HHT 107 APC #20

TM 11-2643

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

INTERCOMMUNICATION SET AN/UIC-1

DEPARTMENT OF THE ARMY • MARCH 1951

A

TECHNICAL MANUAL

INTERCOMMUNICATION SETS AN/UIC–1 AND AN/UIC–1X

TM 11–2643
CHANGES No. 1

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON 25, D.C., *19 March 1962*

TM 11–2643, 16 March 1951, is changed as follows:

The title of the manual is changed as above.

Page 1, paragraph 2.

e. (Added) *Comments or Suggestions.* Any comments concerning omissions and discrepancies in this manual will be prepared on DA Form 2028 and forwarded direct to Commanding Officer, U.S. Army Signal Materiel Support Agency, ATTN: SIGMS–ML, Fort Monmouth, N.J.

Page 1.

2.1. (Added) **Index of Equipment Publications**

Refer to DA Pamphlet 310–4 to determine what Changes to or revisions of this publication are current.

Page 42, Appendix I. Add the following to paragraph 7.

TM 11–5820–281–10P Audio Frequency Amplifier AM–65/GRC, AM–65A/GRC.

TM 11–5820–210–10P Powers Supplies PP–281/GRC, PP–281A/GRC, PP–282/GRC and PP–282A/GRC.

TM 11–5820–281–20P Audio Frequency Amplifier AM–65/GRC, AM–65A/GRC.

TM 11–5820–210–20P Power Supplies PP–281/GRC, PP–281A/GRC, PP–282/GRC and PP–282A/GRC.

TM 11–5830–203–12P Intercommunication Set Control C–375/VRC.

TM 11–5820–306–12P Mounting MT–300/GR.

Pages 43–46, delete present Appendix II and substitute the following:

APPENDIX II (Superseded)

MAINTENANCE ALLOCATION CHART

Section I

MAINTENANCE ALLOCATION

1. General

a. This section assigns maintenance functions to be performed on Components, assemblies, and sub-assemblies by the lowest appropriate maintenance echelon.

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

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

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

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

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

*These changes supersede TM 11–5830–216–10P, 2 July 1959, and so much of TM 11–5830–216–20P, 2 July 1959, as pertains to maintenance allocation chart.

(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 components, assemblies, or sub-assemblies, for unserviceable components, assemblies, or sub-assemblies.

(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) *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) *1st, 2d, 3d, 4th, 5th, echelon.* The symbol X placed in Columns 3 through 7 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 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.* The dagger (†) symbol in these columns indicates the echelons 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 fourth echelon are authorized to the organization operating this equipment.

Section II. MAINTENANCE ALLOCATION CHART

(1) Part or component	(2) Maintenance function	(3) 1st Ech.	(4) 2d Ech.	(5) 3d Ech.	(6) 4th Ech.	(7) 5th Ech.	(8) Tools required	(9) Remarks
INTERCOMMUNICATION SET AN/UIC-1, AN/UIC-1X.	Service		X				11	
	Adjust		X				11	
	Inspect	X						Exterior
	Test		X				4, 9	
				X			2, 3, 5, 7, 9	
					X		1, 2, 3, 5, 6, 7, 9, 10, 13	
						X	1, 2, 3, 5, 6, 7, 8, 10, 13	
	Repair		X				11	Replacement of major components
	Repair			X			12	
	Rebuild				X		12	
AF AMPLIFIER AM-65/GRC	Replace		X					Separate MAC
CONTROL BOX C-375/VRC	Replace		X					Separate MAC
MOUNTING MT-300/GR	Replace		X					Separate MAC
POWER SUPPLY PP-281/GRC	Replace		X					Separate MAC
POWER SUPPLY PP-282/GRC	Replace		X					Separate MAC

Section III. ALLOCATION OF TOOLS FOR MAINTENANCE FUNCTIONS

(1) Tools required for maintenance functions	(3) 2d ech.	(4) 3d ech.	(5) 4th ech.	(6) 5th ech.	(7) Tool code	(8) Remarks
AN/UIC-1; AN/UIC-1X						
ANALYZER, SPECTRUM TS-723/U			(†)	(†)	1	
AUDIO OSCILLATOR TS-382/U		(†)	(†)	(†)	2	
ELECTRONIC MULTIMETER TS-505/U		(†)	(†)	(†)	3	
MULTIMETER AN/URM-105	(†)	(†)	(†)	(†)	4	In procurement. If not available use Multimeter TS-297/U or TS-352/U
OSCILLOSCOPE OS-8A/U		(†)	(†)	(†)	5	
SHUNT, INSTRUMENT, MULTIRANGE MX-1471/U.			(†)	(†)	6	
TEST, FACILITIES KIT MK-153/GRC		(†)	(†)	(†)	7	
TEST SET, ELECTRON TUBE TV-2/U				(†)	8	
TEST SET, ELECTRON TUBE TV-7/U	(†)	(†)	(†)		9	
TEST SET, VIBRATOR TS-747( )/U			(†)	(†)	10	
TOOL EQUIPMENT TE-41	(†)				11	
TOOL EQUIPMENT TE-113		(†)	(†)	(†)	12	
VOLTMETER, METER ME-30/U			(†)	(†)	13	

APPENDIX III (Added)

BASIS ISSUE ITEMS LIST

Section I. INTRODUCTION

1. Scope

a. This appendix lists items supplied for initial operation and for running spares. The list includes tools, accessories, 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 requisitioning.

b. Columns are as follows:

(1) *Source, maintenance, and recoverability code.* 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 authorized.* Under "Items Comprising an Operable Equipment", the column lists the quantity of items supplied for the initial operation of the equipment. Under "Running Spares and Accessory 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.

(8) *Illustrations.* Not used.

Section II. FUNCTIONAL PARTS LIST

(2) Federal stock No.	(3) Designation by model 1	(3) Designation by model 2	(4) Description	(6) Expendability	(7) Quantity authorized
5830-224-5341	-----	-----	INTERCOMMUNICATION SET AN/UIC-1: vehicular; 24 v DC oper---	NX	
5830-224-5342	-----	-----	INTERCOMMUNICATION SET AN/UIC-1X: vehicular; 12 v DC oper--	NX	
			ITEMS COMPRISING AN OPERABLE EQUIPMENT		
Order thru AGC	-----	-----	TECHNICAL MANUAL TM 11-2643----------	------	2
5820-194-8303	(†)	(†)	AF AMPLIFIER AM-65/GRC----------	NX	1
5975-284-5095	(†)	(†)	BOX CONNECTOR, ELECTRICAL: Appleton cat No. 61007------	------	1
5830-170-7868	(†)	(†)	CONTROL BOX C-375/VRC: Army spec No. 71-3327----------	NX	2
5820-221-5515	(†)	(†)	MOUNTING MT-300/GR----------	NX	1
5820-500-4375	-----	(†)	POWER SUPPLY PP-281/GRC----------	NX	1
5820-500-1648	(†)	-----	POWER SUPPLY PP-282/GRC----------	NX	1
			RUNNING SPARES AND ACCESSORY ITEMS		
5920-230-9122	(†)	-----	FUSE, CARTRIDGE: Buss type AGU-4----------	------	5
5920-142-7365	-----	(†)	FUSE, CARTRIDGE: 10 amp; Buss type No. AGU-10----------	------	3
5920-232-3698	(†)	(†)	FUSE, CARTRIDGE: 50 amp; Buss type AGU-50----------	------	3
5180-393-2126	(†)	(†)	WRENCH SET: Sig dwg No. SC-B-61575----------	------	1

NOTE: Model column 1 refers to AN/UIC-1; column 2 refers to AN/UIC-1X.

By Order of the Secretary of the Army:

G. H. DECKER,
General, United States Army,
Chief of Staff.

Official:

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

Distribution:

Active Army:

DASA (6)	WRAMC (1)	6–327
USASA (2)	USA Trans Tml Comd (1)	6–328
CNGB (1)	Army Tml (1)	6–330
Tech Stf, DA (1) except CSigO (14)	POE (1)	6–415
Tech Stf Bd (1)	OSA (1)	6–418
USCONARC (5)	USAEPG (2)	6–425
USAARTYBD (1)	AFIP (1)	6–427
USAARMBD (2)	AMS (1)	7
USAIB (1)	Army Pictorial Cen (2)	7–25
USARADBD (2)	EMC (1)	7–26
USAAVNBD (1)	Yuma Test Sta (2)	17–22
USABELCTBD (1)	USACA (3)	17–25
USAATBD (1)	USASSA (20)	17–26
ARADCOM (2)	USASSAMRO (1)	17–45
ARADCOM Rgn (2)	USASEA (1)	17–46
OS Maj Comd (3)	USA Carib Sig Agcy (1)	17–51
OS Base Comd (2)	USA Sig Msl Spt Agcy (13)	17–52
LOGCOMD (2)	Sig Fld Maint Shops (3)	17–55
MDW (1)	USA Corps (3)	17–56
Armies (2)	Def Log Svc Cen (1)	17–57
Corps (2)	JBUSMC (2)	17–65
Instl (2)	Units organized under following	17–66
Ft Monmouth (63)	TOE's (2 copies each):	17–85
USATC AD (2)	6–37	17–115
USATC Armor (2)	6–100	17–116
USATC Engr (2)	6–125	29–56
USATC Inf (2)	6–126	44–15
USATC FA (2)	6–127	44–17
USAOMC (3)	6–128	44–35
Svc College (2)	6–300	44–37
Br Svc Sch (2)	6–301	44–85
GENDEP (2) except Atlanta	6–315	44–87
GENDEP (None)	6–316	55–75
Sig Sec, GENDEP (5)	6–317	55–78
Sig Dep (12)	6–325	57

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.

☆ U.S. GOVERNMENT PRINTING OFFICE : 1962 O—663305

DEPARTMENT OF THE ARMY
WASHINGTON 25, D. C., *16 March 1951*

TM 11–2643 is published for the information and guidance of all concerned.

[AG 311 (12 Mar 51)]

BY ORDER OF THE SECRETARY OF THE ARMY:

OFFICIAL:
EDWARD F. WITSELL
Major General, USA
The Adjutant General

J. LAWTON COLLINS
Chief of Staff, United States Army

DISTRIBUTION:
Tech Svc (2) except 11 (65); Arm & Svc Bd (1); AFF Bd (ea Svc Test Sec) (1); AFF (5); AA Comd (2); OS Maj Comd (5); Base Comd (5); MDW (5); A (20); CHQ (2); FC (2); Sch (2) except 11 (25); Gen Dep (2); Dep 11 (20) except Sig Sec, Gen Dep (10); Tng Div (2); PE (10), OSD (2); Lab 11 (5); 4th & 5th Ech Maint Shops 11 (3); Two (2) copies to each of the following T/O & E's: 5–225; 5–226; 5–227; 6–200; 6–225; 6–226; 6–229; 6–235; 6–236; 6–416; 6–419; 6–447; 7–11N; 7–31; 7–35; 7–36; 8–37; 11–107; 11–127; 11–500 CA, CB, CC, CD; 11–557; 11–587; 11–592; 11–597; 17–32; 17–35N; 17–36N; 17–37N; 17–77; 17–115; 17–116; 17–117; 17–125; 19–97; 44–275; 44–276; 44–277; 71–2; SPECIAL DISTRIBUTION.
For explanation of distribution formula, see SR 310–90–1.

CONTENTS

		Paragraph	Page
CHAPTER 1. INTRODUCTION.			
Section I.	General.		
	Scope	1	1
	Forms and records	2	1
II.	Description and data.		
	Purpose and use	3	1
	Application of equipment	4	3
	Technical characteristics	5	3
	Packaging data	6	4
	Table of components	7	4
	Description of AF Amplifier AM–65/GRC	8	4
	Description of Power Supplies PP–281/GRC and PP–282/GRC	9	5
	Description of Control Box C–375/VRC	10	6
	Description of Mounting MT–300/GR	11	6
	Running spares	12	8
	Additional equipment required	13	8
CHAPTER 2. INSTALLATION INSTRUCTIONS.			
Section I.	Service upon receipt of Intercommunication Set AN/UIC–1.		
	Siting	14	10
	Uncrating, unpacking, and checking new equipment	15	10
II.	Installation of components.		
	General	16	11
	Installing AF Amplifier AM–65/GRC	17	16
	Connecting components	18	17
III.	Service upon receipt of used or reconditioned equipment.		
	Unpacking	19	18
	Checking	20	18
CHAPTER 3. OPERATING INSTRUCTIONS.			
Section I.	Controls and connectors.		
	AF Amplifier AM–65/GRC controls and connectors	21	19
	Control Box C–375/VRC controls and connectors	22	20
II.	Operating procedure.		
	Preparatory steps	23	20
	Operation from control boxes	24	20
	Operation from the amplifier panel	25	21
CHAPTER 4. ORGANIZATIONAL MAINTENANCE INSTRUCTIONS.			
Section I.	Preventive maintenance.		
	Definition of preventive maintenance	26	22
	Tools and materials required	27	22
	General preventive maintenance techniques	28	22
	Performing preventive maintenance	29	22
	Lubrication	30	24
II.	Weatherproofing and refinishing.		
	Weatherproofing	31	25
	Refinishing	32	25
III.	Theory of Intercommunication Set AN/UIC–1.		
	Simplified block diagram	33	25
	Functional block diagram	34	26
	Power control circuits	35	29
	24-volt operation	36	29
	12-volt operation	37	30
	Audio control circuits	38	30

CHAPTER 4 ORGANIZATIONAL MAINTENANCE INSTRUCTIONS.—Con.

		Paragraph	Page
Section IV.	Trouble shooting at organizational maintenance level.		
	Scope	39	31
	Tools and test equipment required for trouble shooting	40	31
	Sectionalization of trouble to a component	41	31
	Localizing procedures	42	33
	Mounting MT–300/GR, continuity check	43	34
	Cable continuity checks	44	35
	Control Box C–375/VRC, continuity checks	45	35
V.	Replacement of parts and units.		
	Replacement of parts	46	37
	Replacement of units	47	38
CHAPTER 5.	SHIPMENT AND LIMITED STORAGE AND DEMOLITION OF MATÉRIEL TO PREVENT ENEMY USE.		
Section I.	Shipment and limited storage.		
	Disassembly	48	39
	Packing	49	39
II.	Demolition of matériel to prevent enemy use.		
	General	50	40
	Methods of destruction	51	40
APPENDIX I.	REFERENCES		41
II.	IDENTIFICATION TABLE OF PARTS		43

WARNING

HIGH VOLTAGE

is used in the operation of
this equipment.

DEATH ON CONTACT

may result if operating personnel
fail to observe safety precautions.

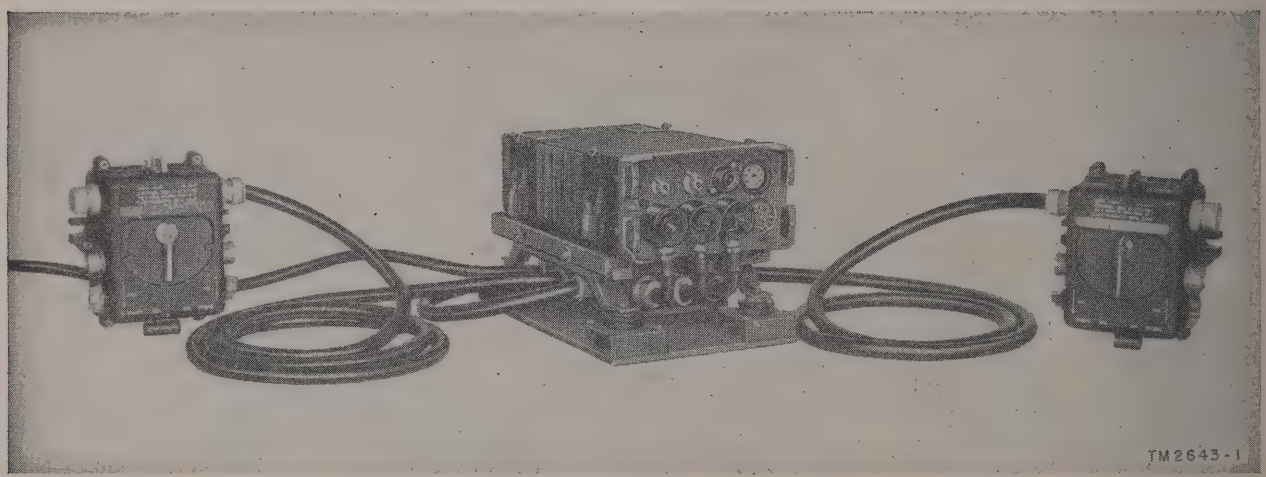


Figure 1. Intercommunication Set AN/UIC–1.

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1. Scope

This technical manual contains instructions for the installation, operation, maitenance, and repair of Intercommunication Set AN/UIC–1 (fig. 1). In addition to these instructions, there are two appendixes containing a list of references and an identification table of parts.

2. Forms and Records

The following forms will be used for reporting unsatisfactory conditions of Army matériel and equipment.

a. DD Form 6, Report of Damaged or Improper Shipment, will be filled out and forwarded as prescribed in SR 745–45–5 (Army), NAV DEPT SERIAL 85P00 (Navy), and AFR 71–4 (Air Force).

b. DA AGO Form 468, Unsatisfactory Equipment Report, will be filled out and forwarded to the Office of the Chief Signal Officer, as prescribed in SR 700–45–5.

c. DA AGO Form 419, Preventive Maintenance Checklist for Signal Corps Equipment, will be prepared in accordance with instructions on the back of the form.

d. Use other forms and records as authorized.

Section II. DESCRIPTION AND DATA

3. Purpose and Use

a. Intercommunication Set AN/UIC–1 (fig. 1) is a combination of an audio amplifier, a mounting, two control boxes, and miscellaneous components which are intended to provide two-way voice communication between two or more positions in large armored vehicles, such as tanks, personnel carriers, gun carriages, etc. It also provides facilities for remote monitoring or transmitting over one or two radio sets, when the intercommounication set is used in conjunction with other radio systems which use such sets.

b. The equipment consists of an aluminum and steel Mounting MT–300/GR, and AF Amplifier AM–65/GRC, having one high-level and two low-level interphone voice channels, a vibrator type Power Supply PP–281/GRC or PP–282/GRC for use with a 12- or 24-volt storage battery (not a component of AN/UIC–1), and two Control Boxes C–375/VRC capable of remote control and three-way switching for plug-in audio accessories (handsets, chest sets, microphones, or headsets). The audio accessories and connecting Cables WM–46/U are not components of basic Intercommunication Set AN/UIC–1, but are supplied with various installation kits for different vehicles. The operating components are shown in figure 2.

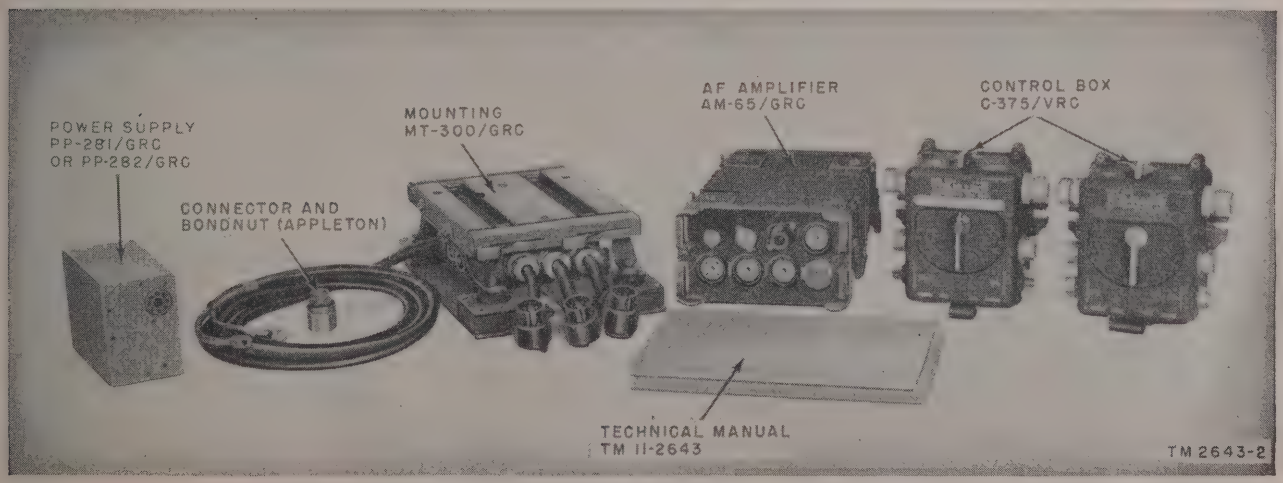


Figure 2. Intercommunication Set AN/UIC–1, disassembled view.

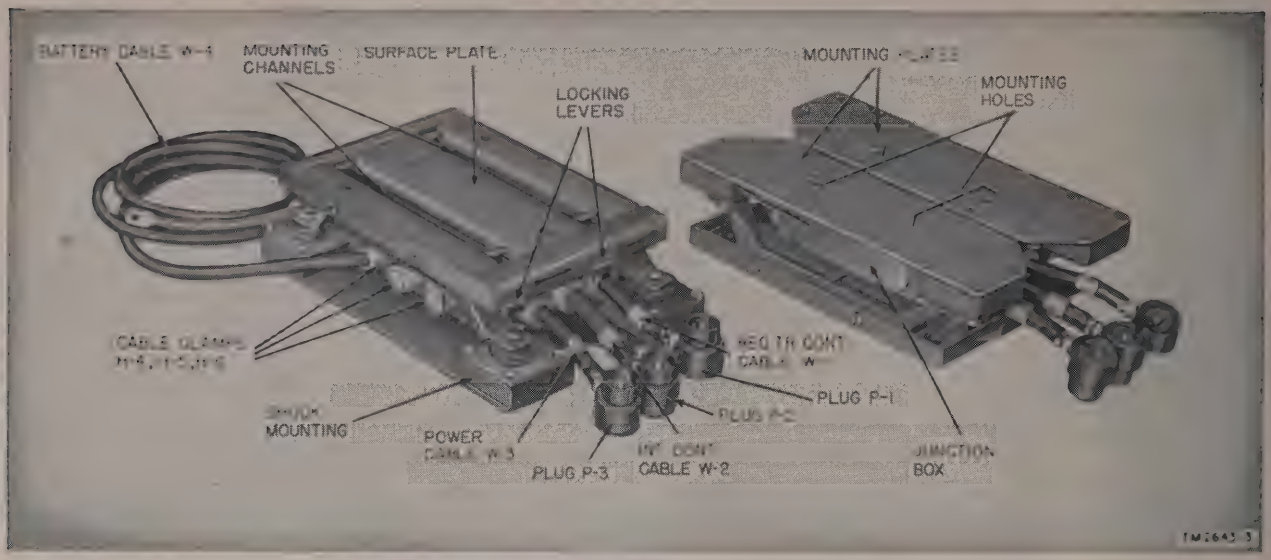


Figure 3. Mounting MT–300/GR, top and bottom views.

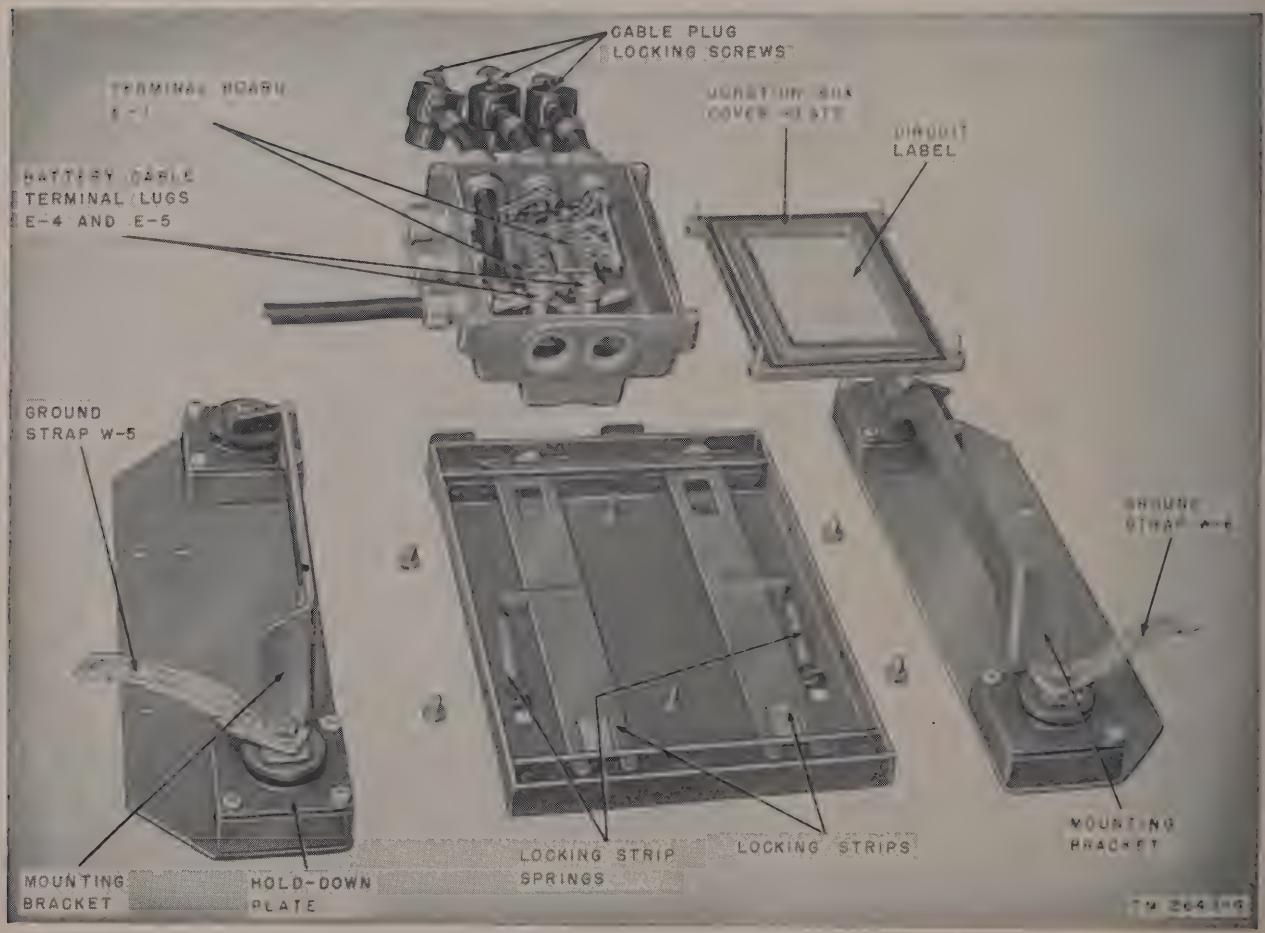


Figure 4. Mounting MT–300/GR, disassembled view.

4. Application of Equipment

a. Intercommunication Set AN/UIC–1 may be used in any situation requiring the amplification and two-way wire transmission of audio signals between two or more stations. The system may be used with any type of audio device having the proper impedance and sufficient driving voltage (par. 5). A signal from telephone lines, microphones, or radio outputs may be used as input, and the output may be heard through headphones, the receivers of handsets, or loudspeakers. The system provides for mixing the inputs of three signals, so that one high-level channel may monitor the other two channels at a lower level; likewise, the high-level channel may be monitored by either of the other two channels. The intercommunication set also may be used in conjunction with other radio systems to provide increased flexibility of operation and additional control stations. In situations where it is authorized and available, Reciever-Transmitter RT–70/GRC may be added to the system, thereby converting it to Radio Set AN/VRC–7.

b. A simplified block diagram of a typical installation is shown in figure 20. This installation consists of AF Amplifier AM–65/GRC on Mounting MT–300/GR and two Control Boxes C–375/VRC, with attached Chest Set Groups AN/GSA–6 and Headset-Microphones H–63/U. Power is supplied by a vehicular storage battery, through the mounting to the amplifier and the power supply. The audio signal originating at either control box is fed through the mounting, the amplifier, back through the mounting and back to both control boxes.

c. In cases where radio Receiver-Transmitter RT–70/GRC is desired, it may be installed on top of AF Amplifier AM–65/GRC, and connected to it by means of the plug-in cord provided. In this case the system becomes Radio Set AN/VRC–7. The radio set may be utilized at any of the control positions for either reception or transmission by means of selector switch S–1 and RADIO TRANS switch S–2 on Control Box C–375/VRC. The output of the radio reciever is mixed with the signal in one of the low-level interphone channels (channel 2 in par. 5. below), and also with the high-level interphone channel; the combined signal may be monitored by turning the selector switch to either position. When Receiver-Transmitter RT–70/GRC is being used, its power input is provided by the power supply being used with AF Amplifier AM–65/GRC.

5. Technical Characteristics

The following table lists the technical characteristics of Intercommunication Set AN/UIC–1:

Signal channels	*Channel 1* Set 1+ Interphone	*Channel 2* Set 2+ Interphone	*Channel 3* Set 1+ Set 2+ Interphone
Signal input levels (volts max):	5	5	0. 25
Signal output levels (mw (milliwatts) min):			
For 5-volt signal into Channel 1.	350	--------	800
For 5-volt signal into Channel 2.	--------	350	800
For .25-volt signal into Channel 3.	350	350	1, 800
Input impedances	1, 500 ohms	1, 500 ohms	150 ohms
Output impedances	600 ohms	600 ohms	600 ohms (adjustable) and 150 ohms
A-f (audio-frequency) response	Flat to within 4 db (decibels) for frequencies between 400 and 2,500 cycles; sharp cut-off beyond these limits.		
Distortion due to overload	10% maximum each channel.		
Crosstalk between channels 1 and 2.	50 db down, minimum.		
Amplifier power requirements (stand-by):			
Plates	135 volts at 35 ma (milliamperes).		
Filaments, 12- or 24-volt operation.	12.6 volts at 0.6 ampere.		
Relay	6.3 volts at 166 ma.		
Microphone	6.3 volts at 30 ma.		
Input voltage requirements for operation with vibrator power supply:			
Power Supply PP–281/GRC	12 volts at 3.85 amperes.		
Power Supply PP–282/GRC	24 volts at 2.4 amperes.		
Operating temperature range	From −40° F. (−40° C.) to +149° F. (+65° C.).		

6. Packaging Data

a. When packaged for export shipment, the components of Intercommunication Set AN/UIC–1 are placed in moistureproof-vaporproof containers, and are packed in two wooden boxes. The size, weight, and volume of the wooden boxes are shown in the following chart. The figures given are approximate.

Note. Items may be packaged in a manner different from that shown, depending on the supply channel.

Box No.	Height (in.)	Width (in.)	Depth (in.)	Volume (cu. ft.)	Weight (lbs.)
1	8	10	15	0. 66	25
2	12	10	15	1. 06	46
Total				1. 72	71

b. The following charts indicate the contents of each box. See the packing lists attached to each box for exact contents.

(1) *Box No. 1*

Contents	Quantity	Notes
Amplifier AM–65/GRC	1	With tubes and fuses with technical manual.
Technical manual (TM 11–2643).	2	

(2) *Box No. 2*

Contents	Quantity	Notes
Control Box C–375/VRC	2	Complete.
Mounting MT–300/GR	1	With connecting cords and plugs.
Power Supply PP–281/GRC or PP–282/GRC.	1	With technical manual.
Connector and bondnut (Appleton).	1	

7. Table of Components

(figs. 1 and 2)

Component	Required No.	Height (in.)	Depth (in.)	Width (in.)	Volume (cu. ft.)	Net unit weight (lb.)
AF Amplifier AM–65/GRC	1	4¼	12⅞	7⅞	0. 25	*15. 5
Connector and bondnut (Appleton)	1				. 01	. 3
Control Box C–375/VRC	2	6 13/16	3¼	7	. 1	3. 25
Mounting MT–300/GR	1	3 1/16	13	8 5/16	. 25	10
Power Supply PP–281/GRC or PP–282/GRC	1	4¼	5¾	2 15/16	. 04	5. 5
Technical manual (TM 11–2643)	2	11	½	8½	. 02	. 5
Total					. 67	35. 5

*Includes weight of power supply.

8. Description of AF Amplifier AM–65/GRC

(figs. 5, 9, and 17)

a. General. AF Amplifier AM–65/GRC is a seven-tube, three-stage audio amplifier that provides one high-level channel and two low-level channels of amplification. The high-level channel provides the main interphone path, while the low-level channels are designed to carry the input of a radio signal mixed with a portion of the interphone signal. The power for the amplifier is derived from a vibrator type power supply, plugged internally in the amplifier, which uses the current from a 12- or 24-volt storage battery (vehicular). For additional detailed information see TM 11–5039. Figure 26 shows a schematic diagram of the amplifier.

b. Case. The amplifier is contained in a metal case which is approximately 4¼ inches high by

12⅞ inches deep by 7⅞ inches wide. The total weight including the plug-in type power supply is 15½ pounds. The case is finished in wrinkled, olive drab enamel. It is designed to be installed on Mounting MT–300/GR by means of runners on the bottom of the case. Provision is made for mounting Receiver-Transmitter RT–70/GRC on top of the case to be secured by means of snap hooks.

c. Panel. The panel of the amplifier contains a FUSE, a selector switch, an audio connector, a VOLUME control and four plug-in lock-on type cable connectors. For the function and application of these parts, see paragraph 21.

9. Description of Power Supplies PP–281/GRC and PP–282/GRC

a. General. Power Supplies PP–281/GRC and PP–282/GRC (fig. 6) are small vibrator type units which are designed to plug into the amplifier. They derive their power from 12- or 24-volt storage batteries, respectively. They supply plate voltages of 90 and 135 volts for the amplifier tubes, and also for the tubes of Receiver-Transmitter RT–70/GRC when it is to be used with the system. For additional detailed information about the power supplies see TM 11–5040.

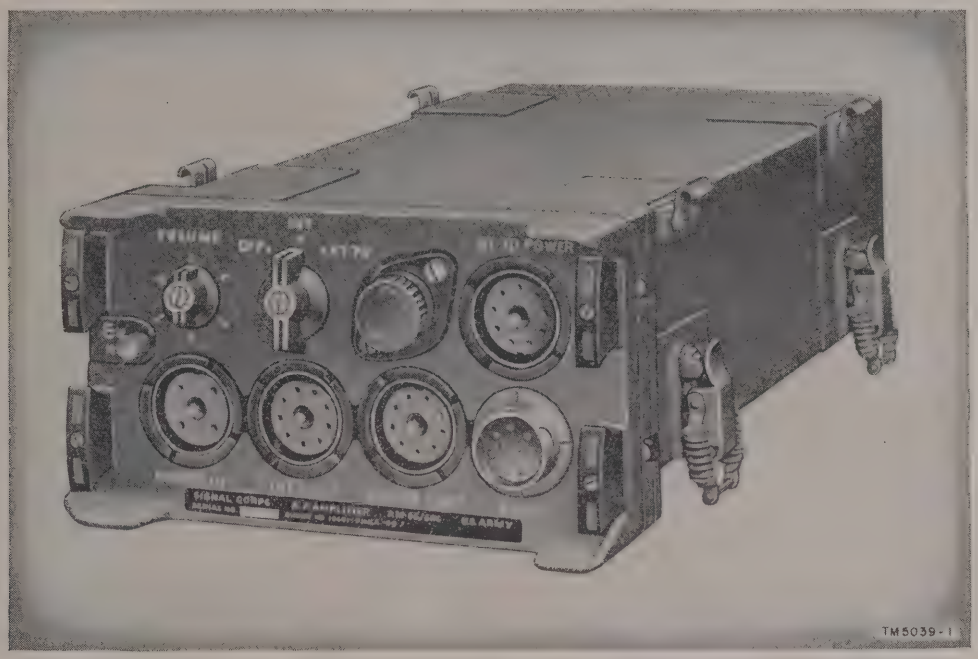


Figure 5. AF Amplifier AM–65/GRC, front view.

d. Chassis. The chassis (fig. 17) of the amplifier is attached to the rear of the panel. All large parts, such as tubes, transformers, etc., are mounted on the top of the chassis. In addition, selector switch S–1, for adapting the amplifier for use with 6-, 12-, or 24-volt batteries, is mounted on the chassis. This switch is set with a screw driver. Regulator tubes and associated resistors are mounted in a small compartment at the rear of the chassis, while the large compartment, also at the rear of the chassis, houses the plug-in vibrator type power supply unit. Detailed information for the amplifier is contained in TM 11–5039, which is packed with the amplifier.

b. Case and Chassis. The power unit is encased in a metal covered panel and chassis (figs. 18 and 19). The bottom of the chassis is covered by a removable metal plate. The panel at the front of the unit has an octal socket for plugging into the amplifier. All connections between the battery, amplifier, and power supply are made through this socket. The small components and the wiring are under the chassis. Larger components, such as the transformer, filter choke, plug-in filter capacitor and plug-in vibrator, are mounted on top of the chassis. A schematic label of the circuit is pasted on the inside of the bottom cover (fig. 18).

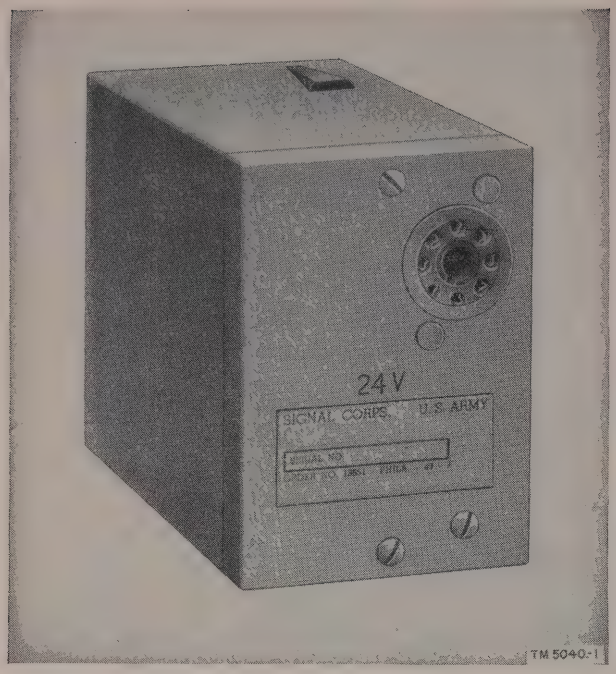


Figure 6. Power Supply PP–282/GRC, front view.

c. Dimensions and Weight. The power supply unit is approximately 4¼ inches high by 2 15/16 inches wide by 5¾ inches deep and weighs about 5 pounds 9 ounces.

10. Description of Control Box C–375/VRC

a. General. Control Box C–375/VRC (fig. 7) consists of a cast aluminum housing, with removable back cover, which contains the parts detailed in *b* and *c* below. The cover is fastened to the remainder of the housing with six machine screws. The box is finished in wrinkled olive green. The over-all dimensions of the box are 6 13/16 inches high by 7 inches wide by 3¼ inches deep. It weighs 3 pounds and 4 ounces.

b. Control Mountings. The front panel of the control box (figs. 14 and 15) mounts a three-position selector switch (S–1). Above the switch is a three-part composition strip for writing in designations of the switch positions. This strip is colored a light olive green. On top of the box is mounted a three-position spring-loaded RADIO TRANS switch (S–2). A lock is provided for securing this switch in the extreme clockwise position. Four jacks, J–3, J–4, J–5, and J–6, are mounted on the bottom of the box. J–3 and J–4 are microphone jacks, and J–5 and J–6 are headphone jacks. Each side of the control box mounts a rubber-sealed cable outlet and clamp (H–1 and H–2), a 10-terminal audio and control connector (J–1 and J–2), and a volume control (R–1 and R–2). In addition there is a mounting lug on each side to accommodate 5/16-inch bolts for mounting the box on any flat surface. Reference marks for the preceding parts, in light olive green paint are found in the interior of the box, adjacent to the parts referenced.

c. Interior of Box. In addition to the parts named in *b*, above, a 15-lug dual terminal strip, E–2, is mounted inside the control box near the cable outlets (fig. 13). This terminal strip provides junction points for connecting the cable conductors to leads from the various switches, jacks, and volume controls. Switches S–1 and S–2 are of the wafer type. Jacks J–3, J–4, J–5, and J–6, whose leaf sections project from the bottom, are covered with rubber jackets. Cable outlets H–1 and H–2 are provided with rubber plugs, so that if one outlet is unused it may be watertight. A schematic diagram of the control box circuits is pasted inside the back cover (fig. 13).

11. Description of Mounting MT–300/GR

a. General. Mounting MT–300/GR (figs. 3 and 4) is a heavy aluminum and steel mounting rack for mounting AF Amplifier AM–65/GRC. The mounting consists of two mounting plates, each with a shockproof mounting foot at each end. Vertical mounting brackets are attached to these feet. A surface plate is bolted over these brackets. A junction box having four connecting cables and outlets for four additional cables is bolted to the under side of the surface plate. The entire mounting is of rectangular box shape and is finished in olive drab. It is approximately 3 1/16 inches high by 8 5/16 inches wide by 13 inches deep over-all.

b. Surface Plate. The surface plate has two mounting channels with clips and spring locks for receiving the mounting runners of AF Amplifier AM–65/GRC (fig. 3).

c. Junction Box. The junction box (fig. 4) is a rectangular box which mounts an 18-terminal dual-lug terminal strip in two sections, and a 2-terminal battery power terminal strip. The box is provided with eight .828-inch cable outlets, four of which are provided with cables and compression type cable clamps. Two of the remaining outlets are provided with compression type cable clamps and rubber plugs for sealing, in case the outlets are unused; the remaining two outlets are sealed with neoprene type plugs. A rectangular

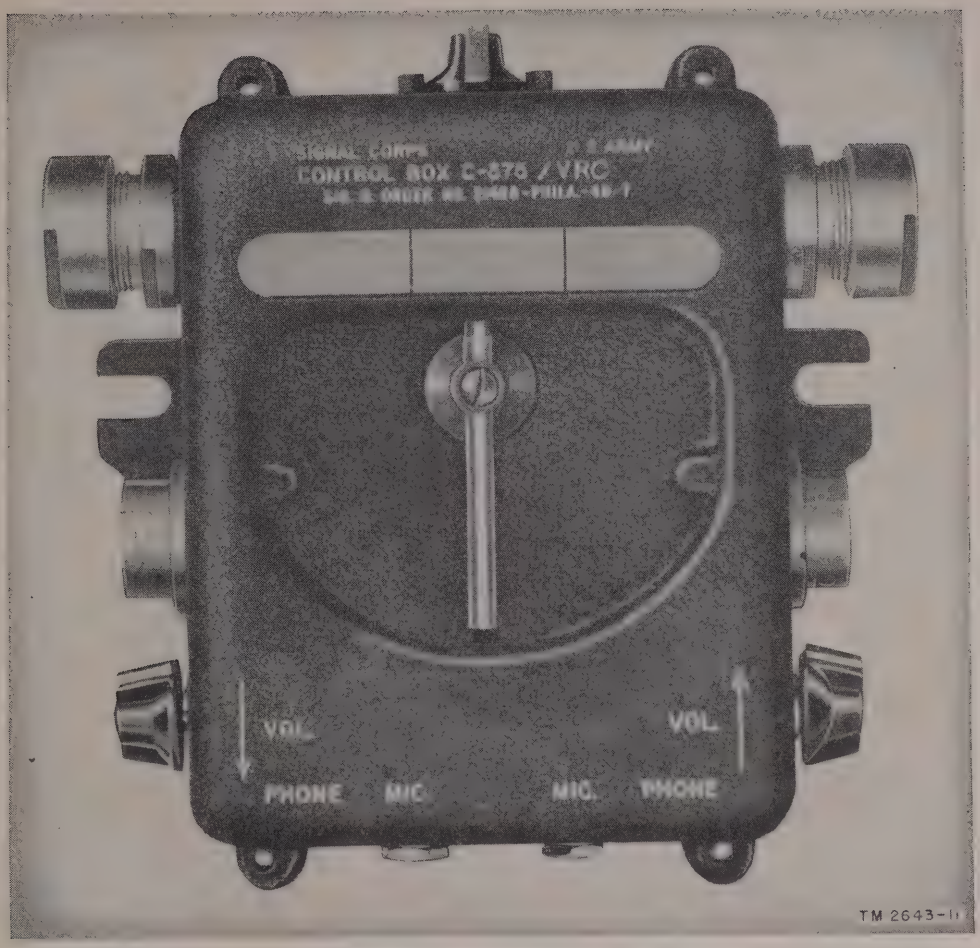


Figure 7. Control Box C–375/VRC, front view.

cover plate is bolted over the bottom of the junction box. A schematic circuit label is affixed to the inside of the cover plate. The entire junction box is fastened to the under side of the surface plate by two bolts.

d. Cable Connectors (fig. 3). Cable connector assemblies connected to the junction box and their functions are listed below. Cable plug connections are shown in figure 11.

(1) *Receiver-transmitter control cable W–1.* This is an 11-conductor cable attached to the main terminal strip and terminating on the other end in a 9-pin male lock-on plug. The cable serves to connect radio control circuits from the amplifier to the mounting.

(2) *Interphone control cable W–2.* This 10-conductor cable is attached to the main terminal strip (E–1) and is terminated by a 9-pin male lock-on plug. The cable serves to connect the interphone circuits from the junction box to the amplifier.

(3) *Power cable W–3.* This is a 2-conductor cable connected to the battery terminal strip (E–4). It terminates in a four-pin lock-on connector and serves to connect the battery to the amplifier.

(4) *Battery cable W–4.* The battery cable is a 2-conductor cable connected to the battery terminal strip (E–4). It serves to connect the storage battery to the junction box in the mounting.

12. Running Spares

The following is a list of running spares (replacement parts) for the major items of equipment:

a. Amplifier AM–65/GRC.

1 fuse, cartridge, 4 amperes
1 fuse, cartridge, 10 amperes

1 tube, ballast, 0.6 ampere, Amperite No. 6–4
1 relay, thermal, GH–2392–12
2 tubes, electron, type 6AK6
3 tubes, electron, type 12AU7
2 tubes, electron, type OB2

b. Power Supply PP–281/GRC or PP–282/GRC.

2 vibrators, plug-in type, 6-volt input (for PP–281/GRC)
2 vibrators, plug-in type, 24-volt input (for PP–282/GRC)

13. Additional Equipment Required

In order to operate the Intercommunication Set AN/UIC–1, additional equipment will be required. Such equipment is not a part of the basic set, but is supplied with installation kits for use with various vehicular installations (par. 14). The following items are necessary:

a. Power Source. A 12- or 24-volt storage battery is used to supply power. This battery is usually the vehicular storage battery of the vehicle involved.

b. Audio Accessories. A microphone and a headset are required at each control station of the intercommunication system (fig. 8). Such accessories provided in the vehicular installation kits for Intercommunication Set AN/UIC–1 are listed below.

(1) *Headset-Microphone H–63/U.* This set consists of two 300-ohm receivers connected in series and mounted on a plastic-covered metal headband which is one-half inch wide; a 100-ohm microphone mounted on an adjustable boom which is attached to the receiver headband; a small diameter 14-inch receiver cord which terminates in a 3-hole connector; and a small diameter 14-inch microphone cord which terminates in a 2-hole connector. The receivers are used to listen to the audio output of the interphone system. The microphone provides speech input to the system.

(2) *Chest Set Group AN/GSA–6* (figs. 8 and 16). This accessory, in conjunction with Headset-Microphone H–63/U ((1) above), is the basic audio accessory for use with Intercommunication Set AN/UIC–1. The chest set group con-



Figure 8. Chest Set Group AN/GSA–6, exterior view.

sists of a chest-mounting switch box and a 5-foot cord which terminates in an 8-contact receptacle and a 10-pin audio connector. The receptacle mates with the plug on one end of the switch box and provides a quick disconnect feature for the chest set. The audio connector will mate with any of the 10-pin connectors on the control boxes or on the amplifier. A two-prong plug and a three-prong plug are provided on the switch box for mating with the cord jacks of Headset-Microphone H–63/U. A two-button push-to-talk switch is provided on one side of the switch box. The buttons are marked HOLD ON and LOCK ON. The HOLD ON button has spring-loaded momentary action, and the LOCK ON button has a locking action. After the LOCK ON button has been used, it may be released by pressing the HOLD ON button. A push-button selector switch marked RADIO is provided on the other side of the switch box. This switch is spring-loaded, and is normally in the interphone (out) position. Pressing the button places the switch momentarily in the RADIO position. An internal lock (fig. 16) is provided for locking the switch in either the RADIO or interphone position. This feature should be used when the chest set is connected to an audio receptacle providing for only interphone operation or radio operation. (*When the chest set group is used at the amplifier panel, the selector switch must be in the RADIO position.*) The LOCK ON button of the push-to-talk switch may be disabled by an internal adjustment (fig. 16), so that only the HOLD ON button may be used.

(3) *Substitute audio accessories.* The substitute audio accessories listed in the table below are for use in emergencies only. The performance efficiency of these accessories will be impaired because of impedance mismatch, and their use will be confined solely to Control Box C–375/VRC:

Standard item	Substitute item
Chest Set Group AN/GSA–6.	Chest Set TD–4 with Cords CD–307–A and CD–518.
Headset-Microphone H–63/U.	Headset H–16/U and Microphone T–45 or Headset HS–30 with Cord CD–933 and Microphone T–45.

c. Special Purpose Cable WM–46/U. This cable serves to connect Mounting MT–300/GR to one or more Control Boxes C–375/VRC, or it may serve as an interconnecting cable between two control boxes. The length of the cable varies according to the particular installation involved. The cable consists of 10 tinned and stranded copper conductors. Five of the conductors are individually shielded. There is an over-all shield for the cable. Each conductor has a synthetic rubber covering, and the entire cable has a synthetic rubber covering. All conductors are color-coded.

d. Control Box C–375/VRC. Additional Control Boxes C–375/VRC will be provided in installation units which require them.

CHAPTER 2

INSTALLATION INSTRUCTIONS

Section I. SERVICE UPON RECEIPT OF INTERCOMMUNICATION SET AN/UIC–1

14. Siting

Intercommunication Set AN/UIC–1 is designed for vehicular installation, therefore instructions for proper location will be found in the installation unit for the vehicle concerned. The set is primarily designed for use with Vehicle, Armored Utility, M39 and Carriage, Motor, Twin 40MM Gun, M19A1. It also may be used with any 12- or 24-volt vehicle requiring an interphone set. The installation units for these vehicles are numbered 2S4301–V–91/50 and 2S4301–V–97/51, respectively.

15. Uncrating, Unpacking, and Checking

a. General. Place the two wooden boxes containing the components of Intercommunication Set AN/UIC–1 in a sheltered spot near the vehicle in which the set is to be installed. The following instructions for unpacking apply to equipment packed for domestic shipment.

b. Step-by-step Instructions for Unpacking. Intercommunication Set AN/UIC–1 is packed in two wooden boxes, Nos. 1 and 2 (par. 6*b*). The No. 2 box contains the components which are to be permanently installed in the vehicle and should be unpacked first.

(1) Remove the nails from the top and one side of the box with a nail puller. Do not attempt to pry off the top and side; the equipment may be damaged.

(2) Slit the top of the moistureproof barrier with a knife and tear it back, exposing the cartons in which the components are packed. Remove any padding material such as excelsior, paper, or corrugated cardboard.

(3) Remove the cardboard cartons containing each component. Cut the paper stripping which fastens the top leaves of each carton.

(4) Remove any bags of desiccant from the cartons, and remove the pieces of equipment. This procedure may be started by tipping the cartons on their sides or upside down. To avoid damage, be careful that the equipment is not allowed to slide completely out of the carton.

(5) Inspect the equipment for possible damage incurred during shipment.

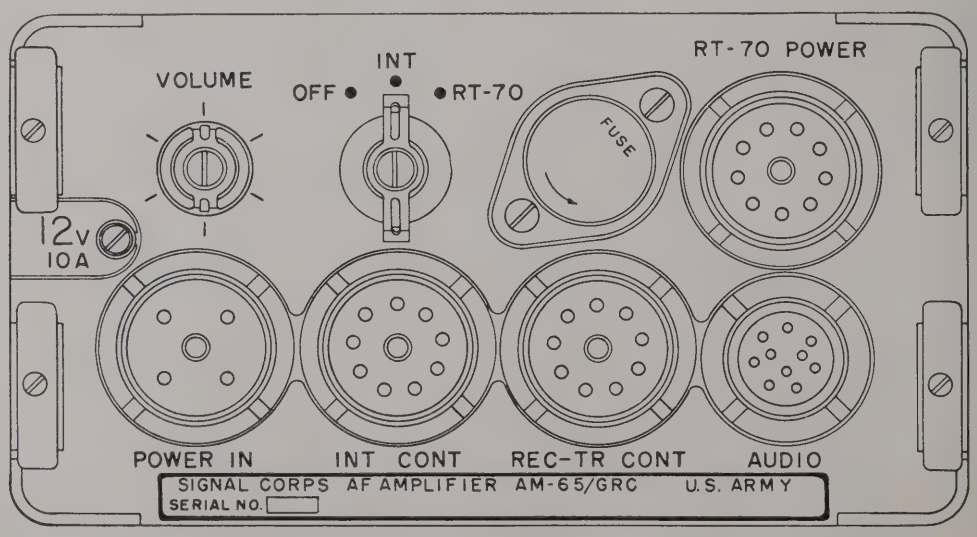


Figure 9. AF Amplifier AM–65/GRC (panel).

(6) Check the contents of the packing box against the master packing slip.

c. Unpacking Equipment Packed in Export Cases. The above instructions apply to equipment packed in export cases, except that such cases will be bound with reinforcing steel straps. These straps must be cut with strap cutters or metal shears, and the ends folded back.

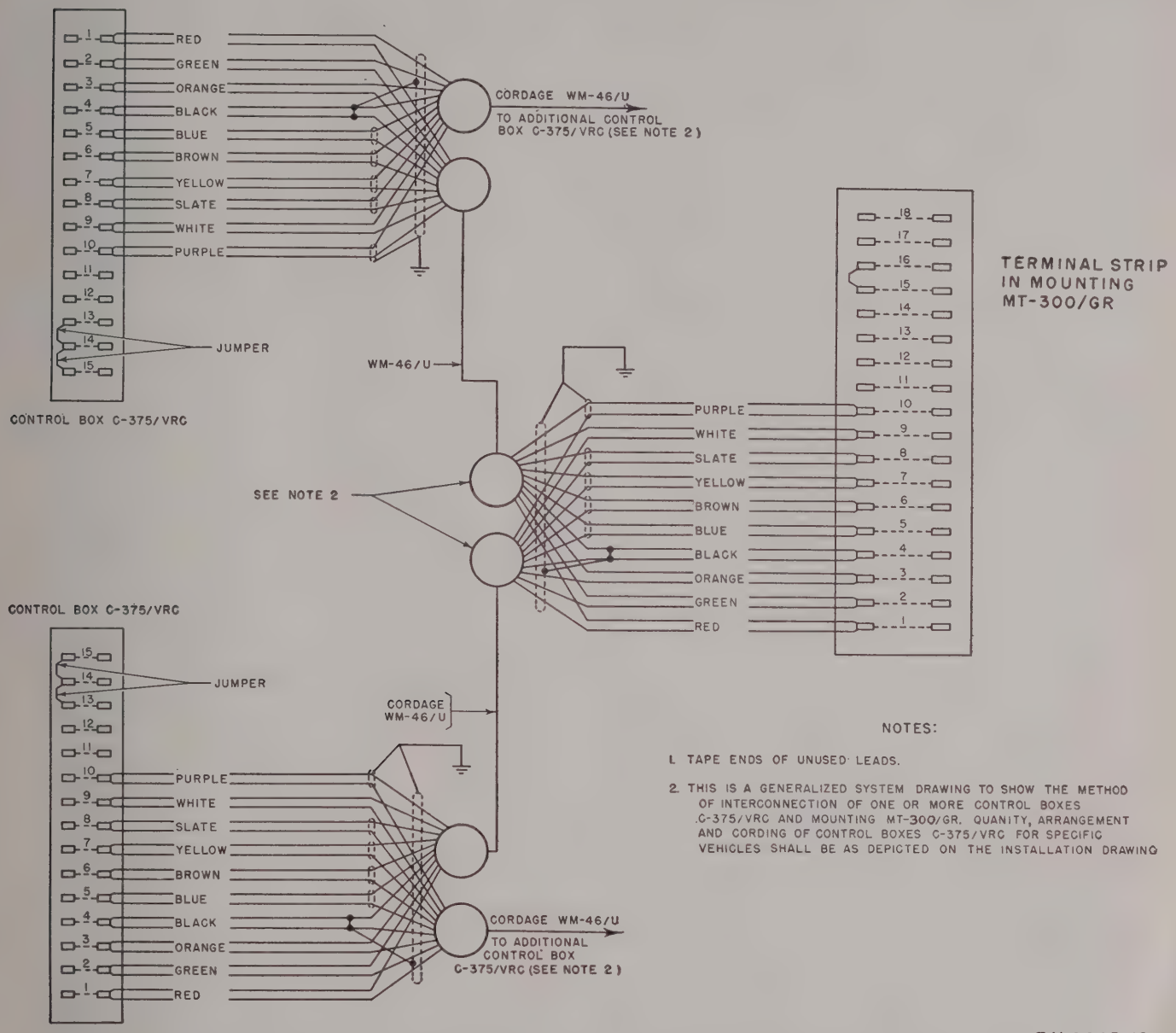


Figure 10. Special Purpose Cable WM–46/U, connection diagram.

Section II. INSTALLATION OF COMPONENTS

16. General

The components which are to be permanently fastened to the vehicle in which the installation is being made should first be bolted in place. These components are Mounting MT–300/GR and Control Boxes C–375/VRC. Install them according to the instructions packed with the installation unit for the vehicle concerned.

a. Installing Mounting MT–300/GR. Mounting MT–300/GR must first be located, secured in place, and all external connections completed.

The installation unit for the vehicle concerned is unpacked first and the contents checked. The procedure for installing follows:

(1) Locate the mounting according to the instructions contained in the installation unit. Be sure minimum clearances provided on the blueprints are observed.

(2) Disassemble the mounting (fig. 4) by removing the four bolts holding the surface plate to the mounting brackets, removing the two bolts holding the junction box to the surface plate, and removing the four bolts holding the junction box cover to the junction box.

(3) Spot and drill eight holes for the mounting brackets according to the instructions and dimensions in the installation unit; bolt the mounting brackets to the vehicle.

(4) Prepare one end of Special Purpose Cable WM–46/U in accordance with instructions given in figure 12.

(5) Loosen the bondnut on the cable clamp at one of the unused cable entries (H–5 or H–6 in fig. 11) on the junction box. Remove the nut, metal ring, and rubber washer, and slip them over the prepared end of the cable in the same order—nut, ring, and washer. Remove the rubber plug from the cable entry. This plug is for waterproofing an unused entry, but it will not be required in this assembly.

(6) Insert the prepared end of Cable WM–46/U through the cable entry until the outer insulation protrudes on the inside of the junction box; allow sufficient slack for making all connections. Solder all individual conductors to the proper terminal on terminal strip E–1 (figs. 10 and 22). Observe the color coding shown on both of these diagrams.

Note. Although all of the conductors are not required for the basic system of Intercommunication Set AN/UIC–1, make *all* connections provided by the cable so that the installation will be adequate for the use of additional equipment, i. e., a radio set or use with another system.

(7) When all connections are complete, tighten the bondnut on the cable clamp.

(8) Make sure that the fuse, F–1, is secure in the fuse holder, E–2. Be sure that all binding post connections, battery cable, power cable, and ground straps are tight.

(9) Replace the cover on the junction box, and bolt the junction box to the surface plate, making sure that the cables W–1, W–2, and W–3 are to the front or in proper position for connection to the amplifier. Bolt the surface plate and junction box assembly to the two mounting brackets.

(10) Route the loose end of Special Purpose Cable WM–46/U in accordance with the instructions given in the installation unit for the vehicle concerned. This end of the cable is for connection to Control Box C–375/VRC. In some vehicular installations the cable will not run directly to the control box, but will pass through junction boxes or slip rings. Directions for placement of junction boxes are supplied with installation units.

(11) Connect the battery cable W–4 (fig. 11) in accordance with the installation instructions for the vehicle concerned; in most cases the cable will not run direct to the battery, but will connect to a vehicular junction box. To connect the cable to the junction box, secure the cable at the box entry with the connector and bondnut supplied with the basic unit.

b. Installing Control Boxes C–375/VRC. Two Control Boxes C–375/VRC are supplied with the basic set. The boxes must be located, mounted, and interconnected with Mounting MT–300/GR. The second box may be connected direct to the mounting by use of an additional Special Purpose Cable WM–46/U, or may be connected to the other control box by using the unused cable entries H–1 or H–2 on the control boxes (fig. 11).

(1) Determine the location of the control boxes according to the instructions with the installation unit. In any case, minimum clearances of 2½, 4, and 3¾ inches must be allowed on the top, bottom, and sides of the boxes, respectively. Drill two holes for bolting the mounting lugs on the sides of each control box to the vehicle. (Do not mount the boxes until connections are made.)

(2) Prepare the loose end of Special Purpose Cable WM–46/U according to the instructions given in figure 12. This may be the other end of the cable connected to

NOTES:

1. ITEMS SHOWN IN SOLID LINES ARE PART OF THE BASIC SET; ITEMS SHOWN IN BROKEN LINES ARE ACCESSORIES SUPPLIED WITH INSTALLATION KITS.
2. CABLES WM-46/U DO NOT TERMINATE IN CONNECTORS; ENDS OF CONDUCTORS ARE SOLDERED TO TERMINAL STRIPS E-1 OF MOUNTING, AND E-2 OF CONTROL BOXES.
3. CABLES WM-46/U MAY NOT LEAD DIRECTLY BETWEEN UNITS SHOWN BUT MAY BE BROKEN BY JUNCTION BOXES WHICH ARE PART OF A PARTICULAR VEHICULAR INSTALLATION.

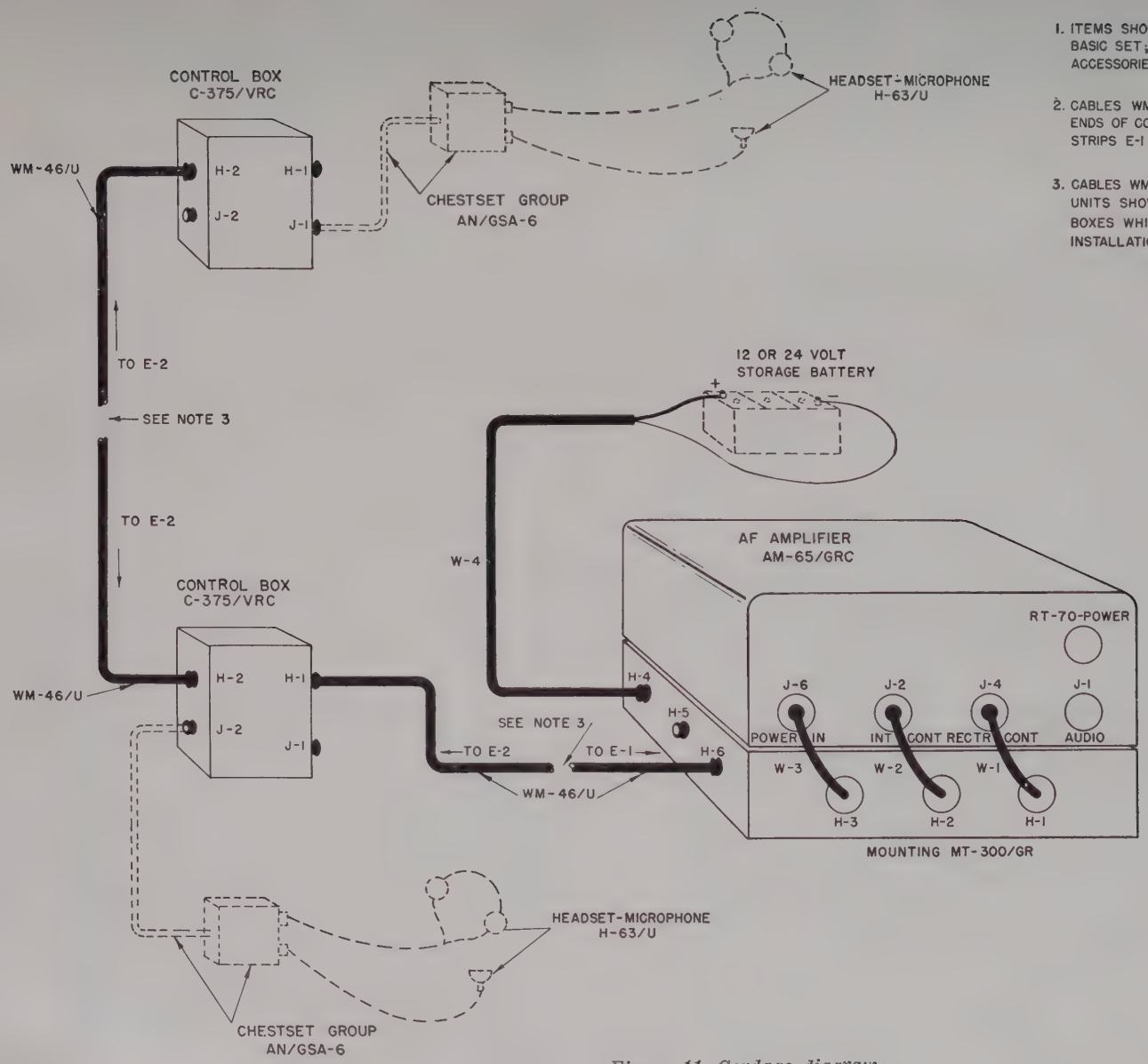
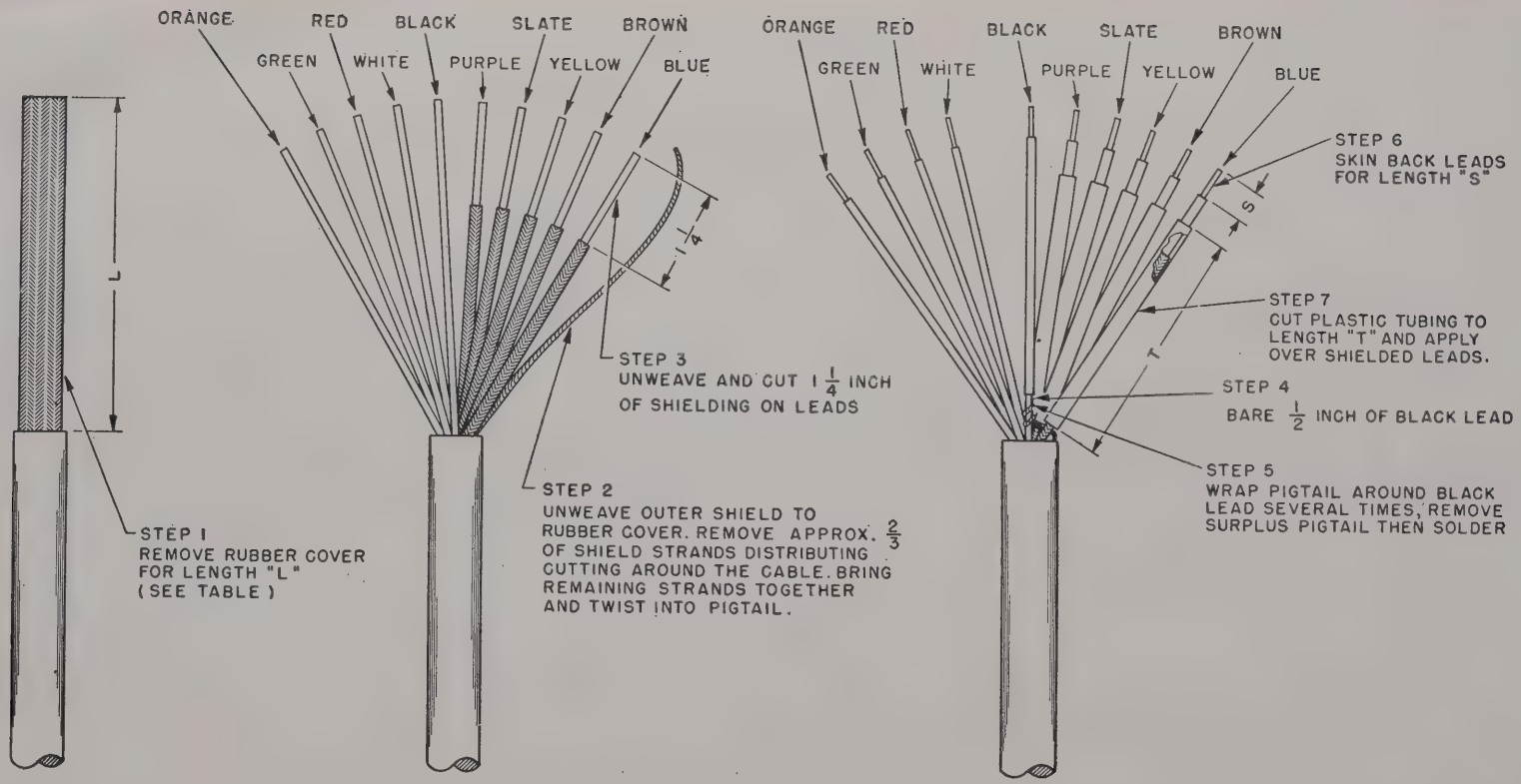


Figure 11. Cordage diagram.

TM 2643-6



COMPONENT	LENGTH "L"	LENGTH "S"	LENGTH "T"
CONTROL BOX C-375/VRC	4	3/8	3 3/8
MOUNTINGS MT-297/GR, MT-298/GR, MT-299/GR, MT-300/GR	6	3/8	5 3/8
TERMINAL BOX SC-D-5319	6	3/8	5 3/8
TURRET TERMINAL BOX IN MEDIUM TANK M46	10	3/8	9 3/8
BENDIX - SCINTILLA CONNECTOR SIZE 28 SHELL	1 3/8	5/16	NOT USED
BENDIX - SCINTILLA CONNECTOR SIZE 22 SHELL	1 1/4	1/4	NOT USED

TM2643-8

Figure 12. Cable preparation chart.

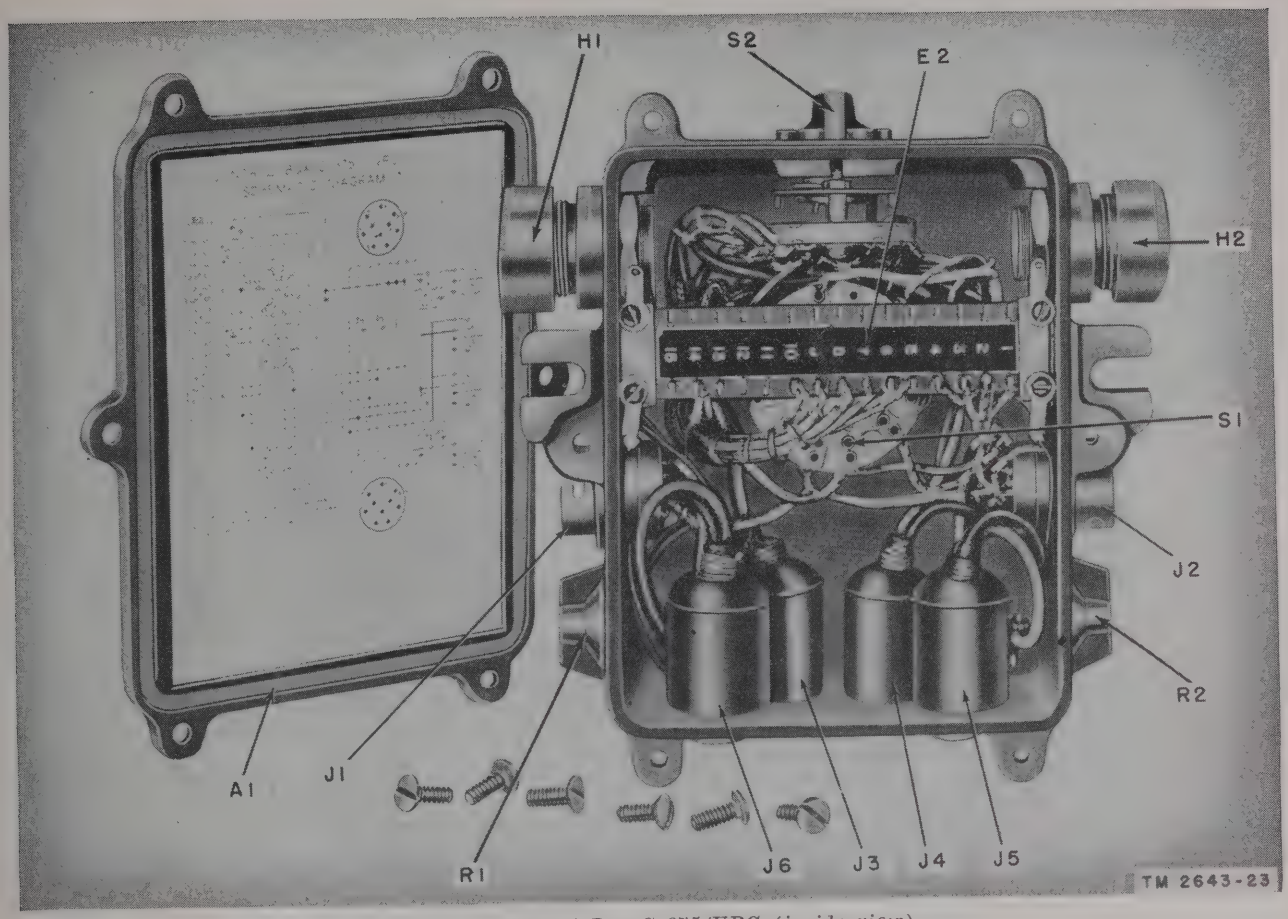


Figure 13. Control Box C–375/VRC (inside view).

the mounting, or it may come from a junction box, depending on the vehicle.

(3) Remove the back cover from the control box. Remove the bondnut, ring, and washer from the cable clamp on the side of the box nearest the cable end. Slip the nut, ring, and washer, in the order named, over the prepared cable end. Insert the cable end through the cable entry until the outside insulation protrudes into the box.

(4) Solder all of the prepared conductors to the proper terminals on terminal strip E–2 (fig. 13), observing the color coding on the diagrams of figures 10 and 22.

(5) After completing the connections, tighten the cable clamp, bolt on the cover, and mount the unit in place by inserting bolts through the two mounting lugs into the prepared holes in the vehicle wall or floor; tighten securely.

(6) On the composition strip above the selector switch, S–1, on the panel of each control box, write the following designations in the three divisions from left to right, respectively; SET 1 + INT, SET 1 + Set 2 + INT, and SET 2 + INT. The basic intercommunication set uses only the center position, which is the interphone position; however, in some instances a radio set or system may be installed in the vehicle. In these cases, the right and left positions of the selector switch will allow monitoring of and transmission over these systems. If the center channel should fail, either of the side channels may be used for interphone communication.

c. Installing Remainder of Equipment. After these installations are made, the balance of the equipment should be installed in accordance with paragraphs 17 and 18.

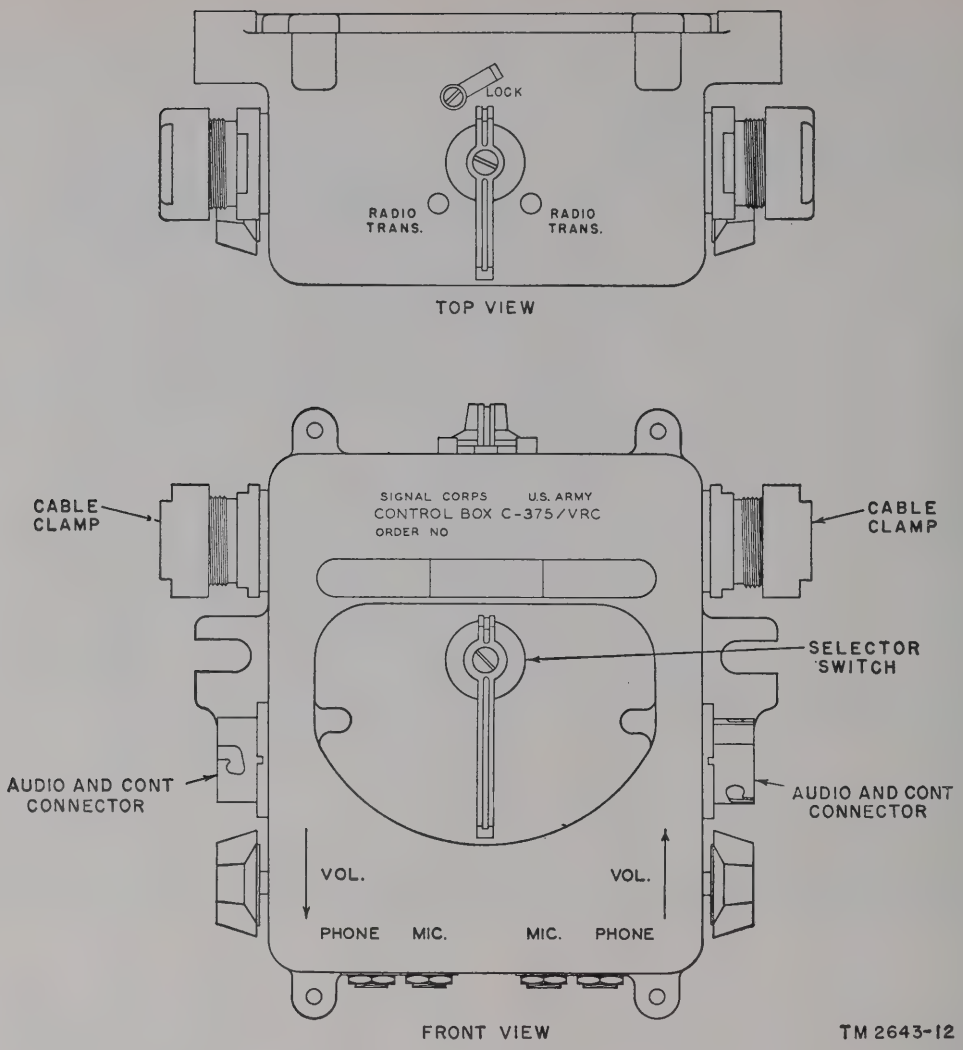


Figure 14. Control Box C–375/VRC (top and panel).

17. Installing AF Amplifier AM–65/GRC

The procedure for installing AF Amplifier AM–65/GRC is as follows:

a. Checking. Before installation, the amplifier should be thoroughly checked to see that all removable parts are in place and that the controls and switches turn easily.

(1) Unscrew the fuse cap on the front panel (fig. 9), remove the fuse. Check the valve against the marker plate and the battery voltage used. Replace the fuse. Rotate the volume control (VOLUME) and the selector switch (OFF-INT-RT-70) to see that they work easily.

(2) Loosen the four Dzus fasteners on the panel, rest the amplifier on the panel, and remove the housing. The top of the chassis (fig. 17) is now exposed. Check all tubes, V–1 through V–7, thermal relay K–1, and ballast tube R–32 to see that they are properly seated. See that the spare fuse is in its clip.

(3) Check to see that the power supply unit, of proper voltage rating, (fig. 17) is in place.

(4) Check selector switch S–1 on the chassis to see that its position corresponds to the voltage designation on the front panel (12V or 24V).

(5) Check to see that the plug-in electrolytic capacitor, (C–1 in fig. 17), is in place.

(6) Replace the chassis in its cover and tighten the four Dzus fasteners.

b. Installing.

(1) Turn the locking strip levers on the front of the mounting (fig. 3) to the extreme

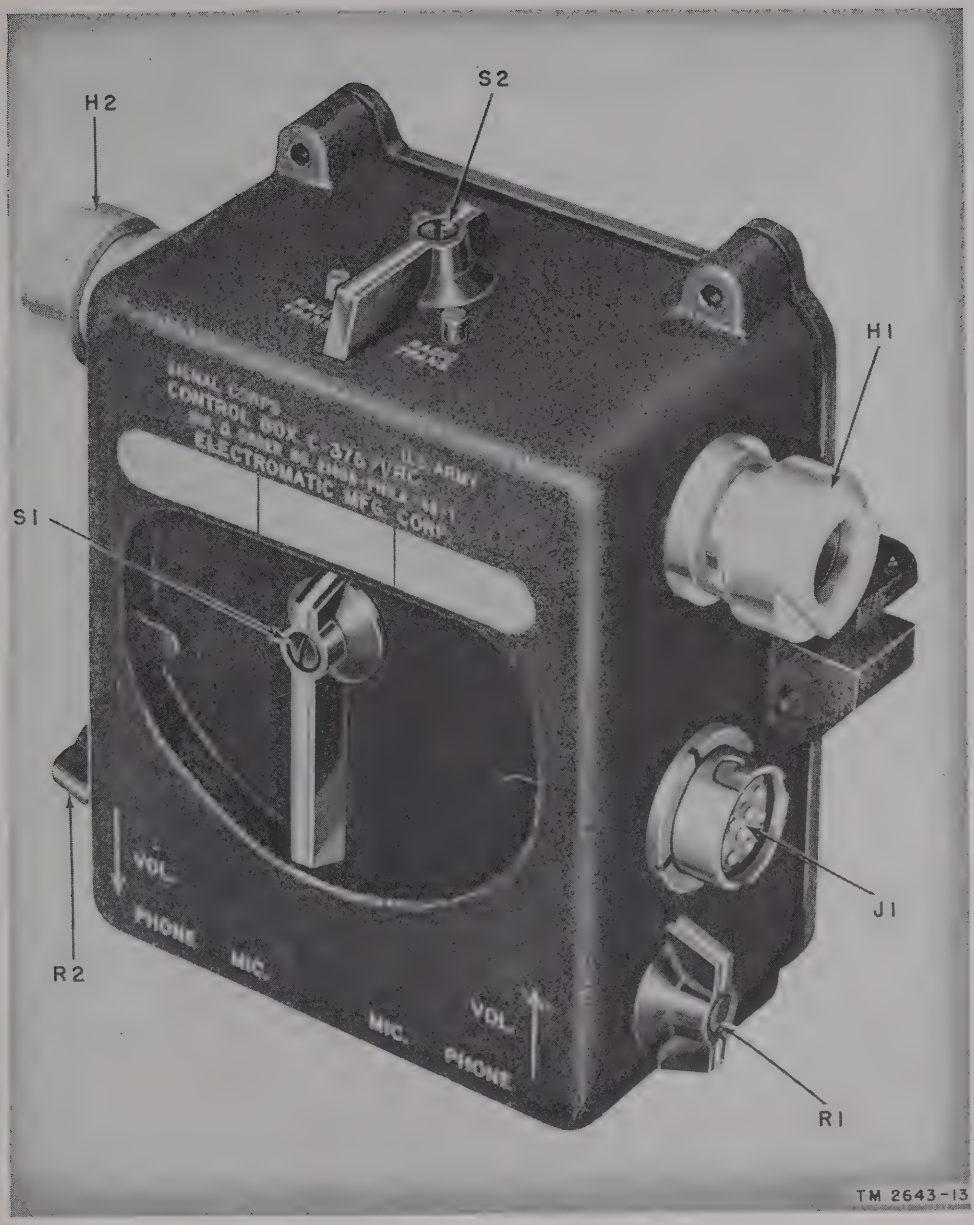


Figure 15. Control Box C–375/VRC (side view).

left; place the amplifier on Mounting MT–300/GR so that the runners on the bottom of the amplifier rest in the channels provided to receive them.

(2) Lock the amplifier in place by turning the locking strip levers to the extreme right.

18. Connecting Components

Connections between Mounting MT–300/GR and the various control stations, as well as the battery connections will normally be made by installation personnel by following instructions contained in the installation unit. In unusual conditions it may be necessary for operating and maintenance personnel to make such connections. The normal connections to be made by operating and maintenance personnel are as follows:

a. Cable Connectors. Mounting MT–300/GR is provided with three cable and plug connectors for connecting to the AF Amplifier AM–65/GRC (fig. 11). These are connected as follows:

(1) Cable W–1, the REC-TR CONT cable is plugged into receptacle J–4 (REC-

TRANS CONT), and the lock screw turned to the right until it is tight.

(2) Cable W–2, the INT CONT cable is plugged into receptacle J–2 (INT CONT), and the lock screw tightened.

(3) Cable W–3, the POWER IN cable is plugged into receptacle J–6 (POWER IN) and the lock screw tightened.

b. Connecting Audio Accessories. Audio accessories are connected to the amplifier and each of the control boxes as follows:

(1) Chest Set Group AN/GSA–6 is connected by plugging Plug Connector U–77/U onto connectors J–1 or J–2 of the control box. In some cases, for testing or Emergency it may be desired to connect the chest set to the amplifier; in such a case the plug connector is connected to AUDIO connector J–1 on the amplifier panel ((3) below).

(2) The microphone and receiver cords of Headset-Microphone H–63/U are connected to the switch box of Chest Set Group AN/GSA–6 by means of the terminating connectors and the plugs on the switch box.

(3) Check the switches labeled RADIO and HOLD ON–LOCK ON to see that they are in the proper position for interphone operation; both switches should be unlocked. The selector switch RADIO (S–1) will be in the out or spring position. If the chest set is to be used at the amplifier panel, the selector switch must be in the RADIO position, that is, the button will be depressed.

Section III. SERVICE UPON RECEIPT OF USED OR RECONDITIONED EQUIPMENT

19. Unpacking

Follow the instructions in paragraph 15 for uncrating and unpacking the equipment.

20. Checking

a. Check the used or reconditioned equipment for tags or other indications of changes in parts or wiring of the equipment. If any changes have been made, note them in this manual, preferably on the appropriate schematic diagram.

b. Check the operating controls for ease of operation.

c. Perform the installation and connection procedures given in paragraphs 17 and 18.

CHAPTER 3

OPERATING INSTRUCTIONS

Section I. CONTROLS AND CONNECTORS

Note. Although SET 1 and SET 2 are not part of this system, these designations appear on some of the controls, connectors, and circuit diagrams. In order to avoid confusion, references to these designations are made in the function column.

21. AF Amplifier AM–65/GRC Controls and Connectors

(figs. 9 and 17)

a. Front Panel Controls and Connectors. The following table lists the controls and connectors on the front panel of the amplifier and their uses:

Control or connector	Function
VOLUME (R–26)	This 10,000-ohm potentiometer adjusts the output level of the 600-ohm main interphone channel at the amplifier panel.
OFF-INT-RT-70 switch (S–2).	This three-position switch is the power switch for the amplifier, and also for the Receiver-Transmitter RT–70/GRC (if used). *Position* — *Function* OFF — Breaks the connection between the storage battery and the amplifier and the power supply unit. INT — Completes power circuits to the amplifier and power supply unit. RT–70 — Same as INT position and in addition completes the plate and filament circuits for the receiver-transmitter.
AUDIO connector (J–1).	Provides signal input connections for the interphone channels, output connection for the main interphone channel (channel 3), and connection to the amplifier relay control circuit.
INT CONT connector (J–2).	Provides input and output connections for the interphone channels, output connections for monitoring Set 1, and output connections for monitoring Set 2.
RT – 70 POWER connector (J–3).	(1) Connects the power supply circuits to Receiver-Transmitter RT–70/GRC. (2) Provides a junction point for microphone and control circuits between Set 2 and the control boxes. (3) Connects the receiver output of Set 2 to the amplifier for monitoring, and to the mounting (through J–4) for retransmission.
REC-TR CONT connector (J–4).	Serves as a junction point between the control boxes (through the mounting) and the Set 2 audio circuits.
POWER IN connector (J–6).	Provides d-c power input connections.
FUSE (F–1)	Protects battery circuit from overloads or short-circuits. ***Caution:*** The rating of the fuse must correspond to the battery voltage used (see next item).
Supply voltage marker.	Marker plate for indicating operating voltage of system.

b. Internal Controls and Connectors.

Control or connector	Function
6V–12V–24V switch (S–1) (fig. 17).	Selects the proper amplifier circuits for operation with a 6-, 12-. or 24-volt power supply (Power Supplies PP–448/GR, PP–281/-GRC, or PP–282/GRC, respectively).
POWER SUPPLY connector (J–5).	A male connector located in the power supply compartment; provides connection between the amplifier and the power supply unit.

22. Control Box C–375/VRC Controls and Connectors

(figs. 14 and 15).

The following table lists the controls and connectors on Control Box C–375/VRC and their uses:

Control or connector	Function
MIC Jacks J–3 and J–4 (on bottom of unit).	Connect microphones terminated in Plug PL–68.
PHONES Jacks J–5 and J–6 (on bottom of unit).	Connect headphones terminated in Plug PL–55.
Audio and control connectors J–1 and J–2 (on sides of unit).	Connect microphones, headsets, handsets, and chest sets terminated in Plug Connectors U–77/U.
VOLUME controls R–1 and R–2 (on sides of unit).	Vary levels of signals at PHONE Jacks J–5 and J–6 and audio connectors J–1 and J–2.
Selector switch (S–1) (on front panel).	(1) Counterclockwise position: selects the output of the interphone amplifier and Radio Set 1 for monitoring; selects the input of Radio Set 1 for transmission.* (2) Center position: selects the output of the interphone amplifier and both radio sets for monitoring; selects the input of the interphone amplifier for intercommunication transmission. (3) Clockwise position: selects the output of the interphone amplifier and Radio Set 2 for monitoring; selects the input of Radio Set 2 for transmission.*
RADIO TRANS switch (S–2) (on top of unit).	(1) Center position: selects the interphone amplifier input for intercommunication transmission. (2) RADIO TRANS. positions: Connects the audio input circuits to either radio set or interphone as selected by switch S–1 for transmission. (Both the selector switch and the RADIO TRANS switch must be operated to make transmission possible). *Note.* Switch S–2 is spring loaded to return to the center position when not held in either of the RADIO TRANS. positions. A locking lever is provided to lock the switch in the clockwise position when Chest Set Group AN/GSA–6 is plugged into J–1 or J–2.

*Only interphone transmission is possible at any position of the selector switch unless the RADIO TRANS. switch is operated as described above.

Section II. OPERATING PROCEDURE

23. Preparatory Steps

The following procedure is used in preparing Intercommunication Set AN/UIC–1 for operation:

a. Connect the audio accessories to the amplifier and control boxes as required for the particular installation (par. 18*b*).

b. Turn the amplifier VOLUME control clockwise until the halfway point is reached.

c. Turn the selector switches, S–1 on the control boxes, (fig. 15) to the center, or main interphone position (Set 1+Set 2+INT).

d. The RADIO TRANS switches, S–2 on the control boxes, are normally in the interphone position (center) by spring action, unless the LOCK (fig. 14) is used. In such a case, it must be released.

e. Turn the VOL control (R–1 or R–2) on the side of the control box to which the audio accessory is connected to the halfway point.

24. Operation From Control Boxes

The system is operated as follows:

a. Turn the OFF-INT-RT-70 switch on the amplifier panel (fig. 5) to the INT position. (*Never use the RT–70 position unless a Receiver-Transmitter RT–70/GRC is used with the system.*)

b. The selector switch RADIO on the chest set (fig. 8) is normally in the interphone position by spring action.

c. Press the push-to-talk switch (HOLD ON) on the chest set.

d. Talk into the microphone; the voice signal now should be heard in the headset and at all other control stations.

e. Readjust the VOL control (R–1 or R–2) on the control box to the desired level.

f. If prolonged transmission is desired, the LOCK ON button of the push-to-talk switch may be pressed; the microphone circuit will be com-

pleted until the lock is released by pressing the HOLD ON button.

25. Operation From the Amplifier Panel

Operation from the amplifier panel is as described in paragraph 24, except that the selector switch RADIO on the chest set must be pressed, placing the switch in the RADIO position. At the same time the push-to-talk switch must be pressed in either the HOLD ON or LOCK ON positions. The VOLUME control then is adjusted to the desired level.

Note. Operation from the panel is not a normal operation, and is used in an emergency or for purposes of testing during trouble shooting.

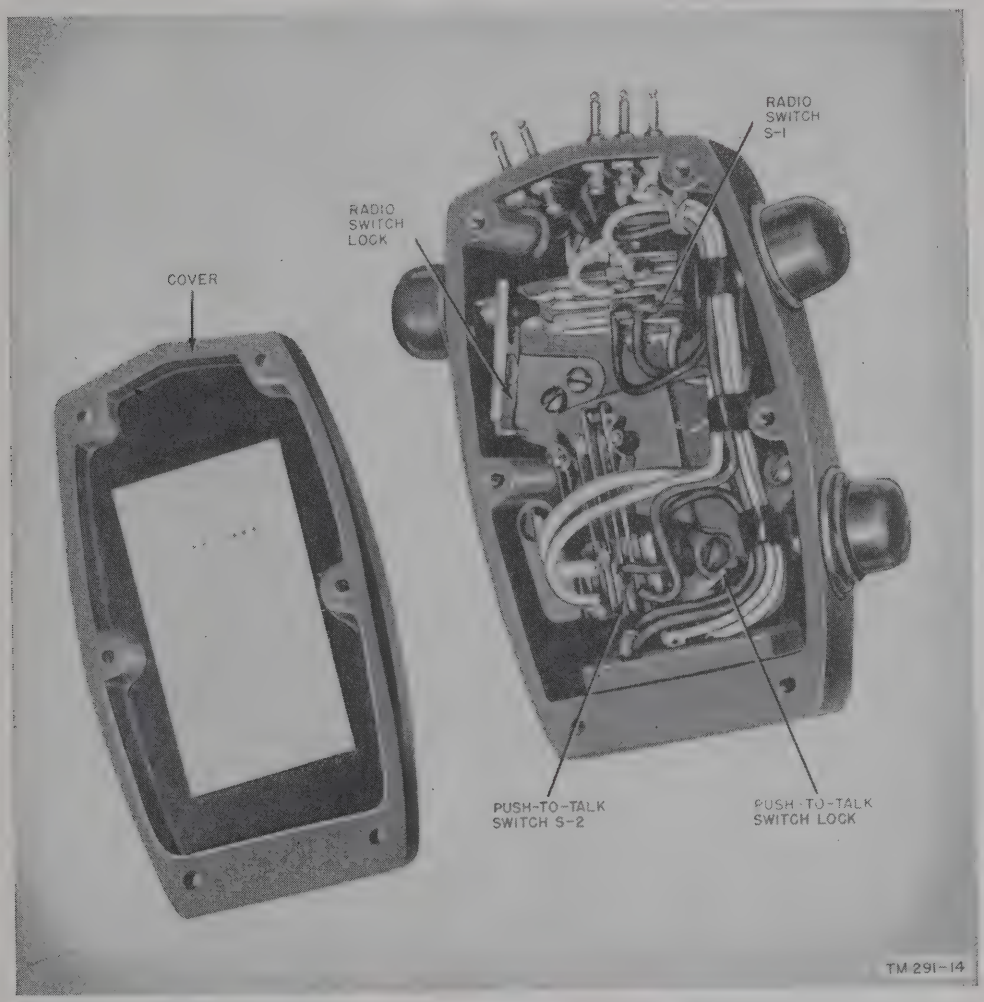


Figure 16. Chest Set Group AN/GSA-6 (inside view).

CHAPTER 4

ORGANIZATIONAL MAINTENANCE INSTRUCTIONS

Section I. PREVENTIVE MAINTENANCE

26. Definition of Preventive Maintenance

Preventive maintenance is work performed on equipment (usually when the equipment is not in use) to keep it in such good working order that breakdowns and needless interruptions in service will be kept to a minimum.

27. Tools and Materials Required

The tools and materials required for preventive maintenance on Intercommunication Set AN/UIC–1 are those normally supplied with such organizational tool equipment as Tool Equipment TE–41. In addition a supply of Solvent, Dry Cleaning (SD) should be available.

28. General Preventive Maintenance Techniques

a. Use No. 0000 sandpaper to remove corrosion.

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

(1) If necessary, except for electrical contacts, moisten the cloth or brush with solvent (SD) ; then wipe the parts dry with a cloth.

(2) Burnish electrical contacts with a burnisher, then clean them with a cloth moistened with carbon tetrachloride and wipe them dry with a dry cloth.

c. If available, dry compressed air may be used for cleaning dust from inaccessible places. The air pressure must not exceed 60 pounds per square inch, and extreme care must be taken in order to avoid mechanical damage to the equipment.

d. For further information on preventive maintenance techniques, refer to TB SIG 178.

29. Performing Preventive Maintenance

Preventive maintenance to be performed by organizational personnel may be divided into three general types: cleaning, inspection, and minor repairs. Cleaning and inspecting of Intercommunication Set AN/UIC–1 are performed at regular intervals, as directed by local authority. Minor repairs are made at inspection times, or whenever necessary. Because of the intense vibration to which vehicular installations of the intercommunication set are subjected, it may be necessary to make daily inspections. Preventive maintenance is performed as follows:

a. Cleaning.

(1) Wipe thoroughly all the exterior surfaces of all components with a dry cloth.

(2) Wipe off all accessible cords and connectors; if grease is present, moisten the cloth with solvent (SD) and wipe, then dry with a dry cloth.

(3) Wipe off all audio accessories with a dry cloth. Brush out receiver and microphone openings with a soft brush.

(4) Using a long-handled brush, brush out the space between the surface plate and the hold-down plates of the mounting (fig. 3) ; brush thoroughly around all connectors.

(5) Remove all panel cable connectors from the panel of AF Amplifier AM–65/GRC. Loosen the four Dzus fasteners (fig. 5) at the corners of the panel, and slide the amplifier chassis out of its cover.

(6) Remove all the tube shields and pull out the tubes, using a tube puller if available.

(7) Wipe off all accessible surfaces with a dry cloth. Brush out all spaces between tubes and parts and around connections with a soft brush.

(8) Brush out holes in tube sockets and panel connectors.

(9) Turn the chassis over and rest it on its top; if available, use compressed air to blow out dust from around wiring and small components. Take care not to use too much pressure; disarrangement of wiring or damage to connections and small parts may result.

b. Inspecting. Make a careful visual inspection of the following:

(1) Inspect the entire system thoroughly for any abnormal conditions such as loose

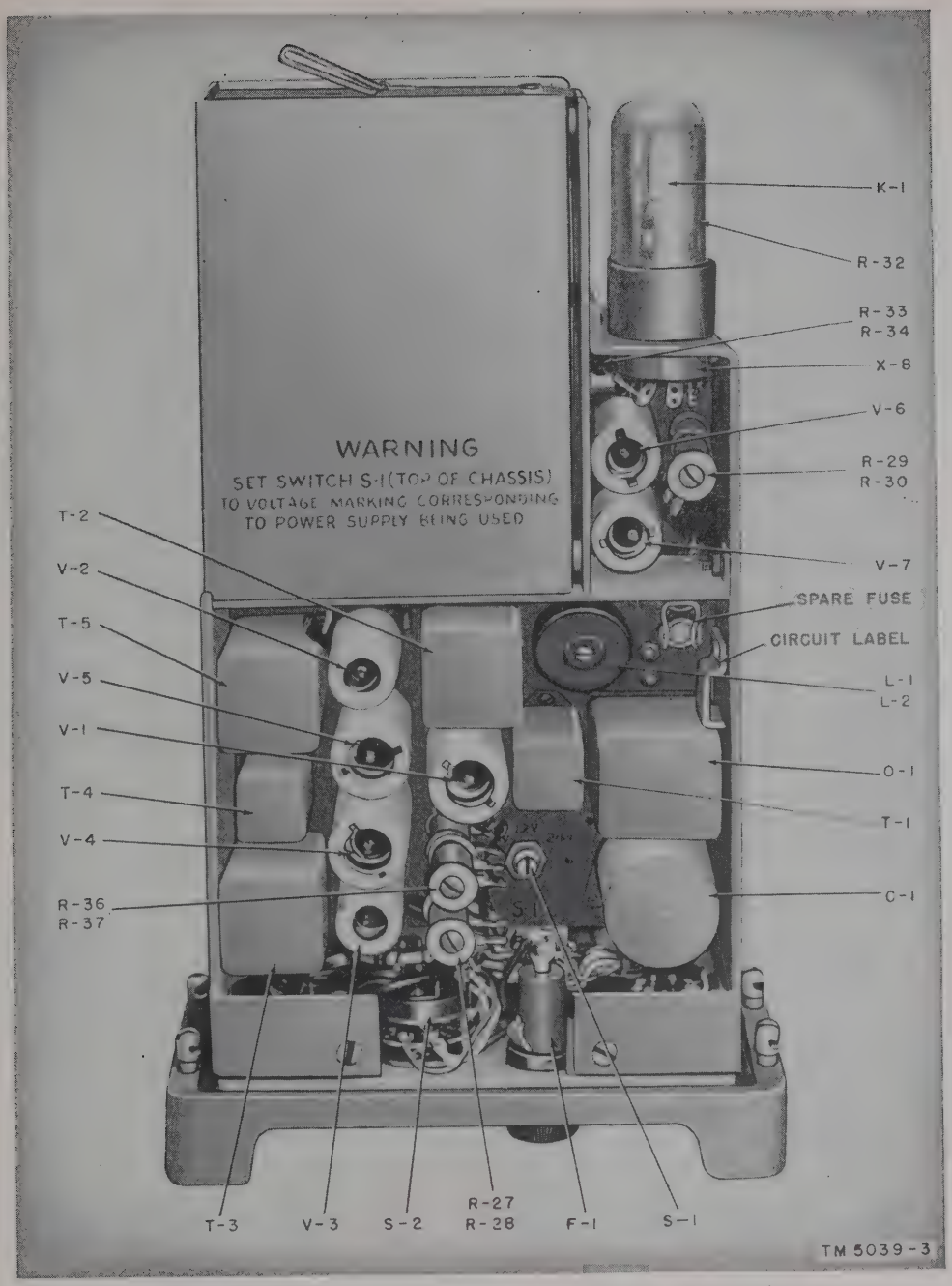


Figure 17. AF Amplifier AM–65/GRC (top of chassis)

cord connections, frayed or charred insulation on cords, bent or scratched components.

(2) Inspect multiple connectors P–1, P–2, and P–3 (fig. 3) for dirt, corrosion, or bent pins.

(3) Examine all tube pins and pins on pluck-out parts (capacitor C–1, thermal relay K–1, and ballast tube R–32) for dirt, corrosion, or bent pins.

(4) Inspect underside of amplifier chassis for—

(*a*) Broken leads.

(*b*) Poor insulation.

(*c*) Soldering lugs for loose or broken connections.

(*d*) Nuts, bolts, rivets, and other mounting hardware for looseness.

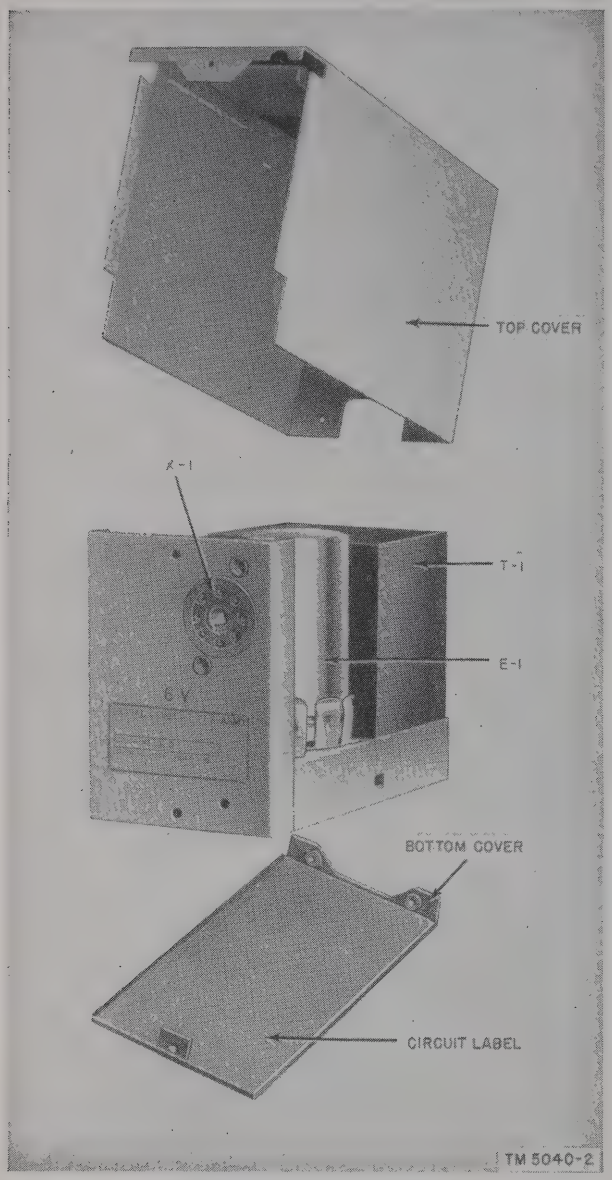


Figure 18. Power Supply PP–282/GRC (disassembled).

(*e*) Resistors and capacitors for discoloration, blistering, or any sign of overheating.

(*f*) Transformers for leakage of compound, indicating internal short or overload.

(*g*) Power supply (remove by pulling from socket) for dirt or corrosion on pins; make sure that voltage of power supply is correct for setting of switch S–1 on top of chassis.

(*h*) Setting of switch S–1 to see that it corresponds with markings on power supply and front panel of amplifier.

c. Making Minor Repairs. Any minor defects disclosed by inspection should be repaired immediately. Repairs which may be made are—

(1) Repair of cordages. Resolder loose or broken connections, and tape worn insulation.

(2) Replacement of any defective pluck-out parts.

(3) Repair of any broken leads underneath chassis of amplifier if accessible.

(4) Tightening of any loose bolts, screws, or nuts.

(5) Replacement of defective fuse (F–1).

(6) Removal of corrosion or dirt on pins of pluck-out parts.

d. Unauthorized Repairs. Repairs which may not be performed by organizational personnel, unless authorized in emergencies, are—

(1) Replacement of permanently connected parts.

(2) Internal repair of parts.

30. Lubrication

No lubrication is required for Intercommunication Set AN/UIC–1. *Never apply oil or grease of any kind to this equipment.*

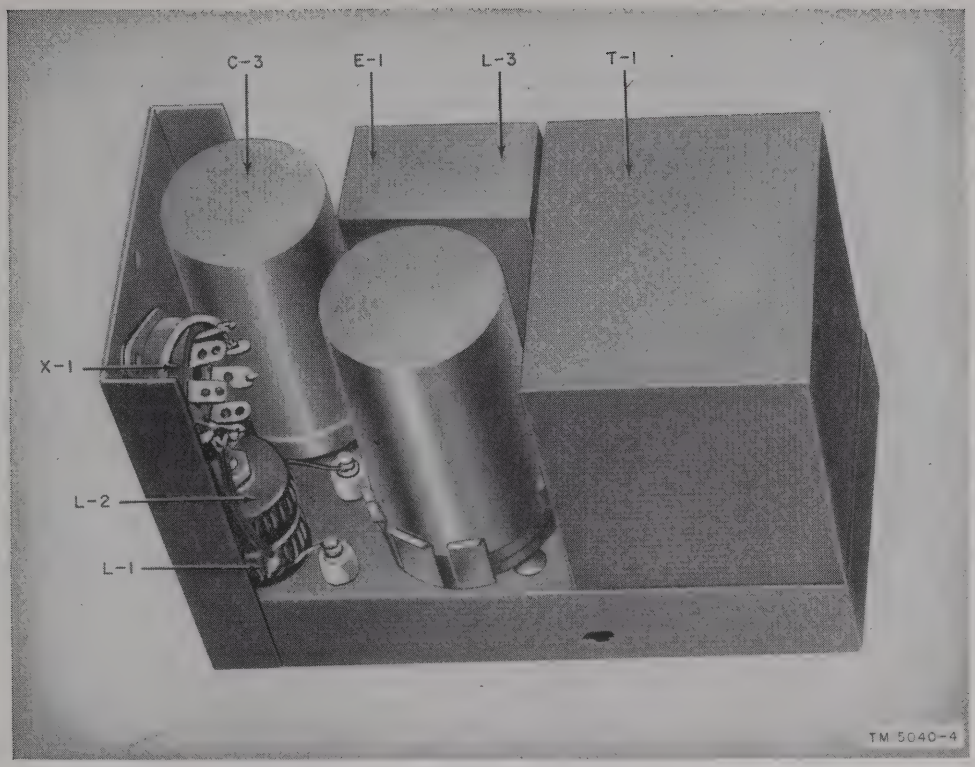


Figure 19. Power Supply PP–282/GRC (top of chassis).

Section II. WEATHERPROOFING AND REFINISHING

31. Weatherproofing

a. General. Signal Corps equipment, when operated under severe climatic conditions such as prevail in tropical, arctic, and desert regions, requires special treatment and maintenance. Fungus growth, insects, dust, corrosion, salt spray, excessive moisture, and extreme temperatures are harmful to most materials.

b. Tropical Maintenance. A special moistureproofing and fungiproofing treatment has been devised which, if properly applied, provides a reasonable degree of protection. This treatment is originally applied at the factory, and needs only to be re-applied in case of wear or replacement of parts. The treatment is fully explained in TB SIG 13 and TB SIG 72.

c. Winter Maintenance. Special precautions necessary to prevent poor performance or total operational failure of equipment in extremely low temperatures are fully explained in TB SIG 66.

d. Desert Maintenance. Special precautions necessary to prevent equipment failure in areas subject to extremely high temperatures, low humidity, and excessive sand or dust are fully explained in TB SIG 75.

32. Refinishing

Rust and corrosion can be prevented by touching up scratched or bared surfaces with paint. Clean surfaces first, with fine sandpaper; never use steel wool. For further information on refinishing procedures, refer to TM 9–2851, painting instructions for field use.

Section III. THEORY OF INTERCOMMUNICATION SET AN/UIC–1

33. Simplified Block Diagram

Figure 20 is a block diagram showing the general functioning of Intercommunication Set AN/UIC–1. Audio signals from various sources, audio accessories or radio receivers, are mixed, amplified, and divided in AF Amplifier AM–65/GRC. The signals are then conveyed through

Mounting MT–300/GR, which serves as a junction box. From the mounting, the signals are conducted through cables to the Control Boxes C–375/VRC. Audio accessories are connected to these control boxes. The control boxes serve to connect the audio accessories to the desired signal channel or channels, and to vary the volume to the desired level. Power is applied to the system from a 12- or 24-volt storage battery. The power is fed through the mounting to Power Supply PP–281/GRC or PP–282/GRC, which plugs into the amplifier. These power supplies provide direct current voltages of 90 and 135 volts for operation of the intercommunication system and an associated radio set, if desired. Low voltage for the filaments and relay of the amplifier is applied from the battery, through the mounting, to the amplifier.

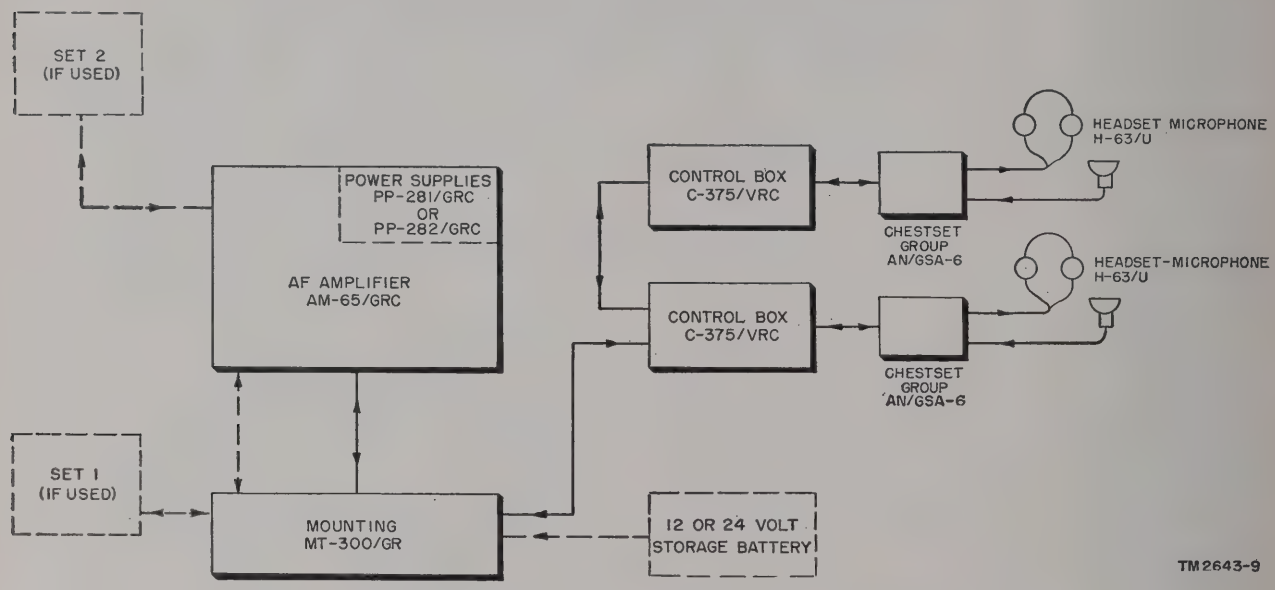


Figure 20. Simplified block diagram of Intercommunication Set AN/UIC–1.

34. Functional Block Diagram

Figure 21 is a detailed block diagram showing the functioning of the system through various signal channels. Discussion in the following paragraphs explains the functioning of signal circuits, power supply circuits, and control circuits for both 12- and 24-volt operation:

a. Signal Channels. The paths of interphone signals through the system are shown in figure 21. The signal originates in chest sets or separate microphones which feed into Control Box C–375/VRC. From the control box, the signal is fed into the input circuit of Interphone Amplifier AM–65/GRC through Mounting MT–300/GR. The interphone signal passes through the following stages of the amplifier:

(1) *Common channel amplifier V–1.* The common channel amplifier V–1 serves to amplify the incoming signal and to divide it into three portions. One of these becomes the main or high-level interphone signal, and the other two are low-level interphone signals. The three portions thus obtained are routed through the balance of the amplifier, and any one of them may be utilized for interphone reception.

(2) *Driver amplifier V–4.* The high-level interphone signal is further amplified by the driver amplifier V–4.

(3) *Output amplifiers V–2, V–3, and V–5.* The high-level interphone signal is finally amplified in output amplifier V–5 (set 1 +2+ interphone channel). The two low-level interphone signals are amplified in output amplifiers V–2 and V–3. The high-level interphone signal is next fed into the amplifier AUDIO connector through a volume control, and also, at a fixed level, though Mounting MT–300/GR, into Control Boxes C–375/VRC. The two low-level interphone signals also

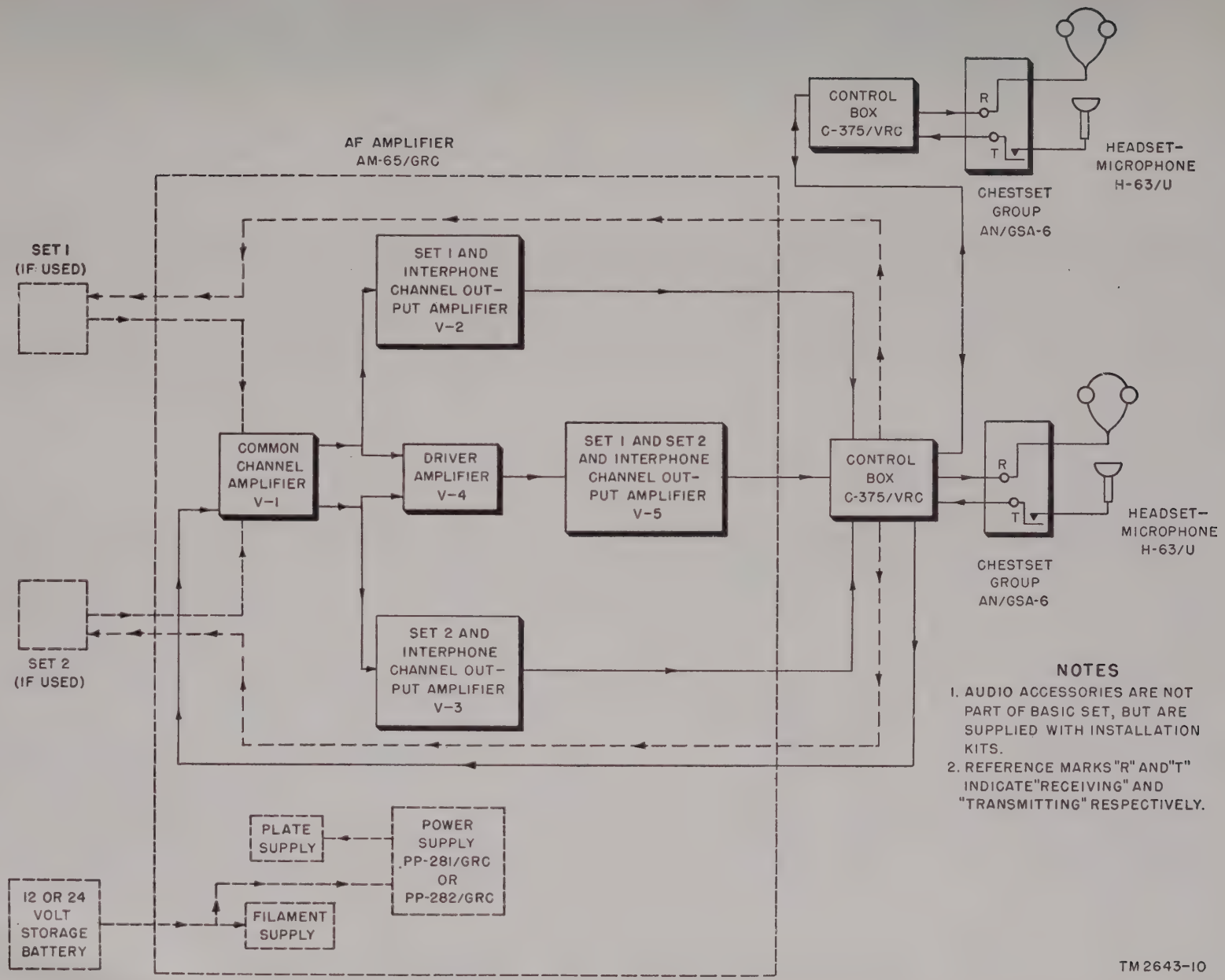


Figure 21. Detailed block diagram of Intercommunication Set AN/UIC-1

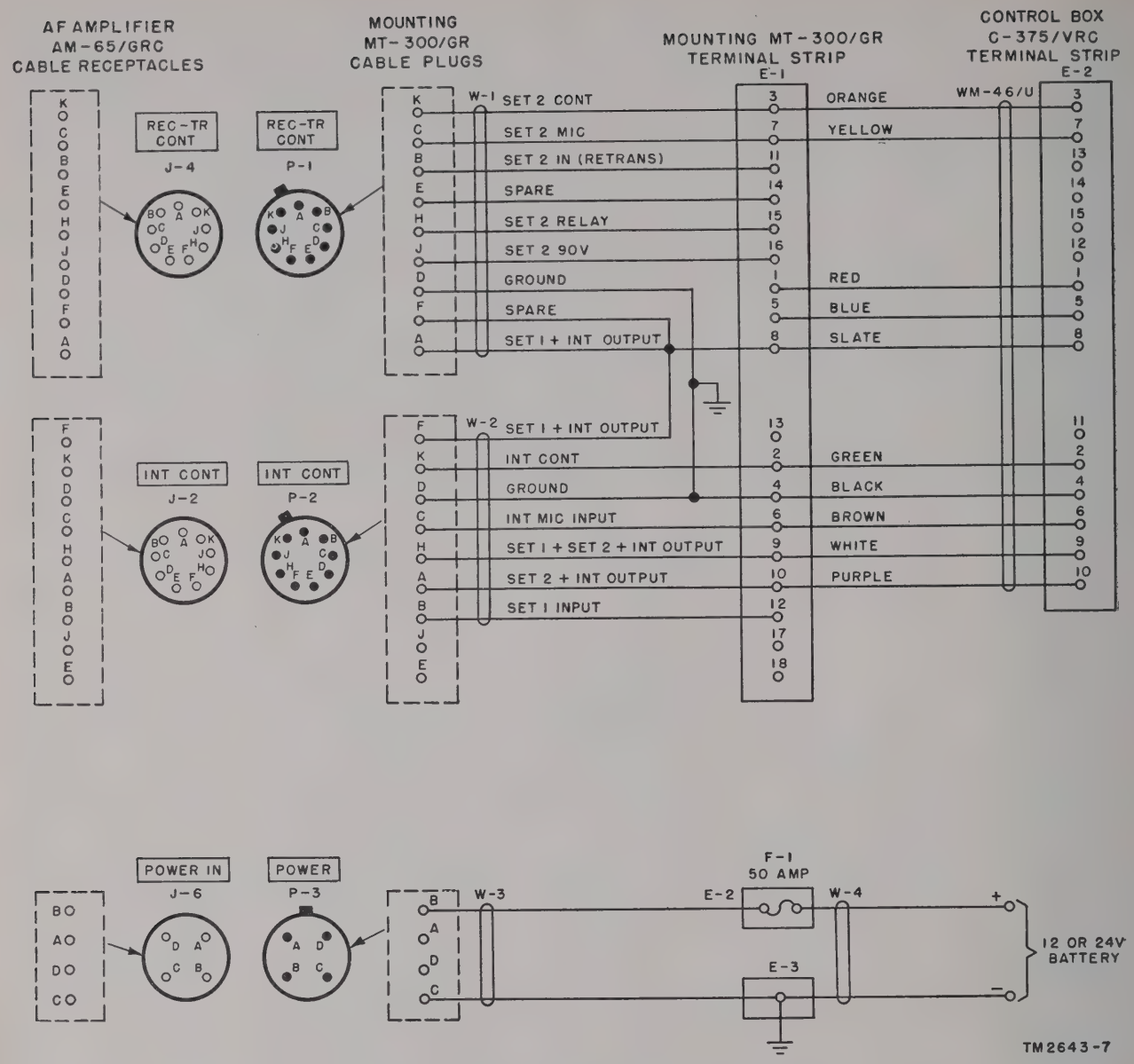


Figure 22. Terminal strip cable connection diagram.

are fed to Control Boxes C–375/VRC at a fixed level, through Mounting MT–300/GR.

(4) *Control Box C–375/VRC.* Control Box C–375/VRC serves to connect any of the interphone chanels to various audio components by means of a selector switch. The control box also serves to connect a microphone to the input of the audio amplifier. The interphone signal thus obtained is passed through the various channels of the amplifier, and through its output to other control boxes, of the interphone set. The signal is also returned to the originating control box.

(5) *Inputs from radio sets.* In cases where the intercommunication set is used with systems having radio sets, the outputs from radio receivers may be fed into the intercommunication system input through receptacles J–2 and J–4 of AF Amplifier AM–65/GRC. The two radio sets commonly used with systems of the standardized series are designated SET 1 and SET 2. Receiver outputs from these sets are first applied to the common chan-

nel amplifier where they are mixed with the interphone signal. The SET 1 signal is then mixed and amplified with one of the low-level interphone signals in V–2, and the SET 2 signal is amplified with the other low-level interphone signal in V–3. A portion of the signal from both radio sets is amplified with the high-level interphone signal, and appears at the output of that channel for the purpose of monitoring.

b. Power Supply Circuits. Power for the intercommunication set is derived from a 12- or 24-volt storage battery, usually vehicular. Current from the battery is fed into the filament supply circuit of AF Amplifier AM–65/GRC and into the input circuits of Power Supplies PP–281/GRC or PP–282/GRC, 12 volts and 24 volts, respectively. These power supplies which plug into AF Amplifier AM–65/GRC provide plate voltages of 135 volts and 90 volts for the plates of the amplifier tubes.

35. Power Control Circuits

The control circuits for application of power to Intercommunication Set AN/UIC–1 and the completion of audio circuits are shown in the control circuit diagram (fig. 31). In using the control circuit diagram, refer to the legend in the lower right-hand corner. Letters are used to designate the unit, letters and figures to designate the part of the unit referred to, such as switch, connector, terminal strip, etc., and a letter or number to designate the terminal or contact referred to. For example, R/E–2(2) refers to terminal 2 on terminal strip E–2 of Control Box C–375/VRC. The application of power is controlled solely from the panel of AF Amplifier AM–65/GRC, while control of the audio channels is from audio components connected to two or more Control Boxes C–375/VRC. Paragraphs 36 through 38 trace the control action for filament, plate, bias, relay, and audio circuits for either 24- or 12-volt operation.

36. 24-Volt Operation

When the system is used with a 24-volt battery, Power Supply PP–282/GRC is plugged into the amplifier. Switch D/S–1 on the amplifier chassis is turned to the 24-volt position.

a. Filament Circuit. When switch D/S–2 on the amplifier panel is turned to the INT position, battery current will flow through the filaments of the amplifier tubes. Tubes V–1 through V–5 are arranged in series parallel. Tubes V–2, V–3, and the two sections of V–5 have all their filaments in parallel. This group is in series with the two-section filaments of V–1 and V–4, also arranged in parallel. The circuit then is extended through the 24-volt position of switch D/S–1 section 1B, to the ballast tube D/R–32. The ballast tube serves to maintain a constant current in the filament circuit. There is normally a 6-volt drop across the ballast tube. The circuit next extends through the normally closed contacts of thermal relay K–1 to section 1A of switch D/S–2. When this switch is in the INT position (which is the normal operating position for this system), a load resistor, R–36, is placed in the circuit. This provides a further voltage drop of 6 volts, replacing Receiver-Transmitter RT–70/GRC load, and serves also to stabilize the circuit. The filament circuit is completed through switch D/S–1 section 1A to ground. If the Receiver-Transmitter RT–70/GRC is used, and switch D/S–2 is in the RT–70 position, the circuit through resistor R–36 is opened and the circuit is completed through an a-f filter, and the filaments of RT–70 to ground. In this case the filament net of RT–70 provides the necessary voltage drop of 6 volts and also the stabilization required.

b. Plate Power Supply. When the OFF-INT-RT-70 switch, D/S–2, is in either of the closed positions, battery current is applied to the input of Power Supply PP–282/GRC. The output of 135 volts is applied to the plates of the amplifier power tubes, through suitable dropping resistors, to the plates and screen grids of the other amplifier tubes.

c. Relay Power Supply. Under 24-volt operation, when switch D/S–2 is closed, the positive side of the battery voltage is applied through connectors U/X–1 and D/J–5, dropping resistors D/R–28 and D/R–27, to relay D/O–1. The negative side of the relay coil is connected to terminals D/J–1F and D/J–2K. When either of these terminals is connected to ground by the push-to-talk switches Y/S–2 of any of the microphones in the audio circuits; for example, through terminals Y/P–1H and R/J–1H, the relay is energized and its contacts close, completing the microphone circuit through terminals C of D/J–1 and D/J–2, through other points to ground.

d. Bias Supply. The cathodes of tube V–5A and V–5B in the power output stage of the amplifier are connected to pin 7 of thermal relay K–1. In 12- or 24-volt operation, with D/S–2 in the INT position, the cathode circuit of the output stage extends through a resistance net consisting of resistors R–33, R–34, R–35, and R–36, the heater of K–1 and section 1A of switch D/S–1 to ground. The voltage drop across these parts provides a fixed bias of approximately 6 volts for the output stage. In the RT–70 position of D/S–2, section 1A, the audio filter of the amplifier and the filaments of Receiver-Transmitter RT–70/GRC are substituted for the load of resistor D/R–36.

37. 12-Volt Operation

When the system is used with a 12-volt battery, Power Supply PP–281/GRC is plugged into the amplifier, and switch D/S–1 is turned with a screw driver to the 12V position. FUSE D/F–1 has a 10-ampere rating. The voltage marker on the left of the amplifier panel must read "12v 10A." The following differences in the various power circuits are noted:

a. Filament Circuit. When switch D/S–2 is in the INT or the RT–70 position, current will flow through the filaments of the amplifier tubes. The circuit does not pass through the ballast tube and thermal relay net, but is completed to ground through switch D/S–1. As in the 24-volt operation the tube filaments are arranged in series parallel.

b. Plate Power Supply. The plate power supply circuit is the same as that described in paragraph 36b, except that Power Supply PP–281/GRC is used.

c. Relay Power Supply. A strap connection between terminals 3 of U/X–1 and 2 of D/J–5 bypasses resistor R–28, and connects the battery circuit through resistor R–27 and the coil of relay D/O–1 to terminals D/J–1F and D/J–2K.

d. Bias Supply. The bias supply for the power output stage remains the same as for 24-volt operation, except that the ballast, thermal relay net is not in series with the tube filaments. The positive battery input to this net is direct from the OFF-INT-RT-70 switch, through section D of switch D/S–1. The negative side of the thermal relay net is direct to ground through the 12-volt contact of switch D/S–1, section 1A.

38. Audio Control Circuits

The audio circuits of Intercommunication Set AN/UIC–1 are controlled by chest sets, terminating either in plugs for insertion in 10-pin audio connectors or plugs for insertion in 2-pole phone jacks or 3-pole microphone jacks. The audio components normally supplied with Intercommunication Set AN/UIC–1 are Chest Set Group AN/GSA–6 for use with the 10-pin connector, and Headset-Microphone H–63/U for plugging in the chest set switch box. The chest set may be plugged into either AF Amplifier AM–65/GRC or Control Box C–375/VRC; the latter is the normal position. The audio control circuits functions as follows:

a. Control Box C–375/VRC Microphone Circuits.

(1) *Chest Set Group AN/GSA–6.* Three chest sets are provided with the installation units for the system. The connections and circuits for all of these are shown on the control circuit diagram (fig. 31). Subparagraph (2) below describes only the chest set connected to receptacle R/J–1 of the control box, which is the left-hand circuit in the audio section of the diagram. Switch Y/S–1 of the chest set is normally in the interphone position (fig. 30). When the push-to-talk switch Y/S–2 is closed, the control circuit from point R/J–1J is completed to ground, thus energizing relay D/O–1 in the amplifier (figs. 26 and 31). At the same time the microphone input circuit from point R/J–1K is completed to ground. The energizing of relay D/O–1 has closed its contacts, thus completing the microphone circuit through dropping resistor D/R–2, the primary of speech input transformer D/T–1, and the microphone to ground. Any speech input to the microphone will appear at the output terminal of the amplifier D/J–1A, and the phone outlets (PHONE and J–1 and J–2) of Control Box C–375/VRC, points R/J–1A and R/J–2A.

(2) *Handset H–33/PT.* When a handset is used, it is plugged into either R/J–1 or R/J–2. The microphone and control circuits are completed in the same way as

described in (1) above. The only control action on the handset is through a push-to-talk switch on the handle. The use of the handset is not recommended with this system because of its tendency to noise pick-up and physical feed back.

(3) *Microphone T–45.* A separate Microphone T–45 may be plugged into either of jacks R/J–3 (MIC) or R/J–4 (MIC) which are in parallel.

Note. The RADIO TRANS switch, R/S–2, must be in the center or interphone position. The control and speech circuits are actuated exactly as in (2) above.

b. Amplifier Panel Microphone Circuit. A Handset H–33/PT or a chest set may be plugged into the AUDIO receptacle D/J–1 on the amplifier panel. When the push-to-talk switch on the handset is closed, the control circuit from D/J–1F is completed to ground, and the relay D/O–1 is energized. When the chest set is used switch Y/S–1 must be in the RADIO position. As the relay is energized, the contacts close and the microphone speech circuit is completed through the primary of transformer D/T–1 and the microphone to ground. Any speech input will appear at the output terminals of the amplifier and the control boxes.

c. Control Box C–/VRC Phone Circuits. Audio output signals appearing at the amplifier receptacle D/J–2 are channeled through Mounting MT–300/GR and into Control Box C–375/VRC at terminal strip R/E–2, contacts 8, 9, and 10. From terminal Strip R/E–2, the signals are distributed through switch R/S–1, as follows:

(1) *Chest Set Group AN/GSA 6.* The audio signal from the selector switch R/S–1 passes through VOL potentiometer R/R–1 to ground. The desired portion of the signal is taken from R/R–1, and is passed through the headset of Chest Set group AN/GSA–6 to ground. PHONE jack R/J–6 is placed in parallel with this circuit for use when Headset HS–30 is used as an alternate monitoring accessory.

(2) *Handset H–33/PT.* The audio signal from the selector switch, R/S–1, is passed through VOL potentiometer R/R–2 to ground. The desired portion of the signal is tapped from R/R–2 and is passed through the receiver of Handset H–33/PT to ground. PHONE jack R/J–5 is placed in parallel with this circuit for use with an additional Headset HS–30.

Section IV. TROUBLE SHOOTING AND REPAIR AT ORGANIZATIONAL MAINTENANCE LEVEL

39. Scope

a. The trouble shooting and repair work that can be performed at organizational level (operators and repairmen) is necessarily limited in scope by the tools, test equipment, and replaceable parts available, and by the existing tactical situation. Accordingly, much trouble shooting is based on observation of the performance of the equipment and the use of the senses in determining such faults as burned-out tubes, worn insulation, broken connections, etc.

b. The paragraphs which follow in this section will help in determining which one of the components, such as mounting, amplifier, control box, or audio accessory, is at fault (sectionalizing), and in isolating the fault in that component to a particular part (localizing). Such localization applies only to parts for which running spares, such as tubes, fuses, and vibrators, are available (par. 12).

40. Tools and Test Equipment Required for Trouble Shooting

a. Tools. The tools required for disassembly or other work in connection with localizing trouble will be found in any standard tool set such as Tool Equipment TE–41 or TE–113. In addition, a tube puller, if obtainable, will be of value.

b. Test Equipment. Test equipment required for trouble shooting includes a standard tube tester and a voltohmmeter for checking resistances, voltages, and continuities. These items are found in Test Set I–56–K. Separately, they may be Tube Tester I–177 (or equivalent) and Voltohmmeter I–166 or Electronic Multimeter TS–505/U.

41. Sectionalization of Trouble to a Component

a. General. Isolation of trouble to a component can be performed rapidly by using the equip-

ment performance checklist. The checklist is a listing of operational steps in their logical sequence, together with normal indications.

b. Use of Checklist for Trouble Shooting.

(1) The checklist may be used independently or in conjunction with the detailed trouble-shooting procedures in the succeeding paragraphs. The operator should perform the various items on the list in sequence until an abnormal indication appears.

(2) The first five columns of the list give the step No., the unit involved, the item to be checked, the action to take, and the normal indications. When an abnormal indication is obtained, the sixth column suggests probable defective units and refers the operator to a paragraph or paragraphs which give procedures for locating the trouble within the particular unit.

c. Equipment Performance Checklist. The items of the equipment performance checklist are listed in the following table:

Step No.	Unit	Item	Operation or condition	Normal indications	Probable defective units
1	Amplifier	OFF-INT-RT–70 switch.	Turn to OFF.		
2	Amplifier	Cables	All connections are made properly (fig. 11).		
3	Chest sets (two)	Audio plugs	Connected to AUDIO receptacle on amplifier panel and audio receptacle J–1 on control box.		
4	Amplifier	VOL control	Turn to halfway position.		
5	Control box	VOL control	Turn to halfway position.		
6	Control box	RADIO TRANS switch (S–2).	Set to center position.		
7	Control box	Selector switch (S–1).	Set to center position (INT).		
8	Chest sets	RADIO switch (S–1)	Unlocked or INT position.		
9	Chest sets	HOLD ON button (S–2).	Press momentarily		
10	Amplifier	OFF-INT-RT–70 switch.	Turn to INT position.		
11	Chest set at amplifier panel.	HOLD ON button (push-to-talk).	Press HOLD ON button and talk into microphone.	Voice signal heard in headset.	Battery or battery cable (par. 42*b*).
		RADIO switch (S–1)	Press simultaneously with HOLD ON button.		Mounting (par. 43). Connecting cables W–1, W–2, and W–3 (par. 44*c*). Amplifier—tubes V–1, V–4 or V–5 (par. 42*b*(3)). Power supply (par. 42*b*(3)).
12	Chest set at control box.	HOLD ON button (push-to-talk).	Press HOLD ON button and talk into microphone.	Voice signal heard in headset.	Control box (par. 42*c*). Special Purpose Cable WM–46/U (par. 44).

Step No.	Unit	Item	Operation or condition	Normal indications	Probable defective units
13	Control box	Selector switch (S–1)	Set to SET 1 + INT (counterclockwise position).		Mounting (par. 43).
14	Chest set at control box.	HOLD ON button	Press Hold On button and talk into microphone.	Voice signal heard in headset at approximately one-half level of signal in step 12.	Tube V–2 in amplifier (par 42*c*(2)); mounting; connecting cable or control box (par. 42*c*).
15	Control box	Selector switch (S–1)	Set to SET 2 + INT (clockwise position).		
16	Chest set at control box.	HOLD ON button	Press HOLD ON button and talk into microphone.	Voice signal heard in headset at approximately one-half level of signal in step 12.	Tube V–3 in amplifier (par. 42*c*(3)); mounting; connecting cables (par. 44) or control box (par. 42*c*).
17	Control box	Selector switch (S–1)	Set to INT (enter position).		
18	Control box and chest set at control box.	VOL control R–1 and HOLD ON button.	Press HOLD ON button, and rotate VOL control through entire range while talking into microphone.	Voice heard over entire range of control at 0 to maximum level.	VOL control.
19	Control box	Connector J–2	Plug in chest set and repeat steps 12 through 18, but using R–2 for VOL control.	Voice signal heard during all steps.	Audio connector J–2; VOL control R–2.
20	Other control boxes.	Connectors J–1 and J–2.	Plug chest set in each connector in turn, and repeat steps 12 through 19 while in each connector.	Voice signals heard at all positions of selector switch and VOL controls.	Control boxes or interconnecting cables (pars. 42 and 44).

42. Localizing Procedures

The following paragraphs list the procedures for localizing trouble to an individual unit or to a particular part within a unit for which a running spare is available (par. 12). These paragraphs should be used in conjunction with the equipment performance checklist (par. 41*c*), but they may be used separately.

Warning: Never turn the OFF-INT-RT–70 switch on the amplifier panel to the RT–70 position unless Receiver-Transmitter RT–70/GRC is used, or unless a suitable load is substituted for it. Without a proper load, thermal relay K–1 in the amplifier will be overloaded and possibly damaged.

a. Preliminary Steps for Operation.

(1) Turn the OF-INT-RT–70 switch to the OFF position.

(2) Check that all cable connections between the amplifier and the mounting are made properly.

(3) Connect a chest set (known to be good) to AUDIO jack J–1 on the front panel of the amplifier.

(4) Connect a chest set (known to be good) to audio connector J–1 on one of the control boxes.

(5) Turn the volume controls, VOLUME on the amplifier panel and VOL (R–1) on the control box, to the half-way positions.

(6) Be sure that the RADIO TRANS switch S–2 on the control box is in the center or interphone position.

(7) Turn selector switch S–1 on the control box to the center or INT position.

(8) Turn the OFF-INT-RT–70 switch on the amplifier panel to the INT position.

b. Amplifier Operational Check. Using the chest set at the amplifier panel, press RADIO switch S–1 and HOLD ON switch S–2; talk into the microphone. If a voice signal is heard in the headset, it indicates that the system is functioning properly to this point. If no signal is heard, an abnormality is indicated, and the trouble must be in the battery, battery cable, mounting wiring, interconnecting cable W–1, W–2, or W–3, or in the amplifier. Make the checks for troubles in these units as follows:

(1) *Battery.* Using the 0- to 50-volt d-c range of the voltmeter, check the battery voltage at the terminals of the battery, and be sure to observe the proper polarity.

(2) *Battery cable.* If a voltage reading is obtained in (1) above, disconnect cable W–3 from the amplifier and make a voltage check across terminals A and C of plug P–3 (fig. 3). A reading here will indicate that power is being applied to the amplifier.

(3) *Amplifier.* No signal at amplifier AUDIO connector J–1 indicates trouble somewhere in the power circuits or in the main interphone signal channel (channel 3). First, check FUSE (F–1) on panel. The most common cause of trouble will be a defective tube V–1, V–4, or V–5. If a tube tester is available, open the amplifier and test the tubes (par. 46*a*). If no tester is available, try replacing the suspected tube with one known to be good (par. 46*a*). If the trouble persists, ballast tube R–32 and thermal relay K–1 should be checked. Do this by making a continuity check of tube base pins with an ohmmeter, or by replacing the faulty part with a part known to be good (par. 46*a* and fig. 17). If the trouble continues, check Power Supply PP–281/GRC or PP–282/GRC for a faulty vibrator. Do this by substituting a vibrator known to be good (par. 46*b* and fig. 19). For detailed information on the amplifier, refer to TM 11–5039. If the above measures do not correct the trouble, replace the entire amplifier.

c. Control Box Operational Check. Use the chest set at connector J–1 of the control box. RADIO switch S–1 must be in the out or interphone position:

(1) With selector switch S–1 on the control box in the INT position, press the HOLD ON button and talk into the microphone. The voice signal should be heard in the headset with good volume. No signal indicates a faulty control box, interconnecting cable, or wiring within the mounting.

(2) Turn selector switch S–1 to the counterclockwise or SET 1+ INT position, and repeat (1) above. The voice signal should be heard with approximately one-half the volume of (1) above. If no signal is heard, check for faulty tube V–2 in the amplifier.

(3) Turn selector switch S–1 to the clockwise position and repeat (1) above. The voice signal should be heard at the same level as in (2) above. If no signal is heard, faulty tube V–3 in the amplifier is indicated and should be checked.

(4) Repeat the procedures in (1) through (3) above, using the chest set at connector J–2 of the control box.

(5) If no signals are obtained in the procedures of (1) through (4) above, but have been obtained at the amplifier panel, the trouble must be in the control box, Special Purpose Cable WM–46/U, the wiring of the mounting, or connecting cable W–2 (INT-CONT). In this case, visual and continuity checks must be made to locate the trouble. The following paragraphs list methods of performing these checks.

43. Mounting MT–300/GR Continuity Check

When trouble has been traced to the cabling or the mounting, the trouble sometimes may be isolated by making the cable checks of paragraph 44. If this fails, open the mounting and make continuity checks. Proceed as follows:

a. Disconnect the three cables connecting the mounting to the amplifier; disassemble the mount-

ing (par. 16*a*) and expose the wiring. First, make a visual inspection to see if there are any broken connections, frayed insulation, or shorted wires.

b. Using an ohmmeter, check from each pin of the plugs on cables W–1, W–2, and W–3 to the corresponding soldered connection on terminal strip E–1 (figs. 3, 4, and 22). This check should disclose the trouble. If the trouble is not located, leave the mounting open to facilitate checks of Special Purpose Cable WM–46/U.

44. Cable Continuity Checks

When normal signals are obtained at the amplifier panel but not at the interphone boxes, the trouble may be caused by poor cable connections or an open or shorted conductor within the cable. Such trouble may be located by making continuity checks. Proceed as follows:

a. Disconnect all audio accessories from the control box, remove the box from the vehicle, and remove the back cover, exposing terminal strip E–2 (fig. 13) and the soldered ends of the cable.

b. Use the terminal strip wiring diagram (fig. 22) to make the checks. The mounting end of the cable may be checked at the pins of plugs P–1 and P–2 of cables W–1 and W–2, while the control box end is checked at terminal strip E–2. If the test leads on the ohmmeter are long enough, the tests may be made directly from one end of the cabling to the other. If the leads are not long enough, they may be lengthened by splicing additional wire to each one, or jumpers may be used at terminal strip E–2 of the control box, as shown in the chart of paragraph 45*f*. The resistance measurement then is made between the pins on plugs P–1 and P–2 of the mounting cables. The ohmmeter should read 0 in all cases.

Warning: Be sure to remove all jumpers before closing box and resuming operation.

c. If the checks in paragraph 45*f* disclose a fault, further checks of paragraph 45*g* should be made to determine whether the fault is in interconnecting Special Purpose Cable WM–46/U or in mounting cable W–1 or W–2.

d. Short checks may be made by taking a reading between each of the cable conductors and all of the others in turn. These readings should be infinity.

e. If a short or an open in Special Purpose Cable WM–46/U is discovered, the cable must be replaced. Follow the directions for installation given in paragraph 16. If the fault is in mounting cable W–1 or W–2, the mounting must be replaced.

45. Control Box C–375/VRC Continuity Checks

When signals are obtained at the amplifier panel, but not at the control box, and the cables are found to be good, the trouble is obviously in the control box. If signals are obtained at one control box but not at another, the trouble is probably in the Special Purpose Cable, WM–46/U which connects the two boxes in parallel. This should be checked for continuity and shorts as in paragraph 44*b*. If the trouble is isolated to a particular control box, a continuity check of the internal wiring should reveal the trouble. Proceed as follows:

a. If the box is not already open for the cable check of paragraph 44*b*, remove the box from the vehicle wall and remove the back cover plate.

b. Make a thorough visual inspection for any loose or broken connections, defective switches, or connectors.

c. Perform the continuity checks listed in the following chart. Reference also may be made to the schematic diagram (fig. 29). These checks should disclose the defect. If defective parts are found, replace the control box.

d. For further trouble-shooting information, refer to TM 11–5039 and TM 11–5040.

e. Normal resistance and continuity readings are shown in the following chart. Where the positions of switches S–1 and S–2 affect the readings, the positions are indicated. Refer to figures 13 and 29 when making the measurements given below.

Points of measurement	Position of RADIO TRANS switch S–2	Position of selector switch S–1	Reading
Terminal 1 of E–2 to tips of jacks J–3 and J–4 and to F contacts of connectors J–1 and J–2.	Center	----------	Infinity.
	RADIO TRANS	Counterclockwise Center Clockwise	0. Infinity. Infinity.
Terminal 2 of E–2 to J contacts of connectors J–1 and J–2.	----------	----------	0.
Terminal 2 of E–2 to tips of jacks J–3 and J–4 and to F contacts of connectors J–1 and J–2.	Center	----------	0.
	RADIO TRANS	Counterclockwise Center Clockwise	Infinity. 0. Infinity.
Terminal 3 of E–2 to tips of jacks J–3 and J–4 and to F contacts of connectors J–1 and J–2.	Center	----------	Infinity.
	RADIO TRANS	Counterclockwise Center Clockwise	Infinity. Infinity. 0.
Terminal 4 of E–2 to B, E, and H contacts of connectors J–1 and J–2.	----------	----------	0.
Terminal 5 of E–2 to rings of jacks J–3 and J–4 and to C contacts of connectors J–1 and J–2.	Center	----------	Infinity.
	RADIO TRANS	Counterclockwise Center Clockwise	0. Infinity. Infinity.
Terminal 6 of E–2 to K contacts of connectors J–1 and J–2.	----------	----------	0.
Terminal 6 of E–2 to rings of jacks J–3 and J–4 and to C contacts of connectors J–1 and J–2.	Center	----------	0.
	RADIO TRANS	Counterclockwise Center Clockwise	Infinity. 0. Infinity.
Terminal 7 of E–2 to rings of jacks J–3 and J–4 and to C contacts of connectors J–1 and J–2.	Center	----------	Infinity.
	RADIO TRANS	Counterclockwise Center Clockwise	Infinity. Infinity. 0.
Terminal 8 of E–2 to tips of jacks J–5 and J–6 and to A contacts of connectors J–1 and J–2.	----------	Counterclockwise Center Clockwise	0 to 10K depending on position of VOLUME controls R–1 and R–2. Infinity. Infinity.
Terminal 9 of E–2 to tips of jacks J–5 and J–6 and to A contacts of connectors J–1 and J–2.	----------	Counterclockwise Center Clockwise	Infinity. 0 to 10K depending on position of VOLUME controls R–1 and R–2. Infinity.

Points of measurement	Position of RADIO TRANS switch S–2	Position of selector switch S–1	Reading
Terminal 10 of E–2 to tips of jacks J–5 and J–6 and to A contacts of connectors J–1 and J–2.		Counterclockwise Center Clockwise	Infinity. Infinity. 0 to 10 K depending on position of VOLUME controls R–1 and R–2.
Terminals 11 and 12 of E–2 to chassis.			Infinity.
Terminal 13 of E–2 to terminal 14 and 15 of E–2.			0.

f. The continuity check chart for cables W–1 and W–2 and Special Purpose Cable WM–46/U is shown below:

Terminal strip E–1 of Control Box C–375/VRC	Check points on Mounting MT–300/GR			Cable conductors tested
Jumper between terminals	Cable	Plug	Pins	
3 and 7	W–1	P–1	K and C	SET 2 CONT and SET 2 MIC.
7 and 8	W–1	P–1	C and A	SET 2 MIC and SET 1 + INT.
2 and 4	W–2	P–2	K and D	INT CONT and GROUND.
4 and 6	W–2	P–2	D and C	GROUND and INT MIC INPUT.
9 and 10	W–2	P–2	H and A	SET 1 + SET 2 + INT OUTPUT and SET 2 + INT OUTPUT.

g. The continuity check chart for cables W–1 and W–2 is given below:

Terminal strip E–1 on Mounting MT–300/GR	Check points on Mounting MT–300/GR			Cable conductors tested
Jumper between terminals	Cable	Plug	Pins	
3 and 7	W–1	P–1	K and C	SET 2 CONT and SET 2 MIC.
7 and 8	W–1	P–1	C and A	SET 2 MIC and SET 1 + INT.
2 and 4	W–2	P–2	K and D	INT CONT and GROUND.
4 and 6	W–2	P–2	D and C	GROUND and INT MIC INPUT.
9 and 10	W–3	P–2	H and A	SET 1—SET 2—INT OUTPUT and SET 2—INT OUTPUT.
	W–1	P–1	D and chassis.	Cable GROUND to chassis.
	W–2	P–2	D and chassis.	Cable GROUND to chassis.

Section V. REPLACEMENT OF PARTS AND UNITS

46. Replacement of Parts

When trouble has been sectionalized to a unit or localized to a part, it may be necessary to replace the part. Such replacement is limited to the amplifier and the plug-in power supply, for which running spares (par. 12) are provided. Procedures for replacing these parts are described in *a* and *b* below.

a. AF Amplifier AM–65/GRC. In order to replace plug-in parts in the amplifier, with the exception of FUSE (F–1), the panel-chassis

assembly must be removed from the immersion-proof case. First, disconnect all external cables, then remove the amplifier from the mounting, loosen the four Dzus fasteners, and slide the chassis out of the case. Plug-in parts now may be replaced as follows:

(1) *FUSE (F–1).* FUSE (F–1) is mounted on the panel; it is removed by unscrewing the fuse cap and pulling straight out. A spare fuse is mounted in a clip on the amplifier chassis (fig. 17). Be sure that the fuse is replaced with one of the proper value for the power supply being used (10 amperes for Power Supply PP–281/GRC and 4 amperes for Power Supply PP–282/GRC).

(2) *Tubes.* All tubes are accessible from the top of the chassis (fig. 17). First, remove the tube shield. If a tube puller is available, use it to remove the tube. If no tube puller is available, take a firm grip on the tube near its base with the fingers, and remove with an even, upward pull. Do not rock the tube in its socket; the pins may be bent or loosened. When replacing tubes, make sure that the proper tube is plugged into each socket (fig. 26).

(3) *Thermal relay K–1 and ballast tube R–32.* Thermal relay K–1 and ballast tube R–32 are mounted horizontally at the rear of the amplifier chassis. These parts may be removed with the fingers or a tube puller by a straight horizontal pull. Do not rock the tubes in the sockets, as this may damage the prongs.

b. Power Supply PP–281/GRC or PP–282/GRC. The plug-in power supply may be replaced as a single unit, but no running spare is provided for it. However, spare vibrators are provided, and one may be replaced as follows:

(1) Loosen the screws holding the clamp at the rear of the power supply compartment (fig. 17) and swing the clamp clear of the edge of the power supply.

(2) Grasp the hinged handle on the power supply case and pull the entire unit straight out.

(3) Remove the three screws which hold the top cover to the power supply chassis (fig. 18); remove the cover.

(4) Pull vibrator E–1 (fig. 19) out of its socket with a straight upward pull. Do not rock the vibrator in its socket, as this may damage the prongs. If the vibrator sticks in the socket, a small screw driver may be used to pry it gently out of the socket; take care that the leaves of the spring clamp holding the base of the vibrator are not bent.

(5) When replacing the vibrator, use a 6-volt type for Power Supply PP–281/GRC, and a 24-volt type for Power Supply PP–282/GRC.

47. Replacement of Units

When trouble within a unit cannot be located, or when it is traced to a part for which a running spare is not available, replace the unit as a whole. In this case, the damaged unit is returned to the appropriate repair organization.

CHAPTER 5

SHIPMENT AND LIMITED STORAGE AND DEMOLITION OF MATERIAL TO PREVENT ENEMY USE

Section I. SHIPMENT AND LIMITED STORAGE

48. Disassembly

The following instructions are recommended for use in preparing Intercommunication Set AN/UIC–1 for shipment and limited storage. The system first must be completely disconnected and disassembled into its basic units:

a. Control Box C–375/VRC. Follow the procedure below in disconnecting the control boxes:

(1) Disconnect all audio components.
(2) Remove the two bolts holding the control boxes to the vehicle.
(3) Remove the back cover plates.
(4) Unsolder all conductors of Special Purpose Cable WM–46/U from terminal strips E–2.
(5) Loosen bondnuts of cable clamp H–1 or H–2 (figs. 11 and 15) and pull out the cable ends.
(6) Replace the rubber plugs in the cable entries that were removed at the time of installation and tighten bondnuts.
(7) Replace the back cover plates. The control boxes are ready now for packing.

b. AF Amplifier AM–65/GRC. Prepare the amplifier as follows:

(1) Disconnect plugs P–1, P–2, and P–3 on cables W–1, W–2, and W–3 from the amplifier.
(2) Unlock the amplifier by moving the locking levers on the mounting (fig. 3) to the left; slide the amplifier off of the mounting.
(3) Loosen the four Dzus fasteners on the panel of the amplifier, and slide the chassis out of the case.
(4) Pull out Power Supply PP–281/GRC or PP–282/GRC from its socket, and remove from the amplifier.
(5) Replace the amplifier chassis in its case, and tighten the Dzus fasteners. The amplifier and power supply now are ready for packing.

c. Mounting MT–300/GR. Prepare the mounting as follows:

(1) Disconnect battery cable W–4 from the battery or junction box to which it is connected.
(2) Remove the four bolts holding the surface plate to the mounting brackets (fig. 4), and lift off the surface plate. Remove the two bolts holding the junction box to the surface plate (fig. 3), and remove the cover plate.
(3) Unsolder all of the conductors of Special Purpose Cable WM–46/U from terminal strip E–1 in the junction box (fig. 4). Loosen the cable clamp bondnut and pull out the cable end. Replace the rubber plug, in the cable clamp which was removed during installation, and tighten the bondnut.
(4) Replace the junction box coverplate and rebolt the junction box to the surface plate (fig. 4).
(5) Remove the eight bolts holding the mounting plates to the vehicle.
(6) Rebolt the surface plate to the mounting brackets. The mounting now is ready for packing.

49. Packing

When packing for reshipment, refer to paragraph 15, and whenever possible, follow the instructions for unpacking in reverse. The exact procedure will depend upon the materials and tools available, and the circumstances under which the equipment is to be shipped or stored. The following steps should be followed when practicable:

a. Wrap each unit with moistureproof material; seal with tape.

b. Place each unit in a cardboard carton, filling blank spaces with paper packing, and protect with corrugated fiber or cardboard. Fasten top leaves with paper stripping.

c. Line wooden boxes (if available) with moistureproof, vaporproof material, and place units in boxes according to packaging data in paragraph 6. If available place dehydrating agent such as silica gel in the box. Seal the barrier with stripping, and nail cover on box firmly. If shipment is for long distance, strengthen the box with steel straps. Equipment is now ready for shipment or storage.

Section II. DEMOLITION OF MATERIAL TO PREVENT ENEMY USE

50. General

The demolition procedures outlined in paragraph 51 will be used to prevent the enemy from using or salvaging this equipment. Demolition of the equipment will be accomplished only upon order of the commander.

51. Methods of Destruction

a. Smash. Smash the controls, tubes, switches, capacitors, transformers, and headsets, using sledges, axes, handaxes, pickaxes, hammers, crowbars, or other heavy tools.

b. Cut. Cut cords, headsets, and wiring, using axes, handaxes, or machetes.

c. Burn. Burn cords, resistors, capacitors, wiring, and technical manuals, using gasoline, kerosene, oil, flame throwers, or incendiary grenades.

d. Bend. Bend panels, cabinets, and chassis.

e. Explosives. If explosives are necessary, use firearms, grenades, or TNT.

f. Disposal. Bury or scatter the destroyed parts in slit trenches, fox holes, or other holes, or throw them into streams.

g. Destroy. Destroy everything.

APPENDIX I

REFERENCES

Note. For availability of items listed, check SR 310–20–3 and SR 310–20–4. Check Department of the Army Supply Catalog SIG 1 for Signal Corps supply catalogs.

1. Army Regulations

AR 380–5	Safeguarding Military Information.

2. Supply Publications

SIG 1	Introduction and Index.
SIG 5	Stock List of All Items.
SIG 6	Sets of Equipment.
SIG 7 & 8	Organizational Maintenance Allowances and Field and Depot Maintenance Stockage Guide.
SB 11–47	Preparation and Submission of Requisitions for Signal Corps Supplies.
SB 11–76	Signal Corps Kit and Materials for Moisture- and Fungi-Resistant Treatment.

3. Publications on Auxiliary Equipment and Test Equipment

TM 11–303	Test Sets I–56–C, I–56–D, I–56–H, and I–56–J.
TM 11–321	Test Set I–56–E.
TM 11–2613	Voltohmmeter I–166.
TM 11–2626	Test Unit I–176.
TM 11–2627	Tube Tester I–177.

4. Painting, Preserving, and Lubrication

TB SIG 13	Moistureproofing and Fungiproofing Signal Corps Equipment.
TM 9–2851	Painting Instructions for Field Use.

5. Decontamination

TM 3–220	Decontamination.

6. Demolition

FM 5–25	Explosives and Demolitions.

7. Other Publications

FM 24–18	Field Radio Techniques.
FM 72–20	Jungle Warfare.
SR 310–20–3	Index of Training Publications (Field Manuals, Training Circulars, Firing Tables and Charts, Army Training Programs, Mobilization Training Programs, Graphic Training Aids, Joint Army-Navy-Air Force Publications, and Combined Communications Board Publications).
SR 310–20–4	Index of Technical Manuals, Technical Regulations, Technical Bulletins, Supply Bulletins, Lubrication Orders, Modification Work Orders, Tables of Organization and Equipment, Reduction Tables, Tables of Allowances, Tables of Organization, and Tables of Equipment.
TB SIG 4	Methods for Improving the Effectiveness of Jungle Radio Communication.
TB SIG 25	Preventive Maintenance of Power Cords.
TB SIG 66	Winter Maintenance of Signal Equipment.
TB SIG 72	Tropical Maintenance of Ground Signal Equipment.
TB SIG 75	Desert Maintenance of Ground Signal Equipment.
TB SIG 123	Preventive Maintenance Practices for Ground Signal Equipment.
TB SIG 178	Preventive Maintenance Guide for Radio Communication Equipment.
TB SIG 223	Field Expedients for Wire and Radio.

TM 9–2857 Storage Batteries Lead-Acid Type.
TM 11–310 Schematic Diagrams for Maintenance of Ground Radio Communication Sets.
TM 11–453 Shop Work.
TM 11–455 Radio Fundamentals.
TM 11–483 Suppression of Radio Noises.
TM 11–486 Electrical Communication Systems Engineering.
TM 11–660 Introduction to Electronics.
TM 11–4000 Trouble Shooting and Repair of Radio Equipment.
TM 38–650 Basic Maintenance Manual.

APPENDIX II

IDENTIFICATION TABLE OF PARTS

Note. The following identification table of parts covers only those units which are not similarly covered in other manuals; these units are the Intercommunication Set AN/UIC–1 (basic set), the Mounting MT–300/GR, and the Control Box C–375/VRC. Lists of parts for the basic set, the mounting, and the control box appear in paragraphs 2, 3, and 4 respectively.

1. Requisitioning Parts

The fact that a part is listed in this table is not sufficient basis for requisitioning the item. Requisitions must cite an authorized basis, such as T/O & E, T/A, T/BA, SIG 7–8–10, list of allowances of expendable material, or other authorized supply basis. The Department of the Army Supply Catalog applicable to the equipment covered in this manual is SIG 7 & 8–AN/UIC–1. For an index of available supply catalogs in the Signal portion of the Department of the Army Supply Catalog, see the latest issue of SIG 1, Introduction and Index.

2. Identification Table of Parts for Intercommunication Set AN/UIC–1

Ref. symbol	Name of part and description	Function of part	Signal Corps stock No.
	ARMY-NAVY INTERCOMMUNICATION SET AN/UIC–1: system for 2-way audio communication between 2 or more stations; c/o AF Amplifier AM-65/GRC, connector and bondnut (Appleton), Control Box C–375/VRC, Mounting MT–300/GR, and Power Supply PP-281/GRC or PP–282/GRC.	Intravehicular communication.	2S4301–1.
	AMPLIFIER: Army-Navy AF Amplifier AM–65/GRC; 3-channel audio freq amplifier; 7 tube; power outputs 1800 mw, 350 mw, 800 mw; inputs 6.3 v DC, 12.6 v DC, and 25.2 v DC; output impedances 600 ohms, 600 ohms, and 600 ohms w/ct (adjustable).	Interphone and monitor amplifier.	2C449–65.
	CONNECTOR AND BONDNUT (Appleton): fitting, conduit; steel, cad finish; cable opening .375″ to .500″ ID; ½″ IPS male thd connection 1 end; w/tapered rubber bushing and bondnut Appleton #BL–50.	Connector for junction box cable entry.	6Z3147.
	CONTROL BOX: Army-Navy Control Box C–375/VRC; metallic construction w/olive drab finish; 1 two pole, 3 position rotary switch, spring loaded to ctr position; one 3 pole, 3 position rotary switch, 2 waterproof cable entries, 2 audio receptacle connectors, 2 microphone jacks, 2 phone jacks, and two 10,000 ohm volume controls.	Remote control for interphone amplifier.	2C666–375.
	MOUNTING: Army-Navy Mounting MT–300/GR: metal rack w/1 metal rack surface plate and 2 metal channels w/locking strips mtd on 2 metal mtg brackets; olive drab finish; rectangular box shape; approx 8 5/16″ wd x 13″ d x 3 1/16″ h o/a; moisture and fungus resistant.	Mounting base for AF Amplifier AM–65/GRC and Receiver-Transmitter RT–70/GRC (if used). Also serves as junction box for cables interconnecting units of the system.	2Z6763–300.

Ref. symbol	Name of part and description	Function of part	Signal Corps stock No.
	POWER SUPPLY: Army-Navy Power Supply PP–281/GRC; vibrator type; synchronous; output 138 v DC, .12 amp; input 12.6 v DC; built-in RF and AF filter; plugs into special compartment of AF Amplifier AM–65/GRC; 5⅞″ lg x 2 15/16″ wd x 4 1/16″ h o/a.	Plate power supply for interphone amplifier.	3H4497–281.
	ALTERNATE		
	POWER SUPPLY: Army-Navy Power Supply PP–282/GRC; vibrator type; synchronous; output 138 v DC, .12 amp; input 25.2 v DC; built-in RF and AF filter; plugs into special compartment of AF Amplifier Am–65/GRC; 5⅞″ lg x 2 15/16″ wd x 4 1/16″ h o/a.	Plate power supply for interphone amplifier.	3H4497–282.
	TECHNICAL MANUAL (TM 11–2643)		(Order through AGO channels.)

3. Identification Table of Parts for Mounting MT–300/GR

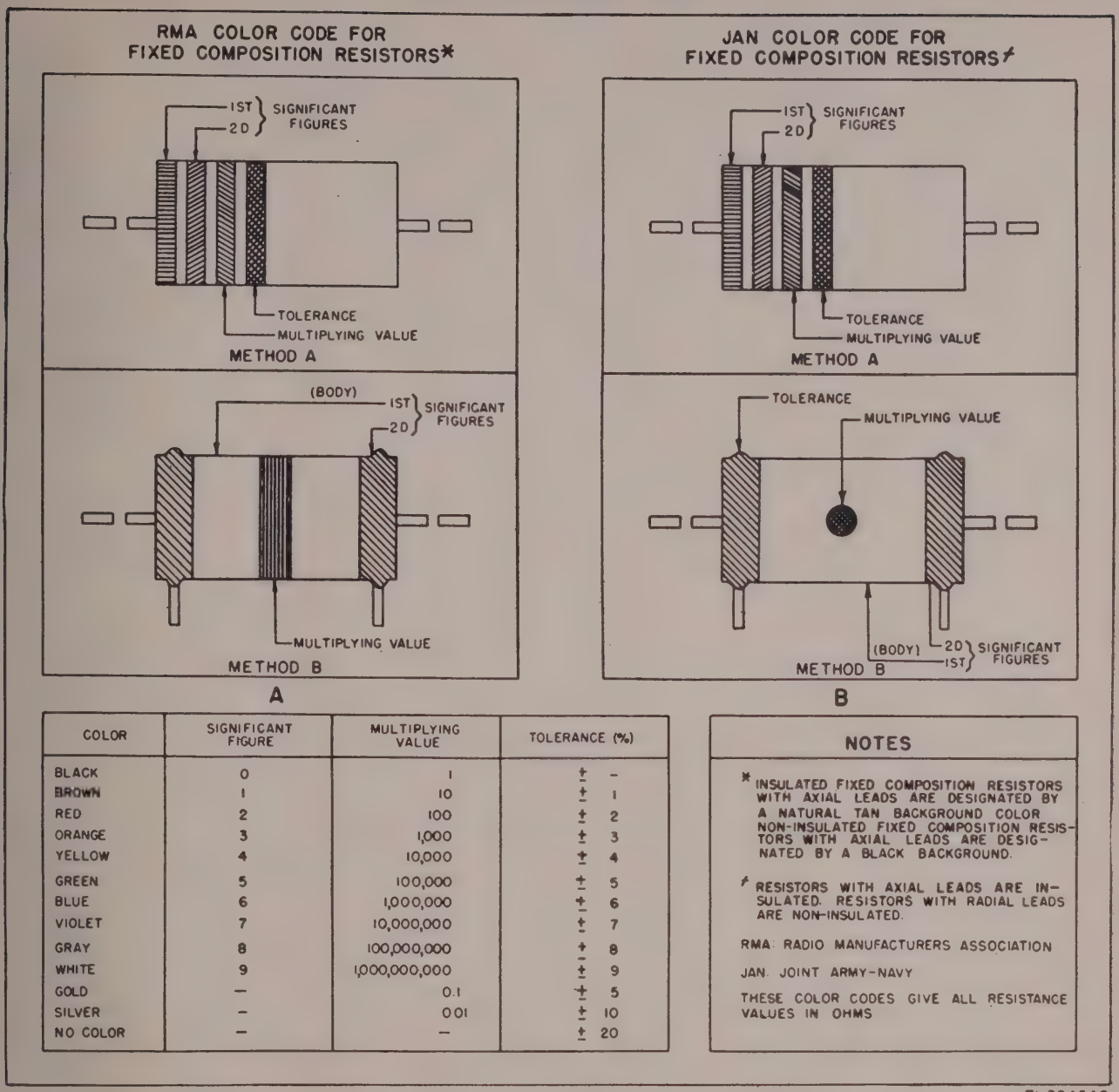
Ref. symbol	Name of part and description	Function of part	Signal Corps stock No.
	MOUNTING: Army-Navy Mounting MT–300/GR; metal rack w/1 metal rack surface plate and 2 metal channels w/locking strips mtd on 2 metal mtg brackets; olive drab finish; rectangular box shape; approx 8 5/16″ wd x 13″ d x 3 1/16″ h o/a; moisture and fungus resistant.	Mounting base for AF Amplifier AM–65/GRC and Receiver-Transmitter RT–70/GRC (if used). Also serves as junction box for cables interconnecting units of the system.	2Z6763–300.
E–1	BOARD ASSEMBLY, terminal: c/o 18 dual solder lug term segments Fed Tele & Rad #GP–1051–2; marker strips #GT–1755–L and #GT–1753–L; rectangular block shape; assem in 2 parts, 2 15/16″ lg x 2⅛″ wd x 1¼″ h o/a; mtg hdw; term marked from 1 to 18.	Terminal connecting board for Special Purpose Cable WM–46/U.	3Z772–1.
H–7, H–8	BUTTON, plug: rubber substitute; fits 19/32″ diam hole; .587″ diam x 1⅜″ lg o/a.	Plug for unused cable clamps.	4Z3152.
H–9, H–10	BUTTON, plug: neoprene; for .828″ diam hole; 1⅛″ diam x ½ thk o/a.	Waterproof plug for unused connector holes in junction box.	4Z3152–1.
W–4	CABLE ASSEMBLY, power: 8 ft 5″ lg excluding terminations; 2 term lugs on 1 end, 1 on ea cond, other end terminated in 2 leads, 1 insulated 1¾″ lg w/end bared and tinned ¾″ lg, other bared 3″ lg.	Cable for battery connections.	3E7350.1–18.2.
W–3	CABLE ASSEMBLY, power: 16″ lg excluding terminations; 1 end terminated in Fed Tele & Rad plug #GH–2200–12, other end terminated in 2 leads, 1 bared 5½″ lg, other insulated 8″ lg w/end bared and tinned ¾″ lg.	Connects battery power from mounting to amplifier.	3E7350.1–16.
W–2	CABLE ASSEMBLY, special purpose: Special Purpose Cable WM–46/U; 14″ lg.	Interphone control cable	3E7350–1.14.2.
W–1	CABLE ASSEMBLY, special purpose: Special Purpose Cable WM–46/U; 14″ lg excluding terminations; 1 end terminated in Fed Tele & Rad plug #GH–21962, other end terminated in 11 leads, 1 bared 5″ lg, 10 leads ins w/½″ bared and tinned.	REC-TR CONTROL cable for connecting and controlling Set 2 audio circuits.	3E7350–1.14.1.

Ref. symbol	Name of part and description	Function of part	Signal Corps stock No.
O–1, O–2	CAM: brass; triangular shape w/rounded corner and bottom side; approx 1 5/32″ lg x 7/8″ wd x .475″ thk; two #6–32 mtg holes slotted through approx ctr of thk.	Serves to lock amplifier to mounting.	4Z3185–1.
H–1, H–2, H–3, H–4.	CLAMP: steel, cadmium pl and olive drab iridited finish; 1 1/16″ lg x 1¼″ diam o/a; accom .61″ diam cable; compression type clamp, has rubber gland to provide waterproof seal between cable and clamp; waterproof seal between clamp and mtg hole.	Entry clamps for connecting cables between mounting and amplifier, and for battery cable.	2Z2642.305.
H–5, H–6	CLAMP: steel, cadmium pl and olive drab iridited finish; 1 1/16″ lg x 1¼″ diam o/a; accom .516 diam cable; compression type clamp, has rubber gland to provide waterproof seal between cable and clamp, waterproof seal between clamp and mtg hole.	Entry clamps for Special Purpose Cable WM-46/U, connecting mounting to control boxes.	2Z264. 2. 300.
F–1	FUSE, cartridge: 50 amp; opens in 1 hour at 135% load, 2 min at 200% load, rated continuous at 110% load; 32 v max; 1 time; glass body; ferrule term; 1½″ lg x 13/32″ diam o/a; term 13/32″ diam x 3/8″ lg; anti-vibration construction.	Overload protection for battery line.	3Z2650.
O–5	GASKET: neoprene; single hole; rectangular shape; 6⅞″ lg x 4½″ wd x ⅛″ thk; hole 6½″ lg x 4⅛″ wd.	Seal for junction box cover	2Z4868. 709.
H–33, H–34	HANDLE: steel, zinc pl, olive drab iridited finish; 2 15/16″ lg x 1½″ wd x 7/16″ h o/a; flanged grip 1 1/16″ lg x .059″ wd x ⅜″ h; two .154″ diam holes on .561 mtg/c.	Moves locking strips for locking amplifier on mounting.	4Z4691.
E–2	HOLDER, fuse: block type; for single type 5AG cartridge fuse; phenolic base w/tinned brass term and fuse holder; 80 amp, 32 v DC max; 1 13/16″ lg x 1 1/16″ wd x 1 13/16″ h; two .169 diam ctr mtg holes in base on 1″ mtg/c; 2 slotted compression type binding post term, 1 post having solder lug term at base; phosphor bronze locking type spring fuse clips.	Fuse holder terminal block for fuse F–1.	3Z3282–1. 1.
E–6	JUNCTION BOX: eight .828″ diam outlets; aluminum, olive drab finish; w/o cover; rectangular box shape; 7⅛″ lg x 5 7/16″ wd x 2½″ h o/a; two #10-24 mtg holes on 6⅜″ mtg/c; waterproof.	Box for cable entries and mounting terminal strips.	6Z6512–1.
N–1	LABEL: circuit label; decalcomania; 2⅞″ wd x 5⅝″ lg x .007″ thk; white print on black background; individually packed.	Schematic diagram of Mounting MT–300/GR.	6D16777–8.
W–5, W–6	LEAD, electrical: single braided cond; uninsulated; flat ribbon shape; ⅝″ wd x .125″ thk x 1 ft lg.	Grounding straps	1F6B1–10.
E–3	POST, binding: compression screw type	Grounding terminal	3Z741–2.
H–11 through H–14.	SCREW, cap: slot drive; hex head, unfinished; ¼″–28 NF–2 thd; 7/16″ lg.	Bracket mounting screws	6L4904–7. 28S.
H–25 through H–28.	SCREW, captive: slot drive; finished, fil; Bind H #10–24 NC–2 thd; .937″ lg.	Junction box cover mounting screws.	6L4770–15. 21SF
H–29, H–30	SCREW, dowel: .625″ lg x .278″ diam o/a	Handle, cam, and locking strip assembly screws.	6L5014–10.
H–31, H–32	SCREW, dowel: .420″ lg x .278″ diam o/a	Handle and cam assembly screws.	6L5014–6–1.
A–1 through A–4.	SHOCK MOUNT: Sig C Shock Mount M–449; sq mtg; 2⅜″ sq o/a.	Absorb vibration	2Z8415–449.
O–3, O–4	SPRING: helical extension type; 1.86″ lg x .375″ diam o/a.	Locking strip tension spring.	2Z8879–323.
E–4, E–5	TERMINAL, lug: ring type; for #8 AWG wire	Battery cable terminal	3Z12073–53.

4. Identification Table of Parts for Control Box C–375/VRC

Ref. symbol	Name of part and description	Function of part	Signal Corps stock No.
	CONTROL BOX C–375/VRC: Army-Navy Control Box; metallic construction w/olive drab finish; 1 two pole, 3 position rotary switch, spring loaded to ctr position; one 3 pole, 3 position rotary switch, 2 waterproof cable entries, 2 audio receptacle connectors, 2 microphone jacks, 2 phone jacks, and two 10,000 ohm volume controls.	Remote control for interphone amplifier.	2C666–375.
E–2	BOARD, terminal; general purpose; 15 dual solder lug term, copper-silver pl; ea term $^{15}/_{16}$'' lg x $^{29}/_{32}$'' h x $^{5}/_{16}$'' thk o/a; (stock number refers to individual term segment).	Junction point for interunit connections.	3Z770–2.49.
H–1, H–2	CLAMP, cable holding; aluminum; waterproof; 1¼'' diam x 2$^{1}/_{16}$'' lg; Electromatic #505501.	Secures interconnecting special purpose cables WM–46/U.	2Z2642.241.
J–1, J–2	CONNECTOR, receptacle: Army-Navy Receptacle Connector U–79/U; 10 cont; 1$^{9}/_{32}$'' OD diam x 1$^{1}/_{16}$'' lg; cylindrical aluminum body; molded bakelite insert; waterproof; Electromatic #509501.	Connector for audio input, output, and control circuits.	2Z7250–79.
A–2	COVER, jack: black rubber; cylindrical; 1'' diam x 1⅛'' lg o/a x $^{1}/_{32}$'' thk wall.	Used to waterproof jack	2Z3352.224.
J–3, J–4	JACK, microphone: Sig C Jack JK–33–C; for 3 cond microphone plug.	Connects microphone to audio input circuit.	2Z5533C.
J–5, J–6	JACK, telephone: Sig C Jack JK–34–C; for 2 cond phone plug.	Connects headset to output of audio circuit.	2Z5534C.
	KNOB: bar; aluminum, olive drab finish; for ¼'' diam double flatted shaft; luminous ctr line; 1$^{3}/_{16}$'' lg x ⅞'' wd x $^{15}/_{32}$'' thk.	For shaft of volume controls R–1 and R–2.	2Z5821–147.
	KNOB: bar; aluminum; olive drab finish; for ¼'' diam double flatted shaft; luminous ctr line; 1$^{15}/_{16}$'' lg x ⅞'' wd x $^{15}/_{32}$'' thk.	For shaft of switch S–2 (RAD TRANS).	2Z5821–148.
	KNOB: bar; aluminum; olive drab finish; for ¼'' diam double flatted shaft; luminous ctr line; 2$^{15}/_{16}$'' lg x ⅞'' wd x $^{7}/_{16}$'' thk.	For shaft of selector switch (S–1).	2Z5821–149.
R–1, R–2	RESISTOR, variable: comp; 10,000 ohms ±10%; 2.25 w.	Volume controls for audio output.	3Z7410–149.
S–2	SWITCH, rotary: 2 pole, 3 position; brass silver pl cont; ceramic body; 1⅞'' diam x 1$^{19}/_{32}$'' d; spring return to ctr position.	Selects interphone amplifier and radio sets for transmitting.	3Z9825–34.2.
S–1	SWITCH, rotary: 3 pole, 3 position; brass silver pl cont; ceramic body; 1$^{15}/_{16}$'' diam x 1½'' d.	Selects interphone amplifier and radio sets for monitoring and transmitting.	3Z9825–34.1.

RESISTOR COLOR CODES



COLOR	SIGNIFICANT FIGURE	MULTIPLYING VALUE	TOLERANCE (%)
BLACK	0	1	± –
BROWN	1	10	± 1
RED	2	100	± 2
ORANGE	3	1,000	± 3
YELLOW	4	10,000	± 4
GREEN	5	100,000	± 5
BLUE	6	1,000,000	± 6
VIOLET	7	10,000,000	± 7
GRAY	8	100,000,000	± 8
WHITE	9	1,000,000,000	± 9
GOLD	–	0.1	± 5
SILVER	–	0.01	± 10
NO COLOR	–	–	± 20

NOTES

* INSULATED FIXED COMPOSITION RESISTORS WITH AXIAL LEADS ARE DESIGNATED BY A NATURAL TAN BACKGROUND COLOR. NON-INSULATED FIXED COMPOSITION RESISTORS WITH AXIAL LEADS ARE DESIGNATED BY A BLACK BACKGROUND.

* RESISTORS WITH AXIAL LEADS ARE INSULATED. RESISTORS WITH RADIAL LEADS ARE NON-INSULATED.

RMA: RADIO MANUFACTURERS ASSOCIATION

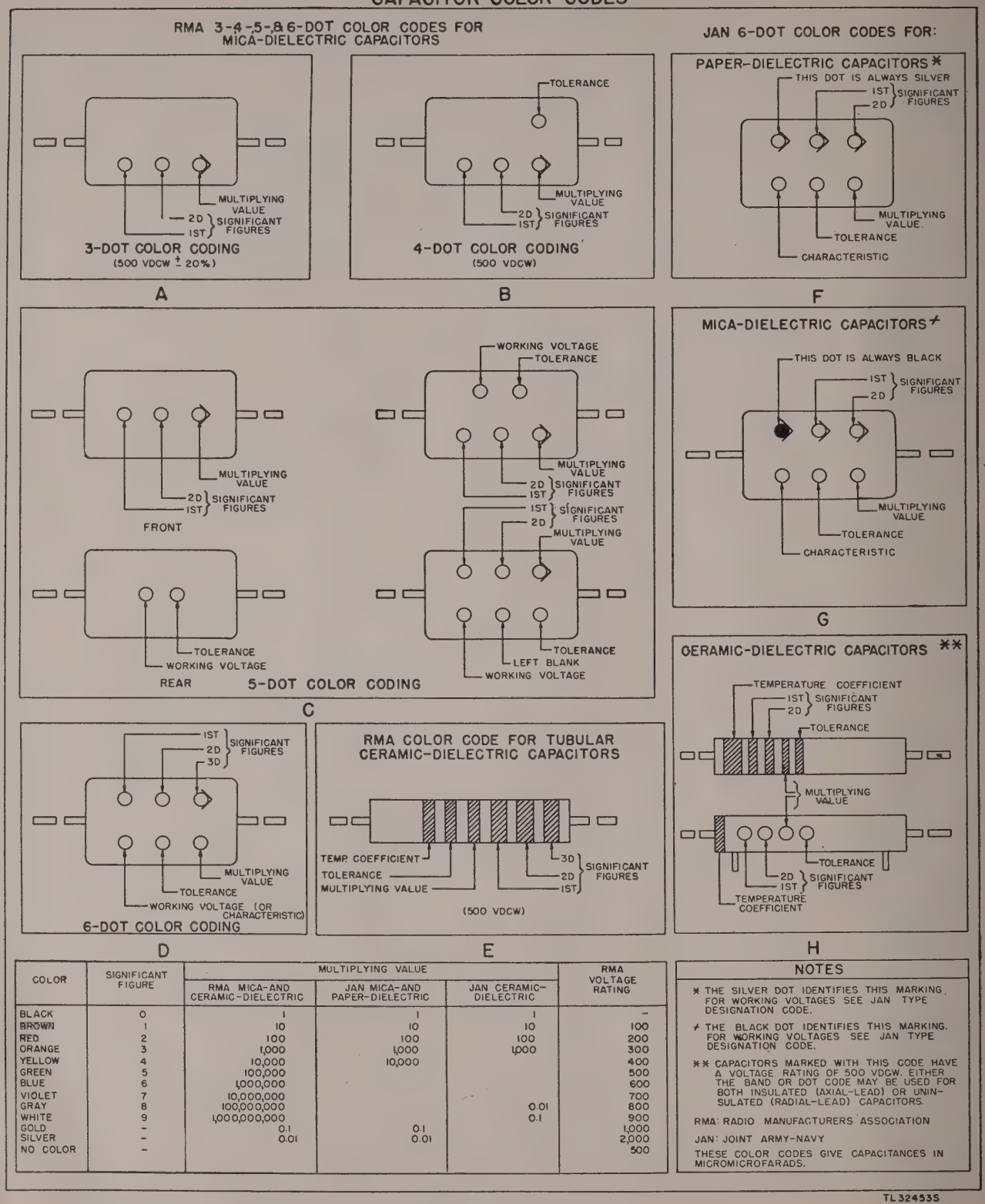
JAN: JOINT ARMY-NAVY

THESE COLOR CODES GIVE ALL RESISTANCE VALUES IN OHMS

TL 32454S

Figure 23. Resistor color code chart.

CAPACITOR COLOR CODES



COLOR	SIGNIFICANT FIGURE	MULTIPLYING VALUE			RMA VOLTAGE RATING
		RMA MICA-AND CERAMIC-DIELECTRIC	JAN MICA-AND PAPER-DIELECTRIC	JAN CERAMIC-DIELECTRIC	
BLACK	0	1	1	1	–
BROWN	1	10	10	10	100
RED	2	100	100	100	200
ORANGE	3	1,000	1,000	1,000	300
YELLOW	4	10,000	10,000		400
GREEN	5	100,000			500
BLUE	6	1,000,000			600
VIOLET	7	10,000,000			700
GRAY	8	100,000,000		0.01	800
WHITE	9	1,000,000,000		0.1	900
GOLD	–	0.1	0.1		1,000
SILVER	–	0.01	0.01		2,000
NO COLOR	–				500

NOTES

* THE SILVER DOT IDENTIFIES THIS MARKING. FOR WORKING VOLTAGES SEE JAN TYPE DESIGNATION CODE.

≠ THE BLACK DOT IDENTIFIES THIS MARKING. FOR WORKING VOLTAGES SEE JAN TYPE DESIGNATION CODE.

** CAPACITORS MARKED WITH THIS CODE HAVE A VOLTAGE RATING OF 500 VDCW. EITHER THE BAND OR DOT CODE MAY BE USED FOR BOTH INSULATED (AXIAL-LEAD) OR UNINSULATED (RADIAL-LEAD) CAPACITORS.

RMA: RADIO MANUFACTURERS ASSOCIATION

JAN: JOINT ARMY-NAVY

THESE COLOR CODES GIVE CAPACITANCES IN MICROMICROFARADS.

TL 32453S

Figure 24. Capacitor color code chart.

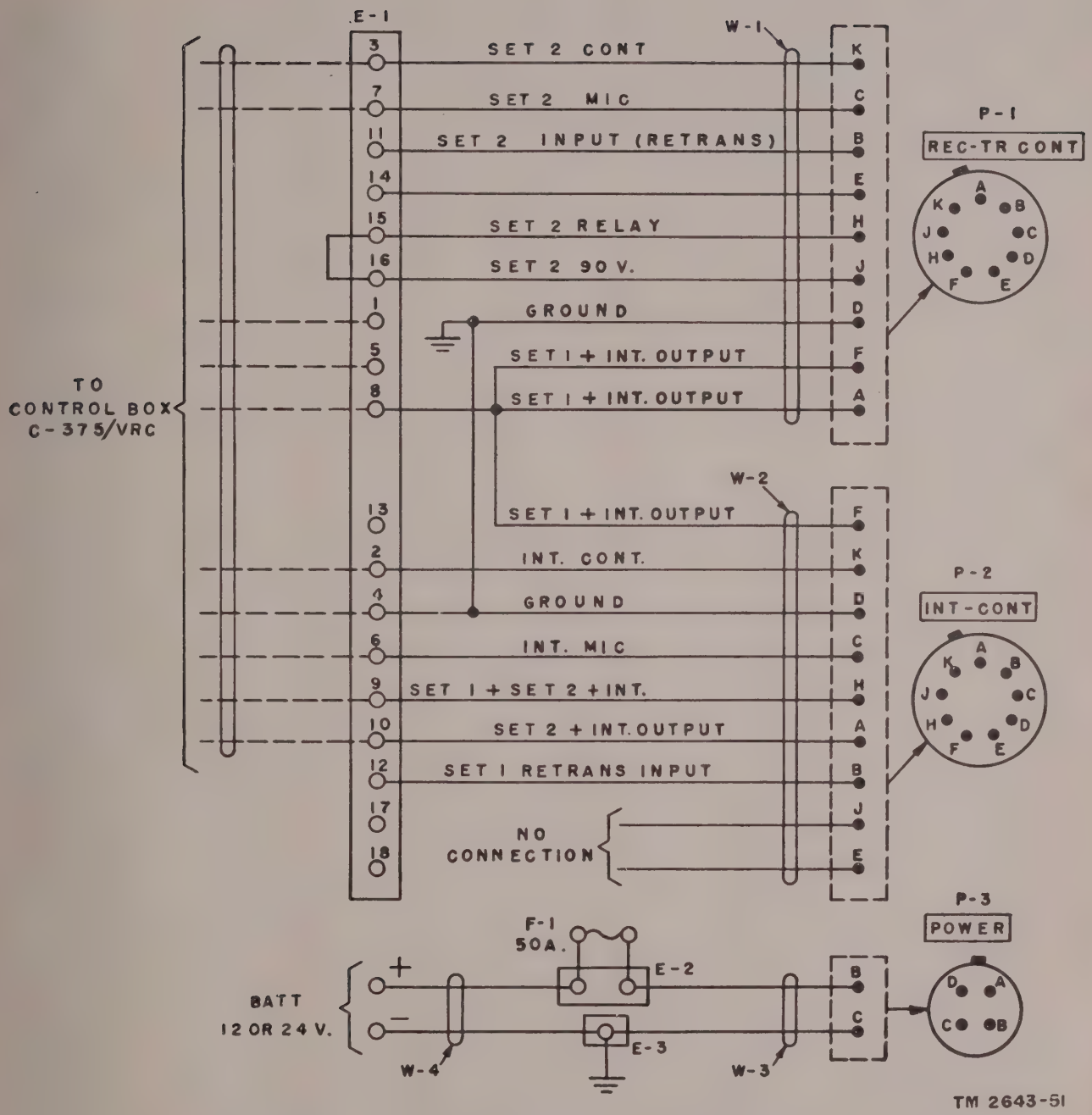
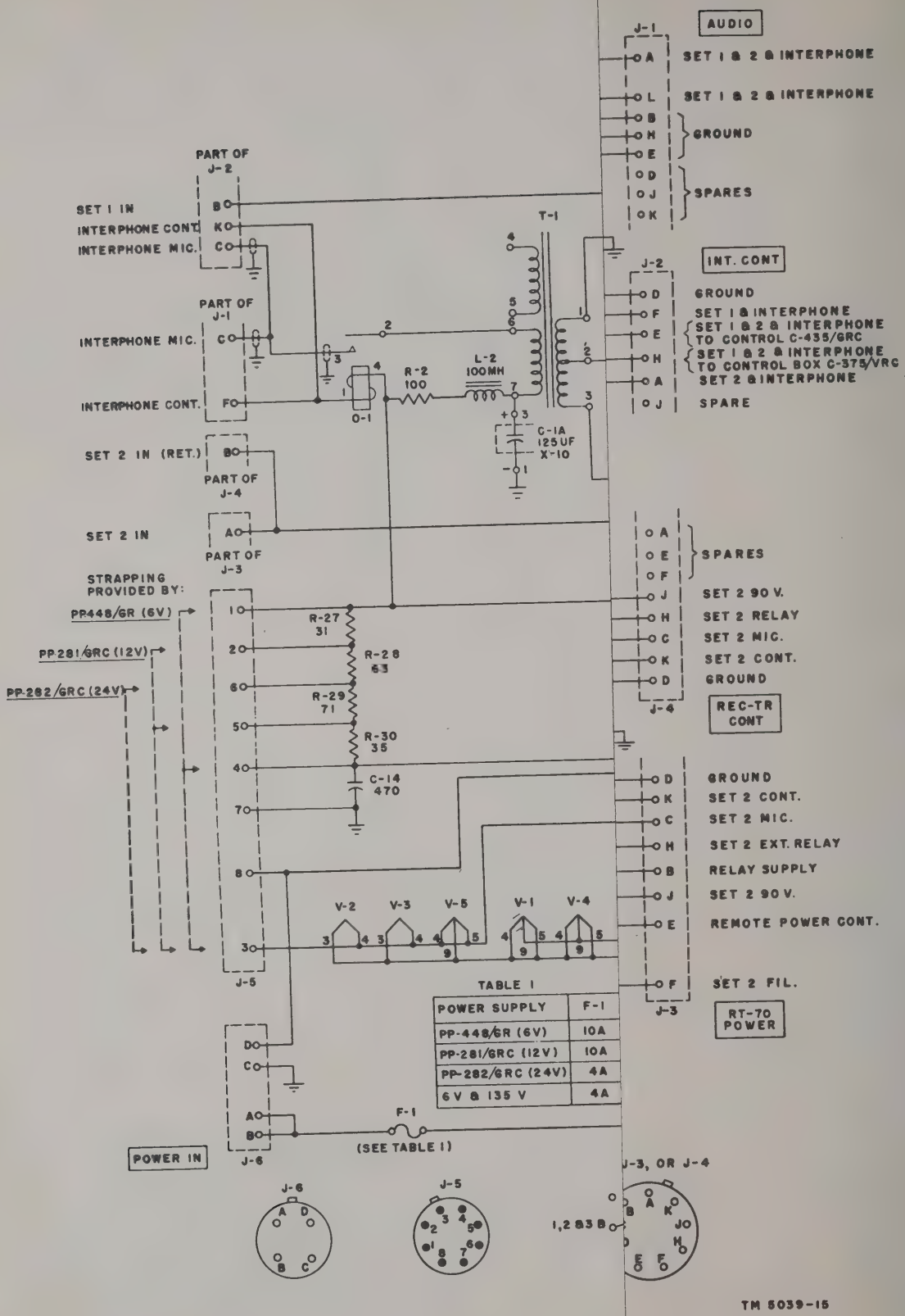


Figure 25. Schematic diagram of Mounting MT–300/GR.


AUDIO
J-1
A SET 1 & 2 & INTERPHONE
L SET 1 & 2 & INTERPHONE
B
H
E
GROUND
D
J
K
SPARES
INT. CONT
J-2
D GROUND
F SET 1 & INTERPHONE
E SET 1 & 2 & INTERPHONE TO CONTROL C-435/GRC
H SET 1 & 2 & INTERPHONE TO CONTROL BOX C-375/VRC
A SET 2 & INTERPHONE
J SPARE
T-1
L-2 100MH
R-2 100
O-1
C-1A 125UF X-10
PART OF J-2
SET 1 IN
INTERPHONE CONT.
INTERPHONE MIC.
PART OF J-1
INTERPHONE MIC.
INTERPHONE CONT.
SET 2 IN (RET.)
PART OF J-4
SET 2 IN
PART OF J-3
STRAPPING PROVIDED BY:
PP448/GR (6V)
PP281/GRC (12V)
PP282/GRC (24V)
R-27 31
R-28 63
R-29 71
R-30 35
C-14 470
J-5
REC-TR CONT
J-4
A
E
F
SPARES
J SET 2 90 V.
H SET 2 RELAY
C SET 2 MIC.
K SET 2 CONT.
D GROUND
D GROUND
K SET 2 CONT.
C SET 2 MIC.
H SET 2 EXT. RELAY
B RELAY SUPPLY
J SET 2 90 V.
E REMOTE POWER CONT.
F SET 2 FIL.
J-3
RT-70 POWER
V-1
V-2
V-3
V-4
V-5
TABLE 1
POWER SUPPLY | F-1
PP-448/GR (6V) | 10A
PP-281/GRC (12V) | 10A
PP-282/GRC (24V) | 4A
6 V & 135 V | 4A
F-1
(SEE TABLE 1)
POWER IN
J-6
D
C
A
B
J-6
J-5
J-3, OR J-4
1,2 & 3 B
TM 5039-15
S-1

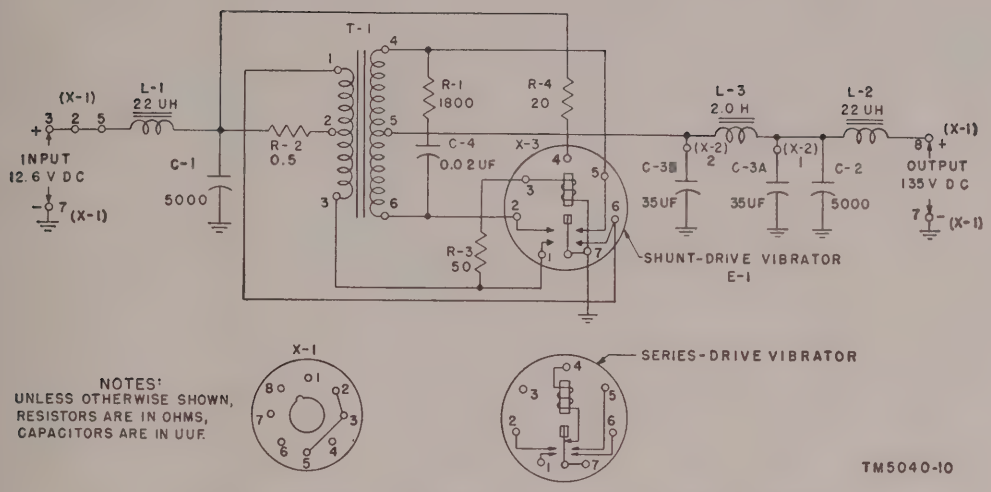


Figure 27. Schematic diagram of Power Supply PP–281/GRC.

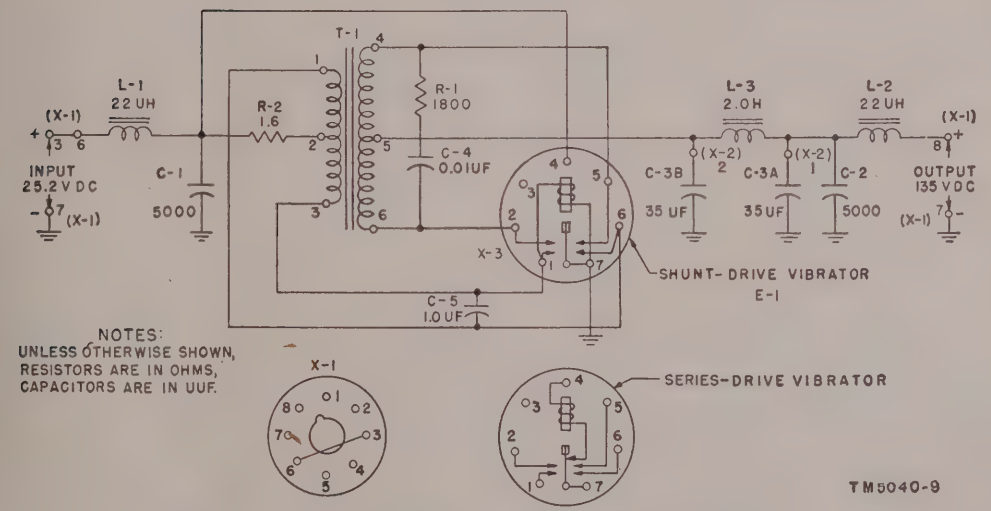


Figure 28. Schematic diagram of Power Supply PP–282/GRC.

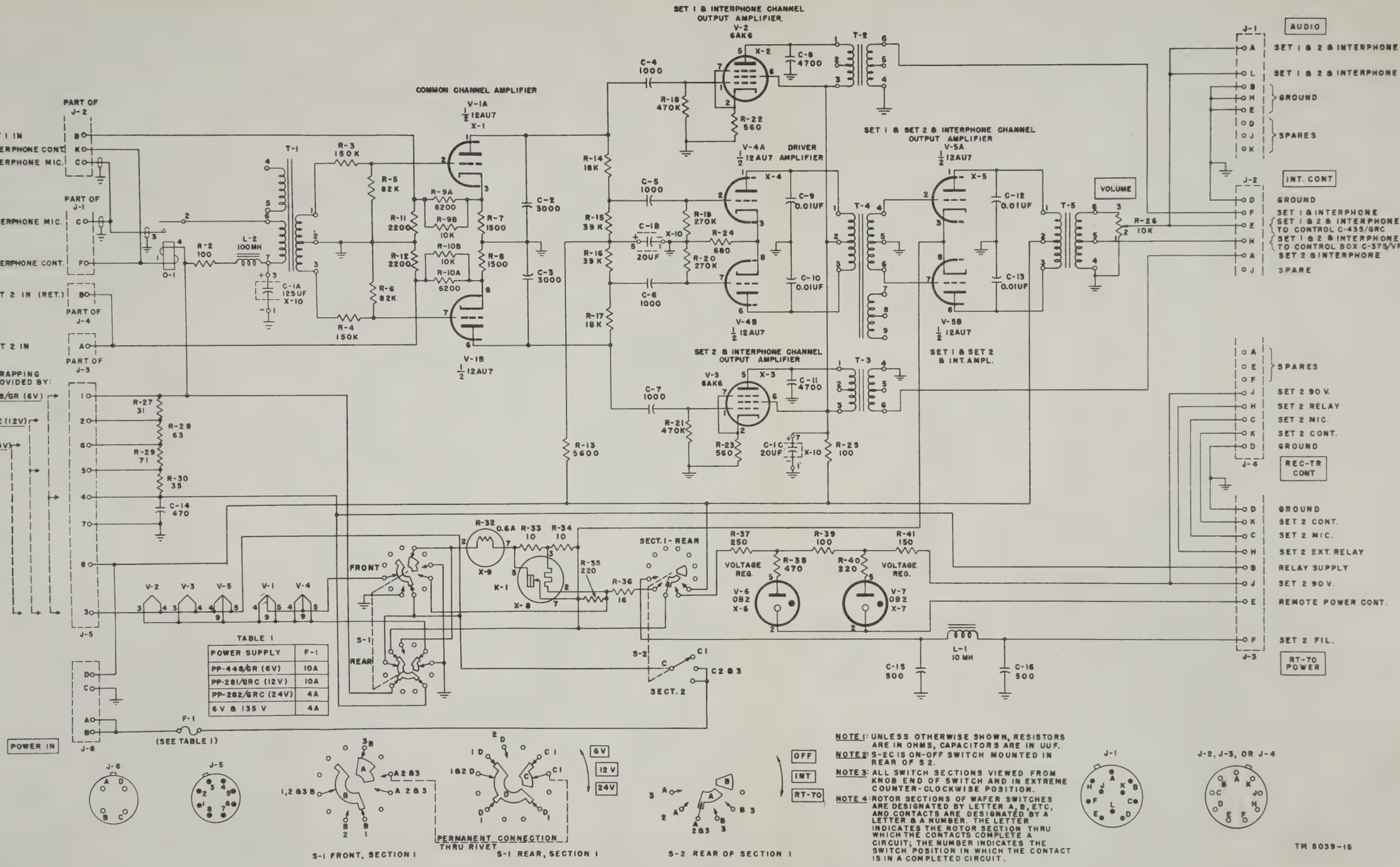


Figure 26. Schematic diagram of AF Amplifier AM–65/GRC.

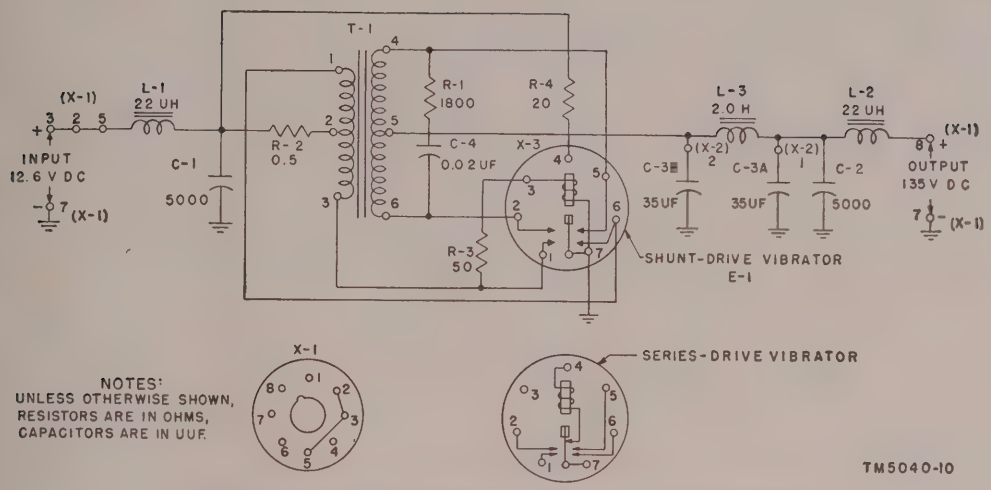


Figure 27. Schematic diagram of Power Supply PP-281/GRC.

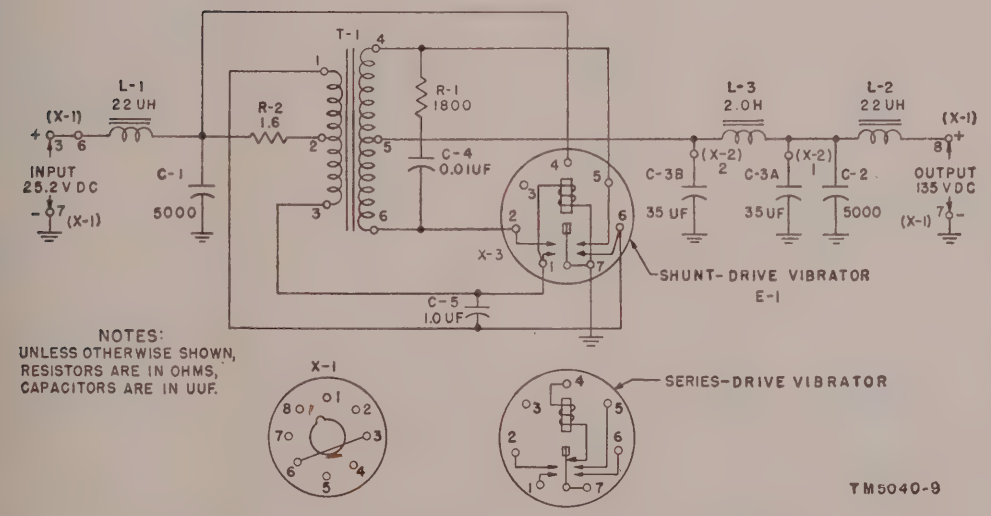


Figure 28. Schematic diagram of Power Supply PP-282/GRC.

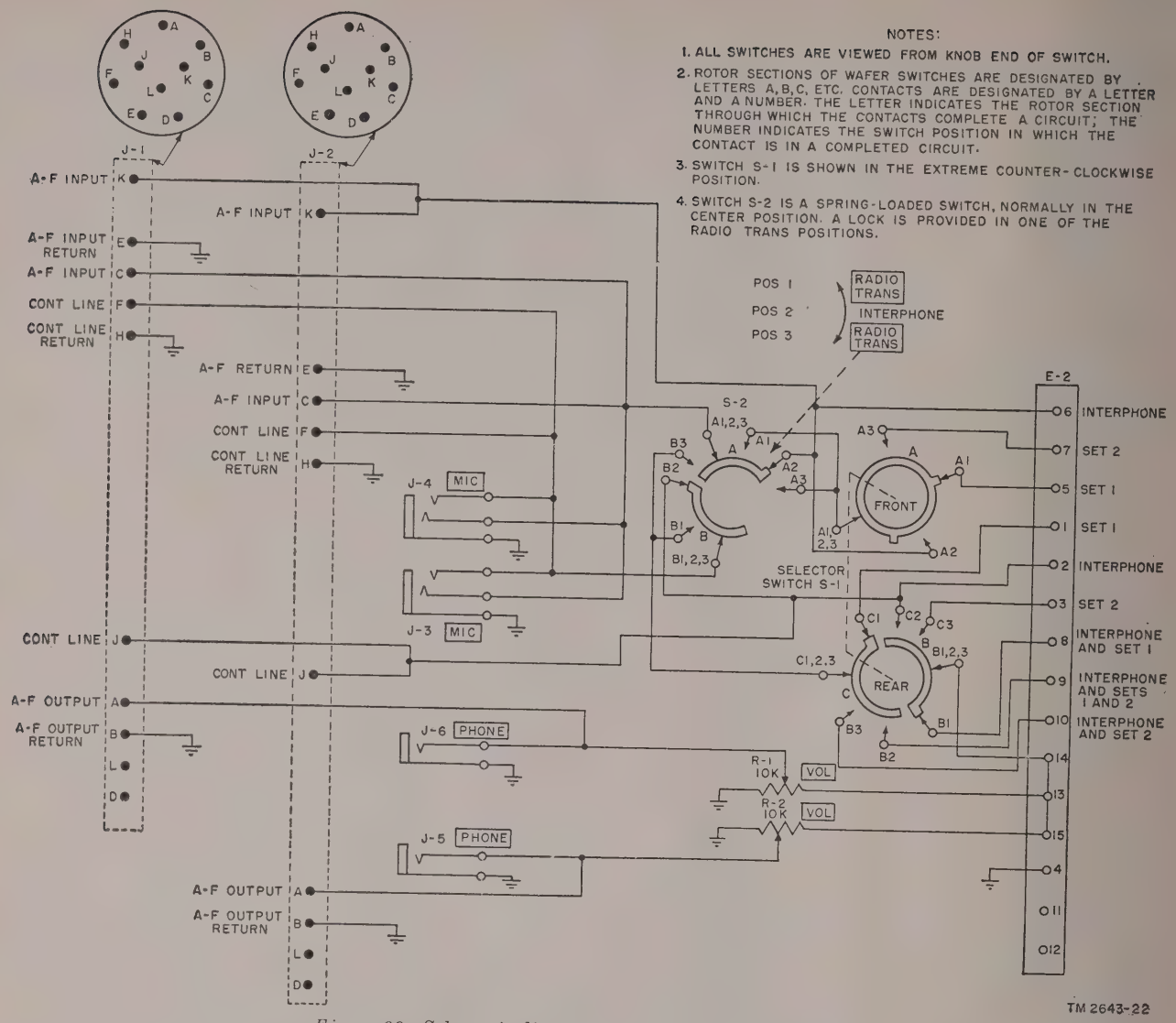


Figure 29. Schematic diagram of Control Box C-375/VRC.

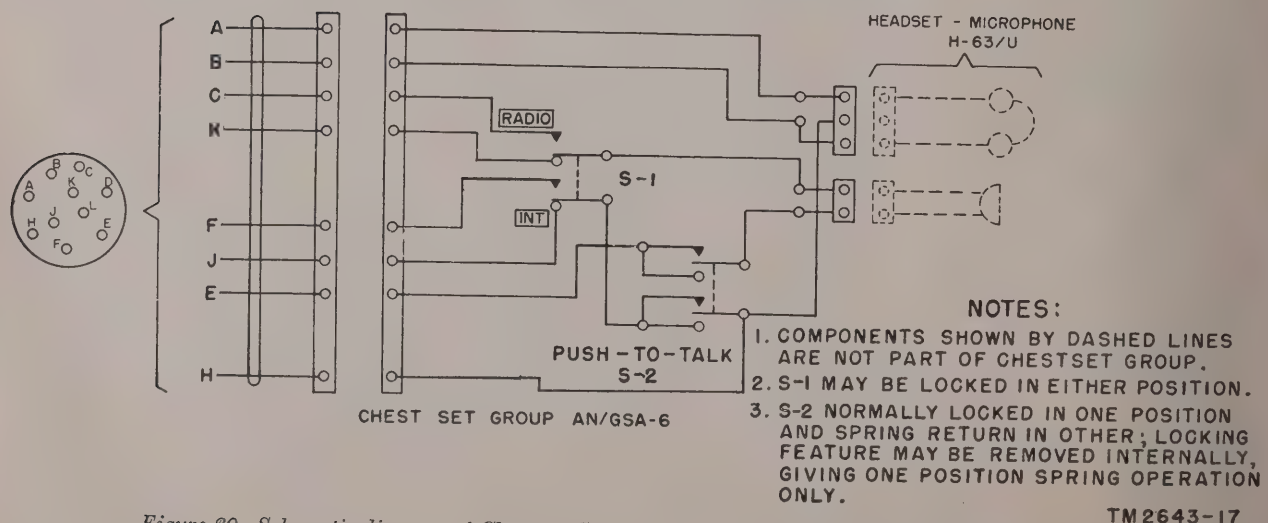
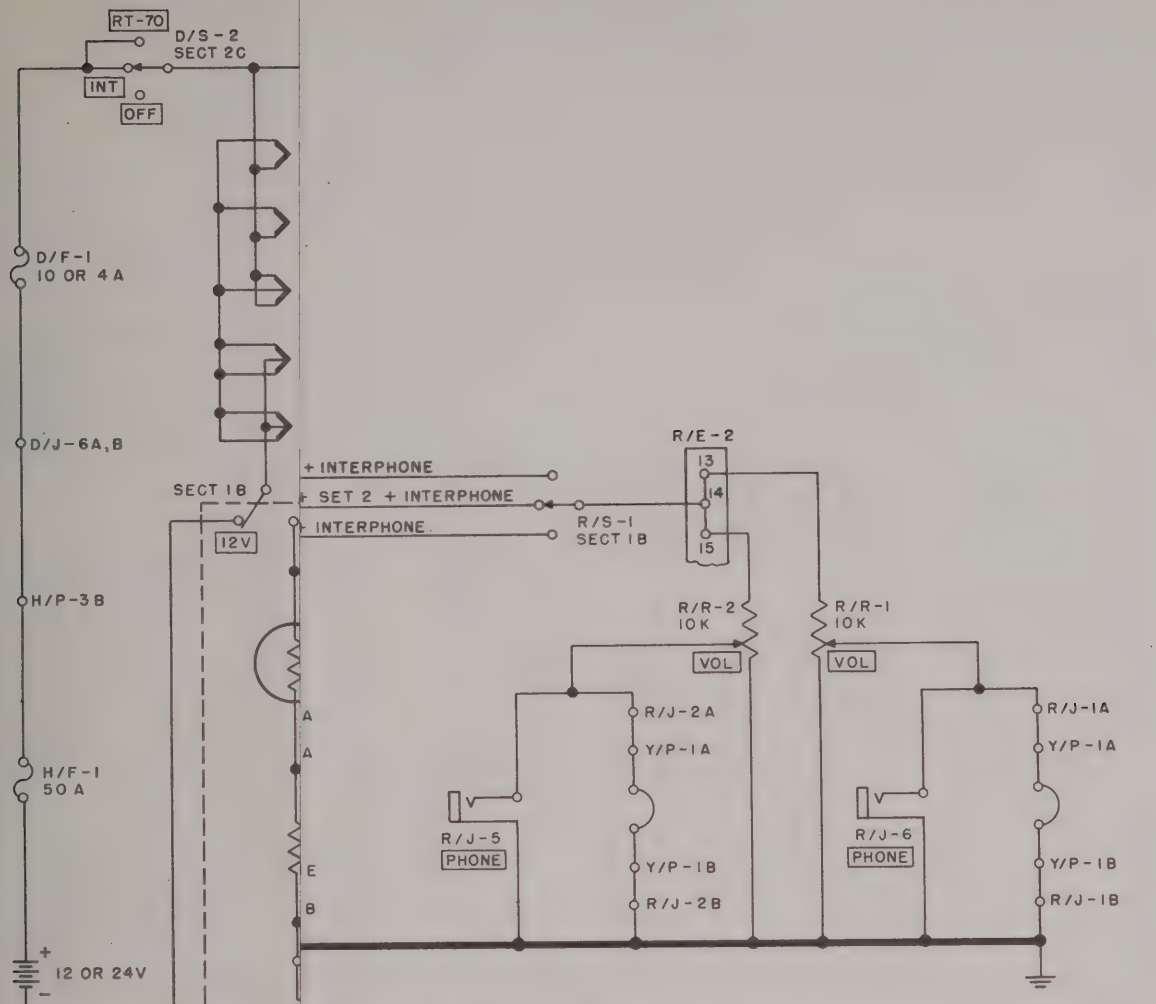
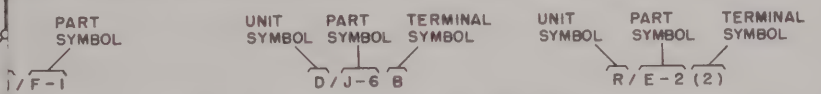


Figure 30. Schematic diagram of Chest set Group AN/GSA-6 and Headset-Microphone H-63/U.



LEGEND

BOLS USE ON THIS DIAGRAM INCLUDE A UNIT SYMBOL, A PART SYMBOL, AND, IN THE CASE OF ECTORS, TERMINAL BOARDS, SOCKETS, ETC., A TERMINAL SYMBOL. EXAMPLES FOLLOW:



S FUSE F-1 IN MOUNTING MT-300/GR; D/J-6B INDICATES TERMINAL B OF JACK J-6 IN A F -65/GRC; R/E-2(2) INDICATES TERMINAL 2 OF TERMINAL STRIP E-2 IN CONTROL BOX E UNIT SYMBOL FOR EACH UNIT IS LISTED IN THE FOLLOWING TABLE.

MBOL AND UNIT SYMBOLIZED		UNIT SYMBOL AND UNIT SYMBOLIZED
IER AM-65/GRC	U	POWER SUPPLY PP-281/GRC OR PP-282/GRC
MT-300/GR	Y	CHEST SET GROUP AN/GSA-6 WITH HEADSET-MICROPHONE H-63/U
OX C-375/VRC		

NOTES:

SHOWN ADJUSTED FOR 12 VOLT OPERATION.

FILAMENTS (IN DOTTED LINES) DO NOT APPLY UNLESS RADIO SET RT-70/GRC WITH SYSTEM.

ST SET IS USED AT AMPLIFIER PANEL, AUDIO CONNECTOR J-1, CHEST SET SWITCH ST BE IN RADIO [RAD] POSITION.

TM 2643-16

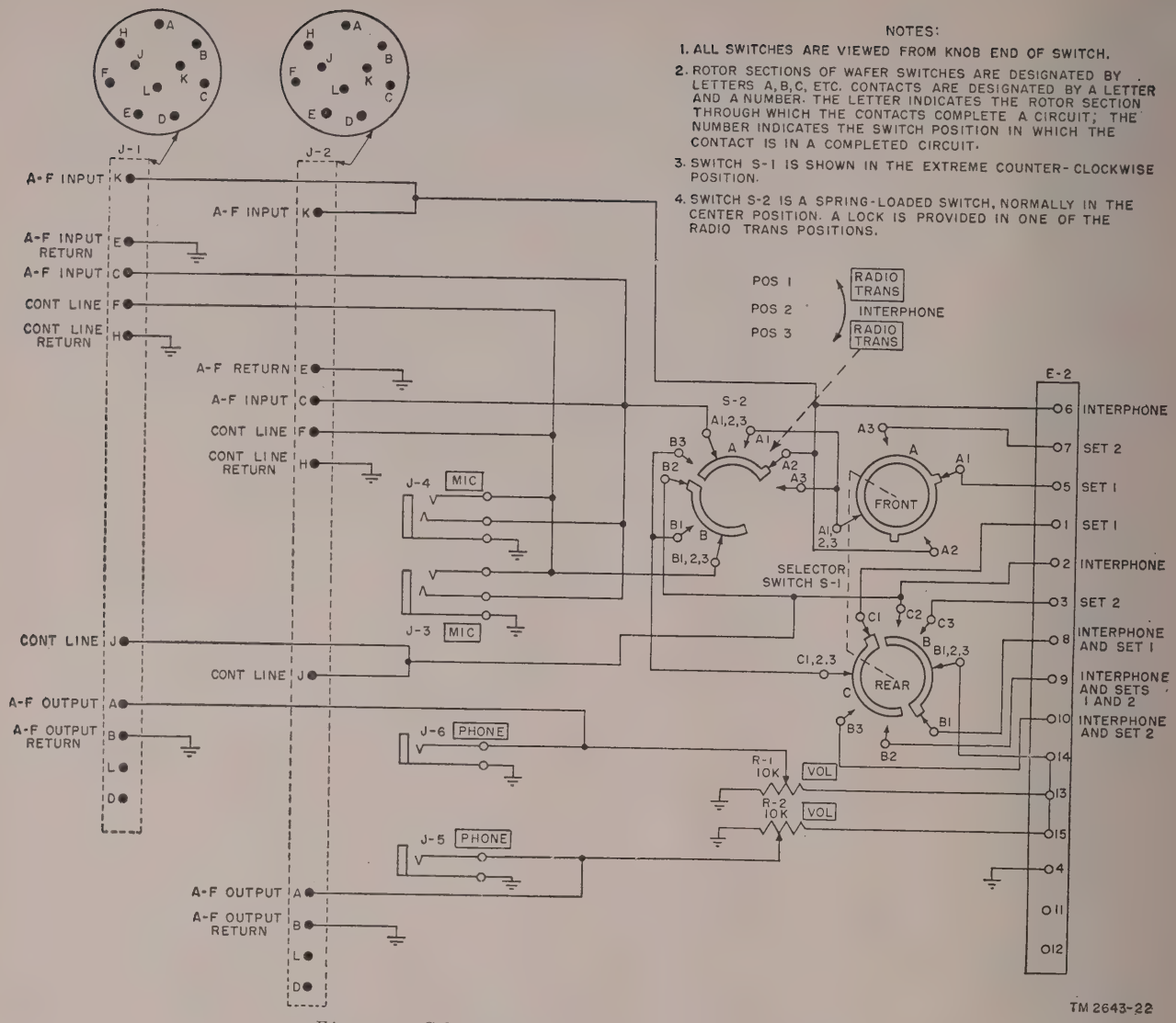


Figure 29. Schematic diagram of Control Box C-375/VRC.

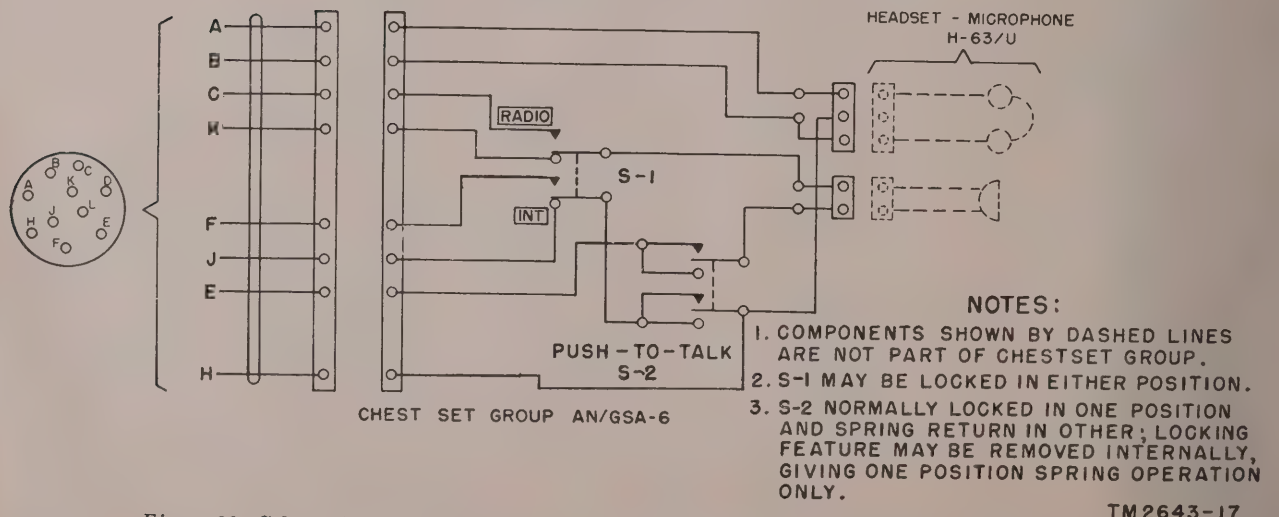
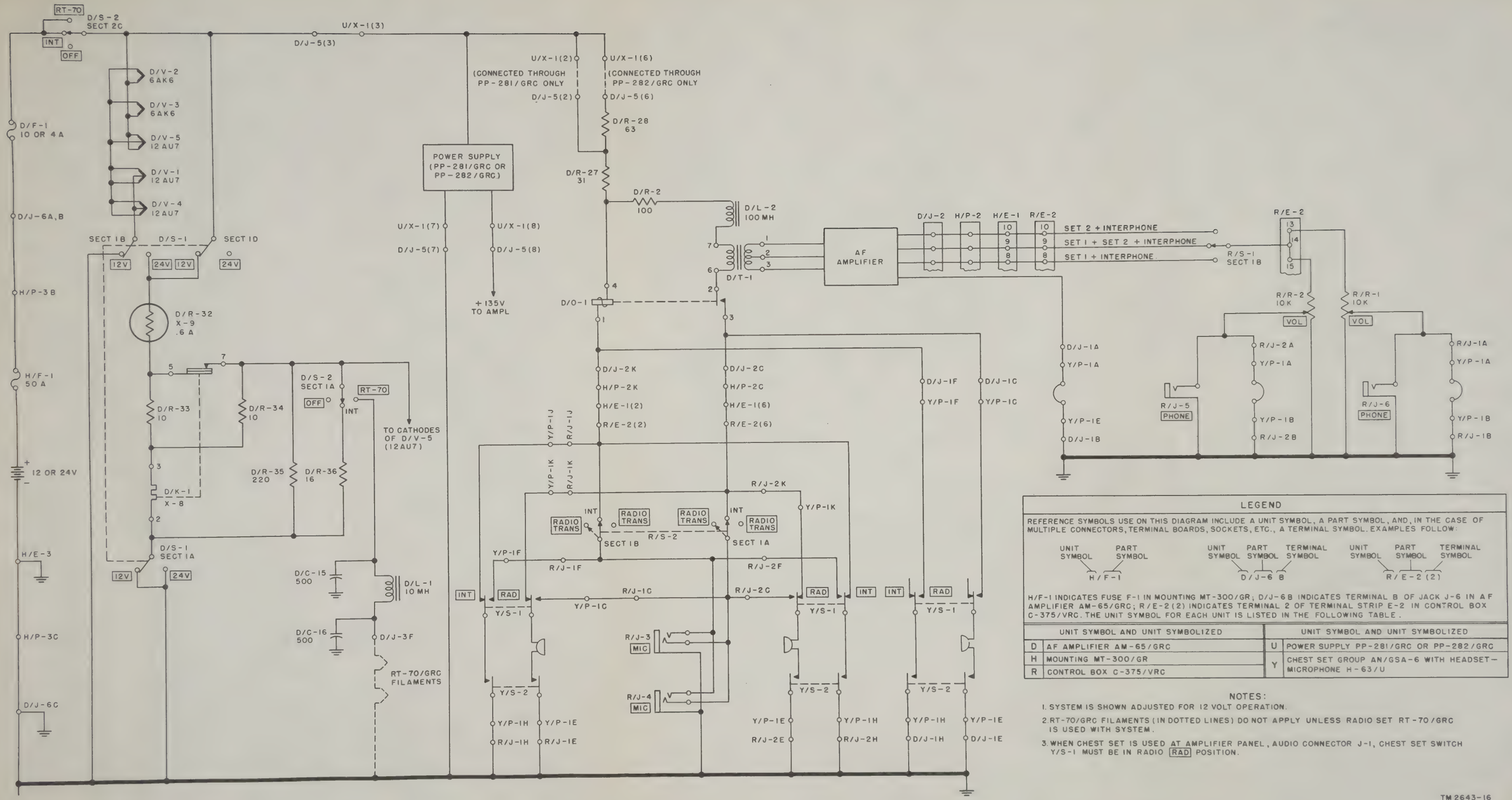


Figure 30. Schematic diagram of Chest set Group AN/GSA-6 and Headset-Microphone H-63/U.



LEGEND
REFERENCE SYMBOLS USE ON THIS DIAGRAM INCLUDE A UNIT SYMBOL, A PART SYMBOL, AND, IN THE CASE OF MULTIPLE CONNECTORS, TERMINAL BOARDS, SOCKETS, ETC., A TERMINAL SYMBOL. EXAMPLES FOLLOW:

UNIT SYMBOL / PART SYMBOL — H/F-1

UNIT SYMBOL / PART SYMBOL / TERMINAL SYMBOL — D/J-6 B

UNIT SYMBOL / PART SYMBOL / TERMINAL SYMBOL — R/E-2 (2)

H/F-1 INDICATES FUSE F-1 IN MOUNTING MT-300/GR; D/J-6B INDICATES TERMINAL B OF JACK J-6 IN AF AMPLIFIER AM-65/GRC; R/E-2(2) INDICATES TERMINAL 2 OF TERMINAL STRIP E-2 IN CONTROL BOX C-375/VRC. THE UNIT SYMBOL FOR EACH UNIT IS LISTED IN THE FOLLOWING TABLE.

UNIT SYMBOL AND UNIT SYMBOLIZED		UNIT SYMBOL AND UNIT SYMBOLIZED	
D	AF AMPLIFIER AM-65/GRC	U	POWER SUPPLY PP-281/GRC OR PP-282/GRC
H	MOUNTING MT-300/GR	Y	CHEST SET GROUP AN/GSA-6 WITH HEADSET-MICROPHONE H-63/U
R	CONTROL BOX C-375/VRC		

NOTES:

1. SYSTEM IS SHOWN ADJUSTED FOR 12 VOLT OPERATION.
2. RT-70/GRC FILAMENTS (IN DOTTED LINES) DO NOT APPLY UNLESS RADIO SET RT-70/GRC IS USED WITH SYSTEM.
3. WHEN CHEST SET IS USED AT AMPLIFIER PANEL, AUDIO CONNECTOR J-1, CHEST SET SWITCH Y/S-1 MUST BE IN RADIO [RAD] POSITION.

TM 2643-16

Figure 31. Control circuits schematic diagram of Intercommunication Set AN/UIC-1.

INDEX

	Paragraph	Page
AF Amplifier AM–65/GRC:		
Description	8	4
Installation	17	16
Localization of trouble	42*b*	34
Technical characteristics	5	3
Application, system	4	3
Audio accessories	13	8
Cables:		
Special Purpose Cable WM–46/U	13*c*	9
Trouble shooting	44	35
Used with Mounting MT–300/GR	16*a*	11
Components, table of	7	4
Components, additional	13	8
Control Box C–375/VRC:		
Description	10	6
Installation	16*b*	12
Localization of trouble	45	35
Operation	24	20
Controls and connectors:		
AF Amplifier AM–65/GRC	21	19
Audio accessories	13*b*	8
Control Box C–375/VRC	22	20
Demolition of equipment	50; 51	40
Equipment performance checklist	41	32
Forms and records	2	1
Identification table of parts	App. II	43
Installation instructions	16–18	11–19
Lubrication	30	24
Maintenance:		
Organizational	39–47	31–38
Preventive	26–30	22–24
Mounting MT–300/GR:		
Description	11	6
Installation	16*a*	11
Localization of trouble	43	34
Operating procedure:		
At amplifier panel	25	21
At control boxes	24	20
Preparatory	23	20
Packaging:		
Initial	6	4
Unpacking	15	10
Used or reconditioned equipment	15	10
Power Supplies PP–281/GRC and PP–282/GRC:		
Description	9	5
Installation	17	16
Localization of trouble	42*a–b*	33–34
Purpose and use of equipment	3	1
References	App. I	41
Refinishing	32	25
Replacement of parts	46	37
Replacement of units	47	38
Scope	1	1
Shipment and limited storage	48; 49	39
Siting	14	10
Storage, limited	48; 49	39
Technical characteristics	5	3
Theory:		
Audio circuits	38	30
Block diagram discussion	33	25
Operation from 12-volt source	37	30
Operation from 24-volt source	36	29
Power control circuits	35	29
Trouble shooting:		
Localization	42–45	33–35
Sectionalization using checklist	41	31
Tools and equipment	40	31
Weatherproofing	31	24

TECHNICAL MANUAL

INTERCOMMUNICATION SETS AN/UIC–1 AND AN/UIC–1X

TM 11–2643
CHANGES No. 1

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON 25, D.C., *19 March 1962*

TM 11–2643, 16 March 1951, is changed as follows:

The title of the manual is changed as above.

Page 1, paragraph 2.

e. (Added) *Comments or Suggestions.* Any comments concerning omissions and discrepancies in this manual will be prepared on DA Form 2028 and forwarded direct to Commanding Officer, U.S. Army Signal Materiel Support Agency, ATTN: SIGMS–ML, Fort Monmouth, N.J.

Page 1.

2.1. (Added) **Index of Equipment Publications**

Refer to DA Pamphlet 310–4 to determine what Changes to or revisions of this publication are current.

Page 42, Appendix I. Add the following to paragraph 7.

TM 11–5820–281–10P Audio Frequency Amplifier AM–65/GRC, AM–65A/GRC.

TM 11–5820–210–10P Powers Supplies PP–281/GRC, PP–281A/GRC, PP–282/GRC and PP–282A/GRC.

TM 11–5820–281–20P Audio Frequency Amplifier AM–65/GRC, AM–65A/GRC.

TM 11–5820–210–20P Power Supplies PP–281/GRC, PP–281A/GRC, PP–282/GRC and PP–282A/GRC.

TM 11–5830–203–12P Intercommunication Set Control C–375/VRC.

TM 11–5820–306–12P Mounting MT–300/GR.

Pages 43–46, delete present Appendix II and substitute the following:

APPENDIX II (Superseded)

MAINTENANCE ALLOCATION CHART

Section I

MAINTENANCE ALLOCATION

1. General

a. This section assigns maintenance functions to be performed on Components, assemblies, and sub-assemblies by the lowest appropriate maintenance echelon.

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

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

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

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

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

*These changes supersede TM 11–5830–216–10P, 2 July 1959, and so much of TM 11–5830–216–20P, 2 July 1959, as pertains to maintenance allocation chart.

(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 components, assemblies, or sub-assemblies, for unserviceable components, assemblies, or sub-assemblies.

(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) *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) *1st, 2d, 3d, 4th, 5th, echelon.* The symbol X placed in Columns 3 through 7 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 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.* The dagger (†) symbol in these columns indicates the echelons 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 fourth echelon are authorized to the organization operating this equipment.

Section II. MAINTENANCE ALLOCATION CHART

(1) Part or component	(2) Maintenance function	(3) 1st Ech.	(4) 2d Ech.	(5) 3d Ech.	(6) 4th Ech.	(7) 5th Ech.	(8) Tools required	(9) Remarks
INTERCOMMUNICATION SET AN/UIC–1, AN/UIC–1X.	Service		X				11	
	Adjust		X				11	
	Inspect	X						Exterior
	Test		X				4, 9	
				X			2, 3, 5, 7, 9	
					X		1, 2, 3, 5, 6, 7, 9, 10, 13	
						X	1, 2, 3, 5, 6, 7, 8, 10, 13	
	Repair		X				11	Replacement of major components
	Repair			X			12	
	Rebuild				X		12	
AF AMPLIFIER AM–65/GRC	Replace		X					Separate MAC
CONTROL BOX C–375/VRC	Replace		X					Separate MAC
MOUNTING MT–300/GR	Replace		X					Separate MAC
POWER SUPPLY PP–281/GRC	Replace		X					Separate MAC
POWER SUPPLY PP–282/GRC	Replace		X					Separate MAC

Section III. ALLOCATION OF TOOLS FOR MAINTENANCE FUNCTIONS

(1) Tools required for maintenance functions	(3) 2d ech.	(4) 3d ech.	(5) 4th ech.	(6) 5th ech.	(7) Tool code	(8) Remarks
AN/UIC–1; AN/UIC–1X						
ANALYZER, SPECTRUM TS–723/U			(†)	(†)	1	
AUDIO OSCILLATOR TS–382/U		(†)	(†)	(†)	2	
ELECTRONIC MULTIMETER TS–505/U		(†)	(†)	(†)	3	
MULTIMETER AN/URM–105	(†)	(†)	(†)	(†)	4	In procurement. If not available use Multimeter TS–297/U or TS–352/U
OSCILLOSCOPE OS–8A/U		(†)	(†)	(†)	5	
SHUNT, INSTRUMENT, MULTIRANGE MX–1471/U.			(†)	(†)	6	
TEST, FACILITIES KIT MK–153/GRC		(†)	(†)	(†)	7	
TEST SET, ELECTRON TUBE TV–2/U				(†)	8	
TEST SET, ELECTRON TUBE TV–7/U	(†)	(†)	(†)		9	
TEST SET, VIBRATOR TS–747( )/U			(†)	(†)	10	
TOOL EQUIPMENT TE–41	(†)				11	
TOOL EQUIPMENT TE–113		(†)	(†)	(†)	12	
VOLTMETER, METER ME–30/U			(†)	(†)	13	

APPENDIX III (Added)

BASIS ISSUE ITEMS LIST

Section I. INTRODUCTION

1. Scope

a. This appendix lists items supplied for initial operation and for running spares. The list includes tools, accessories, 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 requisitioning.

b. Columns are as follows:

(1) *Source, maintenance, and recoverability code.* 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 authorized.* Under "Items Comprising an Operable Equipment", the column lists the quantity of items supplied for the initial operation of the equipment. Under "Running Spares and Accessory 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.

(8) *Illustrations.* Not used.

Section II. FUNCTIONAL PARTS LIST

(2) Federal stock No.	(3) Designation by model 1	2	(4) Description	(6) Expendability	(7) Quantity authorized
5830–224–5341	-----	-----	INTERCOMMUNICATION SET AN/UIC–1: vehicular; 24 v DC oper	NX	
5830–224–5342	-----	-----	INTERCOMMUNICATION SET AN/UIC–1X: vehicular; 12 v DC oper	NX	
			ITEMS COMPRISING AN OPERABLE EQUIPMENT		
Order thru AGC	-----	-----	TECHNICAL MANUAL TM 11–2643	------	2
5820–194–8303	(†)	(†)	AF AMPLIFIER AM–65/GRC	NX	1
5975–284–5095	(†)	(†)	BOX CONNECTOR, ELECTRICAL: Appleton cat No. 61007	------	1
5830–170–7868	(†)	(†)	CONTROL BOX C–375/VRC: Army spec No. 71–3327	NX	2
5820–221–5515	(†)	(†)	MOUNTING MT–300/GR	NX	1
5820–500–4375	-----	(†)	POWER SUPPLY PP–281/GRC	NX	1
5820–500–1648	(†)	-----	POWER SUPPLY PP–282/GRC	NX	1
			RUNNING SPARES AND ACCESSORY ITEMS		
5920–230–9122	(†)	-----	FUSE, CARTRIDGE: Buss type AGU–4	------	5
5920–142–7365	-----	(†)	FUSE, CARTRIDGE: 10 amp; Buss type No. AGU–10	------	3
5920–232–3698	(†)	(†)	FUSE, CARTRIDGE: 50 amp; Buss type AGU–50	------	3
5180–393–2126	(†)	(†)	WRENCH SET: Sig dwg No. SC–B–61575	------	1

NOTE: Model column 1 refers to AN/UIC–1; column 2 refers to AN/UIC–1X.

By Order of the Secretary of the Army:

G. H. DECKER,
General, United States Army,
Chief of Staff.

Official:

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

Distribution:

Active Army:

DASA (6)	WRAMC (1)	6–327
USASA (2)	USA Trans Tml Comd (1)	6–328
CNGB (1)	Army Tml (1)	6–330
Tech Stf, DA (1) except CSigO (14)	POE (1)	6–415
Tech Stf Bd (1)	OSA (1)	6–418
USCONARC (5)	USAEPG (2)	6–425
USAARTYBD (1)	AFIP (1)	6–427
USAARMBD (2)	AMS (1)	7
USAIB (1)	Army Pictorial Cen (2)	7–25
USARADBD (2)	EMC (1)	7–26
USAAVNBD (1)	Yuma Test Sta (2)	17–22
USABELCTBD (1)	USACA (3)	17–25
USAATBD (1)	USASSA (20)	17–26
ARADCOM (2)	USASSAMRO (1)	17–45
ARADCOM Rgn (2)	USASEA (1)	17–46
OS Maj Comd (3)	USA Carib Sig Agcy (1)	17–51
OS Base Comd (2)	USA Sig Msl Spt Agcy (13)	17–52
LOGCOMD (2)	Sig Fld Maint Shops (3)	17–55
MDW (1)	USA Corps (3)	17–56
Armies (2)	Def Log Svc Cen (1)	17–57
Corps (2)	JBUSMC (2)	17–65
Instl (2)	Units organized under following	17–66
Ft Monmouth (63)	TOE's (2 copies each):	17–85
USATC AD (2)	6–37	17–115
USATC Armor (2)	6–100	17–116
USATC Engr (2)	6–125	29–56
USATC Inf (2)	6–126	44–15
USATC FA (2)	6–127	44–17
USAOMC (3)	6–128	44–35
Svc College (2)	6–300	44–37
Br Svc Sch (2)	6–301	44–85
GENDEP (2) except Atlanta GENDEP (None)	6–315	44–87
	6–316	55–75
Sig Sec, GENDEP (5)	6–317	55–78
Sig Dep (12)	6–325	57

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.

☆ U.S. GOVERNMENT PRINTING OFFICE : 1962 O—663305

INTERCOMMUNICATION SETS AN/UIC–1 AND AN/UIC–1X

TM 11–2643
TO 31R2–2UIC–101
CHANGES No. 2

DEPARTMENTS OF THE ARMY
AND THE AIR FORCE
WASHINGTON 25, D.C., *16 October 1962*

TM 11–2643/TO 31R2–2UIC–101, 16 March 1951, is changed as follows:

Page 1. Add the following note after the heading of chapter 1:

Note. Intercommunication Set AN/UIC–1X is similar to Intercommunication Set AN/UIC–1. Information in this manual applies to both sets unless otherwise specified.

Page 37.

Section IV.1. (Added) FOURTH ECHELON TESTING PROCEDURES FOR CONTROL BOX C–375/VRC

45.1. General

a. Testing procedures are prepared for use by Signal field maintenance shops and Signal service organizations responsible for fourth echelon maintenance to determine the acceptability of repaired signal equipment. These procedures set forth specific requirements that repaired signal equipment *must* meet before it is returned to the using organization. The testing procedures may also be used as a guide for testing equipment repaired at third echelon if the proper tools and test equipment are available. A summary of the performance standards is given in paragraph 45.5.

b. Each test depends on the preceding one for certain operating procedures and, where applicable, for test equipment calibrations. Comply with the instructions preceding the body of each chart before proceeding to the chart. Perform each test in sequence. Do not vary the sequence. For each step, perform all the actions required in the *Test equipment control settings* and *Equipment under test control settings* columns; then, perform each specific test procedure and verify it against its performance standard.

45.2. Test Equipment and Other Equipment Required

All test equipment and other equipment required to perform the testing procedures given in this section are listed in the following charts and are authorized under TA 11–17 (Signal Field Maintenance Shops) and TA 11–100 (11–17) (Allowances of Signal Corps Expendable Supplies for Signal Field Maintenance Shop, Continental United States) or TOE 11–158D (Signal Depot Company) and TA 11–101 (11–158), (Allowances of Signal Corps Expendable Supplies for Signal Depot Company) or are repair part items of the subject equipment authorized for stockage at fourth echelon levels.

a. Test Equipment.

Nomenclature	Federal stock No.	Technical manual
Multimeter TS–352(*)/U[a]	6625–242–5023	TM 11–5527
Electric Light Assembly MX–1292/PAQ.	6696–537–4470	TM 11–5540

[a] Indicates Multimeters TS–352/U, TS–352A/U, and TS–352B/U.

b. Other Equipment. Cord CD–1252/U (Federal stock No. 5995–284–6306) is the other equipment required.

45.3. Physical Test and Inspection

a. Test Equipment and Materials. Electric Light Assembly MX–1292/PAQ.

b. Test Connections and Conditions. Remove the cover from the control unit. Make no connections during these tests to the control unit. Connect the MX–1292/PAQ and install the wide transmission filter.

c. Procedure.

Step No.	Test equipment control settings	Equipment under test control settings	Test procedure	Performance standard
1	*MX–1292/PAQ* 245V FOR MV LAMP switch: ON	Controls may be in any positions.	*a.* Expose to the direct rays of the lamp all portions of the unit.	*a.* All chassis surfaces and component parts and connections should be covered with moisture-fungiproofing (MFP) varnish. *Note.* Mfp varnish glows grayish-green when exposed to the lamp.
			b. Turn off the lamp and proceed to the next step.	*b.* None.
2	None.	Same as above.	*a.* Check the RADIO TRANS. and selector switches for correct operation.	*a.* All controls should operate freely without binding.
			b. Check the VOL. PHONE controls (one on each side of unit) for smooth operation and freedom from binding throughout limits of travel.	*b.* Same as *a* above.
3	None.	Same as above.	*a.* Inspect the entire unit for physical damage (dents, punctures, and bent areas) and missing parts.	*a.* There should be no missing parts or damage serious enough to hamper proper operation.
			b. Inspect unit for condition of finish and panel markings.	*b.* Surfaces originally painted should not show bare metal. Panel markings should be legible.

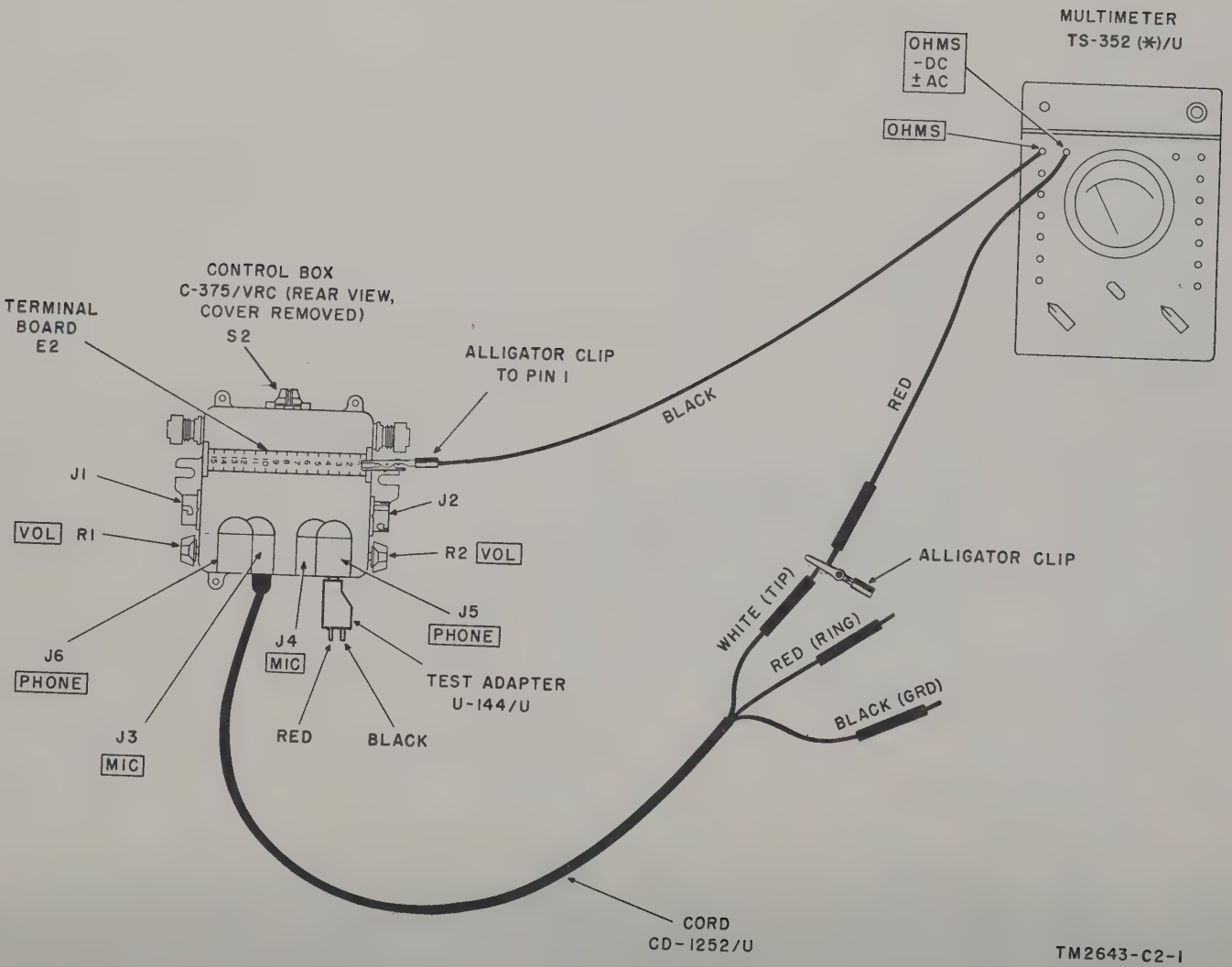


Figure 22.1. Continuity test.

			352(*)/U.	
			j. Rotate VOL control (R2) smoothly fully counterclockwise.	*j.* None.
			k. Plug Test Adapter U–144/U into PHONE jack (J5). Remove red test lead from terminal 15 of E2 and insert it into red jack of Test Adapter U–144/U.	*k.* Same as *b* above.
			l. Unplug Test Adapter U–144/U from PHONE jack J5 (maintaining connection with red test lead of Multimeter TS–352(*)/U and plug it into PHONE jack J6.	*l.* None.
			m. Remove black test lead from pin A of J2 and touch it to pin A of J1.	*m.* Same as *b* above.
			n. Set selector switch to center position.	*n.* Multimeter TS–352(*)/U shall indicate ∞ (no deflection).
8	Same as step 1.	RADIO TRANS. switch (S2): Center position. Selector switch (S1): Counterclockwise position.	*o.* Set selector switch to clockwise position.	*o.* Same as *n* above.
			a. Remove red test lead from red jack of Test Adapter U–144/U and connect it to terminal 9 of E2.	*a.* None.
			b. Connect black test lead to terminal 13, 14, or 15 of E2.	*b.* Multimeter TS–352(*)/U shall indicate ∞ (no deflection).
			c. Set selector switch to center position.	*c.* Multimeter TS–352(*)/U shall indicate Ø ohm (full-scale deflection).
			d. Set selector switch to clockwise position.	*d.* Same as *b* above.
			e. Remove red test lead from terminal 9 of E2 and connect it to terminal 10 of E2.	*e.* Same as *c* above.
			f. Set selector switch to center position.	*f.* Same as *b* above.
			g. Set selector switch to counterclockwise position.	*g.* Same as *b* above.
			h. Remove black test lead from terminal 13, 14, or 15 of E2 and connect it to terminal 4 of E2.	*h.* None.
			i. Remove red test lead from terminal 10 of E2 and connect it to terminal 11 of E2.	*i.* Same as *b* above.
			j. Remove red test lead from terminal 11 of E2 and connect it to terminal 12 of E2.	*j.* Same as *b* above.
			k. Remove red and black test leads from Control Box C–375/URC and replace rear cover. Remove Cord CD–1252/U from MIC jack and Test Adapter U–144/U from PHONE jack.	*k.* None.

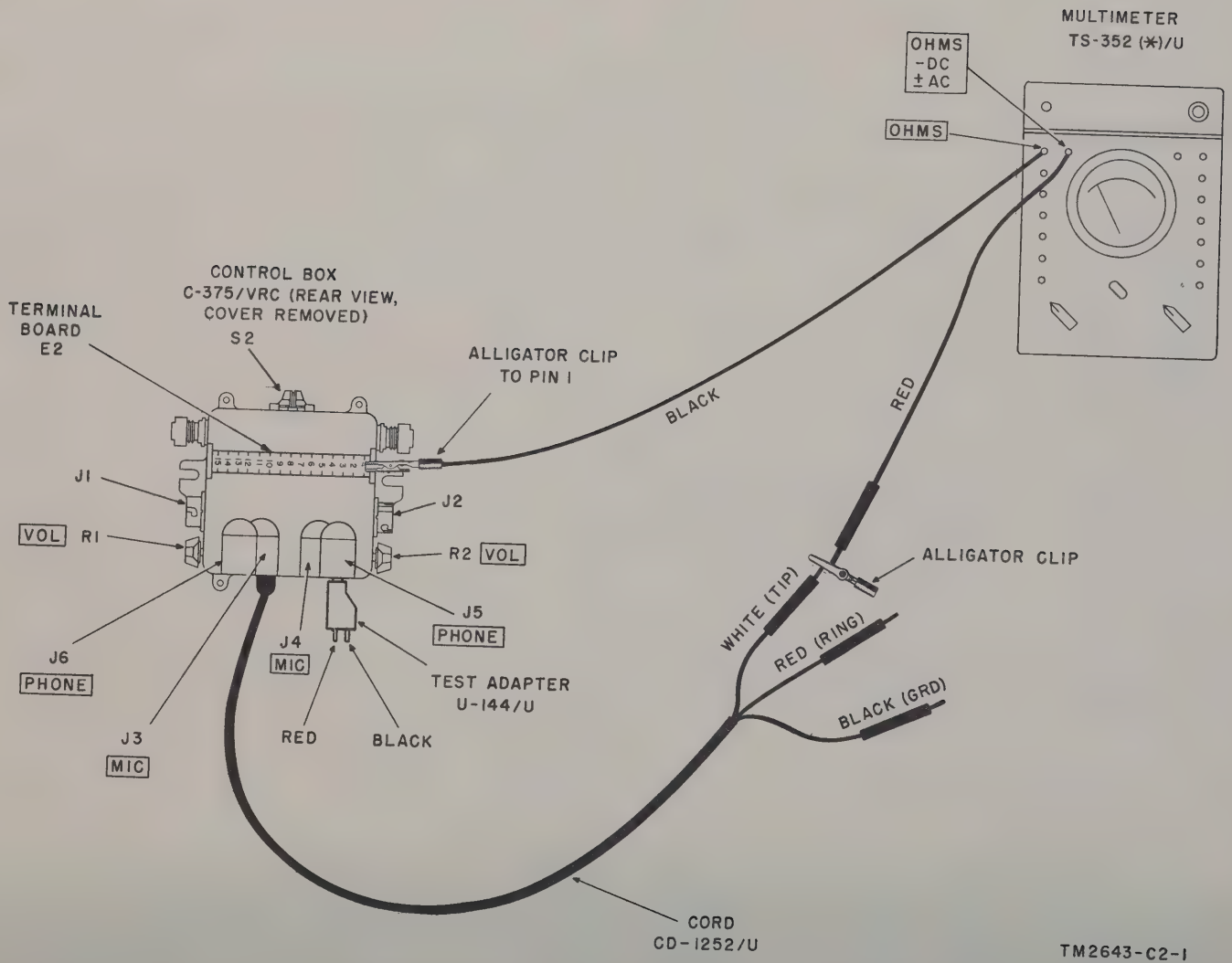


Figure 22.1. Continuity test.

45.4. Continuity Test Procedure

a. Test Equipment and Materials.

(1) Multimeter TS–352(*)/U.
(2) Test Adapter U–144/U (p/o TS–352(*)/U).
(3) Cord CD–1252/U.

b. Test Connections and Conditions.

(1) Remove the rear cover from Control Box C–375/VRC.
(2) Set Multimeter TS–352(*)/U range switch to RX100, and FUNCTION switch to OHMS. Short the lead together and adjust OHMS ZERO ADJ for 0 ohm (0 on upper 0–infinity scale).
(3) Connect the equipment as shown in figure 22.1.

c. Test Procedure.

Step No.	Test equipment control settings	Equipment under test control settings	Test procedure	Performance standard
1	*Multimeter TS–352(*)/U* FUNCTION switch: OHMS Range switch: RX100	RADIO TRANS. switch (S2): center position. Selector switch (S1): Counterclockwise position.	*a.* Observe Multimeter TS–352(*)/U.	*a.* Multimeter TS–352(*)/U shall indicate ∞ (no deflection).
			b. Operate RADIO TRANS. switch clockwise to RADIO TRANS. position.	*b.* Multimeter TS–352(*)/U shall indicate Ø ohm (full-scale) deflection).
			c. Set RADIO TRANS. switch to counterclockwise to RADIO TRANS. position.	*c.* Same as in *b* above.
			d. Set selector switch to center position.	*d.* Same as in *a* above.
			e. Hold RADIO TRANS. switch in either RADIO TRANS. position.	*e.* Same as *a* above.
			f. Release RADIO TRANS. switch and set selector switch to clockwise position.	*f.* Same as *a* above.
			g. Set RADIO TRANS. switch to either of the two RADIO TRANS. positions.	*g.* Same as *a* above.
			h. Remove black test lead from terminal 1 of E2 and touch it to pin F of J1.	*h.* Same as *a* above.
			i. Remove black test lead from pin F of J1 and touch it to pin F of J2.	*i.* Same as *b* above.
			j. Detach Cord CD–1252/U from J3 MIC. jack, and plug it into J4 MIC jack.	*j.* None.
			k. Repeat steps *h* and *i* above.	*k.* Same as *b* above.
2	Same as step 1.	RADIO TRANS. switch (S2): Center position. Selector switch (S1): Counterclockwise position.	*a.* Remove black test lead from pin F of J2 and connect it to terminal 2 of E2.	*a.* None.
			b. Remove red test lead from white wire of Cord CD–1252/U and touch it to pin J of J2.	*b.* Multimeter TS–352(*)/U shall indicate Ø ohms (full-scale deflection).
			c. Remove red test lead from pin J of J1 and touch it to pin J of J2.	*c.* Same as *b* above.
			d. Remove red test lead from pin J of J2 and touch it to pin F of J1.	*d.* Same as *b* above.
			e. Set RADIO TRANS. switch to either of the two RADIO TRANS. positions.	*e.* Multimeter TS–352(*)/U shall indicate ∞ (no deflection).
			f. Release RADIO TRANS. switch and set selector switch to center position.	*f.* Same as *b* above.
			g. Set RADIO TRANS. switch to either of the two RADIO TRANS. positions.	*g.* Same as *b* above.
			h. Release RADIO TRANS. switch and set selector switch to clockwise position.	*h.* Same as *b* above.
			i. Set RADIO TRANS. switch to either of the two RADIO TRANS. positions.	*i.* Same as *e* above.
			j. Release RADIO TRANS. switch.	*j.* None.
3	Same as step 1.	RADIO TRANS switch (S2): Center position. Selector switch (S1): Counterclockwise position.	*a.* Remove black test lead from terminal 2 of E2 and connect it to terminal 3 of E2.	*a.* None.
			b. Touch red test lead to pin F of J1.	*b.* Multimeter TS–352(*)/U shall indicate ∞ (no deflection).
			c. Set RADIO TRANS. switch to either of the two RADIO TRANS. positions.	*c.* Same as *b* above.
			d. Release RADIO TRANS. switch and set selector switch to center position.	*d.* Same as *b* above.
			e. Set RADIO TRANS. switch to either of the two RADIO TRANS. positions.	*e.* Same as *b* above.
			f. Release RADIO TRANS. switch and set selector switch to clockwise position.	*f.* Same as *b* above.
			g. Set RADIO TRANS. switch to either of the two RADIO TRANS. positions.	*g.* Multimeter TS–352(*)/U shall indicate Ø ohm (full-scale deflection).
			h. Release RADIO TRANS. switch.	*h.* None.
4	Same as step 1.	RADIO TRANS. switch (S2): Center position. Selector switch (S1): Any position. VOL. R1: Fully counterclockwise. VOL. R2: Fully counterclockwise.	*a.* Remove black test lead from terminal 3 of E2 and connect it to terminal 4 of E2.	*a.* None.
			b. Touch red test lead to pin E of J1.	*b.* Multimeter TS–352(*)/U shall indicate Ø ohm (full-scale deflection).
			c. Touch red test lead to pin H of J1.	*c.* Same as *b* above.
			d. Touch red test lead to pin B of J1.	*d.* Same as *b* above.
			e. Touch red test lead to pin E of J2.	*e.* Same as *b* above.
			f. Touch red test lead to pin H of J2.	*f.* Same as *b* above.
			g. Touch red test lead to pin B of J2.	*g.* Same as *b* above.
			h. Touch red test lead to pin A of J2.	*h.* Same as *b* above.
5	Same as step 1.	RADIO TRANS. switch (S2): Center position. Selector switch (S1): Counterclockwise position.	*a.* Remove black test lead from terminal 4 of E2 and connect it to terminal 5 of E2.	*a.* None.
			b. Connect red test lead to red wire (ring) of Cord CD–1252/U.	*b.* Multimeter TS–352(*)/U shall indicate ∞ (no deflection).
			c. Set RADIO TRANS. switch to either of the two RADIO TRANS. positions.	*c.* Multimeter TS–352(*)/U shall indicate Ø ohm (full-scale deflection).
			d. Release RADIO TRANS. switch and set selector switch to center position.	*d.* Same as *b* above.
			e. Set RADIO TRANS. switch to either of the two RADIO TRANS. positions.	*e.* Same as *b* above.
			f. Release RADIO TRANS. switch and set selector switch to clockwise position.	*f.* Same as *b* above.
			g. Set RADIO TRANS. switch to either of the two RADIO TRANS. positions.	*g.* Same as *b* above.
			h. Release RADIO TRANS. switch.	*h.* None.
			i. Detach Cord CD–1252/U from J4 MIC jack and plug it into J3 MIC jack, maintaining contact between red test lead of TS–352(*)/U and red wire of Cord CD–1252/U. Set selector switch to counterclockwise position.	*i.* Same as *b* above.
			j. Set RADIO TRANS. switch to either of the two RADIO TRANS. positions.	*j.* Same as *c* above.
			k. Repeat *d* through *g* above.	*k.* Same as *b* above.
			l. Repeat *h* above.	*l.* None.
			m. Remove black test lead from terminal 5 of E2 and touch it to pin C of J1.	*m.* Same as *c* above.
			n. Remove black test lead from pin C of J1 and touch it ot pin C of J2.	*n.* Same as *c* above.
			o. Remove black test lead from pin C of J2 and connect it to terminal 6 of E2.	*o.* Same as *c* above.
			p. Set RADIO TRANS. switch to either of the two RADIO TRANS. positions.	*p.* Same as *b* above.
			q. Release RADIO TRANS. switch and set selector switch to center position.	*q.* Same as *b* above.
			r. Set RADIO TRANS. switch to either of the two RADIO TRANS. positions.	*r.* Same as *c* above.
			s. Release RADIO TRANS. switch and set selector switch to clockwise position.	*s.* Same as *b* above.
			t. Set RADIO TRANS. switch to either of the two RADIO TRANS. positions.	*t.* Same as *b* above.
			u. Release RADIO TRANS. switch.	*u.* None.
			v. Remove red test lead from red wire of Cord CD–1252/U and touch it to pin K of J1.	*v.* Same as *c* above.
			w. Remove red test lead from pin K of J1 and touch it to pin K of J2.	*w.* Same as *c* above.
6	Same as step 1.	RADIO TRANS. switch (S2): Center position. Selector switch (S1): Counterclockwise position.	*a.* Connect black test lead to terminal 7 of E2.	*a.* None.
			b. Connect red test lead to red wire of Cord CD–1252/U.	*b.* Multimeter TS–352(*)/U shall indicate ∞ (no deflection).
			c. Set RADIO TRANS. switch to either RADIO TRANS. position.	*c.* Same as *b* above.
			d. Release RADIO TRANS. switch and set selector switch to center position.	*d.* Same as *b* above.
			e. Set RADIO TRANS. switch to either RADIO TRANS position.	*e.* Same as *b* above.
			f. Release RADIO TRANS. switch and set selector switch to clockwise position.	*f.* Same as *b* above.
			g. Set RADIO TRANS. switch to either RADIO TRANS. position.	*g.* Multimeter TS–352(*)/U shall indicate Ø ohm (full-scale deflection).
			h. Release RADIO TRANS. switch.	*h.* None.
7	Same as step 1.	RADIO TRANS. switch (S2): Center position. Selector switch (S1): Counterclockwise position. VOL (R1): Fully counterclockwise. VOL (R2): Fully counterclockwise.	*a.* Remove black test lead from terminal 7 of E2 and connect it to terminal 8 of E2.	*a.* None.
			b. Connect red test lead to terminal 14 of E2.	*b.* Multimeter TS–352(*)/U shall indicate Ø ohm (full-scale deflection).
			c. Remove red test lead from terminal 14 of E2 and connect it to terminal 13 of E2.	*c.* Same as *b* above.
			d. Remove red test lead from terminal 13 of E2 and connect it to terminal 15 of E2.	*d.* Same as *b* above.
			e. Remove black test lead from terminal 8 of E2 and touch it to pin A of J1.	*e.* Multimeter TS–352(*)/U shall indicate between 4,500 and 5,500 ohms (45 and 55 on top scale).
			f. Rotate VOL control (R1) smoothly until fully clockwise, while observing Multimeter TS–352(*)/U.	*f.* Resistance as read on Multimeter TS–352(*)/U shall decrease smoothly to Ø.
			g. Rotate VOL control (R1) fully counterclockwise.	*g.* None.
			h. Remove black test lead from pin A of J1 and touch it to pin A of J2.	*h.* Same as *e* above.
			i. Rotate VOL control (R2) smoothly until fully clockwise, while observing Multimeter TS–352(*)/U.	*i.* Same as *f* above.
			j. Rotate VOL control (R2) smoothly fully counterclockwise.	*j.* None.
			k. Plug Test Adapter U–144/U into PHONE jack (J5). Remove red test lead from terminal 15 of E2 and insert it into red jack of Test Adapter U–144/U.	*k.* Same as *b* above.
			l. Unplug Test Adapter U–144/U from PHONE jack J5 (maintaining connection with red test lead of Multimeter TS–352(*)/U and plug it into PHONE jack J6.	*l.* None.
			m. Remove black test lead from pin A of J2 and touch it to pin A of J1.	*m.* Same as *b* above.
			n. Set selector switch to center position.	*n.* Multimeter TS–352(*)/U shall indicate ∞ (no deflection).
			o. Set selector switch to clockwise position.	*o.* Same as *n* above.
8	Same as step 1.	RADIO TRANS. switch (S2): Center position. Selector switch (S1): Counterclockwise position.	*a.* Remove red test lead from red jack of Test Adapter U–144/U and connect it to terminal 9 of E2.	*a.* None.
			b. Connect black test lead to terminal 13, 14, or 15 of E2.	*b* Multimeter TS–352(*)/U shall indicate ∞ (no deflection).
			c. Set selector switch to center position.	*c.* Multimeter TS–352(*)/U shall indicate Ø ohm (full-scale deflection).
			d. Set selector switch to clockwise position.	*d.* Same as *b* above.
			e. Remove red test lead from terminal 9 of E2 and connect it to terminal 10 of E2.	*e.* Same as *c* above.
			f. Set selector switch to center position.	*f.* Same as *b* above.
			g. Set selector switch to counterclockwise position.	*g.* Same as *b* above.
			h. Remove black test lead from terminal 13, 14, or 15 of E2 and connect it to terminal 4 of E2.	*h.* None.
			i. Remove red test lead from terminal 10 of E2 and connect it to terminal 11 of E2.	*i.* Same as *b* above.
			j. Remove red test lead from terminal 11 of E2 and connect it to terminal 12 of E2.	*j.* Same as *b* above.
			k. Remove red and black test leads from Control Box C–375/URC and replace rear cover. Remove Cord CD–1252/U from MIC jack and Test Adapter U–144/U from PHONE jack.	*k.* None.

45.5. Summary of Performance Standards

Points of measurements	Position of RADIO TRANS. switch (S2)	Position of selector switch (S1)	Reading (resistance)
Terminal 1 of E2 to tips of J3 and J4 and to F of J1 and J2	Center		∞
	RADIO TRANS	Counterclockwise	0
		Center	∞
		Clockwise	∞
Terminal 2 of E2 to J of J1 and J2			0
Terminal 2 of E2 to tips of J3 and J4 and to F of J1 and J2	Center		0
	RADIO TRANS	Counterclockwise	∞
		Center	0
		Clockwise	∞
Terminal 3 of E2 to tips of J3 and J4 and to F of J1 and J2	Center		∞
	RADIO TRANS	Counterclockwise	∞
		Center	∞
		Clockwise	0
Terminal 4 of E2 to B, E, and H of J1 and J2			0
Terminal 5 of E2 to rings of J3 and J4 and to C of J1 and J2	Center		∞
	RADIO TRANS	Counterclockwise	0
		Center	∞
		Clockwise	∞
Terminal 6 of E2 to K of J1 and J2			0
Terminal 6 of E2 to rings of J3 and J4 and to C of J1 and J2	Center		0
	RADIO TRANS	Counterclockwise	∞
		Center	0
		Clockwise	∞
Terminal 7 of E2 to rings of J3 and J4 and to C of J1 and J2	Center		∞
	RADIO TRANS	Counterclockwise	∞
		Center	∞
		Clockwise	0
Terminal 8 of E2 to tips of J5 and J6 and to A of J1 and J2		Counterclockwise	0 to 5K depending on position of VOLUME controls R1 and R2.
		Center	∞
		Clockwise	∞

Points of measurements	Position of RADIO TRANS. switch (S2)	Position of selector switch (S1)	Reading (resistance)
Terminal 9 of E2 to tips of J5 and J6 and to A of J1 and J2		Counterclockwise	∞
		Center	0 to 5K depending on position of R1 and R2.
		Clockwise	∞
Terminal 10 of E2 to tips of J5 and J6 and to A of J1 and J2		Counterclockwise	∞
		Center	∞
		Clockwise	0 to 5K depending on position of R1 and R2.
Terminal 11 and 12 of E2 to chassis			∞
Terminal 13 of E2 to terminal 14 and 15 of E2			0

By Order of the Secretaries of the Army and the Air Force:

EARLE G. WHEELER,
General, United States Army,
Chief of Staff.

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

CURTIS E. LeMAY,
Chief of Staff, United States Air Force.

Official:
R. J. PUGH,
Colonel, United States Air Force,
Director of Administrative Services.

Distribution:
Active Army:
DASA (6)
USASA (2)
CNGB (1)
Tech Stf, DA (1) except
CSigO (5)
Tech Stf Bd (1)
USCONARC (5)
USAARTYBD (1)
USAARMBD (2)
USAIB (1)
USARADBD (2)
USAAVNBD (1)
USA Abn Elct & SPWAR Bd (1)
USAATBD (1)
ARADCOM (2)
ARADCOM, Rgn (2)
OS Maj Comd (3)
OS Base Comd (2)
LOGCOMD (2)
MDW (1)
Armies (2)
Corps (2)
Div (2)
Instl (2) except
Fort Monmouth (63)
USATC AD (2)
USATC Eng (2)
USATC Inf (2)
USATC FA (2)
USATC Armor (2)
USAOMC (2)
Svc Colleges (2)
Br Svc Sch (2)
GENDEP (2) except
Atlanta GENDEP (none)
Sig Sec, GENDEP (5)
Sig Dep (12) except
Sacramento Sig Dep (17)
WRAMC (1)
USA Trans Tml Comd (1)
Army Tml (1)
POE (1)
OSA (1)
USAEPG (2)
AFIP (1)
AMS (1)
Army Pictorial Cen (2)
EMC (1)
USA Strat Comm Comd (4)
USASSA (25)
USASSAMRO (1)
USARCARIB Sig Agcy (1)
USA Sig Msl Spt Agcy (13)
Sig Fld Maint Shops (3)
Def Log Svc Cen (1)
USA Corps (3)
JBUSMC (2)
Units org under fol TOE:
6–37 (2)
6–100 (2)
6–125 (2)
6–127 (2)
6–128 (2)
6–300 (2)
6–301 (2)
6–315 (2)
6–316 (2)
6–317 (2)
6–325 (2)
6–327 (2)
6–328 (2)
6–330 (2)
6–345 (2)
6–346 (2)
6–347 (2)
6–355 (2)
6–356 (2)
6–357 (2)
6–358 (2)
6–415 (2)
6–418 (2)
6–425 (2)
6–427 (2)
7–25 (2)
7–26 (2)
7–42 (2)

7–45 (2)
7–46 (2)
11–7 (2)
11–16 (2)
11–57 (2)
11–98 (2)
11–117 (2)
11–155 (2)
11–157 (2)
11–500 (AA–AE) (4)
11–557 (2)
11–587 (2)
11–592 (2)
11–597 (2)
17–2 (2)
17–22 (2)
17–25 (2)
17–26 (2)
17–35 (2)
17–36 (2)
17–42 (2)
17–45 (2)
17–46 (2)
17–51 (2)
17–52 (2)
17–55 (2)
17–56 (2)
17–57 (2)
17–65 (2)
17–66 (2)
17–85 (2)
17–86 (2)
17–105 (2)
17–106 (2)
17–107 (2)
17–115 (2)
17–116 (2)
29–56 (2)
37–42 (2)
44–15 (2)
44–17 (2)
44–35 (2)
44–37 (2)
44–85 (2)
44–87 (2)
55–75 (2)
55–78 (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.

☆U.S. GOVERNMENT PRINTING OFFICE: 1962—650503

INTERCOMMUNICATION SETS AN/UIC–1 AND AN/UIC–1X

TM 11–2643
TO 31R2–2UIC–101
CHANGES No. 3

DEPARTMENTS OF THE ARMY
AND THE AIR FORCE
WASHINGTON 25, D.C., *30 January 1963*

TM 11–2643/TO 31R2–2UIC–101, 16 March 1951, is changed as follows:

Note. The parenthetical reference to previous changes (example: "page 1 of C 1") indicates that pertinent material was published in that changes.

Page 1, paragraph 1. Add paragraph 1.1 after paragraph 1.

1.1. Index of Publications
(added)

Refer to the latest issue of DA Pam 310–4 to determine whether there are new editions, changes, or additional publications pertaining to your equipment. Department of the Army Pamphlet No. 310–4 is a current index of Technical Manuals, Technical Bulletins, Supply Bulletins, Lubrication Orders, and Modification Work Orders that are available through publications supply channels. The index lists the individual parts (–10, –20, –35P, etc.) and the latest changes to and revisions of each equipment publication.

Paragraph 2. Delete paragraph 2 and substitute:

2. Forms and Records
(Superseded)

a. Report of Unsatisfactory Equipment. Fill out DA Form 2407 (Maintenance Request) in accordance with instruction in TM 38–750 and forward it to: Commanding Officer, U.S. Army Electronics Materiel Support Agency, ATTN: SELMS–PIE, Fort Monmouth, N.J. The form should be filled out and forwarded to report:

(1) Receipt of defective equipment (use DA Form 6 (*b* below) if defect is due to damaged or improper shipment).
(2) Equipment deficiencies (deadlined equipments).
(3) Equipment shortcomings (operable, but at less than rated capability or efficiency).
(4) Equipment improvement suggestions and recommendations.

b. Report of Damaged or Improper Shipment. Fill out and forward DD From 6 (Report of Damaged or Improper Shipment), as prescribed in AR 700–58 (Army), NAVSANDA Publication 378, and AFR 71–4 (Air Force).

c. Comments on Manual. Forward all comments on this publication direct to: Commanding Officer, U.S. Army Electronics Materiel Support Agency, ATTN: SELMS–MP, Fort Monmouth, N.J. (DA Form 1598 (Record of Comments on Publications), DA Form 2496 (Disposition Form), or letters may be used.)

Delete paragraph 2.1 (page 1 of C 1).

Page 21. Add chapter 3.1 after chapter 3.

CHAPTER 3.1 (Added)
OPERATOR'S MAINTENANCE

25.1. Scope of Operator's Maintenance

The maintenance duties assigned to the operator of Inter-communication Sets AN/UIC–1 and AN/UIC–1X are listed below, together with a reference to the paragraphs covering the specific maintenance function. The duties assigned do not require tools or test equipment other than those issued with the set.

a. Daily maintenance service and inspection (par. 25.4).

b. Cleaning (par. 25.5).

25.2. Operator's Preventive Maintenance

Preventive maintenance is the systematic care, servicing, and inspection of equipment to prevent the occurrence of trouble, to reduce

downtime, and to assure that the equipment is serviceable.

a. Systematic Care. The procedures given in paragraph 25.4 cover systematic care essential to proper upkeep and operation of the equipment. The cleaning operations (par. 25.5) should be performed once a day. If the equipment is not used daily, however, the cleaning operations must be performed before operation after any extended shutdown, or once a week while the equipment is kept in *standby* condition. The other items must be checked before the equipment is placed in operation after a shutdown, during operation, or after it is turned off, as specified in the applicable paragraph.

b. Maintenance Service and Inspection. The maintenance service and inspection chart (par. 25.4) outlines inspections to be made at specific intervals. These inspections are made to determine combat serviceability; that is, to determine that the equipment is in good general (physical) condition, in good operating condition, and likely to remain combat serviceable. To assist the operators in determining and maintaining combat serviceability, the charts indicate what to inspect, how to inspect, and what the normal conditions are; the *references* column lists the paragraph that contains additional information. If the defect cannot be remedied by the operator, higher echelon maintenance or repair is required. Records and reports of these inspections must be made in accordance with TM 38–750.

25.3. Maintenance Service and Inspection Periods

Maintenance service and inspections of the Intercommunication Sets AN/UIC–1 and AN/UIC–1X are required on a daily basis. Paragraph 25.4 specifies services and inspections that must be accomplished daily and under special conditions listed below.

a. Before the vehicle starts on a mission.

b. When the equipment is initially installed.

c. When the equipment is reinstalled.

d. At least once a week if the equipment is maintained in a standby condition.

25.4. Daily Maintenance Service and Inspection Chart

Item No.	Procedures		References
	Item	Normal condition or result	
2	EXTERIOR: Inspect the exterior of the equipment for cleanliness.	Equipment must be clean and dry and free of dust, dirt, grease, corrosion, and fungus.	Par. 25.5.
9	KNOBS: Inspect all knobs and switch handles for proper operation.	*a.* All knobs must be firmly secured to their shafts. *b.* All shafts must turn freely, without binding or scraping.	
10	OPERATIONAL PRESET: Set controls as follows: VOLUME control: Center position. Selector switches: Center position. RADIO TRANS switches: Center position. VOL controls: Center position.	All controls set properly	Par. 23.
11	START: Set the OFF-INT-RT-70 switch to the INT position. Allow 5 minutes warmup.	None observable.	
12	OPERATE:		
	a. Press the push-to-talk switch (HOLD ON button) on the chest set. Talk into the microphone.	*a.* A clear voice signal should be heard in the headset and at all other control stations.	
	b. Turn the VOL controls and the VOLUME control to the full counterclockwise and clockwise positions.	*b.* The voice signal level varies smoothly.	
	c. Press the push-to-talk switch (LOCK-ON button).	*c.* The switch remains closed until the HOLD ON button is pushed to release it.	

25.5. Cleaning

Inspect the exterior of the equipment. The exterior surfaces should be clean, and free of rust, dirt, grease, and fungus.

a. Remove dust and loosen dirt with a clean soft cloth.

b. Remove grease, fungus, and ground-in dirt from the cases; use a cloth dampened (not wet) with Cleaning Compound (Federal stock No. 7930–395–9542).

Warning: **Cleaning compound is flammable and its fumes are toxic. Provide adequate ventilation.** ***Do not*** **use near a flame.**

c. Remove dust or dirt from the plugs and jacks with a brush.

d. Clean the front panels and control knobs; use a soft clean cloth. If difficulty in removing dirt occurs, dampen the cloth with water; mild soap may be used to make the cleaning more effective.

Page 22, under section I heading add:

25.6. Scope of Organizational Maintenance (Added)

a. This chapter contains the instructions covering second echelon maintenance of Intercommunication Sets AN/UIC–1 and AN/UIC–1X. It includes the instruction for performing preventive and periodic maintenance services; the basic theory, and the repair functions to be accomplished by the organizational repairman. The operating instructions are given in paragraphs 23 through 25.

b. Second echelon maintenance of the equipment includes the following:

(1) Organizational preventive maintenance (pars. 26–30).
(2) Weatherproofing (par. 31).
(3) Painting (par. 32).
(4) Sectionalization of trouble (par. 41).
(5) Replacement of units (par. 47).
(6) Cleaning (par. 25.5).

25.7. Tools, Materials, and Test Equipment Required (Added)

A list of parts authorized for second echelon maintenance appears in the basic issue items list, appendix III. The materials, tools and test equipment required for organizational maintenance are listed below.

a. Materials.
(1) Sandpaper.
(2) Paint and brush.

b. Tools and Test Equipment.
(1) Tool Equipment TE–41.
(2) Test Set, Electron Tube TV–7/U.
(3) Multimeter AN/URM–105.

Page 22. Delete paragraphs 26 through 28 and substitute:

26. Organizational Preventive Maintenance (Superseded)

a. Preventive maintenance is the systematic care, inspection, and servicing of equipment to maintain it in serviceable condition, prevent breakdowns, and assure maximum operational capability. Preventive maintenance is the responsibility of all echelons concerned with the equipment and includes the inspection, testing, and repair or replacement of parts, subassemblies, or units that inspection and tests indicate would probably fail before the next scheduled periodic service. Preventive maintenance service and inspection of the equipment at the second echelon level are made at monthly intervals unless otherwise directed by the commanding officer. The maintenance services should be scheduled concurrently with the periodic service schedule of the carrying vehicle for all vehicular installations.

b. The maintenance forms and records to be used and maintained on this equipment are specified in TM 38–750. Paragraph 2 contains additional information concerning submission of specific forms.

27. Monthly Maintenance (Superseded)

Monthly maintenance on Intercommunication Sets AN/UIC–1 and AN/UIC–1X will be scheduled in accordance with the requirements in TM 38–750. If the equipment is a part of a vehicular installation, the Monthly maintenance should be scheduled concurrently with the periodic service schedule of the carrying vehicle to reduce out-of-service time to a minimum. All deficiencies or shortcomings will be recorded, and those not corrected during the inspection and service will be immediately re-

ported to higher echelon by the use of forms and procedures specified by TM 38–750. Equipment with a deficiency that cannot be corrected by second echelon should be deadlined in accordance with TM 38–750. Perform all the services listed in the monthly maintenance and inspection chart (par. 28), in the sequence listed. Whenever a *normal condition or result* is not observed, take corrective action in accordance with the paragraph or other source listed under the *reference* column.

28. Monthly Maintenance Service and Inspection Chart

Item No.	Procedures		References
	Item	Normal condition or result	
1	INITIAL CHECK: Inspect the equipment for completeness and proper installation.	*a.* Equipment must be complete_____ *b.* Equipment must be properly installed.	*a.* App. III. *b.* Pars. 16–18.
2	EXTERIOR: Inspect the exterior of the equipment for cleanliness and preservation.	*a.* Equipment must be clean and dry and free of dust, dirt, grease, corrosion, and fungus. *b.* Painted surfaces must be free of bare spots, rust, and corrosion.	*a.* Pars. 25.5, and 29*a*(1)–(4). *b.* Par. 32.
3	PUBLICATIONS: Check to see that pertinent publications are available.	*a.* Operator, organizational, and field and depot maintenance manual must be complete and in usable condition, without missing pages. *b.* All Changes pertinent to the equipment are on hand.	*b.* DA Pam 310–4 for requirements.
4	MODIFICATION WORK ORDERS: Check DA Pam 310–4 to determine if new applicable MWO's have been published.	All URGENT MWO's have been applied to the equipment. All ROUTINE MWO's have been scheduled.	DA Pam 310–4.
5	GASKETS: Inspect waterproof gaskets for leaks, or worn or loose edges.	Gaskets are clean, flexible, and in apparently good condition.	
6	INTERIOR: Perform the following tasks:		
	a. Cleaning. Perform the cleaning procedures given in paragraph 29*a*(5) through (9).		*a.* Par. 29*a*(5)–(9).
	b. Inspection. Perform the inspection procedures given in paragraph 29*b*.		*b.* Par. 29*b*.
	c. Repairs. Repair any minor defects if listed in paragraph 29*c*.		*c.* Par. 29*c*.
7	FUSE: Check for proper fuse_____	The fuse in use must be of the proper value.	Fig 26, table 1 (lower left).
8	MOUNTING: Inspect the seating and stability of mountings. Check for loose or missing hardware.	All bolts, nuts, and washers are properly tightened. Mounting shows no evidence of weakness or deformity.	
9	KNOBS: Inspect all knobs and switch handles for proper operation.	*a.* All knobs must be firmly secured to their shafts. *b.* All shafts must turn freely, without binding or scraping.	
10	OPERATIONAL PRESET: Set controls as follows: VOLUME control: Center positions. Selector switches: Center positions. RADIO TRANS switches: Center positions. VOL controls: Center positions.	All controls must set properly_____	Par. 23.

Item No.	Procedures		References
	Item	Normal condition or result	
11	START: Set the OFF-INT-RT-70 switch to the INT position. Allow 5 minutes warmup.	None observable.	
12	OPERATE:		
	a. Press the push-to-talk switch (HOLD ON button) on the chest set. Talk into the microphone.	*a.* A clear voice signal should be heard in the headset and at all other control stations.	Par. 41.
	b. Turn the VOL controls and the VOLUME control fully counterclockwise and clockwise.	*b.* The voice signal level varies smoothly.	
	c. Press the push-to-talk switch (LOCK ON button).	*c.* The switch remains closed until the HOLD ON button is pushed to release it.	
13	SPARE PARTS: Check all spare parts (operator's and organizational) for general condition and method of storage.	All spare parts must be in good condition and properly stored. There should be no evidence of overstock, and all shortages will be on valid requisitions.	App. III.

Page 25, paragraph 32. Delete paragraph 32 and substitute:

32. Painting
(Superseded)

Clean rust and corrosion from the metal surfaces by lightly sanding them with fine sandpaper. Brush two thin coats of paint on the bare metal to protect it from further corrosion. Refer to the applicable cleaning and refinishing practices specified in TM 9–2851.

Page 41, appendix I, paragraph 3. After the last item add:

TM 11–6625–203–12 Operating and Organizational Maintenance: Multimeter AN/URM–105, including Multimeter ME–77/U.

TM 11–6625–274–12 Operator's and Organizational Maintenance Manual: Test Sets, Electron Tube TV–7/U, TV–7A/U, TV–7B/U, and TV–7D/U.

Paragraph 7. After the second item add:

DA Pam 310–4 Index of Technical Manuals, Technical Bulletins, Supply Bulletins, Lubrication Orders, and Modification Work Orders.

After the last item add:

TM 38–750 The Army Equipment Record System and Procedures.

By Order of the Secretaries of the Army and the Air Force:

EARLE G. WHEELER,
General, United States Army,
Chief of Staff.

Official:

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

CURTIS E. LeMAY,
Chief of Staff, United States Air Force.

Official:

R. J. PUGH,
Colonel, United States Air Force,
Director of Administrative Services.

Distribution:

Active Army:

DASA (6)
USASA (2)
CNGB (1)
CofEngrs (1)
TSG (1)
CSigO (5)
CofT (1)
USA CD Agcy (1)
USAATBD (1)
USCONARC (5)
Hq, Army Mat Comd (5)
ARADCOM (2)
ARADCOM Rgn (2)
OS Maj Comd (3)
OS Base Comd (2)
LOGCOMD (2)
USA Elct Comd (5)
USA Msl Comd (4)
USA Strat Comm Comd (4)
MDW (1)
Armies (2)
Corps (2)
USA Corps (3)
USATC AD (2)
USATC Engr (2)
USATC Inf (2)
USATC FA (2)
USATC Armor (2)
Instal (2) except
  Ft Monmouth (63)
Svc Colleges (2)
Br Svc Sch (2)
GENDEP (OS) (2)
Army Dep (2) except
  Sacramento (17)
  Lexington (12)
  Tobyhanna (12)
  Ft Worth (8)
Sig Sec, GENDEP (OS) (5)
Sig Dep (OS) (12)
WRAMC (1)
AFIP (1)
USA Elct R&D Actv, White Sands (13)
USA Elct R&D Actv, Ft Huachuca (2)
USA Trans Tml Comd (1)
Army Tml (1)
POE (1)
OSA (1)
AMS (1)
Army Pic Cen (2)
USA Mob Spt Cen (1)
USA Elct Mat Agcy (25)
Chicago Procurement Dist (1)
USARCARIB Sig Agcy (1)
Sig Fld Maint Shops (3)
Yuma Test Sta (2)
JBUSMC (2)
Units org under fol TOE (2 cy each UNOINDC)
  6–37
  6–100
  6–125
  6–126
  6–127
  6–128
  6–300
  6–301
  6–315
  6–316
  6–317
  6–325
  6–327
  6–328
  6–330
  6–345
  6–346
  6–347
  6–355
  6–356
  6–357
  6–358
  6–415

6–418
6–425
6–427
6–435
6–437
7
7–25
7–26
7–42
7–45
7–46
7–100
7–102
11–7
11–16
11–57
11–97
11–98
11–117
11–155
11–157
11–500
(AA–AE) (4)
11–557
11–587
11–592
11–597
17–2
17
17–22
17–26
17–35
17–36
17–42
17–45
17–46
17–51
17–52
17–55
17–56
17–57
17–65
17–66
17–85
17–86
17–100
17–102
17–105
17–106
17–107
37
37–42
37–100
37–102
44–15
44–17
44–85
44–87
55–75
55–78
57

NG: State AG (3).

USAR: None.

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

☆ U. S. GOVERNMENT PRINTING OFFICE: 1963—650508