

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

OPERATOR, ORGANIZATIONAL, FIELD,
AND DEPOT MAINTENANCE MANUAL

OPERATIONS CENTER, COMMUNICATIONS

AN MSC-25

This copy is a reprint which includes current pages
from Changes 4,5,6,8 and 9.

HEADQUARTERS, DEPARTMENT OF THE ARMY
APRIL 1961

**WARNING
HIGH VOLTAGE**

is used in
this equipment.

DEATH ON CONTACT
may result if safety precautions
are not observed.

**EXTREMELY
DANGEROUS POTENTIALS
EXIST IN THE FOLLOWING UNITS:**

POWER ENTRANCE panel	115 volts ac
Power distribution panel	115 volts ac
Teletypewriter TT-4(*)/TG	115 volts dc
Reperforator-Transmitter, Teletypewriter TT-76 (*) /GGC	115 volts ac
Terminal, Telegraph TH-5/TG	350 volts dc
Intercommunications Station LS-147(*)/TG	270 volts de

**WARNING
VENTILATION IS ESSENTIAL**

To prevent asphyxiation, Operations Center, Communications AN/
MSC-25 must be ventilated at all times when occupied.

DON'T TAKE CHANCES!

Changes in force: C4, C5, C6, C8, C9, and C10

Change

No. 10

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 1 July 1989

**ORGANIZATIONAL, DIRECT SUPPORT, GENERAL SUPPORT,
AND DEPOT MAINTENANCE MANUAL
INCLUDING REPAIR PARTS AND SPECIAL TOOLS LISTS**

**OPERATIONS CENTER, COMMUNICATIONS AN/MSC-25 (NSN 5895-00-021-2088),
AN/MSC-25A (NSN 9999-01-122-8722),
AN/MSC-25 (WITH MK-2488/G) AND AN/MSC-25A (WITH MK-2488/G)**

TM 11-5895-227-15, 24 April 1961, is changed as follows:

Page 28, paragraph 18b(7). In line 2 "13through 25" is changed to read "18 through 25", and 18b(9) in line 5, "No. 13" is changed to read "No. 18".

Add figure No. 43.2 "Operation Center Communications, AN/MSC-25 (Modified), Power Schematic Diagram" and figure No. 43.3 "Operation Center Communications, AN/MSC-25A (Modified), Power Schematic Diagram", after figure No. 43.1.

Changes in force: C 1, C 3, and C 4

Operator, Organizational, Field, and Depot Maintenance Manual

OPERATIONS CENTER, COMMUNICATIONS AN/MS-25

CHANGE }
No. 4 }

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 2 December 1964

TM 11-5895-227-15, 24 April 1961, is changed as indicated so that the manual also applies to the following equipment:

Nomenclature
Semitrailer, Van,
Electronic Equipment
V-189A/MS-25

Order No.
7302-PP-64

Page 20, paragraph 9/ (8), heading, and line 2.

Page 28, paragraph 18a, subparagraph (3); and
subparagraph (5), four places.

Page 36, paragraph 25, subparagraph b, line 2;
subparagraph b(4), line 1, and in the note below it.

Page 2, paragraph 1a. In the second sentence,
after " (van)" add: or Semitrailer, Van, Electronic
Equipment V-189A/MS-25 (van).

Paragraph 1b. Change the last line to: H144/U;
Semitrailer, Van, Electronic Equipment V-189(*)/MS-
25 represents Semitrailers, Vans, Electronic Equipment
V-189/MS-25 and V189A/MS-25; Cable Assembly,
Telephone CX4760"/U represents Cable Assembly,
Telephone CX-4760/U and CX--4760A/U; Connector U-
185(*)/G represents Connector U-185/G and U185B/G;
and Connector U-187(*)/G represents Connector U-
187/G and U-187A/G.

Paragraph 2, subparagraph c (page 1 of C 3).

Delete subparagraph c and substitute:

c. Reporting of Equipment Manual Improvements.

The direct reporting; by the individual user, of errors,
omissions, and recommendations for improving this
manual is authorized and encouraged. DA Form 2028
(Recommended changes to DA Publications) will be
used for reporting these improvements. This form will
be completed in triplicate using pencil, pen, or
typewriter. The original and one copy will be forwarded
direct to Commanding General, U.S. Army Electronics
Command, ATTN: AMSE-MR-MA, Fort Monmouth, N.
J., 07703. One information copy will be furnished to the
individual's immediate supervisor (officer,
noncommissioned officer, supervisor, etc.).

Note

The parenthetical reference to
previous changes (*example*: "page 7
of C 3") indicates that pertinent
material was published in that
change.

Page 2, Chapter 1. After the title, add:

Note

**Semitrailer, Van, Electronic Equipment
V-189A/MS-25 is similar to Semitrailer,
Van, Electronic Equipment V-189/MS-
25. Information in this manual applies
to both vans unless otherwise specified.**

Change "V-189/MS-25"to "V-189 (*)/MS-25"
in the following places:

Page 3, paragraph 5, chart, "Item" column, line
1.

Page 9, paragraph 7, line 4.

Page 18, paragraph 9, heading.

Page 28, paragraph 18a(1), line 1.

Subparagraph (2), note.

Page 29, paragraph 20, heading.

Page 43, paragraph 34a, line 5.

Page 59, paragraph 60, heading, and line 1.

Change "CX-4760/U" to "CX4760(*)/U" in the
following places:

Page 6, figure 2.

Page 3, paragraph 6, chart. Delete this portion of the chart and substitute:

6. Components of Semitrailer, Van, Electronic Equipment V-189(*)/MSC25

Quantity (each)	Item	Fig. No.	Location
1	Air conditioner (V-189/MSC-25)	21	Fig. 16.
1	Air conditioner (FSN 4120-289-1323) (V-189A/MSC-25)		Fig. 16.
1	Axe, 2-ft		Front compartment.
1	Axe, 3-ft		15
4	Battery BA-44 (for dome lights)	14	
1	Broom	15	
1	Cable Assembly, Telephone CX-4566/G (250 ft) with Reel RC-435/U(V-189/MSC-25).	3	Fig. 18
1	Cable Assembly, Telephone CX-4566A/G (250 ft) with Reel RC-435/U(V-189A/MSC-25).		
1	Cable Assembly, Telephone CX-4760/U (15 ft) (V-189/MSC-25)	2	Storage cabinet No. 1.
2	Cable Assembly, Telephone CX-4760A/U (15 ft) (V-189A/MSC 25).		Storage cabinet No. 1.
1	Canopy	26	External storage compartment.

Page 4, paragraph 6, chart. Change quantity column as follows:

Line 42, "Swivel chair", change "4"to 5.

Line 56, "Tube pin straightener", change "1"to 2.

Page 13, paragraph 8a. Delete the paragraph heading and substitute:

"Semitrailer, Van, Electronic Equipment V-189(*)/MSC-25 (figs. 7 and 8).

Page 17, figure 16. Transpose the locations of "SAFE" drawer and "DWR #13."

Page 35, paragraph 24. Delete the paragraph heading and substitute:

Connection Procedure for 26-Pair Cables (V-1.89/MSC-25) (figs. 30 and 31).

Page 36, paragraph 24. Add paragraph 24.1 after paragraph 24:

24.1. Connection Procedure for 26-Pair Cables (V-189A/MSC-25)

To couple connectors on 26-pair cables (Cable Assemblies, Telephone CX-4566A/U (250 ft) and CX-760A/U (15 ft), use the procedure given in *a* below. To couple a connector to the receptacle in the entrance box, use the procedure given in *b* below.

a. Coupling 26-Pair Connector.

Caution

Handle the 26-pair connectors carefully during the coupling and uncoupling procedures. Do not force or twist the connectors during installation. Do not drop or place an uncovered 26-pair connector on the ground.

(1) *Cover removed.*

(a) Grasp the knurled collar on the connectors and turn it until the open position is reached.

(b) Lift the cover, disengage it from the cam on the end of the connector, and remove it.

(2) *Coupling procedure.*

(a) Position the two 26-pair connectors so that the cams drop into the slots of the knurled collars and the male contacts are aligned with the female contacts.

(b) Carefully press the two connectors together.

(c) Lock the two connectors by turning the knurled collars until the closed position is reached.

(3) *Uncoupling procedure.*

(a) Unlock the 26-pair connectors by turning the knurled collars until the open position is reached.

(b) Carefully pull the connectors apart.

(4) *Cover replacement.*

(a) Position the cover on top of the 26-pair connector.

(b) Engage the cam on the top of the cover in the slot on the connector collar.

(c) Lock the cover to the connector by turning the collar until the closed position is reached.

b. Coupling 26-Pair Connector to 26-Pair Receptacle. The cover removal and replacement procedures for a 26-pair receptacle are the same as those described for the 26-pair connector (a(l) above). Connect and disconnect a 26-pair connector at the 26-pair receptacle as given below.

(1) *Connecting procedures.*

(a) Remove the covers.

(b) Position the 26-pair connector on the receptacle so that the cams drop into the slots of the knurled collars, and the female contacts are aligned with the male contacts.

(c) Carefully press the connector into the receptacle.

(d) Turn the lever on the receptacle knurled collar counterclockwise until the collar just engages the cam.

(e) Turn the knurled collar on the connector clockwise until the sleeve just engages the cam.

(f) Simultaneously turn the receptacle collar lever and the connector collar until the closed position is reached.

(2) *Disconnecting procedure.*

(a) Simultaneously turn the receptacle collar lever and the connector collar until the open position is reached.

(b) Carefully pull the connectors apart.

(c) Replace the covers.

Page 39, paragraph 27e. Delete the paragraph heading and substitute:

Air Conditioner (TV-189/A1MC-2.5) (fig. 21).

Add paragraph e.1 after paragraph e.

e.1. *Air Conditioner (V-189A/MSC-25).*

Controls	Description and function
Temperature control (knob control) OFF-VENTILATING-COOLING-EXTERNAL CONTROL switch.	Thermostat. Selects temperature desired for conditioned air between ± 65° F and ± 95° F. Four-position rotary switch.
STARTER RESET switch	SW pos Function OFF - Disconnects ac power from air conditioner. VENTILATING - Connects ac power to air conditioner. COOLING - Connects ac power to air conditioner's refrigerating and fan circuits. EXTERNAL CONTROL - Connects ac power to air conditioner's refrigerating and fan circuits through external thermostatic switch if installed.
PRESSURE RESET switch	Push button thermal-electric overload switch. Automatically opens circuit from ac source when circuit is overloaded. Cutout switch which opens circuits to compressor and condenser fan when refrigerant head discharge pressure exceeds 300 pounds per square inch.

Page 41, paragraph 29d. Delete the paragraph heading and substitute:

Air Conditioner (V-189/MS-25) (fig. 21).

Add paragraph 29d.1 after paragraph 29d.

d.1. *Air Conditioner V-189A/MS-25.*

Caution

Open the air conditioner intake (fig. 7) and outlet (fig. 8) vents before operating the air conditioner.

(1) *Starting for ventilation.* Position the main control knob to the VENTILATION position.

(2) *Starting for regulated cooling.* Position the main control knob to the COOLING position. If an external thermostatic switch has been installed, position the main control knob to the EXTERNAL CONTROL position. Adjust the temperature control knob on the external thermostatic switch to provide the desired temperature in the space being cooled.

Note

At any given setting, either the temperature control switch or the external thermostatic switch will automatically operate the air conditioner to maintain the van interior at the desired temperature.

(3) *Starting for constant unregulated cooling.* Position the main control knob to the EXTERNAL,

CONTROL position if no external thermostatic switch has been installed.

Caution: Do not leave the air conditioner unattended for more than 1 hour in this condition.

Page 42, paragraph 32b(4). Delete the heading and substitute:

Air conditioner (V-189/MS-25).

Add subparagraph 32b(4.1) after subparagraph 32b(4).

(4.1) *Air conditioner (V-189A/MS-25).*

Turn the main control knob to OFF to stop all operations of the air conditioner.

Caution

Operate the main control knob to OFF before operating circuit breaker switch No. 9 (AIR COND.) to off.

Page 44, paragraph 38, line 12. Change "C189/MS-2" to V-189(*)/MS-25.

Page 55, paragraph 58a. At the end of subparagraphs (2) and (3), add (V-189/MS-25 only).

Page 62, paragraph 62a(1). Make the following changes:

Line 3. Change "JS" to J1.

Line 5. Change "J1" to J2.

Page 65, appendix I (page 7 of C3). After the reference "TM 9-213", add the following references:

TM 5-4120-205-12 Operator and Organizational Maintenance Manual: Air Conditioner: Floor Mtg; Air Cooled; 18,000 BTU.

TM 5-4120-205-20P Operator and Organizational Maintenance Repair Parts and Special Tool Lists, Air Conditioner: Floor Mtg; Air Cooled; 18,000 BTU.

Figure 43 (foldout). Make the following changes:

On the POWER ENTRANCE PANEL, change "IN POWER 115V AC OUT" to: OUT POWER 115V AC IN.

In the center portion of the illustration, in the area of TH-5 TT-76, make the following changes:

Delete the BLK wire that connects DS38 and S11.

By Order of the Secretary of the Army:

Official:

J. C. LAMBERT,
Major General, United States Army,
The Adjutant General

Distribution:

Active Army:

USASA (2)	Armies (2)	Ft Huachuca (10)
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USAAESWBD (2)	USATC AD (2)	USAERDAW (13)
USARADB (2)	USATC Engr (2)	Units organized under following
USAARMBD (2)	USATC Inf (2)	TOE's: (2 copies each unless
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USASMC (2)	Instl (2) except	11-557
USASCC (4)	Ft Monmouth (63)	11-587
USAAVCOM (1)	Ft Hancock (4)	11-592
MDW (1)	Ft Gordon (5)	11-597

NG: State AG (3); units--same as active Army except allowance is one copy.

USAR: None.

For explanation of abbreviations used, see AR 320-50.

Delete the WHT wire that connects DS38 and S11.

Add a wire between the right side of S11 and the left side of DS38. Indicate that the new wire has the same color coding and wire size as the deleted wire.

In the area of TH-5 TT-74, make the following changes:

Delete the BLK wire that connects DS39 and S12

Delete the WHT wire that connects DS39 and S12.

Add a wire between the right side of S12 and the left side of DS39. Indicate that the new wire has the same color coding and wire size as the deleted wire.

HAROLD K. JOHNSON,
General, United States Army,
Chief of Staff

CHANGE }
No. 5 }

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 23 February 1966

**Organizational, DS, GS, and Depot Maintenance Manual
Including Repair Parts and Special Tool Lists**

OPERATIONS CENTER, COMMUNICATIONS AN/MSC-25

TM 11-5895-227-15, 24 April 1961, is changed as follows:

The title of this manual is changed as shown above.

Note

The parenthetical reference to a previous change (example page 1 of C 4) indicates that pertinent material was published in that change.

Page 2, paragraph 2, subparagraph c (page 1 of C4). Delete and substitute:

c. Reporting of Equipment Manual Improvements.
The direct reporting by the individual user of errors, omissions, and recommendations for improving this manual is authorized and encouraged. DA Form 2028 (Recommended Changes to DA Publications) will be used for reporting these improvement recommendations.

This form will be completed using pencil, pen, or typewriter and forwarded direct to Commanding General, U.S. Army Electronics Command, ATTN: AMSEL-MR-MP-P, Fort Monmouth, N. J. 07703.

Page 65. Appendix I (page 4 of C 4). Add the following after the last reference:

SB 11-573	Painting and Preservation Supplies Available for Field Use for Electronics Command Equipment.
TB SIG 364	Field Instructions for Painting and Preserving Electronics Command Equipment.
TM 11-5935-203-15P	Organizational, DS, GS, and Depot Maintenance Repair Parts and Special Tool Lists: Connectors, Receptacle, Electrical U-186A/G and U-186B/G.
TM 11-6110-201-15P	Operator, Organizational, Field and Depot Maintenance Repair Parts and Special Tool Lists and Maintenance Allocation Chart: Distribution Boxes J-1077/U and J-1077A/U.

***This change supersedes C1, 3 April 1962, and TM 11-5895-227-25P, 22 March 1962, including C2, 21 August 1963.**

TAGO 6571-A

Page 69, appendix II. Delete and substitute:

APPENDIX II

BASIC ISSUE ITEMS LIST

Section I. INTRODUCTION

1. General

a. This appendix lists items supplied for initial operation and for running spares. The list includes tools, parts, and material issued as part of the major end item. The list includes all items authorized for basic operator maintenance of the equipment. End items of equipment are issued on the basis of allowances prescribed in equipment authorization tables and other documents that are a basis for requisition.

b. Columns are as follows:

(1) *Federal stock number.* This column lists the 11-digit Federal stock number.

(2) *Designation by model.* The dagger indicates the model, manufacturer, and procurement order in which the part is used.

(3) *Description.* Nomenclature or the standard item name and brief identifying data for each item are listed in this column. When requisitioning, enter the nomenclature and description.

(4) *Unit of issue.* The unit of issue is each unless otherwise indicated and is the supply term by

which the individual item is counted for procurement, storage, requisitioning, allowances, and issue purposes.

(5) *Expendability.* Nonexpendable items are indicated by NX. Expendable items are not annotated.

(6) *Quantity authorized.* Under "Items Comprising an Operable Equipment", the column lists the quantity of items supplied for the initial operation of the equipment. Under "Running Spare Items" the quantities listed are those issued initially with the equipment as spare parts. The quantities are authorized to be kept on hand by the operator for maintenance of the equipment.

(7) *Illustrations.* Not used.

2. Batteries

Dry batteries shown are used with the equipment but are not considered part of the equipment. These will not be preshipped automatically but are to be requisitioned in quantities necessary for the particular organization, in accordance with SB 11-6.

SECTION II. FUNCTIONAL PARTS LIST

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL				DESCRIPTION	UNITS TS S OU FE	EXP	A U Q T Y O F I T E M S	ILLUSTRATIONS	
									FIGURE NO.	ITEM NO.
5895-021-2088					OPERATIONS CENTER, COMMUNICATIONS AN/MSC-25: Designed as mobile installation in Trailer V-51/G, providing tel and interphone comm facilities; 115v, 230v ac simultaneously, 60 cyc, single ph;					
					ITEMS COMPRISING AN OPERABLE EQUIPMENT					
	†	†			TECHNICAL BULLETIN TS SIG 354				2	
ORD THR AGC					TECHNICAL MANUAL TM 11-5895-227-15				2	
					NOTE For maintainable equipments listed below, only two each technical manuals are authorized.					
5815-553-6061					REPERFORATOR-TRANSMITTER, TELETYPEWRITER TT-76A, B/GGC				1	
5805-831-6062					SEMITRAILER, VAN, ELECTRICAL EQUIPMENT			NX	1	
5805-715-6171					SWITCHBOARD, TELEPHONE, MANUAL SB-22A/PT			NX	1	
5805-543-0012					TELEPHONE SET TA-312/PT			NX	7	
5805-246-8734					TERMINAL, TELEGRAPH TH-5/TG			NX	2	
					SEMITRAILER, VAN, ELECTRICAL V-189/MSC-25, V-189A/MSC-25					
					NOTE Model column 1 refers to V-189/MSC-25 procured from St. Carl on order No. 3131-PP-59; Column 2 refers to V-189A/MSC-25 procured from North Electric Co. on order No. 7302-PP-64.					
4120-892-1989	†				AIR CONDITIONER: Ellis and Watts p/n A-18				1	
4120-964-9261	†				AIR CONDITIONER: Thermo-King model				1	
4210-727-8111	†	†			AXE, FIREMAN: Approx 2-3/4 lb, 24" handle, Fed Spec GGG-A-926, Type 1, Class 1, Design B				1	
4210-764-2905	†	†			AXE, PICKHEAD: Approx 3-1/2 1 bx, 36" handle; Fed Spec GGG-A-926, Type 1 Class 1, Design B				1	
7520-753-4807	†	†			BASKET, WASTEPAPER: Fed Spec RR-B-181, Style A, Design C				4	
6135-120-1020	†	†			BATTERY, DRY BA-30				8	
6135-050-0916	†	†			BATTERY, DRY BA-44: f/emergency light				4	
5920-291-8305	†	†			BROOM, UPRIGHT: Fed Spec H-B-51, Class 1, Type C				1	

SECTION II. FUNCTIONAL PARTS LIST

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL				DESCRIPTION	UNITS S O U R C E	EXP	A U T H O R I Z E D	ILLUSTRATIONS	
									FIGURE NO.	ITEM NO.
					AN/ASC-25 (continued)					
7920-178-8315	†	†			BRUSH, DUSTING, BENCH: Fed Spec H-B-201, Class B			1		
5995-889-1500	†	†			CABLE ASSEMBLY, POWER, ELECTRICAL CX-7453/U: (100 ft lg)			1		
5995-823-2486	†	†			CABLE ASSEMBLY, POWER, ELECTRICAL: 25 ft lg; Sig dwg SM-D-350987			1		
5995-752-2548	†	†			CABLE ASSEMBLY, POWER, ELECTRICAL: CX-7705/U: 15 ft power stub			1		
5995-823-2620	†	†			CABLE ASSEMBLY, SPECIAL PURPOSE: f/headset; approx 8 ft lg; Sig dwg SM-C-382135			2		
5995-889-0923	†	†			CABLE ASSEMBLY, TELEPHONE: Stub for SB-22/PT; Sig dwg SM-C-353715			1		
5995-823-2955	†	†			CABLE ASSEMBLY, TELEPHONE: Approx 6 ft lg; PJ-047B one end, other end stripped and tinned; Sig dwg SM-C-377563-V			8		
5995-83-2715	†	†			CABLE ASSEMBLY AND REEL: 26 ft, 250 ft and RC-435/U			1		
5995-889-0803	†	†			CABLE ASSEMBLY, TELEPHONE CX-4760A/U: (15 ft)			2		
5995-823-3016	†	†			CABLE ASSEMBLY, TELEPHONE: 2 cond; approx 6 ft lg; PJ-055B one end; Sig dwg SM-D-384145-I			1		
5995-823-0608	†	†			CABLE ASSEMBLY, TELEPHONE: 2 cond; approx 6 ft lg; PJ-055R one end; Sig dwg SM-D-384145-II			1		
5995-823-2619	†	†			CABLE ASSEMBLY, TELEPHONE: 2 cond; approx 3 ft 5 in lg excl term; Sig dwg SM-C-377563-3			1		
5995-823-2618	†	†			CABLE ASSEMBLY, TELEPHONE: 2 cond; approx 3 ft 1 in lg excl term; Sig dwg SM-C-377563-2			4		
5995-752-2512	†	†			CABLE ASSEMBLY, TELEPHONE: 2 cond; approx 2 ft lg; plug each end; Sig dwg SM-D-352593-II			8		
7105-268-8214	†	†			CHAIR, FOLDING: Metal; w/o arms; Fed Spec AA-291a, Type 1, Class 1			2		
7110-273-8798	†	†			CHAIR, ROTARY: Fed Spec AA-C-295, Class 1, Size 1; (NOTE: When replacing remove mfg bracket f/use on new chair)			5		
7110-281-4469	†	†			CHAIR, ROTARY: Drafting stool; Fed Spec AA-C-295, Class 2, Size 3; (NOTE: When replacing, remove mtg bracket f/use on new chair)			1		
6645-892-4369	†				CLOCK, WALL: MIL spec MIL-C-1194, type A			1		
6645-752-7902	†				CLOCK: MIL C 3956, M2 AN5743			1		

SECTION II. FUNCTIONAL PARTS LIST

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL					DESCRIPTION	UNITS OUFE	EXP	A U Q T U H A O N R I Z E Y D	ILLUSTRATIONS	
										FIGURE NO.	ITEM NO.
						AN/MSC-25 (continued)					
7210-753-3043	†	†				CUSHION, CHAIR: Sig dwg SM-C-350214			2		
6110-649-8146	†	†				DISTRIBUTION BOX J-1077A/U:		NX	1		
4210-270-4512	†					EXTINGUISHER, FIRE: Walter Kidde p/n 5F-1		NX	3		
4210-223-9912		†				EXTINGUISHER, FIRE: Carbon dioxide type; MIL type MIL-E-468-CE; type .1, class 1		NX	3		
5120-293-2698	†	†				EXTRACTOR, ELECTRON TUBE: Economy Cable p/n ETP-9			1		
5120-752-8862	†	†				EXTRACTOR, ELECTRON TUBE: Economy Cable p/n ETP-7			1		
4140-729-6001	†					FAN, VENTILATING, PROPELLER: Rotron p/n KS802L		NX	1		
4130-965-1230		†				FILTER, AIR CONDITIONING: 10-1/2" w x 40" lg x 1-7/8" thk RP EZ Kleen; Research Products Corp p/n 810004, Type M-V			1		
6545-663-9032	†	†				FIRST AID KIT: Fed Spec GG-K-392, type II, size 1			1		
5120-776-9917	†	†				GRIP, CABLE, JAW: Economy Cable p/n EQA6-8P			6		
5120-776-9918	†	†				GRIP, CABLE, JAW: Economy Cable p/n EQA26-S			44		
5120-251-4489	†					HAMMER, HAND: Fed Spec GGG-H-86, type SA, class II			1		
5965-682-2769	†	†				HANDSET-HEADSET H-144/U; H-144A, B/U		NX	2		
4520-224-7909	†	†				HEATER, SPACE, ELECTRIC: Electromode AAT-15A			4		
5830-752-5337	†	†				INTERCOMMUNICATION STATION LS-147C/FI:		NX	1		
6230-729-9614	†	†				LANTERN, ELECTRIC: Justrite p/n 2106-7			2		
5410-752-2525	†	†				LEAD, ELECTRICAL: Ord strap; Sig dwg SH-B-352166			2		
6230-615-5384	†	†				LIGHT, EXTENSION: 25 ft lg; Woodhead p/n 506KS25-18-2SJ			1		
5935-752-6011	†	†				MAINTENANCE KIT, ELECTRONIC EQUIPMENT: f/maint of Connector, Plug U-77/U; sig C dwgs Nos: SC-B-684, SC-B-68420, SC-B-68424, SC-B-68421, SC-B-68429, MS-35537-78			1		

SECTION II. FUNCTIONAL PARTS LIST

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL					DESCRIPTION	UNITS S O U R C E	EXP	A U T O M A T I Z E D	ILLUSTRATIONS	
										FIGURE NO.	ITEM NO.
						AN/MSC-25 (continued)					
5120-293-0255	†	†				PIN STRAIGHTENER, ELECTRONIC: Duro Speciality p/n D-279-SN				1	
5975-224-5260	†	†				ROD GROUND MX-148/G:				2	
7110-551-5259	†	†				SAFE, FILING CABINET: Fed Spec AA-F-358; Mosler Safe Co		NX		1	
5120-752-9675	†	†				SCREWDRIVER, FLAT TIP: Bridgeport Hwd Mfr Corp p/n 2143-6				2	
7520-162-6178	†	†				SHARPENER, PENCIL: Boston type L				1	
7430-823-7988	†					TYPEWRITER: Portable noiseless; Remington Quiet Writer No. 11		NX		1	
7430-824-1424	†					TYPEWRITER: Portable; Remington classic model				1	
						RUNNING SPARE ITEMS					
						COMMUNICATIONS OPERATIONS CENTER AN/MSC-25					
5960-262-0185	†	†				ELECTRON TUBE: MIL type 5726/6AL5W				2	
5960-262-0152	†	†				ELECTRON TUBE: MIL type 6AU6WA				1	
5960-188-0880	†	†				ELECTRON TUBE: MIL type 6X4W				1	
5960-669-6861	†	†				ELECTRON TUBE: MIL type 6005/6AQ5W				1	
5960-166-7663	†	†				ELECTRON TUBE: MIL type 12AU7				2	
5960-166-7664	†	†				ELECTRON TUBE: MIL type 12AX7				1'	
5920-356-2188	†	†				FUSE, CARTRIDGE: 1/8 amp; MIL type- F)2GF125A				5	
5920-636-3047	†	†				FUSE, CARTRIDGE: 1 amp, 250v; Littelfuse p/n 313001				5	
5920-280-9328	†	†				FUSE, CARTRIDGE: 1.5 amp, 125v; MIL type R02D1R50B				5	
5920-224-5269	†	†				FUSE, CARTRIDGE: 1.6 amp; Littelfuse p/n 31301.6				5	

TAGO 6571-A

SECTION II. FUNCTIONAL PARTS LIST

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL				DESCRIPTION	U N I T S O U T S	EXP	A U T O M A T I Z E D	ILLUSTRATIONS	
									FIGURE NO.	ITEM NO.
					AN/MSC-25 (continued)					
5920-581-4144	†	†			FUSE, CARTRIDGE: 2 amp, 250 v: Buss type MDX-2 (2 mtd in equip)				7	
6240-223-9100	†	†			LAMP, GLOW: MILtype NE-51				1	
6240-143-3060	†	†			LAP, INCANDESCENT: GE type 6S6DC-120				1	
6240-892-6102	†	†			LAMP, INCANDESCENT: 10 w, 120 v; GE part 10C7/5DC				1	
6240-143-3084	†	†			LAMP, INCANDESCENT: 15 w, 120 v GE p/n 15T7/DC (mtd in equip)				1	
6240-155-8706	†	†			LAMP, INCANDESCENT: 6 to 8 v, 0.15 amp; MIL Std MS1557112, type TB-14				1	
6240-196-4501	†	†			LAMP, INCANDESCENT: Sig dwg SC-D-84552-6				1	
7530-223-7966	†	†			PAPER, RECORDING, TELETYPEWRITER: Fed Spec UU-P-547C, type 1, class 1				1	
7510-511-6690	†	†			RIBBON; PRINTING, TELETYPEWRITER: Fed Spec DDD-R-311D, type 1, grade A, class 1				1	
6130-076-3545	†	†			SEMI-CONDUCTOR DEVICE, DIODE: Sig dwg SC-C-141342				1	
6130-076-3546	†	†			SEMI-CONDUCTOR DEVICE, DIODE: Sig dwg SC-C-141343				1	
7530-634-6237	†	†			TAPE, TELETYPEWRITER: Fed Spec UU-T-120				4	
5805-503-3337	†	†			TELEPHONE CIRCUIT, LINE JACK TA-222/PT:		NX		2	
5805-715-6175	†	†			TELEPHONE CIRCUIT, TRUNK JACK TA-326/PT		NX		1	
5920-538-5986	†	†			FUSE, CARTRIDGE: 1 amp; Littelfuse 3AG				5	
5120-251-4489	†	†			HANDLE, HAMMER, WOOD: Stanley p/n RH-30-8				1	
5920-014-2630	†	†			FUSE, CARTRIDGE: 5 amp MIL std S-90080-1				5	
6240-538-8447	†	†			LAP, FLUORESCENT: GE p/n F20T12SW				7	
6240-179-1814	†	†			LAMP, LOW: GE type No. NE-45				3	

SECTION II. FUNCTIONAL PARTS LIST

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL					DESCRIPTION	UNITS S OU FE	EXP	A U Q T U H A O N R I Z E Y D	ILLUSTRATIONS	
										FIGURE NO.	ITEM NO.
						AN/MSC-25 (continued)					
6240-179-1816	†	†				LAMP, GLOW; GE TYPE No. NE-30			1		
6240-143-3070	†	†				LAMP, INCANDESCENT: 50 w; GE p/n 50A/RS			3		
6240-155-7786	†	†				LAMP, INCANDESCENT: MIL std MS 15610-2			2		
6240-044-6914	†	†				LAMP, INCANDESCENT: MIL std MS 35478-10			2		
5895-856-5178	†	†				SCREEN, OPERATIONS BOARD: Adler p/n 1041-608B7			2		
6250-299-2884	†	†				STARTER, FLUORESCENT LAMP: GE p/n FS-2			12		

**APPENDIX III
MAINTENANCE ALLOCATION
Section I. INTRODUCTION**

1. General

a. This appendix assigns maintenance functions to be performed on components, assemblies, and subassemblies by the lowest appropriate maintenance category.

b. Columns in the maintenance allocation chart are as follows:

(1) *Part or component.* This column shows only the nomenclature or standard item name. Additional descriptive data are included only where clarification is necessary to identify the component. Components, assemblies, and subassemblies are listed in top-down order. That is, the assemblies which are part of a component are listed immediately below that component, and subassemblies which are part of an assembly are listed immediately below that assembly. Each generation breakdown (components, assemblies, or subassemblies) is listed in disassembly order or alphabetical order.

(2) *Maintenance function.* This column indicates the various maintenance functions allocated to the categories.

(a) *Service.* To clean, to preserve, and to replenish lubricants.

(b) *Adjust.* To regulate periodically to prevent malfunction.

(c) *Inspect.* To verify serviceability and detect incipient electrical or mechanical failure by scrutiny.

(d) *Test.* To verify serviceability and to detect incipient electrical or mechanical failure by use of special equipment such as gages, meters, etc.

(e) *Replace.* To substitute serviceable components, assemblies, or subassemblies, for unserviceable components, assemblies, or subassemblies.

(f) *Repair.* To restore an item to

serviceable condition through correction of a specific failure or unserviceable condition. This function includes but is not limited to welding, grinding, riveting, straightening, and replacement of parts other than the trial and error replacement of running spare type items such as fuses, lamps, or electron tubes.

(g) *Align.* To adjust two or more components of an electrical system so that their functions are properly synchronized.

(h) *Calibrate.* To determine, check, or rectify the graduation of an instrument, weapon, or weapons system, or components of a weapons system.

(i) *Overhaul.* To restore an item to completely serviceable condition as prescribed by serviceability standards. This is accomplished through employment of the technique of "Inspect and Repair Only as Necessary" (IROAN). Maximum utilization of diagnostic and test equipment is combined with minimum disassembly of the item during the overhaul process.

(j) *Rebuild.* To restore an item to a standard as near as possible to original or new condition in appearance, performance, and life expectancy. This is accomplished through the maintenance technique of complete disassembly of the item, inspection of all parts or components, repair or replacement of worn or unserviceable elements using original manufacturing tolerances and/or specifications and subsequent reassembly of the item.

(3) *Operator, organization, direct support, general support, and depot.* The symbol X indicated the categories responsible for performing that particular maintenance operation, but does not necessarily indicate that repair parts will be stocked at that level. Categories higher than those marked by X are authorized to perform the indicated operation.

- (4) *Tools required.* This column indicates codes assigned to each individual tool equipment, test equipment, and maintenance equipment referenced. The grouping of codes in this column of the maintenance allocation chart indicates the tool, test, and maintenance equipment required to perform the maintenance function.
- (5) *Remarks.* Entries in this column will be utilized when necessary to clarify any of the data cited in the preceding column.

c. Columns in the allocation of tools for maintenance functions are as follows:

- (1) *Tools required for maintenance functions.* This column lists tools, test, and

maintenance equipment required to perform the maintenance functions.

- (2) *Operator, organization, direct support, general support and depot.* The dagger (†) symbol indicates the categories normally allocated the facility.
- (3) *Tool code.* This column lists the tool code assigned.

2. Maintenance by Using Organizations

When this equipment is used by signal services organizations organic to theater headquarters or communication zones to provide theater communications, those maintenance functions allocated up to and including general support are authorized to the organization operating this equipment.

Section II. MAINTENANCE ALLOCATION CHART

PART OR COMPONENT	MAINTENANCE FUNCTION	ECHELON					TOOLS REQUIRED	REMARKS		
		O/C	O	DS	GS	S				
COMMUNICATIONS OPERATIONS CENTER AN/MSC-25	service	X						Van facility & exterior of components		
	inspect	X								
	test	X								
				X				1,4,6	System operation using built-in facilities	
					X			2,4,5,6	Continuity checks of signal, lighting and power circuits except 26 pair cable	
						X		2,3,4,5,6	Test in accordance with component maintenance allocation chart	
	repair	X							Test in accordance with component maintenance allocation chart	
				X				4,5,6	Repair as determined by component maintenance allocation chart	
					X			4,5,6	Repair as determined by component maintenance allocation chart	
						X		4,5,6	Repair as determined by component maintenance allocation chart	
SEMI-TRAILER, VAN, ELECTRICAL EQUIPMENT V-189/MSC-25	overhaul					X		5	Overhaul by component	
	service	X							Facility & exterior of components	
	inspect	X								
	test		X						1,4,6	Continuity checks of power and lighting circuits except 26 pair cable
	repair					X			2,3,4,5,6	All tests
				X					4,5,6	Except door panel, gaskets, molding strip replacement and cable connector
CABLE ASSEMBLY CX-4566/G	test					X			4,5,6	Except door panel and 26 pair connector
	replace		X			X			2,3	All repairs
CONNECTOR; PLUG, ELECTRICAL U-185A/G	repair					X			4	
	test					X			2	
	repair					X			4	
CABLE ASSEMBLIES, POWER	test		X						1	
	repair		X						4	

Section II. MAINTENANCE ALLOCATION CHART

PART OR COMPONENT	MAINTENANCE FUNCTION	ECHELON					TOOLS REQUIRED	REMARKS
		O/C	O	DS	GS	S		
AN/MSC-25 (continued)								
CLOCK	repair							Responsibility of ordinance corps
CONNECTOR, RECEPTACLE, ELECTRICAL U-187/G	replace							For maintenance allowances see TM 11-5935-205-15P
DISTRIBUTION BOX J-1077A/U	repair							See TM 11-6110-201-15P for maintenance allocations
EXTINGUISHER, FIRE	repair							Responsibility of engineers corps
HANDSET-HEADSET H-144A, B/U	repair							See TM 11-5965-206-15P for maintenance allocations
INTERCOMMUNICATION STATION LS-147A,B,C,D/FI	repair							See TM 11-5830-221-12 for maintenance allocations
SWITCHBOARD, TELEPHONE, MANUAL SB-22A/PT	repair							See TM 11-5805-262-12 for maintenance allocations
TELEPHONE SET TA-312/PT	repair							See TM 11-2155 for maintenance allocations
GENERATOR, RINGING, HAND G-42A/PT	repair							See TM 11-5805-257-12P for maintenance allocations
HANDSET H-60/PT; H-165/U	repair							See TM 11-5965-224-15P for maintenance allocations
TELETYPEWRITER SET AN/GGC-3A and REPERFORATOR TRANSMITTERS, TELETYPEWRITER TT-76, A, B/GGC	repair							See TM 11-2225 for maintenance allocations
TELETYPEWRITER SET AN/PGC-1, and TELETYPEWRITER TA-4A, B/TG	repair							See TM 11-5815-206-12 for maintenance allocations
TERMINAL, TELEGRAPH TH-5/TG	repair							See TM 11-5805-246-20 for maintenance allocations

Section II. MAINTENANCE ALLOCATION CHART

PART OR COMPONENT	ECHELON					TOOLS CODE	REMARKS
	O/C	O	DS	GS	S		
AN/MSC-25 (continued)							
COMMUNICATIONS OPERATIONS CENTER AN/MSC-25							
MULTIMETER AN/URM-105		†				1	
MULTIMETER TS-352/U			†	†	†	2	
OHMMETER ZM-21A/U				†	†	3	
TOOL EQUIPMENT TE-123		†	†	†	†	4	
TOOL KIT, GENERAL MECHANIC (FSN 5160-754-0641)		†	†	†	†	5	
TOOL & TEST EQUIPMENT ASSOCIATED WITH COMPONENTS OF END EQUIPMENT		†	†	†	†	6	Allocation based on separate MAC'S
NOTE: DEPOT MAY USE ANY OTHER TYPE OF TOOL & TEST EQUIPMENT REQUIRED TO OVERHAUL THIS EQUIPMENT							

APPENDIX IV

ORGANIZATIONAL, DS, GS AND DEPOT MAINTENANCE REPAIR PARTS AND SPECIAL TOOL LISTS Section I. INTRODUCTION

1. General

- a. This appendix includes organizational, direct and general support and depot maintenance special tool lists.
- (1) The organizational maintenance repair parts and special tool lists show the repair parts authorized for organizational maintenance and are a basis for requisitioning by organizations which are authorized the major item of equipment. End items of equipments are issued on the basis of allowances prescribed in equipment authorization tables and other documents that are a basis for requisitioning.
- (2) Direct and general support and depot maintenance repair parts and special tool lists show the quantities of repair parts authorized for direct and general support maintenance and are a basis for requisitioning authorized parts. They are also a guide for depot maintenance in establishing initial levels of spare parts.
- b. Columns are as follows:
- (1) *Source, maintenance, and recoverability code.* Source, maintenance, and recoverability codes indicate the Commodity Command responsible for supply, the maintenance category at which an item is stocked, categories at which an item is installed or repaired, and whether an item is repairable or salvageable. The source code column is divided into four parts.
- (a) *Column A.* This column indicates the materiel code and designates the area of responsibility for supply. AR 310-1 defines the basic numbers used to identify the materiel code. If the part is Signal materiel responsibility, the column is left blank.
- (b) *Column B.* This column indicates the point within the maintenance system where the part is available. "P" indicates that the repair part is a high mortality part; procured by Commodity Commands, stocked in and supplied from the Army depot system, and authorized for use at indicated maintenance categories.
- (c) *Column C.* This column indicates the lowest maintenance categories authorized to install the part.
"O"--Organizational maintenance (operator and organizational)
"F"--Direct support maintenance.
"H"--General support maintenance.
- (d) *Column D.* Not used.
- (2) *Federal stock number.* This column lists the 11-digit Federal stock number.
- (3) *Designation by model.* The dagger (†) indicates model in which the part is used.
- (4) *Description.* Nomenclature or the standard item name and brief identifying data for each item are listed in this column. When requisitioning, enter the nomenclature and description.
- (5) *Unit of issue.* The unit of issue is each unless otherwise indicated and is the supply term by which the individual item is counted for procurement, storage, requisitioning, allowances, and issue purposes.
- (6) *Expendability.* Nonexpendable items are indicated by NX. Expendable items are not annotated.
- (7) *Quantity incorporated in unit.* This column lists the quantity of each part found in a given assembly, component, or equipment.
"AR" indicates that the item may be requisitioned "as required"; however, estimated minimum quantities may be stocked to cover immediate needs. This symbol applies to common hardware and bulk materials only.
- (8) *Organizational.* See paragraph 3.
- (9) *Direct support.* This column indicates quantities of repair parts authorized for

initial stockage for use in the direct support maintenance and in supply support to organization. The quantities are based on 100 equipments to be maintained for a 15-day period.

- (10) *General support.* The numbers in this column indicate quantities of repair parts authorized for initial stockage for use in general support maintenance. The quantities are based on 100 equipments to be maintained for a 15-day period.
- (11) *Depot.* The numbers in this column indicate quantities of repair parts authorized for depot maintenance and for initial stockage for maintenance, and for supply support to lower categories. The entries are based on the quantity required for rebuild of 100 equipments.
- (12) *Illustration.* The "Item No." column lists the reference symbols used for identification of the items in the illustration or text of the manual.

2. Parts for Maintenance

When this equipment is used by signal service organizations organic to the theater headquarters or communication zones to provide theater communications, those repair parts authorized up to and including general support are authorized for stockage by the organization operating this equipment.

3. Additional Repair Parts Authorization

An asterisk (*) indicates that an item is not authorized for stockage but if required, may be requisitioned for immediate use only.

4. Requisitioning Information (DS, GS and Depot)

a. The allowance factors are based on 100 equipments. In order to determine the number of parts authorized for initial stockage for the specific number of equipments supported, the following formula will be used and carried out to two decimal places. Specific number of equipments supported

$$\text{X} \frac{\text{allowance factor}}{100} =$$

Number of parts authorized for initial stockage.

b. Fractional values obtained from above computation will be rounded to whole numbers as follows:

- (1) When the total number of parts authorized is less than 0.5, the quantity authorized will be zero.
- (2) When the total number of parts authorized is between 0.5 and 1.0, the quantity authorized will be one.
- (3) For all values above one, fractional values below 0.5 will revert to the next lower whole number and fractional value 0.5 and above will advance to the next higher whole number.

c. The quantities determined in accordance with the above computation represent the initial stockage for a 15-day period.

SECTION II. ORGANIZATIONAL FUNCTIONAL PARTS LIST

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL				DESCRIPTION	UNIT ISSUE	EXP	QUANTIFIED	ORGANIZATI	ILLUSTRATIONS	
	FIGURE NO.	ITEM NO.									
5895-021-2088					OPERATIONS CENTER, COMMUNICATIONS AN/MSC-25 OPERATIONS CENTER, COMMUNICATIONS AN/MBC-25: designed as mobile installation in Trailer V-51/G, providing tel and interphone comm facilities; 115 v, 230 vac simultaneously, 60 cyc, single ph SEMITRAILER, VAN, ELECTRICAL V-189/MSC-25, V-189A/MSC-25 NOTE: Model Column 1 refers to V-189/MSC-25; Column 2 refers to V-189A/MSC-25		NX				
5410-792-6335	/	/			ADAPTER, TIE DOWN, FLOOR: Davis Aircraft part No. FDC-1225M5			12	*		
5805-866-0797	/	/			ADAPTER, TIE DOWN, FLOOR Davis Aircraft part No. FDC-1225M8-1			13	*		
6625-752-8464	/	/			AMMETER 0-100 amp; MIL type MR36W100ACAAR			1	*		
6250-500-4845	/	/			BALLAST, LAMP: GE part No. 89G-457			22	*		
6350-193-2776	/	/			BELL, ELECTRICAL: non adj; Edwards part No. 156			1	#		
7920-291-8305	/	/			BROOM, UPRIGHT: Fed Spec H-B-51, class 1, type C			1	*		
7920-178-8315	/	/			BRUSH, DUSTING, BENCH: Fed Spec H-B-201, class B			1	*		
6145-752-2562	/	/			CABLE, POWER, ELECTRICAL: 2 16AWG cond GE part No. S1-5325 type 65/0063 (Authorized allowances will be a minimum of or a multiple of 6 ft.)	ft		24	*		
6145-985-7704	/	/			CABLE, POWER, ELECTRICAL 2 16AWG cond ML type C0-02MGF(2/16)0338 (Authorized allowances will be a minimum of or a multiple of 2 ft.)	ft		2	*		
6145-752-2473	/	/			CABLE, POWER, ELECTRICAL, 3 cond Sig dwg-SC-A-46608 (Authorized allowances will be a minimum of or a multiple of 115 ft.)	ft		115	*		
5995-889-1500	/	/			CABLE ASSEMBLY, POWER, ELECTRICAL CX-7453/U: (100 ft lg)			1	*		
5995-823-2618	/	/			CABLE ASSEMBLY TELEPHONE: 2 cond approx 3 ft 1 in lg excl term; Sig dwg SM-C- 377563-2			4	*		
5995-823-2619	/	/			CABLE ASSEMBLY, TELEPHONE: 2 cond; approx 3 ft 5 in lg excl term; Sig dwg SM-C-377563-3			1	*		
5995-823-3016	/	/			CABLE ASSEMBLY, TELEPHONE: 2 cond approx 6 ft lg PJ-055B one end; Sig dwg SM-D-384145-1			1	*		

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL					DESCRIPTION	UNIT ISSUE	EXP	QUANTIFIED	ORGANIZATI	ILLUSTRATIONS	
											FIGURE NO.	ITEM NO.
						AN/MSC-25 (continued)						
5995-889-0608	/	/				CABLE ASSEMBLY, TELEPHONE: 2 cond; approx 6 ft lg; PJ-055R one end; Sig dwg SM-D-384145-II			1	*		
5995-752-2512	/	/				CABLE assembly, telephone: 2 cond; approx 2 ft lg; plug each end; Sig dwg SM-D-353593-II			8	*		
5940-254-2244	/	/				CAP, ELECTRICAL: black, f/U-106/U; Sig dwg SC-C-76202-1			56	*		
5910-880-6898	/	/				CAPACITOR, FIXED, PAPER DIELECTRIC: 1 sect, 5 uf, ±10%, 330 vac; 1.313 in d X 3.093 in h X 2.000 in w; GE part No. 49F3319			1	*		
5910-553-6096	/	/				CAPACITOR, FIXED, PAPER DIELECTRIC: 3 sect; ea sect 10,000 uuf ±10%; Hopkins type No. 591A			22	*		
5910-713-8313	/	/				CAPACITOR, FIXED, PAPER DIELECTRIC: 4 uf ±10%; Aerovox part No. P150F83			1	*		
5925-752-6642	/	/				CIRCUIT BREAKER: air arc quenching; dpst; Square D Cat No. Q0-270			1	*		
5930-734-5202	/	/				CIRCUIT BREAKER: air arc quenching; spst; CH part No. 10172H334A			4	*		
5925-682-1061	/	/				CIRCUIT BREAKER: air arc quenching; spst; Square D Car No. Q0-115			8	*		
5925-823-2485	/	/				CIRCUIT BREAKER: air arc quenching; spst; Square D Car No. Q0150			1	*		
5925-523-5764	/	/				CIRCUIT BREAKER: air arc quenching; Square D Cat No. Q0-120			5	*		
5975-705-5841	/	/				CLIP, RETAINING: holds cable in cradle clamps; neoprene; 1-5/8 in lg X 1 in w X 1/8 in thk; Electrovert part N3			110	*		
5340-884-9983	/	/				CLIP, RETAINING: secures cable to cradle clips; 3.179 in lg X 1 in w X 0.135 in thk; electrovert part N7			14	*		
6645-752-7902	/	/				CLOCK: MIL type MIL-C-3956 AN5743 M2			1	*		
6645-892-4369	/	/				CLOCK, WALL: MIL spec MIL-C-1194, type A			1	*		
5935-429-5511	/	/				CONNECTOR, PLUG, ELECTRICAL: 2 cont; Hubbell part No. 7102			4	*		
5935-646-5908	/	/				CONNECTOR, PLUG, ELECTRICAL: 2 cont; Hubbell part No. 9754			1	*		
5935-064-5731	/	/				CONNECTOR, PLUG, ELECTRICAL U-237/G: f/power cables			3	*		
5935-518-9653	/	/				CONNECTOR, PLUG, ELECTRICAL UP-120M; f/heater			4	*		

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL					DESCRIPTION	UNIT OF ISSUE	EXP	QUANTIFIED	ORGANIZATION	ILLUSTRATIONS	
											FIGURE NO.	ITEM NO.
						AN/MS-25 (continued)						
5935-836-1417	/	/				CONNECTOR, PLUG, ELECTRICAL: f/SB-22/PT cable stub; MIL type MS3116B16-26P			1	*		
5935-064-5732	/	/				CONNECTOR, RECEPTACLE, ELECTRICAL U-238/G: in power entrance box			2	*		
5935-827-1545	/	/				CONNECTOR, RECEPTACLE, ELECTRICAL: f/SB-22/PT cable assy; MIL type MS3112E16-26S			2	*		
5935-359-6025	/	/				CONNECTOR, RECEPTACLE, ELECTRICAL: 2 cont; Hubbell part No. 9210			7	*		
5935-549-3562	/	/				CONNECTOR, RECEPTACLE, ELECTRICAL: duplex; Hubbell part No. 9200			11	*		
5805-871-5703	/	/				DOOR, FOLDING: Holcombe and Hoke part No. 2F2385			1	*		
5120-293-2692	/	/				EXTRACTOR, ELECTRON TUBE: Economy Cable part No. ETP-9			1	*		
5120-752-8862	/	/				EXTRACTOR, ELECTRON TUBE: Economy Cable part No. ETP-7			1	*		
6210-855-9091	/					FIXTURE, LIGHT: Specialty Electronics part No. E-24BM			10	*		
		/				FIXTURE, LIGHT: Electrospace Corp part No. EST-184 (M4CW10-B257)			10	*		
5920-014-2630	/	/				FUSE, CARTRIDGE: 5 amp; MIL std MS-90080-1			1	*		
5920-686-0021	/	/				FUSEHOLDER: Buss type HKL			1	*		
5895-856-5179	/	/				GEAR, DRIVE: P/o operations board screen; Sig dwg SM-B-378535			3	*		
5120-776-9918	/	/				GRIP, CABLE, JAW: Economy Cable part No. EQA26-S			44	*		
5120-776-9917	/	/				GRIP, CABLE, JAW: Economy Cable part No. EQA6-8P			6	*		
5120-251-4489	/	/				HAMMER HAND: Fed Spec GGG-H-86, type SA, class II			1	*		
4540-404-9232	/	/				HEATING ELEMENT, ELECTRICAL: 110 v, 1.5 kw; Electromode part No. 3954-E			4	*		
5965-892-3201	/	/				HOOK, HEADSET: Tiebout part No. 5565-1			9	*		
4140-855-9079	/					IMPELLER, FAN, AXIAL: 5 blades; Rotron part No. 12706-1			1	*		
4520-792-8398	/					IMPELLER, FAN, AXIAL: Torrington part No. 20			4	*		
5935-192-4826	/	/				JACK, TELEPHONE: MIL type JJ-086			18	*		

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL				DESCRIPTION	UNIT ISSUE	EXP	QUANTIFIED	ORGANIZATION	ILLUSTRATIONS	
										FIGURE NO.	ITEM NO.
					AN/MS-25 (continued)						
5935-228-4038	/	/			JACK, TELEPHONE: MIL type JJ-085			46	*		
6210-665-5376	/	/			KNOB: for fuseholder; Buss part 6279-1/2			1	*		
5355-614-0400	/	/			KNOB: MIL Std MS91531-3N2M			3	*		
6240-152-2996	/	/			LAMP, FLUORESCENT: GE part No. F20T12CW			22	*		
6240-179-1816					LAMP, GLOW: GE type No. NE-30			2	*		
6240-179-1814		/			LAMP, GLOW: GE type No. NE-45			17	*		
6240-143-3070					LAMP, INCANDESCENT: 50 w; GE part No. 50s/RS			10	*		
6240-155-7786					LAMP, INCANDESCENT: MIL Std MS15610-2			2	*		
6240-044-6914	/				LAMP, INCANDESCENT: MIL Std MS35478-10			3	*		
6250-158-8918	/	/			LAMPHOLDER: Dialco part No. 6-08			2	*		
6250-299-6093	/	/			LAMPHOLDER: Hubbell part No. 2937			22	*		
6250-299-6697	/	/			LAMPHOLDER: Hubbell part No. 2943			22	*		
6250-752-1233	/				LAMPHOLDER: Leecra/t part No. 4-74-6			15	*		
6250-892-4365	/	/			LAMPHOLDER: Leviton part No. 9062			2	*		
6230-729-9614	/	/			LANTERN, ELECTRIC: Justrite part No. 2106-7			2	*		
5410-752-2525	/	/			LEAD, ELECTRICAL: grd strap; Sig dwg SM-B-352166			2	*		
6230-615-5384	/	/			LIGHT, EXTENSION: 25 ft lg; Woodhead part 506KS25-18-2SJ			1	*		
6625-841-6641	/				METER, ELECTRICAL FREQUENCY: JBT Instrument part No. 31FHXX type I			1	*		
6105-560-5739	/	/			MOTOR, ALTERNATING CURRENT: GE part No. 5KSP51AL74			4	*		
6105-792-8384	/				MOTOR, ALTERNATING CURRENT: Rotron part No. 23396-01			1	*		
5940-223-5293	/	/			POST, BINDING U-106/U:			56	*		
5940-823-1805	/	/			POST, BINDING: Standard Elec Time part No. FJ-5M red			2	*		

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL					DESCRIPTION	UNIT ISSUE	EXP	A U T H O R I Z E D	O R G A N I Z A T I	ILLUSTRATIONS	
											FIGURE NO.	ITEM NO.
						AN/MSC-25 (continued)						
5940-823-1806	/	/				POST, BINDING: Standard Electric Time part No. GJ-5M black			2	*		
5945-615-7738	/	/				RELAY, SWITCH: dpdt; Potter and Brumfield part No. PR11AY			1	*		
5410-793-2021	/	/				REPAIR KIT, ELECTRONIC EQUIPMENT, SHELTER MRK-680/G: to repair punctures to shelter skin; (NOTE: To be requisitioned for immediate use only, order direct from depot stock.)			A/R			
	/	/				RETAINER, LAMP, FLUORESCENT: retains lamps in sockets; Laduby part P-40 (M4CW10-B226)			44	*		
5975-224-5260	/	/				ROD, GROUND MX-148/G:			2	*		
5895-856-5178	/	/				SCREEN, OPERATIONS BOARD: Sig dwg SM-C-378530			3	*		
6210-754-8134	/	/				SHIELD, LIGHT: f/fluorescent: Sig dwg SM-C-349983			22	*		
6250-299-2884	/	/				STARTER, FLUORESCENT: GE part No. FS-2			22	*		
5895-885-8612	/	/				STRAP WEBBING: 18 in lg; Davis Aircraft part FDC-1730-57-7			2	*		
	/	/				STRAP, WEBBING: 18 in lg; Davis Aircraft part FDC-1730-58-3 (M4CW30-A073)			3	*		
						STRAP, WEBBING: 36 in lg; Davis Aircraft part FDC-1730-57-10 (M4CW30-A274)			1	*		
5340-823-5234	/	/				STRAP, WEBBING: 37 in lg; Davis Aircraft part FDC-1730-58-2			4	*		
	/					STRAP, WEBBING: 52 in lg; Davis Aircraft part FDC-1730-56-1 (M4CW30-A775)			1	*		
	/					STRAP, WEBBING: 84 in lg; Davis Aircraft part FDC-1730-57-12 (MCW30-A275)			1	*		
5340-823-5232	/					STRAP, WEBBING: 24 in lg X 1 in w; Davis Aircraft part No. FDC-1730-58-1			1	*		
5340-823-5261	/	/				STRAP, WEBBING: 24 in lg X 1 in w; Davis Aircraft part No. FDC-1730-56-3			1	*		
5340-823-5262	/	/				STRAP, WEBBING: 32 in lg X 1 in w; Davis Aircraft part No. FDC-1730-57-2			1	*		

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL					DESCRIPTION	UNIT ISSUE	EXP	QUANTIFIED	ORGANIZATION	ILLUSTRATIONS	
											FIGURE NO.	ITEM NO.
						AN/MSC-25 (continued)						
5340-823-5236	/	/				STRAP, WEBBING: 48 in lg X 1 in w; Davis Aircraft part No. FDC-1730-57-1				7	*	
5930-823-0301	/	/				SWITCH, PUSH: Door bell switch; Edwards part No. 1786				1	*	
5930-738-8204	/	/				SWITCH, SENSITIVE: dpdt; Minneapolis Honeywell part No. DTF2-2RQ9LH				1	*	
5930-682-0508	/	/				SWITCH, SENSITIVE: Minneapolis Honeywell part No. BZ-2RS-P4				1	*	
5930-823-0797	/	/				SWITCH, SENSITIVE: spdt; Minneapolis Honeywell part No. BZE6-2RQ81				1	*	
5930-504-9923	/	/				SWITCH, TOGGLE: dpdt; CH part No. 7563K4				4	*	
5930-615-9376	/	/				SWITCH, TOGGLE: dpdt; MIL Std MS35059-21				1	*	
5930-615-7896	/	/				SWITCH, TOGGLE: spst; MIL Std MS25098-22				2	*	
5930-636-4014	/	/				SWITCH, TOGGLE: spst; Hubbell part No. 9711				7	*	
5930-258-4314	/	/				SWITCH, TOGGLE: spst; Sig dwg No. SM-B-167342				2	*	
5930-577-2523	/	/				SWITCH, TOGGLE: MIL Std MS25068-24				1	*	
6680-793-9575	/	/				THERMOSTAT, FLOW CONTROL: White Rodgers part No. H-2727-A				4	*	
5950-892-8208	/	/				TRANSFORMER, CURRENT: mtd in power control panel; Midwest Elec part No. 3CT-11B				1	*	
5950-823-3247	/	/				TRANSFORMER, POWER STEP-DOWN: 115 v pri, 10 v secd; Edwards part No. 666				1	*	
	/	/				TRANSFORMER, STEP-DOWN: Edwards Co part 991 (M4CW30-A981)				1	*	
6625-883-4272	/	/				VOLTMETER: MIL type MR36W150ACVVR				1	*	

SECTION III. DIRECT AND GENERAL SUPPORT AND DEPOT FUNCTIONAL PARTS LIST

SOURCE CODE				FEDERAL STOCK NO.	DESIGNATION BY MODEL	DESCRIPTION	UNIT OF ISSUE	EXP	QTY IN UNIT	DIRECT SUPPORT	GENERAL SUPPORT	DEPOT	ILLUS-TRATION	
A	B	C	D										FIG. NO.	ITEM NO.
				5895-021-2088		OPERATIONS CENTER, COMMUNICATIONS AN/MSC-25 OPERATIONS CENTER, COMMUNICATIONS AN/MSC-25: designed as mobile installation in Trailer V-51/G; providing tel and interphone come facilities; 115 v, 230 vac simultaneously, 60 cyc, single ph SEMITRAILER, VAN, ELECTRICAL V-189/MSC-25, V-189A/MSC-25 NOTE: Model Column 1 refers to V-189(M)C-25; Column 2 refers to V-189A/MSC-25		NX						
		O		5410-792-6335	/	/			12	6.5	3.6	120.0		
		O		5805-856-0797	/	/			13	6.5	3.6	130.0		
		O		6625-752-8464	/	/			1	2.6	1.3	5.0		
		O		6250-500-4845	/	/			22	9.4	5.5	44.0		
		O		6350-193-2776	/	/			1	1.6	0.5	2.0.		
		O		7920-291-8305	/	/			1	1.9	1.0	3.0		
		O		7920-178-8315	/	/			1	1.9	1.0	3.0		
		O		6145-752-2562	/	/		ft	24	*	*	240.0		
		O		6145-985-7704	/	/		ft	2	*	*	20.0		
		O		6145-752-2473	/	/		ft	115	*	*	1150.0		

SOURCE CODE				FEDERAL STOCK NO.	DESIGNATION BY MODEL	DESCRIPTION	UNIT OF ISSUE	EXP	QTY IN UNIT	DIRECT SUPPORT	GENERAL SUPPORT	DEPOT	ILLUS-TRATION	
A	B	C	D										FIG. NO.	ITEM NO.
						AN/MSC-25 (continued)								
		F		6145-823-2259	/	CABLE, TELEPHONE: MIL type WM-111A/U (Authorized allowances will be a minimum of or a multiple of 8 ft.)	ft		16	*	*	160.0		
		H		6145-577-8480	/	CABLE, TELEPHONE WM-130A/G: (26 pr) (Authorized allowances will be a minimum of or a multiple of 265 ft.)	ft		265	*	*	2650.0		
		O		5995-889-1500	/ /	CABLE ASSEMBLY, POWER, ELECTRICAL CX-7453/U: 100 ft lg			1	1.6	0.5	2.0		
		O		5995-823-2618	/ /	CABLE ASSEMBLY, TELEPHONE: 2 cond; approx 3 ft 1 in lg excl term; Sig dwg SM-C-377563-2			4	3.7	1.2	24.0		
		O		5995-823-2619	/ /	CABLE ASSEMBLY, TELEPHONE: 2 cond; approx 3 ft 5 in lg excl term; Sig dwg SM-C-377563-3			1	1.9	0.6	6.0		
		O		5995-823-3016	/ /	CABLE ASSEMBLY, TELEPHONE: 2 cond; approx 6 ft lg; PJ-055B one end; Sig dwg SM-D-384145-I			2	2.9	0.8	12.0		
		O		5995-889-0608	/ /	CABLE ASSEMBLY, TELEPHONE: 2 cond; approx 6 ft lg; PJ-055R one end; Sig dwg SM-D-384145-II			1	1.9	0.6	6.0		
P		O		5995-752-2515	/ /	CABLE ASSEMBLY, TELEPHONE: 2 cond; approx 2 ft lg; Sig dwg SM-D-352593-II			8	6.5	3.6	48.0		
		O		5940-254-2244	/ /	CAP, ELECTRICAL: black, f/U-106/U; Sig dwg SC-C-76202-1			56	11.0	3.8	560.0		
		O		5910-880-6898	/	CAPACITOR, FIXED, PAPER DIELECTRIC: 1 sect, 5 uf, ±10%, 330 vac; 1.313 in d X 3.093 in h X 2.000 in w; GE part 49F3319			1	1.9	1.0	6.6		
		O		5910-553-6096	/ /	CAPACITOR, FIXED, PAPER DIELECTRIC: 3 sect; ea sect 10,000 uuf ±10%; Hopkins type No. 591A			22	11.7	7.1	132.0		
		O		5910-713-8313	/	CAPACITOR, FIXED, PAPER DIELECTRIC: 4 uf ±10%; Aerovox part No. P150F82 ; f/exhaust fan			1	1.9	1.0	6.0		
		O		5925-752-6642	/ /	CIRCUIT BREAKER: air arc quencher; dpst; Square D Cat No. OO-270			1	1.9	1.0	6.0		CB15

SOURCE CODE				FEDERAL STOCK NO.	DESIGNATION BY MODEL	DESCRIPTION	UNIT OF ISSUE	EXP	QTY IN UNIT	DIRECT SUPPORT	GENERAL SUPPORT	DEPOT	ILLUS-TRATION	
A	B	C	D										FIG. NO.	ITEM NO.
						AN/MSC-25 (continued)								
		O		5930-734-5202	/ /	CIRCUIT BREAKER: air arc quenching; spst; f/heater; CH part No. 101712H334A			4	3.7	1.2	24.0		
		O		5925-682-1061	/ /	CIRCUIT BREAKER: air arc quenching; spst; Square D Cat No.Q0-115			8	6.5	3.6	48.0		CB1 thru CB8
		O		5925-823-2485	/ /	CIRCUIT BREAKER: air arc quenching; spst; Square D Cat No. Q0-150			1	1.9	1.0	6.0		CB9
		O		5925-523-5764	/ /	CIRCUIT BREAKER: air arc quenching; Square D Cat No. Q0-120			5	4.8	2.6	30.0		CB10 thru
		O		5975-705-5841	/ /	CLIP, RETAINING: holds cable in cradle clamps; 1-5/8 in lg X 1 in w X 1/8 in thk; Electrovert part N3			110	16.5	10.5	1100.0		
		O		5340-884-9983	/ /	CLIP, RETAINING: secures cable to cradle clips; 3.179 in lg X 1 in w X 0.135 in thk Electrovert part N7			14	4.8	2.6	140.0		
		O		6645-752-7902	/ /	CLOCK: MIL TYPE MIL-C-3956, AN 5743-M2								
		O		6645-892-4369	/ /	CLOCK, WALL: MIL spec MIL-c-1194, type A			1	1.9	1.0	5.0		
		F		5935-283-2950	/ /	CONNECTOR, PLUG U-77/7: f/headset extension cord			2	2.9	0.8	10.0		
		F		5935-283-2884	/ /	CONNECTOR, PLUG U-78/U; f/headset extension cord			2	2.9	0.8	10.0		
P	H			5935-045-9830	/ /	CONNECTOR, PLUG, ELECTRICAL U-185B/G; u/w CX-4566A/G and CX-4760A/U			3		2.0	15.0		
		O		5935-429-5511	/ /	CONNECTOR, PLUG, ELECTRICAL: f/heater; 2 CONT; Hubbell part No. 7102			4	3.7	1.2	20.0		
		O		5935-646-5908	/ /	CONNECTOR, PLUG, ELECTRICAL; f/exhaust fan; 2 cont; Hubbell part No. 9754			1	1.9	1.0	6.0		
		O		5935-518-9653	/ /	CONNECTOR, PLUG, ELECTRICAL UP-120/M; f/heater			4	3.7	1.2	20.0		
		O		5935-836-1417	/ /	CONNECTOR, PLUG, ELECTRICAL: f/SB-22/PT cable stub; MIL type MS3116B16-26P			1	1.	0.6	5.0		

TAGO 6571-A
GPO 820-078-2

SOURCE CODE				FEDERAL STOCK NO.	DESIGNATION BY MODEL				DESCRIPTION	UNIT OF ISSUE	EXP	QTY IN UNIT	DIRECT SUPPORT	GENERAL SUPPORT	DEPOT	ILLUS-TRATION	
A	B	C	D													FIG. NO.	ITEM NO.
		O		5935-064-5732	/	/			AN/MSC-25 (continued) CONNECTOR, RECEPTACLE, ELECTRICAL U-238/G: in power entrance box			2	2.9	0.8	10.0		
		O		5935-827-1545	/	/			CONNECTOR, RECEPTACLE, ELECTRICAL: f/SB-22/PT cable assy; MIL type MS3112E16-268			2	3.9	1.5	10.0		J32,J33
		H		5935-682-0381	/	/			CONNECTOR, RECEPTACLE, ELECTRICAL U-187/G, U-187A/G; 26 PAIR			1		0.6	5.0		
		O		5935-359-6025	/	/			CONNECTOR, RECEPTACLE, ELECTRICAL: 2 cont; Hubbell part No. 9210			7	5.7	3.1	35.0		J7,J8,J16 thru J20
		O		5935-549-3562	/	/			CONNECTOR, RECEPTACLE, ELECTRICAL: duplex Hubbell part No. 9200			11	7.3	4.2	50.0		J3,J5,J6, J9 thru J15
		O		5805-871-5703	/	/			DOOR, FOLDING: Holcombe and Hoke part 2F2385			1	1.6	0.8	2.0		
		O		5120-293-2692	/	/			EXTRACTOR, ELECTRON TUBE: Economy Cable part No. EETP-9			1	1.6	0.5	5.0		
		O		5120-752-8862	/	/			EXTRACTOR, ELECTRON TUBE: Economy Cable part No. ETP-7			1	1.6	0.5	5.0		
		O		6210-855-9091	/				FIXTURE, LIGHT: Specialty Electronics part No. 3-24BM			10	5.7	3.1	20.0		
		O			/				FIXTURE, LIGHT: Electrospace Corp part No. EST-184 (M4CW10-B257)			10	5.7	3.1	20.0		
		O		5920-014-2630	/	/			FUSE, CARTRIDGE: f/relay 5 amp; MIL Std MS-90080-1			1	25.0	9.9	200.0		
		O		5920-686-0021	/	/			FUSEHOLDER: Buss type HKL			1	1.6	0.5	2.0		
		O		5895-856-5179	/	/			GEAR, DRIVE: p/o operations board screen; Sig dwg SM-B-378535			3	1.9	1.0	5.0		
		O		5120-776-9918	/	/			GRIP, CABLE, JAW: Economy Cable part No. EQA26-S			44	45.1	19.5	880.0		
		O		5120-776-9917	/	/			GRIP, CABLE, JAW: Economy Cable part No. EQA6-8P			6	11.5	4.0	120.0		
		O		5120-251-4489	/	/			HAMMER, HAND: Fed Spec GGG-H-86, type SA, class II			1	2.6	1.2	5.0		

SOURCE CODE				FEDERAL STOCK NO.	DESIGNATION BY MODEL				DESCRIPTION	UNIT OF ISSUE	EXP	QTY IN UNIT	DIRECT SUPPORT	GENERAL SUPPORT	DEPOT	ILLUS-TRATION	
A	B	C	D													FIG. NO.	ITEM NO.
		O		5975-224-5260	/	/			ROD GROUND -148/G:		2	7.	2	30.0			
				5895-856-5178	/	/			SCREW, OPERATIONS BOARD: Sig dwg SM-C-378530		3	2.	1:	12.0			
		O		6210-754-8134	/	/			SHIELD, LIGHT: f/fluorescent; Sig dwg SM-C-349983		22	9.4	5.5	44.0			
		O		6250-299-2884	/	/			STARTER, FLUORESCENT: GE part No. FS-2		22	16.5	10.5	220.0			
		O		5895-885-8612	/	/			STRAP, WEBBING: 18 in lg; Davis Aircraft part FDC-1730-57-7		2	2.3	1.1	10.0			
		O							STRAP, WEBBING: 18 in lg; Davis Aircraft part FDC-1730-58-3 (NlcW30-A073)		3	2.9	1.5	15.0			
		O							STRAP, WEBBING: 36 in lg; Davis Aircraft part FDC-1730-57-10 (M oCW30-A274)		1	1.6	0.8	5.0			
		O		5340-823-5234	/	/			STRAP, WEBBING: 37 in lg; Davis Aircraft part FDC-1730-58-2		4	3.4	1.0	20.0			
		O							STRAP, WEBBING: 52 in lg; Davis Aircraft part FDC-1730-56-1 (M1E30-A775)		1	1.6	0.8	5.0			
		O							STRAP, WEBBING: 84 in lg; Davis Aircraft part FDC-1730-57-12 (1hCM30-A275)		1	1.6	0.8	5.0			
		O		5340-823-5232	/	/			STRAP, WEBBING: 27 in lg X 1 in w; Davis Aircraft part No. FDC-1730-58-1		1	1.6	0.5	5.0			
		O		5340-823-5261	/	/			STRAP, WEBBING: 24 in lg X 1 in w; Davis Aircraft part No. FDC-1730-56-3		1	1.6	0.5	5.0			
		O		5340-823-5262	/	/			STRAP, WEBBING: 32 in lg X 1 in w; Davis Aircraft part No. FDC-1730-57-2		1	1.6	0.5	5.0			
		O		5340-823-5236	/	/			STRAP, WEBBING: 48 in lg X 1 in w; Davis Aircraft part No. FDC-1730-57-1		7	4.8	2.6	35.0			
		O		5930-823-0301	/	/			SWITCH, PUSH: Doorbell switch; Edwards part No. 1786		1	1.1	0.5	1.0			S14
	P	O		5930-738-8204	/	/			SWITCH, SENSITIVE: dpdt; Minneapolis Honeywell part No. DTF2-2RQg9l		1	2.6	1.3	5.0			S16
		O		5930-682-0508	/	/			SWITCH, SENSITIVE: Minneapolis Honeywell part No. BZ-2RS-P4		1	1.6	0.5	2.0			S15

By Order of the Secretary of the Army:

HAROLD K. JOHNSON,
General, United States Army,
Chief of Staff.

Official:

J.C. LAMBERT,
Major General, United States Army,
The Adjutant General

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ARADCOM (5)	SVAD (5)
ARADCOM Rgn (2)	CHAD (3)
OS Maj Comd (4) except	ATAD (10)
USAREUR (5)	GENDEP (OS) (2)
LGOCOMD (2)	Sig Sec, GENDEP (OS) (5)
USAMICOM (4)	Sig Dep (OS) (12)
USASMC (2)	Sig Fld Maint Shops (2)
USASCC (4)	AMS (1)
	USAERDAA (2)
Armies (2)	USAERDAW (13)
Corps (2)	USACRREL (2)
USAC (3)	Units org under fol TOE:
11th Air aslt Dive (3)	11-16 (2) 11-96 (2) 11-127 (2) 11-587 (2)
Svc Colleges (2)	11-32 (2) 11-97 (2) 11-155 (2) 11-592 (2)
Br Svc Sch (2) except	11-57 (2) 11-98 (2) 11-157 (2) 11-597 (2)
USASESCS (25)	11-95 (2) 11-117 (2) 11-158 (2)
USATC AD (2)	11-500 AA-AC (2)
USATC Armor (2)	

NG: State AG (3); units - same as Active Army except allowance is one copy to each unit.

USAR: None.

For explanation of abbreviations used, see AR 320-50.

Changes In force: C 3, C 4, C 5, and C 6

CHANGE }
NO. 6 }

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 20 February 1974

**Organizational, Direct Support, General Support and Depot Maintenance Manual
Including Repair Parts and Special Tools List**

**OPERATIONS CENTER, COMMUNICATION
AN/MSC-25**

TM 11-5895-227-15, 24 April 1961, is changed as follows:

Page 2, paragraph 1.1. Delete paragraph 1.1 and substitute:

1.1. Indexes of Publications

a. *DA Pam 310-4.* Refer to the latest issue of DA Pam 310-4 to determine whether there are new editions, changes, or additional publications pertaining to the equipment.

b. *DA Pam 310-7.* Refer to DA Pam 310-7 to determine whether there are modification work orders (MWO's) pertaining to the equipment.

Paragraph 2. Delete paragraph 2 and substitute:

2. Forms and Records

a. *Reports of Maintenance and Unsatisfactory Equipment.* Maintenance forms, records, and reports which are to be used by maintenance personnel all maintenance levels are listed in and prescribed by TM 38-750.

b. *Report of Packaging and Handling Deficiencies.* Fill out and forward DD Form 6 (Report of Packaging

and Handling Deficiencies) as prescribed in AR 700-58 (Army)/NAVSUP PUB 378 (Navy)AFR 71-4 (Air Force)and MCO P4030.29 (Marine Corps), and DSAR 4145.8.

c. *Discrepancy in Shipment Report (DISREP) (SF 361).* Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361) as prescribed in AR 55-38 (Army)/NAVSUPINST 4610.33/AFM 75-18/MCO P4610.19A (Marine Corps), and DSAR 4500.15.

After paragraph 2 add:

2.1. Reporting of Errors

The Reporting of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028, Recommended Changes to Publications, and forwarded direct to Commander, US Army Electronics Command, ATTN: AMSEL-MA-C, Fort Monmouth, NJ 07703.

Page 3. After paragraph 4 add:

4.1. Items Comprising an Operable Equipment

FSN	QTY	Nomenclature	Usable on code
5895-021-2088		Operations Center, Communication AN/MSC-25 consisting of:	
5815-553-6061	1	Reperforator-Transmitter, Teletypewriter, TT-76A, B/GGC,	
5805-715-6171	1	Switchboard, Telephone, Manual SB-22A/PT	
5805-543-0012	7	Telephone Set TA-312/PT	
5805-246-8734	2	Terminal, Telegraph TH-5/TG	
5805-831-6062	1	Semitrailer, Van, Electrical Equipment V-189/MSC-25, V-189A/M SC-25 which includes:	
		NOTE	
		In the Usable on code column, number 1 refers to V-189/MSC-25; number 2 refers to V-189/MSC-25.	
		NOTE	
		The part number is followed by the applicable 5-digit Federal supply code for manufacturers (FSCM) identified in SB 708-42 and used to identify manufacturer, dis- tributor, or Government agency, etc.	
4120-892-1989	1	Air Conditioner: A-18; 98437	1
4120-964-9261	1	Air Conditioner: Thermo-King model	2
7520-753-4807	4	Basket, Wastepaper: RR-B-181, Style A, Design C; 81348	1,2
6135-120-1020	8	Battery, Dry BA-30	1,2
6135-050-0916	4	Battery, Dry BA-44: f/emergency light	1,2
		NOTE	
		Dry batteries shown are used with the equipment but are not considered part of the equipment. They will not be preshipped automatically but are to be requisitioned in quantities necessary for the particular organization in accordance with SB 11-6.	
5920-291-8305	1	Broom, Upright: H-B-51, Class 1, Type C; 81348	1,2
7920-178-8315	1	Brush, Dusting, Bench: Fed Spec H-B-201, Class B	1,2
5995-889-1500	1	Cable Assembly, Power, Electrical CX-7453/U: (100 ft lg)	1,2
5995-823-2486	1	Cable Assembly, Power, Electrical: 25 ft lg; SM-D-350987; 80063	1,2
5995-752-2548	1	Cable Assembly, Power, Electrical CX-7705/U: 15 ft power stub	1,2
5995-823-2620	2	Cable Assembly, Special Purpose: f/headset; approx 8 ft lg; SM-C-382135, 80063	1,2
5995-889-0923	1	Cable Assembly, Telephone: Stub for SB-22/PT; SM-C-353715; 80063	1,2
5995-823-2955	8	Cable Assembly, Telephone: Approx 6 ft lg; PJ-047B one end, other end stripped and tinned; SM-C-377563-V; 80063	1,2
5995-823-2715	1	Cable Assembly and Reel: 26 ft, 250 ft and RC-435/U	1,2
5995-889-0803	2	Cable Assembly, Telephone CX-4760A/U: (15 ft)	1,2
5995-823-3016	1	Cable Assembly, Telephone: 2 cond; approx 6 ft lg; PJ-055B one end; SM-D-384145-I; 80063	1,2
5995-889-0608	1	Cable Assembly, Telephone: 2 cond; approx 6 ft lg; PJ-055R one end; SM-D-384145-II; 80063	1,2
5995-823-2619	1	Cable Assembly, Telephone: 2 con; approx 3 ft 5 in. lg excl term; SM-C-377563-3; 80063	1,2
5995-823-2618	4	Cable Assembly, Telephone: 2 cond; approx 3 ft 1 in. lg excl term; SM-C-377563-2; 80063	1,2
5995-752-2512	8	Cable Assembly, Telephone: 2 cond; approx 2 ft lg; plug each end; SM-D-352593-II; 80063	1,2
7105-268-8214	2	Chair, Folding: Metal; w/o arms; AA-291a, Type 1, Class 1; 81348	1,2

FSN	QTY	Nomenclature, part No and mfr code	Usable on code
7110-273-8798	5	Chair, Rotary: AA-295, Class 1, Size 1; 81348 (When replacing remove mtg bracket f/use on new chair)	1,2
7110-281-4469	1	Chair, Rotary: Drafting stool; AA{-295, Class 2, Size 3; 81348 (When replacing, remove mtg bracket f/use on new chair)	1,2
6645-892-4369	1	Clock, Wall: MIL-1194, type A; 81349	1
6645-752-7902	1	Clock: MIL-3956, M2 AN5743; 81349	2
7210-753-3043	2	Cushion, Chair: SM350214; 80063	1,2
6110-649-8146	1	Distribution Box J-1077A/U	1,2
5120-293-2692	1	Extractor, Electron Tube: ETP-9; 95344	1,2
5120-752-8862	1	Extractor, Electron Tube: ETP-7; 95344	1,2
4140-729-6001	1	Fan, Ventilating Propeller: KS802L; 82877	1
4130-965-1230	1	Filter, Air-Conditioning: 10-12 in w x 40 in. lg 1-78 in. thk RP EZ KLEEN; 810004; Type M-V; 82866	2
5120-776-9917	6	Grip, Cable Jaw: EQA6-8P; 95344	12
5120-776-9918	44	Grip, Cable Jaw: EQA2S; 95344	1,2
5965-682-2769	2	Handset-Headset H-144/U; H-144A, B/U	1,2
4520-224-7909	4	Heater, Space, Electric: AAT-15A; 34217	1,2
5830-752-5337	1	Intercommunication Station LS147CAFI	1,2
6230-729-9614	2	Lantern, Electric: 2106-7; 32572	1,2
5410-752-2525	2	Lead, Electrical: Grd strap; SM-B352166; 80063	1,2
6230-615-5384	1	Light, Extension: 25 ft lg, 506KS25-18-2SJ; 79409	1,2
5935-752-6011	1	Maintenance Kit, Electronic Equipment: f/maint of Connector, Plug U-77/U; SC-B484, SC-B8420, SC-B-68424, SCB68421, SC-B48429, MS-35537-78; 80063	1,2
5126-293-0255	1	Pin Straightener, Electronic: Duro Speciality p/n D-279SN	1,2
7110-551-5259	1	Safe, Filing Cabinet: Fed Spec AA-F358; 82782	1,2
5120-752-9675	2	Screwdriver, Flat Tip: 2143-6; 72368	1,2
7520-162-4178	1	Sharpener, Pencil: Boston type L	1,2
7430-823-7988	1	Typewriter: Portable; noiseless; 11; 93780	1
7430-824-1424	1	Typewriter: Portable; Remington classic model	2
7530-223-7966	1	Paper, Recording, Teletypewriter: UU-P-547C, type 1, class 1; 81348	1,2
7510-511-6690	1	Ribbon, Printing, Teletypewriter: DDD-R-311D, type 1, grade A, Class 1; 81348	1,2
5895-856-5178	2	Screen, Operation Board: 104108B7; 05542	1,2
7530-634-6237	4	Tape, Teletypewriter: UU-T-120; 81348	1,2
5805-503-3337	2	Telephone Circuit, Line Jack TA-222/PT	1,2
5805-715-6175	1	Telephone Circuit, Truck Jack TA-326/PT	1,2

4.2. Expendable Consumable Items

A- list of expendable consumable items required for operation appears in table 1-1.

Table 1-1. Expendable Consumable Supplies and Material

The supplies and material listed in this table are required for operation of this equipment and are authorized to be requisitioned by SB 700-50. The FSN for the applicable unit of issue required can be found in appropriate supply catalogs. The FSCM is used as an element in item identification to designate manufacturer or distributor or Government agency, etc., and is identified in SB 708-42.

Item	Description	Ref no. And FSCM	FSC
1	Paper, Recording, Teletypewriter, type 1, class 1	UU-P-547C; 81.348	7530
2	Ribbon, Printing, Teletypewriter, type 1, grade A, class 1	DDD-R-311D; 81348	7510
3	Tape, Teletypewriter	UU-T-120; 81348	7530

Page ;24, paragraph 11. Delete the last sentence of paragraph 11.

Page 69, appendix II. Delete appendix II and substitute:

APPENDIX II BASIC ISSUE ITEMS LIST (BIIL) AND ITEMS TROOP INSTALLED OR AUTHORIZED LIST (ITIAL)

Section I. INTRODUCTION

1. Scope.

This appendix lists only basic issue items required by the crew/operator for installation, operation, and maintenance of Operations Center, Communications AN/MSC-25.

2. General.

This Basic Issue Items and Items Troop Installed or Authorized List is divided into the following sections:

- a. *Basic Issue Items List-Section II.* A list, in alphabetical sequence, of items which are furnished with, and which must be turned in with the end item.
- b. *Items Troop Installed or Authorized List-Section III.* Not applicable.

3. Explanation of Columns

The following provides an explanation of columns found in the tabular listings:

- a. *Illustration.* This column is divided as follows:
 - (1) *Figure number.* Indicates the figure number of the illustration in which the item is shown.
 - (2) *Item number.* Not applicable.
- b. *Federal Stock Number.* Indicates the Federal stock number assigned to the item and will be used for requisitioning purposes.
- c. *Part Number.* Indicates the primary number

used by the manufacturer individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications standards, and inspection requirements to identify an item or range of items.

d. *Federal Supply Code for Manufacturer (FSCM).* The FSCM is a 5-digit numeric code used to identify the manufacturer, distributor, or Government agency, etc., and is identified in SB 708-42.

e. *Description.* Indicates the Federal item name and a minimum description required to identify the item.

f. *Unit of Measure (U/M).* Indicates the standard of basic quantity of the listed item as used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation, (e.g., ea, in., pr, etc.) When the unit of measure differs from the unit of issue, the lowest unit of issue that will satisfy the required units of measure will be requisitioned.

g. *Quantity Furnished with Equipment (Basic Issue Items Only).* Indicates the quantity of the basic issue item furnished with the equipment.

Section II. BASIC ISSUE ITEMS LIST

(1) ILLUSTRATION		(2)	(3)	(4)	(5)	(6)	(7)
(A) FIG. NO.	(B) ITEM NO.	FEDERAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION USABLE ON CODE	UNIT OF MEAS	QTY FURN WITH EQUIP
15		4210-727-8111	GGG-A-926	81348	AXE, FIREMAN, APPROX 2-3/4 LBS, 24 IN. HANDLE TYPE 1, CLASS 1 DESIGN B.	EA	1
		4210-764-2905	GGG-A-926	81348	AXE, PICKHEAD, APPROX 3-1/2 LBS, 36 IN. HANDLE, TYPE 1 CLASS 1, DESIGN B	EA	1
14,15 15		4210-270-4512	5F-1	33S526	EXTINGUISHER, FIRE -	EA	3
		6545-663-9032	GG-K-392	81348	FIST AID KIT, TYPE II SIZE 1	EA	1
		5120-251-4489	GGG-H86	81348	HAMMER, AND. TYPE SA, CLASS II	EA	1
		5120-251-4489 5975-224-5260	RH-30-8	81348	HANDLE HAMMER, WOOD ROD GROUND MX-48G	EA EA	1 2

By Order of the Secretary of the Army:

CREIGHTON W. ABRAMS
General, United States Army
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TSG (1)	Army Dep (2) except
USAARENBD (1)	LBAD (14)
USAMB (10)	SAAD (30)
AMC (1)	TOAD (14)
TRADOC (2)	ATAD (10)
ARADCOM (2)	USA Dep (2)
ARADCOM Rgn (2)	Sig Sec USA Dep (2)
OS Maj Comd (4)	Sig Dep (2)
LOGCOMDS (3)	Sig FLDMS (1)
MICOM (2)	USAERDAW (1)
TECOM (2)	MAAG (1)
USACC (4)	USARMIS (1)
MDW (1)	Units org under fol TOE:
Armies (2)	(1 copy each)
Corps (2)	11-16
HISA (ECOM) (18)	1135
Svc Colleges (1)	11-85
USASESS (5)	11-95
USAADS (2)	11-96
USAFAS (2)	11-97
USAARMS (2)	11-98
USAIS (2)	11-117
USAES (2)	11-127
USAINTS (3)	11-158
WRAMC (1)	11302
USACDCEC (10)	11500 AA-AC
ATS (1)	29-134
USAERDAA (1)	29136
Instl (2) except	

NG: Three (3) cys to the fol States AG: AL, DE, FL, NY, and SC.
USAR: None
For explanation of abbreviations used, see AR 310-50.

CHANGE }
No. 8

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, 12 May 1982

**ORGANIZATIONAL, DIRECT SUPPORT, GENERAL SUPPORT,
AND DEPOT
MAINTENANCE MANUAL INCLUDING REPAIR PARTS
AND SPECIAL TOOLS LISTS
OPERATIONS CENTER, COMMUNICATIONS AN/MSC-25
(NSN 5895-00-021-2088)
AND
AN/MSC-25A (NSN 9999-01-122-8722)**

TM 11-5895-227-15, 24 April 1961, is changed as follows:

The title is changed as shown above.

Page 3, figure 1. In the block marked "TT-4(*)/TG" add "or AN/UGC-74A(V)3".

Paragraph 4, line 12. Under "Teletypewriter TT-4(*)/TG

.....160 watts" - add: "or AN/UGC-74A(V)3100 watts".

Paragraph 4, line 24. Under line 24, add:

"Weight of AN/MSC-25A 13,000 lb".

Paragraph 4.3 is added after 4.2.

4.3 Items Comprising an Operable Equipment (AN/MSC-25A)

NSN	QTY	Nomenclature, part No. and mfr code	Usable on code
5895-00-021-2088		Operations Center, Communication AN/MSC-25A, consisting of	
5815-00-553-6061	1	Reperforator-Transmitter, Teletypewriter, TT-76A, B/GGC	
5805-00-715-6171	1	Switchboard, Telephone, Manual SB-22AIPT	
5805-00-543-0012	7	Telephone Set TA-312/PT	
5815-01-062-8194	1	Terminal, Communications AN/UGC-74A(V)3	
5805-00-246-8734	2	Terminal, Telegraph TH-5/TG	
5805-00-831-6062	1	Semitrailer, Van, Electrical Equipment V-189/MSC-25, V-189A/ MSC-25 which includes:	
		NOTE	
		In the Usable on code column, number 1 refers to V-189/MSC-25; number 2 refers to V-189A/MSC-25.	
		NOTE	
		The part number is followed by the applicable 5-digit Federal supply code for manufacturers (FSCM) identified in SB 708-42 and used to identify manufacturer, distributor, or Government agency, etc.	
	1	Air Conditioner: A-18; 98437	1
4120-00-964-9261	1	Air Conditioner: Thermo-King model	2
	4	Basket, Wastepaper: RR-B-181, Style A, Design C; 81348	1.2

4.3 items Comprising AN Operable equipment (AN/MSC- 25A)- continued

NSN	QTY	Nomenclature, part No. And mfr code	Usable on
6135-00-120-102C	8	Battery Drv BA-30	1.2
6135-00-050-091E	4	Battery, dry BA-44:,light	1.2
NOTE			
Dry batteries shown are used with the not considered part of the equipment. They preshipped automatically but are to be quantities necessary for the particular accordance with SB 11-6.			
6135-01-0354-223E	1	Battery BA- 5598/U (800058)	1.2
5920-00-291-830E	1	Broom, Upright: H-B-51, class 1, type : 8134E	1.2
7920-00-178-831E	1	brush, dusting. Bench: fed Spec H-B-201, Class E	1.2
5995-000-889-150C	1	Cable Assembly, Power electrical CX-7453/U; (100 ft lq)	1.2
5995-00-823-248E	1	Cable assembly, Power, Electrical: 25 ft lq; SM-D-350987;8006E	
	2	Cable Assembly, Power, Electrical CX-775/U: 15 ft power stub SM-C-382135,806E	1.2
5995-00-889-092E	1	Cable assembly, Telephone: stub for SB-22/PT; SM-C 353715; 8006E	1.2
5995-00-823-295E	8	Cable Assembly, telephone: approx 6 ft lq; PJ-047B one end other end stripped an tinned: SM-C-377563-V:8006E	1.2
59995-00-823-271E	1	Cable Assembly and Reel: 26th ft, 250 ft and RC-435/L	1.2
5995-00-889-080E	2	Cable Assembly, telephone CX-4670A/U: (15 ft	1.2
5995-00-823-301E	1	Cable Assembly, telephone: 2 cond: approx 6 ft lq: PJ-055E one end: SM-D-3841145-II: 8006E	1.2
5995-00-889-060E	1	Cable Assembly, telephone: 2 cond: approx 6 ft lq: PJ-055F one-: Sm-D-3841145-II: 80006E	1.2
5995-00-823-261E	1	Cable Assembly, telephone: 2 con; approx 3 ft 5 in lq exc term; SM-C-377563-3: 8006E	1.2
5995-00-823-261E	4	Cable assembly, telephone: 2 cond: approx 3 ft 1 in. Lq exc term; SM-C-377563	1.2
	8	Cable assembly, telephone: 2 cond: approx 2 ft 1 in. Lq plus each end; SM-D-352593-II; 8006E	1.2
	2	Chair, folding: Metal: w/o arms; AA-29a, Type 1, class 1 8134E	1.2
7110-00273-879E	5	Chair, rotary: AA-C-295, Class 1, Size: 81348 (wher replacing remove mtg bracket f/use on new chair	1.2
7110-0-281-446E	1	Chair, Rotary: drafting stool; AA-c-295, Class 2, Size 3: 81348 (When replacing, remove mtg bracket f/use on new chair)	1.2
	1	Clock, Wall: MIL-C1194, type A: 81349	1
6645-00-752-790E	1	Clock: MIL-C, 3956, M2 AN5743; 9134E	2
7210-00-753-790E	2	Cushion, Chair: SM-C-350214: 80006E	1.2
	1	Distribution box J-1077A/U	1.2
5120-00-293-269E	1	Extractor, Electron tube: ETP-9, 95344	1.2
5120-00-752-886E	1	Extractor , Electron tube: ETP-7; 95344	1.2
440-00-729-6001	1	Fan, ventilating Propeller: KS802L: 82877	1
4130-00965-123C	1	Filter, air-conditioning: 10-1/2 in. W X 40 in. Lq 1-7/8 in. thk RP EZ KLEEN; 810004; type M-V: 8286E	2
5120-00-776-9917	6	Grip, cable Jaw: EQA^8P: 95344	1.2
5120-00-776-991E	44	Grip, Cable Jaw: EQA26-s: 95344	1.2
5965-00-682-276E	2	handset-Headset H-144A, B/L	1.2
4520-00-224-790E	4	Heater, Space, Electric: AAT-15A: 34217	1.2
	1	Intercommunication Station LS-147C/FI	1.2
6230-00729-9614	2	Lantern, electric: 106-7; 3257E	1.2
5410-	2	Lead, electrical: Grd strap; SM-B-352166; 8006E	1.2
6230-00-615-5384	1	Light, Extension: 25 ft lq; 506K25-18-2SJ; 7940E	1.2

4.3 Items Comprising an Operable Equipment (ANIMSC-25A)-Continued

NSN	QTY	Nomenclature, part No. and mfr code	Usable on code
	1	Maintenance Kit, Electronic Equipment: f/maint of Connector, Plug U-77/U; SC-B-684, SC-B-68420, SC-B-68424, SC-B-68421, SC-B-68429, MS-35537-78; 80063	1,2
5120-00-293-0255	1	Pin Straightener, Electronic: Duro Speciality p/n D-279-SN	1,2
7110-00-551-5259	1	Safe, Filing Cabinet: Fed Spec AA-F-358; 82782	1,2
	2	Screwdriver, Flat Tip: 2143-6; 72368	1,2
7520-00-162-6178	1	Sharpener, Pencil: Boston type L	1,2
	1	Typewriter: Portable; noiseless; 11; 93780	1
7430-00-824-1424	1	Typewriter: Portable; Remington classic model	2
7530-00-223-7966	1	Paper, Recording, Teletypewriter: UU-P-547C, type 1, class 1; 81348 or	1,2
7530-00-285-5030	1	Paper, Roll, 3-ply Paper, fanfold, single ply Paper, fanfold, 3 ply	1,2
7510-00-923-0252	1	Ribbon, Teletypewriter, SM-B-765911 (80063)	1,2
5895-00-856-5178	2	Screen, Operation Board: 1041-608B7; 05542	1,2
7530-00-634-6237	4	Tape, Teletypewriter: UU-T-120; 81348	1,2
5805-00-503-3337	2	Telephone Circuit, Line Jack TA-222/PT	1,2
5805-00-715-6175	1	Telephone Circuit, Truck Jack TA-326/PT	1,2

Table 1-1. Items 4 and 5 are added after item 3.

Item	Description	Ref No. & FSCM	FSC
4	Paper, Roll, 3 ply Paper fanfold single ply, Paper, fanfold, 3 ply		7530
5	Ribbon, Teletypewriter	SM-B-765911 (80063)	7510

Paragraph 5.1 is added after 5.

5.1. Major Components of Operations Center AN/MSC-25A.

Quantity (ea.)	Item	Fig. No.
1	Semitrailer, Van, Electronic Equipment V-189/MSC-25	7, 8
1	Switchboard, Telephone, Manual SB-22 (*)/PT including: Accessory Kit MX-230/PT, MX-230A/PT, or MX-2915/PT (storage cabinet No. 1).	14
2	Terminal, Telegraph TH-5/TG	14
7	Telephone Set TA-312/PT (3 installed and 4 stored in storage cabinet NO. 1).	14, 16
1	Terminal, Communications AN/UGC-74A(V)3	6.1
1	Reperforator-Transmitter, Teletypewriter TT-76(*)/GGC	14

Page 5. Paragraph 6.1 is added after 6.

6.1. Components of Semitrailer Van, Electronic Equipment V-189(*)/MSC-25A

Quantity (ea.)	Item	Fig. No.	Location
1	Air conditioner (V-189/MSC-25)	21	Fig. 16.
1	Air conditioner (NSN 4120-00-289-1323 (V-189A/MSC-25)		Fig. 16.
1	Axe, 2-ft		Front compartment.
1	Axe, 3-ft	15	
4	Battery BA-44 (for dome lights)	14	
1	Battery BA-5598/U		(Backup supply for AN/UGC-74A(V)3.)
1	Broom	15	
1	Cable Assembly, Telephone CX-4566/G (250 ft) with Reel RC-435/U (V-189/MSC-25)	3	Fig. 18
1	Cable Assembly, Telephone CX-4566A/G (250 ft) with Reel RC-435/U (V-189A/MSC-25)		
1	Cable Assembly, Telephone CX-4760/U (15 ft) (V-189/MSC-25)	2	Storage cabinet No. 1.
1	Cable Assembly, Telephone CX-4760A/U (15 ft) (V-189A/MSC-25)		Storage cabinet No. 1.
1	¹ Cable Assembly, special purpose, SC-D-960025-001		Fig. 26.1
1	¹ Cable Assembly, ac power, SC-D-960027-000		Fig. 26.1
1	¹ Cable, signal assembly, SC-D-983141-005		Fig. 26.1
2	Chair cushion		
1	Clock, 3 in	16	
1	Distribution Box J-1077A/U	14	Front compartment
1	Drafting stool	14	
1	Droplight, 25 ft	2	Storage cabinet No. 1
4	Electric heater	20	Fig. 14, 15
1	Exhaust blower	17	
3	Fire extinguisher, 5 lb	14, 15	
1	First aid kit	15	
2	Folding chair	18	
2	Ground rod	15	
2	Ground strap	2	Storage cabinet No. 1
1	Hand brush	15	
2	Handset-Headset H-144 (*)/U	2	Storage cabinet No. 1
2	Handset-Headset extension cord, 8 ft	2	Storage cabinet No. 1
2	Hand lantern		Fig. 15 and front compartment.
1	Intercommunication Station LS-147(*)/FI	23	Fig. 14.
1	Ladder, 12-ft	27	Fig. 7
2	Ladder	29	Fig. 8
1	LINE/BATTERY LIGHTING POWER TRANSFER relay K1	17	Relay box
1	Line cord, 25 ft, with duplex receptacle	2	Storage cabinet No. 1
2	Message tray		Storage cabinet No. 1
2	Padlock (including 2 keys)		Storage cabinet No. 1
8	Patch cord, 2-ft	4	Fig. 14
1	Pencil sharpener	17	
1	Pioneer tool kit including	5	Fig. 7
	1 axe		
	1 hand shovel		
	1 pick mattock		
	1 pick mattock handle		

6.1. Components of Semitrailer Van, Electronic Equipment V-189(*)IMSC-25A-Continued

Quantity (ea.)	Item	Fig. No.	Location
1	Portable typewriter	18	
1	Power cable assembly, 100 ft	17	
6	Power cable grip	2	Storage cabinet No. 1
1	Power cable stub, 15 ft	2	Fig. 17
1	Rubber mat		Storage drawer No. 12
1	Safe w/4 drawers	16	
44	Signal cable grip	2	Storage cabinet No. 1
1	Sledge hammer	15	
1	Sledge handle, spare	15	
1	SB-22/PT cable stub		
4	Swivel chair	15	
8	Telephone cord, 4 ft.....	4	
1	Tool roll kit, including	2	Storage cabinet No. 1
	1 bag with 10 pockets		
	1 adjustable wrench, 8 in.		
	1 Allen wrench set		
	1 Knife TL-29		
	1 lineman's pliers		
	1 long-nosed pliers		
	1 screwdriver, 2 in.		
	1 screwdriver, 4 in.		
	1 screwdriver, 6 in.		
	1 socket wrench set		
	1 vise grip pliers, 7 in.		
1	Tube pin straightener	16	
1	Tube puller, 7-pin	16	
1	Tube puller, 9-pin	16	
4	Wastebaskets	14, 15	
1 set	Running spares consisting of	6	
	1 electron tube 6AQ5		
	1 electron tube 6AU6		
	1 electron tube 6X4W		
	7 fluorescent lamps, 20 w, 24 in		Fig. 19
	12 fluorescent lamp starters FS-2		Fig. 19
	5 fuses, 1-ampere		Storage cabinet No. 1
	5 fuses, 5-ampere		Storage cabinet No. 1
	3 glowlamps, NE-45		
	3 incandescent lamps, 60 w		
	2 incandescent lamps, 24-volt (dome light)		
	1 incandescent lamp (spare bulb for lantern)		
	1 neon lamp NE-34		
	3 transparent overlay rolls		Fig. 18
1 set	Technical manuals for major components		Manual holder, Fig. 17

¹ Part of AN/UGC-74A(V)3. These components will be packed with the AN/UGC-74A(V)3 on turn-in and stored in storage cabinet No 1. during limited storage.

Page 9. Paragraph 7.1 is added after 7.

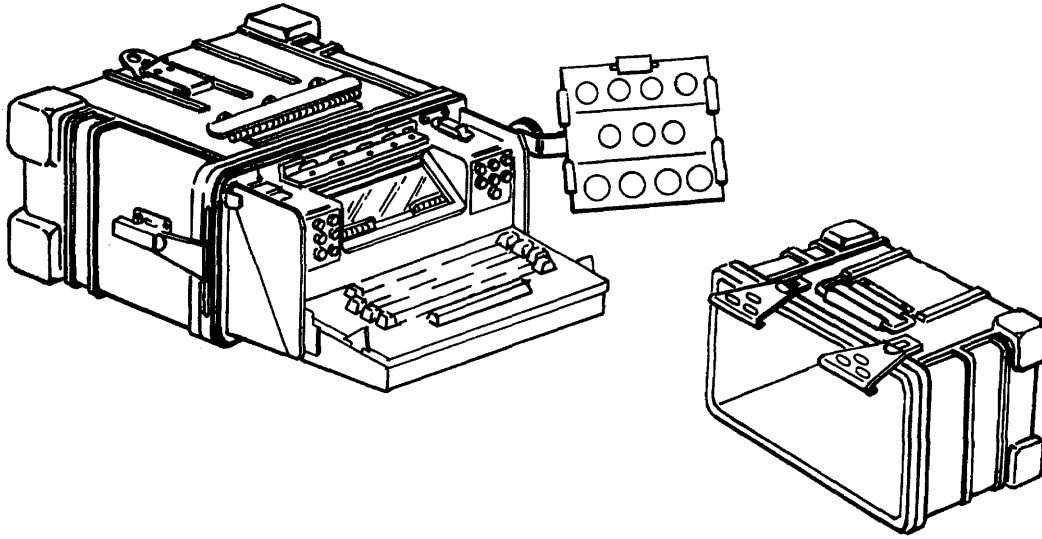
7.1. Difference Between Models

The Operations Center AN/MS-25A is similar to the AN/MS-25 (plain) with the exception that Teletypewriter TT-4(*)/TG has been replaced by Terminal, Communications AN/UGC-74A(V)3 (fig. 6.1).

A pair of jacks has been added to a cable raceway, designation strips have been changed on the patch panel and signal entrance box, and power and signal schematic plates are replaced. The AN/UGC-74A(V)3 is not usable with COMSEC equipment as applied in plain model of the AN/MS-25. Modification of

signal cable SC-D-983141-005 to adapt it to the TSEC/KW-7 or to switch box assembly (MWO 11-5895-

227-40) is not covered by this publication. Figure 6.1 is added after Figure 6.



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Figure 6.1. Terminal, Communications AN/UGC-74A(V)3.

Page 15. Figure 12.1 is added after 12

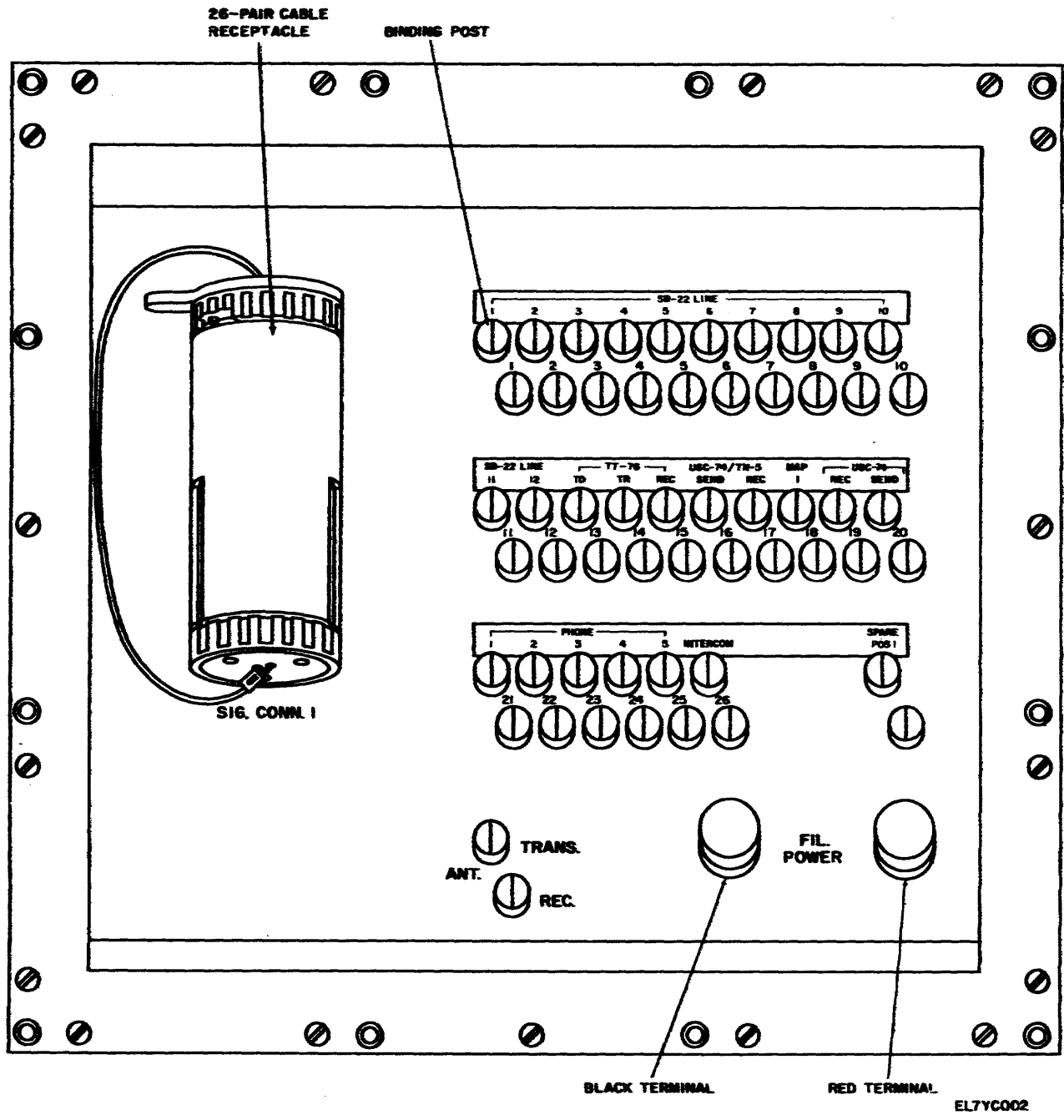


Figure 12.1 Terminal, Communications AN/MS-25A, SIGNAL ENTRANCE Panel

Page 17. Paragraph 8g is added after 8f.

g. *Terminal, Communications AN/UGC74A(V9 (AN/MS-25A only)*. The AN/UGC74A(V)3 (TM 11-5815-602-12) is mounted on the curbside tabletop (fig. 14.1). It is used for teletypewriter communication and for data processing, if required.

Page 20. Paragraph 9(9) is added after 9(8).

(9) *Cable assemblies for use with AN/UGC-*

74A(V)3. Three cables are provided to be used with Terminal, Communications AN/UGC-74A(V)3: cable assembly, special purpose SC-D-960025-001 for connection to Battery BA-5398/U, cable assembly, ac power SC-D-960027-000, cable signal assembly SC-D-483141-005 for connecting the output of the AN/UGC-74A(V)3 to the TH-5TG send and receive loop circuits.

Change 8 8

Page 22. Figure 22.1 is added after 22.

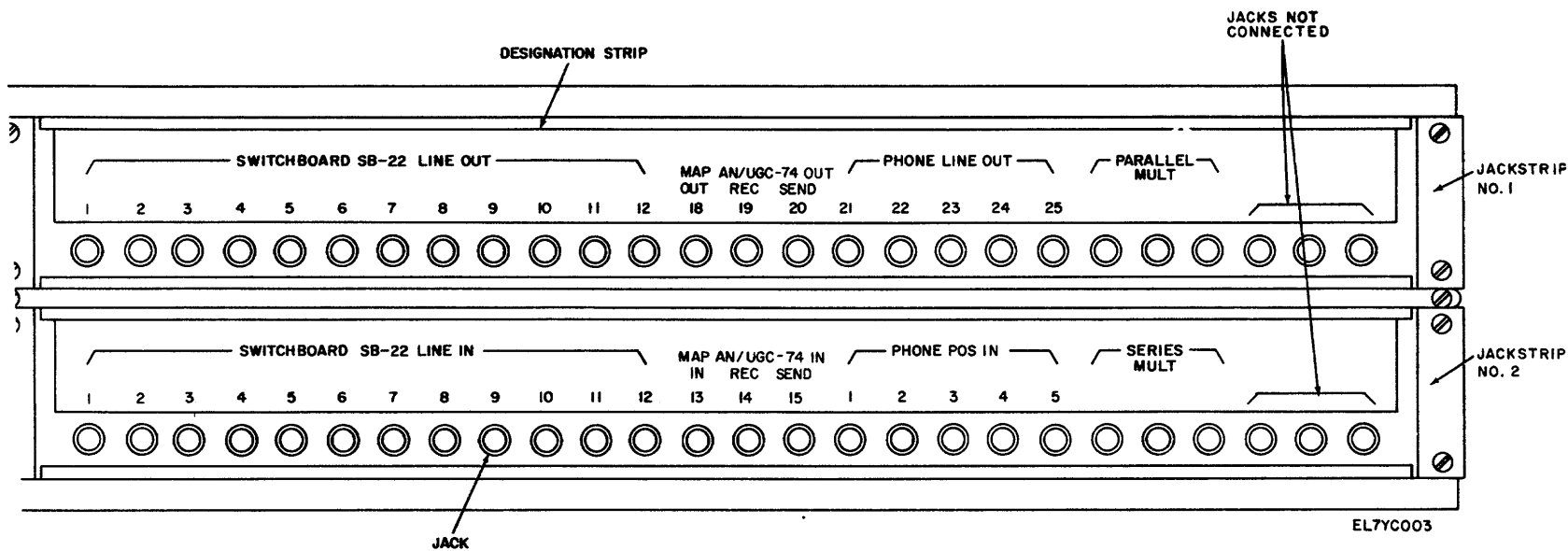


Figure 22.1. Terminal, Communications AN/MSC-25A, Patch Panel.

Change 8 9

Page 24. Paragraph 10a is added after 10a.

a. 1. . When an AN/MSC-25A is received, check it (para 11), and then perform the tests in paragraph 16.1. When a V-189MSC25A is received, perform the procedures in (1) through (7) below

- (1) Check the equipment (para 11).
- (2) Install and connect the SB-22(*)PT (para 12).
- (3) Install and connect the TA-312/PT's (para 13).
- (4) Install and connect the TH-5/TG's (para 14).
- (5) Install and connect the TT-76(*)GGC (para 15).
- (6) Install and connect the AN/UGC-74A(V)3 (para 16.1).
- (7) Test the equipment after installation (TM 11-515-602-12).

NOTE

When Multimeter TS-297/U or an equal size meter is issued for use with the AN/MSC-25A, it can be stored in the TS-297/U stag box (fig 14). Install the canopy (para 17) as required.

Paragraph 11 is superseded as follows:

11. Check of Equipment received

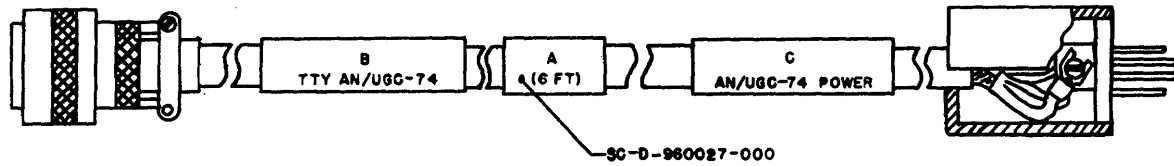
Check the contents of the AN/MSC-25 or AN/MSC-25A against the packing list. If the packing list is not available, use the table of components (para 5 and 6 for the AN/SC-25, para 5.1 and 6.1 for the AN/SC-25A) to check the equipment that probably was packed. Examine the equipment for damage and prepare applicable forms (para 2b)

Page 26. Paragraph 16.1 is added after 16.

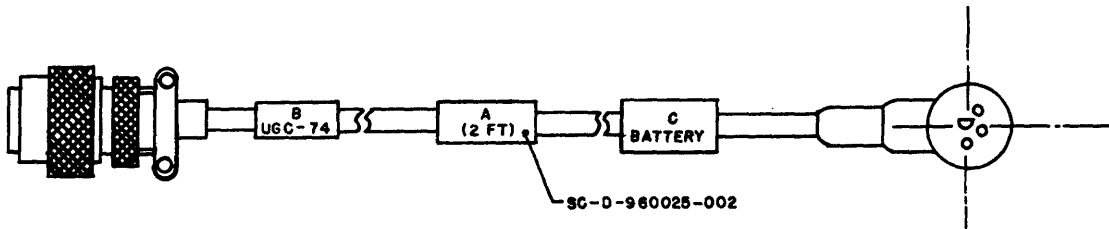
16.1 Installation of Terminal, Communication AN/UGC_74A (V3)(AN/MSC-25A only).

- a. Perform the appropriate service upon receipt of equipment procedures (TM 11-5815-602-12)
- b. Bolt the AN/UGC-74(V)3 to teletype table, use hardware supplied
- c. Position the web strap across top of equipment and secure
- d. Connect ac power cable between AN/UGC-74A(V)3 receptacle and AN/UGC-74A(V)3 power connector in power raceway. Connect signal cable between the TH-5/TG (AN/UGC-74A(V)3) receptacle on raceway to AN/UGC-74A(V)3 signal jack. Connect battery to BAT connectors on AN/UG-74A(V)3 with battery cable.

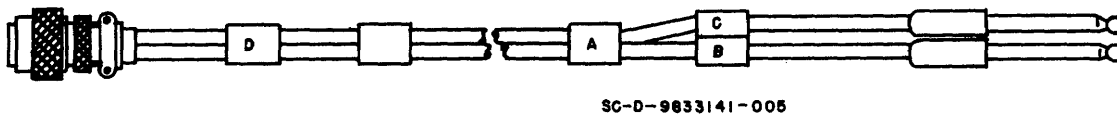
Page 27. Figure 26.1 is added after 26.



A. CABLE AC POWER



B. CABLE SPECIAL PURPOSE



C. CABLE SIGNAL ASSEMBLY

EL7YC004

Figure 26.1. Cable Assemblies for Terminal Communications AN/UGC-74A(V)3.

Page 39, paragraph 27f After "(fig. 22)" add:
 (AN/MSC-25) Paragraph 27f.1 is added after 27f.
 f.1. . Patch panel (fig. 22.1) AN/MSC-25A).

NOTE
 The three jacks on the right side of
 each jack strip are not connected.

	Jack	Description and function
J	SWITCHBOARD SB-22 LINE OUT	Cutoff jacks. Permit external switchboard lines to be patched to
A	jacks 1 through 12.	van equipment or other lines.
C	OUT MAP 1 jack (No. 18)	Cutoff jacks. Permit external telephone lines to be patched to
K		van equipment or other lines.
S	AN/UGC-74 OUT REC and SEND	Cutoff jack. Permits AN/UGC-74 to be patched to van equipment
T	(jack No. 19 and jack No. 20)	or other lines.
R	PHONE LINE OUT jacks 21 through 25 .	Cutoff jacks. Permit external telephone lines to be patched to van
I		equipment or other lines.
P	PARALLEL MULLET jacks (3)	Parallel jacks. Permit operator to establish a parallel arrange-
NO. 1		ment when required.

	Jack	Description and function
J	SWITCHBOARD SB-22 LINE IN jacks	Cutoff jacks. Permit switchboard lines to be patched to van equipment or other lines.
A	1 through 12.	
C	IN MAP 1 jack	Cutoff jack. Permit TA-312/PT's to be patched to van equipment or to other than their assigned lines.
K		
S	AN/UGC-74 in REC and SEND	Cutoff jack. Permits AN/UGC-74 to be patched to van equipment other than assigned lines.
T		
R	PHONE POS IN jacks 1 through 5	Cutoff jacks. Permit TA-312/PT lines to be patched to van equipment or lines other than their assigned lines.
I		
P	SERIES MULT jacks (3)	Series jacks. Permit operator to establish a series arrangement when required
NO. 1		

Page 42, Paragraph 32b(3) line 2 after "TT-4" add "or AN/UGC-74A(V)3.

Page 47. Paragraph 46.1 is added after 46.

46.1. Removal and Replacement of Terminal, Communications ANIUGC-74A(V)3 (AN/MSC-25A only)

- a. Remove the ac power cord connector plug from the power duct receptacle, and the AN/U(CC-74 signal connecting plugs from the TH-5/TG.
- b. Remove the bolts and washers that secure the AN/UGC-74(V)3 to the table top.
- c. Replace the AN/UGC-74(V)3 (para 16.1).

NOTE

Use the appropriate TH-5/TG ANIUGC-74A(V)3 receptacle on raceway (fig. 14.1) for motor power and protective ground connections. Energize the teletypewriter ac power circuit as required.

- d. Insert the black plug and red plug of AN/UGC-74A(V)3 signal cable into the SEND (Black) and REC

(Red) jacks of the associated TH-5/TG.

Page 61. Paragraph 61c(3) is added after 61c(2).

(3) The external circuit for the AN/UGC-74A(V)3 and its associated TH-5/TG connects to the SIGNAL CONN 1 26-pair cable receptacle (pins 13A, 13B, 14A, 14B, 15A, and 15B) or to the AN/UGC-74A(V)3 TR and REC binding post pairs (16, 17, 19 and 20) in the signal entrance box. Inside the van, the AN/UGC-74A(V)3 circuit connects through signal duct wiring to terminals 3 through 6, on the associated TH-5/TG, and through the signal cable to the AN/UGC-74A(V)3.

Page 63. Paragraph 63. Add the following note below paragraph heading:

NOTE

The instructions in this paragraph apply to both the AN/MSC-25 and the ANIMSC-25A.

Page 65. Appendix I is superseded as follows.

APPENDIX I

REFERENCES

DA Pam 310-4	Index of Technical Publications.
SB 11-6	FSC Class 6135: Dry Battery Supply Data.
TM 11-5805-201-12	Operator and Organizational Maintenance Manual: Telephone Set, TA-312/PT (NSN 5805-00-543-0012).
TM 11-5805-201-20P	Organizational Maintenance Repair Parts and Special Tools Lists for Telephone Set TA-312/PT (NSN 5805-00-543-0012).
TM 11-5805-221-12	Operator's and Organizational Maintenance Manual: Intercommunications Station LS-147(*)/U (To be published).
TM 11-5805-246-10	Operator's Manual: Terminal Telegraph TH-5/TG.
TM 11-5805-262-12	Operator's and Organizational Maintenance Manual: Switchboards, Telephone, Manual SB-22/PT (NSN 5805-00-257-3602) and SB-22A/PT (5805-00-715-6171).
TM 11-5805-356-12	Operator and Organizational Maintenance Manual (Including Repair Parts and Special Tools List): Terminal, Telegraph-Telephone AN/TCC-29 (NSN 5805-00-902-3087) (Including Terminal, Telegraph TH-22/TG (5805-00-907-8300)) and Converter, Telegraph-Telephone Signal CV-425/U (5805-00-985-9088).
TM 11-5815-206-12	Operator's and Organizational Maintenance Manual for Teletypewriter Sets, AN/PGC-1 and AN/PGC-3 and Teletypewriters TT-4A/TG, TT-4B/TG, TT-4C/TG, TT-335/TG, TT-537/TG, TT-698/TG, TT-698A/TG, TT-698B/TG, TT-722/TG and TT-722A/TG.
TM 11-5815-206-20P	Organizational Maintenance Repair Parts and Special Tools List for Teletypewriter Sets, AN/PGC-1 (NSN 5815-00-198-5963), AN/PGC-3 (5815-01-012-8773) and Teletypewriters, TT-4A/TG, TT-4B/TG and TT-4C/TG (5815-00-198-4438), TT-335/TG (5815-00-878-8449), TT-537/TG (5815-00-926-7378), TT-698/TG, TT-698A/TG, TT-698B/TG (5815-01-008-9628) and TT-722/TG, TT-722A/TG (5815-01-017-9172).
TM 11-5815-238-12	Operator's and Organizational Maintenance Manual: Teletypewriter Sets, AN/GGC-3 (NSN 5815-00-503-3309), AN/GGC-3A (5815-00-5819751), AN/GGC-53 (5815-01-012-8772) and AN/GGC-53A (5815-01-017-0956) and Teletypewriter Reperforator-Transmitters, TT-76/GGC (5815-00-503-2760, TT-76A/GGC, TT-76B/GGC, TT-76C/GGC (5815-00-553-6061), TT-699/GGC (5815-01-012-8446), TT-699A/GGC, TT-699B/GGC and TT-699C/GGC (5815-01-017-9166).
TM 11-5815-238-20P	Organizational Maintenance Repair Parts and Special Tools Lists: Teletypewriter Sets AN/GGC-3 and AN/GGC-3A and Teletypewriter Reperforator-Transmitters TT-76/GGC, TT-76A/GGC, TT-76B/GGC and TT-76C/GGC (FNS 5815-503-3309).
TM 11-5815-338-15	Operator's, Organizational, Direct Support, General Support, and Depot Maintenance Manual: Device, Low Level Signaling, TT-523/GGC (NSN 5815-00-937-6146) and TT-523A/GGC (5815-00-999-3048).

TM 11-5815-602-12	Operator's and Organizational Maintenance Manual for Terminal, Communications, AN/UGC-74A(V)3 (NSN 5815-01-062-8194).
TM 11-5830-221-12	Operator's and Organizational Maintenance Manual: Intercommunication Stations LS-147A/FI, LS-147B/FI, LS-147C/FI, and LS-147D/FI (NSN 5830-00-752-5357).
TM 11-5895-1048-13	Operator's, Organizational and Direct Support Maintenance Manual for Teletypewriter Operations Central AN/MGC-19A (NSN 5815-01-041-5104).
TM 11-5965-206-14P	Operator's, Organizational, Direct Support and General Support Maintenance Repair Parts and Special Tools Lists (Including Depot Maintenance Repair Parts and Special Tools): Headset-Microphone H-91A/U (FSN 5965-669-6871), Handset-Headset H-144/U, H-144A/U, H-144B/U and H-144C/U (FSN 5965-682-2769) and Headset-Microphone H-210/G (FSN 5965-892-1068).
TM 11 5965-224-14P	Operator's Organizational, Direct Support and General Support Maintenance Repair Parts and Special Tools List (Including Depot Maintenance Repair Parts and Special Tools): Handset, H-60/PT (FSN 5965-669-9145) and H-165/U (5965-543-1837).
TM 11-6110-201-12P	Operator's and Organizational Maintenance Repair Parts and Special Tools Lists for Distribution Boxes J-1077/U and J-1077A/U (NSN 6110-00-985-7574).
TM 38-.750	The Army Maintenance Management System (TAMMS).
TM 43-0139	Painting Instructions for Field Use.
TM 740-90-1	Administrative Storage of Equipment.
TM 750C-244-2	Procedures for Destruction of Electronics materiel to Prevent Enemy Use (Electronics Command).

Page 72. Appendix III- is superseded as follows:

APPENDIX III

MAINTENANCE ALLOCATION

Section I. INTRODUCTION

1. General

This appendix provides a summary the main tenance operations for the AN/MS-25 and AN/MS-25A. It authorizes categories of maintenance for specific maintenance functions on repairable items and components and the tools and equipment required to perform each function. This appendix may be used as an aid in planning maintenance operations.

2. Maintenance Function

Maintenance functions will be limited to and defined as follows:

- a. **Inspect.** To determine the serviceability of an item by comparing its physical, mechanical and/or electrical characteristics with established standards through emanation.
- b. **Test.** To verify serviceability and to detect incipient failure by measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.
- c. **Service.** Operations required periodically to keep an item in proper operating condition, i.e., to clean [decontaminate), to preserve, to drain, to paint, or to replenish fuel, lubricants, hydraulic fluids, or compressed air supplies.
- d. **Adjust.** To maintain, within prescribed limits, by bringing into proper or exact position' or by setting the operating characteristics to the specified parameters.
- e. **Align** To adjust specified variable elements of an item to bring about optimum or desired performance.
- f. **Calibrate.** To determine and cause corrections to be made or to be adjusted on instruments or test measuring and diagnostic equipments used in precision measurement. Consists of comparisons of two

instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

g. **install** The act of emplacing, seating, or fining into position an item, part, module Component or assembly) in a manner to allow the proper functioning of the equipment or system.

h. **Replace.** The act of substituting a serviceable like type part, subassembly, or module (component or assembly) for an unserviceable counterpart.

i. **Repair.** The application of maintenance services (inspect, test, service, adjust, align, calibrate, replace) or other maintenance actions Welding, Minding, riveting, straightening, facing, remachining, or resurfacing) to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module [component or assembly), end item, or system.

j. **Overhaul.** That maintenance effort (service/action) necessary to restore an item to a completely serviceable/operational condition as prescribed by maintenance standards (i.e., DMWR) in appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

k. **Rebuild.** Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild

operation includes the act of returning to zero those age measurements (hours, miles, etc.) considered in classifying Army equipments/components.

3. Column Entries

a. *Column 1, Group Number.* Column 1 lists group numbers, the purpose of which is to identify components, assemblies, subassemblies, and modules with the next higher assembly.

b. *Column 2, Component/Assembly.* Column 2 contains the noun names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

c. *Column 3, Maintenance Functions.* Column 3 lists the functions to be performed on the item listed in column 2. When items are listed without maintenance functions, it is solely for purpose of having the group numbers in the MAC and RPSTL coincide.

d. *Column 4, Maintenance Category.* Column 4 specifies, by the listing of a "work time" figure in the appropriate subcolumn(s), the lowest level of maintenance authorized to perform the function listed in column 3. This figure represents the active time required to perform that maintenance function at the indicated category of maintenance. If the number or complexity of the tasks within the listed maintenance function vary at different maintenance categories, appropriate "work time" figures will be shown for each category. The number of task-hours specified by the "work time" figure represents the average time required to restore an item (assembly, subassembly, component, module, end item or system) to a serviceable condition under typical field operating conditions. This time includes preparation time, troubleshooting time, and quality assurance/quality control time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the maintenance allocation chart. Subcolumns of column 4 are as follows:

- C-Operator/Crew
- O-Organizational
- F-Direct Support
- H-General Support
- D-Depot

e. *Column 5, Tools and Equipment.* Column 5 specifies by code, those common tool sets (not individual tools) and special tools, test, and support equipment required to perform the designated function.

f. *Column 6, Remarks.* Column 6 contains an alphabetic code which leads to the remark in section IV, Remarks, which is pertinent to the item opposite the particular code.

4. Tool and Test Equipment Requirements (Sect. III)

a. *Tool or Test Equipment Reference Code.* The numbers in this column coincide with the numbers used in the tools and equipment column of the MAC. The numbers indicate the applicable tool or test equipment for the maintenance functions.

b. *Maintenance Category.* The codes in this column indicate the maintenance category allocated the tool or test equipment.

c. *Nomenclature.* This column lists the noun name and nomenclature of the tools and test equipment required to perform the maintenance functions.

d. *National/NATO Stock Number.* This column lists the National/NATO stock number of the specific tool or test equipment.

e. *Tool Number.* This column lists the manufacturer's part number of the tool followed by the Federal Supply Code for manufacturers (5digit) in parentheses.

5. Remarks (Sect. IV)

a. *Reference Code.* This code refers to the appropriate item in section II, column 6.

b. *Remarks.* This column provides the required explanatory information necessary to clarify items appearing in section II.

Back of Manual. Figures 14.1 and 14.2 are added after Figure 14; Figures 18.1 and 18.2 are added after Figure 18; Figure 42.1 is added after Figure 42; and Figure 43.1 is added after Figure 43.

SECTION IV. REMARKS

REFERENCE CODE	REMARKS
A	EQUIPMENT OPERATION TEST.
B	CONTINUITY AND POWER CHECKS.
C	REPAIR AS INDICATED IN COMPONENT BREAK-DOWN.
D	REPAIR AS INDICATED IN GROUP 0101.
E	LIMITED TO V-189/MSC-25 REPAIR AS INDICATED BELOW.
F	CHECK OPERATION OF ELECTRIC HEATER, CIRCUIT BREAKERS, AND CURRENT TRANSFORMERS.
G	TEST INTERNAL WIRING AND STRUCTURE OF TRAILER.
H	REPLACEMENT OF ELECTRIC HEATER, CIRCUIT BREAKERS, AND CURRENT TRANSFORMERS.
I	REPAIR OF POWER CABLES, CONNECTORS, AND RF CABLES, EMERGENCY REPAIRS OF HOLES AND MINOR STRUCTURAL DAMAGE (TB 750-240). ALL OTHER REPAIRS WILL BE PERFORMED BY GENERAL SUPPORT
J	FOR MAINTENANCE ALLOCATION, REFER TO TM 11-6110-201-15P.
K	FOR MAINTENANCE ALLOCATION, REFER TO TM 11-5965-206-15P.
L	FOR MAINTENANCE ALLOCATION, REFER TO TM 11-5805-221-12.
M	FOR MAINTENANCE ALLOCATION, REFER TO TM 11-5805-262-12.
N	FOR MAINTENANCE ALLOCATION, REFER TO TM 11-5805-201-12.
O	FOR MAINTENANCE ALLOCATION, REFER TO TM 11-5805-257-12P.
P	FOR MAINTENANCE ALLOCATION, REFER TO TM 11-5965-224-14P.
Q	FOR MAINTENANCE ALLOCATION, REFER TO TM 11-5815-238-12.
R	FOR MAINTENANCE ALLOCATION, REFER TO TM 11-5815-238-12.
S	FOR MAINTENANCE ALLOCATION, REFER TO TM 11-5815-338-12.
T	FOR MAINTENANCE ALLOCATION, REFER TO TM 11-5815-206-12.
U	P/O AN/MSC-25 ONLY (FOR MAINTENANCE ALLOCATION, REFER TO TM 11-5815-206-12P).
V	FOR MAINTENANCE ALLOCATION, REFER TO TM 11-5805-246-10.
W	FOR MAINTENANCE ALLOCATION, REFER TO TM 11-5805-356-12.
X	FOR MAINTENANCE ALLOCATION, REFER TO TM 11-5805-232-12P AND KAM 258A(*)/TSEC (FOUO).
Y	P/O AN/MSC-25A ONLY (FOR MAINTENANCE ALLOCATION, REFER TO TM 11-5815-602-12).

**SECTION II MAINTENANCE ALLOCATION CHART
FOR
COMMUNICATIONS OPERATIONS CENTER AN/MSC-25 AND AN/MSC-25A**

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQPT.	(6) REMARKS
			C	O	F	H	D		
00	COMMUNICATIONS OPERATIONS CENTER AN/MSC-25 AND AN/MSC-25A	Inspect Test Test Test Service Repair Repair Repair Overhaul	0.1	0.5 0.5 1.0	1.0 2.0	2.0 4.0	80.0	1, 8 3 3, 6 2 1, 2, 8 thru 5. 8 1 thru 7, 9 1 thru 9	A B C D E
01	SEMI-TRAILER VAN. ELECTRICAL EQUIPMENT V-189/ MSC-25	Inspect Test Test Test Repair Repair Repair	0.1	0.5 1.0	- 2.0	1.0 2.0 4.0		3 1, 2 1 thru 5 1 thru 7	F H I
0101	CABLE ASSEMBLY CX-4566/6	Replace Repair		0.5	1.0			2 3, 4	
0102	DISTRIBUTION BOX -1077A/U	Replace		0.5				1, 2	J
02	HANDSET, HEADSET H-144(*)/U	Replace		0.5				1, 2	K
03	INTERCOMMUNICATIONS STATIONS LS-147(*)/U	Replace		0.5				1, 2	L
04	SWITCHBOARD. TELEPHONE SB-22A/PT	Replace		0.5				1, 2	M
05	TELEPHONE SET TA-312/PT	Replace		0.5				1, 2	N
06	GENERATOR, RINGING. HAND G-42A/PT	Replace		0.5				1, 2	O
07	HANDSET H-60/PT OR H-165/U	Replace		0.5				1, 3	P
08	TELETYPEWRITER SET G6C-3A	Replace		0.5				1, 3	Q
09	REPERFORATOR-TRANSMITTER. TELETYPEWRITER TT-76(*)1/GGC	Replace		0.5				1, 3	R
10	LOW LEVEL SIGNALING DEVICE TT-523/GGC	Replace		0.5				1, 3	S
11	TELETYPEWRITER SET AN/PGC-1	Replace		0.5				1, 3	T
12	TELETYPEWRITER TT-4(*)/TG	Replace		0.5				1, 3	U
13	TERMINAL. TELEGRAPH TH-5/TG	Replace		0.5				1, 3	V
14	TERMINAL., TELEGRAPH TH-22/TG	Replace		0.5				1, 3	W
15	COMMUNICATIONS SECURITY EQUIPMENT TSEC/II-7	Replace							X
16	FORWARD AREA TELETYPE (FATT) AN/UGC-74A	Replace		0.5				1, 3	Y

**Section III TOOL AND TEST EQUIPMENT REQUIREMENTS
FOR
COMMUNICATIONS OPERATIONS CENTER AN/MSC-25 AND AN/MSC-25A**

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL/NATO STOCK NUMBER	TOOL NUMBER
1	O, F, H, D	MULTIMETER AN/USM-223	6625-00-999-7465	
2	O, F, H, D	TOOL KIT, ELECTRONIC EQUIPMENT TK-101/G	5180-00-064-5178	
3	F, H, D	MULTIMETER TS-352(*)/U	6625-00-553-0142	
4	F, H, D	TOOL KIT, ELECTRONIC EQUIPMENT TK-100/G	5180-00-605-0079	
5	F, H, D	TOOL KIT, AUTOMOTIVE MECHANICS -	5180-00-973-4369	
6	H, D	OHMMETER ZM-21(*)	6625-00-643-1089	
7	H, D	TOOL KIT, SHELTER REPAIR TK-144/G	5180-00-973-4369	
8	O, F, H, D	TOOLS AND TEST EQUIPMENT ASSOCIATED WITH COMPONENTS OF THIS END ITEM		
9	D	TOOLS AND TEST EQUIPMENT REQUIRED FOR DEPOT TO TEST, OVERHAUL OR REBUILD THIS EQUIPMENT		

By Order of the Secretary of the Army:

Official.:

ROBERT M. JOYCE
Brigadier General, United States Army
The Adjutant General

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General United States Army
Chief of Staff

DISTRIBUTION:

To be distributed in accordance with DA Form 12-34B, requirements for TMDE/Calibration Maintenance manual.

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CHANGE }
NO. 9 }

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 9 January 1984

**ORGANIZATIONAL, DIRECT SUPPORT, GENERAL
SUPPORT, AND DEPOT MAINTENANCE MANUAL
(INCLUDING REPAIR PARTS AND SPECIAL TOOLS LISTS)
OPERATIONS CENTER, COMMUNICATIONS ANIMSC-25
(NSN 5895-00-021-2088) AND
ANIMSC-25A (NSN 9999-01-122-8722)**

TM 11-5895-227-15, 24 April 1961, is changed as follows:

Add the following warnings to the inside front cover:

WARNING

- **Never operate the generator or shelter until it has been properly grounded. Electrical defects in the load lines or equipment can cause DEATH BY ELECTROCUTION when contact is made with an ungrounded system.**
- **Adequate ventilation should be provided while using TRICHLOROTRIFLUOROETHANE. Prolonged breathing of vapor should be avoided. The solvent should not be used near heat or open flame: the products of decomposition are toxic and irritating. Since TRICHLOROTRIFLUOROETHANE dissolves natural oils, prolong contact with skin should be avoided. When necessary, use gloves which the solvent cannot penetrate. If the solvent is taken internally, consult a physician immediately.**
 - **Compressed air shall not be used for cleaning purposes except where reduced to less than 29 pounds per square inch (psi) and then only with effective chip guarding and personnel protective equipment. Do not use compressed air to dry parts when TRICHLOROTRIFLUOROETHANE has been used. Compressed air is dangerous and can cause serious bodily harm if protective means or methods are not observed to prevent chip or particle (of whatever size) from being blown into the eyes or unbroken skin of the operator or other personnel.**

Page 2. Paragraphs 1.1, 2, 2.1, 2.2, 2.3 and 2.4 are superseded as follows:

1.1. Consolidated Index of Army Publications and Blank Forms

Refer to the latest issue of DA Pam 310-1 to determine whether there are new editions, changes or additional publications pertaining to the equipment.

2. Maintenance Forms, Records, and Reports

a. *Reports of Maintenance and Unsatisfactory Equipment.* Department of the Army forms and procedures used for equipment maintenance will be those prescribed by TM 38-750. The Army Maintenance Management System.

b. *Report of Packaging and Handling Deficiencies.* Fill out and forward SF 364 (Report of Discrepancy (ROD)) as prescribed in AR 735-11-2/ DLAR 4140.55/NAVMATINST 4355.73A/AFR 400-54/MCO 4430.3F.

c. *Discrepancy in Shipment Report (DISREP) (SF 361).* Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361) as prescribed in AR 55-38/NAVSUPINST 4610.33C/ AFR 75-18/MCO P4610.19D/DLAR 4500.15.

2.1. Reporting Errors and Recommending Improvements

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms) direct to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: DRSEL-ME-MP, Fort Monmouth, New Jersey 07703. In either case a reply will be furnished direct to you.

*This change supersedes C3, 24 June 1963; C7, 28 December 1981 and TM 11-5895-227-ESC dated 3 May 1976.



5

SAFETY STEPS TO FOLLOW IF SOMEONE IS THE VICTIM OF ELECTRICAL SHOCK

1

DO NOT TRY TO PULL OR GRAB THE INDIVIDUAL

2

IF POSSIBLE , TURN OFF THE ELECTRICAL POWER

3

IF YOU CANNOT TURN OFF THE ELECTRICAL POWER, PULL, PUSH, OR LIFT THE PERSON TO SAFETY USING A WOODEN POLE OR A ROPE OR SOME OTHER INSULATING MATERIAL

4

SEND FOR HELP AS SOON AS POSSIBLE

5

AFTER THE INJURED PERSON IS FREE OF CONTACT WITH THE SOURCE OF ELECTRICAL SHOCK, MOVE THE PERSON A SHORT DISTANCE AWAY AND IMMEDIATELY START ARTIFICIAL RESUSCITATION

2.2. Reporting Equipment Improvement Recommendations (EIR)

If your Communications operation center reels improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design. Put it on an SF 368 (Quality Deficiency Report). Mail it to Commander, US Army Communication-electronics command and Fort Monmouth, ATTN: DRSEIL-ME-MP, Fort Monmouth, New Jersey 07703. We'll send you a reply.

2.3. Administrative Storage

Administrative Storage of equipment issued to and used by Army activities will have preventive maintenance performed in accordance with the PMCS charts before storing. When removing the equipment from Administrative storage the PMCS should be performed to assured operational readiness. Disassembly and

repacking do equipment for shipment or limited storage are covered in chapter 6 and TM 740-90-1.

2.4 Destruction of Army Electronics Materiel

Destruction of Army electronics materiel to prevent enemy use shall be in accordance with TM 750244-2.

Paragraph 3, add the following.

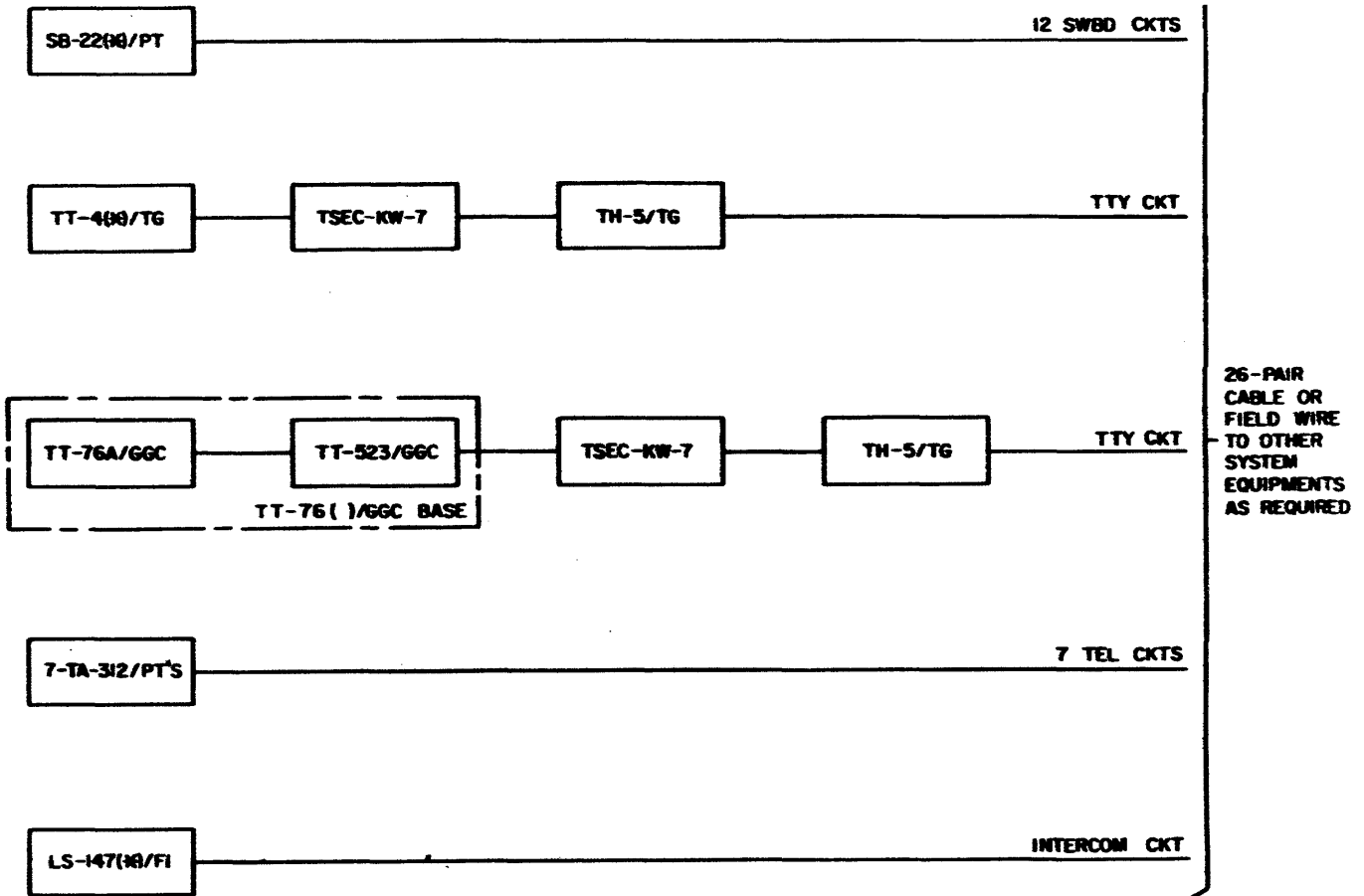
Teletypewriter circuits are adaptable to secure communication through the TSECIKW-7 equipment (fig. 1.1).

Page 3. Add figure 11 after figure 1.

After paragraph 4, add the following note:

NOTE

Throughout the manual, where reference is made to Repeater-Transmitter, Teletypewriter TT-76(*)/GGC, the (*) refers to all models except the plain model.



EL7YC001

Figure 1.1. Operations center, communications AN/MS-25 (modified), signal circuits, block diagram.

Paragraph 4.1. Add the following after line 2.

NSN	QTY	Nomenclature, part No. & mfr code	Useable on code
5815-00-198-4438	1	Teletypewriter TT-4/TG	1, 2

Paragraph 5. Under "Reperforator-Transmitter, Teletypewriter TT-76(*)/GGC", add the following:

Quantity (ea)	Item	Fig. No.
1	Interconnecting box assembly, SC-D-621128	14
1	Box, switch assembly, SC-C-621133	14
2	Cable assembly, dual shielded, CX-9994/U (W4, W5)	14
1	Cable assembly, dual shielded, SC-D-621147	14
1	Cable assembly, dual shielded (W1)	
1	Cable assembly, dual shielded (W3)	
1	Cable assembly, dual shielded (W2)	
1	Cable assembly, dual shielded (W7)	
1	Cable assembly, PJ055B on one end, banana plugs on other end (120 in. lg) (W8)	
1	Cable assembly, PJ055R on one end, banana plugs on other end (120 in. lg) (W9)	
1	Cable assembly, PJ055B on one end, banana plugs on other end (136 in. lg) (W10)	
1	Cable assembly, PJ055R on one end, banana plugs on other end (136 in. lg) (W11)	
1	Cable, ground, stranded leads 26 in. lg (W12, W13)	

Page 17, paragraph 8. Add the following paragraph after paragraph 8g.

h. Communications Security Equipment. A mounting rack and wiring are provided to the modified version of the communications central. This is located on the right side of the curbside table for supporting the TSEC/KW-7 communications security equipment. This is used with teletypewriter signal units to provide secure communications with the distant station. Provisions are made for back-to-back local test of the equipment in a non-secure mode by use of selector switches.

Page 20, paragraph 9. Add the following after paragraph 91.

m. Viewer, Door Assembly. An optical viewer (peep sight) is mounted in the rear door assembly directly below the pressure relief valve for security purposes.

Page 24, paragraph 10. Add the following to paragraph 10a(6) and install and connect the TSEC/KW-7 communications security equipment if required.

Page 26. Add the following paragraphs after paragraph 15.

NOTE

Before installing the TT-76(*)/GGC's for secure operation, be sure the teletypewriters-reperforator have been modified as indicated below.

15.1. Modification of TT-76(*)/GGC's for Secure Operation

- a. Disconnect the copy light, the four ground straps, and remove the dust cover.
- b. Position the TT-76(*)/GGC to allow access to the three cables connected to TB-1 and disconnect the cables from the terminal board.
- c. Remove the three screws, nuts, lockwashers, and clamps holding the cables.
- d. Remove the three cables by squeezing the strain reliefs and pushing them through the base (bottom to top). Retain the strain reliefs and tag the cables to indicate that they will be reconnected when the modification is removed.
- e. Select and fasten three cables W6 (TR SEND), W7 (REC), and W6 (TD SEND) to the base of the TT-76(*)/GGC. Use the original strain reliefs to fasten the cables.

f. Place a piece of masking tape on the W6 cable connected to terminals 6 and 8 (TD SEND) for use as identification later.

g. Fasten the ground lugs and the original cable clamps.

h. Connect the cable leads to terminal board TB-2.

i. Connect a 27,000-ohm resistor to terminal board TB-1 terminals 7-8. (Remove existing lead on terminal 8, tape the end and tuck it aside; insulate resistor leads.)

j. Add a label marked CAUTION: Modified in accordance with paragraph 15.1, TM 11-5895227-15.

15.2. Installation of Low Level Signaling Device TT-523A/GGC on TT-76(*)/GGC's

NOTE

TT-76(*)/GGC's must be "A" model or later. The plain model cannot be used. The use of the TT-523A/GGC may require more frequent maintenance of transmitter contacts than normal. The low level keying current is of insufficient value to perform the contact cleaning obtained when the teletypewriters are used for normal (high-level power) operation. No timetable or schedule can be set up for the frequency of cleaning the contacts. Clean and burnish the transmitter contacts as required.

a. On the TT-76(*)/GGC power supply and terminal unit, disconnect the existing strap across the BIAS TEST MA terminals.

b. Connect a 56,000-ohm +10 percent, 1-watt resistor across the BIAS TEST MA terminals.

c. Set the SIGNAL/BIAS switch on the power

supply and terminal unit to 60MA.

NOTE

Although the TT-76(*)/GGC will be used in a 20-ma neutral circuit, the SIGNAL/ BIAS switch must be set to the 60MA position to provide the required operational power for the TT-523(*)/GGC.

d. Insert the plug from the selector magnet cable into the SELECTOR MAGNET socket marked 20MA on the power supply and terminal unit.

e. Remove the plug P7 from its associated receptacle J7, located at the rear of the TT-76(*)/ GGC.

f. Insert male plug P1 at the bottom of the TT523(*)/GGC into receptacle J7 of the TT-76(*)/ GGC.

g. Connect plug P7 of the TT-76(*)/GGC to female receptacle J1 on the rear of the TT-523(*)/ GGC.

h. Secure the TT-523(*)/GGC ground strap to the adjacent ground binding post on the dust cover of the TT-76(*)/GGC.

Page 28, paragraph 18c. Add NOTE as follows:

NOTE

Set switch S1 to the DUMMY BOX position prior to performing the following tests. Upon completion of tests, set switch S1 to AUX position.

Page 40, paragraph 27h. After "doorbell switch", add: TT-523(*)/GGC low level signaling device 60-30 ma.

Page 42, paragraph 32b. Add the following paragraph after 32b(5).

(6) TSEC/KW-7 *communications security set*. Operate the ON/OFF switch to OFF. Secure equipment after operation as prescribed h. TM 11-5895-1048-13.

Page 43, chapter 4. Insert the following under the title of chapter 4:

Section I. OPERATOR/CREW AND

ORGANIZATIONAL PREVENTIVE

MAINTENANCE CHECKS AND SERVICES

Paragraph 33, 34, and 35 are superseded as follows:

33. General Maintenance

NOTE

Refer to TM 750-244-2 for proper procedures for destruction of this equipment to prevent enemy use.

a. Operator/crew preventive maintenance is the systematic care, servicing and inspection of equipment to prevent the occurrence of trouble, to reduce downtime, and to maintain equipment in serviceable condition. To be sure that your communications operations center is always ready for your mission, you must do scheduled preventive maintenance checks and services (PMCS).

(1) BEFORE OPERATION, perform your B PMCS to be sure that your equipment is ready to go.

(2) When an item of equipment is reinstalled after removal, for any reason, perform the necessary B PMCS to be sure the item meets the readiness criteria.

(3) Use the ITEM NO. column in the PMCS table to get the number to be used in the TM ITEM NO. column on DA Form 2404 (Equipment Inspection and Maintenance Worksheet) when you fill out the form.

b. Organizational preventive maintenance procedures are designed to help maintain equipment in serviceable condition. They include items to be checked and how to check them. These checks and services, described in paragraph 36, outline inspections that are to be made at specific monthly (M) and quarterly (Q) intervals.

c. Routine checks like CLEANING, PRESERVATION, DUSTING, WASHING, CHECKING FOR FRAYED CABLES, STOWING ITEMS NOT IN USE, COVERING UNUSED RECEPTACLES, CHECKING FOR LOOSE NUTS AND BOLTS AND CHECKING FOR COMPLETENESS are not listed as PMCS checks. They are things that you should do any time you see they must be done. If you find a routine check like one of those listed in your PMCS, it is because other operators reported problems with this item.

6 NOTE When you are doing any PMCS or routine checks, keep in mind the warnings and cautions.

WARNINGS

- Never operate the generator or shelter until it has been properly grounded. Electrical defects in the load lines or equipment can cause death by electrocution when contact is made with an ungrounded system.
- Adequate ventilation should be provided while using TRICHLOROTRIFLUOROETHANE. Prolonged breathing of vapor should be avoided. The solvent should not be used near heat or open flame; the products of decomposition are toxic and irritating. Since TRICHLOROTRIFLUOROETHANE dissolves natural oils, prolonged contact with skin should be avoided. When necessary, use gloves which the solvent cannot penetrate. If the solvent is taken internally, consult a physician immediately.
- Compressed air is dangerous and can cause serious bodily harm if protective means or methods are not observed to prevent a chip or particle (of whatever size) from being blown into the eyes or unbroken skin of the operator or other personnel. Goggles must be worn at all times while cleaning with compressed air. Compressed air shall not be used for cleaning purposes except where reduced to less than 29 pounds per square inch gage (psig) and then only with effective chip guarding and personnel protective equipment. Do not use compressed air to dry parts when trichlorotrifluoroethane has been used.

NOTES

The PROCEDURES column in your PMCS charts instruct how to perform the required checks and services. Carefully follow these instructions and, if tools are needed or the chart so instructs, get organizational maintenance to do the necessary work.

If your equipment must be in operation all the time, check those items that can be checked and serviced without disturbing operation. Make the complete checks and services when the equipment can be shut down.

d. Deficiencies that cannot be corrected must be reported to higher category maintenance personnel. Records and reports of preventive maintenance must be made in accordance with procedures given in TM 38-750.

34. Operator/Crew Preventive Maintenance Checks and Services

Perform before operation PMCS if you are operating the item for the first time.

NOTE

The checks in the interval column are to be performed in the order listed.

35. Operator/Crew Preventive Maintenance Checks and Services Chart

B - Before

Item No.	Interval	Item to be Inspected	Procedures - Check for and have repaired or adjusted as necessary	Equipment is not Ready/Available If:
	B			
1	•	Mission Essential Equipment	Check completeness and satisfactory condition of the equipment. Replace missing items.	Available equipment is insufficient to support the combat mission.
2	•	Grounding	Check equipment grounded for electrical safety (See TB 43-0125).	If grounding procedures in paragraph 21 cannot be completed properly
3	*	SB-22(*)/PT Manual Switchboard	Perform operational checks as described in TM 11-5805-262-12. inoperative.	Switchboard inoperative or four or more linepacks
4	*	TT-4A/TG Teletypewriter	Perform operational checks as described in TM 11-5815-206-12. fails to communicate.	Teletypewriter fails to print error-free copy or
5	*	TT-76(*)/GGC Reperator Transmitter, Teletypewriter	Perform operational checks as described in TM 11-5815-238-12.	Fails to feed tape or tears tape.
6	*	TH-5/TG Telegraph Terminal	Perform operational checks as described in TM 11-5805-206-10. operate.	Communication or ringing operation of TH-5 fails to
7	*	TA-312/PT Telephone Set	Perform operational checks as described in TM 11-5805-201-12.	
8	•	AN/MSC-25 Communications Operations Center	Perform operational checks as described in paragraphs 28, 29, and 30.	Operational checks indicate failure to support mission.

*Do this check before each deployment to a mission location. This will permit any existing problems to be corrected before the mission starts. The check does not need to be done again until redeployment.

Page 44. Paragraph 36 is superseded as follows:

36. Organizational Preventive Maintenance Checks and Services Chart

M - Monthly Q - Quarterly

Item No.	Interval		Item to be Inspected	Procedures
	M	Q		
1	•		Exhaust Blowers	Lubricate motor at oil points with PL-Special or OE-10.
2	•		SB-22(*)/PT Manual Switchboard	Perform organizational checks as described in TM 11-5805-262-12.
3	•		TT-4A/TG Teletypewriter	Perform organizational checks as described in TM 11-5815-206-12.
4	•		TT-76(*)/GGC Repeater-Transmitter, Teletypewriter	Perform organizational checks as described in TM 11-5815-238-12.
5	•		TH-5/TG Telegraph Terminal	Perform organizational checks as described in TM 11-5805-246-20.
6	•		TA-312/PT Telephone Set	Perform organizational checks as described in TM 11-5805-201-12.
7	•		LS-147(*)/FI Intercommunication Station	Perform organizational checks as described in TM 11-5830-221-12.
8	•		AN/MSC-25 Communications Operations Center	Perform operational check of equipment as described in paragraph 28 through 30.
9		•	Fire Extinguisher	Replace, if seal is broken.
10		•	First Aid Kit	Check for completeness.

Paragraph 37 is rescinded.

Page 61, paragraph c. Title of paragraph c is changed to "Teletypewriter Equipment Circuits (Non-Secure Mode of Operation)."

Paragraph c(1). Before paragraph c(1) add the following note:

NOTE

Non-secure operation of teletypewriters is to be used only for local (back-to-back) testing of the equipment. On-line operation will always be in the secure mode.

Change paragraph d to e and paragraph e to f. Add new paragraph d as follows:

d. Teletypewriter Equipment Circuits (Secure Mode of Operation).

(1) Locate the TSEC/KW-7 equipments in the spaces provided on the rack assembly. Clamp them in place with the hardware provided on the rack.

(2) Remove all cables from the receptacles on the interconnecting boxes and connect them to similarly designated receptacles on the security equipments.

(3) Operate the security equipments in accordance with associated technical literature. (Do not bypass the teletypewriter keyboard filter contacts.)

(4) Operate Switch S1 to the AUX position.

NOTE

Use plug adapter for connecting the TSEC/ KW-7 power cord to receptacle No. 6.

Page 62, paragraph 62. Make the following changes: Subparagraph a(1), line 12. Add a period after "(fig. 13) light". Delete the remainder of the paragraph as well as the "note".

Subparagraph a(2). Delete subparagraph a(2) and substitute:

(2) Ac power from receptacle J2 is applied through the power duct wiring to MAIN circuit breaker switch CB15 in the POWER DISTRIBUTION PANEL. LINE/BATTERY LIGHTING POWER TRANSFER relay K1 disconnects the 24V DC van battery supply from dome lights DS1 through DS3 and arranges the van lighting circuit for ac input through circuit breaker switches CB1 and CB2. (Dome lights DS1 through DS3 may be operated after relay K1 operates, by operation of the DOME lights switch to DOME TRACT BAT (tractor still connected to van)). Circuit breaker switches CB1 through CB14 (parallel-connected) are connected in series with CB15. Wiring to the equipment and convenience receptacles is distributed through the power duct from circuit breaker switches CB1 through CB14. Lamps DS4, DS5, and DS54 are connected across the ac input lines to CB15 ((1) above). Lamps DS40 through DS53 are connected across the circuits controlled by CB1 through CB14, respectively, and light individually as each circuit breaker is operated to ON.

Page 63, chapter 6. Change the title of chapter 6 from "SHIPMENT AND LIMITED STORAGE AND DEMOLITION TO PREVENT ENEMY USE" to "SHIPMENT AND LIMITED STORAGE".

Page 64. Section II title and paragraphs 65 and 66 C9, TM 11-5895-227-15

are rescinded.

Page 65, Appendix I. Delete the reference DA Pam 310-4 and title and substitute:

DA Pam 310-1	Consolidated Index of Army Publications and Blank Forms.
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Appendix I. After the reference "SB 11-6", add the following reference:

TB 43-0125	Installation of Communications Electronic Equipment: Hookup of Electrical cables to Mobile Generator Sets on Fielded Equipment to meet Electrical Safety Standards.
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Appendix I. After the reference "TM 11-5805246-10", add the following reference:

TM 11-5805-246-20	Organizational Maintenance Manual: Terminal, Telegraph TH-5/TG.
-------------------	---

Figure 42 (foldout). At the area: "P/O PATCH PANEL, SWITCHBOARD SB-22 LINE OUT" and "SWITCHBOARD SB-22 LINE IN", make the following changes:

Change all prefixes "JR1-" to: JR2-.

Change all prefixes "JR2-" to: JR1-.

Figure 42.1 (foldout). Change the title to read "Figure 42.1 Operations Center AN/MSC-25 (Modified for COMSEC) signal schematic-wiring diagram."

Figure 43 (foldout). Make the following changes:

Delete the two wires that connect the coil of relay K1 across 115V AC IN lamp DS54, and add two wires to connect the coil of relay K1 across the 115-volt input power on the protected side of MAIN circuit breaker CB15. Indicate that the two new wires have the same color coding and wire size as the deleted wires.

By Order of the Secretary of the Army:

Official:

JOHN A. WICKHAM JR.
General, United States Army
Chief of Staff

ROBERT M. JOYCE
Major General, United States Army
The Adjutant General

DISTRIBUTION:

To be distributed in accordance with DA Form 12-51A-1, Operator Maintenance requirements for AN/MS-25.

OPERATIONS CENTER,. COMMUNICATIONS AN/MSC-25

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CHAPTER 1

INTRODUCTION

Section I. GENERAL

1. Scope

a. This manual describes Operations Center, Communications AN/MS-25 (par. 7) and covers its installation, operation, theory, and maintenance. It also includes instructions for installing components not provided as a part of Semitrailer, Van, Electronic Equipment V-189/MS-25 (van). Except for the van and its components, major components of the AN/MS-25 are covered in detail in their respective technical manuals (app. I).

b. Official nomenclature followed by (*) is used to indicate all models of the equipments covered in this manual. Thus, Reperforator Transmitter, Teletypewriter TT-76 (*) /GGC represents Reperforator-Transmitters, Teletypewriter TT-76/GGC, TT-76A/GGC, and TT-76B/GGC; Teletypewriter TT-4 (*) /TG represents Teletypewriters TT-4/TG, TT-4A/ TG and TT-4B/TG; Intercommunications. Station LS-147 (*) /FI represents Intercommunication Stations LS-147A/FI, LS-147B/FI, LS-147C/1FI, and LS-147D/FI; Switchboard, Telephone, Manual SB-22 (*) /PT represents Switchboards, Telephone, Manual SB-22/PT and SJB-22A/PT; Handset-Headset H-144(*) /U represents Handset-Headsets H-144/U and H-144A/U.

2. Forms and Records

a. *Unsatisfactory Equipment Reports.* Fill out and forward DA Form 468 (Unsatisfactory Equipment Report) or DD Form 787-1 (Electronic Failure Report-Signal Equipment) to the Commanding Officer, U.S. Army Signal Materiel Support Agency, ATTN: SIGMS-MLM, Fort Monmouth, NJ, as prescribed in AR 700-38 (for DA Form 468) or AR 700-39 (for DD Form 787-1).

b. *Report of Damaged or Improper Shipment.* Fill out and forward DD Form 6 (Report of Damaged or Improper Shipment) as prescribed in AR 700-58.

c. *Preventive Maintenance Forms.* Prepare preventive maintenance forms for the major components (par. 5) as specified in their respective technical manuals (app. I).

d. *Parts List Form.* Forward DA Form 2028 (Recommended Changes to DA Technical Manual Parts Lists or Supply Manual 7, 8, or 9) direct to the Commanding Officer, U.S. Army Signal Materiel Support Agency, ATTN: SIGMS-MLM, Fort: Monmouth, NJ, with comments on the parts listing in appendix II.

e. *Comments on Manual.* Forward all other comments concerning this manual direct to the Commanding Officer, U.S. Army Signal Materiel Support Agency, ATTN: SIGMS-PA2d, Fort Monmouth, N.J.

Section II. DESCRIPTION AND DATA

3. Purpose and Use

Operations Center, Communications AN/ MS-25 (figs. 7-10) is a tactical communications operations and message center van; it is air transportable. The AN/MS-25 (pars. 5 and 6) contains telephone

switchboard, teletypewriter, and local telephone circuits (fig. 1), and display board facilities required by the signal operations officer to plan, engineer, and control area-type communication systems. The AN/MS-25 is used at army signal centers.

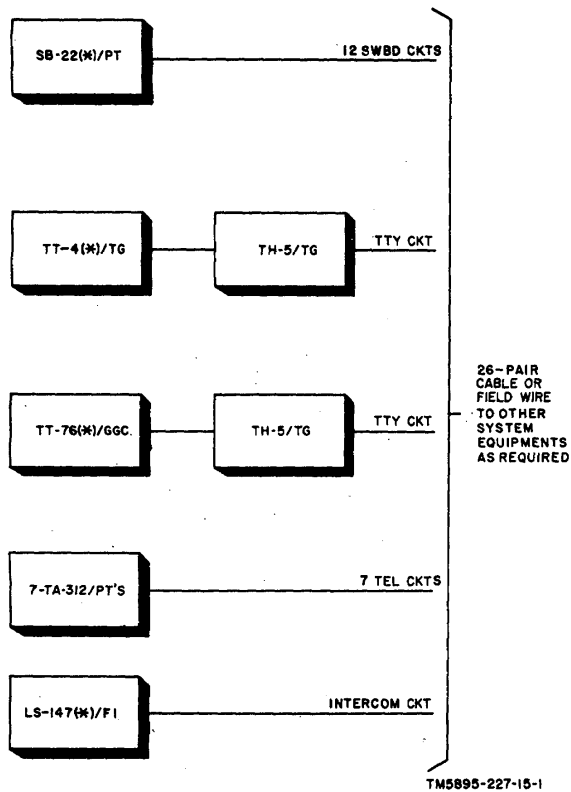


Figure 1. Operations Center, Communication AN/MSC-25, signal circuits, block diagram.

4. Technical Characteristics

Voltage requirements.....	115 v, 60 cps,
Power consumption (maximum):.....	single-phase,
Semitrailer, Van, Electronic Equip.....	3-wire.
ment V-189/MSC-25:	
Lights	1,040 watts.
Exhaust blower.....	150 watts.
Electric heaters	6,000 watts.
Air conditioner	3,000 watts.
Intercommunication Station	
LS147(*) /FI	32 watts.
Major components:	
Teletypewriter TT-4(*) /TG	160 watts.
Terminals, Telegraph TH-5/TG ...	120 watts.
Reperforator-Transmitter Tele-...	150 watts.
typewriter, TT-76 () /GGC	150 watts.
Total	10,652 -Watts.
Communication facilities:	
Local telephone circuit	
(TA-312/PT)	7 circuits.
Intercommunication circuit	
(LS-147 (*) / FI)	1 circuit.
Teletypewriter	2 circuits.
Switchboard	12 circuits.,
Weight of AN/MSC-25.....	13,000 lb.
Outside dimensions of V-189/MSC-25:	
Length	318 in.
Width	96 in.
Height	139 in.

5. Major Components of Operations Center, Communications AN/MSC-25

Quantity (ea)	Item	Fig. No.
1	Semitrailer, Van, Electronic Equipment V-189/MSC25 -	7, 8
1	Switchboard, Telephone, Manual SB-22 (*) /PT including: Accessory Kit MX-230/PT, MX-230A/PT, or MX-2915/PT (storage cabinet No. 1).	14
2	Terminal, Telegraph TH-5/TG-	14
7	Telephone Set TA-312/PT (3 installed and 4 stored in storage cabinet No. 1).	14,16
1	Teletypewriter TT-4 (*) /TG .	14
1	Reperforator-Transmitter, Teletypewriter TT-76 (*) /GGC	14

6. Components of Semitrailer, Van, Electronic Equipment V-189IMSC 25

Quantity (ea.)	Item	Fig. No.	Location
1	Air conditioner-	21	Fig. 16
1	Axe, 2-ft.	2	Front compartment .
1	Axe, 3-ft	15	
4	Battery BA-44 (for dome lights).....	14	
1	Broom	15	
	Cable Assembly, Telephone CX-566/G (250 ft) with Reel RC-436/U	3	Fig. 18
1	Cable Assembly, Telephone CX4760/U (15 ft)	2	Storage cabinet No. 1
1	Canopy-	26	External storage compartment.

Quantity (ea.)	Item	Fig. No.	Location
2	Chair cushion		
1	Clock, 3 in.	16	
1	Distribution Box J-1077A/U	14	Front compartment
1	Drafting stool	14	
1	Droplight, .25 ft	2	Storage cabinet No. 1
4	Electric heater	20	Fig. 14, 15
1	Exhaust blower	17	
3	Fire extinguisher, 5 lb	14, 15	
1	First aid kit	15	
2	Folding chair	18	
2	Ground rod	15	
2	Ground strap	2	Storage cabinet No 1
1	Hand brush	15	
2	Handset-Headset H-144 () /U.....		Storage cabinet No 1
2	Handset-Headset extension cord, 8 ft.....	2	Storage cabinet No 1
2	Hand lantern		Fig 15 and front compart ment.
11	Intercommunication Station LS 147() /FI	28	Fig 14
1	Ladder, 12ft	27	Fig 7
2	Ladder.....	29	Fig 8
1	LINE/BATTERY .LIGHTING POWER TRANSFER relay K1	17	Relay box
1	Line cord, 25 ft, with duplex receptacle	2	Storage cabinet No 1
2	Message tray.....		Storage cabinet No 1
2	Padlock (including 2 keys)		Storage cabinet No 1
8	Patch cord, 2 ft	4	Fig 14
1	Pencil sharpener	17	
1	Pioneer tool kit including.....	5	Fig 7
	1 axe		
	1 hand shovel		
	1 pick mattock		
	1 pick mattock handle,		
1	Portable* typewriter	18	
1	Power cable assembly, 100 ft	17	
6	Power cable grip.....	2	Storage cabinet No 1
1	Power cable stub, 15 ft	2	Fig 17
1	Rubber mat		Storage drawer No 12
1	Safe w/4 drawers	16	
44	Signal cable grip.....	2	Storage cabinet No 1
1	Sledge hammer	16	
1	Sledge handle, spare	15	
1	SB 22/PT cable stub		
4	Swivel chair	15	
8	Telephone cord, 4 ft	4	
1	Tool roll kit, including	2	Storage cabinet No 1
	1 bag with 10 pockets		
	1 adjustable wrench, 8 in.		
	1 Allen wrench set		
	1 Knife TL-29		
	1 lineman's pliers		
	1 long-nosed pliers		
	1 screwdriver, 2 in.		
	1 screwdriver, 4 in.		
	1 screwdriver; 6'in.		
	1 socket wrench set		
	1 vise grip pliers, 7 in..		
1	Tube pin straightener.....	16	
1	Tube puller, 7 pin.....	16	
1	Tube puller, 9,pin	16	

Quantity (ea.)	Item	Fig. No.	Location
4	Wastebaskets	14, 15	
1 set	Running spares consisting of.....	6	
	1 electron tube 6AQ5		
	1 electron tube 6AU6		
	1 electron tube 6X4W		
	7 fluorescent lamps, 20 w, 24 in.....	-	Fig. 19
	12 fluorescent lamp starters FS-2	-	Fig. 19
	5 fuses, 1-ampere	-	Storage cabinet No. 1
	5 fuses, 5-ampere	-	Storage cabinet No. 1
	3 glowlamps, NE-45		
	3 incandescent lamps, 60 w		
	2 incandescent lamps, 24-volt (dome light)		
	1 incandescent lamp (spare bulb for lantern)		
	1 neon lamp NE-34		
	3 transparent overlay rolls	-	Fig. 18
1 set	Technical manuals for major components.....	-	Manual holder, Fig. 17

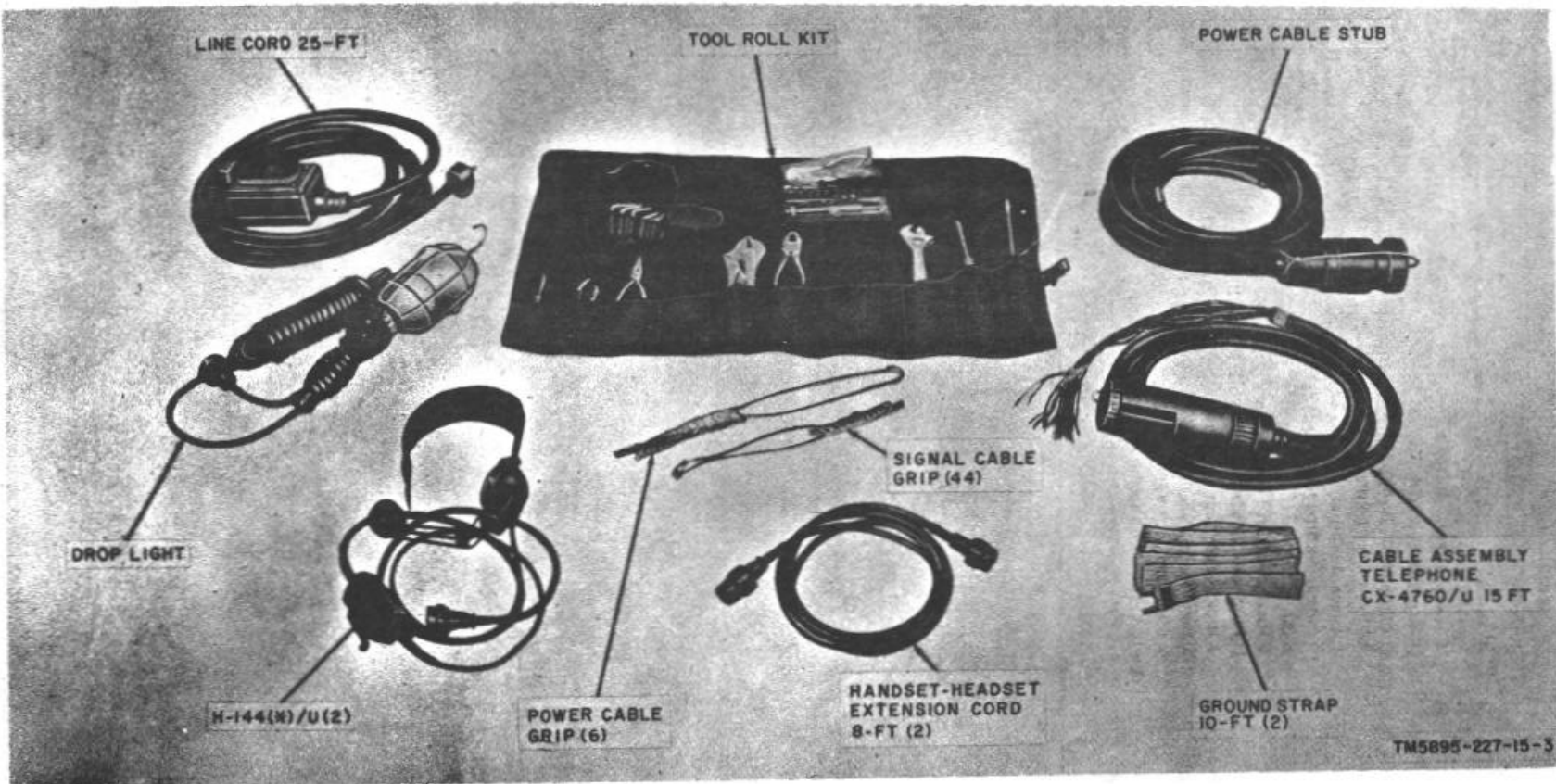


Figure 2. Operations Center, Communications AN/MSC-25, tools and accessories.

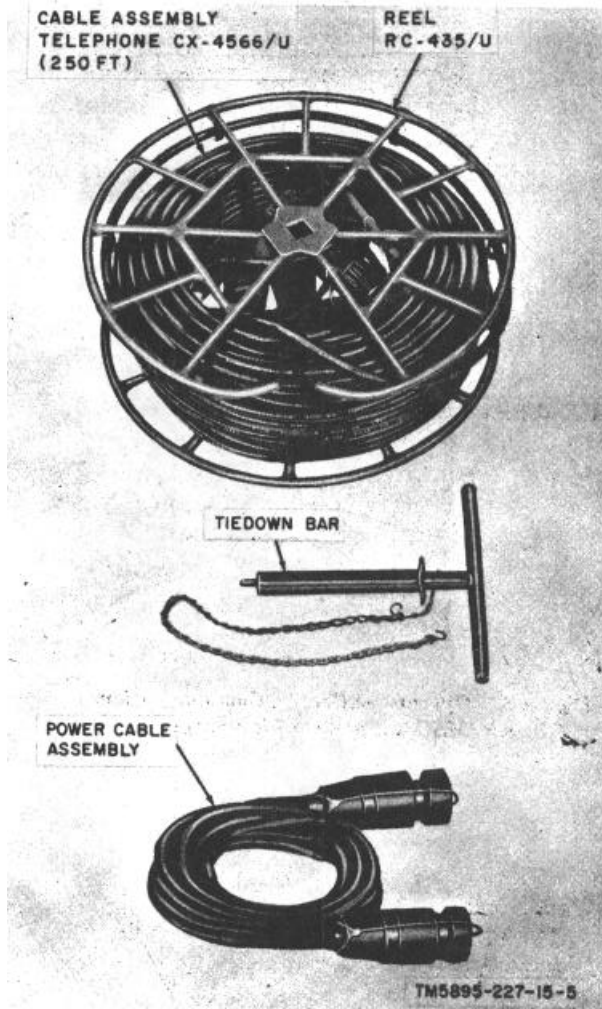


Figure 3. Operations Center, Communications AN/MSC-25, cable assemblies..

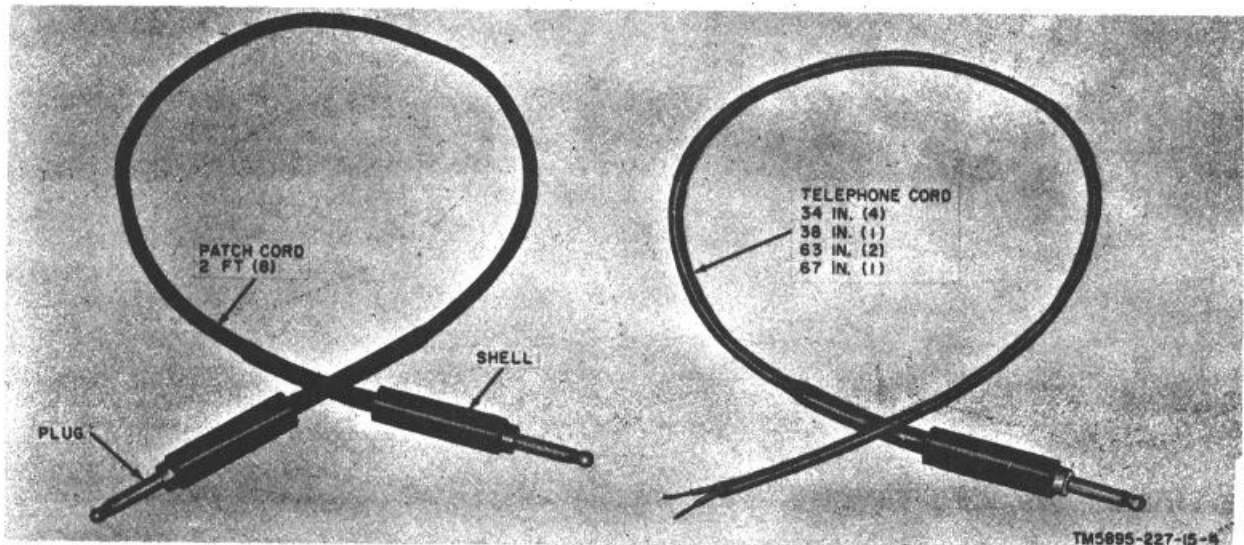


Figure 4. Operations Center, Communications AN/MSC-25, telephone and patch cords.

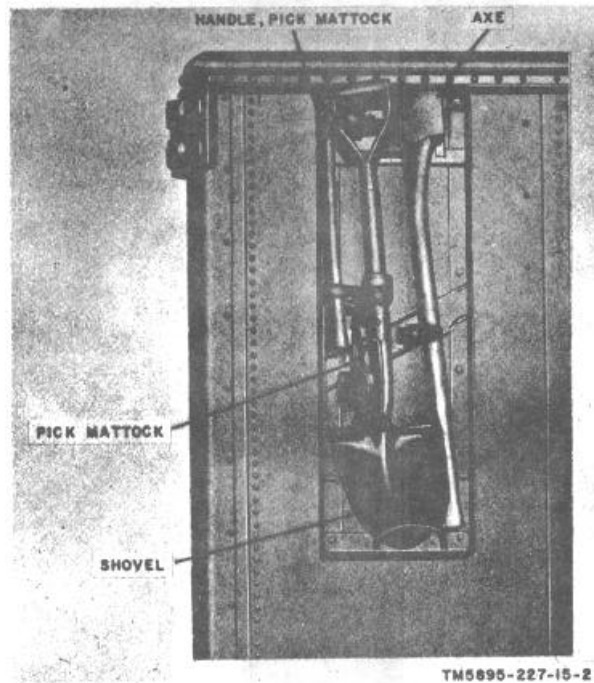


Figure 5. Operations Center, Communications AN/MSC-25, pioneer kit storage.

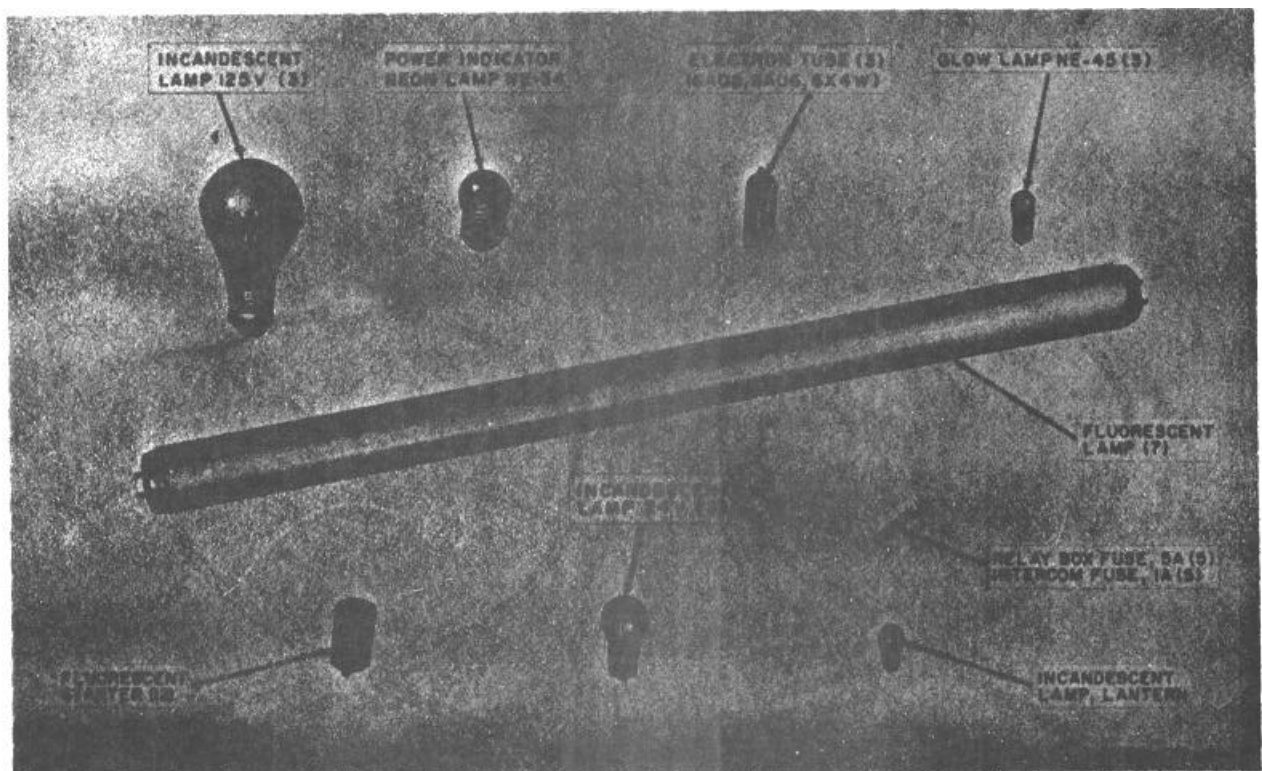


Figure 6. Operations Center, Communications AN/MSC-25, running spares.

7. Description

The components of Operations Center, Communications AN/MSC-25 (para. 5 and 6) are housed in Semitrailer, Van, Electronic Equipment V-189/MSC-25 (figs. 7 and 8). External connections to the van are made at the SIGNAL ENTRANCE PANEL (signal entrance box) or the POWER ENTRANCE

PANEL (power entrance box). Alternating current (ac) power for the AN/MSC-25 must be obtained from a local source (para. 22). Figures 9 and 10 are interior views of the AN/MSC-25; the locations of interior components are shown- in figures 14 through 19. The major components of the AN/MSC-25 are described in paragraph 8, and the van components in paragraph 9.

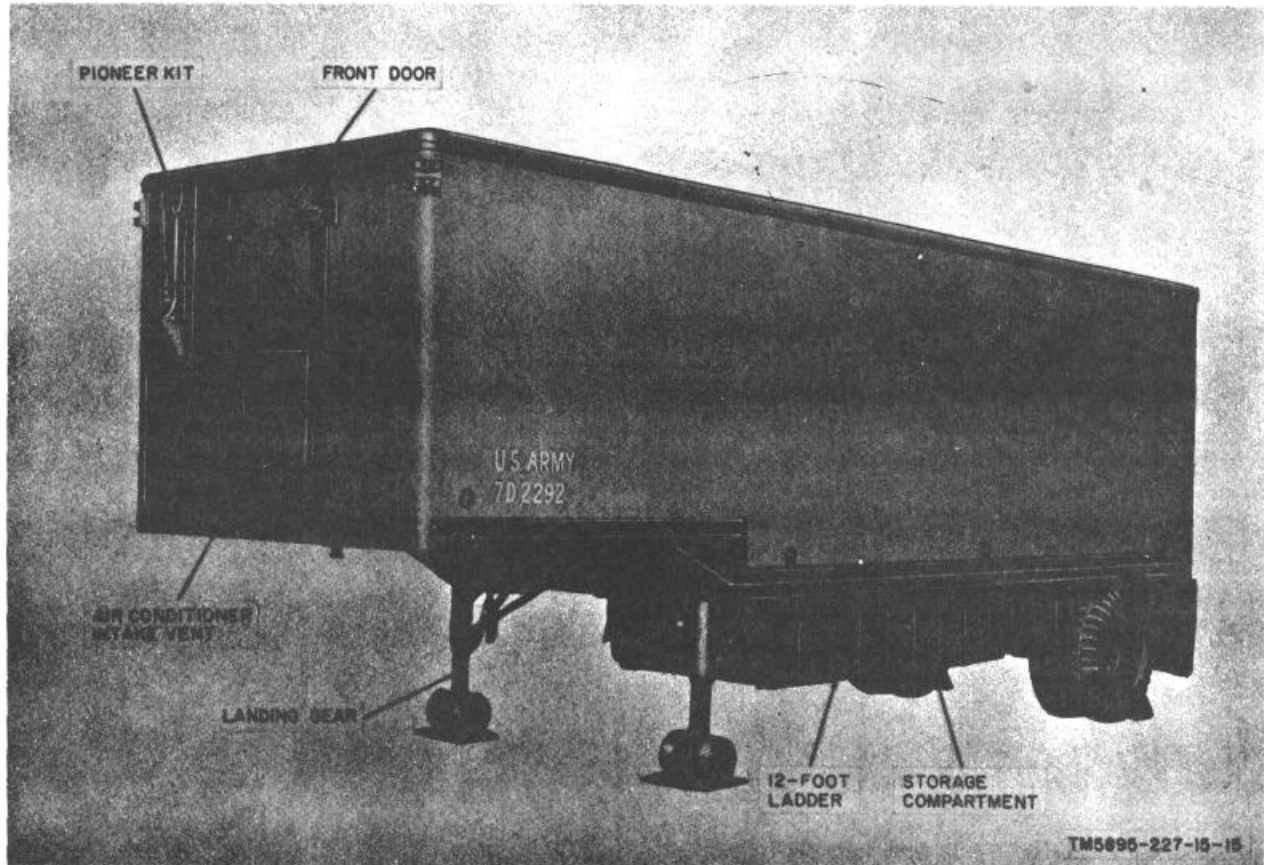


Figure 7. Operations Center, Communications AN/MSC-25, exterior front and roadside view.

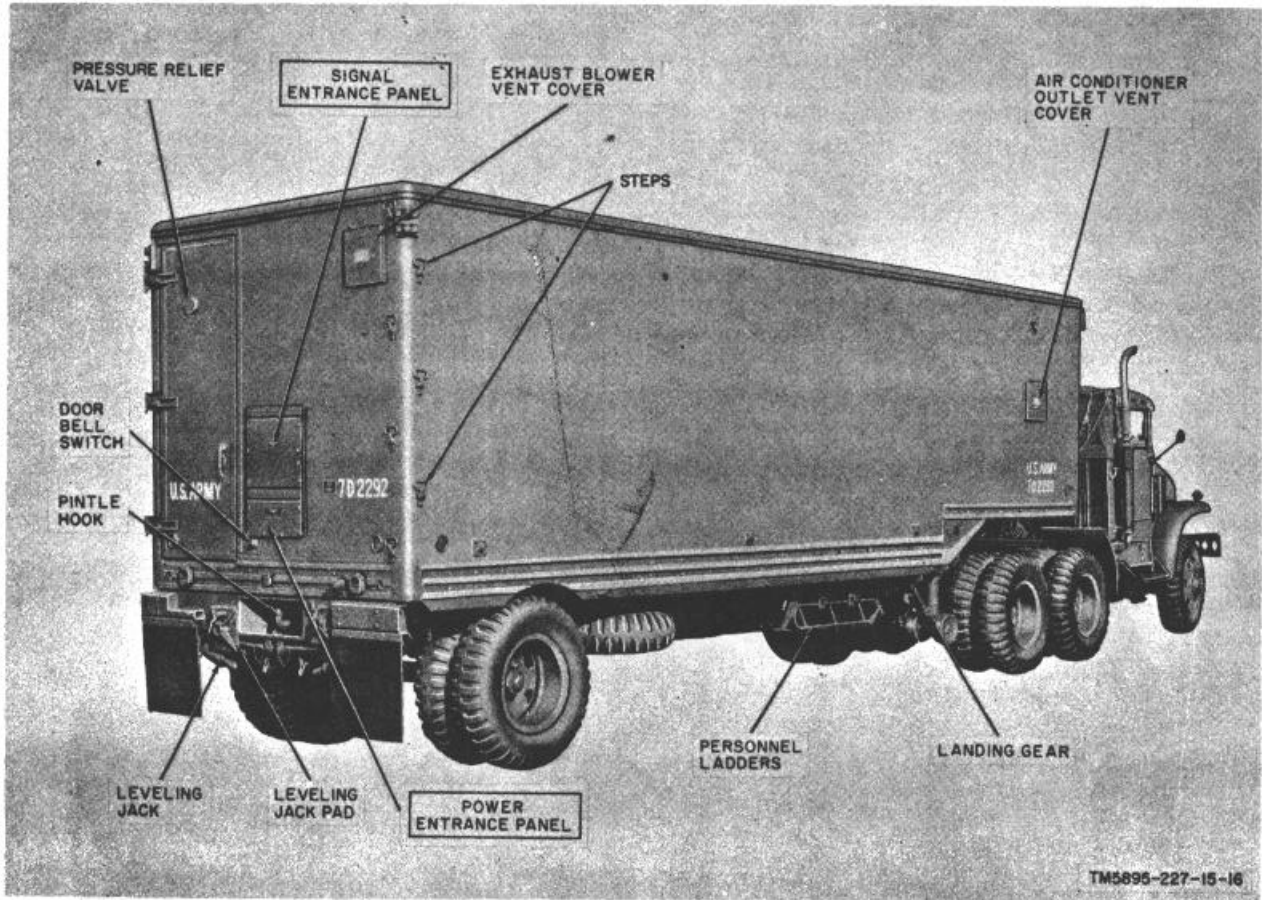


Figure 8. Operations Center, Communications AN/MS-25 and tractor, exterior rear and curbside view.

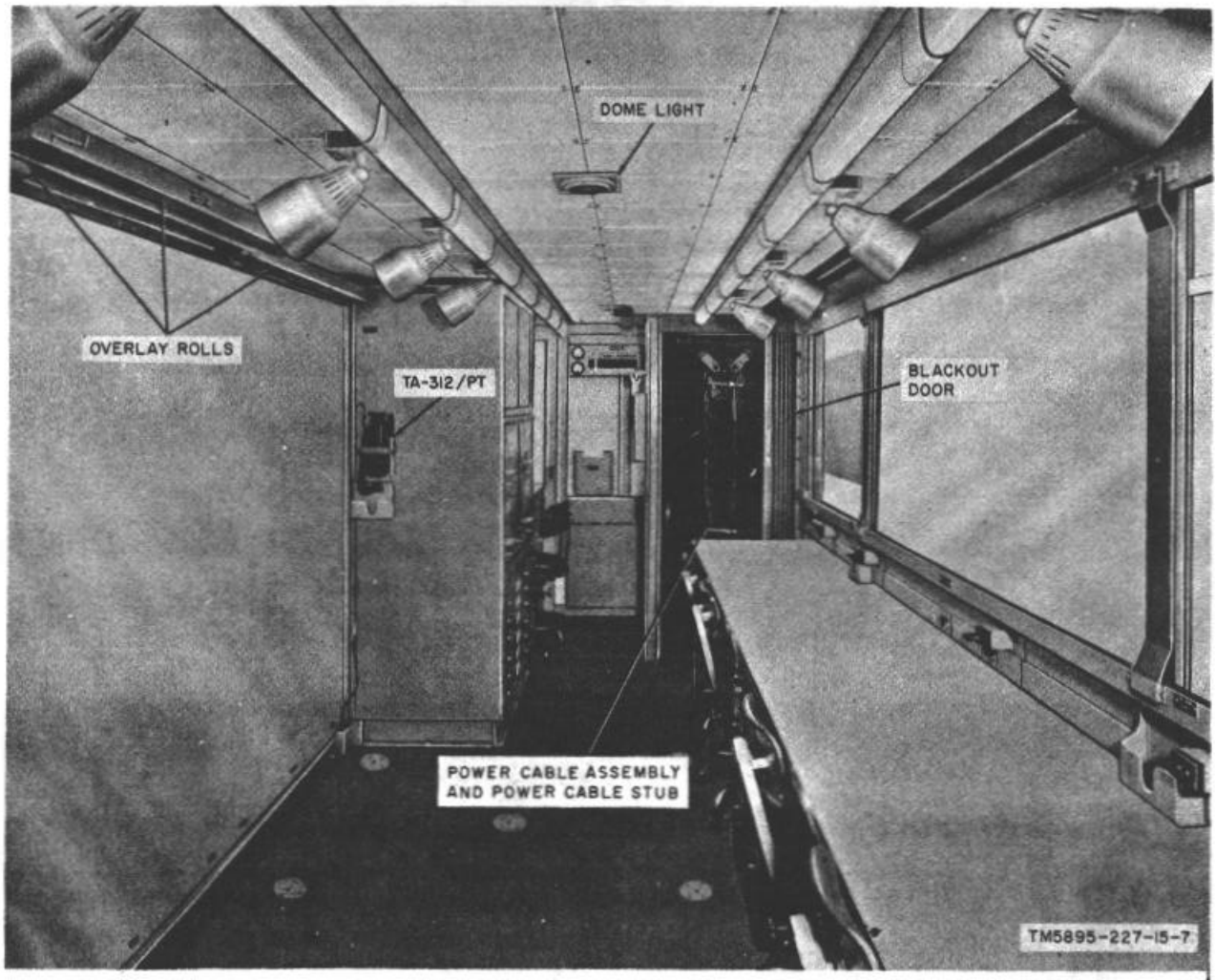


Figure 9. Operations Center, Communications AN/MSC-25, interior rear view.

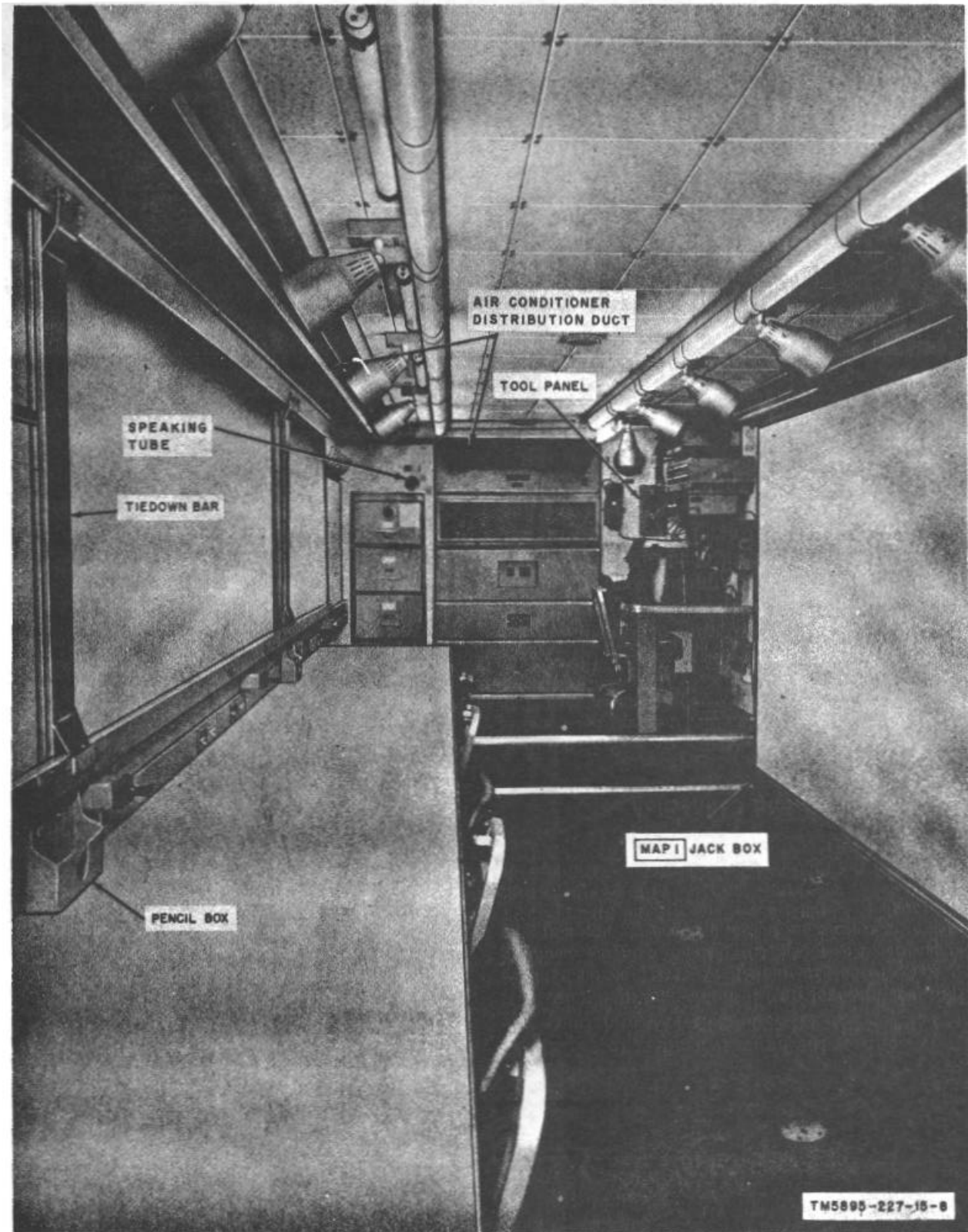


Figure 10. Operations Center, Communications AN/MSC-25, interior front view.

8. Description of Major Components of AN/MSC-25

a. *Semitrailer, Van, Electronic Equipment V-189/MSC-25* (figs. 7 and 8). The van is the component of the AN/MSC-25 in which all other components (para. 5 and 6) are installed. The van is divided into front and rear compartments by the front partition wall (figs. 14 and 15); each compartment has its own entrance door. A speaking tube is provided for communication between compartments. The front compartment is used chiefly as a storage area and the air-conditioned rear compartment, as the work area. A safe and file cabinet, equipped with a combination lock, and an air conditioner are mounted in the front partition wall. A lighted vestibule to the rear compartment is formed by a wall partition and an accordion blackout door (fig. 18). Lighttight vents for the air conditioner and the exhaust blower are on the outside wall. All equipment racks and mountings, ac power receptacles, and signal wiring required for mounting and operating the AN/MSC-25 components are installed in the van. Storage areas and installed mounting fixtures are provided for running spares and accessory items. The van can be moved by a tractor or transported by cargo aircraft and is fully insulated and weatherproofed.

- (1) *Lighting* (fig. 19). Twenty-two fluorescent lights and 10 incandescent spotlights provide lighting for the van. Three dome lights, which can be powered either from the tractor battery, or from the 24V DC battery supply (fig. 14) in the van, are provided for emergency lighting.
- (2) *Power and wiring*. Watertight receptacles in the power entrance box ((3) below) are provided for connecting the van to an ac power source. The ac power is routed through circuit breaker switches in the power distribution panel ((5) below) to the equipment power duct receptacles (figs. 14, 15, and 17). Signal connections are made at the 26-pair cable RECEPTACLE or to the binding posts in the signal entrance box ((4) below).
- (3) *Power entrance box*. The power entrance box (fig. 11) is mounted in-the exterior

rear wall of the van (fig. 8). It contains receptacles for connecting ac power (para. 22) to the van, and a duplex convenience ac receptacle (115V AC) equipped with a spring-loaded watertight cover. The power entrance box cover is equipped with folding side panels (not shown) for weather protection and is secured with captive screw-type fasteners.

- (4) *Signal entrance box*. The signal entrance box (fig. 12) is mounted in the exterior rear wall of the van (fig. 8). It contains a 26-pair cable receptacle and 29 pairs of binding posts. Binding post pairs No. 1 through 26 are for optional use in connecting signal circuits to the AN/MSC-25 (para. 23). The SPARE POS 1 binding posts provide a spare signal circuit to operating position 1 (fig. 15). The ANT (TRANS. and REC.) and FIL POWER binding posts are provided for connecting a radio equipment circuit.

Note

Radio equipment is not provided as a component of the AN/MSC-25.

- (5) *Power distribution panel* (fig. 13). The power distribution panel is located on the rear wall of the van (fig. 17). A glowlamp, associated with each power distribution circuit breaker switch (1 through 14), lights when the switch is at ON.
- (6) *Signal and power entrance panel*. The signal and power entrance panel is mounted on the interior rear wall (fig. 17) and is equipped with a removable cover. It provides access to the rear of the power entrance box and the signal entrance box.

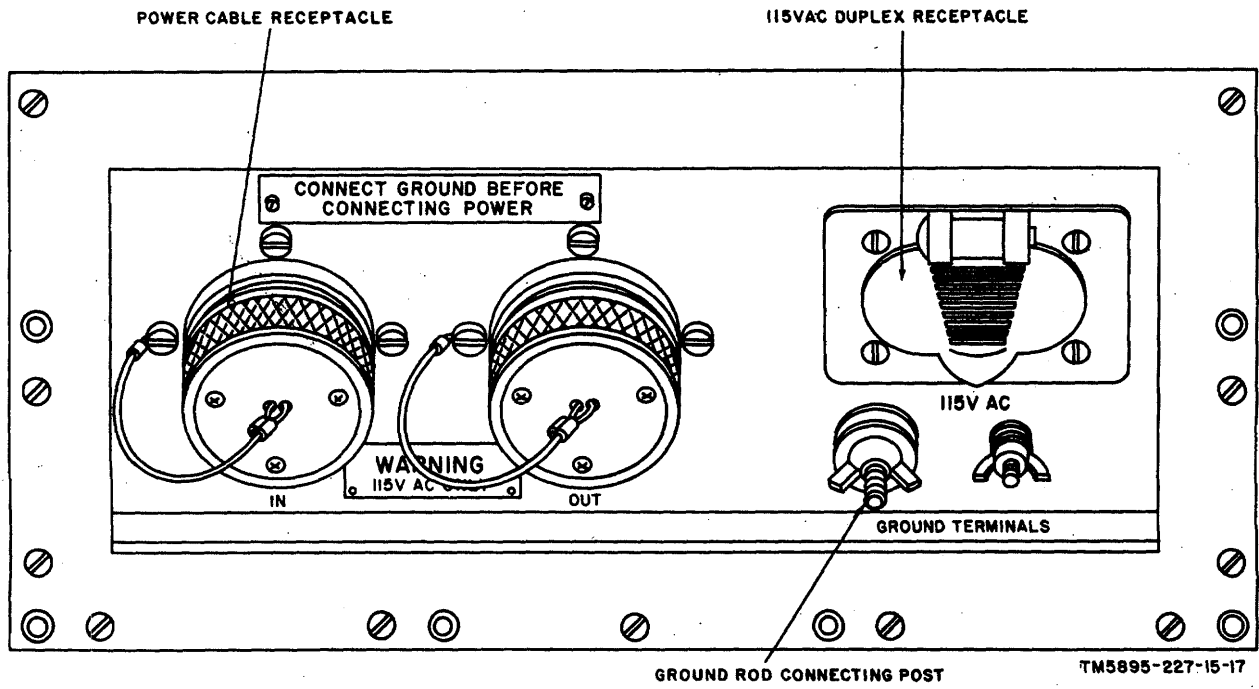


Figure 11. POWER ENTRANCE panel.

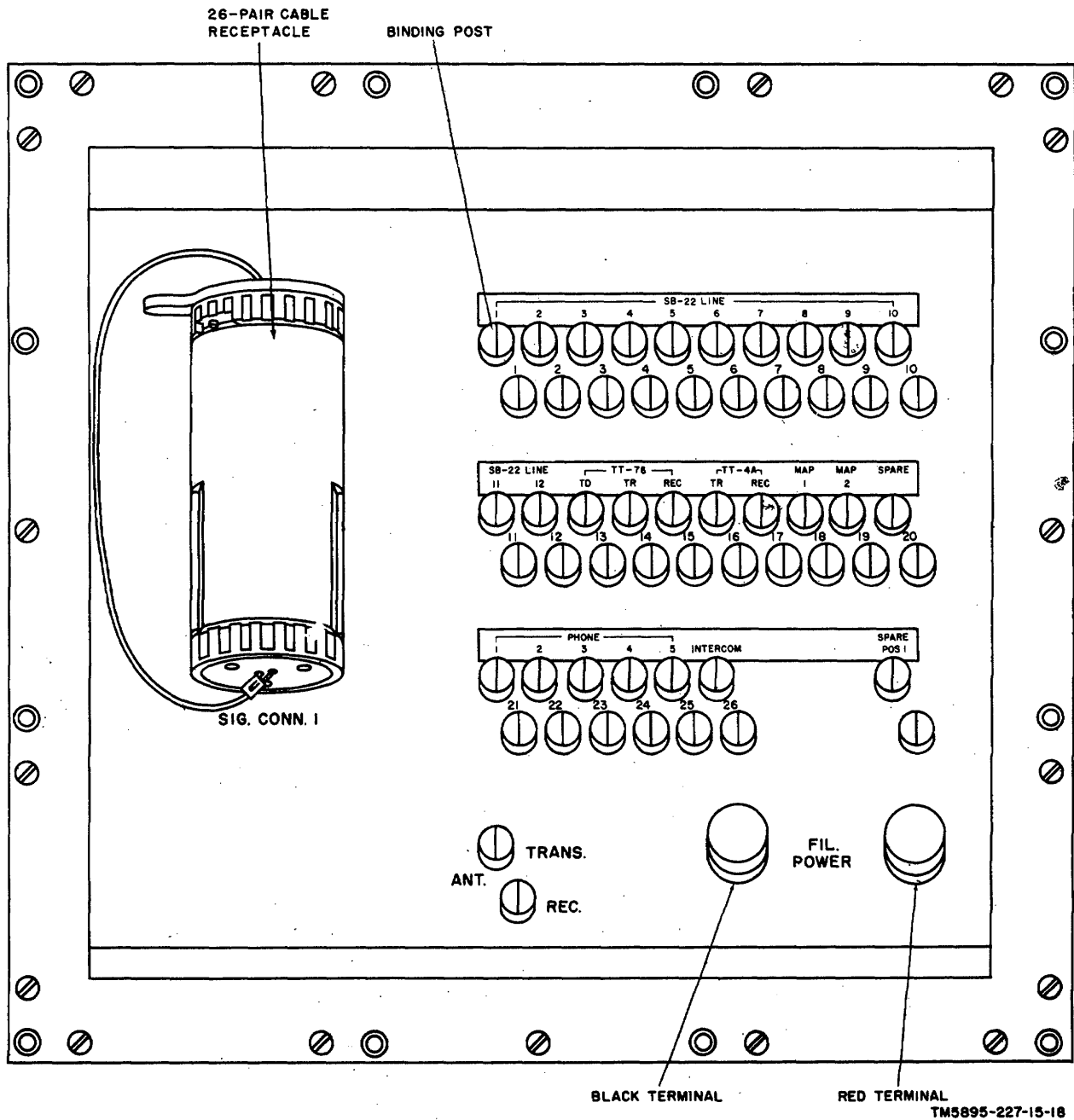


Figure 12. SIGNAL ENTRANCE panel.

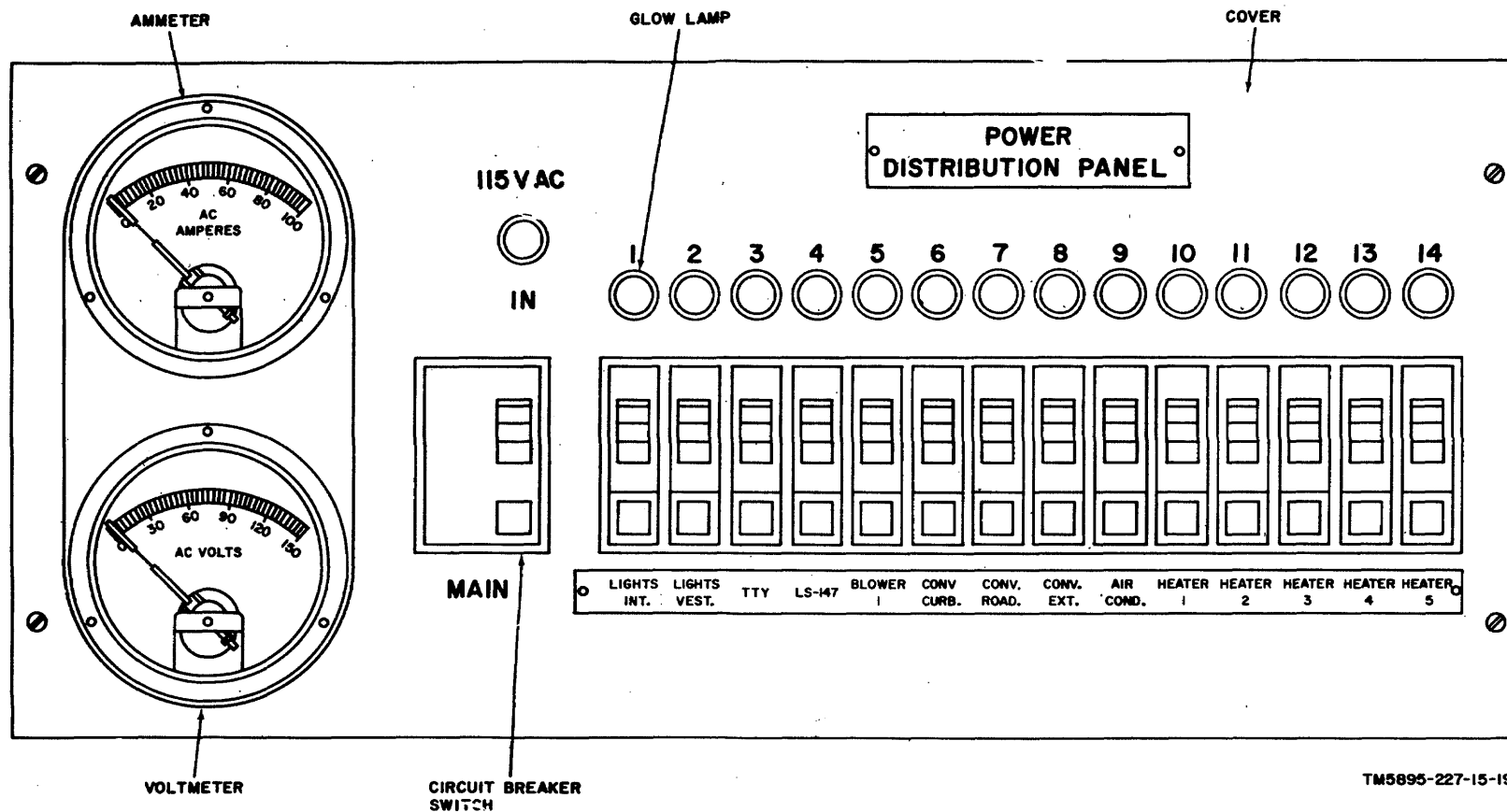


Figure 13. Power distribution panel.

b. *Switchboard, Telephone, Manual SB-22(*) /PT.* The SB-22(*)/PT (TM 11-5805-262-12) is mounted in a rack above the curbside tabletop (fig. 14). It is local battery switchboard with facilities for switching a maximum of 12 telephone and voice-frequency (vf) teletypewriter circuits.

c. *Telephone Set TA.-312/PT.* Three TA-312 /PT's (TM 11-2155) are mounted (less carrying cases) : one above the tabletop (fig. 14), one on the side of storage cabinet No. 1 (figs. 9 and 14), and one on the front, partition wall (fig. 16). Four TA-312/PT's are located in storage cabinet No. 1; when required for use, they should be placed on the roadside tabletop (fig. 15) adjacent to the PHONE jacks at positions 1 through 4. The TA-312/PT's are used for local telephone communication.

d. *Terminal, Telegraph TH-5/TG.* Two TH5/TG's (TM 11-5805-246-10) are rack mounted on the top shelf on the curbside wall (fig. 14). The TH-5/TG's are. used with the TT-76 (*)/GGC and the TT-4 (*)/TG,

e. *Reperforator-Transmitter, Teletypewriter TT-76(*)/GGC.* The TT-(*)/GGC (TM 11-2225) is mounted on the curbside tabletop (fig. 14). It is used for tape relay and manual keyboard operation in the AN/MSC-25.

f. *Teletypewriter TT-4(*)/TG.* The TT-4 (*)/TG (TM 11-5815-206-12) is mounted on the curbside tabletop (fig. 14). It is used for teletypewriter communication.

Figure 14. Operations Center, Communications AN/MSC-25, curbside. wall, elevation diagram.
(Located in back of manual)

Figure 15. Operations Center, Communications AN/MSC-25, roadside wall, elevation diagram.
(Located in back of manual)

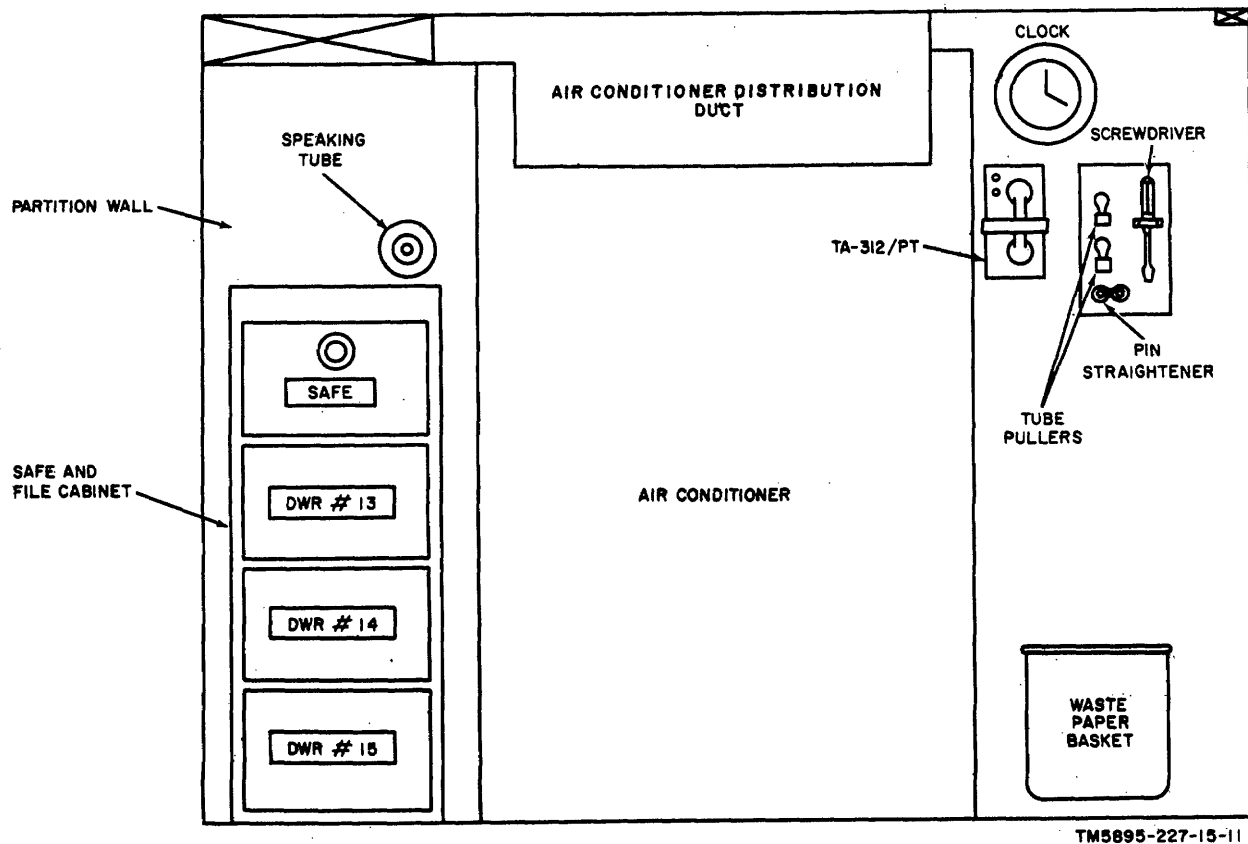


Figure 18. Operations Center, Communications AN/MSC-25, front partition wall, elevation diagram.

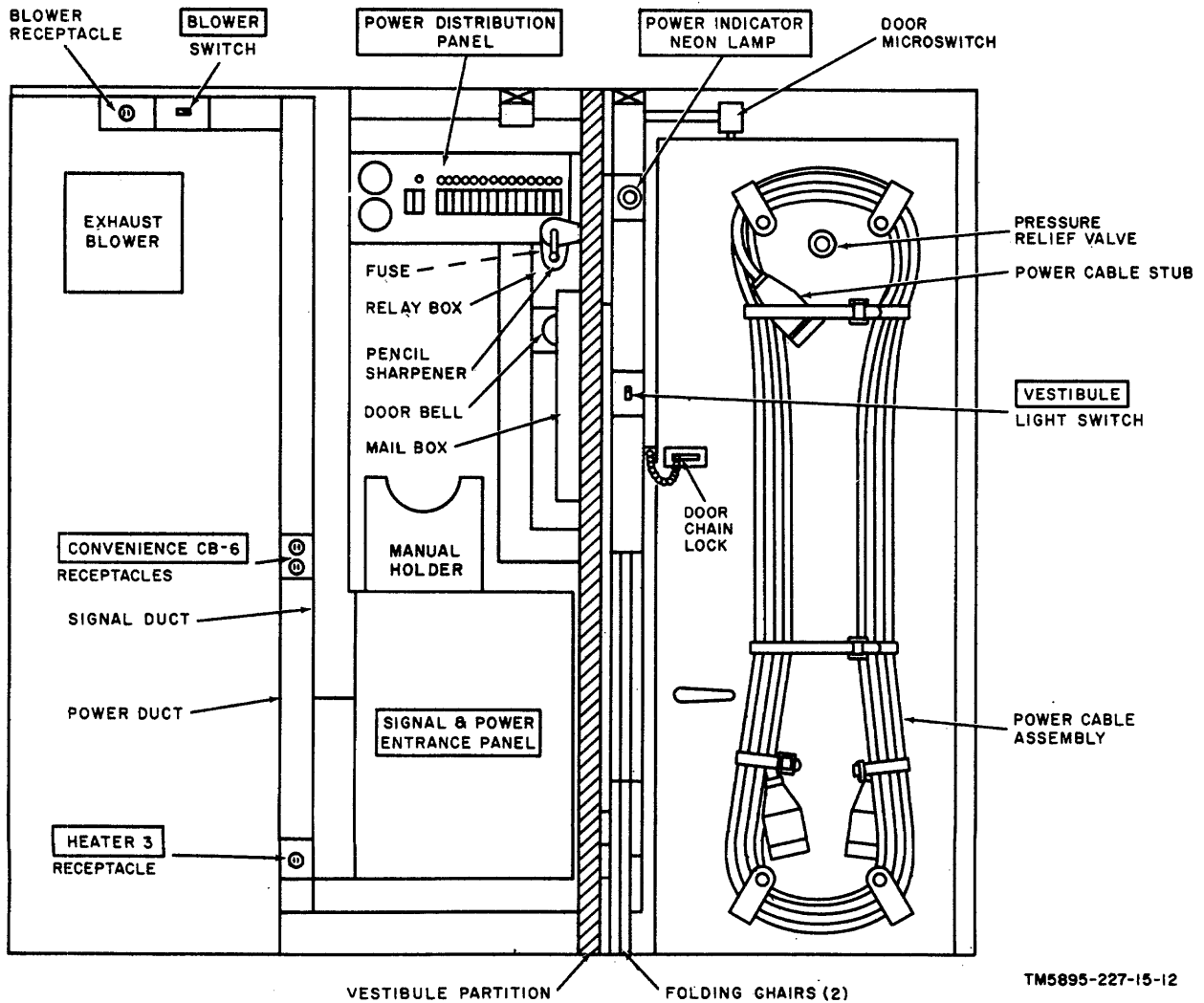


Figure 17. Operations Center, Communications AN/MSC-25, rear wall, elevation diagram.

Figure 18. Operations Center, Communications AN/MSC-25, floor plan.
(Located in back of manual)

Figure 19. Operations Center, Communications AN/MSC-25, ceiling plan.
(Located in back of manual)

9. Description of V-189/MSC-25 Components

a. *Electric Heaters.* (fig. 20). The electric heaters are secured in their mounting bases on the floor of the van (figs. 14 and 15). Each heater contains a 1.5-kilowatt heating element and a fan for air circulation. The fan operates when the heater is turned on, but may also be operated independently. Horizontal louvers on the front of the heater are adjustable to deflect the

airstream. Operating controls are on top of the heater; the power cord extends through a hole in the right side of the back cover plate.

b. *Exhaust Blower.* The exhaust blower, mounted on the rear wall (fig. 17), is equipped with a removable cover that muffles the sound when the blower is operating. An exhaust blower vent is provided (para. 8a).

c. *Clock*. An 8-day, luminous-dial, 24-hour clock is mounted on the front wall (fig. 16). A knob on the left-hand side is used for winding and setting the clock.

d. *Air Conditioner* (fig. 21). The air conditioner is mounted on the floor and extends through the front partition wall (fig. 16). It can be used for cooling or ventilating (para. 29d). An air duct, connected from the rear of the air conditioner to a lighttight air conditioner outlet vent (fig. 8), provides condenser air discharge to the outside of the van. The air duct connected to the front of the air conditioner (fig. 10) distributes conditioned air throughout the work area.

e. *Frequency Meter*. The frequency meter, located between the TT-76(*)/GGC and the TT-4 (*) /TG (fig. 14), measures the frequency of the ac voltage applied to the teletypewriter equipment.

f. *Handset-Headset H-144(*)/U*. Two H144 (*)/U's are stored in storage cabinet No. 1. An H-144 (*)/U is used with an 8-foot extension cord to allow greater freedom of movement at the display boards while operating a TA-312 /PT (para. 13).

g. *Patch Panel* (fig. 22). The patch panel is shelf mounted above the SB-22 (*)/PT (fig. 14). It consists of two jack strips and is used for rearranging telephone, teletypewriter, and switchboard circuits (para. 30).

h. *Display Boards*. Tactical, terrain, or communications maps can be fastened to the display boards, and information charted with grease pencil on transparent panels.

- (1) *Status boards*. The status boards (fig. 15) are provided with transparent sliding panels over a tackboard surface.

i. *Distribution Box J-1077A/U*. The J-1077A/U (fig. 14) contains 26 pairs of binding posts connected in parallel with two 26-pair cable receptacles and housed in a weather-resistant box. The cover of the box can be locked in the raised position when making wire and cable connections. The J-1077A/U can be used to connect field wire to 26-pair cables or to terminate and provide cross-connection facilities for cable circuits if the patch panel becomes inadequate or inoperative (para. 25b).

j. *Intercommunication Station LS-147(*)/FI* (fig. 23). The LS-147(*)/FI is mounted on the curbside wall (fig. 14). It provides two-way, non-private communication in a system that consists of other LS-147 (*) /FI's or equivalent equipment.

k. *LINE/BATTERY LIGHTING POWER TRANSFER relay*. The LINE/BATTERY LIGHTING POWER TRANSFER relay K1 is contained in the relay box mounted on the rear wall (fig. 17). The relay transfers battery lighting power to the dome lights during failure of the ac power supply.

l. Cords and Cables.

- (1) *Power cable assembly* (fig. 3). The power cable assembly is secured on the rear door (fig. 17). It is a 100-foot, three-conductor cable, with a watertight power connector on each end. It is used to connect the AN/MSC-25 to a power source (para. 22).
- (2) *Power cable stub* (fig. 2). The power cable stub is secured on the rear door (fig. 17). It is a 15-foot, three-conductor cable with a watertight power receptacle on one end and red, white, and black prepared leads on the other end. It is used to connect the AN/MSC-25 to a power source (para. 22).
- (3) *Telephone cords* (fig. 4). Each telephone cord is a two-conductor cord with a telephone plug on one end and prepared leads on the other; they are used to connect the TA-312/PT's (para. 13) and the LS-147(*)/FI.
- (4) *Patch cords* (fig. 4). The patch cords are secured on a hook adjacent to the patch panel (fig. 14). They are two-conductor cords equipped with a telephone plug at each end and are used with the patch panel.
- (5) *Handset-headset extension cord*. Two 8-foot handset-headset extension cords (fig. 2) are stored in storage cabinet No. 1. The extension cords are used to connect the H-144(*)/U's to TA-213 /PT's (para. 13) to allow freedom of movement at the display boards while operating a telephone.
- (6) *SB-22/PT cable stub*. The SB-22/PT cable stub is 3 feet long and is equipped with a 26-pin connector on one end and prepared leads on the other. It is used to connect the SB-22/PT to its receptacle (para. 12).

- (7) *Cable Assembly, Telephone CX-4566 /G (250 ft.) (fig. 3).* The CX-4566/G consists of a 250-foot, 26-pair cable, equipped with a 26-pair connector on each end, and is wound on Reel RC-435/U. The CX-4566/G is secured to the floor of the front compartment (fig. 18).
- (8) *Cable Assembly, Telephone CX-4760 /U (15 ft.) (fig. 2).* The CX-4760/U (26-pair cable stub) is stored in a storage cabinet. It is 15 feet long and is equipped with a 26-pair connector on one end and prepared leads on the other end. It is used to adapt a 26-pair cable for connection to binding posts (para. 25b).

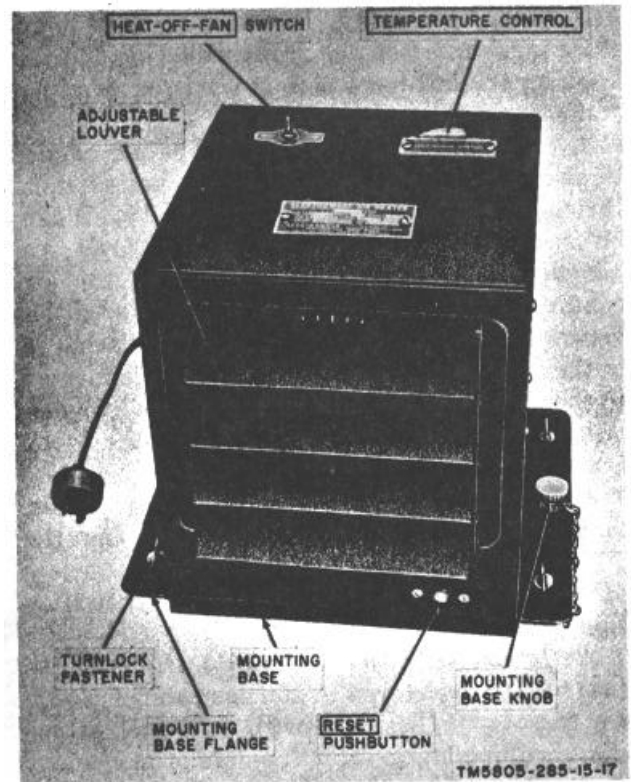
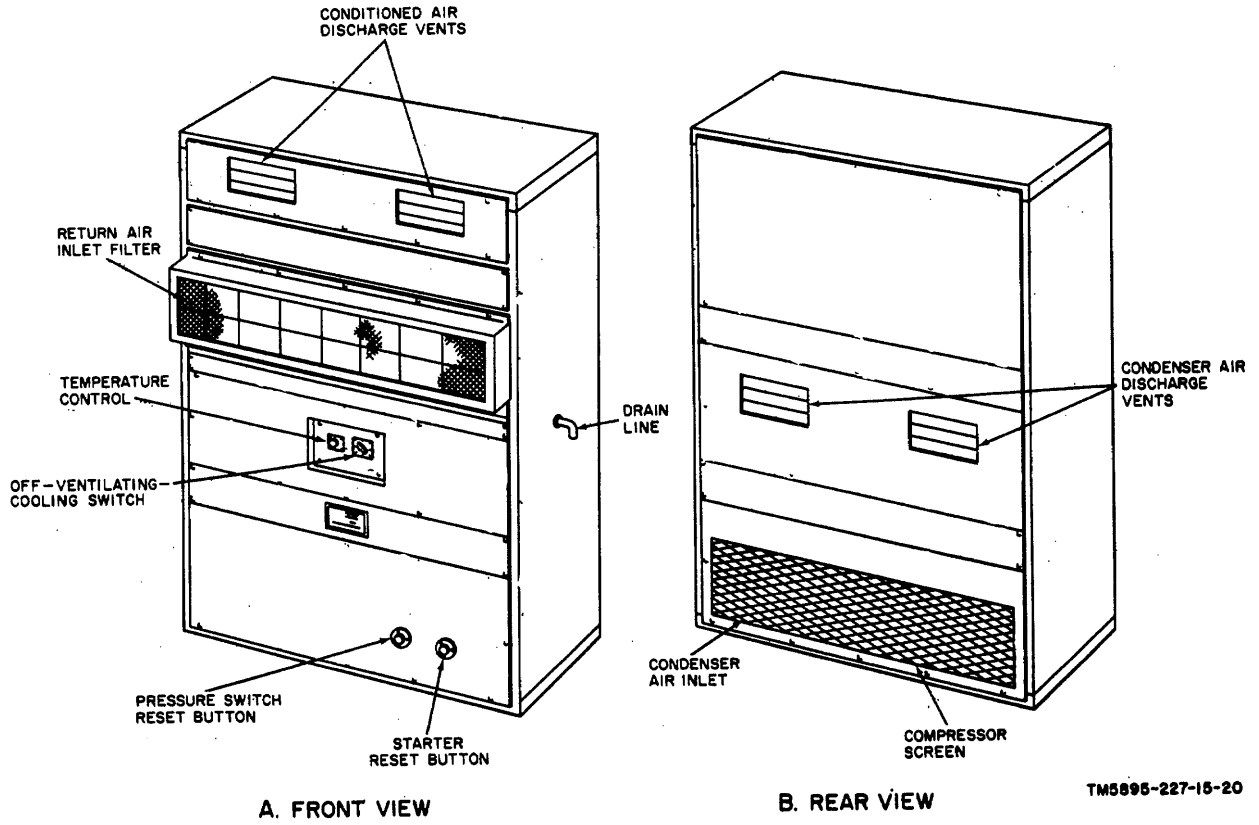


Figure 20. Electric heater.



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Figure 21. Air conditioner.

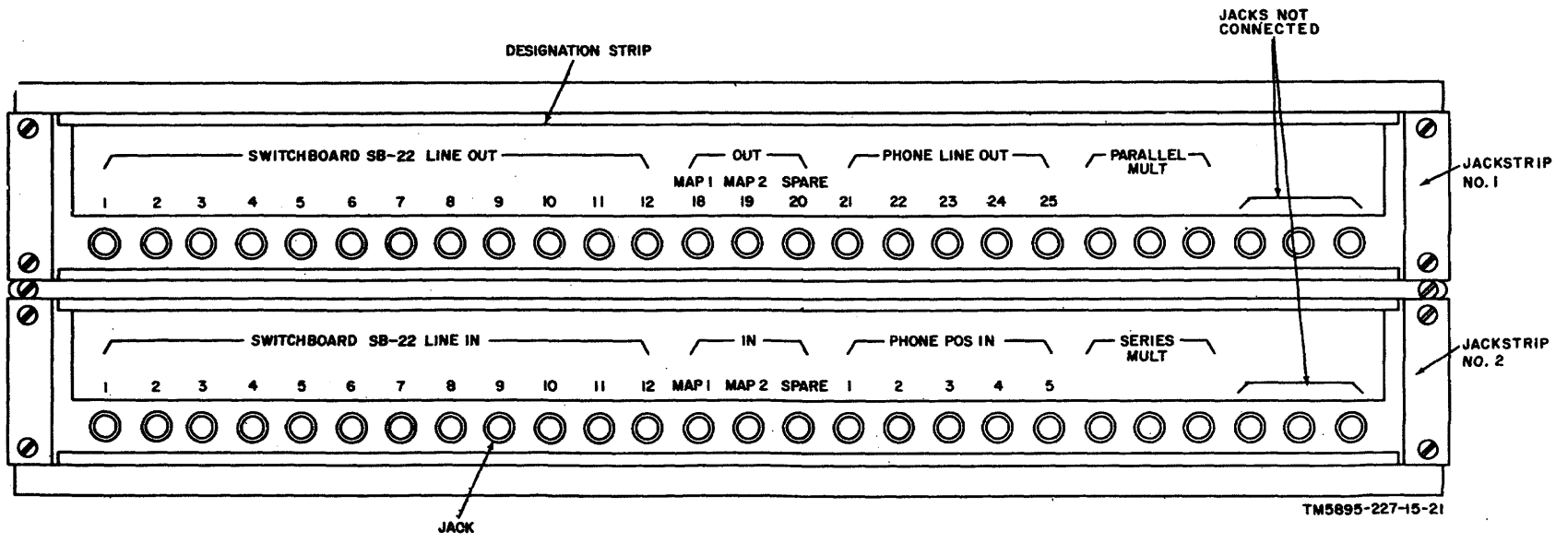


Figure 22. Patch panel.

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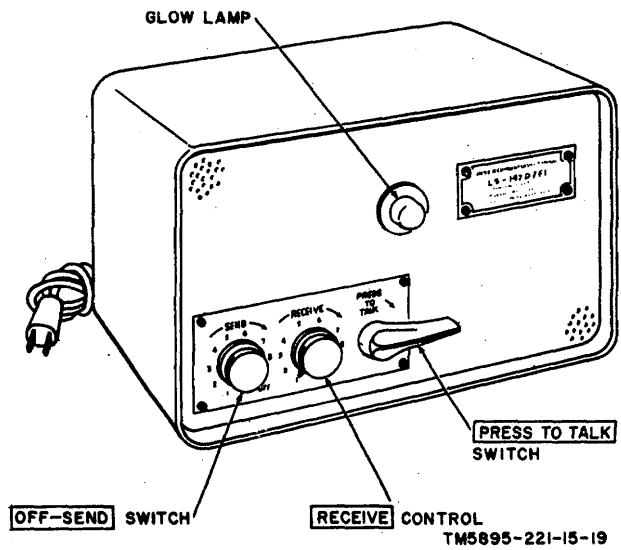


Figure 23. Intercommunication Station LS-147(*)/F1.

**CHAPTER 2
INSTALLATION AND PREOPERATIONAL PROCEDURES**

Section I. INSTALLATION, CONNECTION, AND TESTING OF INSTALLED EQUIPMENT

10. General

a. When an AN/MSC-25 is received, check it (para. 11), and then perform the tests in paragraph 18. When a V-189/MSC-25 (para. 8a and 9) is received, perform the procedures in (1) through (7) below.

- (1) Check the equipment (para. 11).
- (2) Install and connect the SB-22(*)/PT (para. 12).
- (3) Install and connect the TA-312/PT's (para. 13).
- (4) Install and connect the TH-5/TG's (para. 14).
- (5) Install and connect the TT-76 (*)/GGC (para. 15).
- (6) Install and connect the TT--4 (*)/TG (para. 16).
- (7) Test the equipment after installation (para. 18).

Note. When Multimeter TS-297/U or an equal size meter is issued for use with the AN/MSC-25, it can be stored in the TS-297/U storage box (fig. 14). Install the canopy (para. 17) as required.

b. The signal duct contains all the wiring required to connect the communications equipment to the external lines. All wiring is appropriately marked and prepared for connection. The signal schematic-wiring diagram (fig. 42) supplements the information given in the connection procedures. The power duct contains power receptacles appropriately marked for each piece of equipment that requires ac power.

c. The tool roll kit (fig. 2) is required for installation and connection of components.

Note

Ground the van (para. 21) and connect the power (para. 22) before using the lights or the convenience receptacles.

11. Check of Equipment Received

Check the contents of the AN/MSC-25 or the V-189/MSC-25 against the packing list. If the packing list is not available, use the tables of 24 components (para.

5 and 6) to check the equipment that *probably* was packed. Examine the equipment for damage and prepare DD Form 6 (para. 2b) as required.

12. Installation and Connection of SB-22(*)/PT

a. Remove the front cover' of the SB-22(*) /PT (TM 11-5805-262-12).

b. Remove headset-handset from the front cover and store the cover.

c. Open the rear cover of the SB-22 (*)/PT.

d. Install four Batteries BA-30 in the battery case and ground the SB-22 (*)/PT.

Note

Connect the SB-22(*)/PT ground lead to the ground terminal adjacent to the TH-5 TT-4 receptacle (fig. 14).

e. Connect the prepared leads from the SB22/PT cable stub to the SB-22 (*)/PT binding posts according to the chart below.

Wire pair NO	Wire colors	SB-22 (*) /PT binding Post pair No.
1	Brn-blk-blk, Brn-blk	1
2	Brn-red-red, Brn-red.....	2
3	Brn-yel-yel, Brn-yel	3
4	Brn-vio-vio, Brn-vio	4
5	Brn-wht-wht, Brn-wht	5
6	Red-wht-wht, Red-wht.....	6
7	Orn-blk-blk, Orn-blk	7
8	Orn-red-red, Orn-red.....	8
9	Orn-yel-yel, Orn-yel	9
10	Orn-vio-vio, Orn-vio	10
11	Orn-wht-wht, Orn-wht.....	11
12	Grn-blk-blk, Grn-blk	12

f. Turn the tiedown knobs underneath the SB-22 (*) /PT mounting rack at position No. 5 (fig. 14), and raise the retaining bar inside the rack.

g. Place the SB-22 (*)/PT in the mounting rack; replace the retaining bar and secure it in place by turning the tiedown knobs (f above).

h. Connect the SB-22 (*)/PT cable stub connector plug to its receptacle in the signal duct (fig. 14).

i. Connect the handset-headset to the SB-22 (*)/PT (TM 11-5805-262-12) and place the handset-headset on the hook provided (fig. 14).

Note

To operate the SB-22(*)/PT on the tabletop at position No. 4 (fig. 15) instead of in the mounting rack at operating position 5, perform the procedures in *a* through *e*, *h*, and *i* above and use the SB-22(*)/PT receptacle at operating position 4. Place the SB-22 (*)/PT on the rubber mat provided (stored in storage drawer No. 12).

13. Installation and Connection of TA-31 2/PT

Note

When the TA-312/PT's are used at the roadside tabletop locations (fig. 15), they are not installed in mounting brackets (*a* below). Connect each TA312/PT as described in *b* below.

a. Installation in Mounting Bracket.

- (1) Loosen the wingnut on the side of the mounting bracket (fig. 24).
- (2) Rotate the clamping arm to obtain access to the flathead screw on the side of the mounting. Tighten the wingnut.

- (3) Use a screwdriver to remove the flathead screw that secures the holding plate (inside the mounting bracket).
- (4) Remove the TA-312/PT from its carrying case; store the case.
- (5) Insert the holding plate into the buzzer recess in the side of the TA-412/PT.
- (6) Place the TA-312/PT in the mounting bracket and replace the flathead screw.

b. Connection.

- (1) Connect the prepared leads of a telephone cord to the LINE binding posts on the TA-312/PT.

Note

Install two Batteries BA-30 in the battery compartment and operate the LB-CB-CBS switch to LB.

- (2) Connect the telephone plug into the appropriate PHONE jack in the signal duct at positions No. 1 through 5 or at the MAP 1 or MAP 2 positions (figs. 14 and 15).

Note

Use the 8-foot extension cord (para. 9(5)) to permit greater freedom of movement at the display boards by connecting it between receptacle connector U-79/U on the TA-312/PT and the connector plug on the H-144 (*)/U.

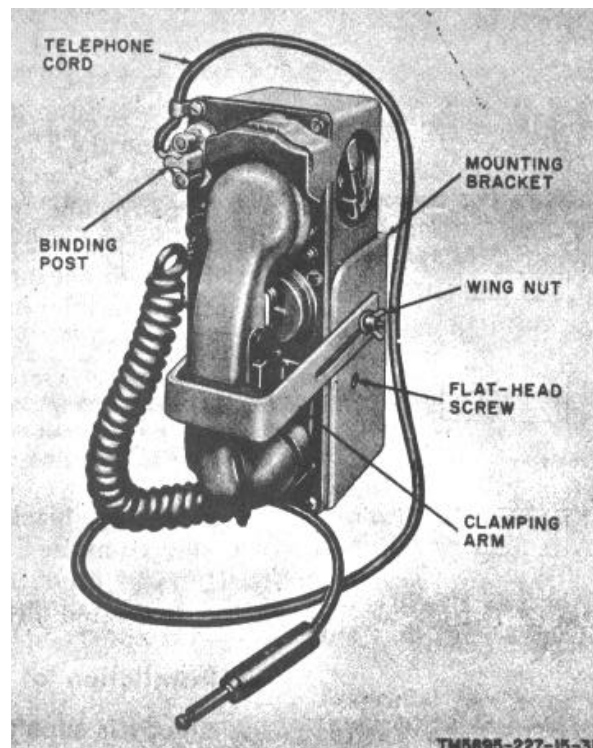


Figure 24. Telephone Set TA 312/PT, installed for transit.

14. Installation and Connection of TH-5/TG's

- a. Remove the TH-5/TG front panel and chassis assembly from its case (TM 11-5805246-20).
- b. Remove the spare fuses from the cover assembly and store them in a storage drawer. Store the TH-5/TG case.

- c. Place the TH-5/TG in its mounting rack (fig. 14) and tighten the captive screws on the front panel to secure the TH-5/TG in position.
- d. Connect the wires from the signal duct at each mounting position to the TH-5/TG's as listed in the chart below.

Wire No.	Wire color	Connect at TH-5/TG associated with TT-76(*)/GGC to binding post No.	Connect at TH-5/TG associated with TT-76(*)/GGC to binding post No.
1	Black.....	..... 1	
2	Red.....	..... 2	
3	Orange.....	..... 3	
4	Yellow.....	..... 4	
5	Green.....	..... 5	
6	Blue.....	..... 6	
3	Orange.....	.....	3
4	Yellow.....	.....	4
5	Green.....	.....	5
6	Blue.....	.....	6

- e. Insert the power cord connector plug of the TH-5/TG associated with the TT-7 (*)/GGC into its power duct receptacle (TH-5 TT-76).
- f. Insert the power cord connector plug of the TH-5/TG associated with the TT-4(*)/TG into its power duct receptacle (TH-5 TT-4).

15. Installation and Connection of TT-76(*)/GGC.

- a. Remove the wooden shipping base and the dust cover from the TT-76(*)/GGC (TM 11-2225).
- b. Place the TT-76 (*) /GGC in position (fig. 14). Aline the holes in the TT-76(*)/GGC base with the holes in the tabletop. Secure the TT-76(*)/GGC in place with the nuts and bolts provided; attach the nuts at the underside of the tabletop.
- c. Perform the appropriate preinstallation services and preparation for starting procedures (TM 11-2225).

Note

Use the appropriate TH-5 TT-76 receptacle (fig.14) and adjacent ground for ground and power connections (TM 11-2225). Energize the teletypewriter ac supply circuit (para. 28) as required.

- d. Replace the dust cover on the TT-76(*)/GGC and fasten the web strap across the top of the dust cover.
- e. Insert the gray, black, and red teletypewriter connecting cord plugs from the TT-76(*)/GGC into the SEND, SEND, and REC jacks, respectively, of the associated TH-5/TG.

16. Installation and Connection of TT-4(*)/TG

- a. Perform the appropriate service upon receipt of equipment procedures (TM 11-5815-206-12).
- b. Remove the wingnuts from the underside of the TT-4(*)/TG tabletop position (fig. 14) and remove the retaining bars.
- c. Position the TT-4(*)/TG on the tabletop. Place the retaining bars in the packboard lashing hooks on the TT-4(*)/TG and through the holes in the tabletop.
- d. Replace and tighten the wingnuts (b above).
- e. Perform the appropriate preliminary installation and final installation procedures (TM 11-5815-206-12).

Note

Use the appropriate TH-5 TT-4 receptacle (fig. 14) and adjacent ground for motor power and protective ground connections (TM 11-5815-206-12). Energize the teletypewriter ac power circuit (para. 28) as required.

- f. Insert the black teletypewriter connecting cord plug from the TT-4(*)/TG into one of the SEND jacks, and the red into the REC jack of the associated TH-5/TG.

17. Installation of Canopy

A canopy is supplied with the van for use in shading the roof of the van from direct sunlight in hot climates, or as warranted by other climatic conditions. Follow the

procedures in a through j below to install the canopy.

a. Remove the tarpaulin and two lashing ropes from the storage compartment (fig. 7) and remove the canopy bows (fig. 25).

b. Install a curved bow at the front and rear of the van roof (fig. 26), and the straight bows, by positioning the bow locating pins and securing the bow wingnuts. Use the 12-foot ladder (para. 20d).

c. Place the folded tarpaulin on the front of the van roof with the edge marked FRONT parallel with the front edge of the roof.

d. Unfold the tarpaulin one fold and center the tarpaulin center rope.

e. Tie one end of a lashing rope to a curbside

bowhook (fig. 25).

f. Loop the lashing rope around the curved bow and through each grommet on the front of the tarpaulin and tie the other end of the lashing rope to the roadside bowhook.

g. Tie the front tarpaulin center rope to the cleat on the front edge of the van roof.

h. Unfold the tarpaulin, working from front to rear, and tie the side tarpaulin ropes to the bowhooks.

i. Tie down the rear end of the tarpaulin as in e, f, and g above.

j. Tighten the rear tarpaulin center rope sufficiently to pull the tarpaulin securely over the bows.

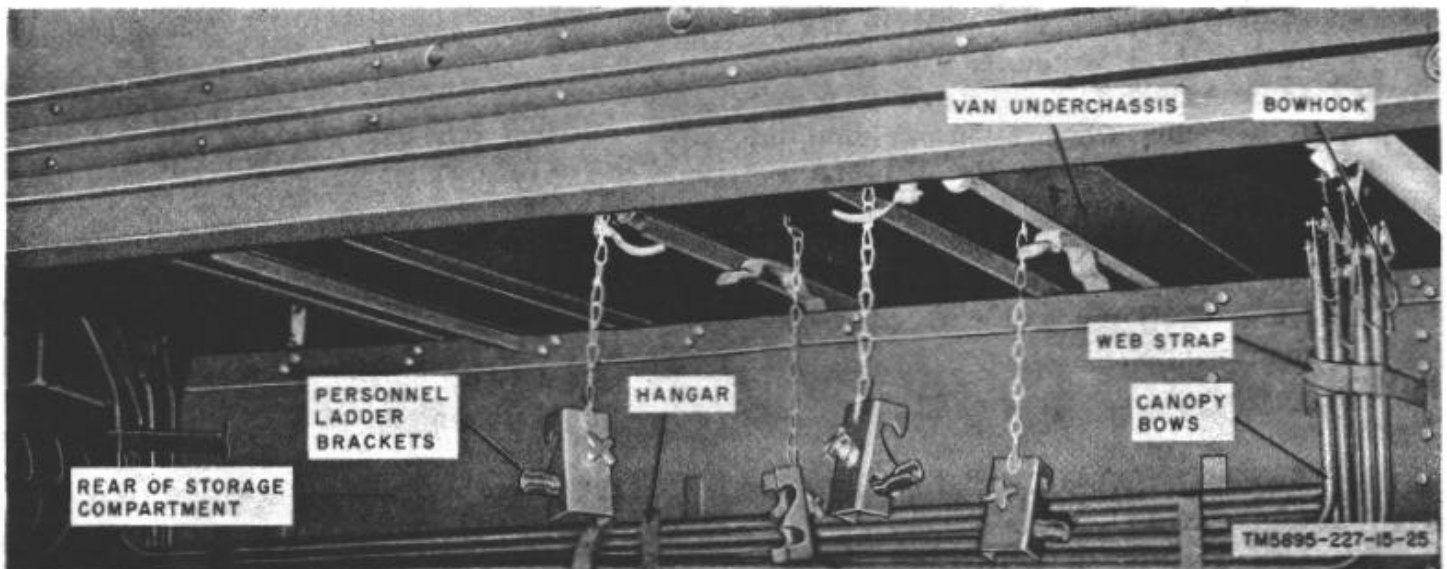


Figure 25. Storage of canopy bows.

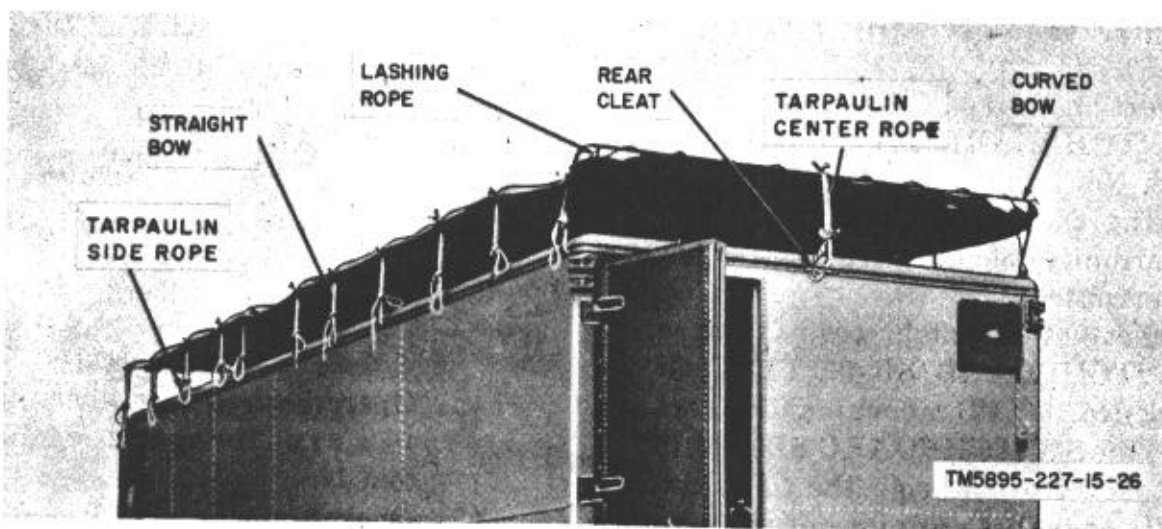


Figure 26. Canopy installed.

18. Testing of Equipment After Installation

a. Preliminary Procedure.

- (1) Ground the V-189/MS-25 (para. 21) and make power connections (para. 22) before using the lights and convenience receptacles. For test purposes, any satisfactory ground may be used in place of the ground rods.
- (2) Energize the van lighting circuits (paras. 28a through e).

Note

Refer to paragraph 27 for information covering the V-189/MS-25 controls and instruments.

- (3) Connect the CX-4760/U (15 ft.) (para. 24) to the 26-pair cable receptacle in the signal entrance box (fig. 12).
- (4) Remove Distribution Box J-1077A/U from its mounting (fig. 14).
- (5) Connect the prepared leads of the CX4760/U to the binding posts on the J1077A/U in sequence. For example, connect the CX-4760/U pair 1 (A and B, wht-blu, wht-orn-blu) to binding post pair No. 1 on the J-1077A/U; CX-4760/U pair 2 (A and B, wht-brn-blu, wht-gy-blu) to binding post pair No. 2, etc. Refer to A, figure 41 for CX-4760/U pin and wire color code identification.

b. S3B-22()/PT and TA-S12/PT Test Procedure.*

- (1) Remove a TA-312/PT from storage cabinet No. 1.
- (2) Use field wire to connect the TA-312/PT to binding post pair No. 1 in the J-1077A/U and perform talking and ringing tests over SB-22 (*)/PT line No. 1.
- (3) Insert one end of a patch cord into the SWITCHBOARD SB-22 LINE OUT jack No. 1 at the patch panel (fig. 22) during the talking test ((2) above). Continuity of the circuit should be interrupted.
- (4) Remove the patch cord from the SWITCHBOARD SB-22 LINE OUT jack No. 1 ((3) above) and insert it into the SWITCHBOARD SB-22 LINE IN jack No. 1 during the talking test ((2) above). Continuity of the circuit should be interrupted.
- (5) Connect the other end of the patch cord

as in (3) above. Continuity of the circuit should be completed.

- (6) Remove the connections to binding post pair No. 1 of the J-1077A/U ((2) above) and connect the TA-312/PT to binding post pairs No. 2 through 12, in turn. Perform ringing and talking tests and patch panel jack tests at SWITCHBOARD SB-22 LINE OUT ((3) above) and SWITCHBOARD SB-22 LINE IN ((4) above), and continuity tests ((5) above) for each SB-22 (*)/PT line.
- (7) Connect the TA-312/PT to binding post pairs No. 13 through 25 of the J-1077A/U, in turn.
- (8) Connect another TA-312/PT (para. 13b) to the MAP 1, MAP 2, and PHONE 1 through 5 jacks (figs. 14 and 15) in turn.
- (9) Perform talking and ringing tests between the TA-312/PT's. For example, ring and talk between the TA-312/ PT's connected at binding post pair No. 13 ((7) above) and the MAP 1 jack ((8) above).
- (10) Perform jack performance tests as in (3), (4), and (5) above at the OUT MAP 1-IN MAP 1, OUT MAP 2-IN MAP 2, PHONE LINE OUT 21 (through 25)-PHONE POS IN 1 (through 5) jacks.
- (11) Remove the field wires from the TA312/PT and J-1077A/U.

c. TT-76()/GGC, TT-4(*)/TG, and THS5/TG Test Procedure.*

- (1) Connect jumper wires between the binding post pairs on the J-1077A/U as indicated in the chart below.

Binding post pair connections		Color code of CX4760/U leads being jumpered
From-	To-	
14	17	Wht-blu-red to wht-brn-brn Wht-yel-red to wht-grn-orn
15	16	Wht-red-red to wht-blk-orn Wht-gy-red to wht-orn-orn

- (2) Operate circuit, breaker switch No. 3 (TTY) on the power distribution panel to ON.
- (3) Operate the TH-5 TT-4 and TH-5 TT-76 switches (fig. 14) to ON.

- (4) Arrange the TT-4(*)/TG (TM 115815-206-12), TT-76(*)/GGC (TM 11-2225), and the TH-5/TG (TM 115805-246-10) for four-wire, full-duplex operation.
- (5) Send from the TT-4(*)/TG and observe the receive tape on the TT-76(*)/GGC for correct copy.
- (6) Send first from the keyboard and then from the transmitter-distributor of the TT-76(*)/GGC and observe for correct copy

- on the TT-4(*)/TG.
- (7) Operate the TH-5 TT-4 and TH-5 TT-76 switches (fig. 14) to OFF.
- (8) Operate circuit breaker switch No. 3 (TTY) to OFF.
- (9) Remove the jumper wires ((1) above) from the J-1077A/U.
- (10) Disconnect and store the CX-4760/U and the J-1077A/U.

Section II. PREOPERATIONAL PROCEDURES

19. Siting

The location of Operations Center, Communications AN/MSC-25 in relation to other components of an area-type communications system depends on the tactical situation and local terrain considerations. The AN/MSC-25 should be located on firm, level, dry ground with good drainage and positioned to facilitate connections to the entrance boxes.

20. Disposition of Semitrailer, Van, Electronic Equipment V-1 89/MSC-25

a. Uncoupling Van. After the van has been positioned at the operating site, uncouple the van from the tractor as in (1) through (12) below.

- (1) Apply the van brakes by operating the airbrake controller in the tractor cab.
- (2) Place the wheel chocks under the rear wheels of the van (fig. 28).
- (3) Loosen the fasteners that secure the bearing plates (fig. 27) to the underside of the van; place a bearing plate in position below each landing gear.
- (4) Unhook the cranks from their hangars on the underside of the van.

Caution

Make sure that the bearing plates are on a hard surface before lowering the landing gear. If the bearing plates (and landing gear) settle deeply into a soft surface, leveling (c

below) and recoupling the van will be extremely difficult.

- (5) Insert a crank into each crankshaft (pushed in for high speed operation) and station a man at each crank.
- (6) Turn the cranks simultaneously until the wheels of each landing gear rest on the bearing plate.
- (7) Close the cutoff cocks on the tractor airbrake hoses.
- (8) Disconnect both airbrake hoses from the van by raising each hose coupling until it is free. Disconnecting the airbrake hoses automatically sets the airbrakes on the van.
- (9) Couple the tractor hoses together. Place the dust caps on the van couplings.
- (10) Disconnect the lighting cable and directional signal cable from the van and close the hinged cover of the lighting cable receptacle.
- (11) Move the coupler release (on the fifth wheel of the tractor) to the unlocked position.
- (12) Drive the tractor forward slowly and allow the van coupler to slide down the ramp of the fifth wheel. Low tractor speed will minimize the impact when the weight of the van is transferred to the landing gear.

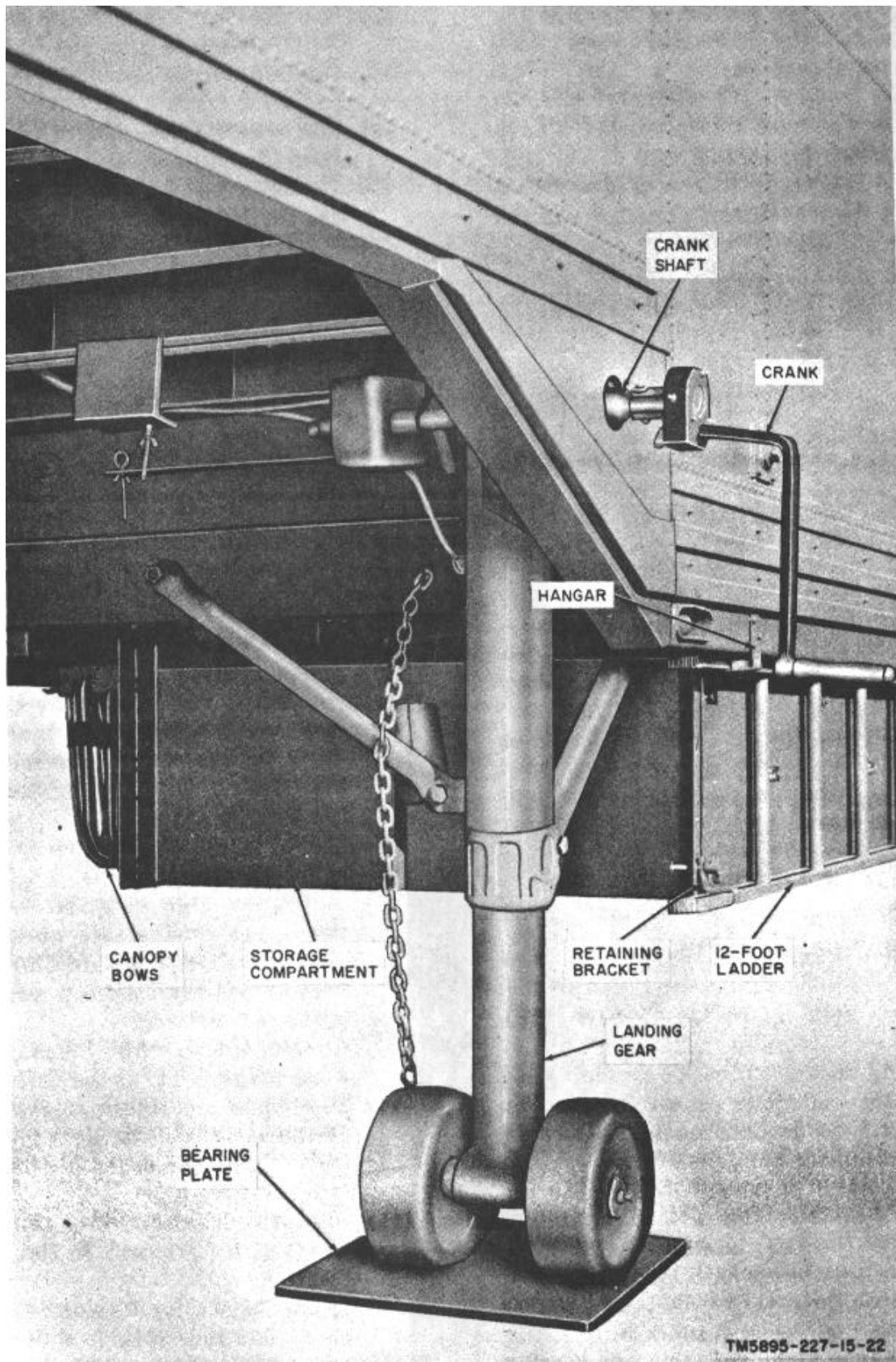


Figure 27. Semitrailer, Van, Electronic Equipment V-189/MSC-25, landing gear and external storage facilities.

b. Lowering Van Leveling Jacks. Both leveling jacks (fig. 8) must be lowered to level the van (c below). Lower each leveling jack as follows:

- (1) Remove clevis pins A and B (fig. 28) which secure the side support arm and the leveling jack in the retracted position (not shown) on the van. Allow the leveling jack assembly to swing downward.
- (2) Position the free end of the side support arm into the leveling jack bracket (fig. 28) and insert clevis pins A and B as shown.
- (3) Remove clevis pin C which secures the forward support arm to the underside of the van. Position the forward support arm

on the leveling jack and insert clevis pin C as shown.

- (4) Remove the leveling jack pads from their storage locations (fig. 8) and position a pad at each leveling jack (fig. 28).
- (5) Remove the lever bars (adjacent to the pintle hook, fig. 8). Insert a lever bar into the hole at the base of each leveling jack (fig. 28).
- (6) Rotate the lever bar until the leveling jack is seated in the leveling jack pad. Subsequent rotation may be required for leveling the van (c below).

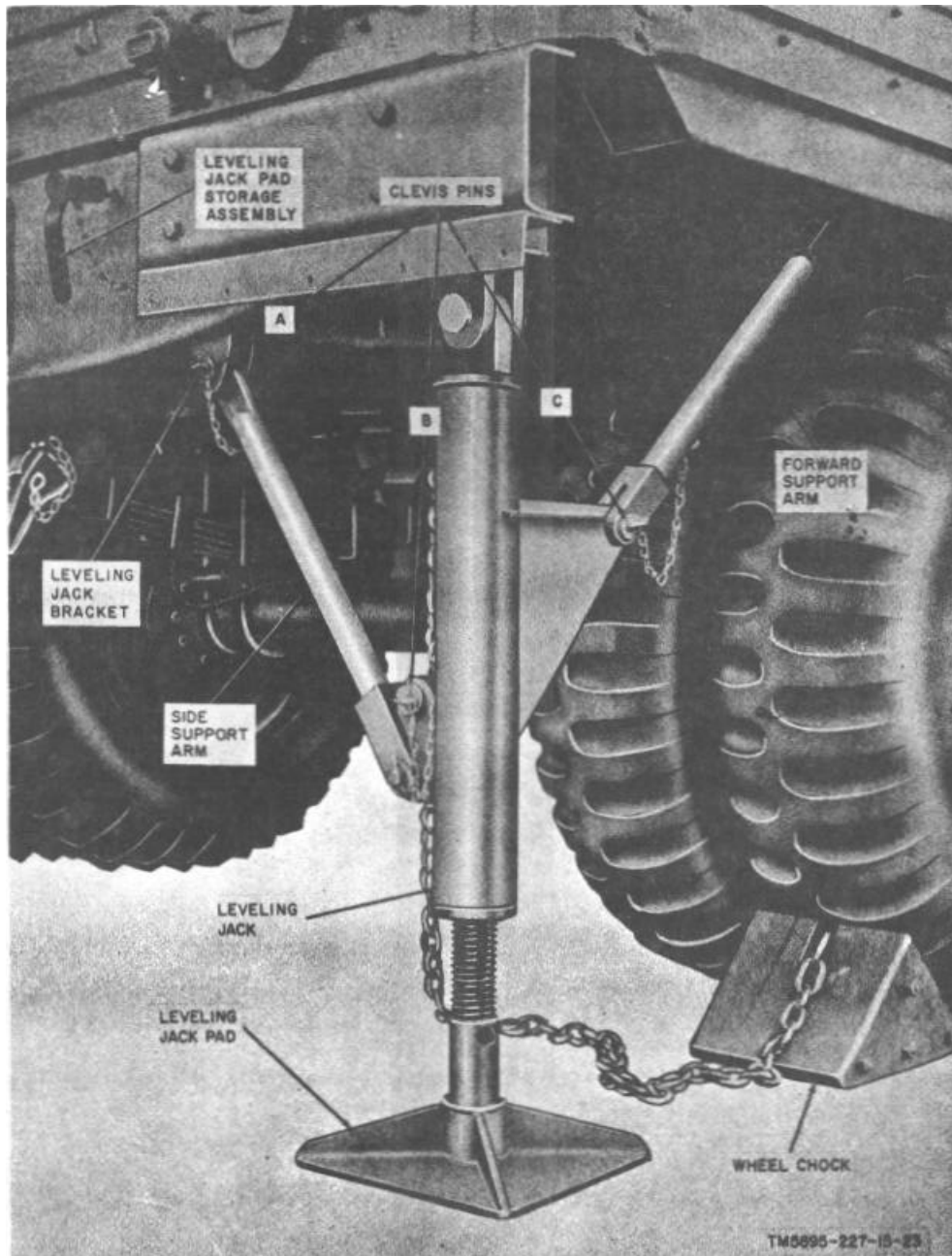


Figure 28. Semitrailer, Van, Electronic Equipment V-189/MS-25, leveling jack arrangement.

c. Leveling Van.

- (1) Suspend and center a plumbline from the roof at the rear of the van. Use the 12-foot ladder (*d* below).
- (2) Adjust the landing gear (*a* above) and the leveling jacks (*b* above) by rotating the landing gear cranks and leveling jack levers as required until the plumbline

indicates that the van is level.

d. Removing and Replacing Ladders.

- (1) *Ladder, 12-foot* (figs. 7 and 27).
 - (a) Rotate the locking knobs counter clockwise to loosen the ladder retaining brackets and remove the ladder.

- (b) Replace the 12-foot ladder by following (a) above in reverse.
- (2) Personnel ladders (figs. 8 and 29).
 - (a) Remove the three-step ladder by loosening the locking knobs on the personnel ladder brackets and removing the brackets. Remove the four-step personnel ladder by loosening and rotating the fasteners on the underside of the van chassis.

Note

Install a personnel ladder at the front (four-step) and rear (three-step) doors of the van by inserting the eccentric cams (locking handles vertical) into the holes provided and turning the locking handles to the horizontal position.

- (b) Replace the personnel ladders by following (a) above in reverse.

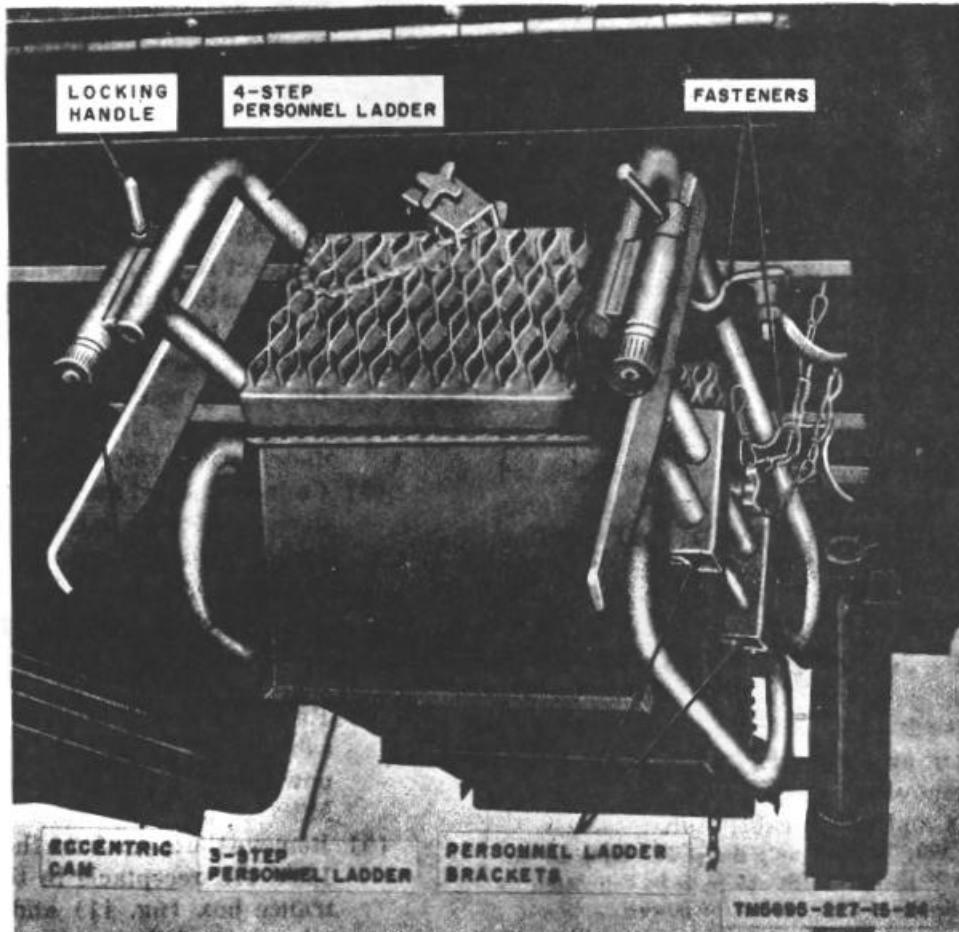


Figure 29. Semitrailer, Van, Electronic Equipment V-18D/MSC-25, personnel ladder storage.

21. Grounding

The AN/MSC-25 must be properly grounded before input power is connected. Select a grounding site that will not interfere with the entrance door, the field wires, or the power cable. Ground the AN/MSC-25 as follows:

- a. Loosen the captive screws and lift the cover of

the power entrance box (fig. 8).

- b. Use the cover support to secure the cover in the open position.

- c. Remove a ground rod and the sledge hammer (fig. 15) from their mountings.

d. Select a grounding site within 10 feet of the power entrance box and dig a small hole, about 6 inches deep, at the site.

e. Remove any paint or grease from the ground rod.

f. Drive the ground rod into the hole until the top of the ground rod is approximately 3 inches above ground level.

g. Saturate the ground around the rod with water.

h. Remove a 10-foot ground strap from storage cabinet No. 1.

i. Connect one end of the ground strap to the ground rod. Connect the other end of the ground strap to the ground rod connecting post in the power entrance box (fig. 11).

j. Replace the sledge hammer in its mounting (fig. 15).

22. Power Connections

Caution

Ground the van (para. 21) before connecting power to the AN/MSC-25.

Ac power for the AN/MSC-25 may be obtained by connecting to a nearby shelter or van (b below), or from a central or a commercial power source.

a. *Preliminary Procedure.* Use the dome lights, as required, until ac power is connected to the AN/MSC-25. Operate the DOME lights switch (fig. 15) to the TRACT BAT position if the tractor is connected to the van, and to the INT BAT after the tractor has been disconnected. Operate the DOME lights switch to INT BAT after the lighting circuit is energized (par. 28).

(1) Operate all circuit breaker and equipment switches to OFF.

(2) Remove the power cable assembly (fig. 17) and power cable stub.

Note

Remove only the power cable assembly if the AN/MSC-25 is to be connected to a nearby shelter or van for power.

(3) Unwind the power cable assembly and remove the connector covers.

b. *Obtaining Power from Adjacent Shelter or Van.* The total power consumption of the AN/MSC-25 is 10,652 watts. Be sure that the output rating of the power source for the adjacent shelter or van is not exceeded when the AN/ MSC-25 is connected.

(1) Operate the MAIN circuit breaker switch on the power distribution panel (fig. 13) of the AN/MSC-25 to OFF.

(2) Remove the cover from the IN POWER 115V AC receptacle in the power entrance box (fig. 11) and connect one end of the power cable.

(3) Remove the cover of the OUT POWER 115V AC receptacle in the power entrance box of the adjacent shelter or van and connect the other end of the power cable.

c. *Using Commercial Power.*

(1) Remove power from the commercial or central power source terminals before making any connections.

(2) Connect the red and white leads of the power cable stub to the neutral bus bar, and the black lead to one of the 120volt bus bars of the power source if the power source is a 50- to 60-cps, 120-240-volt, single-phase, three-wire distribution system.

(3) Connect the red and white leads of the power cable stub to the neutral bus bar, and the black lead to the phase-1, phase-2, or phase-3 bus bar if the power source is a 50- to 60-cycle-persecond (cps), 120-208-volt, 3-phase, four-wire distribution system.

(4) Remove the cover from the power cable stub connector. Connect the power cable stub to one end of the AN/ MSC-25 power cable.

(5) Remove the cover from the IN POWER 115V AC receptacle in the power entrance box (fig. 11) and connect the other end of the power cable.

(6) Restore power to the commercial or central power source terminals.

Section III. SIGNAL CONNECTIONS

23. Signal Circuit Planning

a. *Switchboards Circuits.* Line terminations for the SB-22 (*)/PT may be completed by connecting a 26-pair cable to the SIG. CONN. 1 receptacle or field wire to

SB-22 LINE binding pairs No. 1 through 12.

b. *Intershelter Communication Circuits.* Line terminations for the local telephone (TA-312/PT) circuits may be made to the SIG. CONN 1 receptacle (pins 18

through 25) or to the PHONE (1 through 5) MAP 1, and MAP 2 binding posts. Line terminations for Intercommunication Station LS-147(*)/FI may be made to the SIG. CONN. 1 receptacle (pin 26) or to the INTERCOM binding posts.

c. Teletypewriter Circuits. Line terminations for the teletypewriter circuits may be made to the SIG CONN 1 receptacle (pins 13 through 15) or to binding post pairs No. 13, 14, and 15 for the TT-76(*)/GGC (TT-76, TD, TR, and REC, respectively) and the SIG CONN 1 receptacle (pins 16 and 17) or to binding post pairs No. 16 and 17 for the TT-4(*)/TG (TT-4A TR and REC, respectively).

d. Optional Radio Circuit. The ANT TRANS, REC, and FIL POWER binding posts have been provided for connections to radio equipment; radio equipment is not supplied as a component of the AN/MSC-25.

e. Spare Circuits. Binding post pairs No. 20 (SPARE) and SPARE POS 1 are provided for spare line circuit terminations as required.

24. Connection Procedure for 26-Pair Cables

(figs. 30 and 31)

To couple connectors on 26-pair cables (Cable Assemblies, Telephone CX-4566/U (250 ft.) and CX-4760/U (15 feet), use the procedure in *a* below. To couple a connector to the receptacle in the signal entrance box (fig. 12), use the procedure in *b* below.

a. Coupling 26-Pair Connector.

Caution

Handle the 26-pair connectors carefully during the coupling and uncoupling procedures. Do not force or twist the connectors during installation. Do not drop or place an uncovered 26-pair connector on the ground.

b. Coupling 26-Pair Connector to 26-Pair Receptacle. The cover removal and replacement procedures for a 26-pair receptacle (A through D, fig. 31) are the same as those described for the 26-pair connector (*a*(1) above). Connect and disconnect a 26-pair connector at the 26-pair receptacle as given below.

Note

The cable end of the connectors is used as a reference for clockwise or counterclockwise rotation.

(1) *Connecting procedure.*

- (a) Remove the covers and lock them

(1) *Cover removal.*

- (a) With each hand, grasp the knurled collar on each end of the connector and turn the collars until the open position is reached (A, fig. 30).
- (b) Disengage the cam on top of the cover from the slot on the connector collar. Lift and remove the cover (B, fig. 30).

(2) *Coupling procedure.*

- (a) Position the two 26-pair connectors so that the cams drop into the slots of the knurled collars and the male contacts are aligned with the female contacts (C, fig. 30).
- (b) Carefully press the two connectors together (D, fig. 30).
- (c) Lock the two connectors by turning the knurled collars until the closed position is reached (E, fig. 30).
- (d) Lock the two connector covers together.

(3) *Uncoupling procedure.*

- (a) Unlock the 26-pair connectors by turning the knurled collars until the open position is reached (A, fig. 30).
- (b) Carefully pull the connectors apart.

(4) *Cover replacement.*

- (a) Unlock the two connector covers.
- (b) Position the cover on top of the 26-pair connector.
- (c) Engage the cam on the top of the cover in the slot on the connector collar (A, fig. 30).
- (d) Lock the cover to the connector by turning the collars until the closed position is reached.

together.

- (b) Position the 26-pair connector on the receptacle so that the cams drop into the slots of the knurled collars, and the male contacts are aligned with the female contacts (E and F, fig. 31).
- (c) Carefully press the connector into the receptacle (G, fig. 31).
- (d) Turn the lever on the receptacle knurled collar counterclockwise until the collar just engages the cam.

- (e) Turn the knurled collar on the connector clockwise until the sleeve just engages the cam.
- (f) Simultaneously turn the receptacle collar lever and the connector collar until the closed position is reached (G, fig. 31).

- (2) *Disconnecting procedure.*
 - (a) Simultaneously turn the receptacle collar lever and the connector collar until the open position is reached.
 - (b) Carefully pull the connectors apart.
 - (c) Replace the covers (a(4) above).

Figure 31. Connecting 26-pair connector to 26-pair receptacle.

(Located in back of manual)

25. Field Wire Connections

a. Connect the field wire pairs to the binding posts in the signal entrance box (fig. 12).

- (1) Loosen the captive screws and lift the cover of the entrance box (fig. 8).
- (2) Use the cover support to secure the cover in the open position.
- (3) Press down on the binding posts (fig. 12) to open the wire slots. Place the field wire pairs in the appropriate slots and release the binding posts.

b. Use Distribution Box J-1077A/U and correct Cable Assembly, Telephone CX-4760/U (15 ft.) or field wire pairs from the signal entrance box into a 26-pair cable as follows:

- (1) Remove the J-1077A/U from the front compartment (fig. 14) and place it adjacent to the coupled connectors of the 26-pair cables.
- (2) Uncouple the 26-pair connectors (para. 24) and connect them to the 26-pair cable receptacles on the J-1077A/U.
- (3) Release the fasteners and open the cover on the J-1077A/U.
- (4) Connect the CX-4760/U prepared leads or the field wire pairs to the appropriate binding posts on the J1077A/U.

Note

The wire colors of the CX-4760/U are the same as the wire colors of the 26-pair cable (A, fig. 41).

b. Lighting.

Control, indicator	Description and function		
BLACKOUT BYPASS-NORMAL switch (fig. 15)	Two-position switch. Controls lighting in the AN/MSC-25 for blackout operation as follows:		
	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center; width: 50%;"><i>Sw pos</i></td> <td style="text-align: center; width: 50%;"><i>Permits</i></td> </tr> </table>	<i>Sw pos</i>	<i>Permits</i>
<i>Sw pos</i>	<i>Permits</i>		
	BLACKOUT BYPASS..... Van lighting circuits to be controlled by the individual light switches.		
	NORMAL..... Van lighting circuits to be controlled by door microswitch.		
POWER INDICATOR NEON LAMP (2).....	Neon lamp. Lights when ac power is connected to the AN/MSC-25. One on rear wall (fig. 17) and one in front compartment.		
CURB ODD lights switch.....	Two-position ON-OFF switch. Controls five fluorescent lights on the curbside of the ceiling.		
CURB EVEN lights switch.....	Two-position ON-OFF switch. Controls four fluorescent lights on curbside of the ceiling.		
ROAD ODD lights switch	Two-position ON-OFF switch. Controls four fluorescent lights on roadside of the ceiling.		
ROAD EVEN lights switch	Two-position ON-OFF switch. Controls four fluorescent lights on roadside of the ceiling.		
SPOTLIGHTS switch	Two-position ON-OFF switch. Controls application of ac power to all spotlights. Each spotlight has a built-in ON-OFF switch.		
NIGHTLIGHT switch (fig. 19)	Two-position ON-OFF switch. Controls nightlight.		
Front compartment light switch	Two-position ON-OFF switch. Controls three fluorescent lights in the front compartment.		
VESTIBULE lights switch (fig. 17)	Two-position ON-OFF switch. Controls fluorescent lights in vestibule.		
Door interlock switch.....	Microswitch. Extinguishes interior van lights when accordion door is opened (BLACKOUT BYPASS-NORMAL switch in NORMAL position).		
Rear door interlock switch (fig. 17)	Microswitch. Extinguishes vestibule lights when rear door is opened. (BLACKOUT BYPASS-NORMAL switch in NORMAL position.)		
Front compartment door interlock switch.....	Microswitch. Extinguishes front compartment lights when front compartment door is opened. (BLACKOUT BYPASS-NORMAL switch in NORMAL position.)		
DOME lights switch.....	Three-position switch. Controls application and selection of dc power source to dome lights.		
	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center; width: 50%;"><i>Sw pos</i></td> <td style="text-align: center; width: 50%;"><i>Function</i></td> </tr> </table>	<i>Sw pos</i>	<i>Function</i>
<i>Sw pos</i>	<i>Function</i>		
	TRACT BAT Applies dc power from tractor to dome lights circuit.		
	OFF Disconnects dc power from dome lights.		
	INT BAT Applies dc power from van, 24-V DC battery supply (fig. 14).		

c. LS-147(*)/FI (fig. 23).

Control or indicator	Description and function
OFF-SEND control.....	Ganged on-off potentiometer. Turns ac power on and off and controls volume of output signal. Switch must be on to originate a call.
PRESS TO TALK switch	Two-position nonlocking switch. Switch must be pressed to originate a call.
RECEIVE control	Potentiometer. Controls speech volume from loudspeaker.
Glowlamp.....	Neon lamp. One-half of lamp glows when internal dc power supply is operating.

d. Electric Heater (fig. 20).

Control or indicator	Description and function
HEAT-OFF-FAN switch	Three-position toggle switch. <i>Sw pos</i> <i>Function</i>
HEAT	Applies ac power to heater element and fan motor.
OFF	Disconnects ac power from heater element and fan motor.
FAN.....	Applies ac power to fan only.
TEMPERATURE CONTROL.....	Thermostat control. Regulates the temperature provided by the heating element.
RESET pushbutton.....	Pushbutton which resets the protective circuit breaker within heater.

e. Air Conditioner (fig. 21).

Controls	Description and function
Temperature control (knob control)	Thermostat. Selects temperature desired for conditioned air between +65°F and +95°F.
OFF-VENTILATING-COOLING switch	Three-position rotary switch. <i>Sw pos</i> <i>Function</i>
OFF.....	Disconnects ac power from air conditioner.
VENTILATING	Connects ac power to air conditioner fan only.
COOLING.....	Connects ac power to air conditioner refrigerating and fan circuits.
STARTER RESET switch	Pushbutton thermal-electric overload switch. Automatically opens circuit from ac source when circuit is over-loaded.
PRESSURE RESET switch	Cutout switch that opens circuits to compressor and condenser fan when the refrigerant head discharge pressure exceeds 800 pounds per square inch.

f. Patch Panel (fig. 22).

Note

The three jacks on the right side of each jack strip are not connected.

Jack	Description and function
JACK STRIP NO. 1	SWITCHBOARD SB-22 LINE OUT jacks 1 through 12.....
	Cutoff jacks. Permit external switchboard lines to be patched to van equipment or other lines.
	OUT MAP 1 and MAP 2 jacks..... (No. 18 and 19).....
	Cutoff jacks. Permit external telephone lines to be patched to van equipment or other lines.
	OUT SPARE jack (No. 20)
	Cutoff jack. Permits external spare line to be patched to van equipment or other lines.
	PHONE LINE OUT jacks 21 through 25
	Cutoff jacks. Permit external telephone lines to be patched to van equipment or other lines.
	PARALLEL MULT jacks (3)
	Parallel jacks. Permit operator to establish a parallel arrangement when required.
JACK STRIP NO. 2	SWITCHBOARD SB-22 LINE IN jacks 1 through 12.
	Cutoff jacks. Permit switchboard lines to be patched to van equipment or other lines.
	IN MAP 1 and MAP 2 jacks (2)
	Cutoff jacks. Permit TA-312/PT's to be patched to van equipment or to other than their assigned lines.
	IN SPARE jack.....
	Cutoff jack. Terminates in the patch panel, terminals 57 and 58 of TB 1 (fig. 42).
	PHONE POS IN jacks 1 through 5
	Cutoff jacks. Permit TA-312/PT lines to be patched to van equipment or lines other than their assigned lines.
	SERIES MULT jacks (3)
	Series jacks. Permit operator to establish a series arrangement when required.

g. Signal Duct (figs. 14 and 15).

Jack	Description and function
MAP 1 and MAP 2 phone jack boxes	One terminating jack in each box. Provide a means of connecting the TA-312/PT's to external lines.
PHONE jacks at operating positions 1 through 5 (5).....	Terminating jacks. Provide a means of connecting a TA-312/PT from any of the five operating positions to an external line.
INTERCOM jacks at operating positions 1 through 5 (5).....	Parallel-connected terminating jacks. Provide a means of connecting the LS-147(*)/FI from any of the five operating positions to an external line.
Binding posts: FIL PWR (1 red, 1 black)	Binding posts used to connect an external source of filament power to radio equipment (radio equipment not a component of the AN/MSC-25).
ANT: TR (1)	Binding posts used to connect transmitting and receiving antenna to radio transmitter and receiver (radio equipment not a component of the AN/MSC-25).
REC (1)	
SPARE: (2)	Binding posts used to connect AN/MSC-25 equipment to spare line as required.

h. Miscellaneous.

Control, indicator, or instrument	Description and function
TH-5 TT-4 switch (fig. 14)	Two-position ON-OFF switch. Controls ac power to the TH-5 TT-4 receptacles.
TH-5 TT-76 switch (fig. 14)	Two-position ON-OFF switch. Controls ac power to the TH-5 TT-76 receptacles.
Glowlamps (2)	Neon lamps adjacent to TH-5 TT-4 and TH-5 TT-76 switches (fig. 14). Light when the associated switch is ON.
Frequency meter (fig. 14)	Frequency meter with 55- to 65-cps range. Indicates the frequency of the ac power supplied to the teletypewriter equipment.
BLOWER switch (fig. 17)	Two-position ON-OFF switch. Controls ac power to exhaustblower.
Doorbell switch (fig. 8)	Pushbutton. Controls ac power to doorbell.

28. Energizing Ac Circuits

Warning

To prevent asphyxiation, the AN/MSC-25 must be ventilated at all times when occupied.

Prepare the AN/MSC-25 for full operation as follows:

a. Connect the AN/MSC-25 to the available power source (para. 22); each POWER INDICATOR NEON LAMP (fig. 17) and the 115V AC IN glowlamp (fig. 13) should light.

b. Operate the MAIN circuit breaker switch on the power distribution panel (fig. 13) to ON.

c. Operate the BLACKOUT BYPASS-NORMAL switch (fig. 15) to BLACKOUT BYPASS. When blackout conditions are required, operate the switch to NORMAL.

d. Operate circuit breaker switches No. 1 and 2 (LIGHTS INT. and LIGHTS VEST.) to ON.

e. Operate the lights switches (para. 26b) to ON as required.

Note

The DOME lights switch (fig. 15) should be operated to the INT BAT position while the 40 AN/MSC-25 is in use. Operate to OFF when the AN/MSC-25 is not in use.

f. Check to see that the voltmeter (fig. 13) indicates 115 volts ac ± 10 and that the ammeter indicates nearly 0 ampere. The frequency meter (fig. 14) should indicate 60 cps ± 3 .

g. Operate circuit breaker switches No. 3 through 14 to ON.

29. Operating Procedures

Note

Operate the TH-5 TT-4 and TH-5 TT-76 switches to ON before using the teletypewriter circuits. Refer to the applicable technical manuals (app. I) for operating procedures of the major components. Refer to paragraph 27 for descriptions and functions of controls and instruments of V-189/MSC-25 (van) components.

Warning

To prevent asphyxiation, the van must be ventilated at all times when occupied.

a. *Electric Heaters* (fig. 20). The electric heaters (4) may be moved (para. 41) to any location accessible to a HEATER receptacle (figs. 14, 15, and 17). Insert the power cord connector plug into the appropriate

HEATER receptacle and operate the HEAT-OFF-FAN switch to the desired position.

Note

If the HEAT-OFF-FAN switch is operated to HEAT, set the TEMPERATURE CONTROL to the desired setting.

b. *Exhaust Blower.* Connect the power cord connector plug into the blower receptacle (fig. 17) and operate the BLOWER switch to ON.

Caution

Open the exhaust blower vent cover on the rear of the van (fig. 8) before operating the blower.

c. *Intercommunication Station LS-147(*)/FI* (fig. 23).

- (1) Insert the power cord connector plug into the INTERCQM power duct receptacle (fig. 14).
- (2) Insert the signal cord plug into the INTERCOM signal duct jack below the LS-147(*)/FI.
- (3) Operate the OFF-SEND switch to 5 (approximately midposition). The glowlamp will light.
- (4) Operate the PRESS TO TALK switch and speak into the speaker-microphone on the front panel; release the PRESS TO TALK switch to receive.

Note

The OFF-SEND switch does not have to be operated to receive a call.

- (5) Operate the RECEIVE control to regulate the volume of an incoming call.

Note. The LS-147(*)/FI may be moved to an operating position on the roadside tabletop (fig. 15) by removing it from its mounting (para. 43). Insert the power cord connector plug and the signal cord plug into the appropriate CONVENIENCE receptacle and INTERCOM jack, respectively.

d. *Air Conditioner* (fig. 21).

Caution

Open the air conditioner intake (fig. 7) and outlet (fig. 8) vents before operating the air conditioner.

- (1) *Ventilating.* Operate the OFF-VENTILATING-COOLING switch to the VENTILATING position.

Caution

When the temperature outside the van is 50°F. or less, operate the OFF-VENTILATING-COOLING switch from OFF to COOLING for 1

second, then from COOLING to OFF for 2 seconds. Repeat until air conditioner compressor starts quietly.

- (2) *Cooling.* Set the thermostat control for AGO 5812A the desired temperature and operate the OFF-VENTILATING-COOLING switch to the COOLING position.

30. Patching

(fig. 22)

Patching is not required during normal operation. Typical patching procedures for circuit rearrangements are given in a through d below.

Note

Patching interrupts service on the circuits being patched.

a. *External Line to Switchboard.* Use a patch cord (para. 91(4)) to connect between either an OUT MAP 1, OUT MAP 2, OUT SPARE, or a PHONE LINE OUT (21 through 25) jack on jack strip No. 1 and the appropriate SWITCHBOARD SB-22 LINE IN (1 through 12) jack on jack strip No. 2.

b. *External Line to Telephone.* Use a patch

c. *Internal Telephone Circuit to Switchboard.* Use a patch cord to connect between either an IN MAP 1, IN MAP 2, or a PHONE POS IN (1 through 5) jack and a SWITCHBOARD SB-22 LINE IN (1 through 12) jack on jack strip No. 2.

d. *Conference Circuit Arrangement.* To arrange a conference circuit, perform the procedures in (1) through (3) below.

- (1) Use a patch cord to connect between a SWITCHBOARD SB-22 LINE OUT (1 through 12) jack and a PARALLEL MULT jack on jack strip No. 1.
- (2) Use a patch cord to connect between an OUT MAP 1, OUT MAP 2, or a PHONE LINE OUT (21 through 25) jack and a PARALLEL MULT jack on jack strip No. 1.
- (3) Use a patch cord to connect between an IN MAP 1, IN MAP 2, or a PHONE POS IN (1 through 5) jack on jack strip No. 2 and a PARALLEL MULT jack on jack strip No. 1.

31. Operation Under Adverse Climatic Conditions

Operations Center, Communications AN/ MSC-25 can be operated in extremely cold or hot climates. Install the canopy (para. 17) as required. The van offers complete protection from the elements for personnel and equipment; however, when the entrance boxes are exposed to bad weather conditions, the following precautions are necessary:

a. *Cold Climates.* Extreme cold causes the cables and wires to become hard, brittle, and difficult to handle. Be careful when handling the cables and when connecting them to the AN/MSC-25 so that kinks and unnecessary loops will not result in permanent damage. Make sure that the binding posts and cable receptacles on the outside of the AN/MSC-25 are kept free of frost, snow, and ice by replacing the covers on the receptacles and closing the covers on the entrance boxes when they are not in use. Lower the folding side panels when the entrance box covers are open. Replace a connector cover as soon as the connector is disconnected from the equipment; do not drag or place an open connector in the snow.

b. *Hot Climates.* In hot, dry climates, the connectors, receptacles, and binding post are subject to damage from dirt and dust. Lower the folding side panels when the entrance box covers are open. Close the covers on the entrance boxes when they are not in use and replace the covers on the cable connectors. Do not drag or place an open connector on the ground.

c. *Warm, Damp Climates.* In warm, damp climates, the equipment is subject to damage from moisture and fungi. Wipe all moisture and fungi : from the exterior of the equipment with a lint-free cloth.

32. Stopping Procedures

Note

To turn the power off in an emergency, operate the MAIN circuit breaker switch to OFF.

a. *Major Components.* Refer to the applicable technical manuals (app. I) for stopping procedures for major components (para. 5) as required.

b. V-189/MSC-25 Components.

- (1) *Electric heaters.* Operate the TEMPERATURE CONTROL to its lowest setting and the HEAT-OFF-FAN switch to OFF.
- (2) *Intercommunication Station LS-147(*)/FI.* Operate the OFF-SEND switch of OFF.
- (3) *Teletypewriter ac supply circuit.* Operate the TH-5 TT-4 and the TH-5 TT-76 switches (fig. 14) to OFF.
- (4) *Air conditioner.* Operate the OFF-VENTILATING-COOLING switch to OFF.

Caution

Operate the OFF-VENTILATING-COOLING switch to OFF before operating circuit breaker switch No. 9 (AIR COND.) to OFF.

- (5) Blower. Operate the BLOWER switch to OFF.

Note

After the other van components have been turned off, allow the exhaust blower to remain in operation at least 10 minutes to evacuate all smoke and fumes before completing the stopping procedures and closing the doors of the van.

c. *Circuit Breaker and Light Switches.* Operate all circuit breaker and light switches to OFF.

CHAPTER 4

MAINTENANCE INSTRUCTIONS

33. General Maintenance

Clean and inspect all components of the AN/MS-25 regularly. Detailed maintenance procedures pertaining to the major components are covered in the appropriate technical manuals (app. I).

a. Use a clean, dry, lint-free cloth or brush for dusting.

b. For cleaning, if necessary, moisten the cloth or brush with Cleaning Compound (FSN 7930-399542); after cleaning, wipe dry with a cloth. Do not use cleaning compound on electrical contacts.

Warning

Cleaning compound is flammable and its fumes are toxic. Do not use near a flame; provide adequate ventilation.

c. Dry, compressed air, not exceeding 60 pounds per square inch, may be used to remove dust from inaccessible places.

Warning

Compressed air is dangerous and can cause serious damage to eyes, ears, nose, and other parts of the body. It also can cause mechanical damage to the equipment. Do not use compressed air to dry parts where cleaning compound has been applied.

34. Tools and Materials Required

a. *Tools and Test Equipment.* The tools and test equipment required for maintenance of the major components are listed in the applicable technical manuals (app. I). The tool roll kit (fig. 2) is required for maintenance of the V-189/ MSC-25.

Note

The running spares (para. 6) required for operator's maintenance of the V-189/MS-25 are shown in figure 6.

b. Materials.

Item	Federal stock No.
Abrasive, sheet: sandpaper #0000; 9 x 12 in. sheets.	627500-0000 ^a
Cloth, textile: cheesecloth; lintfree; 36 in.	408-2701 ^b
Orangestick.....	5120-408-4036
Tape TL-83.....	5970-184-2003
Cleaning compound.....	7930-395-9542
Abrasive, sheet: crocus 9 x 11 in.	(Ord) ^d
Grease, graphite, aircraft MIL-G-7187 (GGA).	9150-223-4001 ^c
Lubricating oil, internal combustion engine MIL-L-2104A(OE-10).	9150-265-9425 ^c
Polish, metal: paste.....	6G1516 ^a
Lubricating oil, general purpose, preservative MIL-L-644A(PL special).	9150-266-9425 ^c

^a - Signal Corps stock number.

^b - Interim Federal stock number.

^c - Quartermaster Corps stock number.

^d - Ordnance Corps items.

35. Daily Preventive Maintenance

a. Check for completeness and general condition of the van, equipment and spare parts.

b. Remove dirt, dust, grease, and moisture from the exposed parts.

c. Remove rust, corrosion, fungi, dirt, and moisture from the binding posts, cable connectors, and receptacles.

d. inspect the field wire connections at the binding posts for good contact.

e. Inspect the ground rods and ground strap connections for good contact.

f. Inspect all exposed cables for kinks, strains, moisture, fungi, loose terminals, and for frayed, cut, or damaged insulation.

g. Tighten loose mounting hardware.

h. Inspect the lettering on the designation strips for legibility.

36. Weekly Preventive Maintenance

- a. Clean and tighten the components, racks, mountings, installations, cables, and connectors..
- b. Inspect the components, racks, mountings, installations, and exposed metal surfaces for rust, corrosion, and moisture.
- c. Inspect the cables and wires for cuts, breaks, fraying, deteriorations, kinks, and strain.
- d. Inspect for looseness of accessible items, such as component switches, circuit breaker switches, signal and ac cable assemblies, and glowlamps.
- e. Clean the air filters, nameplates, meters, and clock.
- f. Inspect meters and clock for damaged glass and cases.
- g. Wind the clock (fig. 16).
- h. Inspect the van for support, installation, rust, corrosion, and moisture.
- i. Check the entrance boxes, exhaust blower vent, and air-conditioner intake and outlet vents for cracks, leaks, damaged gaskets, dirt, and grease.
- j. Check for normal operation.

37. Monthly Preventive Maintenance and Lubrication

- a. Lubricate locks and latches. Use grease (GGA.).
- b. Lubricate the hinges on the van door and on the entrance boxes, exhaust blower vent, and air vent covers. Use oil (PL special or OE-10).

- c. Lubricate all metal-to-metal moving parts.

Caution

More frequent lubrication may be required for items listed above in excessively hot, humid, or dusty areas. Do not overlubricate.

- d. Remove the shelter air-conditioner filters and soak them in cleaning compound, benzine, or naphtha. Shake loose dirt from the filters, air-dry them, and replace them in their mountings.
- e. Check the fire extinguishers (figs. 14 and 15) for broken wire seals on the trigger mechanisms. If an extinguisher has been used, or if there are any signs of leakage, request that it be recharged by appropriate personnel.

38. Equipment Performance Checklist

The equipment performance checklist is used to systematically check the AN/MSC-25. Only first echelon maintenance corrective measures are given in the Corrective measures column. If the corrective measures given do not correct the fault, request higher echelon maintenance. When using the checklist, start at the beginning and follow each step consecutively. If a trouble is suspected in a particular area, start checking at that point and continue the steps sequentially. Refer to the power schematic-wiring diagram (fig. 43) when checking the C-189/MSC-25 ac circuits. When a fault or trouble is located in a major component item, refer to the applicable technical manual (app. I). First echelon repair procedures are given in paragraphs 39 through 49.

	Item No.	Item	Action or condition	Normal indication	Corrective measures
PREPARATORY	1	Ac circuits.....	All equipment and power duct switches at OFF; energize ac circuits in the sequence given in paragraph 28.	As each circuit breaker switch is operated to ON, associated glowlamp lights. Lights and meters function as indicated in paragraph 28.	<ul style="list-style-type: none"> a. Reset circuit breaker switch. b. Check ac power source. Check power assemble and replace if defective. c. Perform appropriate repair procedure (paras. 89-49).

	Item No.	Item	Action or condition	Normal indication	Corrective measures
EQUIPMENT PERFORMANCE	2	Shelter components.	Operate as outlined in paragraph 29.	Component functions; glowlamps associated with components light as appropriate. As components are operated, current indication on power distribution panel ammeter increases (approximately 3 amperes for the exhaust blower and 10 amperes for each electric heater).	a. Replace fuses or lamp (para. 40) and press RESET pushbuttons on air conditioner and electric heaters, as required..
EQUIPMENT PERFORMANCE	3	Major components.	Operate major components, as outlined in appropriate technical manuals(app. I). Note. The installation test procedures (para. 18) may be used as a check for normal operation.	Communication is possible on all signal circuits connected to the AN/MSC-25.	b. Perform appropriate repair procedure (paras. 39-49). Note. Notify the appropriate repair personnel when repair of the air conditioner is required. a. Check suspected major component for proper connections (paras. 12-16). b. Check signal connections to AN/MSC-25 (paras. 23-25).
STOP	4	Major components.	Perform stopping procedures as indicated in applicable technical manuals (app. I).-		
STOP	5	Shelter components	Perform stopping procedure as outlined in paragraph 32.		

39. Replacement of Hand Lantern Batteries and Bulb

(fig. 32)

The hand lantern requires four Batteries BA-30 which are not supplied with the lantern. A spare bulb is stored inside the reflector case.

a. Replacing Batteries.

- (1) Pull the battery case latch forward and raise the battery case cover.
- (2) Insert four batteries in the case with, the center brass caps up.

- (3) Snap the battery case cover shut.

b. Replacing Bulb.

- (1) Press the button on the bottom of the reflector case and lift out the reflector.
- (2) Unscrew the brass cap at the rear of the bulb and remove the bulb and spring.
- (3) Remove the spare bulb from inside the reflector case. Insert the bulb and spring in the reflector and tighten the brass cap.
- (4) Replace the reflector in the reflector case and snap it securely in position.

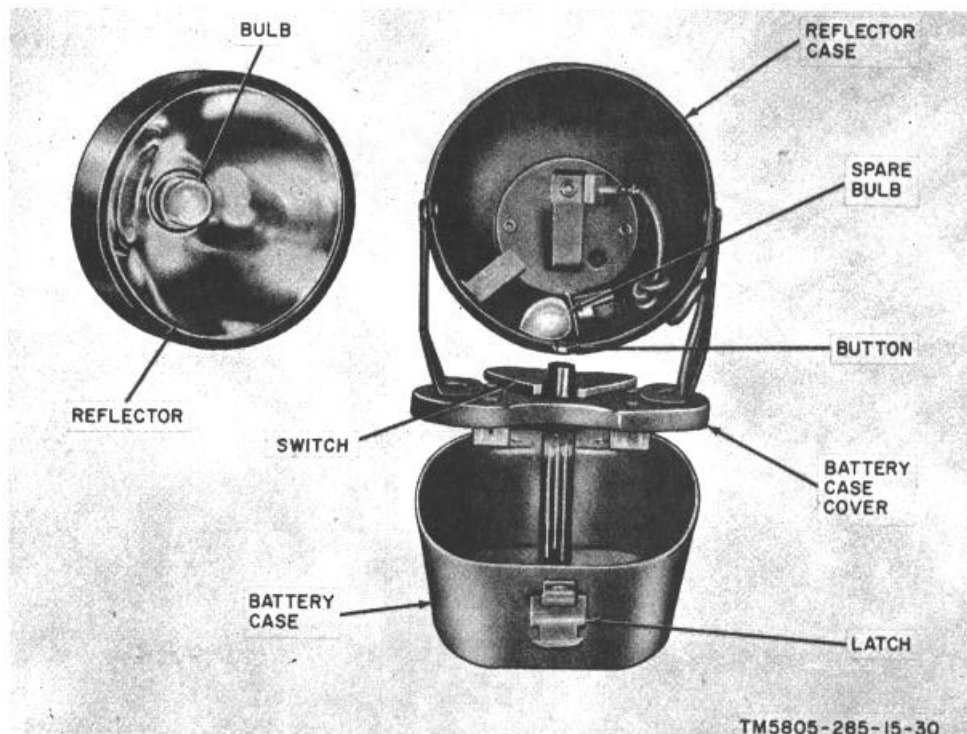


Figure 32. Hand lantern, partially disassembled.

40. Removal and Replacement of Lamps, Fluorescent Lamp Starters, and Fuses

a. Fluorescent Lamp.

- (1) Pull gently to remove the light shield from the fluorescent light fixture.
- (2) Rotate the lamp in its sockets one-quarter turn and remove it from the fixture.
- (3) Remove the spare lamp from its storage brackets (fig. 19).
- (4) Align the lamp with the slots in the fixture sockets.
- (5) Press in and rotate the lamp one-quarter turn to seat the pins firmly.
- (6) Replace the light shield on the fluorescent light fixture.

b. Fluorescent Lamp Starter.

- (1) Remove the light shield and lamp (a(1) and (2) above) to expose the starter.
- (2) Press in and twist the starter one-quarter turn counterclockwise and withdraw it.
- (3) Remove the spare starter from its storage bracket (fig. 19). Insert the new starter, press in, and turn it clockwise until it seats.

- (4) Replace the lamp and lamp shield (a(4) through (6) above).

c. *Neon and Incandescent Lamps.* Remove a defective neon or incandescent lamp by unscrewing it from its socket.

d. Dome Lamps.

- (1) Loosen the captive screw to release the lamp panel.
- (2) Remove the lens and unscrew the bulb.
- (3) Replace the lens and lamp by following the procedures in (1) and (2) above in reverse.

e. Relay Box Fuse (fig. 17).

- (1) Twist the fuse cap counterclockwise and remove the fuse and fuse cap.
- (2) Pull the defective fuse from the fuse cap. Remove a 5-ampere fuse from storage cabinet No. 1.

Caution

Use only a 5-ampere fuse to avoid damage to the equipment.

- (3) Seat the fuse in the fuseholder and twist the fuse cap clockwise.

41. Removal and Replacement of Electric Heater

(fig. 20)

a. Removal.

- (1) Operate the HEATER-OFF-FAN switch to OFF.
- (2) Remove the power cord connector plug from the HEATER receptacle (figs. 14, 15, and 17).
- (3) Loosen the four turnlock fasteners that secure the heater to the mounting base.
- (4) Remove the mounting base knob.
- (5) Slide the heater to the right until it clears the flange on the mounting base and lift out the heater.

b. Replacement.

- (1) Slide the heater onto the mounting base so that it engages the flanges.
- (2) Tighten the four turnlock fasteners.
- (3) Replace and tighten the mounting base knob.

42. Removal and Replacement of Exhaust Blower Cover

- a. Operate the BLOWER switch to OFF (fig. 17).
- b. Remove the power cord connector plug from its receptacle.
- c. Remove the 10 screws that secure the cover to the front wall and lift off the cover.
- d. Replace the cover by following the procedures in a through c above in the reversed order.

43. Removal and Replacement of Intercommunication Station LS-147(*)/FI

- a. Remove the power cord connector plug from the power duct INTERCOM receptacle (fig. 14).
- b. Release the case mounting clamps by loosening the captive wingnuts.
- c. Disconnect the signal cord from the binding posts on the rear of the LS-147(*)/FI.
- d. Remove the LS-147 (*) /FI from its mounting position.
- e. Replace the LS-147 (*) /FI by following the procedures in a through d above in the reversed. order.

44. Removal and Replacement of SB-22(*)/PT

- a. Turn the tiedown knobs underneath the SB-22 (*) /PT mounting rack (fig. 14) and raise the retaining bar.
- b. Disconnect the handset-headset from the SB-22 (*) /PT.
- c. Slide the SB-22 (*)/PT forward and remove it from the rack mounting.
- d. Remove the batteries from the SB-22(*)/ PT (TM 11-5805-262-12).
- e. Disconnect the wires from the binding posts on the rear of the SB-22(*)/PT.
- f. Replace the SB-22(*)/PT by the following appropriate procedures in paragraph 12.

45. Removal and Replacement of TA-312/PT (fig. .24)

- a. Remove the telephone leads from the TA312/PT binding posts.
- b. Remove the flathead screw on the side of the mounting bracket.
- c. Lift the TA-312/PT out of the mounting bracket and remove the holding plate from the buzzer recess on the side of the TA-312/PT.
- d. Remove the batteries from the TA-312/PT (TM 11-2155).
- e. Replace the TA-312/PT by following the appropriate procedures in paragraph 13.

46. Removal and Replacement of TT-76(*)/GGC or TT-4(*)/TG

- a. Remove the power cord connector plug from the power duct receptacle and the teletypewriter connecting cord plugs from the TH-5/TG.
- b. Remove the teletypewriter dust cover.

Note

On the TT-4(*) /TG only, remove the tele-typewriter connecting cord leads from the terminals on the terminal and switchbox.

- c. Remove the nuts and bolts that secure the teletypewriter to the tabletop.
- d. Replace the dust cover.
- e. Replace the teletypewriter by following the appropriate procedures in paragraph 15 for the TT-76 (*) /GGC or paragraph 16 for the TT4 (*)/TG.

47. Removal and Replacement of TH-5/TG

- a. Remove the TH-5/TG power cord connector plug from the appropriate receptacle (fig. 14).

- b. Remove the teletypewriter connecting cord plugs from the receptacles and the wires from the binding posts on the front panel of the TH-5/TG.
- c. Loosen the captive screws on the: front panel of the TH-5/TG.
- d. Lift the equipment rack designation plate; pull the TH-5/TG forward and lift it from the rack.
- e. Replace the TH-5/TG by following the appropriate procedures in paragraph 14.

48. Removal and Replacement of Transparent Overlay (fig. 14)

- a. Loosen the clamping bar by loosening the thumbscrews.
- b. Roll up the overlay by turning the rollup knob.
- c. Loosen the knurled bolts to open the overlay cover.
- d. Press in on the right side of the overlay spool and remove the spool. Remove the overlay from the spool.
- e. Tape the replacement overlay to the spool and wind the overlay on the spool.

- f. Replace the overlay spool by fitting it into place and pressing in on the right side.
- g. Thread the overlay over the overhead bar and pull it down to the clamping bar.
- h. Tighten the clamping bar.
- i. Secure the overlay cover by tightening the knurled bolts.

49. Removal and Replacement of Batteries for Dome Lights

- a. Disconnect the wires from the battery terminals in the 24V DC battery box (fig. 14).
- b. Loosen the retaining bars by turning the locking knobs, and remove the batteries from the mounting.
- c. Position the replacement batteries (Batteries, Dry BA-44) in the mounting; replace and secure the retaining bars.
- d. Reconnect the wires to the replacement batteries in a series arrangement.

Section II. ORGANIZATIONAL, FIELD, AND DEPOT MAINTENANCE

Note

The maintenance allocation chart (app. II) indicates the maintenance functions and tools authorized for each maintenance echelon.

50. Troubleshooting Information

- a. Procedures for localizing troubles within the AN/MSC-25 are given in the equipment performance checklist (par. 38).
- b. Procedures for troubleshooting components, parts, and wiring of the V-189/MSC-25 are given in paragraph 51.
- c. Procedures for troubleshooting the major components of the AN/MSC-25 are given in the applicable technical manuals (app. I). Refer to paragraphs 44 through 47 for removal and replacement of major components.

51. Troubleshooting and Repair Procedures

Warning

Be extremely careful when performing the troubleshooting procedures; dangerous voltages are present in the equipment.

Isolate defective components, parts, or wiring of the V-189/MSC-25 by making appropriate voltage, resistance, or continuity tests with Multimeter AN/URM-105. Refer to figure 43 when isolating trouble in the power circuits and to figure 42 for signal circuits. Repair

or replace components, parts, or wiring. Use the chart below for references to repair procedures.

Part or component	Reference	
	Par.	Fig. No.
Ammeter .....	.52d	13 and 38
Circuit breaker switches No. 1 through 14.	52b	13 and 33
Current transformer.....	.52c	13 and 33
Door microswitch.....	.55b	43
Electric heater.....	.53	34 and 35
Exhaust blower.....	.54	36 and 37
Fluorescent light fixture.....	.56	38
Frequency meter.....	.52d	14
Intercommunication Station LS-147(*) /FI.	43	44
LINE/BATTERY LIGHTING POWER TRANSFER relay K1.	59	43
MAIN circuit breaker switch .....	.52b	13 and 33
Power duct switches.....	.55a	43
Spotlight.....	.57	43
26-pair cable receptacle.....	.58	39, 40, and 41
Van repairs.....	.60	
Voltmeter .....	.52d	13 and 33

Caution

Repair of the air conditioner must be performed by Corps of Engineer maintenance personnel.

52. Power Distribution Panel Repairs (fig. 33)

a. *Preliminary Procedures.* Operate the MAIN circuit breaker switch to OFF. (fig. 13) and disconnect

the ac power cable at the power entrance box (fig. 11). Remove the four screws that secure the power distribution panel cover and remove the cover.

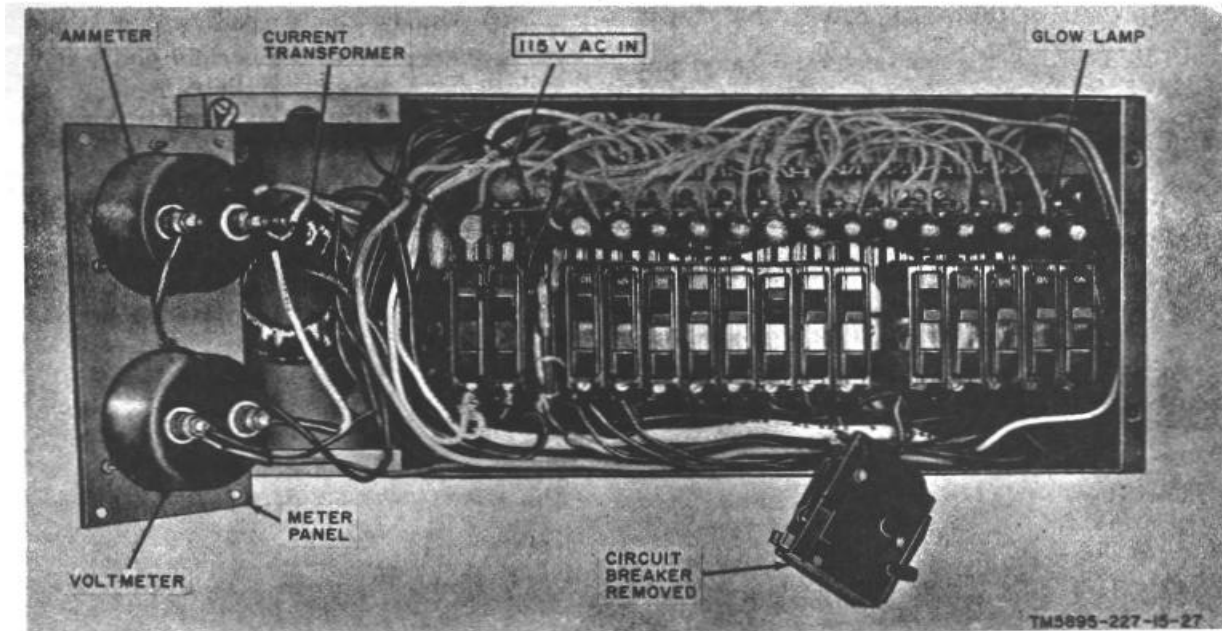


Figure 33. Power distribution panel, meter panel and circuit breaker switch removed.

b. *Removal and Replacement of Circuit Breaker Switch.*

- (1) Grasp the defective circuit breaker switch and pull it straight out from the panel.
- (2) Tag and disconnect the wires connected to the circuit breaker switch.
- (3) Connect the wires ((2) above) to the replacement circuit breaker switch and press it back into the panel.

c. *Removal and Replacement of Current Transformer.*

- (1) Remove the four screws that hold the meter panel to the power distribution panel.
- (2) Tag and disconnect the current transformer leads from the ammeter.
- (3) Remove the two bolts that secure the current transformer inside the panel and remove the current transformer.

Note

Count the number of turns of heavy black wire around the current transformer before performing the procedure in (4) below.

- (4) Disconnect the black wire wound around the current transformer from the MAIN circuit breaker switch and carefully unwind the wire from the current transformer.
- (5) Wind the black wire around the replacement transformer.

Caution

Be sure that the number of turns is the same as on the original transformer. Reconnect the black wire to the MAIN circuit breaker switch (fig. 3).

- (6) Position the replacement transformer inside the panel and replace and tighten the bolts.
- (7) Connect the transformer leads to the ammeter.
- (8) Replace the meter panel and tighten the screws.

d. *Removal and Replacement of Meter.*

Note

The frequency meter (fig. 14) removal and replacement procedures are the same as those for power distribution panel meters outlined in (1) through (4) below.

- (1) Remove the bolts that hold the meter to the meter panel and lift out the meter.
- (2) Tag and disconnect the leads from the meter terminals.
- (3) Connect the leads to the replacement meter.
- (4) Position the meter in the panel and tighten the bolts.

53. Electric Heater and Repairs

(fig. 34 and 35)

a. *Preliminary Procedures.* Before performing the repair procedures in b through g below, remove the

heater from its mounting base (par. 41) and remove the backplate and bottom plate as follows:

- (1) Remove the four screws that secure the bottom plate to the heater.
- (2) Remove the two screws that secure the backplate to the bottom plate, and remove the bottom plate.
- (3) Loosen the power cord clamp on the backplate.
- (4) Remove the four screws that secure the backplate to the heater and remove the backplate.

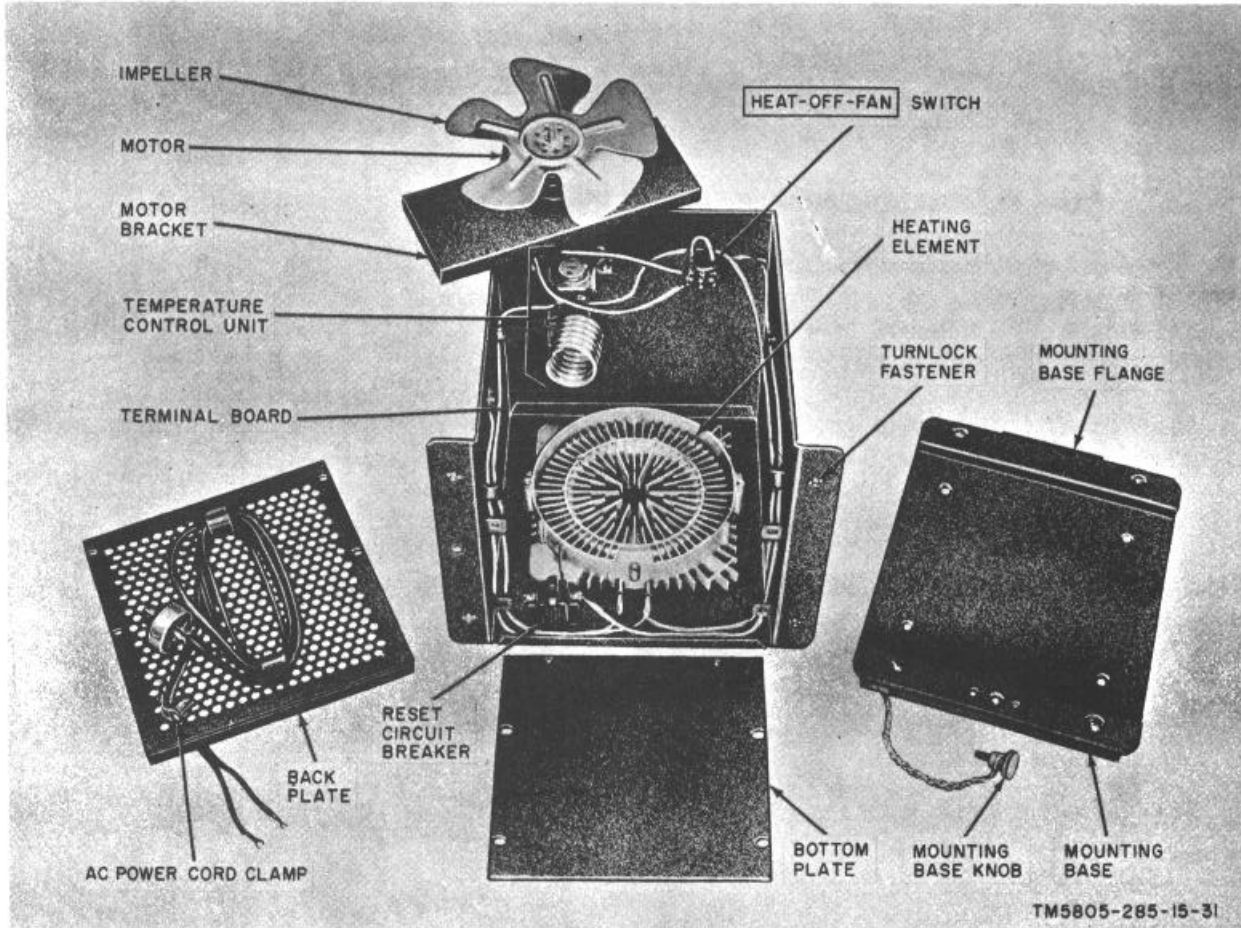


Figure 34. Electric heater, partially disassembled, rear view.

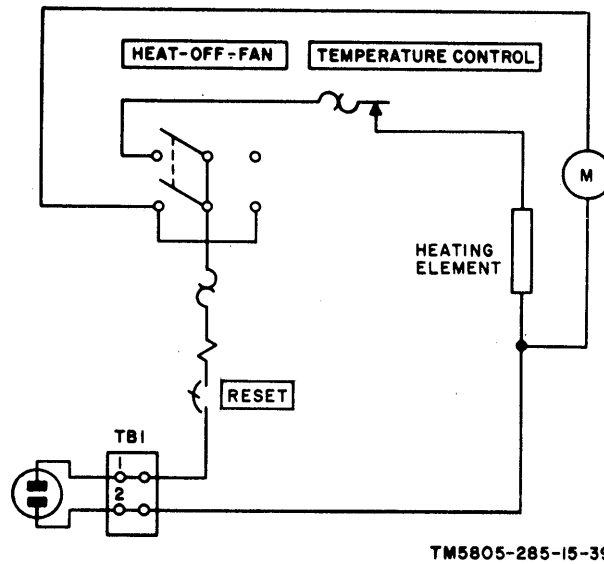


Figure 35. Electric heater, schematic diagram.

b. Removal and Replacement of Power Cord.

- (1) Loosen the screws that secure the power cord leads to terminal board TB1 (fig. 35).
- (2) Pull the power cord out of the clamp in the backplate.
- (3) Insert a new power cord through the clamp in the backplate.
- (4) Connect the leads to terminal board TB1.

c. Removal and Replacement of Temperature Control Unit.

- (1) Loosen the screws that connect the two wires to the temperature control unit.
- (2) Remove the two screws that secure the unit to the cabinet and remove the unit.
- (3) Insert the TEMPERATURE CONTROL switch on the replacement unit through the slot in the cabinet. Replace and tighten the screws.
- (4) Connect the two wires to the temperature control unit.

d. Removal and Replacement of HEAT-OFFFAN Switch.

- (1) Tag and unsolder the three wires and strap connected to the switch.
- (2) Remove the ringnut that secures the switch through the top of the cabinet and remove the switch.
- (3) Solder the strap and the three wires to the replacement switch.
- (4) Position the switch and tighten the ringnut.

e. Removal and Replacement of Reset Circuit Breaker.

- (1) Loosen the screws that connect the two insulated wires to the circuit breaker. Loosen the bolt that secures the bare copper wire to the heating element.
- (2) Remove the two screws that fasten the circuit breaker to the cabinet and remove the circuit breaker.
- (3) Connect the two insulated wires to the replacement circuit breaker. Connect the bare copper wire to the heating element.

Caution

Do not alter the shape or length of the bare copper wire.

- (4) Position the circuit breaker and replace and tighten the screws.

f. Removal and Replacement of Motor and Impeller

- (1) Remove the four screws that secure the motor bracket to the cabinet and lift out the motor and bracket.
- (2) Tag and disconnect the motor leads at the HEAT-OFF-FAN switch and at the taped splice in the heating element cable.
- (3) Remove the three screws that secure the motor to the bracket.
- (4) Unscrew the metal fastener that secures the impeller to the motor shaft and remove the impeller.
- (5) Position and secure a replacement motor in the bracket. Slide the impeller onto the motor shaft and tighten the fastener.
- (6) Replace the motor bracket in the cabinet and connect the motor leads ((2) above).

g. Removal and Replacement of Heating Element.

- (1) Remove the four screws that secure the motor bracket to the cabinet. Remove the motor bracket.
- (2) Loosen the bolt that secures the bare copper wire from the circuit breaker to the heating element and remove the wire.

Caution

Be extremely careful when removing this lead. Do not alter the length or shape of the bare copper wire.

- (3) Tag and remove the wire connections from the plug-in terminals on the heating element.
- (4) Remove the screws that secure the heating element to the cabinet. Be careful not to bend the louvers on the front of the cabinet during the removal procedure.
- (5) Position the replacement element and replace and tighten the screws.
- (6) Connect the wires to the plug-in terminals of the heating element.
- (7) Replace the bare wire connected from the circuit breaker ((2) above).
- (8) Position the motor bracket in the cabinet and replace and tighten the screws.

54. Exhaust Blower Repairs

(figs. 36 and 37)

a. Preliminary Procedures. Before performing the repair procedures in *b* through *d* below, remove the exhaust blower cover (par. 42) and remove the power cord connector plug from its receptacle.

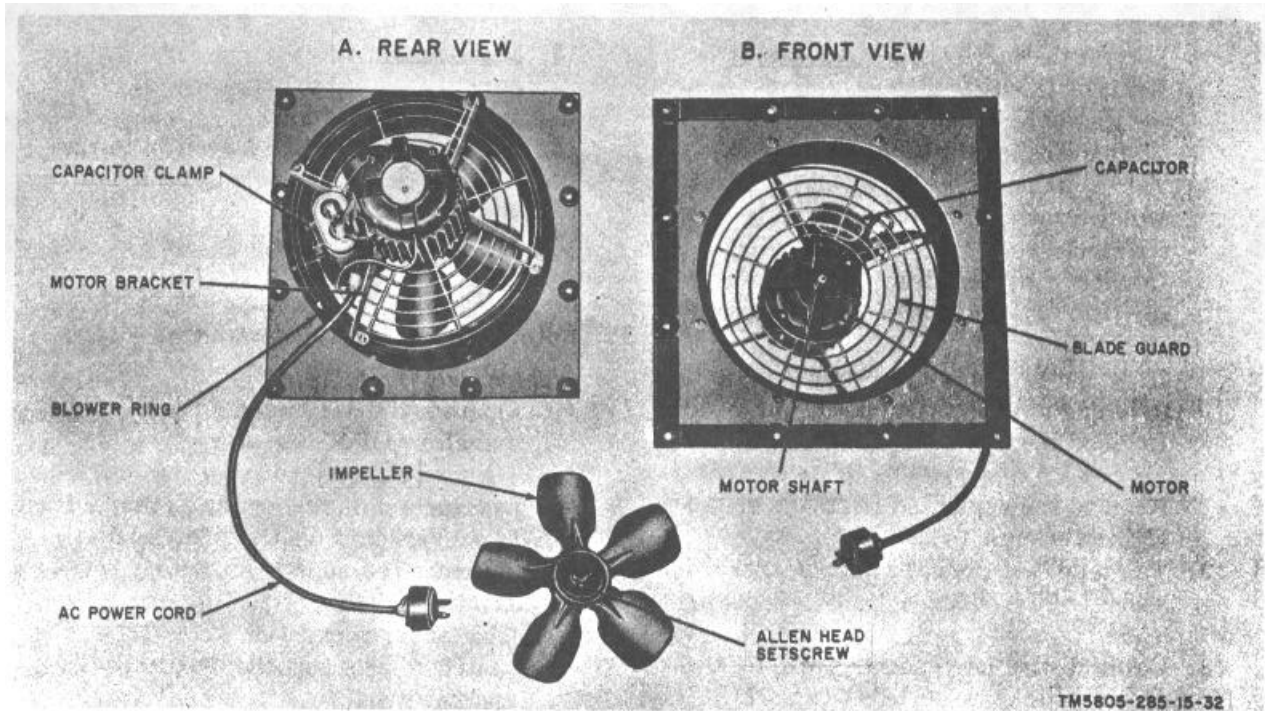


Figure 36. Exhaust blower, front and rear view.

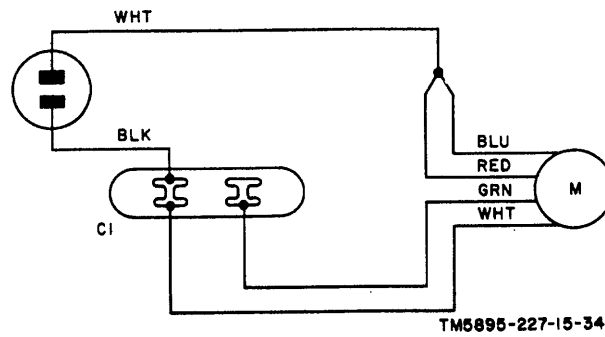


Figure 37. Exhaust blower, schematic-wiring diagram.

b. *Removal and Replacement of Capacitor.*

- (1) Loosen the capacitor clamp screw.
- (2) Remove the power cord clamp from the motor bracket.
- (3) Slide the capacitor out of the clamp.
- (4) Tag and disconnect the motor leads and the power cord from the capacitor terminals.
- (5) Connect the motor leads and the power cord to the replacement capacitor (fig. 37).
- (6) Slide the capacitor into the clamp and tighten the screw.
- (7) Replace the power cord clamp.

c. *Removal and Replacement of Power Cord.*

- (1) Remove the capacitor from the clamp (b(2) through (4) above).
- (2) Tag and disconnect the power cord leads from the capacitor and motor leads.
- (3) Connect the new power cord to the capacitor and motor leads (fig. 37).
- (4) Slide the capacitor into the clamp and tighten the screw.
- (5) Replace the power cord clamp.

d. *Removal and Replacement of Motor and Impeller.*

- (1) Remove the two screws from the bottom edge of the plate that holds the exhaust blower to the front wall.
- (2) Lift the exhaust blower away from the wall.
- (3) Remove the four bolts that secure the blade guard and motor brackets to the blower ring.
- (4) Tag and disconnect the motor leads from the capacitor and power cord.
- (5) Remove the power cord clamp.
- (6) Remove the four screws that secure the motor mounting bracket to the motor.
- (7) Loosen the two Allen-head setscrews that secure the impeller to the motor shaft and remove the impeller.
- (8) Slide the impeller (setscrews toward the motor) onto the shaft of the new motor and tighten the setscrews.
- (9) Secure the motor bracket to the new motor.
- (10) Connect the motor leads to the capacitor and power cord (fig. 37).
- (11) Replace the power cord clamp.
- (12) Position the motor bracket and blade guard on the blower ring.

- (13) Replace and tighten the bolts that secure the motor bracket and blade guard to the blower.
- (14) Replace the exhaust blower by reversing the procedures in (1) and (2) above.
- (15) Replace the exhaust blower cover (par. 42).

55. Removal and Replacement of Switches

a. *Power Duct Switches.*

- (1) Operate the associated circuit breaker switch to OFF (fig. 13).
- (2) Remove the screws from the brackets at each end of the switch. Remove the two brackets and the switchplate.
- (3) Remove the switch mounting screws and the switch.
- (4) Tag and remove the wires from the switch and connect them to the replacement switch (fig. 43).
- (5) Replace the switch by following the procedures in (1) through (4) above in reversed order.

b. *Door Microswitch.*

- (1) Disconnect ac power from the AN/MSC-25.
- (2) Remove the switch cover plate.
- (3) Tag and remove the wires from the NO and C terminals of the switch (fig. 43).
- (4) Unscrew the ringnut from the door side of the switch, and remove the switch.
- (5) Replace the switch by following the procedures in (1) through (4) above in reversed order.

56. Removal and Replacement of Fluorescent Light Fixture Components

Note

The fluorescent light fixtures are fabricated as part of the power duct. The radiofrequency filters are sealed units; they are not repairable and are replaced as a complete unit.

- a. Operate the associated LIGHT switch (par. 27b) to OFF; remove the light shield and the fluorescent lamp (par. 40a).
- b. Carefully pry off the associated power duct cover.
- c. Tag and disconnect the wires from the defective component (fig. 38) and remove the defective component from the power duct.

- d. Secure the replacement component in the power duct.
- e. Connect the wires to the replacement component.
- f. Replace the cover on the power duct.

- g. Replace the fluorescent lamp and light shield (par. 40a).

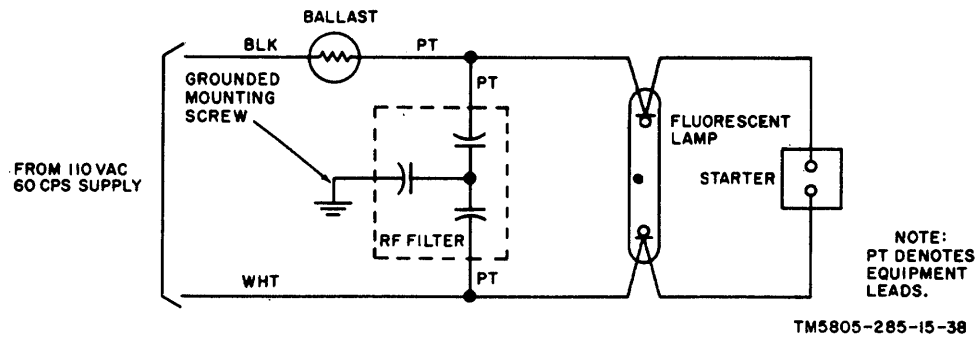


Figure 38. Fluorescent light fixture, schematic-wiring diagram.

57. Removal and Replacement of Spotlight

- a. Operate the SPOTLIGHTS switch (fig. 15) to OFF.
- b. Remove the incandescent lamp from the spotlight.
- c. Remove the screws that secure the lamp socket in the spotlight assembly; tag and disconnect the socket wiring (fig. 43).
- d. Tag and disconnect the wiring to the spotlight switch (on the spotlight assembly), and remove the switch.
- e. Remove the screws that secure the spotlight assembly to the power duct.
- f. Replace the spotlight by reversing the procedures in a through e above.

58. Removal and Replacement of 26-Pair Cable Receptacle

- a. *Removal.*
 - (1) Remove the screws that fasten the cover to the signal and power entrance panel (fig. 17) and remove the cover.
 - (2) Remove the screws that secure the insert clips (figs. 39 and 40).
 - (3) Unfasten the cable clip nearest the 26pair cable receptacle mounting (fig. 39).
 - (4) At the signal entrance box (fig. 12), remove the 26-pair cable receptacle cover.
 - (5) Lift the receptacle insert (fig. 40) from the front of the 26-pair cable receptacle housing.
 - (6) Tag and unsolder the wires from the receptacle insert.

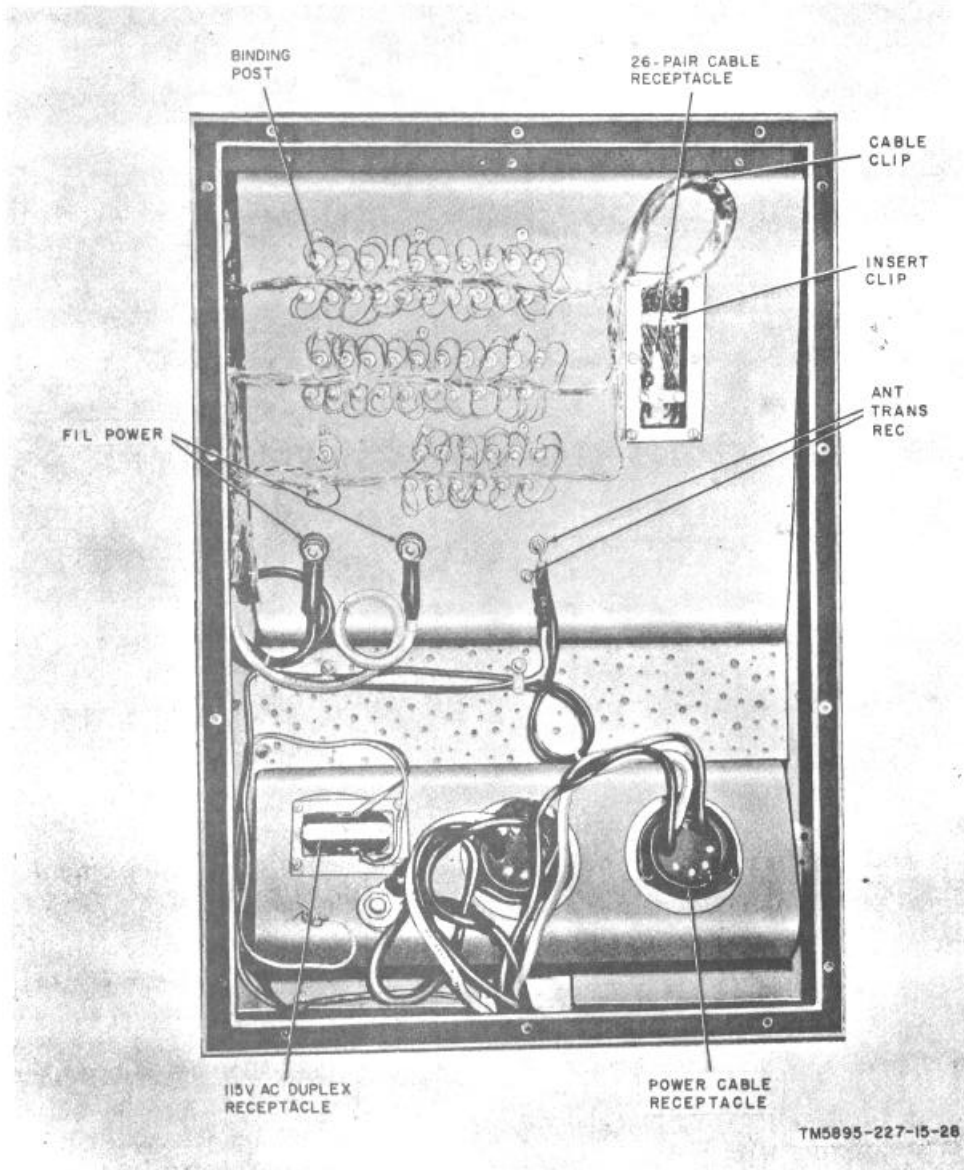


Figure 39. Power and signal entrance panel, cover removed.

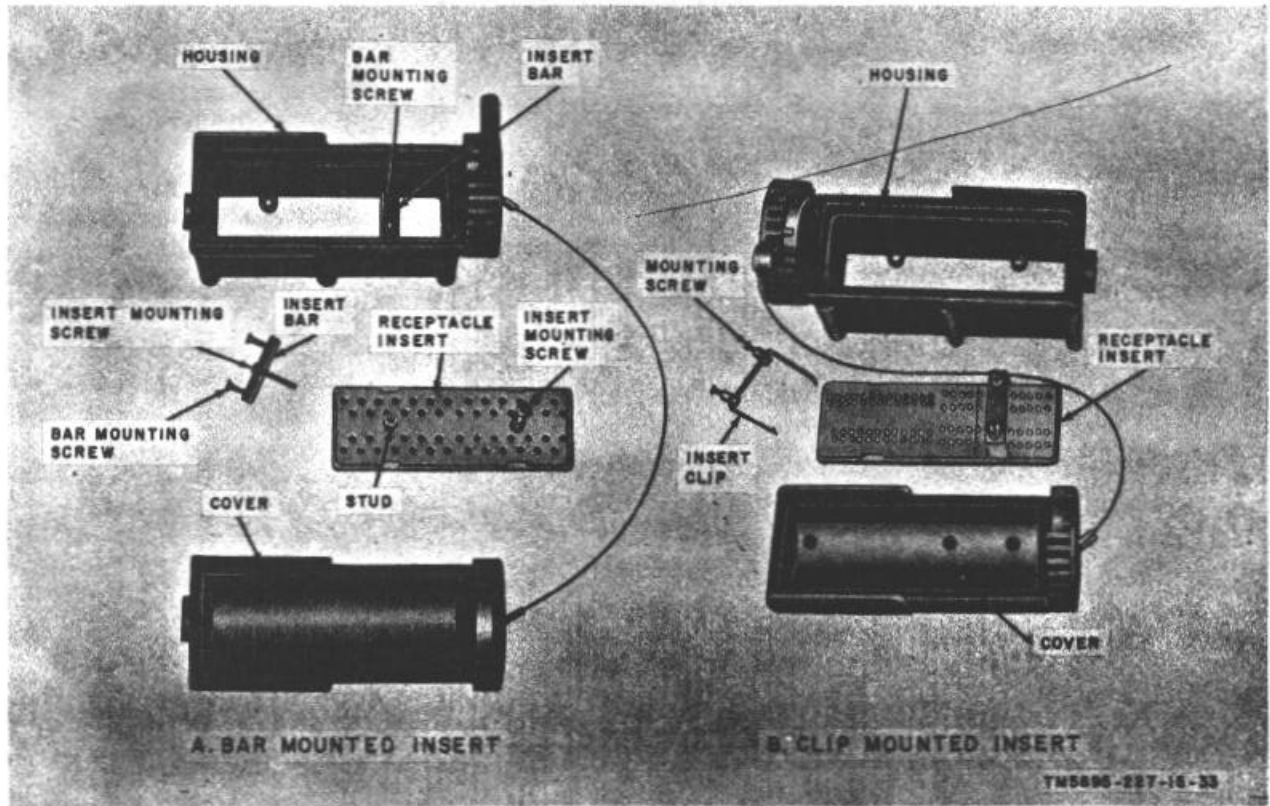
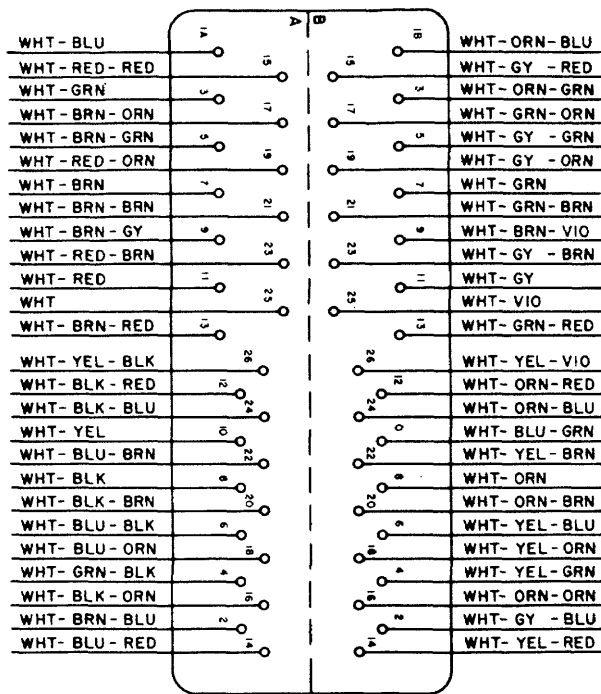
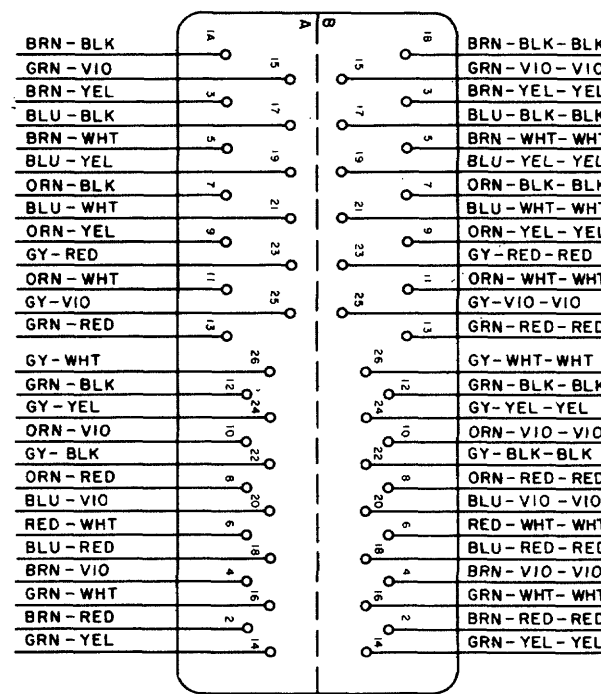


Figure 40. Cable receptacle, 26-pair, partially disassembled.



A. 26-PAIR CABLE CONNECTOR



B. 26-PAIR CABLE RECEPTACLE

NOTES:

1. CONNECTOR (A) AND RECEPTACLE (B) AS SEEN FROM WIRING SIDE.
2. WIRES CONNECTED TO PINS 1A AND 1B, 2A AND 2B, ETC. ARE PAIRED WIRES.
3. BLUE AND RED SPARE WIRES (NOT SHOWN) ARE TURNED BACK AND SEWN INTO FORM.

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Figure 41. Cable connector and receptacle insert, 26-pair, wiring diagram.

b. Replacement.

- (1) Connect the cable wires to the replacement receptacle insert (fig. 41).

Caution

Be extremely careful when connecting and soldering wires. Excessive heat or pressure will damage the insert.

- (2) Carefully place the insert in the 26pair cable receptacle housing (fig. 40).

Caution

Be careful not to damage the wires when replacing screws or when taking up slack in the 26-paix cable.

59. Removal and Replacement of LINE/ BATTERY LIGHTING POWER TRANSFER Relay K1

Warning

Disconnect the ac power from the AN/MS-25 and use the land lantern during replacement or repair procedures.

- Remove the screws that secure the relay box cover (fig. 17) and remove the cover.
- Tag and disconnect the wires from relay K1 (fig. 43).
- Remove the relay from its mounting.
- Fasten the replacement relay in place.
- Resolder the wires to the relay.
- Replace the cover on the relay box.

60. Maintenance of V-189/MS-25

a. The maintenance or replacement of the V-189/MS--25 (van) racks, frames, brackets, and assorted hardware is accomplished by removing and replacing screws or bolts. When any exterior component of the van is replaced, be sure the gasket is adequately sealed to the van to prevent leakage. The responsibilities for van maintenance are listed in the maintenance allocation chart (app. II).

b. The exterior skin of the van is susceptible to puncturing or gouging. Use Patch Kit, Shelter, Electrical Equipment (Fed. stock No. 5410783-6250) to repair the roof or sides of the van as described in the instructions provided with the patch kit and given below.

- (1) Use emery cloth, sandpaper, a knife, or scraper and remove all paint or foreign matter within a 3-inch radius around the

hole to be patched. Do not touch the cleaned area with hands or dirty cloths.

- (2) If the insulation has been gouged out, fill the hole with clean' noncombustible material, if possible. Do not use the glass cloth for this purpose.
- (3) Cut out a piece of glass cloth that will extend 2 inches beyond the edges of the hole to be repaired.

Warning

Resin No. 797 and curing agent No. 237 are harmful to the skin. Wash thoroughly with water any area of the body that may have come in contact with the liquid resin or curing agent.

- (4) Pour 3 ounces of resin No. 797 for each square foot of surface area to be covered into the mixing cup provided. Shake the can thoroughly before pouring out the resin. Temperature and climate will determine the quantity of curing agent and cold weather promoter to be added to the resin. Use the eye dropper and prepare the mixture as follows:
 - For temperatures above 55° F., fill the eye dropper to the redline with curing agent No. 237. Add the curing agent to the resin and mix thoroughly.
 - For temperatures between 20° and 55° F., fill the eye dropper to the redline with curing agent No. 237. Fill the eye dropper to the halfway mark with cold weather promoter No. 347. Add the cold weather promoter to the combined curing agent and resin and mix thoroughly.
 - For temperatures below 20° F., fill the eye dropper to the redline with curing agent No. 237; add the curing agent to the resin and mix thoroughly. Fill the eye dropper to the redline with cold weather promoter No. 347. Add the cold weather promoter to the combined curing agent and resin and mix thoroughly.
- (5) Use the spatula (or the brush in hard-to-reach areas or when the temperature is above 55° F.) and spread a liberal coating of the prepared mixture over the surface to be patched. Place the glass cloth ((3) above) over the coating and press it lightly with the applicator. Spread a second liberal

coating of the mixture over the glass cloth; work from the center of the patch towards the edges.

- (6) Examine the patch to see that the edges are flat and firmly embedded in the mixture. Be sure the patch is completely covered by the mixture. Prepare and apply an additional mixture, if necessary.

Note

To accelerate curing during cold weather, heat the patch with warm, dry air or radiant heat. Do not use an open flame.

- (7) Depending on the temperature and drying conditions, the patched surface may be sanded and painted within 4 to 24 hours after application of the patch. After the mixture in the cup and on the spatula has hardened, flex the cup and the spatula to crack the mixture. Clean the cup and spatula and store them for future use. Discard the used brush; recap and store the containers.

Caution

Shelf-life is severely limited by heat; recap the containers tightly and store them in a cool dry place.

61. Signal Circuits

Note

The SIGNAL CONN 1 (26-pair cable) receptacle pins 1 (A and B) through 26 (A and B) are connected in parallel with binding post pairs E1-E2 through E51-E52 in the signal entrance box.

a. *SB-22(*)/PT Circuits.* The external circuits for the SB-22 (*)/PT connect to the SIGNAL CONN 1 26-pair cable receptacle (pins 1 through 12) and to SB-22 LINE 1 through 12 binding post-pairs (E1-E2 through E23-E24) in the signal entrance box. Inside the van, the SB-22(*)/PT circuits connect through signal duct wiring; and through individual SWITCHBOARD SB-22 LINE OUT and LINE IN cutoff jacks (JR-1 through JR1-12 and JR2-1 through JR2-12, respectively) at the patch panel, to the SB-22/PT receptacles. Two parallel-connected SB-22/PT receptacles are provided (figs. 14 and 15): from either receptacle, the SB-22 (*) /PT circuits connect through the SB-22/PT cable stub to the SB-22 (*)/PT (par. 12e).

b. *TA-312/PT Circuits.* The external circuits for the TA-312/PT's connect to the SIGNAL CONN 1 26-pair cable receptacle (pins 18 through 25) and to the MAP 1, MAP 2, and PHONE 1 through 5 binding post pairs (E35-E36 through E49-E50). Inside the van, the TA312/PT circuits connect through signal duct wiring and through individual cutoff jacks at the patch panel (par. 27f) to individual terminating jacks (MAP 1, MAP 2, and PHONE POS 1 through 5) at each TA-312/PT operating position (figs. 14 and 15).

c. *Teletypewriter Equipment Circuits.*

- (1) The external circuit for the TT-76 f(*) /GGC and its associated TH-5/TG connects to the SIGNAL CONN 1 26-pair cable receptacle (pins 13 through 15) or to the TT-76 TD, TR, and REC binding post pairs (E25-E26 through E29-E30) in the signal entrance box. Inside the van, the

TT-76 (*) /GGC circuit connects through signal duct wiring to binding posts 1 through 6 on the associated TH-5/TG (par. 14d) and through teletypewriter connecting cords to the TT-76 (*) /GGC (par. 15).

- (2) The external circuit for the TT-4 (*) / TG and its associated TH-5/TG connects to the SIGNAL CONN 1 26-pair cable receptacle (pins 16 and 17) or to the TT-4A TR and REC binding post pairs (E31-E32 and E33-E34) in the signal entrance box. Inside the van, the TT-4 (*) /TG circuit connects through signal duct wiring to binding posts 3 through 6 on the associated TH-5/TG (par. 14d), and through teletypewriter connecting cords to the TT-4(*)/TG (par. 16).

d. *LS-147(*)/FI Circuit.* The external circuit for the LS-147 (*) /FI connects to the SIGNAL CONN 1 26-pair cable receptacle (pin 26) or to the INTERCOM binding posts (E51 and E52) in the signal entrance box. Inside the van, the LS-147 (*) /FI circuit connects through signal duct wiring to the parallel-connected INTERCOM terminating jacks in the signal duct (figs. 14 and 15).

e. *Miscellaneous Circuits.*

- (1) *Optional radio equipment circuit.* An external radio equipment circuit (radio equipment not provided as a component of the AN/MS-25) may be connected to the FIL POWER (E57 and E58) and the ANT. TRANS (E55) and ANT. REC (E56) binding posts in the signal entrance box. These binding posts connect through signal duct wiring to the FIL POWER (E59 and E60), and ANT. TRANS (E61) and ANT. REC (E62) binding posts, respectively, on the signal duct at operating position No. 1 (fig. 15).
- (2) *Spare line circuit.* One spare line circuit may be connected to the van at the

SPARE binding posts (E53 and E54), in the signal entrance box. The spare line circuit connects through signal duct wiring to the SPARE binding posts (E63 and

E64) on the signal duct at operating position No. 1 (fig. 15).

**Figure 42. Operations Center, Communications AN/MSC-25, signal schematic-wiring diagram.
(Located in back of manual)**

62. Ac Power Circuits
(fig. 43)

Note

The function of switches and indicators of the V-189/MSC-25 components is covered in paragraph 27.

a. Ac Power Distribution.

- (1) Ac power is applied to the AN/MSC25 through IN POWER 115V AC receptacle JS in the power entrance box (par. 22). Parallel-connected OUT POWER 115V AC receptacle J1 is provided so that another area assemblage may be connected to the AN/MSC-25 power source. When ac power is applied to the van, POWER INDICATOR NEON LAMPS DS4 DS5 (fig. 17) and the 115V AC IN lamp DS54 (fig. 13) light and the LINE/BATTERY LIGHTING POWER TRANSFER relay K1 operates. Operation of relay K1 disconnects the 24V DC van battery supply from dome lights DS1 through DS3 and arranges the van lighting circuit for ac input through circuit breaker switches CB1 and CB2.

Note

Dome lights DS1 through DS3 may be operated after relay K1 operates by operating the DOME lights switch to DOME TRACT BAT (tractor still connected to van).

- (2) Ac power from receptacle J2 is applied through the power duct wiring to MAIN circuit breaker switch CB15 in the power

distribution panel. Circuit breaker switches CB1 through CB14 (parallel-connected) are connected in series with CB15. Wiring to the equipment and convenience receptacles is distributed through the power duct from circuit breaker switches CB1 through CB14. Lamps DS4, DS5, and DS54 are connected across the ac input lines to CB15 ((1) above). Lamps DS40 through DS53 are connected across the circuits controlled by CB1 through CB14, respectively, and light individually as each circuit breaker switch is operated to ON.

b. Grounding. The AN/MSC-25 is grounded (par. 21) to reduce electrical shock hazards. Ground terminals for the AN/MSC-25 components are provided inside the V-189/MSC-25.

c. Voltmeter, Ammeter, and Frequency Meter.

- (1) Voltmeter M1 is connected across the ac input circuit after MAIN circuit breaker switch CB15. It indicates the voltage applied from the power source to the AN/MSC-25.
- (2) Ammeter M2 is connected to the ac input circuit through current transformer T1. It indicates the total current being drawn by the operating components of the AN/MSC-25.
- (3) Frequency meter M3 is connected across the ac input circuits to the TT-76 (*)/GGC, TT-4 (*)/TG, and TH-5/TG's. It indicates the frequency of the ac voltage supplied to the teletypewriter equipment.

**Figure 43. Operations Center, Communications AN/MSC-25, power schematic-wiring diagram.
(Located in back of manual)**

CHAPTER 6

SHIPMENT AND LIMITED STORAGE AND DEMOLITION

TO PREVENT ENEMY USE

Section I. SHIPMENT AND LIMITED STORAGE

63. Disassembly of Equipment

Perform the following procedures when the AN/MSC-25 is moved to a different location or placed in storage.

a. Operate all ac power switches and circuit breaker switches to their OFF positions except the appropriate light switches (par. 27b), circuit breaker switches 1 LIGHTS INT and 2 LIGHTS VEST, and the MAIN circuit breaker switch.

b. Remove the batteries from the TA-812/ PT, the SB-22 (*)/PT, the 24V DC battery supply (fig. 14), and the hand lantern for prolonged storage or long-distance shipment.

c. Secure all components in their cases, mountings, or holders.

d. Place all miscellaneous items in the storage drawers and cabinets, and secure the drawers and cabinets for transit.

e. Disconnect the field wires from the binding posts in the signal entrance box (fig. 18).

f. Disconnect the 26-pair cable at the signal entrance box, replace the covers on the receptacles and connectors, and close the entrance box cover.

g. Wind the 26-pair cable on its reel, and secure the reel for transit (fig. 18).

h. Operate circuit breaker and light switches (a above) to OFF.

i. If power was obtained from an adjacent shelter or van, disconnect the AN/MSC-25 power cable from the OUT POWER 115V AC receptacle at the adjacent shelter or van. Replace the receptacle and connector cover.

j. If power was obtained from a commercial source, proceed as follows:

- (1) Turn off or disconnect the power.

- (2) Disconnect the power cable connector from the power cable stub connector. Replace both connector covers.

- (3) Disconnect the power cable stub from the commercial source.

k. Disconnect the power cable from the IN POWER 115V AC receptacle in the power entrance box and replace the covers on the receptacle and connector.

l. Disconnect the ground strap from the GROUND TERMINAL in the power entrance box. Close and secure the cover on the power entrance box.

m. Store the power cable assembly and power cable stub (fig. 17).

n. Store the ground strap in storage cabinet No. 1.

o. Close and secure the covers on all exterior vents.

p. Remove the ground rod and store it in the van (fig. 15).

q. Remove and store the canopy by following the procedures in paragraph 17 in reversed order.

r. Recheck the area for any loose items. Be sure all items are properly stored in the van.

s. Clean the van thoroughly.

t. Close and lock the front and rear doors and store the personnel ladders (par. 20a).

64. Transportation

The AN/MSC-25 can be moved by tractor or transported by cargo aircraft. Follow the procedures in paragraph 20a and b in reversed order to couple the van to a tractor.

Section II. DEMOLITION OF MATERIEL TO PREVENT ENEMY USE

65. Authority for Demolition

Demolition of the equipment will be accomplished only upon the order of the commander. The destruction procedures in paragraph 66 will be used to prevent further use of the equipment.

66. Methods of Destruction

Use any or all of the following methods to destroy the equipment.

a. Smash. Smash the controls, tubes, coils, relays, switches, capacitors, transformers, and meters; use sledges, axes, handaxes, pickaxes, hammers, or crowbars.

b. Cut. Cut all cables and cords and slash the wiring on the components; use axes, handaxes, or machetes.

c. Burn. Burn cords and technical manuals; use gasoline, kerosene, oil, flamethrowers, or incendiary grenades.

d. Bend. Bend panels and cabinets.

Warning

Be extremely careful with explosives and incendiary devices. Use these items only when the need is urgent.

e. Explode. If explosives are necessary, use firearms, grenades, or TNT.

f. Dispose. Bury or scatter the destroyed parts in slit trenches or foxholes, or throw them into streams.

APPENDIX I

REFERENCES

AR 820-5	Dictionary of United States Army Terms.		writer ribbon re-inking device;
AR 320-50	Authorized Abbreviations and Brevity Codes.	MWO SIG 11-2284-1	Modification- of Teletypewriters TT4/TG and TT-4A/TG to Replace Transmitter Gears with New Improved Wide Faced Gears.
AR 700-38	Unsatisfactory Equipment Report (Reports Controls Symbol CS-GLD-247 (R21).		Serviceability Standards for Teletypewriter TT4/TG and TT-4A/TG.
DAM Pam 108-1	Index of Army Motion Pictures, Film Strips, Slides and Phono-Recordings.	SB 11-100-99	Serviceability Standards for Telephone Set TA-312/PT.
DA Pam 310-4	Military Publications: Index- of Technical Manuals, Technical Bulletins, Supply Bulletins, Lubrication Orders, and Modification Work Orders.	SB 11-100-156	Telephone Set TA-312/PT.
DA Pam 310-21	Military Publications: Index of Supply Manuals; Signal Corps.	TM 11-2155	Teletypewriter Sets AN/GGC-3 and AN/GGC-3A and Teletypewriter Reperformer-Transmitters TT-76/GGC, TT-76A/GGC, and TT-76B/GGC.
FM 21-5	Military Training.	TM 11-2225	Operator and Organizational Maintenance Repair Parts and Special Tool Lists and Maintenance Allocation Chart: Telephone Set TA-31-2/PT.
FM 21-6	Techniques of Military Instruction.	TM 11-5805-201-12P	Field and Depot Maintenance Repair Parts and Special Tool Lists: Telephone Set TA-312/PT.'
FM 21-30	Military Symbols.	TM 11-5805-201-35P	Operator's Manual: Terminal, Telegraph TH-5/TG.
MWO SIG 197	Modification of Teletypewriters. TT-4/TG, TT-4A/TG, TT-98/FG, TT-99/FG, TT-100/FG, TT-172/GG, and TT-173/TG, Teletypewriter Sets AN/FGC-20, AN/FGC-20X, AN/FGC-21, and AN/PGC-1; and all other applicable Klein-schmidt model teletypewriter page printers to provide an automatic teletype-	TM 11-5805-246-10	Operator's and Organizational Maintenance Repair Parts and
		TM 11-5805-246-12P	

	Special Tool Lists and Maintenance Allocation Chart for Terminal, Telegraph TH-5/TG.	TM 11-5805-262-35P	Field and Depot Maintenance Repair Parts and Special Tool Lists for Switchboard, Telephone, Manual SB-22/PT.
TM 11-5805-246-20	Organizational Maintenance Manual: Terminal, Telegraph TH-5/TG.	TM 11-5815-206-12	Operation and Organizational Maintenance: Teletypewriter Set AN/PGC-1 and Teletypewriters TT4A/TG and TT-4B/TG.
TM 11-5805-246-35	Field and Depot Maintenance Manual, Terminal, Telegraph TH-5/TG.	TM 11-5815-206-12P	Operator's and Organizational Maintenance Repair Parts and Special Tools List: Teletypewriter Set AN/PGC-1 including Teletypewriters TT4A/TG and TT-4B/TG.
TM 11-5805-246-35P	Field and Depot Maintenance Repair Parts and Special Tool Lists: Terminal, Telegraph TH-5/TG.	TM 11-5815-206-35	Field and Depot Maintenance: Teletypewriter Set AN/PGC-1 and Teletypewriters TT-4A/TG and TT4B/
TM 11-5805-257-12P	Operator's and Organizational Maintenance Repair Parts and Special Tool Lists and Maintenance Allocation Chart for Generators, Ringing, Hand G-42/PT and G-42A/PT.	TM 11-5815-206-35P	Field and Depot Maintenance Repair Parts and Special Tool Lists: AN/PGC-1 including Teletypewriters TT-
TM 5805-257-35P	Field and Depot Maintenance .Repair Parts and Special Tool Lists for Generator,	TM 11-5815-238-12P	Operator's and Organizational Maintenance Repair Parts and Special Tool Lists and Maintenance Allocation Chart: Teletypewriter Sets AN/GGC-3, AN/GGC-3A, and Reperforator-Transmitters, Teletypewriter TT-76/GGC, -76A/GGC, and -76B/GGC.
TM 11-5805-262-12	Operator's and Organizational Maintenance Manual, Switchboards, Telephone, Manual SB-22/PT and SB-22A/PT.	TM 11-5815-238-35P	Field and Depot Maintenance Repair Parts and Special Tool Lists: Teletypewriter Sets AN/GGC-3, AN/GGC-3A, and Reper-
TM 11-5805-262-20P	Organizational Maintenance Repair Parts and Special Tool Lists and Maintenance Allocation Chart for Switchboard, Telephone, Manual SB-22/PT.		
TM 11-5805-262-35	Field and Depot Maintenance Manual, Switchboards, Telephone, Manual SB-22/PT and SB-22A/PT.		

	forator-Transmitters, Teletypewriter TT-76/GGC, -76A/GGC, and -76B/GGC.		cial Tool Lists and Maintenance Allocation Chart for Handset-Headsets H-81/U and H-81A/U.
TM 11-5830-221-12	Operator's and Organizational Maintenance Manual: Intercommunication Station LS-147B/FI.	TM 11-5965-224-12P	Operator and Organizational Maintenance Repair Parts and Special Tool Lists and Maintenance Allocation Chart: Handsets H-60/PT and H-165/U.
TM 11-5830-221-12P	Operator's and Organizational Maintenance Repair Parts and Special Tool Lists: Intercommunication Station LS-147A/FI and LS-147B/FI.	TM 11-5965-233-12P	Operator and Organizational Maintenance Repair Parts and Special Tool Lists and Maintenance Allocation Chart: Headset-Microphones H-91/U and H-91A/U.
TM 11-5830-221-35	Field and Depot Maintenance Manual: Intercommunication Station LS-147B/FI.		
TM 11-5830-221-35P	Field and Depot Maintenance Repair Parts and Special Tool Lists: Intercommunication Station LS-147A/FI and LS-147B/FI.	TM 11-6625-203-12	Operation and Organizational Maintenance: Multimeter AN/URM-105, including Multimeter ME-77/U.
TM 11-5895-207-36P	Field and Depot Maintenance Repair Parts and Special Tool Lists for Handset-Headsets H-81/U and H-81A/U.	TM 11-6625-203-12P	Operator's and Organizational Maintenance Repair Parts and Special Tool Lists for Multimeter AN/URM-105.
TM 11-5935-204-15P	Operator, Organizational, Field and Depot Maintenance Repair Parts and Special Tool Lists and Maintenance Allocation Chart: Connector, Receptacle, Electrical U-185A/G.	TM 11-6625-203-35	Field and Depot Maintenance: Multimeter AN/URM-105 including Multimeter ME-77/U.
TM 11-5935-205-15P	Operator, Organizational, Field and Depot Maintenance Repair Parts and Special Tool Lists and Maintenance Allocation Chart: Connector, Receptacle, Electrical U-187/G.	TM 11-6625-203-35P	Field and Depot Maintenance Repair Parts and Special Tool Lists for Multimeter AN/URM-105.
		TM 11-6625-274-10P	Operator's Maintenance Repair Parts and Special Tool Lists for Test Sets, Electron Tube TV-7/U, TV-7A/U, TV-7B/U, and TV-7D/U.
TM 11-5965-207-12P	Operator's Organizational Maintenance Repair Parts and Spe-	TM 11-6625-274-12	Operator's and Organizational Maintenance Manual: Test Sets, Electron Tube TV-

TM 11-6625-274-20P

7/U, TV-,7A/U, -TV-7B/U, and TV-7D/U. Organizational Maintenance Repair Parts and Special Tool Lists for Test Sets, Electron, Tube TV-7/U, TV-7A/U, TV-7B/U,

TM 11-6625-274-35P

and TV-7D/U. Field and Depot Maintenance Repair Parts and Special Tool Lists for Test Sets, Electron Tube TV-7/U, TV-7A/U, TV-7B/U, and TV-7D/U.

APPENDIX II

MAINTENANCE ALLOCATION

Section I. INTRODUCTION

1. General

a. This appendix assigns maintenance functions and repair operations to be performed by the lowest appropriate maintenance echelon.

b. Columns in the maintenance allocation chart are as follows:

- (1) *Part or component.* This column shows only the nomenclature or standard item name. Additional descriptive data are included only where clarification is necessary to identify the part. Components and parts comprising a major end item are listed alphabetically. Assemblies and subassemblies are in alphabetical sequence with their components listed alphabetically immediately below the assembly listing.
- (2) *Maintenance function.* This column indicates the various maintenance functions allocated to the echelon capable of performing the operations.
 - (a) *Service.* To clean, to preserve, and to replenish fuel and lubricants.
 - (b) *Adjust.* To regulate periodically to prevent malfunction.
 - (c) *Inspect.* To verify serviceability and to detect incipient electrical or mechanical failure by scrutiny.
 - (d) *Test.* To verify serviceability and to detect incipient electrical or mechanical failure by use of special equipment such as gages, meters, etc.
 - (e) *Replace.* To substitute serviceable assemblies, subassemblies and parts for unserviceable components.
 - (f) *Rebuild.* To restore an item to a standard as near as possible to original or new condition in appearance, performance, and life expectancy. This is accomplished through the maintenance technique of complete disassembly -of the

item, inspection of all parts or components, repair or replacement of worn or unserviceable elements using original manufacturing tolerances and/or specifications and subsequent reassembly of the item.

- (g) *Repair.* To restore an item to serviceable condition through correction of a specific failure or unserviceable condition. This function includes but is not limited to, inspecting, cleaning, preserving, adjusting, replacing, welding, riveting, and straightening.
- (3) *1st, 2d, 3d, 4th, 5th echelon.* The symbol X indicates the echelon responsible for performing that particular maintenance operation, but does not necessarily indicate that repair parts will be stocked at that level. Echelons higher than the echelon marked by X are authorized to perform the indicated operation.
- (4) *Tools required.* This column indicates codes assigned to each individual tool equipment, test equipment, and maintenance equipment referenced. The grouping of codes in this column of the maintenance allocation chart indicates the tool, test, and maintenance equipment required to perform the maintenance function.
- (5) *Remarks.* Entries in this column will be utilized when necessary to clarify any of the data cited in the preceding columns.

c. Columns in the section allocation of tools for maintenance functions are as follows:

- (1) *Tools required for maintenance functions.* This column lists tools, test, and maintenance equipment required to perform the maintenance functions.

- (2) *1st, 2d, 3d, 4th, 5th echelon.* A dagger (±) symbol indicates the echelons allocated the facility.
- (3) *Tool code.* This column lists the tool code assigned.
- (4) *Remarks.* Entries in this column are used to clarify data in the other columns.

communication zones to provide theater communications, those maintenance functions allocated up to and including fourth echelon are authorized to the organization operating this equipment.

3. Mounting Hardware

The basic entries of this maintenance allocation chart do not include mounting hardware such as screws, nuts, bolts, washers, brackets, clamps, etc.

2. Maintenance by Using -Organizations

When this equipment is used by signal service organizations organic to the theater headquarters or

SECTION II MAINTENANCE ALLOCATION CHART

Tools Required For Maintenance Functions (1)	Maintenance Function (2)	1 st ech. (3)	2 nd ech. (4)	3 rd ech. (5)	4 th ech. (6)	5 th ech. (7)	Tool Code (8)	Remarks (9)
COMMUNICATIONS OPERATIONS CENTER AN/MSC-25	service	X						Interior
	service		X					Exterior
	inspect	X					3,4	Interior and exterior
	test		X				1	Continuity' (signal and power units)
	repair		X				3,4	
	rebuild					X	3,4	
SEMI-TRAILER, VAN, ELECTRONIC EQUIPMENT V-189/MSC-25	repair		X				3,4	
	rebuild					X	3,4	
CABLE ASSEMBLIES	repair		X				3,4	See separate MAC for Connector U-185/G
CLOCK	replace		X				3	
CONDUIT ASSEMBLIES	repair		X				3,4	
DOOR. ASSEMBLIES, EXTERIOR	repair		X				3	
DOORS, FOLDING	replace			X			3	
FAN, VENTILATING	repair		X				3	
HEATERS, SPACE, ELECTRICAL.	replace		X				3	
INTERCOMMUNICATION STATION LS-147 ()/FI	repair		X					See separate MAC
JACK AND SWITCH PANEL ASSEMBLIES	repair '		X				3,4	
PANEL, POWER DISTRIBUTION	repair		X				3, 4	
PANEL, POWER, ENTRANCE	repair		X				3,4	
PANEL, SIGNAL, ENTRANCE	repair		X				3, 4	See separate MAC For Connector U-187/G
SWITCHBOARD SB-22/PT	repair		X					See separate MAC
TELEGRAPH TERMINALS TH-5/TG	repair		X					See separate MAC
TELEPHONE SET TA-312/PT	repair		X					See separate MAC
TELETYPEWRITER TT-4A/TG	repair		X					See separate MAC
TELETYPEWRITER TT-76/GGC	repair		X					See separate MAC
TERMINAL BOX TA-125/GT	repair		X					See separate MAC
TIE DOWN ASSEMBLIES	replace		X				3	

SECTION II MAINTENANCE ALLOCATION CHART

Tools Required For Maintenance Functions (1)	Maintenance Function (2)	1 st ech. (3)	2 nd ech. (4)	3 rd ech. (5)	4 th ech. (6)	5 th ech. (7)	Tool Code (8)	Remarks (9)
AN/MSC-25		+					1	
MULTIMETER, AN/URM-105			+	+	+		2	
MULTIMETER, TS-352/U		+	+	+	+		3	
TOOL KIT, GENERAL MECHANIC		+	+	+	+		4	
SOLDERING IRON, TL-117		+	+	+	+			

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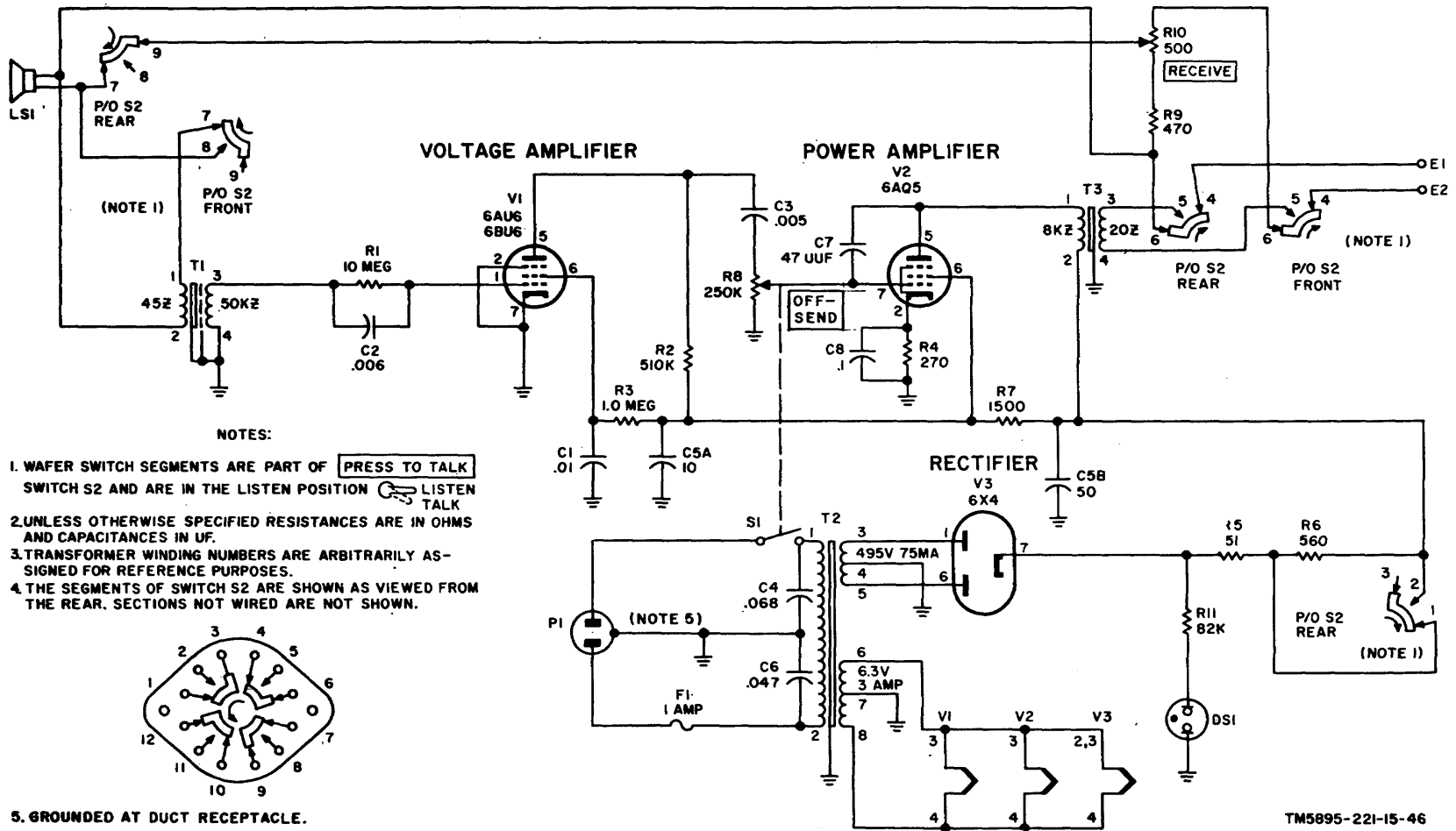


Figure 44. Intercommunication Station LS-147D/FI, schematic diagram

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USAR: None.

For explanation of abbreviations used, see AR 320-50.

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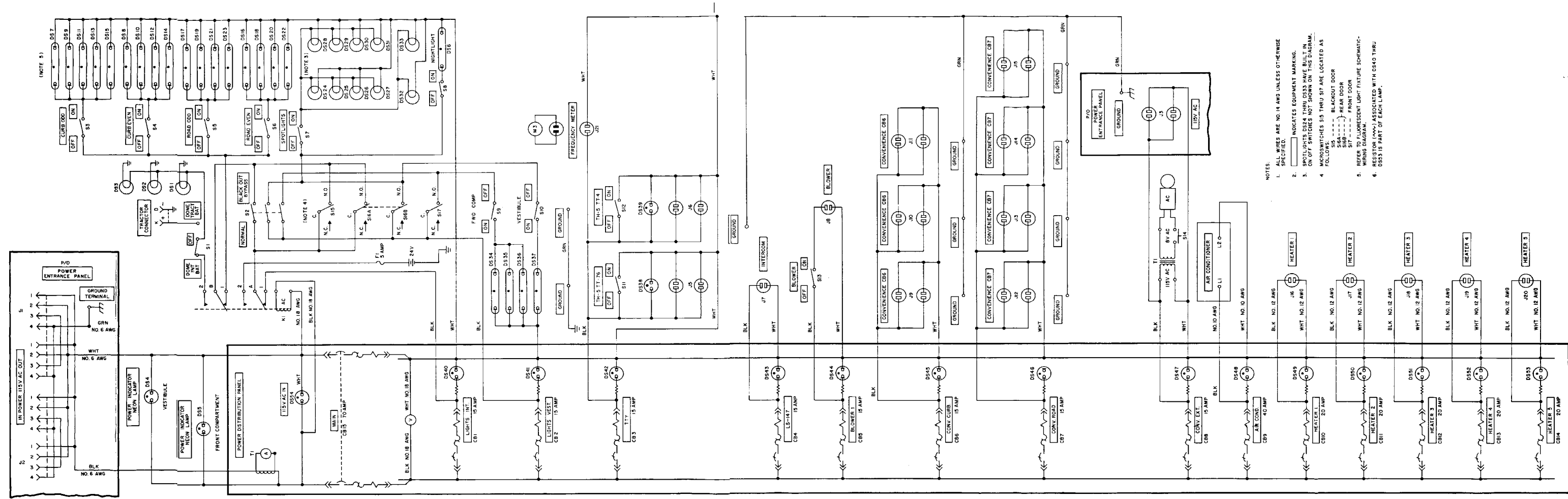
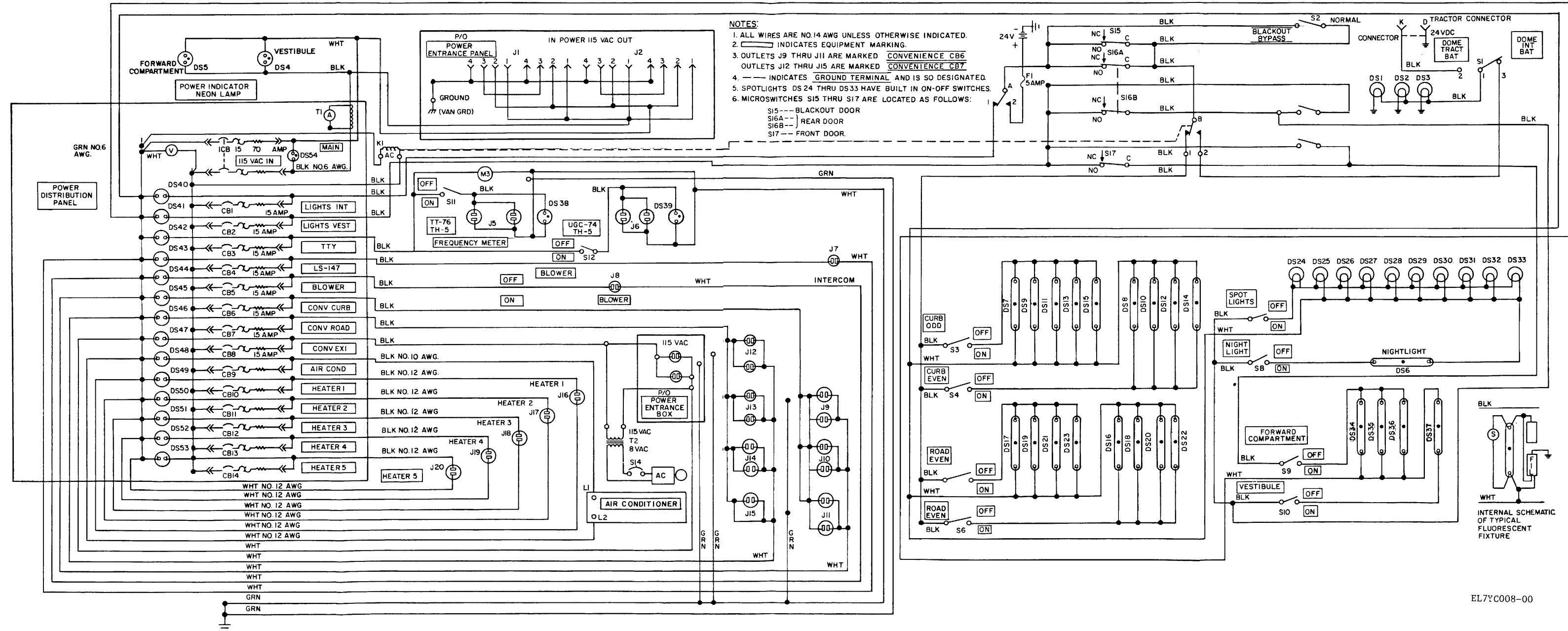


Figure FO 43.2. Operation Center Communications. AN/MSC-25 (Modified) Power Schematic Diagram

Change 10



EL7Y:CO08-00

Figure FO 43.3. Operation Center Communications. AN/MS-25A (Modified), Power Schematic Diagram

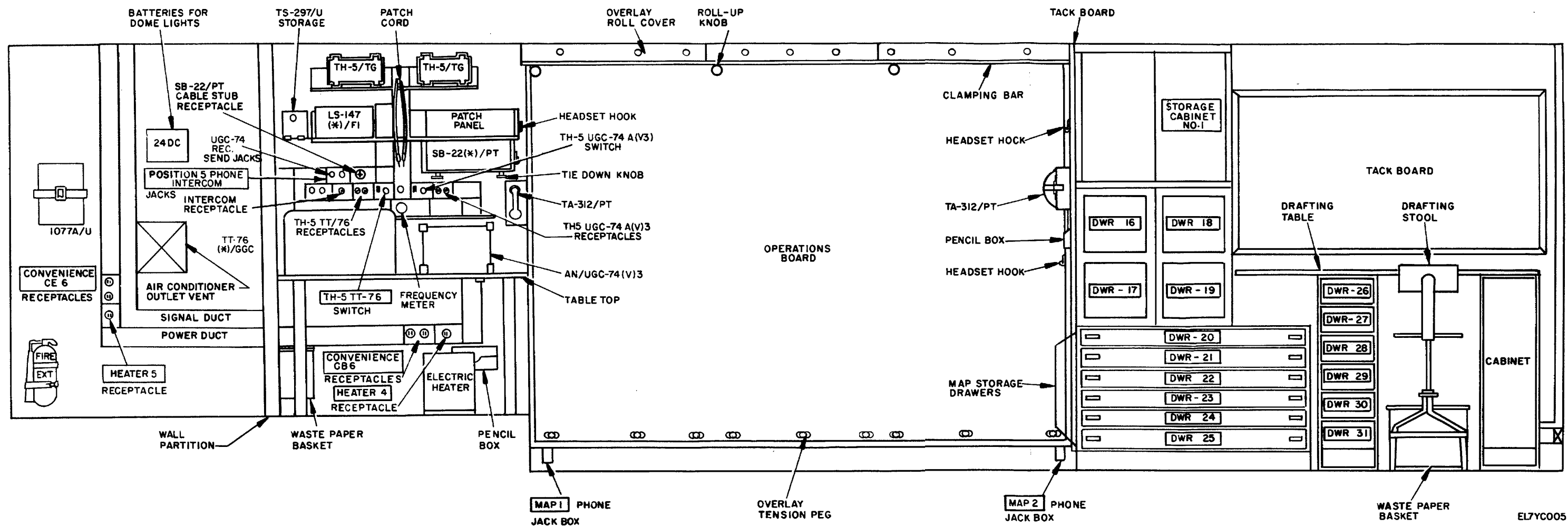
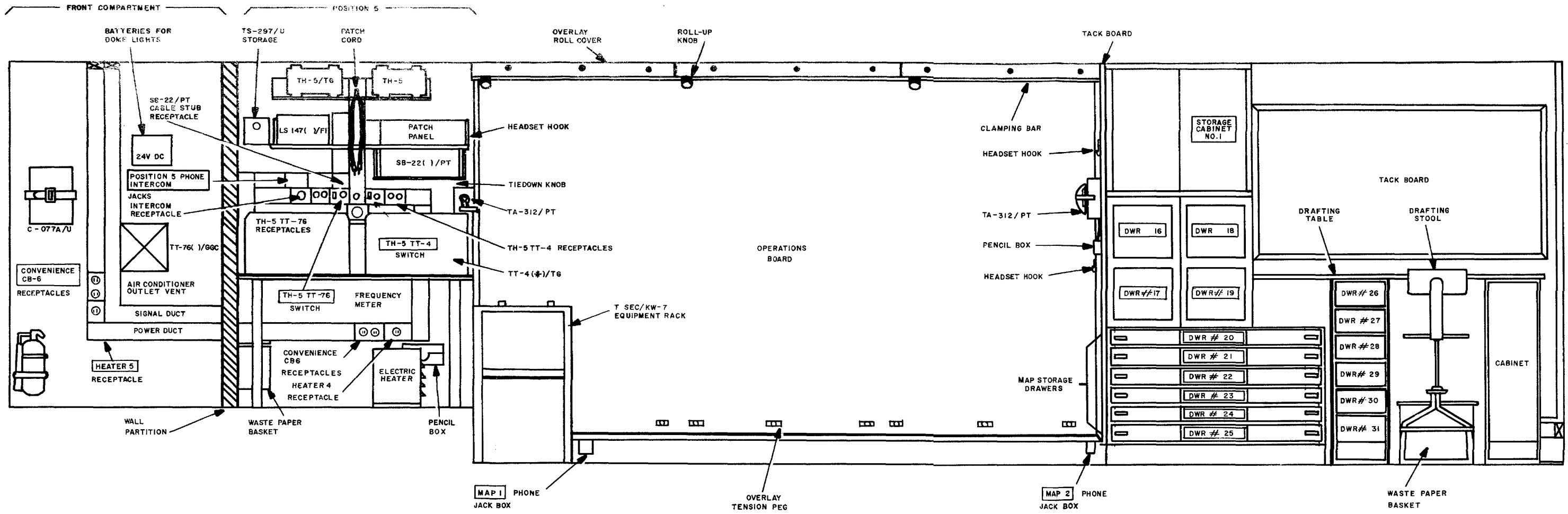


Figure 14.1. Operations Center, Communications AN/MS-25A, Curbside Wall Elevation Diagram.



EL7YCO10

Figure 14.2. Operations Center, Communications AN/MSC-25, Curbside Wall, Elevation Diagram, (with secure equipment installed).

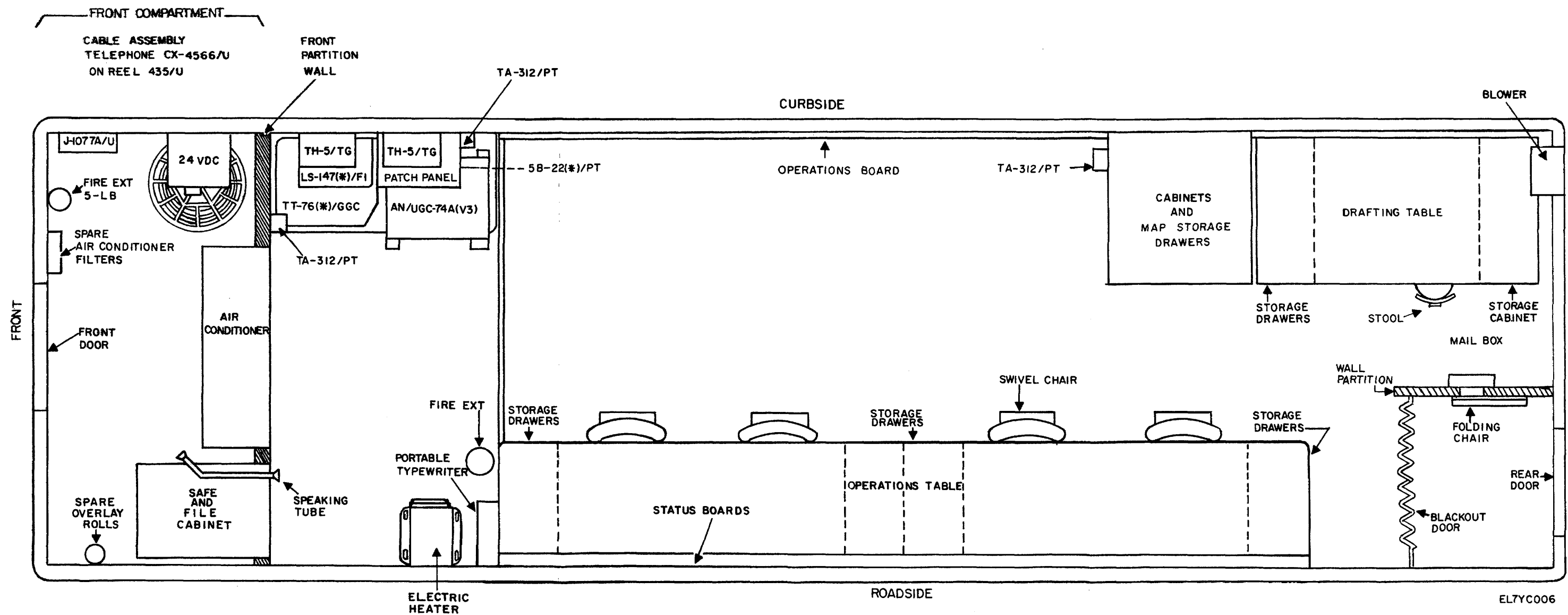
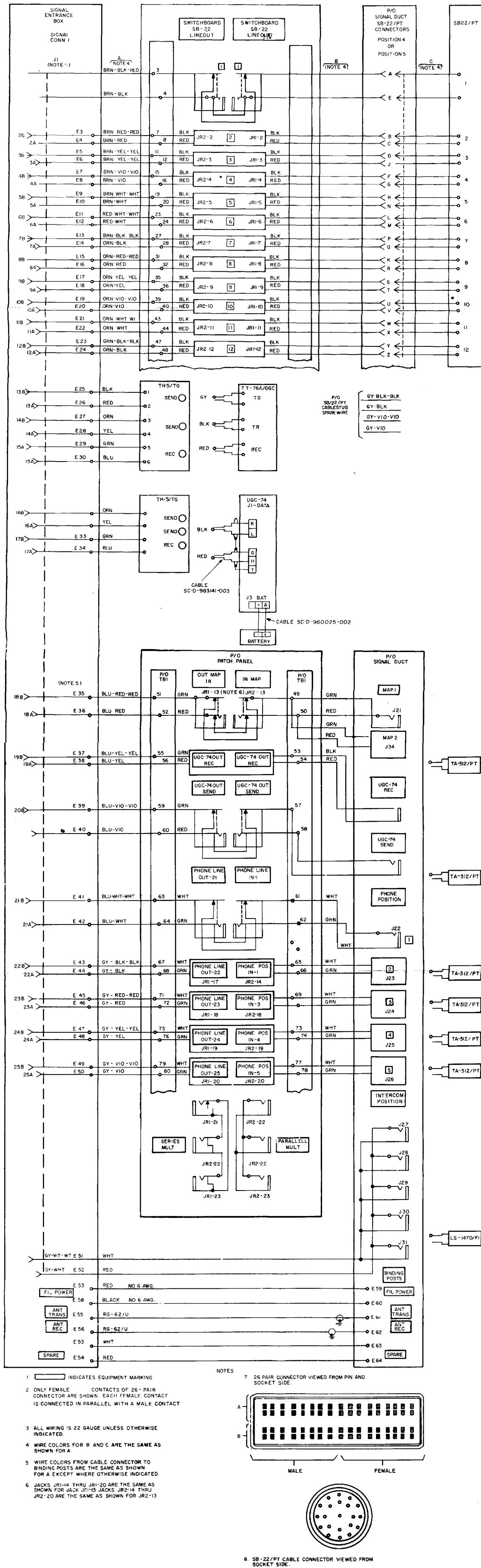


Figure 18.1. Operations Center, Communications AN/MS-25A. Floor Plan.



EL7YC009

Figure 42.1. Operations Center, Communications AN/MSC-25A, Signal Schematic Wiring Diagram.

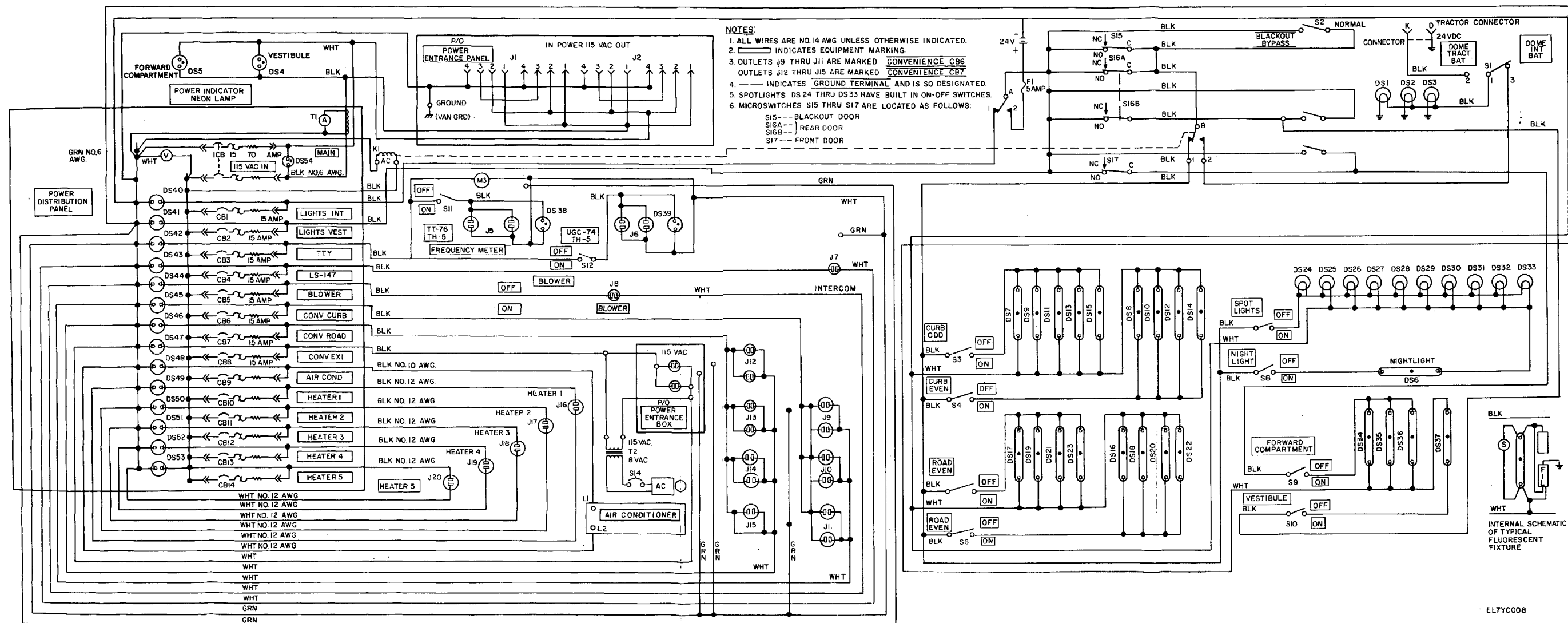


Figure 43.1. Operations Center, Communications AN/MS-25A, Power Schematic Wiring.

EL7YC008

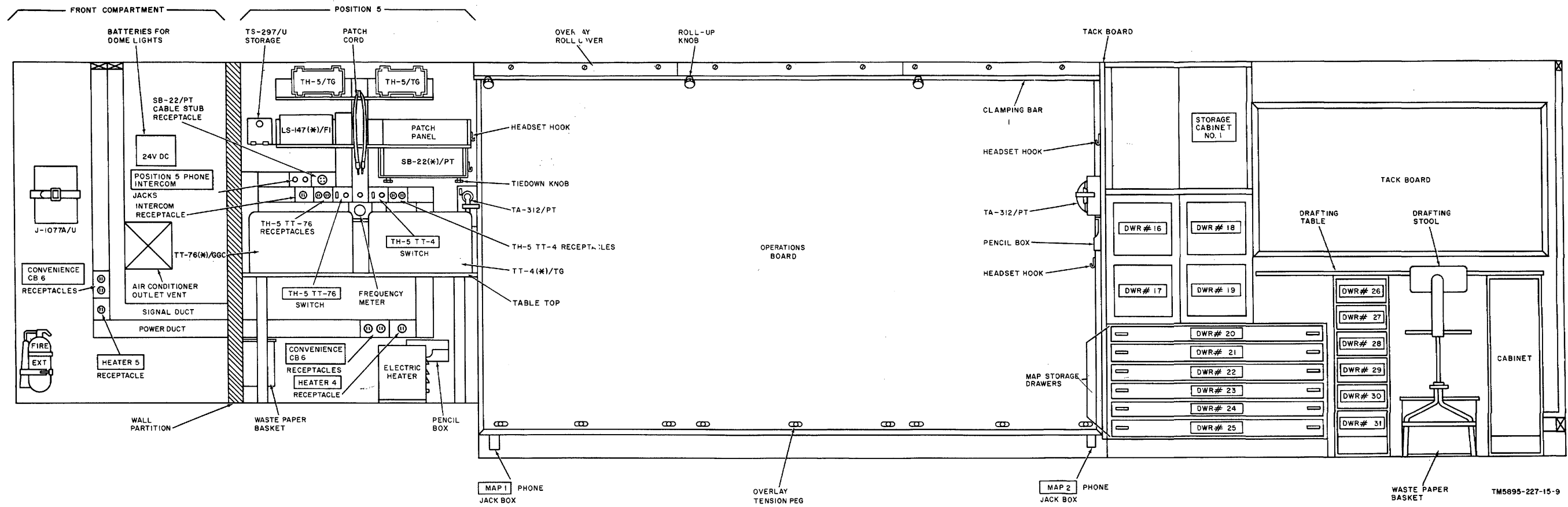
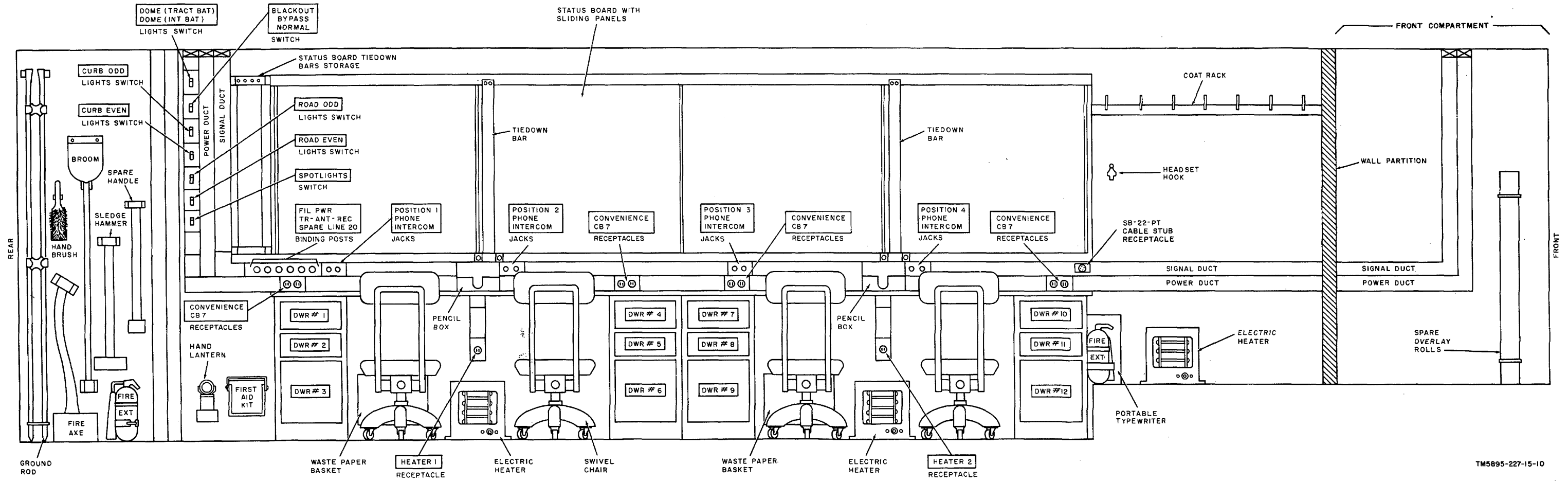


Figure 14. Operations Center, Communications ANIMSC-25, curbside wall, elevation diagram.



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Figure 15. Operations Center, Communications ANMSC-25, roadside wall, elevation diagram.

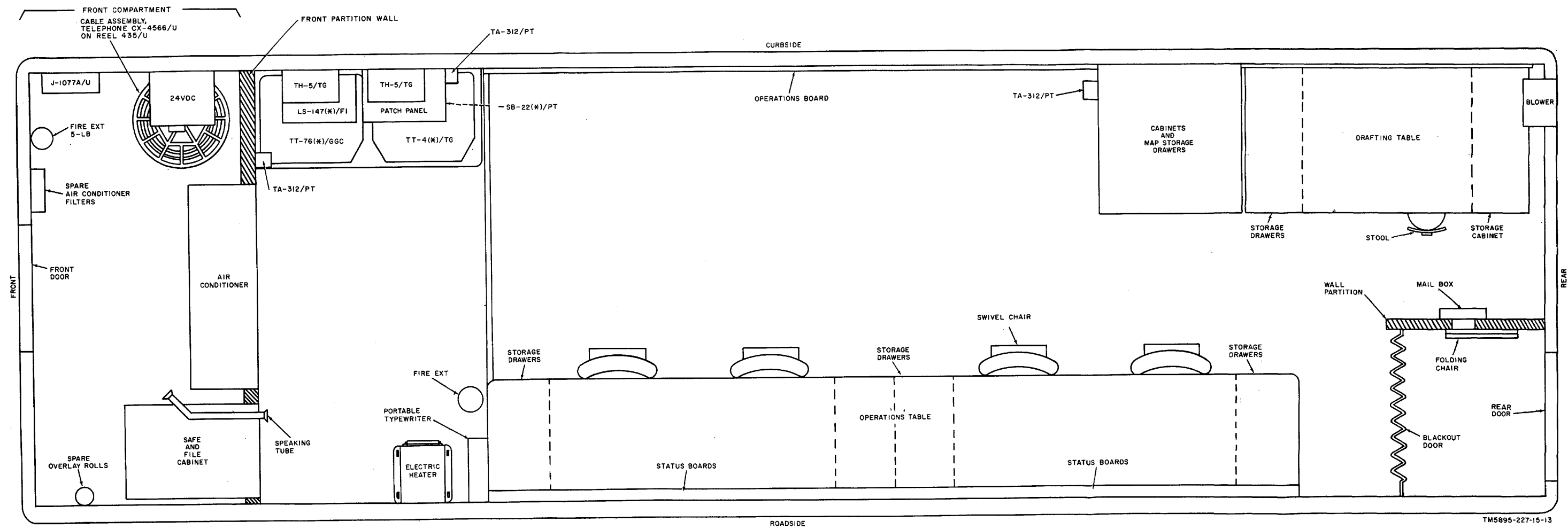


Figure 18. Operations Center, Communications AN/MSC-25, floor plan.

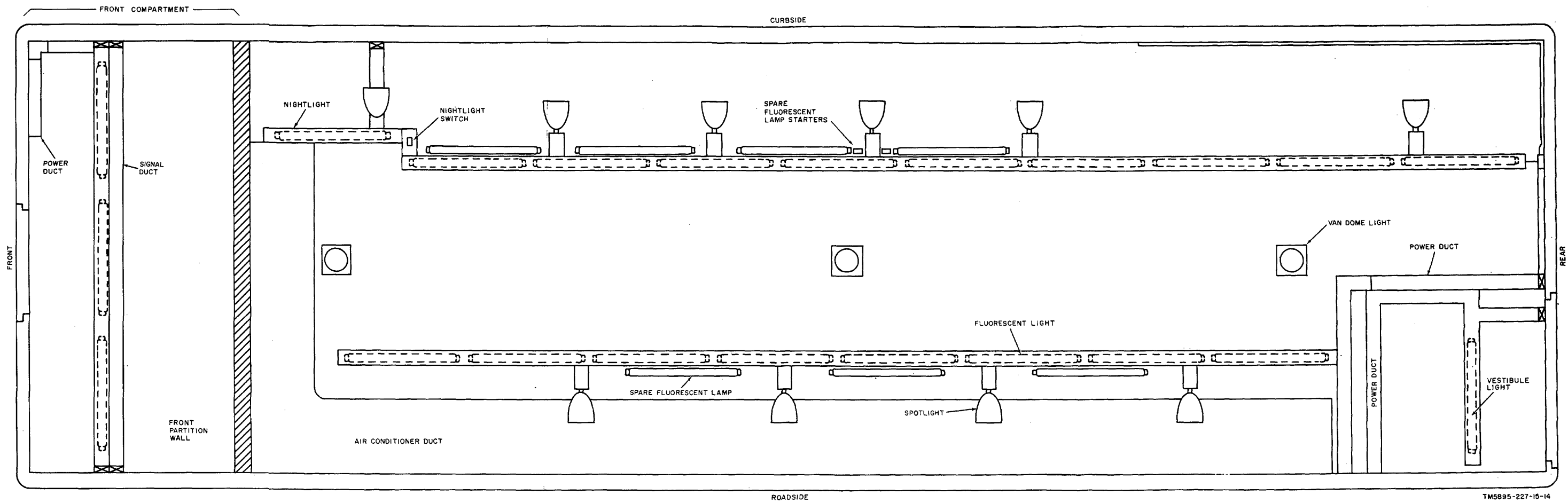
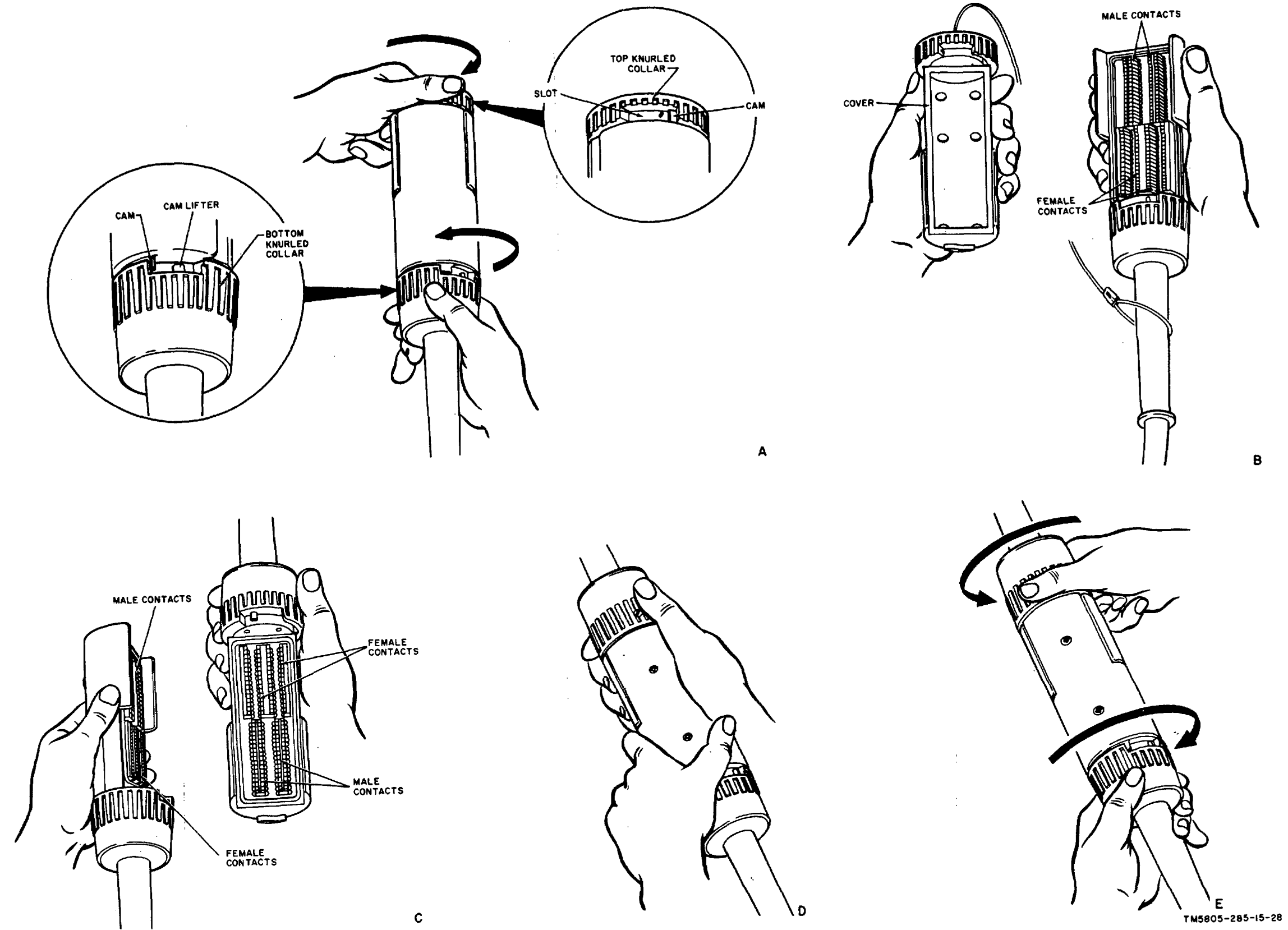
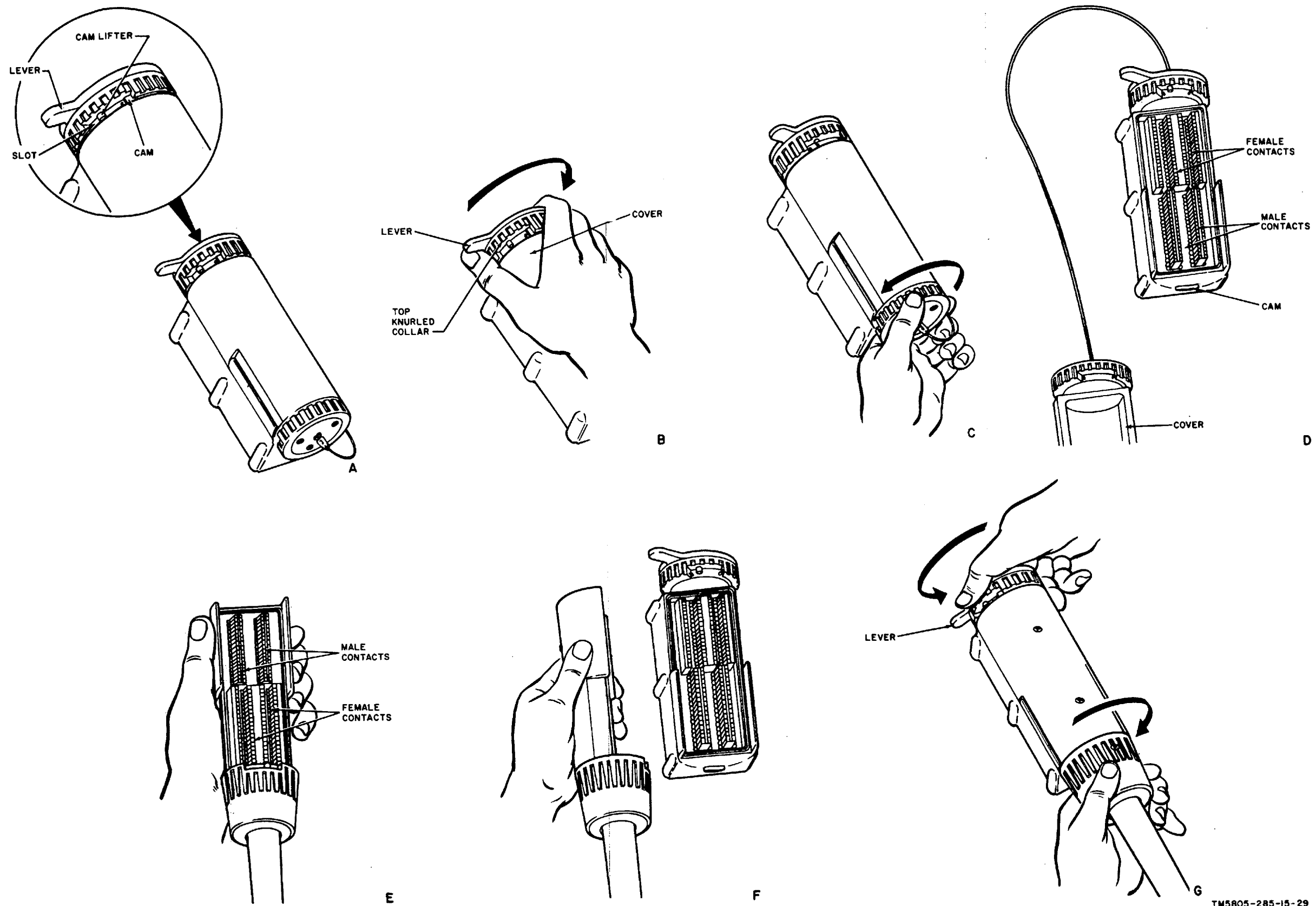


Figure 19, Operations Center, Communications ANIMSC-25, ceiling plan.



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Figure 30. Coupling 26-pair connectors.



TM5805-285-15-29

Figure 31. Connecting 26-pair connector to 26-pair receptacle.

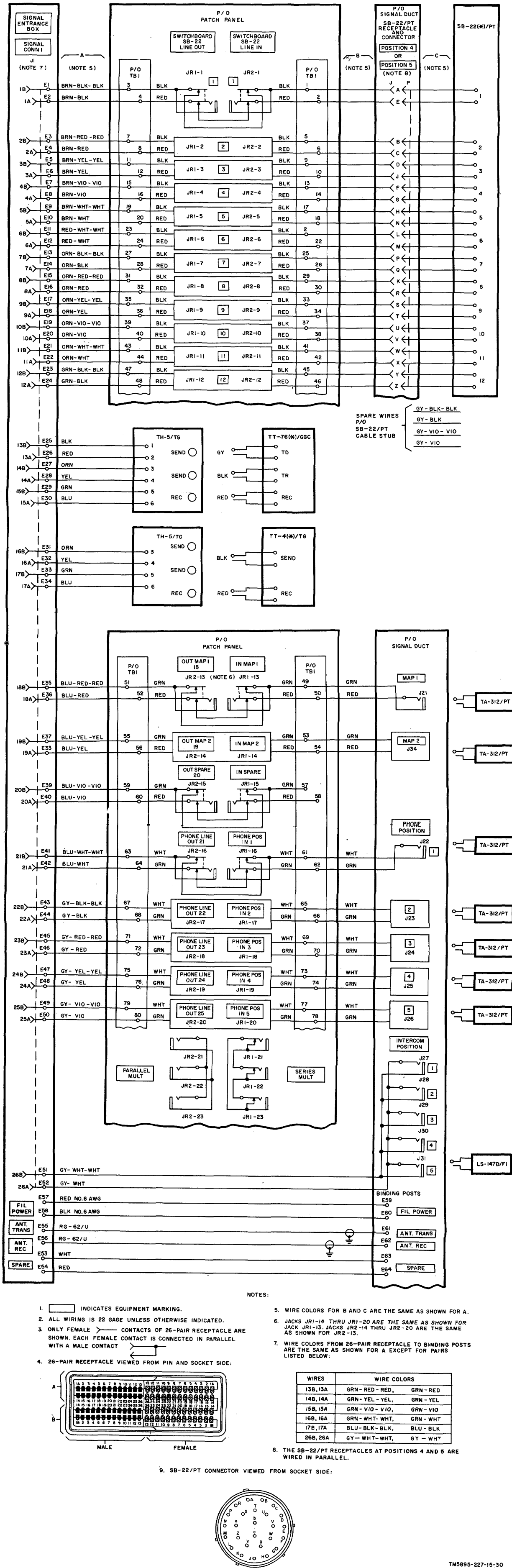
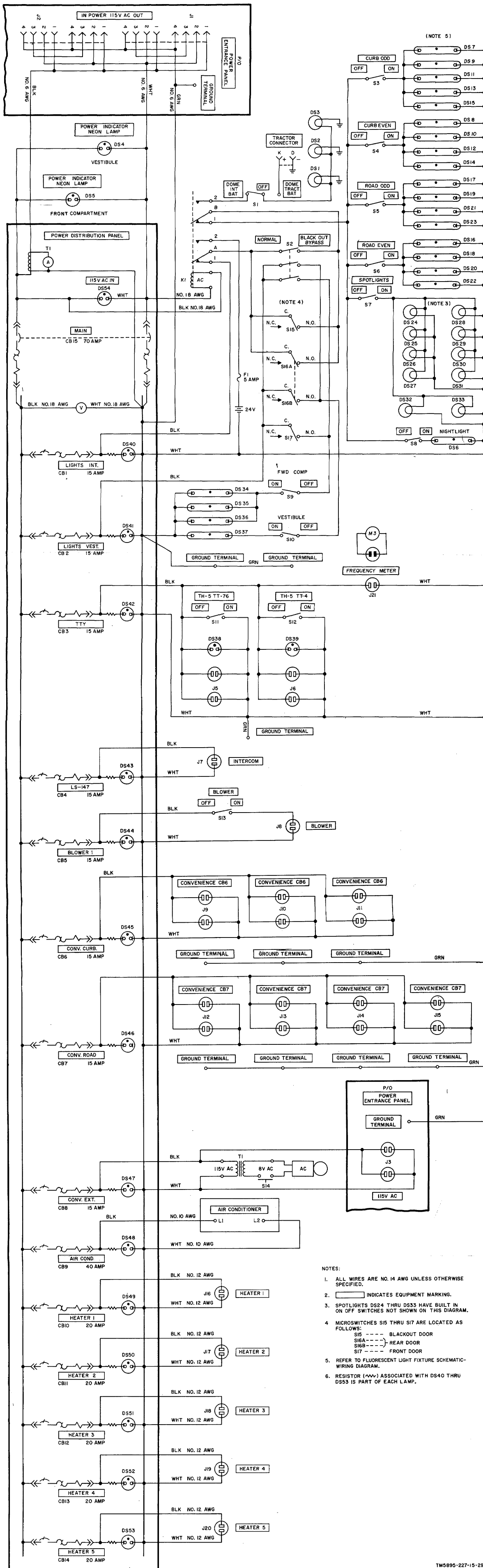


Figure 42. Operations Center, Communications AN/MS-25, signal schematic-wiring diagram



- NOTES:
1. ALL WIRES ARE NO. 14 AWG UNLESS OTHERWISE SPECIFIED.
 2. INDICATES EQUIPMENT MARKING.
 3. SPOTLIGHTS DS24 THRU DS33 HAVE BUILT IN ON OFF SWITCHES NOT SHOWN ON THIS DIAGRAM.
 4. MICROSWITCHES S15 THRU S17 ARE LOCATED AS FOLLOWS:
 S15 --- BLACKOUT DOOR
 S16A --- REAR DOOR
 S16B --- FRONT DOOR
 S17 --- FRONT DOOR
 5. REFER TO FLUORESCENT LIGHT FIXTURE SCHEMATIC-WIRING DIAGRAM.
 6. RESISTOR (R) ASSOCIATED WITH DS40 THRU DS53 IS PART OF EACH LAMP.

Figure 43. Operations Center, Communications AN/MS-25, power schematic-wiring diagram

The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
 1 decimeter = 10 centimeters = 3.94 inches
 1 meter = 10 decimeters = 39.37 inches
 1 dekameter = 10 meters = 32.8 feet
 1 hectometer = 10 dekameters = 328.08 feet
 1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
 1 decigram = 10 centigrams = 1.54 grains
 1 gram = 10 decigrams = .035 ounce
 1 decagram = 10 grams = .35 ounce
 1 hectogram = 10 decagrams = 3.52 ounces
 1 kilogram = 10 hectograms = 2.2 pounds
 1 quintal = 100 kilograms = 220.46 pounds
 1 metric ton = 10 quintals = 1.1 short tons

Liquid Measure

1 centiliter = 10 milliliters = .34 fl. ounce
 1 deciliter = 10 centiliters = 3.38 fl. ounces
 1 liter = 10 deciliters = 33.81 fl. ounces
 1 dekaliter = 10 liters = 2.64 gallons
 1 hectoliter = 10 dekaliters = 26.42 gallons
 1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
 1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
 1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
 1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
 1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
 1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
 1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
 1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

Approximate Conversion Factors

<i>To change</i>	<i>To</i>	<i>Multiply by</i>	<i>To change</i>	<i>To</i>	<i>Multiply by</i>
inches	centimeters	2.540	ounce-inches	Newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29.573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	Newton-meters	1.356	metric tons	short tons	1.102
pound-inches	Newton-meters	.11296			

Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C
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