DEPARTMENT OF THE ARMY TECHNICAL MANUAL

OPERATOR, ORGANIZATIONAL, FIELD, AND DEPOT MAINTENANCE MANUAL TEST FACILITIES KIT, RADIO MK-153/GRC

This copy is a reprint which includes current pages from Changes 1, 2, and 4.

HEADQUARTERS, DEPARTMENT OF THE ARMY
SEPTEMBER 1961

AGO 10032A

WARNING

EXTREMELY DANGEROUS VOLTAGES

are used in the operation of the radio sets used in connection with this equipment.

DON'T TAKE CHANCES

Changes in force: C 1, C 2, and C 4

Change
No. 4 }

HEADQUARTERS,
DEPARTMENT OF THE ARMY
Washington, D.C., *31 August 1973*

Operator, Organizational, Field, and Depot Maintenance Manual
TEST FACILITIES KIT, RADIO MK-153/GRC

TM 11-6625-408-15, 27 September 1961, is changed as follows:

Page 3. paragraph 1.1. Delete paragraph 1.1 and substitute:

1.1. Indexes of Publications

a. *DA Pam 310-4.* Refer to the latest issue of DA Pam 3104 to determine whether there are new editions, changes, or additional publications pertaining to the equipment.

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

Paragraph 2 (page 1 of C 1 as changed by C 2, 22 July 1964).

Delete paragraph 2 and substitute:

2. Forms and Records

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

b. Report of Packaging and Handling Deficiencies. Fill out and forward DD Form 6 (Report of Packaging and Handling Deficiencies) as prescribed in AR 700-58 (Army)/NAVSUP PUB 378 (Navy)/AFR 71-4 (Air Force)/and MCO P4030.29 (Marine Corps).

c. Discrepancy in Shipment Report (DISREP) (SF361). Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361) as prescribed in AR 5538 (Army)/NAVSUP PUB 459 (Navy)/ AFM 75-34 (Air Force)/and MCO P4610.19 (Marine Corps).

_____
***This change supersedes C3, 27 November 1964.**

Add paragraph 2.1 after paragraph 2.

2.1. Reporting of Errors

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

Paragraph 5. Change title to: Components, Dimensions, and Weights.

Delete the sentence and substitute: The components of Test Facilities Kit, Radio MK-153/GRC are illustrated in figure 1.

Page 4. After paragraph 5 add paragraph 5.1.

5.1. Items Comprising an Operable Radio Test Facilities Kit MK-153/GRC

FSN	*Qty*	*Nomenclature, part No. and mfc code*
		NOTE **The part number is followed by the applicable 5-digit Federal supply code for manufacturers (FSCM) identified in SB 708-42 and used to identify manufacturer. distributor, or Government agency etc.**
6625-322-4903	1	Test Facilities Kit. Radio MK-153GRC. which GRC, Which includes:
6625-510-1785	1	Adapter. Test MX-1566/GRC. SCDL-181817. 80063 (Not installed
5820-893-0093	1	Adapter. Test MX-35.33/GRC. SCDL-181818. 80063(Not installed
5995-823-2166	1	Cable Assembly. Special Purpose. Electrical CX-7162/t1 (2 ft 8in.)

5.1. Items Comprising an Operable Radio Test Facilities Kit MK-153/GRC--Continued

FSN	*Qty*	*Nomenclature, part No. and mfc code*
		SC-D-173910. 80063 (Not installed)
5995-823-2168	1	Cable Assembly, Special Purpose. Electrical CX-7063/U (2 ft-8 in. SC-D-173909. 80063 (Not installed)
5995-823-2169	5	Cable Assembly. Special Purpose. Electrical CX-7064/U (2 ft-8 in.) SC-D-173911. 8006.3 (Not installed)
5995-823-2167	1	Cable Assembly. Special Purpose. Electrical CX-7065/U (2 ft-8 in.) SC-D-173912. 80063 (Not installed)l
5995-823-2170	1	Cable Assembly. Special Purpose. Electrical CX-7066/U (2 ft8 in.) SC-D-173906. O(0:i3 (Not installed)
5820-893-0095	1	Dummy Load DA-269/GRC. 28 watts nom pow dissipation: 20 to .55 mHz oper. freq(. SC-DL-132830B. 80063 (Not installed)
5820-893-0094	1	Dummy Load DA-270/(GRC.1w pow dissipation; 47 to 58.4 mHz oper freq SC-DL-181150. 80063 (Not installed)
5820-221-5508	1	Mounting MT-297/CGR. (Not installed)
5340-757-2300	4	Mount. Shock M449. (Not installed)

Page 7, **paragraph 10. Subparagraph b. Delete the second sentence.**
Page 37**, appendix III. Delete appendix III.**

By Order of the Secretary of the Army:

CREIGHTON W. ABRAMS
General, United States Army
Chief of Staff

Official:

VERNE L. BOWERS
Major General, United States Army
The Adjutant General

Distribution:

To be distributed in accordance with DA Form 1251, Direct/General Support requirements for AN/GLQ-2. AN/PRC-25 and AN/VRC-12.

GPO 883-876

Changes in force: C 1 and C 2

Operator, Organizational, Field, and Depot Maintenance Manual
Test Facilities Kit, Radio MK-153/GRC

CHANGE
No. 2 }

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D. C., *22 July 1964*

TM 11-6625-408-15, 27 September 1961, 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 change.**

Page 3, paragraph 2 (page 1 of C1). Delete subparagraph c and substitute:

c. Reporting of Equipment Manual Improvements. The direct reporting, by the individual user, of errors, omissions, and recommendations for improving this manual is authorized and encouraged. DA Form 2028 (Recommended Changes to DA Publications) will be used for reporting these improvements. This form will be completed in triplicate using pencil, pen, or typewriter. The original and one copy will be forwarded direct to Commanding General, U.S. Army Electronics Command, ATTN: AMSEL-MR-MP-P, Fort Monmouth, N.J. 07703.

Page 7. Delete paragraph 10 and substitute:

10. Checking Unpacked Equipment

a. Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on DD Form 6 (para. 2).

b. See that the equipment is complete as listed on the packing slip. If a packing slip is not available, check the equipment against the list of components (para. 5) or against the basic issue items list (app. III). Report all discrepancies in accordance with TM 38750. Shortage of a minor assembly that does not affect proper functioning of the equipment should not prevent use of the equipment.

c. If the equipment has been used or reconditioned, see whether it has been changed by a modification work order (MWO). If the equipment has been modified, the MWO number will appear on the front panel or near the nomenclature plate. Check to see whether the MWO number (if any) and appropriate notations concerning the modification have been entered in the equipment manual.

Note. **Current MWO's applicable to the equipment are listed in DA Pam 310-4.**

Page 21, paragraph 25. Delete the chart and substitute:

Switch	Position	Point of measurement	Normal reading (ohms)	Possible trouble
XMITR (S102).....	ON	Pin F of.P10 to TB102	0	Open switch S102.
.....	OFF	Pin F of P108 to TB102	infinity	Shorted switch S102
TEST POINT SELECTOR (S103).	OFF	VTVM binding post TB101 to pin 7 of METERING SOCKET connector.	infinity	Shorted switch S103.
	REC OSC GRID	VTVM binding poet TB101 to pin 1 of METERING SOCKET connector.	O	Open switch S103.
	AFC DISCR OUTPUT	VTVM binding post TB101 to pin 2 of METERING SOCKET connector.	O	Open switch S103.
	REC DISCR OUTPUT	VTVM binding post TB101 to pin 38 of METERING SOCKET connector.	O	Open switch S103.
	REC LIMITER GRID.....	VTVM binding post TB101 to pin 4 of METERING SOCKET connector.	O	Open switch S103.
	AFC CONTROL.....	VTVM binding post TB101 to pin 56 of METERING SOCKET connector.	O	Open switch S103.
	GND.....	VTVM binding post TB101 to pin 6 of METERING SOCKET connector.	O	Open switch S103.

Page 28, appendix I (page 5 of C 1). Change the title of TM 38-750 to Army Equipment Record Procedures.

Page 30. Delete figure 15 and substitute new figure 15.

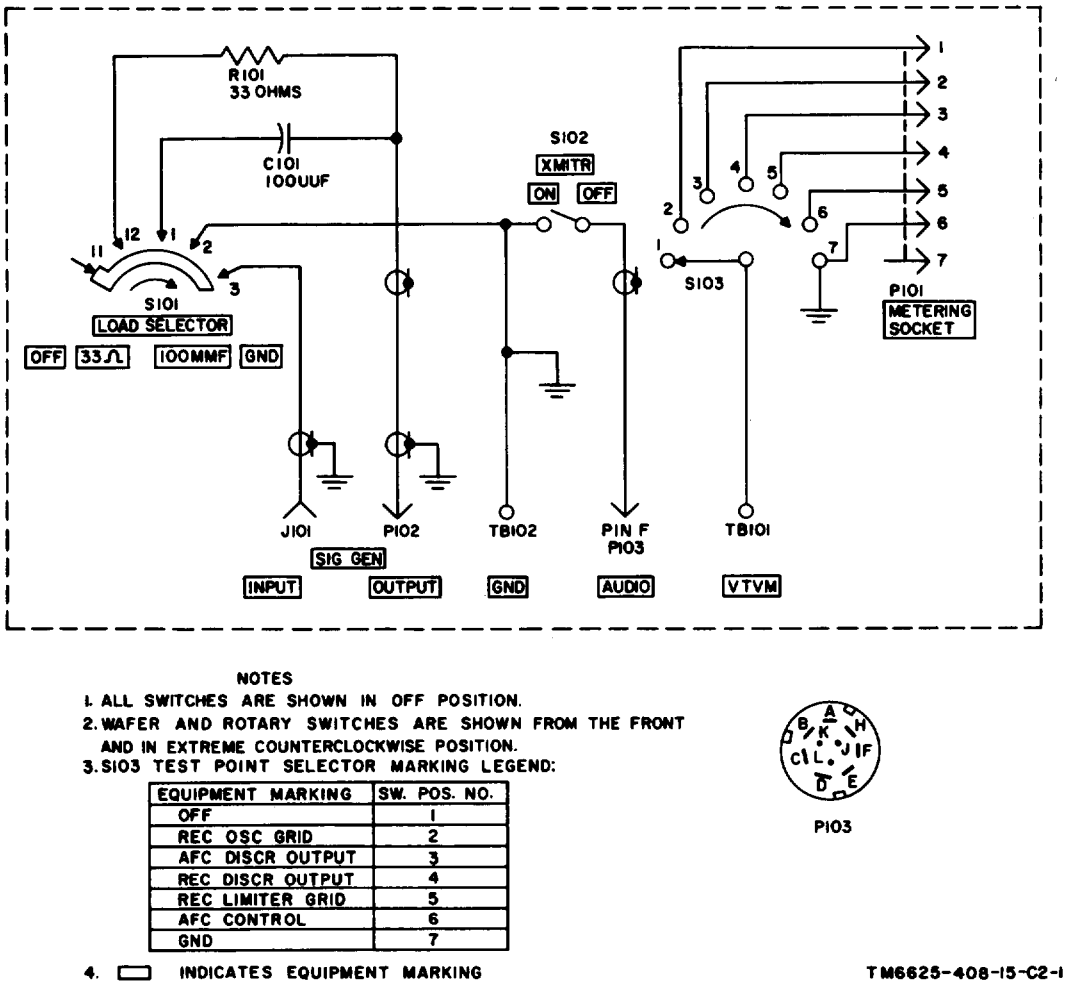

Figure 15. Adapter, Test MX-ss55/GRC, schematic diagram (Superseded).

By Order of the Secretary of the Army:

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

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

AGO U67A

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- Sig Sec GENDEP (OS) (5)
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NG: State AG (3); units--same as active Army except allowance is one copy.

USAR: None.

For explanation of abbreviations used, see AR 320-S0.

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AGO 5267A

Operator, Organizational, Field, and Depot Maintenance Manual

TEST FACILITIES KIT, RADIO MK-153/GRC

CHANGE
No. 1 }

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., *11 October 1963*

TM 11-6625-408-15, 27 September 1961, is changed as follows

Page 3. Add paragraph 1.1 after paragraph 1;

1.1. Index of Publications

Refer to the latest issue of DA Pam 310-4 to determine whether there are new editions, changes, or additional publications pertaining to the equipment. DA Pam 310-4 is an index of current technical manuals, technical bulletins, supply bulletins, lubrication orders, and modification work orders 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.

Delete paragraph 2 and substitute:

2. Forms and Records

a. Reports of Maintenance and Unsatisfactory Equipment. Use equipment forms and records in accordance with instructions in TM 38-750.

b. Report of Damaged or Improper Shipment. Fill out and forward DD Form 6 (Report of Damaged or Improper Shipment) as prescribed in AR 700-58 (Army), NAVSANDA Publication 378 (Navy), and AFR 714 (Air Force).

c. *Reporting of Equipment Manual Improvements*. The direct reporting by the individual user of errors, omissions, and recommendations for improving this manual is authorized and encouraged. DA Form 2028 (Recommended changes to DA technical manual parts lists or supply manual 7, 8 or 9) will be used for reporting these improvements. This form will be completed in triplicate using pencil, pen, or typewriter. The original and one copy will be forwarded direct to: Commanding Officer, U. S. Army Electronics Materiel Support Agency, ATTN: SELMS-MP, Fort Monmouth, N. J., 07703. One information copy will be furnished to the individual's immediate supervisor officer, noncommissioned officer, supervisor, etc.).

Page 16. Delete chapter 3 and substitute:

CHAPTER 3
OPERATOR'S MAINTENANCE

18. Scope of Maintenance

The maintenance duties assigned to the operator of the equipment are listed below together with a reference to the paragraphs covering the specific maintenance functions. No special tools or test equipment are required for operator's maintenance of the equipment.

a. Daily preventive maintenance checks and services (par. 19.2).

b. Weekly preventive maintenance checks and services (par 19.3).

c. Cleaning (par. 19.4).

19. 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 equipment is serviceable.

a. Systematic Care. The procedures given in paragraphs 19.2 through 19.4 cover routine systematic care and cleaning essential to proper upkeep and operation of the equipment.

b. Preventive Maintenance Checks and Services. The preventive maintenance checks and services charts (pars. 19.2 and 19.3) outline functions to be performed at specific intervals. These checks and services are to maintain Army electronic equipment in a combat serviceable condition; that is, in good general (physical) condition and in good operating condition. To assist operators in maintaining combat serviceability, the charts, indicate what to check, how to check, and what the normal conditions are, the references column lists the illustrations, paragraphs or manuals that contain supplementary information. If the defect cannot be remedied by the operator, higher echelon maintenance or repair is required. Records and reports of these checks and services must be made in accordance with the requirements set forth in TM 38-750.

19.1. Preventive Maintenance Checks and, Services Periods

Preventive maintenance checks and services of the equipment are required daily and weekly.

a. Paragraph 19.2 specifies the checks and services that must be accomplished daily and under the conditions listed below.

(1) When the equipment is initially installed.
(2) When the equipment is reinstalled after removal for any reason.
(3) At least once each week if the equipis maintained in standby condition.

b. Paragraph 19.3 specifies additional checks and services that must be performed on a weekly basis.

19.2. Daily Preventive Maintenance Checks and Services Chart

Sequence No.	Item	Procedure	Reference
1	End item equipment	Inspect equipment for completeness	App. III, fig. 1.
2	Exterior surfaces	Clean exterior surfaces	Par. 19.4.
3	MT-297/GR hardware	Check switches, lampholder, locking handles, J1 connector locking release, and mounting base wingnuts for looseness. Tighten loose items as necessary. Check controls for positive operation (no internal or external binding or excessive looseness).	Fig. 5.
4	Dummy antenna	Check meters for bent or sticking pointers, and cracked glass.	Fig. 1.
5	Adapters	Check switches and cover catches for positive operation.	Figs. 2 and 3.
6	Operation	Operate the equipment. During operation, be alert for any unusual signs or conditions.	Pars. 13 through 17.

19.3. Weekly Preventive Maintenance Checks and Services Chart

Sequence No.	Item	Procedure	Reference
1	Cables and shock mounts	Inspect cords, cables, and wires for chafed, cracked, or frayed insulation. Check connectors for loose, bent, broken, or missing pins. Check shock mounts for deterioration.	Fig. 1 and 13.
2	Handles and latches	Inspect handles and latches for looseness. Replace or tighten as required.	Fig. 1.
3	Metal surfaces	Inspect exposed metal surfaces for rust and corrosion.	Fig. 1.

19.4. Cleaning

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

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

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

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). After cleaning, wipe dry with a cloth.

c. Remove dust or dirt from plugs, connectors, and jacks with a bush.

> ***Caution:* Do not press on the meter face (glass) when cleaning the meter may become damaged.**

d. Clean the front panels, meters, and control knobs; use a soft clean cloth. If necessary, dampen the cloth with water; mild soap may be used for more effective cleaning. Wipe dry with a cloth.

Page 17. Delete figure 10.

Page 18. Delete figure 11.

Page 19 Delete Chapter 4 and substitute:

CHAPTER 4
ORGANIZATIONAL MAINTENANCE

20. Scope of Organizational Maintenance

This chapter contains instructions covering second echelon maintenance of the equipment. It includes instructions for performing preventive and periodic maintenance services to be accomplished by the organizational repairman.

a. Monthly preventive maintenance checks and services (par. 21.2).

b. Quarterly preventive maintenance checks and services (par. 21.4).

c. Touchup painting (par. 21.5).

21. Organizational Preventive Maintenance

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 checks and services of the equipment at the second echelon level are made at monthly and quarterly intervals unless otherwise directed by the commanding officer. The preventive maintenance checks and services should be scheduled concurrently with the periodic service schedule of the carrying vehicle for all vehicular installations.

b. Maintenance forms and records to be used and maintained on this equipment are specified in TM 38-750.

2 1.1. Monthly Maintenance

Perform the maintenance functions indicated in the monthly preventive maintenance checks and services chart (par. 21.2). A month is defined as approximately 30 calendar days of 8 hour-per-day operation. If the equipment is operated 16 hours a day, the monthly preventive maintenance checks and services should be performed at 15-day intervals. Adjustment of the maintenance interval must be made to compensate for any unusual operating conditions. Equipment maintained in a standby (ready for immediate operation) condition must have monthly preventive maintenance checks and services performed on it. Equipment in limited storage requires service before operation; it does not require monthly preventive maintenance.

21.2. Monthly Preventive Maintenance Checks and Services Chart

Sequence No.	Item	Procedure	Reference
1	Pluckout items	Inspect seating of pluckout items. Make sure that fuseholders grip fuses tightly.	Fig. 13.
2	Relays.....	Inspect relays for dirt, corrosion, and burned contacts.	Fig. 13.
3	Jacks	Inspect jacks for snug fit and good contact	Fig. 2.
4	Gaskets and insulators	Inspect gaskets, insulators, bushings, and sleeves for cracks, chipping, and excessive wear.	Fig. 13.
5	Terminal blocks	Inspect terminal blocks for loose connections and cracked or broken insulation.	Fig. 13.
6	Resistors and capacitors	Inspect resistors and capacitors for cracks, blistering, or other detrimental defects.	Fig. 13.
7	Interior	Clean interior of chassis and cabinet	Fig. 13.

21.3. Quarterly Maintenance

Quarterly preventive maintenance checks and services on the equipment are required. Periodic weekly and monthly services constitute a part of the quarterly preventive maintenance checks and services and must be performed concurrently. All deficiencies or shortcomings will be recorded in accordance with the requirements of TM 38-750. Perform all the checks and services listed in the quarterly preventive maintenance checks and services chart (par. 21.4) in the sequence listed.

21.4. Quarterly Preventive Maintenance Checks and Services Chart

Sequence No.	Item	Procedure	Reference
1	Publications	Check to see that all publications are complete,])A Pam 310-4. serviceable, and current.	
2	Modifications.....	Check DA Pam 310-4 to determine if new applicable MWO's have been published. All URGENT MWO's must be applied immediately. All NORMAL MWO's must be scheduled.	TM 38-750 and DA Pam 310-4.
3	Spare parts	Check all spare parts (organizational) for general condition and method of storage. There should be no evidence of overstock, and all shortages must be on valid requisitions.	App. III and TM 11-6625-408-25P.
4	Preservation	Check all surfaces for evidence of fungus. Remove rust and corrosion and spot-paint bare spots.	Par. 21.5.
5	Fuses.....	Check to see that all operating fuses are of correct value. Check spare fuses for proper value and quantity, (F1, 50 amperes; F2, 2 amperes).	Fig. 13.
6	Mounting.....	Check to see that all bolts, nuts, and washers are correctly positioned and properly tightened. Check for cracked, bent, or broken brackets.	None.

21.5. Touchup Painting Instructions

Clean rust and corrosion from 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 9-213.

Page 28, appendix I. Delete and substitute:

APPENDIX I

REFERENCES

Following is a list of applicable references that are available to the operator and repairman of Test Facilities Kit, Radio MK-153/GRC:

DA Pam 3104	Index of Technical Manuals, Technical Bulletins, Supply Bulletins, Lubrication Orders, and Modification Work Orders.
SIG 7 & 8, MT-297/GR	Mounting MT-297/GR.
TM 9-213	Painting Instructions for Field Use.
TM 11-284	Radio Sets AN/GR-3, -4, -5, -6, -7, and -8.
TM 11-289	Receiver-Transmitters RT-66/GRC, RT-67/GRC, and RT-68/GRC.
TM 11-290	Receiver-Transmitters RT-70/GRC, RT-70A/GRC, and Radio Receiver-Transmitter RT-70B/GRC; Field Maintenance.
TM 11-612	Operation and Organizational Manual: Radio Sets AN/PRC--8, -8A, 4, 9A, -10, -10A and -28.
TM 11-898	Radio Receiver R-108/GRC, R-109/GRC and R-110/GRC.
TM 114065	Radio Sets AN/PRC-8, -9, and -10; Field Maintenance.
TM 11-4065A	Radio Sets AN/PRC-8A, -9, -10A, and -28; Field Maintenance.
TM 11-5036	Power Supplies PP-109/GR, PP-109A/GR, PP-112/GR, and PP-112A/GR.
TM 11-5037	Generators G-8/GRC and G-8A/GRC.
TM 11-5038	Control Group AN/GRA-6.
TM 11-5039	AF Amplifier AM-65/GRC and AM-65A/GRC.
TM 11-5040	Power Supplies PP-281/GRC, PP-281A/GRC, PP-282/GRC, PP-282A/GRC, PP448/GR and PP-448A/GR.
TM 11-6625-408-25P	Organizational, Field and Depot Maintenance Repair Parts and Special Tools List: Test Facilities Kit, Radio MK-153/GRC.
TM 38-750	The Army Equipment Record System and Procedures.

By Order of the Secretary of the Army:

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

Official:

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

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NG: State AG (3); units-same as Active Army except allowance is one copy for each unit.
USAR: None.
For explanation of abbreviations used, see AR 320-50.

US. GOVERNMENT PRINTING OFFICE, 1963-700504
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US GOVERNMENT PRINTING OFFICE: 1970 - 397-106/118

TECHNICAL MANUAL
No. 11-6625-408-15

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON 25, D. C., *27 September 1961*

OPERATOR, ORGANIZATIONAL, FIELD, AND DEPOT MAINTENANCE MANUAL TEST FACILITIES KIT, RADIO MK-153/GRC

TAGO 10032A-October

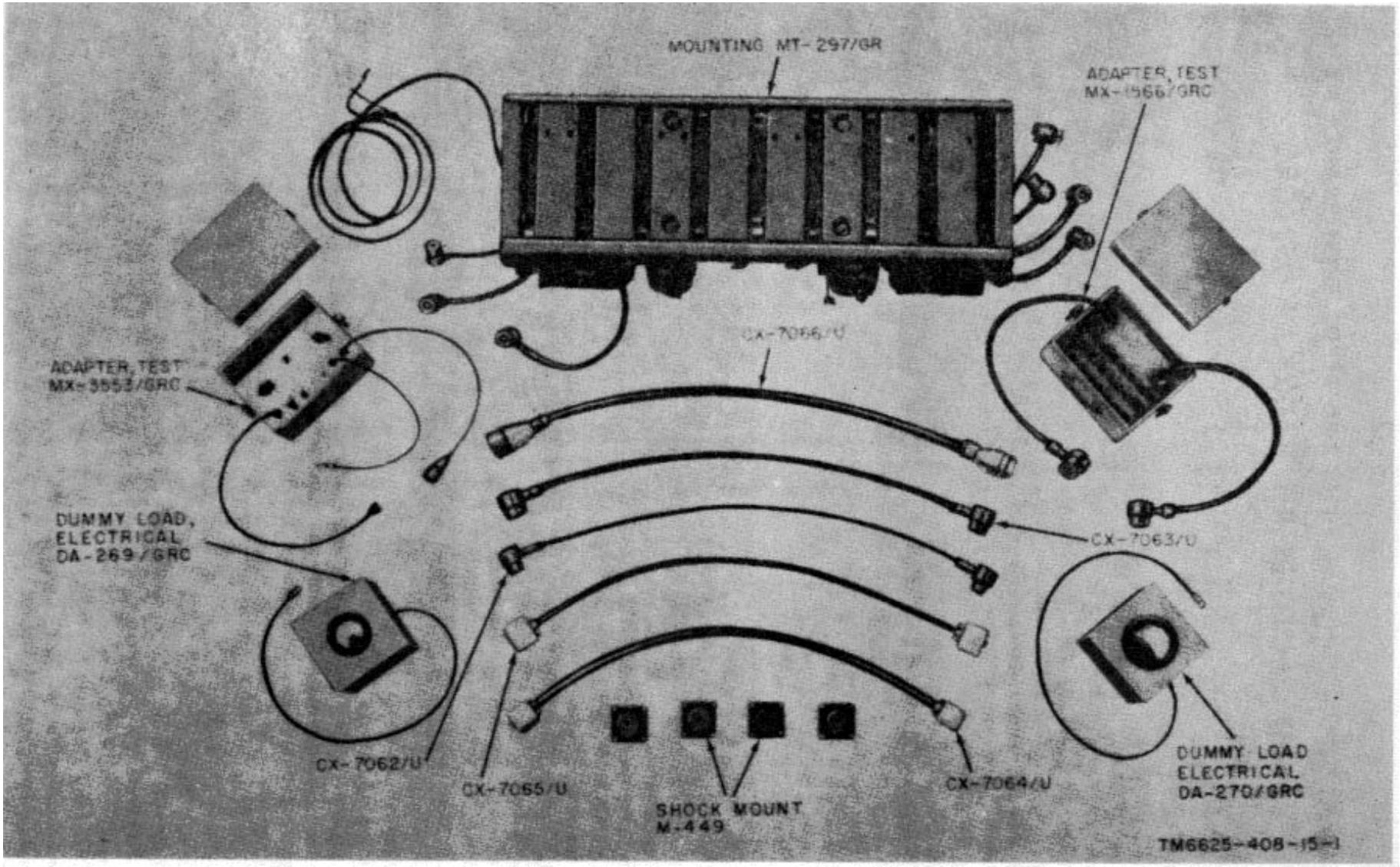

Figure 1. Test Facilities Kit, Radio MK-153/GRC.

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1. Scope

This manual describes Test Facilities Kit, Radio MK-153/GRC and covers the installation, operation, all echelons of maintenance, and repair.

2. Forms and Records

a. Unsatisfactory Equipment Reports. Fill out and forward DA Form 468 (Unsatisfactory Equipment Report) to the Commanding Officer, U.S. Army Signal Materiel Support Agency, ATTN: SIGMS-ML, Fort Monmouth, N.J., as prescribed in AR 700-38.

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

c. Preventive Maintenance Forms. Prepare DA Form 11-266 (figs. 10, 11, and 12) (Maintenance Check List for Signal Equipment (Test Equipment)) in accordance with instructions on the form.

d. Parts List Form. Forward DA Form 2028 (Recommended changes to DA Technical Manual Parts Lists or Supply Manuals 7, 8, or 9), direct to the Commanding Officer, U.S. Army Signal Materiel Support Agency, ATTN: SIGMS-ML, Fort Monmouth, N.J., with comments on parts listings.

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

Section II. DESCRIPTION AND DATA

3. Purpose and Use

a. Test Facility Kit, Radio MK-163/GRC (fig. 1) contains maintenance equipment required to facilitate third echelon and higher maintenance on components of Radio Sets AN/ GRC-3 through -8, and AN/PRC-8, -9, and -10.

b. Special cables are provided to permit panels and subchassis of the receivers and transmitters to be disassembled for troubleshooting and alignment.

c. Test adapters are provided to permit voltage and resistance measurements to be made without disassembling the sets.

d. Two dummy antennas are provided to measure the output of the transmitters; one for high power and the other for low power.

4. Technical Characteristics

a. Dummy Load, Electrical DA-269/GRC.

Type	Resistive.
Indication	0-1 amp RF meter.
Maximum power consumption.	28 w at frequency range of 20 to 55 mc.
Input impedance	40 ohms.
Weight	2 lb.

b. Dummy Load, Electrical DA-270/GRC.

Type	Resistive.
Indication	0-1560 ma RF meter.
Maximum power consumption.	1 w in the frequency range of 47.0 to 58.4 mc.
Input impedance	50 ohms.
Weight	2 lb.

c. Mounting MT-297/GR.

Input voltage	12 or 24 volts dc.
Power requirements	From 110 to 280 w, depending on number of components being tested.
Weight	58 lb.

5. Components of Test Facilities Kit, Radio MK-1 53/GRC

The components of Test Facilities Kit, Radio MK-153/GRC are listed in the basic issue items list (app. III) and are illustrated in figure 1.

Quantity	Item	Height (in.)	Depth (in.)	Width (in.)	Unit weight (lb)
1	Dummy Load, Electrical DA-269/GRC	5 3/8	4 9/16	5 3/8	2.1
1	Dummy Load, Electrical DA-270/GRC	5 3/8	4 9/16	5 3/8	1.6
1	Cable Assembly, Special Purpose, Electrical CX-7062/U	2 ft. 8 in. long			1.1
1	Cable Assembly, Special Purpose, Electrical CX-7063/U	2 ft. 8 in. long			1.1
5	Cable Assembly, Special Purpose, Electrical CX-7064/U	2 ft. 8 in. long			0.75
1	Cable Assembly, Special Purpose, Electrical CX-7065/U	2 ft. 8 in. long			0.75
1	Cable Assembly, Special Purpose, Electrical CX-7066/U	2 ft. 8 in. long			1.5
1	Adapter, Test MX-1566/GRC	4	6	8	6
1	Adapter, Test MX-3553/GRC	4	6	8	8.25
1	Mounting MT-297/GR	5	12	34	58
4	Shock Mount M-449	1 1/8	2 3/8	2 3/8	0.5
2	Technical manual 11-6625-408-15				
	Total	.....	.....	.....	81.65

6. Nomenclature and Common Names

A list of the nomenclature assignments for the components of Test Facilities Kit, Radio MK-153/GRC is given below. A common name is indicated after each item.

Nomenclature	Common name
Test Facilities Kit, Radio MK-153/GRC	Test facilities kit
Dummy Load, Electrical DA 269/GRC	High-power dummy antenna
Dummy Load, Electrical DA 270/GRC	Low-power dummy antenna.
Adapter, Test MX-1566	Set I adapter GRC.
Adapter, Test MX-3553	PRC adapter GRC.
Mounting MT-297/GR	Mounting base
Shock Mount M449	Shock mount

7. Description of Equipment

a. Dummy Load, Electrical DA-269/GRC (fig. 1). The high-power dummy antenna is a radiofrequency (RF) ammeter with a resistor ring and cable assembly mounted in a wooden box. The RF ammeter is a 0-1-ampere meter mounted on the front panel of the box. A 34 inch long coaxial cable, terminated with a coaxial connector plug, is used to connect the high-power dummy antenna to the antenna output socket of Receiver-Transmitter RT-66/ GRC, RT-67/GRC, or RT-68/GRC (receiver-transmitter).

b. Dummy Load, Electrical DA-270/GRC (fig. 1). The low-power dummy antenna is similar in appearance to the high-power dummy antenna, except its meter has a 0-150 milliampere (ma) range. A coaxial cable and connector is used to connect the low-power dummy antenna to the receiver-transmitter. The low-power dummy antenna is used only for Receiver-Transmitter RT-70/GRC.

c. CX-7062/U (fig. 1). The CX-7062/U is an 8-conductor rubber covered cable with a 9pin male connector at each end.

d. CX-706S/U (fig. 1). The CX-7063/U is a 16-conductor rubber covered cable with a 14pin male connector at each end.

e. CX-7064/U (fig. 1). The CX-7064/U is a 15-conductor rubber covered cable which is terminated at one end with a 15-pin male connector and the other end with a 15-pin female connector.

f. CX-7065/U (fig. 1). The CX-7065/U is a 20-conductor rubber covered cable. One end terminates to a 20-pin male connector and the other end to a 20-pin female connector.

g. CX-7066/U (fig. 1). The CX-7066/U is a 20-conductor rubber covered cable. It terminates at one end to a 26-pin male connector and the other end to a 26-pin female connector.

h. Adapter, Test MX-1566/GRC (fig. 2). The set 1 adapter is contained in a metal box with a cover (similar to that shown in fig. 3) that protects the panel and cable assembly of the adapter and fastens to the case with two spring catches. The adapter has two cable assemblies and 12 pairs of closed circuit jacks located on the panel. This adapter is connected between Power Supply PP-109/GR or PP112/GR (power supply) the RT-66/GRC,

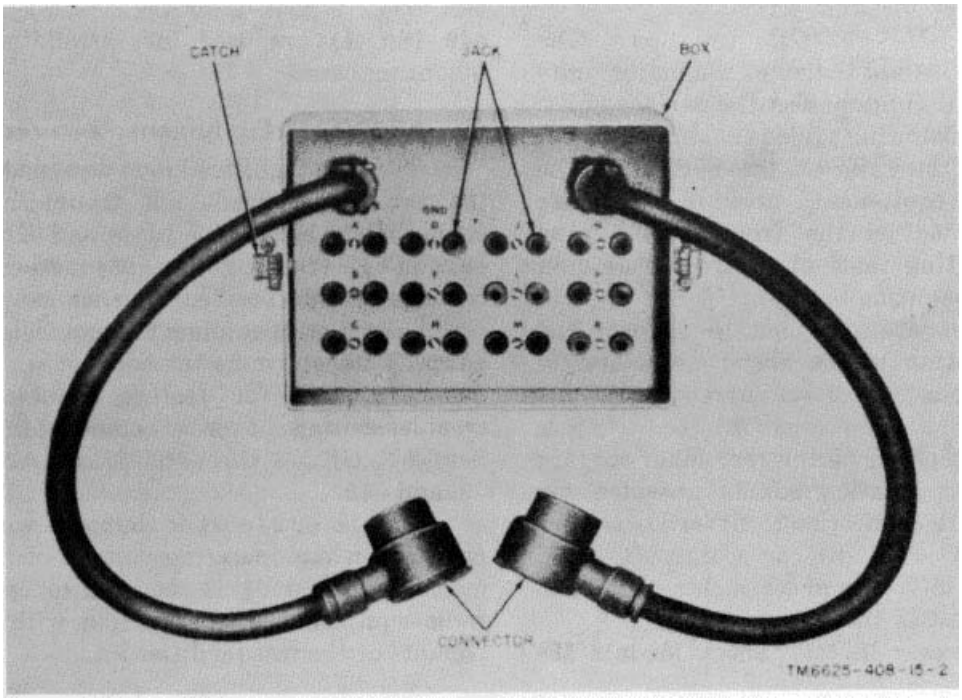

Figure 2. Adapter, Test MX-1566/GRC.

RT-67/GRC, or RT-68/GRC so that the voltage or resistance at each pin can be individually measured without removing the units from their cases or interrupting circuit operation.

i. Adapter, Test MX-355s/GRC (fig. 3). The PRC adapter is contained in a metal box with a cover. The cover protects the panel and cables when they are not in use and fastens to the case by two spring catches. The switches, cables, and binding posts are used to connect the RT70/GRC and the test equipment to the PRC adapter.

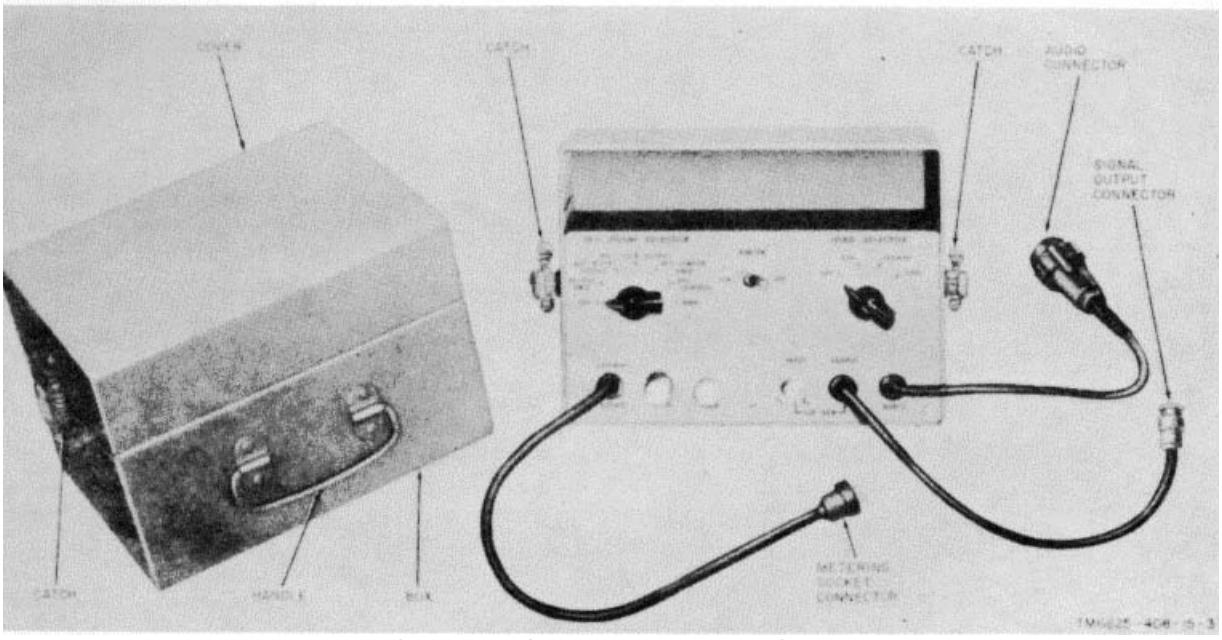

Figure 3. Adapter, Test MX-3553/GRC.

j. Mounting MT-297/GR (fig. 5). The mounting base is used to mount the major units under test and to interconnect the various units.

(1) The mounting table is channeled to engage the rails on the bottom of the radio equipment. Locking levers are provided on the front edge of the mounting table to secure the unit on the mounting base.

(2) Cables are provided to connect the mounting to the major units and to the source of direct current (dc) voltage.

(3) A receptacle on the rear inner, surface of the junction box is provided for making connection to either Local Control C-434/GRC or Control C-435/ GRC to interconnect such a control to the rest of the system.

k. Shock Mounts M-449. Shock Mounts M-449 (fig. 1) are used for installation of the mounting base.

8. Additional Equipment Required

a. The test facilities kit is designed to aid in the testing, alinement, and troubleshooting of Radio Sets AN/GRC-3, to -8 and AN/PRC-8, -9, and -10 (radio set) in conjunction with the test equipment specified for each set. Refer to the individual equipment technical manuals (app. I) to determine the additional test equipment required for testing, alinement, and troubleshooting of each component of Radio Sets AN/GRG-3 through -8 and AN/PRC-8, -9, and -10.

b. A 12or 24-volt dc source of voltage (depending on the operating voltage of the equipment being tested) is required to operate the radio equipment in conjunction with the components of the test facilities kit.

CHAPTER 2

INSTALLATION AND OPERATION

Section I. SERVICE UPON RECEIPT OF EQUIPMENT

9. Unpacking

a. Packaging Data. The test facilities kit is packed in one box per unit for shipment. The dimensions are approximately 15 by 39 by 17 inches; the volume is 5.76 cubic feet, and the weight is 125 pounds.

b. Removing Contents (fig. 4).

(1) Unpack the equipment as close to the operating position as is convenient.

(2) Cut and fold back the metal straps that encircle the wooden crate; use a pair of tin snips or a large pair of diagonal cutting pliers.

(3) Remove the top and one side of the packing case. Remove the nails with a nailpuller. Do not attempt to pry off the sides and top; the equipment may become damaged.

(4) Remove the top pad and the two manuals that are enclosed in a waterproof bag.

(5) Remove the two cartons from the wooden case.

(6) Open the two cartons and remove the components of the test facilities kit.

10. Checking Unpacked Equipment

a. Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, refer to paragraph 2.

b. Check the equipment against the packing list. When no packing list accompanies the equipment, use the basic issue items list (app. III).

11. Installation

The installation of the test facilities kit depends on the individual components to be tested. The bench used to set up the test facilities kit should be at least 3 feet wide by 6 feet long. It should be strong and sturdy and should provide enough working space for the operator.

a. Installation of Mounting MT-297GR. (fig. 5) The mounting base serves as a table and junction box for the AN/GRC-3 through -8 radio equipment to be tested. To install the mounting base, proceed as follows:

(1) Place the mounting base on the back part of the bench and bolt it down on the shock mounts (fig. 1) with bolts and nuts to prevent the mounting from moving.

(2) Connect battery cable W8 (fig. 5) of the mounting to a 12'or 24-volt dc power source, depending on the operating voltage of the radio equipment to be tested. Connect the insulated lead to the -positive'(+) terminal of the voltage source and the bare lead to the negative (-) terminal of the voltage source.

Note. Connect jumpers between terminals 14, 15, and 16; also between terminals 17 and 18 of terminal board E6 (fig. 13) of the mounting base for 12-volt operation. Re move the jumpers for 24-volt operation.

b. Connection of Cables, Adapters, and Dummy Antennas. The special purpose cables, adapters, and dummy antennas are not permanently installed, but are stored with the mounting, and used when necessary (para 12).

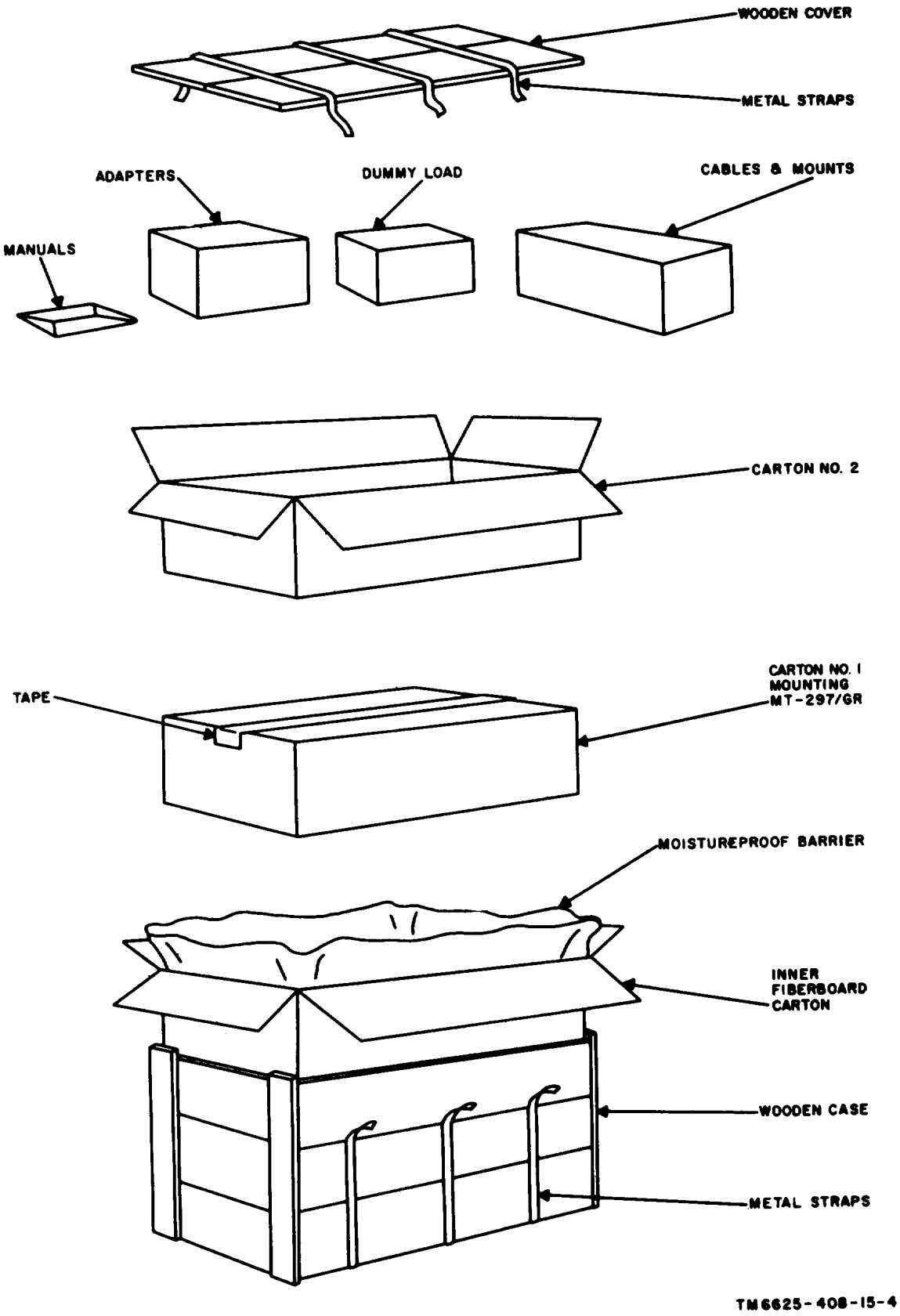

Figure 4. Typical packaging of Test Facilities Kit, Radio MK-15I/GRC.

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Section II. OPERATION

12. Controls, Indicators, and Conncetors

The following chart lists the controls, indicators, and cable connectors of the test facilities kit and describes their function:

Control, indicator, connector	Function
Mounting MT-297/GR (fig. 5):	
OFF-REMOTE-ON switch	Controls input voltage to the radio sets. OFF position: Opens voltage input circuit to the mounting. REMOTE position: Permits control of the radio equipment by the operator at Control Group AN/GRA-6. (Refer to TM 11-5038 for operating instructions.) ON position: Contents dc input voltage to the input terminals of Power Supply PP-109/GR or PP-112/GR (POWER IN cable (W5)), AF Amplifier AM-65/GRC (POWER IN cable (W4)), and Auxiliary Receiver R-10/GRC, R-109/GRC, or R-110/GRC (auxiliary equipment) (POWER IN cable (W1)).
POWER lamp	When lighted, indicates that power has been made available to the input terminals of POWER IN cables (WI, W4, and W5). Dimmer control provides for masking the glow of the lamp.
POWER IN cable (W)	Provides de power input to Auxiliary Receiver R-108/GRC, R-109/GRC, or R-110/GRC (POWER IN receptacle).
DEC CONTROL cable (W2)	Connects to REC CONTROL receptacle of Auxiliary Receiver R-108/GRC, R-109/GRC, or R-110IO/GRC.
REC-TR-CONT cable (W3)	Connects to REC-TR-CONT receptacle of Receiver-Transmitter RT-66/GRC, RT-67/GRC, or RT-68/GRC.
POWER IN cable (W4)	Connects to POWER IN receptacle of AF Amplifier AM-65/GRC.
POWER IN cable (W5)	Connects to POWER IN receptacle of Power Supply PP-109/GR or PP-112/GR.
RECTR-CONT cable (W6)	Connects to REC-TR-CONT receptacle of AF Amplifier AM-5/GRC.
INT CONT cable (W7)	Connects to INT CONT receptacle of AF Amplifier AM-65/GRC.
Battery cable (WS)	Connects to dc voltage source to apply operating voltage to the mounting base.
PRC adapter (fig. 3):	
TEST POINT SELECTOR switch	Used in conjunction with METERING SOCKET, VTVM, and GND binding posts to measure voltage at pins of test socket J7 on Receiver-Transmitter RT-70/GRC. ***Note.*** **For differences between unlettered model and A model of Radio Sets AN/PRC-8. -9, and -10. refer to paragraph 13 to determine the function of each position of the TEST POINT SELECTOR switch.**
METERING SOCKET	Connects to test socket J7 of Receiver-Transmitter RT-70/GRC, so that voltage at each pin of test socket J7 can be measured at the VTVM and GND binding posts of the PRC adapter.
VTVM and GND binding posts	Used to connect a vtvm to the PRC adapter. Positive lead of vtvm connects to VTVM binding post, negative lead of vtvm connects to GND binding post.
SIG GEN INPUT connector	Connects output of signal generator to PRC adapter.
SIG GEN OUTPUT connector	Connects signal generator signal through the LOAD SELECTOR switch to Receiver-Transmitter RT-70/GRC.
LOAD SELECTOR switch	Selects the type of load placed in series with the SIG GEN OUTPUT lead: *Position* — *Action* OFF — Opens signal generator output to SIG GEN OUTPUT lead. 33Ω — Connects a 33-ohm resistor in series with SIG GEN OUTPUT lead. Used during RT-70/GRC receiver RF alinement. 100MMF — Connects a 100-mmf capacitor in series with the SIG GEN OUTPUT lead. Used during alinement of receiver mixer, oscillator, and afc circuits. GND — Grounds the signal applied to SIG GEN OUTPUT lead.
AUDIO connector	Connects to the AUDIO connector of Receiver-Transmitter RT-70/GRC.
XMITR ON-OFF switch	Turns transmitter section of Receiver RT-70/GRC on and off through the AUDIO connector.

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Control, indicator, connector	Function
CX-7062/U (fig. 9)	Connects between RT-70/GRC POWER receptacle J3 of AF Amplifier AM-65/GRC and POWER receptacle J203 of Receiver-Transmitter RT-GRC.
CX-7063/U (fig. 6)	Connects between POWER IN receptacle J309 of RT-66/GRC, RT-67/GRC, or RT-68/GRC and POWER OUT receptacle J2 of Power Supply PP-109/GR or PP-I12/GR.
CX-7064/U (fig. 7)	Connects between front panel and subchassis to permit disassembly of sets for troubleshooting. The cables can be used for the following panel and subchassis connections. *a.* Receiver-Transmitter RT-66/GRC, RT-67/GRC, or RT68/GRC: Between J4 and P304. Between J5 and P305. Between J106 and P306. Between J107 and P307. Between J108 and P308. *b.* Receiver-Transmitter R-108/GRC, R-109/GRC, or R-1 1/GRC: Between J5 and P5. *c.* Receiver-Transmitter RT-70/GRC: Between J1 and P201.
CX-7065/U (fig. 7)	Connects between J101 and P202 of Receiver-Transmitter RT-70/GRC. (Used with cable CX-7064/U when RT-70/GRC is disassembled.)
CX-7066/U (fig. 9)	Connects between mounting base connector J1 (fig. 13) and Control C-435/GRC or local Control C-434/GRC.
Low-power dummy load (fig. 9)	Connects to ANT socket J201 of Receiver-Transmitter RT-70/GRC to act as a load and output indicator during troubleshooting, testing, and transmitter alignment.
High-power dummy load (fig. 9)	Connects to ANT socket J307 of Receiver-Transmitter RT-66/GRC, RT-67/GRC, or RT-68/GRC to act as a load and output indicator during testing, troubleshooting, and transmitter alinement.
Set I adapter (fig. 2) cable assemblies	Connects to POWER IN receptacle of Receiver-Transmitter RT-66/GRC, RT-67/GRC, or RT-68/GRC and POWER OUT receptacle of Power Supply PP-109/GR or PP-112/GR.
Test jacks	Closed circuit jacks that connect to pins of the cable, connectors corresponding to the letter identifying each pin. Used to measure voltage or resistance in Power Supply PP-109/GR or PP-112/GR and Receiver-Transmitter RT-66/GRC, RT-67/GRC, or RT-68/GRC.

13. General Operating Procedures

a. The operating procedure for the test facilities kit depends on the individual component of a complete radio set to be tested, alined, or repaired.

b. Follow the procedure below for setting up the equipment that requires troubleshooting, testing, or alinement with the components of the test facilities kit:

(1) Operate the OFF-REMOTE-ON switch on the mounting base to the OFF position.

(2) Connect the power cable connections to the dc power source.

Caution: **Be sure to connect the insulated lead to the positive terminal and the bare lead to the negative terminal of the power source. Otherwise, the radio equipment being tested or aligned will be seriously damaged.**

(3) Place the components of the radio set to be tested on the mounting base.

(4) Connect the power and control cables from the mounting base to the component on the mounting base (fig. 9).

(5) Connect Adapter, Test MX-1566/ GRC, special purpose cables, and dummy antenna as required for the test to be made.

Note. **Refer to the appropriate technical manual (app. I) for disassembly instructions if the panel and subchassis are to be disassembled.**

(6) When using the PRC adapter, operate the POWER OFF-REMOTE-ON-CAL & DIAL LITE switch on Receiver-Transmitter RT-70/GRC to the OFF position before connecting the test

equipment to the PRC adapter and the PRC adapter to the receiver-transmitter.

(7) Follow the procedures for troubleshooting, alinement, or testing the radio equipment as outlined in the appropriate technical manual (app. I).

14. Operation of PRC Adapter

(fig. 8)

a. Connect the test equipment and Radio Set AN/PRC-8, -9, or -10 to the PRC adapter as follows:

(1) Place the PRC adapter on the bench and remove the protective cover.

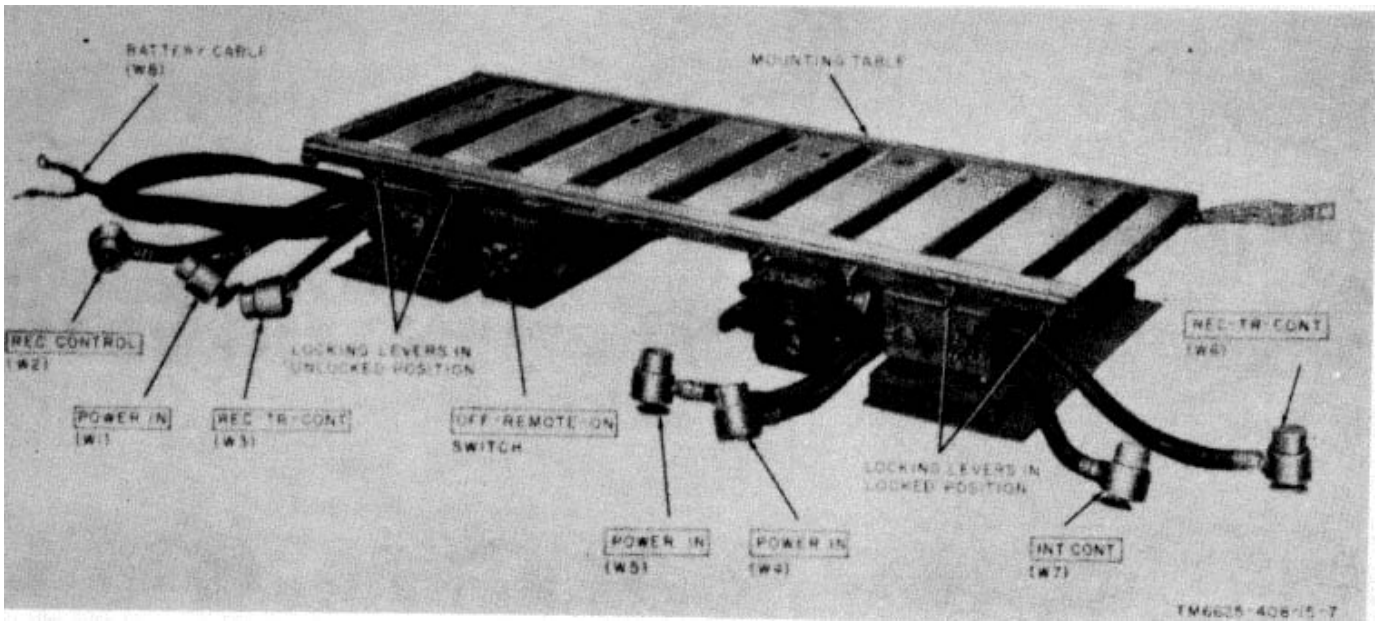


Figure 5. Mounting MT-297/GR.

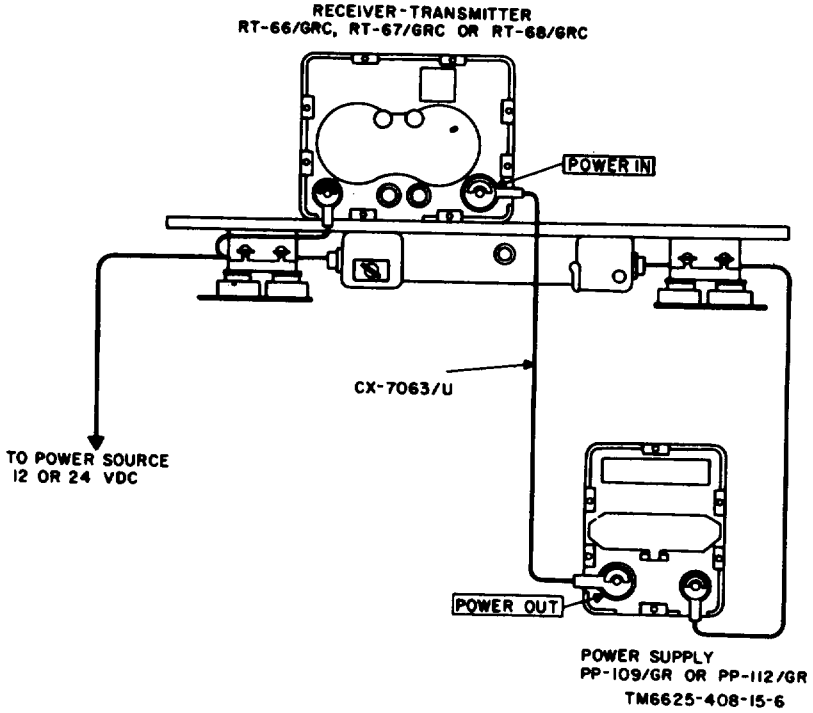


Figure 6. Typical use of cable CX-7063/U.

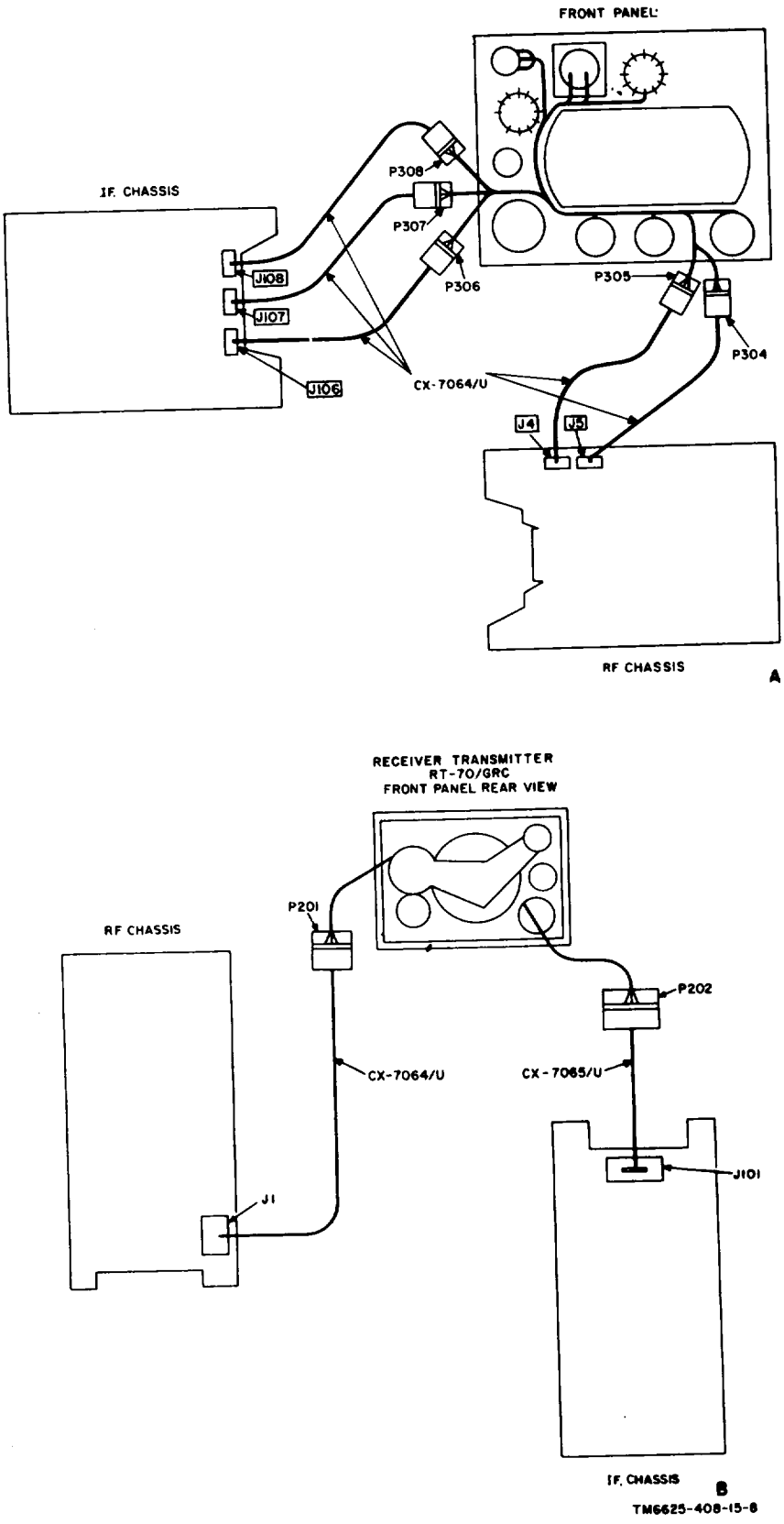


Figure 7. Typical use of cables CX-7064/U and CX-7065/U.

(2) Operate the TEST POINT SELECTOR, XMITR, and LOAD SELECTOR switches to their OFF positions.
(3) Connect the METERING SOCKET cable to test socket J7 of Receiver-Transmitter RT-70/GRC.
(4) Connect the positive lead of the VTVM to the VTVM binding post and the negative lead of the VTVM to the GND binding post.
(5) Connect the signal generator output cable connector to the SIG GEN IN-PUT receptacle.
(6) Connect the SIG GEN OUTPUT cable on the PRC adapter to AUX ANT jack J3 of Receiver-Transmitter RT-70/ GRC for rf alignment, or to the test point indicated in the alinement procedure.
(7) Connect the AUDIO cable to the AUDIO connector of Receiver-Transmitter RT-70/GRC.

b. Follow the alinement procedures given in the appropriate technical manuals (TM 114065 and TM 11-4065A). Refer to the following chart to determine the proper switch settings on the PRC adapter during the alinement procedure:

Stage to be aligned	Position of switches			Remarks
	TEST POINT SELECTOR	XMITR	LOAD SELECTOR	
Receiver mixer	REC LIMITER GRID	OFF	100 MMF	
Receiver oscillator	REC LIMITER GRID	OFF	100 MMF	
RF amplifier	REC LIMITER GRID	OFF	33Ω	
Afc	AFC DISC OUTPUT	ON	100 MMF	Not used for AN/PRC-8A, -9A, or -10A.
Transmitter (AN/PRC-8, -9, -10)	AFC CONTROL	ON	OFF	Disconnect the negative lead of vtvm from GND binding post and connect it to junction of resistors R11 and R13 Receiver-Transmitter RT-70/GRC.
Transmitter (AN/PRC-8A, -9A,-10A)	REC DISCR OUTPUT	ON	OFF	

15. Differences in Models of AN/PRC-8, -9, and -10

a. Differences exist between the unlettered model and the A model of Radio Sets AN/PRC8, -9, and -10 which affect the circuits tested when using the PRC adapter plugged into test socket J7.

b. The positions of the TEST POINT SELECTOR switch on the PRC adapter are marked to conform with the circuits of the unlettered model of the AN/PRC-8, -9, and -10.

c. Refer to the following, chart to determine the differences in the circuits being tested when using the PRC adapter with the A model of the AN/PRC-8, -9, and -10.

PRC adapter TEST POINT SELECTOR switch		
Switch position	**AN/PRC-8. -9, -10**	**AN/PRC-8A, -9A.-10A**
REC OSC GRD	Receiver oscillator grid voltage	Same.
AFC DISC OUTPUT	Afc discriminator output voltage	Transmitter oscillator grid voltage.
REC DISCR OUTPUT	Receiver discriminator output	Same.
REC LIMITER GRID	Receiver limiter grid voltage	Same.
AFC CONTROL	Afc control voltage to modulator stage	Not used.
GND	Ground	Same.

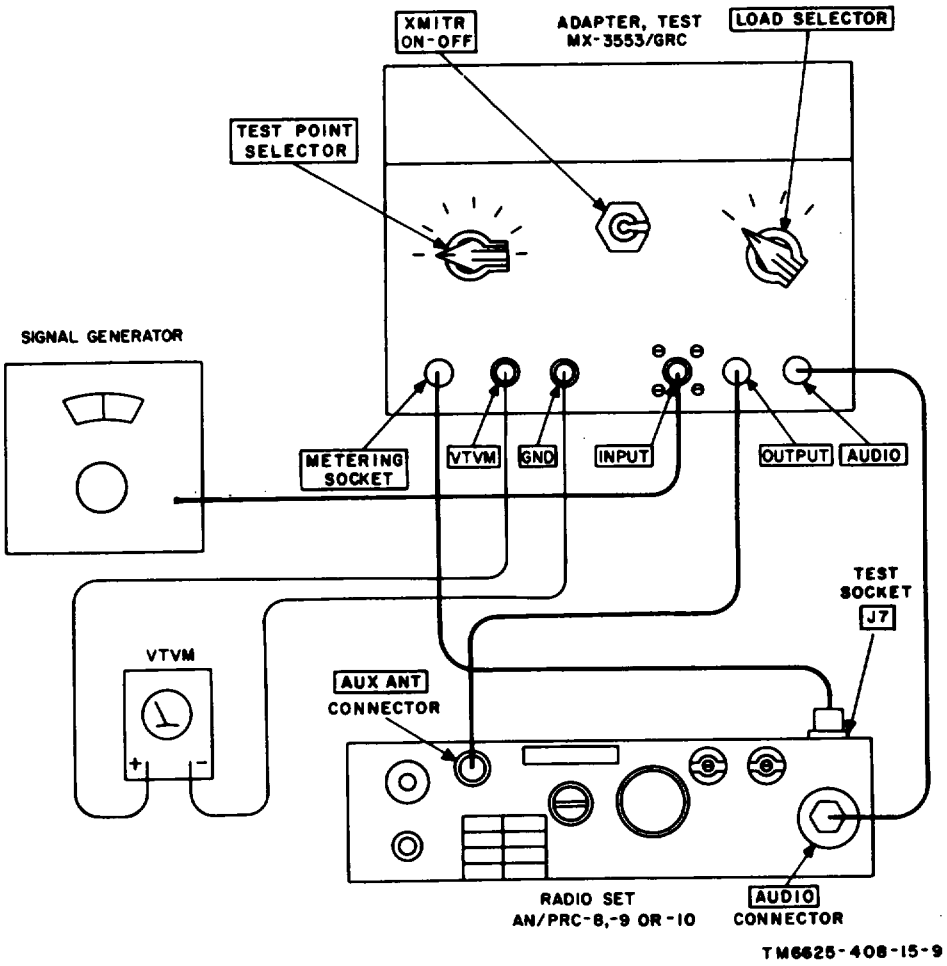


Figure 8. Typical use of PRC adapter with Radio Sets AN/PRC -8, -9, or -10

16. Operation of Set 1 Adapter (fig. 9)

a. Test Jacks. Each cable connection is completed through a pair of jacks lettered to correspond to the letter that identifies each pin of the cable connectors. The left jack of each pair connects to the left side assembly; the right jack of each pair connects to the right side cable assembly.

b. Hookup procedure. Use the following procedure to connect the set 1 adapter between Receiver-'Transmitter RT-68/GRC, RT-67/GRC, or RT-68/GRC and Power Supply PP-109/GR or PP-112/GR:

(1) Place the set 1 adapter on the bench in front of the mounting base and remove the protective cover.

(2) Connect the right-hand cable assembly connector from. the set 1 adapter to the POWER OUT receptacle of the power supply.

(3) Connect the left-hand cable assembly connector from the set 1 adapter to the POWER IN receptacle of the receiver-transmitter.

c. Voltage Measurements.

(1) Connect the positive lead of the vtvm to one jack of the desired pair of jacks of the set 1 adapter.

Note. **Either jack of the desired pair can be used for making voltage measurements.**

(2) Connect the negative lead of the vtvm to test jack D (GND).

Note. **Either jack marked D can be used for making voltage measurements.**

d. Power Supply Resistance Measurements.

(1) Connect a dummy plug into the left

jack of the desired pair (the side corresponding to the cable connected to the receiver-transmitter) to open that jack of the closed circuit pair of jacks.

(2) Connect one lead of the ohmmeter to the right jack of the desired pair (the side corresponding to the cable connected to the power supply).

(3) Connect the other lead of the ohm-meter to either jack marked D (GND).

e. Receiver-Transmitter Resistance Measurements.

(1) Connect a dummy plug into the right jack of the desired pair of jacks (the side corresponding to the cable connected to the power supply) to open that jack of the closed circuit pair.

(2) Connect one lead of the ohmmeter to the left jack of the desired pair (the side corresponding to the cable connected to the receiver-transmitter).

(3) Connect the other lead of the ohm-meter to either jack marked D (GND).

f. Normal Short Circuit, Voltage and Resistance Measurements. Refer to TM 11-289 to obtain normal short circuit, voltage and resistance measurements for Receiver-Transmitter RT-66/GRC, RT-67/GRC or RT-68/GRC. Refer to TM 11-5036 to obtain normal short circuit, voltage and resistance measurements for Power Supply PP-109/GR or PP-112/GR.

17. Stopping Procedure

a. Operate the test equipment (signal generator, vtvm, etc.) power switches to OFF.

b. Operate the radio equipment power switches to the OFF position.

c. Operate OFF-REMOTE-ON switch S1 on the mounting base to OFF.

d. Disconnect the PRC and set 1 adapters, cables CX-7062/U through CX-7066/U, low and high-power dummy loads, and mounting base connecting cables from the radio equipment.

e. Replace the PRC and set 1 adapter cables in the case.

f. Replace the PRC and set 1 adapter covers.

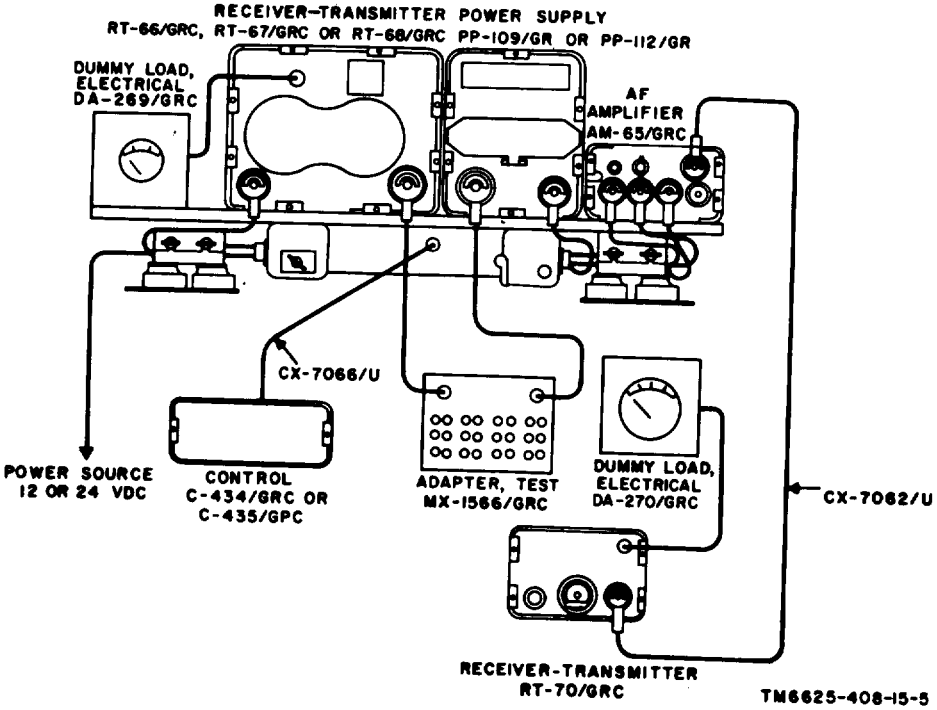


Figure 9. Typical use of low- and high-power dummy antennas, set I adapter, cables CX-7062/U and CX-706/ U.

CHAPTER 3

OPERATOR'S MAINTENANCE

18. Scope of Operator's Maintenance

a. General. Operator's maintenance of the test facilities kit is limited to dusting and cleaning exterior surfaces of the components of the kit.

b. Materials Required.

(1) Cleaning Compound (Federal stock No. 7930-395-9542).

(2) Cleaning cloth.

19. Operators Preventive Maintenance

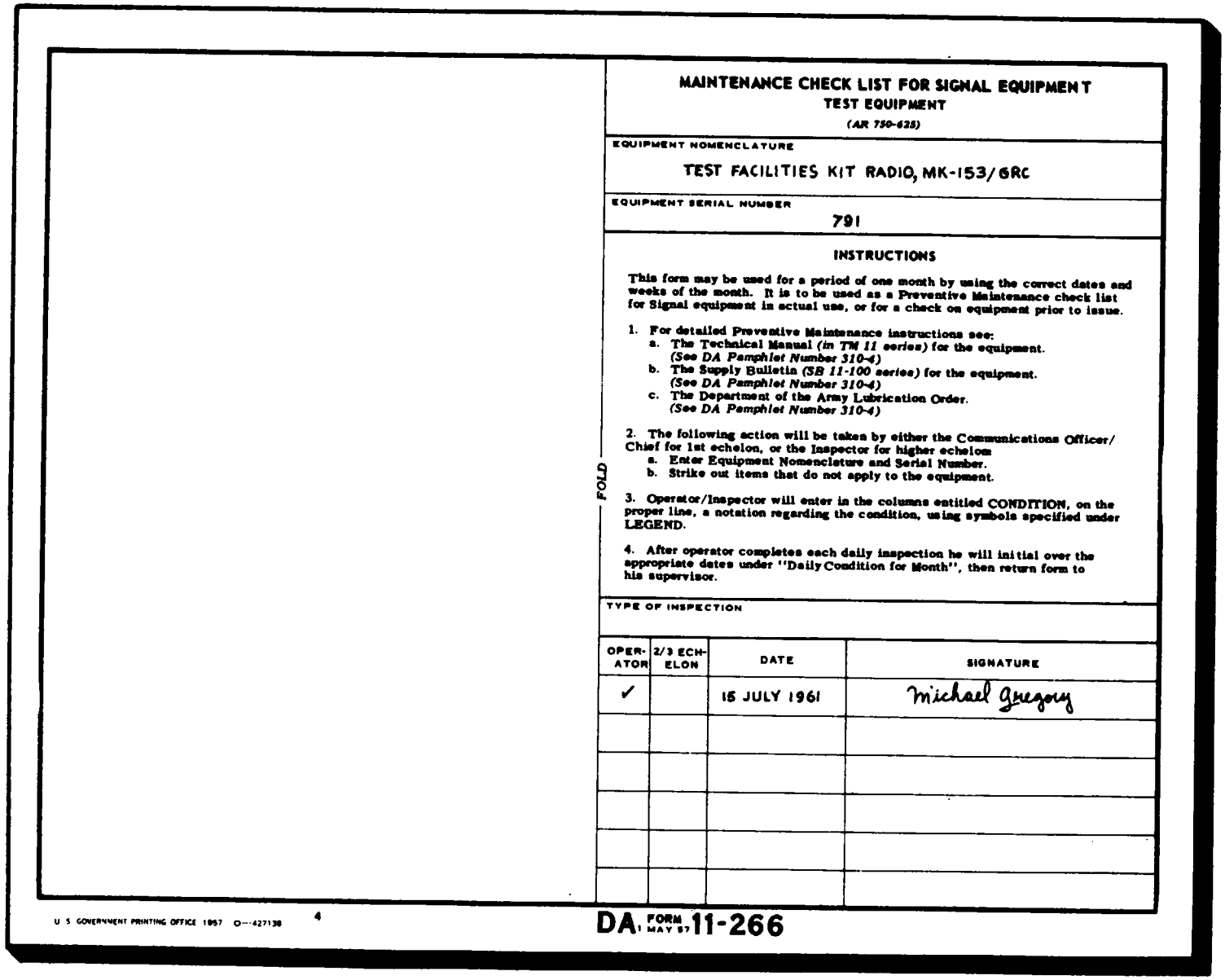
a. DA Form 11-266. DA Form 11-266 (figs. 10 and 11) is a preventive maintenance checklist to be used by the operator of the test facilities kit. When performing preventive maintenance, follow the instructions on the form.

b. Items. The information shown in the chart below supplements DA Form 11-266. The item numbers correspond to the ITEM numbers on the form.

***Warning*: Disconnect all power before performing the following operational When maintenance is completed, reconnect the power, and check for normal operation**.

Item	Maintenance procedures
1	Use a clean cloth to remove dust, dirt, moisture, and grease from all exposed surfaces of the mounting base, PRC and set 1 adapter cases and control panels, cables CX-7062/U through CX-7066/U, and low- and high-power dummy antennas. If necessary, wet the cloth with cleaning compound and then wipe with a dry, clean cloth. ***Warning*: Cleaning compound is flammable and its fumes are toxic. Do not use near a flame; provide adequate ventilation.**
2	Check and tighten, when necessary, the OFF-REMOTE-ON switch, and POWER lamp holder on the mounting base, TEST POINT SELECTOR, XMITR, and LOAD SELECTOR switches; VTVM, GND, and SIG GEN INPUT connectors on the PRC adapter.
3	Operate the OFF-REMOTE-ON switch on the mounting base, the TEST POINT SELECTOR XMITR, and LOAD SELECTOR switches on the PRC adapter, through each of their operating positions. Check for binding, loose contact, or scraping as each control is operated through its entire range.
4	During operation of the radio equipment, using the test facilities kit, observe the operation of the low- and high-power dummy antennas, PRC and set I adapters, and cables CX-7062 through CX-7066/U; any unusual condition in the performance of the test facilities kit components will require higher echelon maintenance.
5	Inspect cables CX-7062/U through CX-7066/U; METERING SOCKET, SIG GEN OUPTUT, and AUDIO cables of the PRC adapter; connecting cables of the set I adapter; and cables WI through W8 on the mounting base for cuts, breaks, deterioration and fraying. Check the pin connections on each cable for bent, broken, loose, or missing pins.
7	Check the mounting base for looseness of locking handles, J1 connector locking release, and mounting base wingnuts. Check the. PRC and set 1 adapters for looseness of handles, latches, and hinges. Tighten any component found to be loose.
10	Inspect all metal surfaces of mounting base, set 1 adapter, PRC adapter, cables CX-7062/U through CX-7066/U and low- and high-power dummy loads for rust and corrosion.
11	Inspect the low-and high-power dummy antennas for cracked or broken glass, damaged cases, or connectors.

Note. If the deficiencies noted are not corrected during inspection, indicate on DA Form 11-266 the action taken to initiate correction.



MAINTENANCE CHECK LIST FOR SIGNAL EQUIPMENT
TEST EQUIPMENT
(AR 750-625)

EQUIPMENT NOMENCLATURE

TEST FACILITIES KIT RADIO, MK-153/GRC

EQUIPMENT SERIAL NUMBER

791

INSTRUCTIONS

This form may be used for a period of one month by using the correct dates and weeks of the month. It is to be used as a Preventive Maintenance check list for Signal equipment in actual use, or for a check on equipment prior to issue.

1. For detailed Preventive Maintenance instructions see:
   a. The Technical Manual *(in TM 11 series)* for the equipment. *(See DA Pamphlet Number 310-4)*
   b. The Supply Bulletin *(SB 11-100 series)* for the equipment. *(See DA Pamphlet Number 310-4)*
   c. The Department of the Army Lubrication Order. *(See DA Pamphlet Number 310-4)*

2. The following action will be taken by either the Communications Officer/ Chief for 1st echelon, or the Inspector for higher echelons
   a. Enter Equipment Nomenclature and Serial Number.
   b. Strike out items that do not apply to the equipment.

3. Operator/Inspector will enter in the columns entitled CONDITION, on the proper line, a notation regarding the condition, using symbols specified under LEGEND.

4. After operator completes each daily inspection he will initial over the appropriate dates under "Daily Condition for Month", then return form to his supervisor.

FOLD

TYPE OF INSPECTION

OPER-ATOR	2/3 ECH-ELON	DATE	SIGNATURE
✓		15 JULY 1961	Michael Gregory

U S GOVERNMENT PRINTING OFFICE 1957 O—427138

4

DA FORM 1 MAY 57 11-266

TM6625-408-15-13

Figure 10. DA Form 11-266, pages 1 and 4.

LEGEND for marking conditions:
Satisfactory, ✓.
Adjustment, Repair or Replacement required, X.
Defect corrected, (X).

DAILY CONDITION FOR MONTH OF **JULY, 1961**

NO.	DAILY ITEM	1 M6 17	2 M6 18	3 M6 19	4 M6 20	5 M6 21	6 M6 22	7 M6 23	8 24	9 25	10 26	11 27	12 28	13 29	14 30	15 31	16	2D 3D ECHELON
1.	CLEAN DIRT AND MOISTURE FROM EXPOSED SURFACES OF HOUSINGS, CASES, CABINETS, CONTROL PANELS, INTERCONNECTING PLUGS, CABLES, HEADSETS, METER WINDOWS, ETC.	✓	✓	✓	✓	✓	✓	✓										
2.	INSPECT FOR LOOSENESS OF EXTERIOR ITEMS SUCH AS SWITCHES, KNOBS, JACKS, CONNECTORS AND PILOT LIGHTS.	✓	✓	✓	✓	✓	✓	✓										
3.	INSPECT CONTROLS FOR BINDING, SCRAPING. TAP CONTROLS LIGHTLY FOR CUT-OUT DUE TO LOOSE CONTACTS.	✓	(X)	✓	✓	✓	✓	✓										
4.	DURING OPERATION BE ALERT FOR ANY UNUSUAL PERFORMANCE OR CONDITION.	✓	✓	✓	✓	✓	✓	✓										

WEEKLY	CONDITION EACH WEEK 1ST	2D	3D	4TH	5TH	2D 3D ECH
6. INSPECT CORDS, CABLES, WIRE AND SHOCK MOUNTS FOR BREAKS, CUTS, KINKS, DETERIORATION, STRAIN AND FRAYING.	✓					
6. ~~INSPECT BANDS AND LEATHER GEAR FOR RUNGS, FRAYING, TEARS, BROKEN BUCKLES AND SNAP FASTENERS.~~						
7. HAND CHECK FOR LOOSENESS OF EXTERIOR ITEMS SUCH AS HANDLES, LATCHES, HINGES.	✓					
8. ~~INSPECT FOR LUBRICATION IN ACCORDANCE WITH APPLICABLE LUBRICATION ORDER.~~						
9. ~~INSPECT SAW CASSETTES FOR DIRT, LOOSE TERMINALS AND LEAKAGE~~						
10. INSPECT EXPOSED METAL SURFACES FOR RUST AND CORROSION.	✓					
11. INSPECT METERS FOR DAMAGED GLASS AND CASES.	X					

ADDITIONAL ITEMS FOR 2D AND 3D ECHELON INSPECTIONS	CONDITION
12. INSPECT SEATING OF READILY ACCESSIBLE ITEMS OF A PLUCK-OUT NATURE: CRYSTALS, FUSES, CONNECTORS, PLUG-IN COILS, LAMPS, ETC. DO NOT REMOVE, ROCK OR TWIST TO INSPECT. USE ONLY A DIRECT PRESSURE TO INSURE THE ITEM IS FULLY SEATED.	
13. INSPECT FOR CLEANLINESS AND TIGHTNESS OF SUCH ITEMS AS SHOCK MOUNTS, ANTENNA, ANTENNA MOUNTS AND WAVE GUIDES.	
14. INSPECT RELAY AND CIRCUIT BREAKER ASSEMBLIES FOR DIRT, CORROSION, WORN OR BURNED CONTACTS.	

ADDITIONAL ITEMS FOR 2D AND 3D ECHELON INSPECTIONS	CONDITION
15. INSPECT RESISTORS, BUSHINGS, INSULATORS FOR CRACKS, CHIPPING, BLISTERING, DISCOLORATION AND MOISTURE.	
16. INSPECT JACKS AND CONNECTORS FOR SNUG FIT AND GOOD CONTACTS.	
17. INSPECT VARIABLE CAPACITORS FOR DIRT AND MOISTURE.	
18. INSPECT AIR FILTERS FOR CLEANLINESS.	
19. INSPECT SCREWTYPE TERMINALS OF TRANSFORMERS, FIXED CAPACITORS, RESISTORS, CHOKES, POTENTIOMETERS AND RHEOSTATS FOR CORROSION, DIRT AND LOOSE CONTACTS.	
20. CLEAN AND TIGHTEN SWITCHES, BLOWERS, RELAY CASES; CLEAN INTERIOR OF CHASSIS AND CABINETS.	
21. INSPECT GENERATORS, MOTORS AND DYNAMOTORS FOR BRUSH WEAR, SPRING TENSION, ARCING AND COMMUTATOR WEAR.	
22. INSPECT TERMINAL BLOCKS FOR LOOSE CONNECTIONS, CRACKS AND BREAKS.	
23. INSPECT GASKETS AND BUSHINGS FOR WEAR AND DAMAGE.	
24. INSPECT CATHODE RAY TUBES FOR BURNED SCREEN SPOTS.	
25. BEFORE STORING OR SHIPPING REMOVE ALL BATTERIES.	

IF DEFICIENCIES NOTED ARE NOT CORRECTED DURING THE INSPECTION, INDICATE ACTION TAKEN FOR CORRECTION. *(Continue on page 4, if more space is needed)*

DUMMY LOAD, DA-269/GRC METER GLASS CRACKED.
REPORTED TO HIGHER ECHELON MAINTENANCE FOR REPAIR.

2 3

TM6625-408-15-14

Figure 11. DA Form 11-266, pages 1 and 3.

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CHAPTER 4

SECOND ECHELON MAINTENANCE

20. Scope of Second Echelon Maintenance

Preventive maintenance for items 1 through 11 shown on DA Form 11-266 (fig. 12) is the same as for operator's preventive maintenance (para. 19).

21. Second Echelon Preventive Maintenance

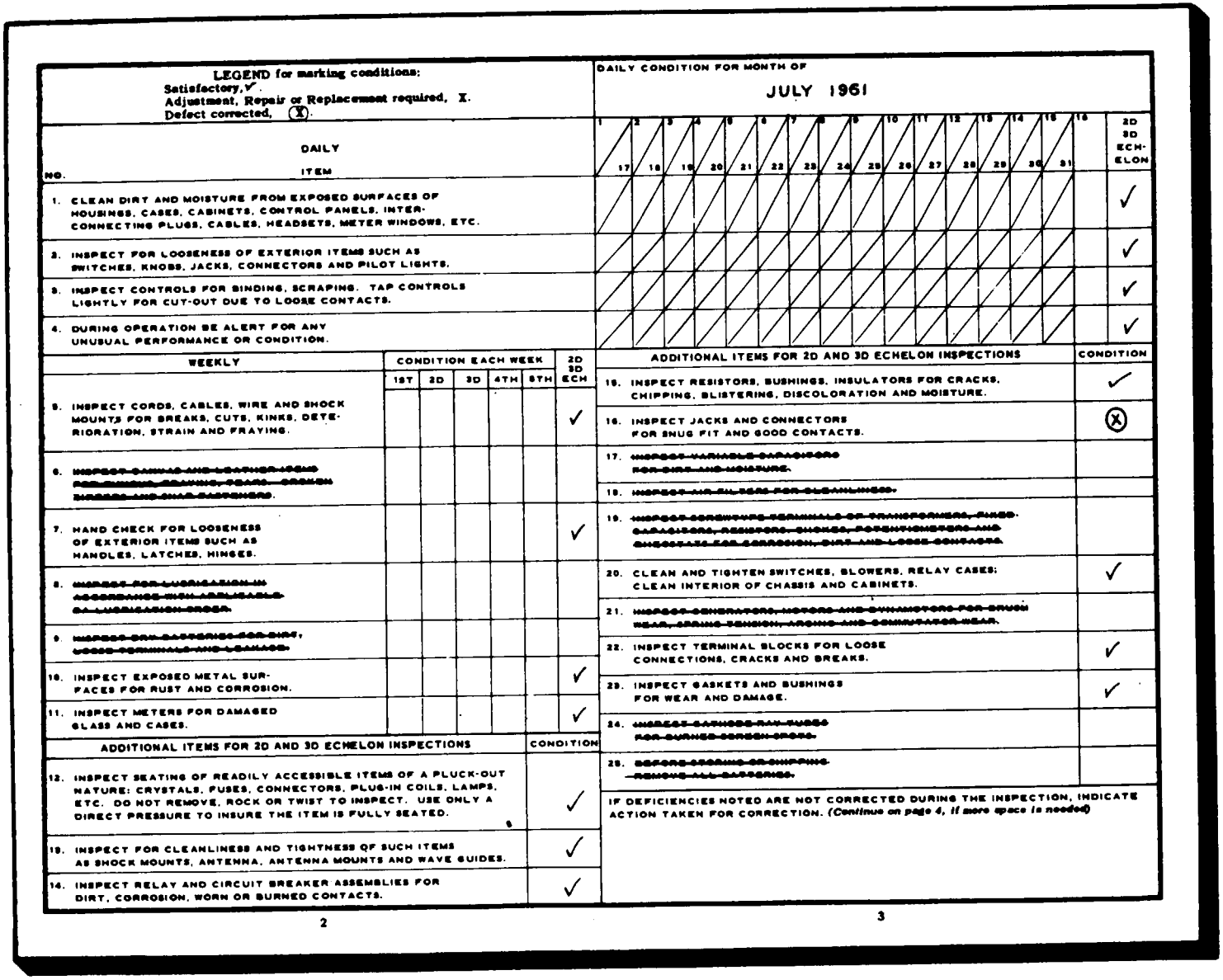
a. DA Form 11-266. DA Form 11-266 (fig. 12) is a preventive maintenance checklist to be used by second echelon personnel. Items not applicable to the test facilities kit are lined out. When performing preventive maintenance, follow the instructions on the form.

b. Items. The information shown in the chart below supplements DA Form 11-266. The item numbers correspond to the ITEM numbers on the form.

Warning: **Disconnect all power before performing the following operation & When maintenance is completed, reconnect the power, and check for normal operation.**

Item	Maintenance procedures
12	Inspect seating of fuses Fl and F2 and lamp E7 in the mounting base. Tighten the two screws that secure fuse F1; clamp if they are loose.
13	Use a clean cloth to remove dust, dirt, moisture, and grease from 8hock Mount M-449. Tighten the bolts that secure the mounts if necessary.
14	Inspect relays O1 and K1 of the mounting base for dirt and corrosion or relay terminals. Use a clean cloth to remove dirt and corrosion. If necessary, wet the cloth with Cleaning Compound (FSN 7930-395-9542) and then wipe with a dry, clean cloth. Tighten, if loose, the four bolts that secure relay K1 to the mounting.
15	Inspect the low- and high-power dummy antennas and PRC adapter for cracked, chipped, or blistering resistors and insulators.
16	Inspect the cable connections on the mounting base, set I adapter, cables CX-7062/U through CX-7066/U, and the low-and high-power dummy antennas for loose, bent, or broken pins, or bent connector shell. Insert each cable connector into its proper jack to insure snug fit and proper contact. Insert a plug into each jack on the set 1 adapter to insure snug fit and proper contact.
20	Clean and tighten OFF-REMOTE4)N switch S1 on the mounting base, and all switches on the PRC adapter.
2	Inspect all terminal blocks in the mounting base (E1 through E12) for loose or broken connections, bent or broken pins, and cracks or breaks on the terminal blocks.
3	Inspect gaskets on all components of the test facilities kit for wear and damage.

Note. **If the deficiencies noted re not corrected during inspection, indicate on DA Form 11-266 the action taken to initiate correction.**



LEGEND for marking conditions:
Satisfactory, ✓.
Adjustment, Repair or Replacement required, X.
Defect corrected, (X).

DAILY CONDITION FOR MONTH OF JULY 1961

NO.	DAILY ITEM	1 17	2 18	3 19	4 20	5 21	6 22	7 23	8 24	9 25	10 26	11 27	12 28	13 29	14 30	15 31	16	2D 3D ECHELON
1.	CLEAN DIRT AND MOISTURE FROM EXPOSED SURFACES OF HOUSINGS, CASES, CABINETS, CONTROL PANELS, INTERCONNECTING PLUGS, CABLES, HEADSETS, METER WINDOWS, ETC.																	✓
3.	INSPECT FOR LOOSENESS OF EXTERIOR ITEMS SUCH AS SWITCHES, KNOBS, JACKS, CONNECTORS AND PILOT LIGHTS.																	✓
5.	INSPECT CONTROLS FOR BINDING, SCRAPING. TAP CONTROLS LIGHTLY FOR CUT-OUT DUE TO LOOSE CONTACTS.																	✓
4.	DURING OPERATION BE ALERT FOR ANY UNUSUAL PERFORMANCE OR CONDITION.																	✓

WEEKLY	CONDITION EACH WEEK 1ST	2D	3D	4TH	5TH	2D 3D ECH
5. INSPECT CORDS, CABLES, WIRE AND SHOCK MOUNTS FOR BREAKS, CUTS, KINKS, DETERIORATION, STRAIN AND FRAYING.						✓
6. [illegible]						
7. HAND CHECK FOR LOOSENESS OF EXTERIOR ITEMS SUCH AS HANDLES, LATCHES, HINGES.						✓
8. [illegible]						
9. [illegible]						
10. INSPECT EXPOSED METAL SURFACES FOR RUST AND CORROSION.						✓
11. INSPECT METERS FOR DAMAGED GLASS AND CASES.						✓

ADDITIONAL ITEMS FOR 2D AND 3D ECHELON INSPECTIONS	CONDITION
12. INSPECT SEATING OF READILY ACCESSIBLE ITEMS OF A PLUCK-OUT NATURE: CRYSTALS, FUSES, CONNECTORS, PLUG-IN COILS, LAMPS, ETC. DO NOT REMOVE, ROCK OR TWIST TO INSPECT. USE ONLY A DIRECT PRESSURE TO INSURE THE ITEM IS FULLY SEATED.	✓
13. INSPECT FOR CLEANLINESS AND TIGHTNESS OF SUCH ITEMS AS SHOCK MOUNTS, ANTENNA, ANTENNA MOUNTS AND WAVE GUIDES.	✓
14. INSPECT RELAY AND CIRCUIT BREAKER ASSEMBLIES FOR DIRT, CORROSION, WORN OR BURNED CONTACTS.	✓

ADDITIONAL ITEMS FOR 2D AND 3D ECHELON INSPECTIONS	CONDITION
15. INSPECT RESISTORS, BUSHINGS, INSULATORS FOR CRACKS, CHIPPING, BLISTERING, DISCOLORATION AND MOISTURE.	✓
16. INSPECT JACKS AND CONNECTORS FOR SNUG FIT AND GOOD CONTACTS.	(X)
17. [illegible]	
18. [illegible]	
19. [illegible]	
20. CLEAN AND TIGHTEN SWITCHES, BLOWERS, RELAY CASES; CLEAN INTERIOR OF CHASSIS AND CABINETS.	✓
21. [illegible]	
22. INSPECT TERMINAL BLOCKS FOR LOOSE CONNECTIONS, CRACKS AND BREAKS.	✓
23. INSPECT GASKETS AND BUSHINGS FOR WEAR AND DAMAGE.	✓
24. [illegible]	
25. [illegible]	

IF DEFICIENCIES NOTED ARE NOT CORRECTED DURING THE INSPECTION, INDICATE ACTION TAKEN FOR CORRECTION. *(Continue on page 4, if more space is needed)*

2 3

TM6625-408-15-15

Figure 12. DA Form 11-266, pages 2 and 3 (second echelon).

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CHAPTER 5

FIELD AND DEPOT MAINTENANCE

Note. Unless otherwise specified, the information given in this chapter applies only to third echelon maintenance of the test facilities kit.

Section I. TROUBLESHOOTING

22. General Instructions

The test facilities kit is not an operational unit but is used in conjunction with components of the standardized series of Radio Sets AN/ GRC-3 through -8, AN/PRC-8, -9, -10 and AN/VRC series radio sets; therefore, operational tests for the test facilities kit are limited. Troubleshooting is limited to resistance and continuity measurements for a component of the test facilities kit, once that component is found to be defective.

23. Troubleshooting Procedure

a. When using a component of the test facilities kit to troubleshoot, test, or aline the radio equipment, and the test facilities kit component is suspected of being defective, replace it with one known to be good. If the replacement component operates normally, then troubleshoot and repair the defective component.

b. If no replacement is available, troubleshoot the component of the test facilities kit suspected as being faulty; use the information given in paragraphs 23 through 27 as required.

24. Continuity Checks for Special Purpose Cable Assemblies

a. Cables CX-7062/U through CX-7066/U can be checked by making continuity measurements from the pins of the connector on one end of the cable to the corresponding pins on the opposite connector.

b. When continuity measurements are made, a zero resistance measurement must be obtained between corresponding pins of each connector. An infinite resistance measurement indicates an open circuit in the cable; a measurable resistance indicates a high resistance in the cable connection.

c. All pins on cables CX-7062/U through CX-7065/U should indicate zero ohms resistance when the cable is checked for continuity. Cable CX-7066/U should indicate zero ohms resistance on all pins except G, H, J, K, L, and W. These pins should indicate an infinite resistance measurement.

25. PRC Adapter, Continuity and Resistance Measurements

The chart below gives continuity and resistance measurements within the PRC adapter. These measurements are intended to localize trouble within the PRC adapter after it has been determined that it is the probable source of trouble. When making resistance and continuity measurements, refer to the schematic diagram of the PRC adapter (fig. 15).

Switch	Position	Point of measurement	Normal reading (ohms)	Probable trouble
XMITR (S102)	ON	Pin F of P103 to TB102	0	Defective switch S102.
	OFF	Pin F of P103 to TB102	∞	Shorted switch S102.
TEST POINT SELECTOR (S103).	OFF	VTVM binding post (TB101) to pin 7 of METERING SOCKET.	∞	Defective metering socket.
	REC QSC GRID	VTVM binding post (TB101) to pin 6 of METERING SOCKET.	0	Defective wiring.
	AFC DISC OUTPUT	VTVM binding post (TB101) to pin 5 of METERING SOCKET.	0	
	REC DISC OUTPUT	VTVM binding post (TB101) to pin 4 of METERING SOCKET.	0	

Switch	Position	Point of measurement	Normal reading (ohms)	Probable trouble
LOAD SELECTOR.	REC LIMITER GRID	VTVM binding pose, (TB101) to pin 3 of METERING SOCKET.	0	
	AFC CONTROL	VTVM binding post (TB101) to pin 2 of METERING SOCKET.	0	
	GND	VTVM binding post (TB101) to pin 1 of METERING SOCKET.	0	
	OFF	SIG GEN INPUT receptacle to SIG GEN OUTPUT receptacle.	∞	Defective switch 8101.
	33Ω	SIG GEN INPUT receptacle to SIG GEN OUTPUT receptacle.	33Ω	Open resistor R101.
	100 MMF	SIG GEN INPUT receptacle to SIG GEN OUTPUT receptacle.	∞	Shorted capacitor C101.
	GND	SIG GEN INPUT receptacle to SIG GEN OUTPUT receptacle.	0	

26. Low- and High-Power Dummy Antenna Resistance Measurements

a. The low-power dummy antenna has a resistance measurement of 50 ohms when measured at the connector with the RF meter disconnected.

b. The high-power dummy antenna has a resistance measurement of 40 ohms when measured at the connector with the RF meter disconnected.

c. To check the RF meter of the low or high power dummy antenna, follow the procedure given below:

(1) Disconnect the meter from the resistor ring.

(2) Connect the ohmmeter leads to the two terminals of the RF meter.

***Caution*: Use the highest resistance range of the ohmmeter when checking continuity of the RF meter to prevent damage to the meter due to excessive current flow.**

(3) An infinite resistance measurement indicates that the RF meter is defective; the ohmmeter will indicate continuity if the meter is good.

27. Set 1 Adapter Continuity Measurements (fig. 16)

a. The set 1 adapter can be checked by making continuity measurements from the pins of connector P101 to the corresponding pins on connector P102.

b. When continuity measurements are made, a zero resistance measurement must be obtained between corresponding pins of each connector. An infinite resistance measurement indicates an open in the cables or a defective closed circuit jack.

c. When a dummy plug is inserted into one jack of a closed circuit jack pair, a zero resistance measurement must be obtained between corresponding pins of each connector. An infinite resistance measurement indicates a defective jack.

d. When dummy plugs are inserted into both jacks of a closed circuit jack pair, an infinite resistance measurement must be obtained between corresponding pins of each connector. A measurable resistance or a zero resistance measurement indicates a defective closed circuit jack or a short circuit in the wiring of connecting cable or the wiring of the set 1 adapter.

28. Localizing Trouble In Mounting MT-297/GR

a. The chart in c below lists continuity measurements that can be made in the mounting. These measurements are arranged according to individual circuits or stages of operation within an operational system. This arrangement simplifies the checking of specific wiring in the mounting.

b. Electrically disconnect all components from the mounting.

c. When making continuity measurements below, refer to the schematic diagram of the mounting base (fig. 14).

Circuit or stage	Point of measurement	Normal reading (ohm)	Probable cause
RT-66/GRC, RT-67/GRC or RT-68/GRC operation from control box:			
Transmission	From term. 5 of E6 term. C of P3.	0	Defective wiring.
	From term 1 of E6 to term. K of P3.	0	Defective wiring.
	From term. D of P3 to chassis.	0	Defective wiring.
Reception	From term. B of P3 to term. B of P7.	0	Defective wiring.
			Open contacts 2-3 of relay 01.
	From term. H to term. J of P3.	0	Defective wiring.
			Open contacts 4-5 of relay 01.
	From term. 8 of E6 to term. F of D7.	0	Defective wiring.
Auxiliary receiver operation from control box -	From term. H to term. J of D2.	0	Broken strap connection between terminals H1 and J1 of terminal strip E2.
	From term. B of P2 of term. B of D7.	0	Defective wiring. Open contacts 2-3 of relay 01.
AM-65/GRC and RT-70/GR operation from control box:			
Transmission	From term. 6 of E6toterm. C of P7.	0	Defective wiring.
	From term. 2 of E6 to term. K of P7.	0	Defective wiring.
Reception	From term. 9 of E6 to term. H of P7.	0	Defective wiring.
	From term. 8 of E6 to term. F of P7.	0	Defective wiring.
	From term. 10 of E6 to term. A of P7.	0	Defective wiring.
Miscellaneous	From term. 4 of E6 to chassis.	0	Defective wiring.
Power input circuits:			
Battery connections	From + term. of battery cable to term. B2 of relay K1.	Almost 0.	Defective wiring.
			Open fuse F1.
	From + term. of battery cable to -term. of battery cable with:		
	S1 in OFF position.	Infinity	Defective wiring. Grounded switch S1. Contacts of K1 stuck.
	S1 in REMOVE position.	Infinity	Defective wiring. Defective switch S1. Contacts of K1 stuck.
	S1 in ON position	53.5 (24v) 27.5 (12v)	Defective wiring. Defective battery cable. Open or shorted R3. Open or shorted coil of K1. Open fuse F1.
	From -term. of battery cable of chassis.	0	Open battery cable.
Auxiliary receiver power input circuit	From term. B of P1 to term. B1 of relay K1.	0	Defective wiring.
	From term. C of P1 chassis	0	Defective wiring.
	From term. B of P1 to chassis -	165	Defective wiring. Defective lamp E7.

Circuit or stage	Point of measurement	Normal reading (ohm)	Probable cause
Set 1 power input circuit.....	From term. B of P5 to term. B1 of relay K1.	0.....	Defective wiring.
	From term. C of P5 to chassis.	0.....	Defective wiring.
	From term. B of P5 to chassis.	165.....	Defective wiring. Defective lamp E7.

Section II. REPLACEMENT OF PARTS

29. General

After trouble has been localized to a particular part of a component of the test facilities kit, that part must be replaced. Procedures for the replacement of parts are given in this section.

30. Mounting MT-297/GR (fig. 13)

a. Disassembly of Cover Plates. To reach the components of the mounting base, proceed as follows:

(1) Loosen the four wingnut fasteners that hold the mounting table firm against the shock mounts.
(2) Swing the mounting table back on its hinges to make the junction box accessible.
(3) Loosen the 20 screws that secure the cover plates on the U-shaped junction box, and remove the cover plates.

b. Replacement of Pilot Lamp.

(1) Slide the lamp socket (with lamp) out of the bakelite sleeve.
(2) Press in on the lamp, turn it counter-clockwise, and remove it from the lampholder.
(3) Press the replacement lamp into the lampholder and turn the lamp clock-wise to secure it in the lampholder.
(4) Replace the lamp socket.

c. Replacement of Fuses.

***Warning*: Do not attempt to replace fuses unless the power cable (W8) has been removed from the source of dc voltage.**

(1) To remove fuse F1, grasp the fuse and pull it straight up; do not rock the fuse. in the fuseholder. To replace fuse F1, place the fuse between the metal clamps and press into the fuseholder.
(2) To replace fuse F2, remove the two screws from the two fuse retaining bars.
(3) Remove the defective fuse and replace it with a fuse of the proper rating.
(4) Replace the retaining bars and screws.

d. Replacement of Relay 01.

(1) Unsolder the lead or leads connected to each terminal of the relay and label each wire so that it will be resoldered to the proper terminal.
(2) Remove the three bolts that secure the relay to the mounting base.
(3) Remove the defective relay and insert the replacement relay in the exact position as the one removed.
(4) Replace the three bolts to secure the relay in the mounting.
(5) Clean the relay terminal posts and wires to be soldered to remove dirt and excess solder.
(6) Resolder all wires to the new relay.

e. Replacement of Relay K1.

(1) Remove the bolt from each of the four leads on the relay and remove each lead. Label each lead so that it will be replaced on the proper terminal.
(2) Remove the two nuts that secure the relay to the mounting base, and remove the defective relay.
(3) Insert the replacement relay in the same position as the one removed, and replace the two nuts to secure the relay to the mounting base.
(4) Reconnect the proper lead to each terminal of the relay and replace each bolt.

f. Replacement of Cables (W1 Through W8).

(1) Unsolder the leads of the defective cable from the lugs on the terminal

board. Label each lead so that it will be resoldered to the proper terminal.

(2) Remove the bondnut, metal ring, and rubber washer from the defective cable entry on the mounting base and remove the defective cable.

(3) Use the defective cable as a guide to cut the insulation from each conductor of the replacement cable.

(4) Slip the bondnut, metal ring, and rubber washer (in the order listed) over -the replacement cable and insert the cable through the entry into the mounting base.

(5) Solder the individual leads of the cable to the correct lugs on the terminal board.

(6) Tighten the bondnut on the cable entry clamp with a wrench.

31. PRC Adapter

a. Disassembly of PRC Adapter. To remove the panel from the case of the PRC adapter, remove the mounting screws on the panel and slide it out of the case. Be careful not to damage any wiring or components while removing or handling the unit.

b. Replacement of cables.

(1) Unsolder the lead or leads of the defective cable from the circuit in the PRC adapter. Label each wire so that the wires of the replacement cable will be resoldered to the proper terminals.

(2) Remove the defective cable from the PRC adapter.

(3) Use the defective cable as a guide to cut the insulation from the replacement cable.

(4) Insert the replacement cable through the rubber grommet in the panel and resolder the leads of the cable to the correct terminals.

c. Replacement of switches.

(1) Unsolder the leads connected to each terminal of the defective switch and label

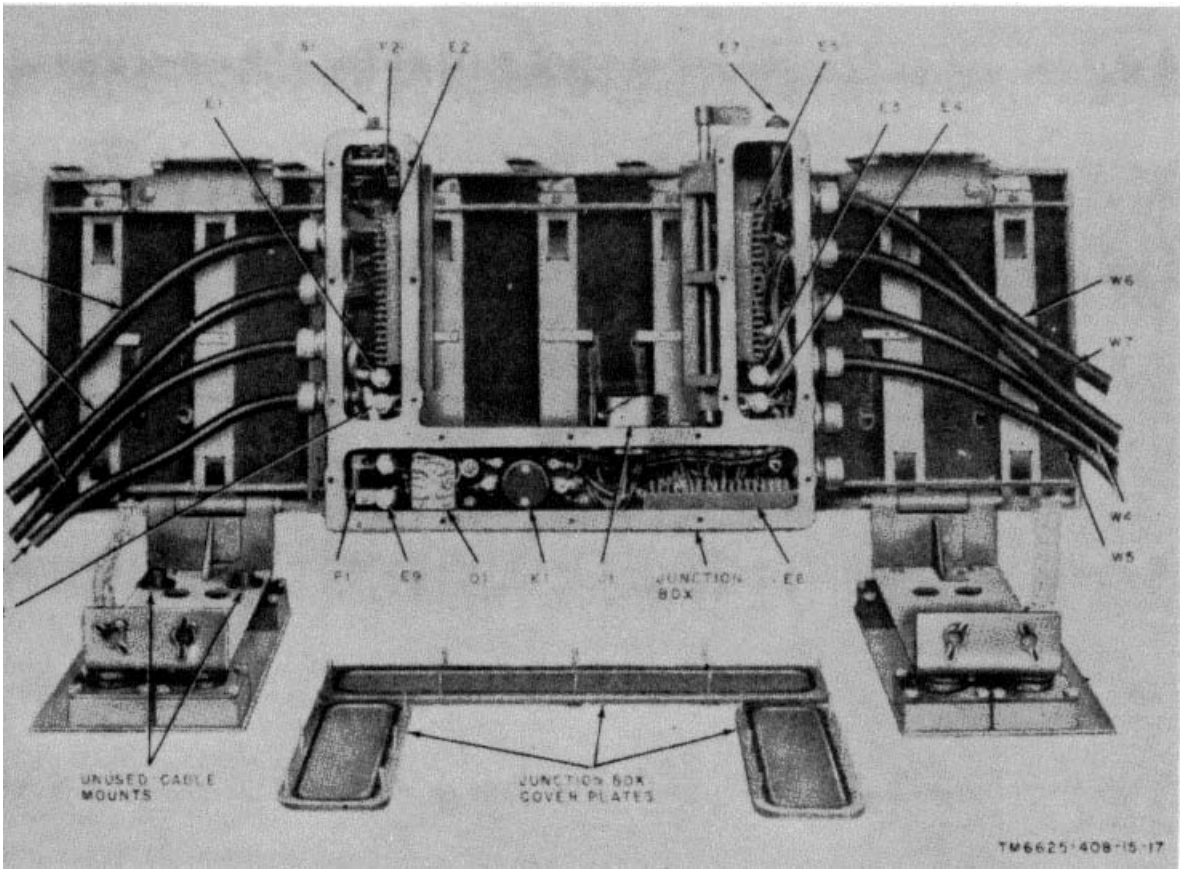

Figure 13. Mounting MT-297/GR, open view.

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each wire so that it will be resoldered to the proper terminal.

(2) Remove the nut that secures the switch to the panel and remove the defective switch.

(3) Insert the replacement switch and replace the retaining nut.

(4) Clean the switch contacts and wires to be soldered to remove any dirt and excess solder.

(5) Resolder all wires to the new switch.

32. Low- and High-Power Dummy Antennas

a. Replacement of Meters.

(1) Tag and disconnect the leads to the meter terminals.

(2) Remove the four mounting screws and pull the meter from the front panel.

(3) Mount the replacement meter in the opening and secure it with the mounting screws.

(4) Solder the tagged leads to the terminals of the replacement meter.

b. Replacement of Resistors.

(1) Remove the meter from the case; follow the procedure listed in a (2) above.

(2) Unsolder the defective resistor or resistors from the resistor ring.

(3) Insert the replacement resistor in the same position as the resistor that had been removed, and wrap the resistor leads at least 1 ’ turns around the resistor ring.

(4) Resolder the resistor to the resistor ring.

CHAPTER 6

SHIPMENT, LIMITED STORAGE, AND DEMOLITION TO PREVENT ENEMY USE

Section I. SHIPMENT AND LIMITED STORAGE

33. Disassembly of Equipment

a. Disconnect the battery cable (WS) of Mounting MT-297/GR from the power source.

b. Coil all cords on the mounting base neatly and secure them with waterproof tape.

c. Coil all special purpose cables and secure them with waterproofed tape.

d. Place the PRC and set 1 adapter cables in their cases and replace the metal covers.

34. Repackaging for Shipment and Limited Storage

The exact procedure for repackaging depends on the material available and the conditions under which the equipment is to be shipped or stored. Adapt the procedures outlined below whenever the circumstances permit. The information concerning the original packaging (para. 9) will also be helpful.

a. Material Requirements. The following materials are required for packaging the test facilities kit:

Material	Quantity
Moistureproof paper	12 sq ft
Waterproof tape	12 ft
Corrugated cardboard	12 sq ft
Gummed tape	12 ft
Wadding material	5 lb

b. Repackaging. Package the test facilities kit as follows:

(1) Wrap the mounting base in moisture-proof paper.
(2) Secure the wrap with waterproof tape.
(3) Pack the mounting base in a corrugated cardboard carton, and cushion on all surfaces with wadding material.
(4) Secure the carton with gummed tape.
(5) Wrap the PRC adapter, set 1 adapter, low- and high-power dummy antennas and each special purpose cable in moistureproof paper and secure each wrap with waterproof tape.
(6) Pack the individual units in a corrugated cardboard carton and cushion each unit with wadding material.
(7) Secure the carton with gummed tape.
(8) Place both cartons into one large carton, and seal with gummed tape.

Section II. DEMOLITION OF MATERIAL TO PREVENT ENEMY USE

35. Authority for Demolition

Demolition of the equipment will be accomplished only upon the order of the commanding officer. The destruction procedure contained in paragraph 36 will be used to prevent further use of the equipment.

36. Methods of Destruction

Any or all of the methods of destruction given below may be used. The time available will be the major determining factor for the method used. The tactical situation also will determine in what manner the destruction order will be carried out.

a. Smash. Use sledges, axes, hammers, crowbar, and any other heavy tools available to smash the components of the test facilities kit. Smash meters and controls with the heaviest tool on hand.

b. Cut. Use axes, machetes, and similar tools to cut cables, cording, and wiring. Cut all cables and cords in a number of places. If time permits, slash the interior wiring and cabling.

c. Burn. Burn as much of the equipment as is flammable; use gasoline, oil, flame-thrower, or similar tools. Burn instruction literature first. Pour gasoline on the cut cables and interior wiring and ignite it.

d. Dispose. Bury or scatter the destroyed parts in slit trenches, foxholes, or throw them into streams.

APPENDIX I

REFERENCES

Following is a list of applicable references that are available to the operator and repairman of Test Facilities Kit, Radio MK-153/GRC:

SIG 7 & 8, MT-297/GR	Mounting MT-297/GR.
TM 11-284	Radio Sets AN/GRC-3, -4, -5, -6, -7, and -8.
TM 11-289	Receiver-Transmitters RT-66/GRC, RT-67/GRC, and RT-68/GRC.
TM 11-290	Receiver-Transmitters RT-70/GRC, RT-70A/GRC, and Radio Receiver-Transmitter RT-70B/GRC; Field Maintenance.
TM 11-612	Radio Sets AN/PRC-8, -8A, -9, -9A, -10, -10A, and -28; Operation and Organizational Maintenance.
TM 1-898	Radio Receivers R-108/GRC, R-109/GRC and R-110/GRC.
TM 11-898	Radio Sets AN/PRC-8, -9, and -10; Field Maintenance.
TM 11-4065A	Radio Sets AN/PRC-8A, -9, -10A, and -28.
TM 11-5036	Power Supplies PP-109/GR, PP-109A/GR, PP-112/GR, and PP-112A/GR.
TM 11-5037	Generators G-8/GRC and G-8A/GRC.
TM 11-5038	Control Group AN/GRA-6.
TM 11-5039	AF Amplifier AM-65/GRC and AM-65A/GRC.
TM 11-5040	Power Supplies PP-281/GRC, PP-281A/GRC, PP-282/GRC, PP-282A/GRC, PP-448/GR and PP-448A/GR.

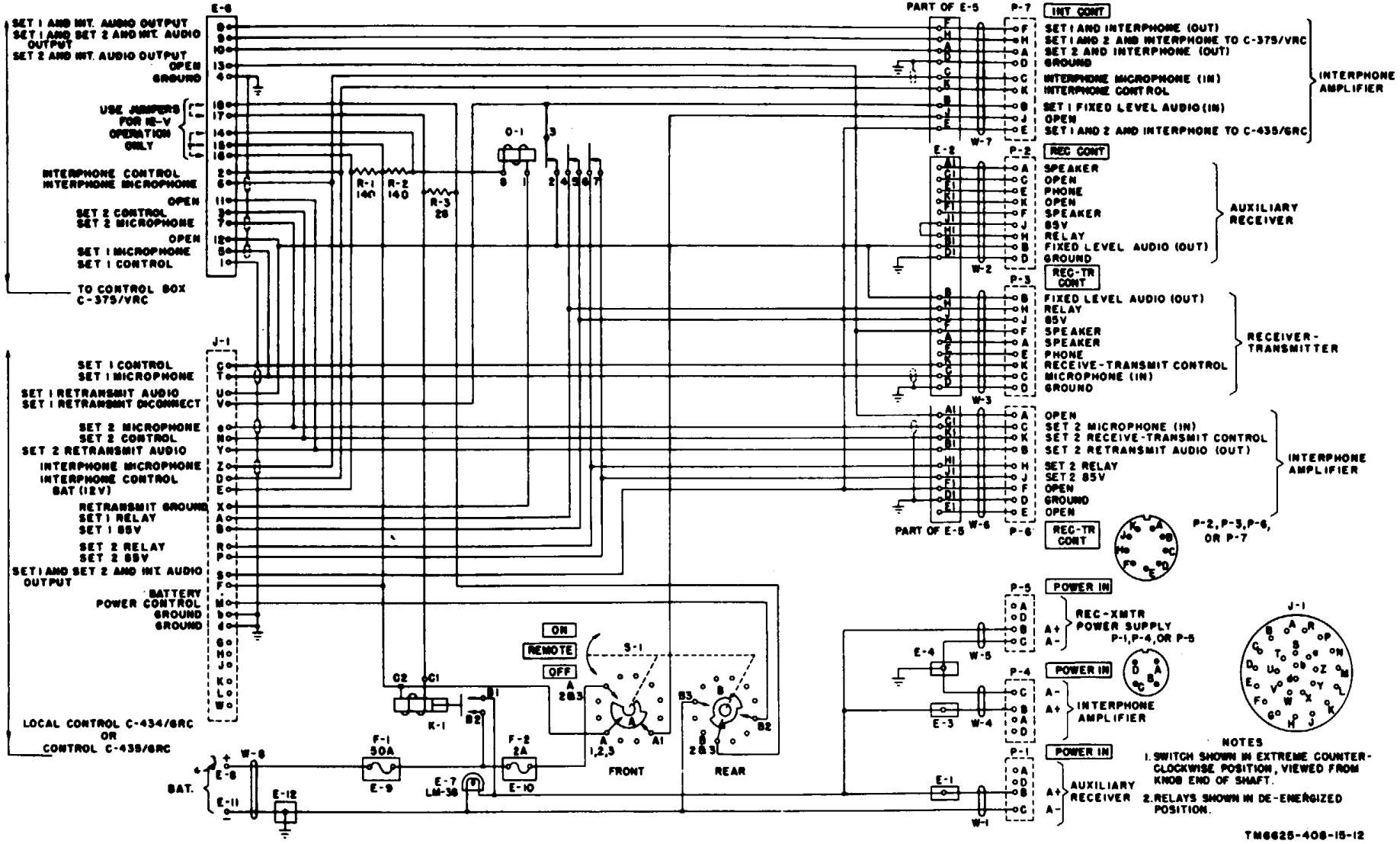

Figure 14. Mounting MT-297/GR, schematic diagram.

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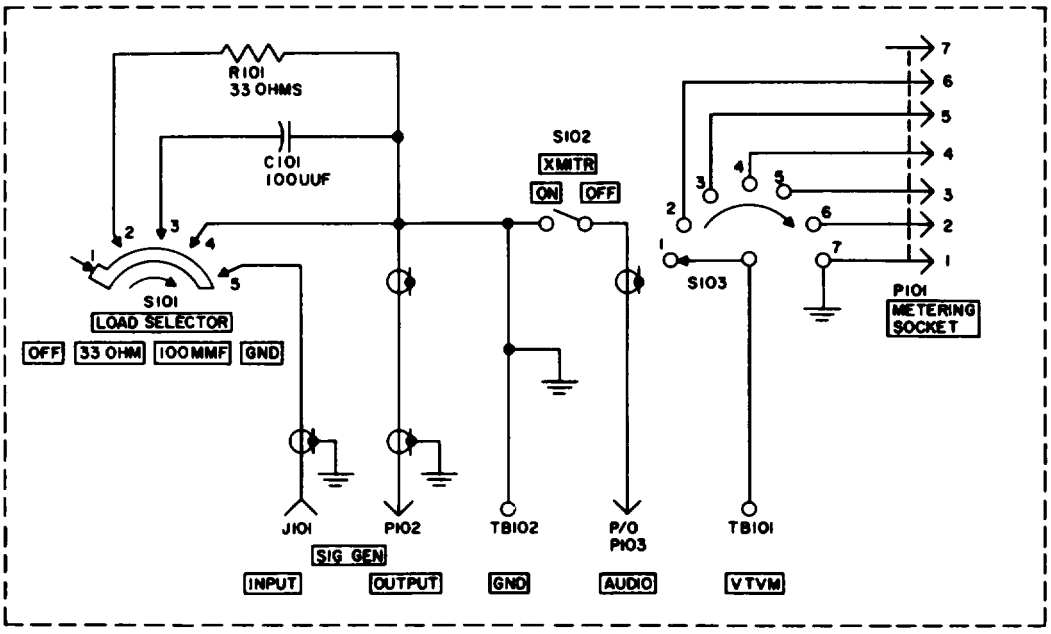

NOTES

1. ALL SWITCHES ARE SHOWN IN OFF POSITION.
2. WAFER AND ROTARY SWITCHES ARE SHOWN FROM THE FRONT AND IN EXTREME COUNTERCLOCKWISE POSITION.
3. S103 TEST POINT SELECTOR MARKING LEGEND:

EQUIPMENT MARKING	SW. POS. NO.
OFF	1
REC OSC GRID	2
AFC DISCR OUTPUT	3
REC DISCR OUTPUT	4
REC LIMITER GRID	5
AFC CONTROL	6
GND	7

4. ▭ INDICATES EQUIPMENT MARKING

P103

TM6625-408-15-10

Figure 15. Adapter Test MX-3553/GRC, schematic diagram.

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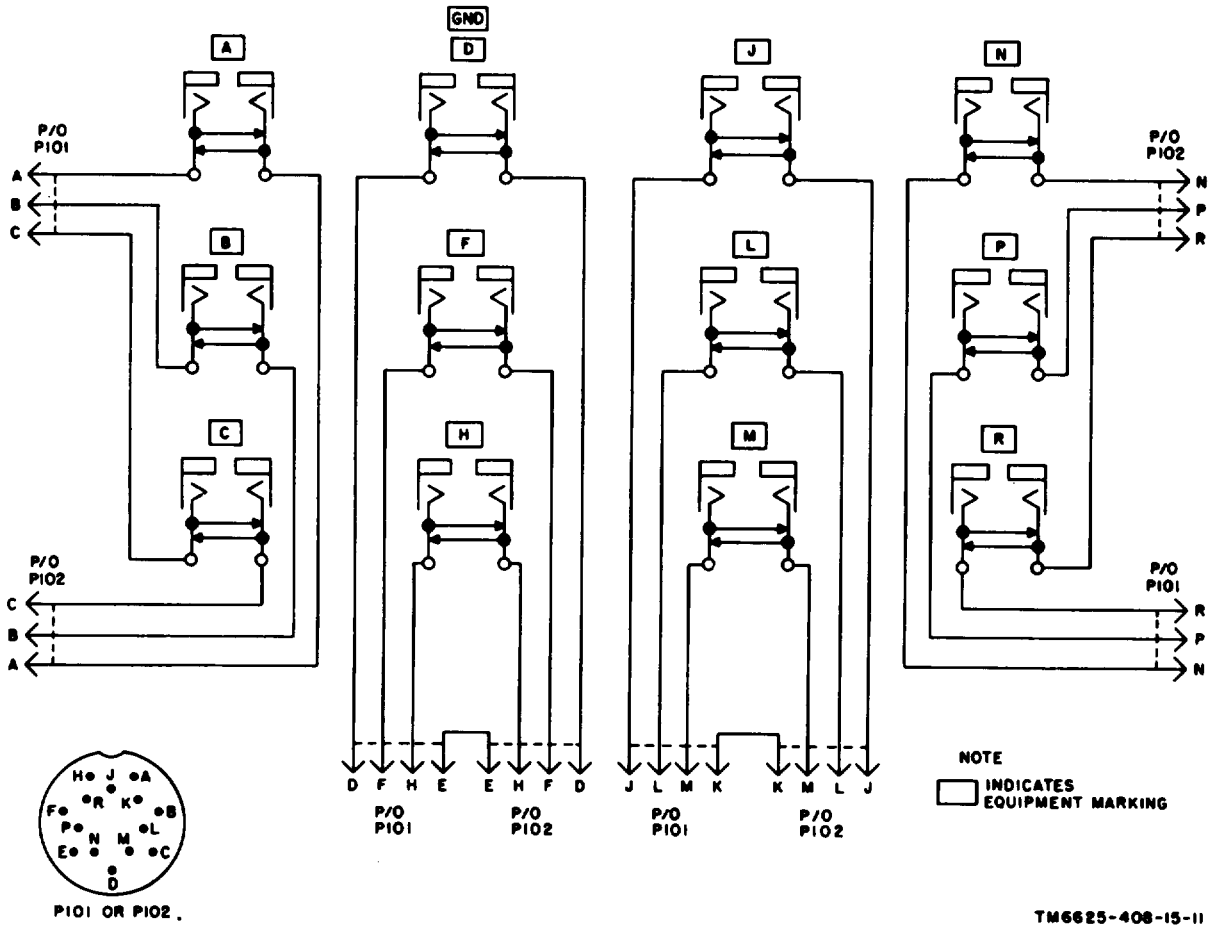
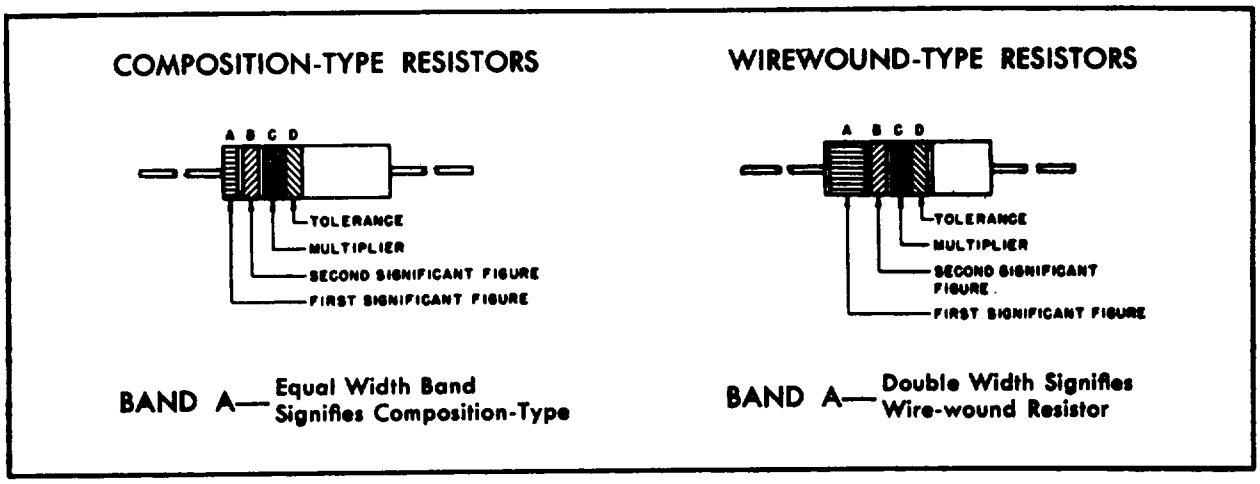
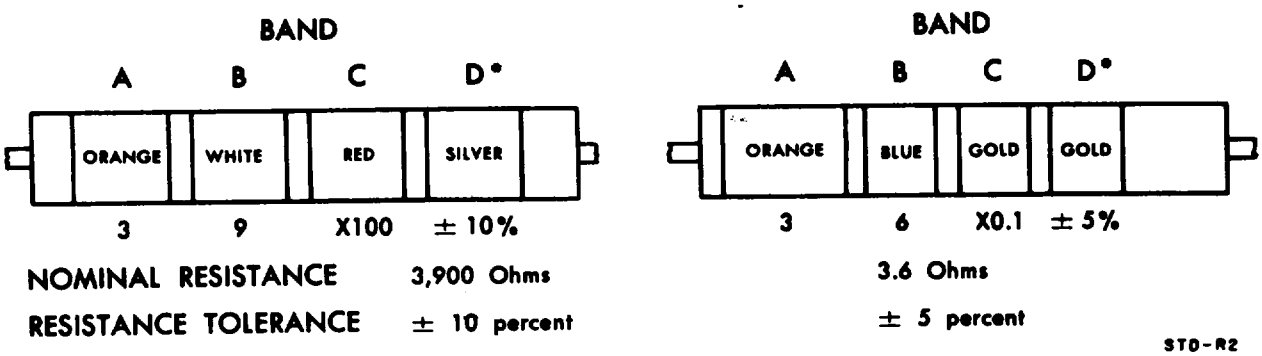


Figure 16. Adapter Test MX-1566/GRC, schematic diagram.



COLOR CODE TABLE

BAND A		BAND B		BAND C		BAND D*	
COLOR	FIRST SIGNIFICANT FIGURE	COLOR	SECOND SIGNIFICANT FIGURE	COLOR	MULTIPLIER	COLOR	RESISTANCE TOLERANCE (PERCENT)
BLACK	0	BLACK	0	BLACK	1		
BROWN	1	BROWN	1	BROWN	10		
RED	2	RED	2	RED	100		
ORANGE	3	ORANGE	3	ORANGE	1,000		
YELLOW	4	YELLOW	4	YELLOW	10,000	SILVER	± 10
GREEN	5	GREEN	5	GREEN	100,000	GOLD	± 5
BLUE	6	BLUE	6	BLUE	1,000,000		
PURPLE (VIOLET)	7	PURPLE (VIOLET)	7				
GRAY	8	GRAY	8	SILVER	0.01		
WHITE	9	WHITE	9	GOLD	0.1		



- If Band D is omitted, the resistor tolerance is ±20%, and the resistor is not Mil-Std.

Figure 17. MIL-STD resistor color codes.

Figure 18. MIL-STD capacitor color codes.
(Located in back of manual)

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APPENDIX II

MAINTENANCE ALLOCATION

Section I. INTRODUCTION

1. General

a. The maintenance allocation chart assigns maintenance functions and repair operations to be performed by the lowest appropriate maintenance echelon.

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

(1) *Part or component*. This column shows only the nomenclature or standard item name. Additional descriptive data are included only where clarification is necessary to identify the part. Components and parts comprising a major end item are listed alphabetically. Assemblies and subassemblies are in alphabetical sequence with their components listed alphabetically immediately below the assembly listing.

(2) *Maintenance function*. This column indicates the various maintenance functions allocated to the echelon capable of performing the operations.

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

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

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

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

(e) *Replace*. To substitute service assemblies, subassemblies, and parts for unserviceable components.

(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, inspecting, cleaning, preserving, adjusting, replacing, welding, riveting, and straightening.

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

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

(i) *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.

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

(3) *1st, 2d, 3rd, 4th, 5th echelon*. The symbol X indicates the echelon responsible for performing that particular maintenance operation, but does not necessarily indicate that repair parts will be stocked at that level. Echelons higher than the echelon marked by X are authorized to perform the indicated operation.

(4) *Tools required*. This column indicates codes assigned to each individual tool equipment, test equipment, and maintenance equipment referenced.

The grouping of codes in this column of the maintenance allocation chart indicates the tool, test, and maintenance equipment required to perform the maintenance function.

(5) *Remarks*. Entries in this column will be utilized when necessary to clarify any of the data cited in the preceding columns.

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

(1) *Tools required for maintenance functions.* This column lists tool, test, and maintenance equipment required to perform the maintenance functions.

(2) *1st, 2d, 3d, 4th, 5th echelon*. The dagger (t) symbol indicates the echelons allocated the facility.

(3) Tool code. This column lists the tool code assigned.

2. Mounting Hardware

The basic entries of the maintenance allocation chart do not include mounting hardware such as screws, nuts, bolts, washers, brackets, clamps, etc.

3. Maintenance by Using Organizations

When this equipment is used by signal service 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.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
PART OR COMPONENT	**MAINTENANCE FUNCTION**	**1ST ECH**	**2ND ECH**	**3RD ECH**	**4TH ECH**	**5TH ECH**	**TOOLS REQUIRED**	**REMARKS**
TEST FACILITIES KIT, RADIO MK-153/GRC								
	service			X			3	
	inspect			X				Visual only
	test			X			1	
	repair			X			1,2	
	rebuild					X	1,2	
	overhaul				X		1,2	
CABLE ASSEMBLIES	replace			X				
	repair			X				
DUMMY LOADS	replace			X				
	repair			X				
	rebuild					X		
	overhaul				X			
MOUNTING MT-297/U	replace			X				
TEST ADAPTERS	replace			X				
	repair			X				
	rebuild					X		
	overhaul				X			

Section III. ALLOCATION OF TOOLS FOR MAINTENANCE FUNCTIONS

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
TOOLS REQUIRED FOR MAINTENANCE FUNCTIONS	**1ST ECH**	**2ND ECH**	**3RD ECH**	**4TH ECH**	**5TH ECH**	**TOOL CODE**	**REMARKS**
MK-153/GRC (continued)							
MULTIMETER TS-352			†	†	†		1
TOOL KIT TK-87/U			†	†	†		2
TOOLS A14D TEST EQUIPMENT AVAILABLE TO REPAIRMAN USER BECAUSE OF HIS ASSIGNED MISSION			†				3

APPENDIX III

BASIC ISSUE ITEMS LIST

Section I. INTRODUCTION

1. Scope

a. This appendix lists items supplied for initial operation. The list includes tools, parts, and material issued as part of the majof 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*. Not 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, not annotated, 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.

(8) *Illustrations*. The "Item No." lists the reference symbols used for identification of the items in the illustration or text of the manual.

2. References

Note. **Refer to appendix I for additional instructions contained in Supply Manual SIG 7 & 8, MT-297/GR concerning maintenance of this equipment.**

(1) SOURCE MAINTENANCE AND RECOVERABIL. CODE	(2) FEDERAL STOCK NUMBER	(3) DESIGNATION BY MODEL	(4) DESCRIPTION	(5) UNIT OF ISSUE	(6) EXP	(7) QTY IN UNIT	(8) ILLUSTRATION FIGURE NO.	(9) ILLUSTRATION ITEM NO.
	6625-32-4903		TEST FACILITIES KIT, RADIO -153/GRC					
			ITEMS COMPRISING AN OPERABLE EQUIPMENT					
			TEST FACILITIES KIT. RADIO MK-153/GRC (Basic Component)		NX	1		
	Order Thru AGC		TECHNICAL MANUAL TM 11-6625-408-15			2		
	5820-893-0095		DUMMY LOAD, ELECTRICAL DA-269/GRC (not installed)		NX	1		E1
	5820-893-0094		DUMMY LOAD, ELECTRICAL DA-270/GRC (not installed)		NX	1		E2
	5995-823-2166		CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL CX-7062/U (2 ft 8 in) (not installed)		NX	1		W2
	5995-823-2168		CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL CX-7063/U (2 ft 8 in) (not installed)		NX	1		W3
	5995-823-2169		CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL CX-7064/U (2ft 8 in) (not installed)		NX	1		W4
	5995-823-2167		CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL CX-7065/U (2 ft 8 in) (not installed)		NX	1		W5
	5995-823-2170		CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL CX-7066/U (2 ft 8 in) (not installed)		NX	1		W6
	6625-510-1785		ADAPTER, TEST MX-1566/GRC (not installed)		NX	1		
	5820-893-0093		ADAPTER, TEST MX-3553/GRC (not installed)		NX	1		
	5820-221-5506		MOUNTING M-297/GR (not installed)		NX	1		
	5340-498-1527		MOUNT, SHOCK M-449 (not installed)		NX	4		
			RUNNING SPARES AND ACCESSORY ITEMS					
			NO PARTS AUTHORIZED FOR STORAGE AT FIRST ECHELON					

BY ORDER OF THE SECRETARY OF THE ARMY:

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

Official:

R. V. LEE,
Major General, United States Army,
The Adjutant General.

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DASA (6)	Army Pictorial Cen (2)
USASA (2)	EMC (1)
CNGB (1)	Yuma Test Sta (2)
Tech Stf, DA (1) except CSigO (18)	USACA (3)
Tech Stf Bd (1)	USASSA (20)
USCONARC (5)	USASSAMRO (1)
USAARTYBD (1)	USASEA (1)
USAARMBD (2)	USA Caribbean Sig Agcy (1)
USAIB (1)	USA Sig Msl Spt Agcy (13)
USARADBD (2)	Sig Fld Maint Shops (3)
USAABELCTBD (1)	USA Corps (3)
USAAVNBD (1)	JBUSMC (2)
USAATB (1)	AFSSC (1)
ARADCOM (2)	Units org under fol TOE: (2 copies each except as indicated)
ARADCOM Rgn (2)	7
OS Maj Comd (3)	7-52
OS Base Comd (2)	11-5
LOGCOMD (2)	11-6
MDW (1)	11-7
Armies (2)	11-8
Corps (2)	11-16
Instl (2)	11-38
Ft Monmouth (63)	11-55
USATC AD (2)	11-56
USATC Armor (2)	11-57
USATC Engr (2)	11-58
USATC FA (2)	11-67
USATC Inf (2)	11-68
USAOMC (3)	11-98
Svc Colleges (2)	11-117
Br Svc Sch (2)	11-155
GENDEP (2) except Atlanta GENDEP (None)	11-158
	11-500 (AA-AE) (4)
Sig Sec, GENDEP (5)	11-557
Sig Dep (12)	11-587
WRAMC (1)	11-592
USA Trans Tml Comd (1)	11-97
Army Tml (1)	17
POE (1)	2951
OSA (1)	29-55
USAEPG (2)	29-68
AFIP (1)	39-61
AMS (1)	57

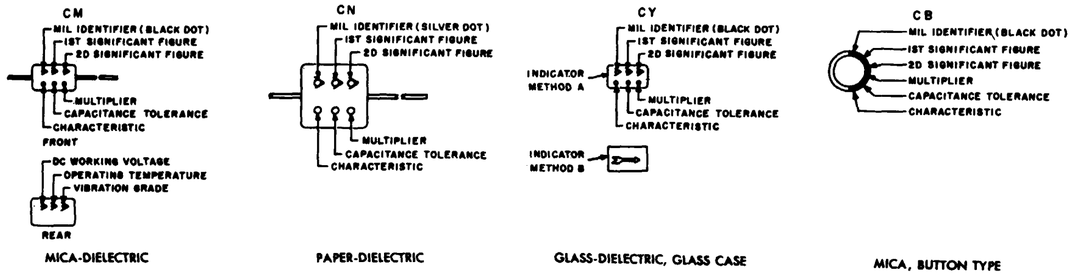
NG: State AG (3); units-same as Active Army except allowance is one copy to each unit.
USAR: None.
For explanation of abbreviations used, see AR 32060.

AGO 10032A

U. S. GOVERMENT PRINTING OFFICE: 1989 O - 242-451 (5188)

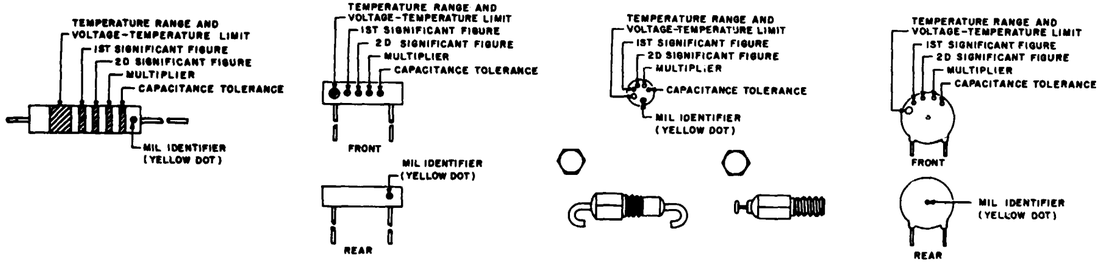
COLOR CODE MARKING FOR MILITARY STANDARD CAPACITORS

GROUP I Capacitors, Fixed, Various-Dielectrics, Styles CM, CN, CY, and CB



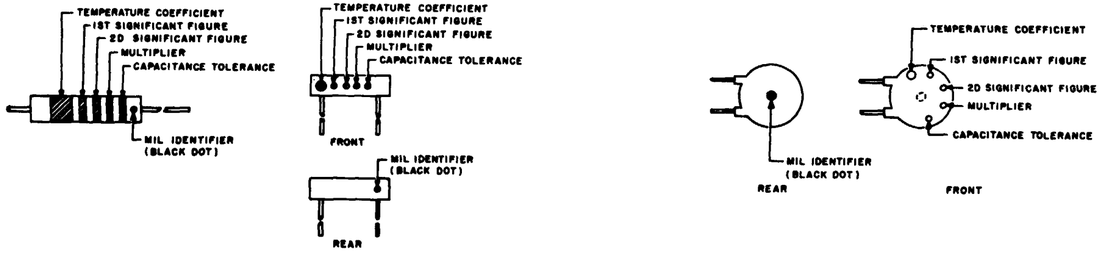
MICA-DIELECTRIC | PAPER-DIELECTRIC | GLASS-DIELECTRIC, GLASS CASE | MICA, BUTTON TYPE

GROUP II Capacitors, Fixed Ceramic-Dielectric (General Purpose) Style CK



AXIAL LEAD | RADIAL LEAD | FEED-THROUGH | STAND-OFF | DISK-TYPE

GROUP III Capacitors, Fixed, Ceramic-Dielectric (Temperature Compensating) Style CC



AXIAL LEAD | RADIAL LEAD | DISK-TYPE

COLOR CODE TABLES

TABLE I – For use with Group I, Styles CM, CN, CY and CB

COLOR	MIL ID	1st SIG FIG	2nd SIG FIG	MULTIPLIER[1]	CAPACITANCE TOLERANCE				CHARACTERISTIC[2]				DC WORKING VOLTAGE	OPERATING TEMP. RANGE	VIBRATION GRADE
					CM	CN	CY	CB	CM	CN	CY	CB	CM	CM	CM
BLACK	CM, CY CB	0	0	1			± 20%	± 20%		A				−55° to +70°C	10–55 cps
BROWN		1	1	10					B	E		B			
RED		2	2	100	± 2%		± 2%	± 2%	C		C			−55° to +85°C	
ORANGE		3	3	1,000		± 30%			D			D	300		
YELLOW		4	4	10,000					E					−55° to +125°C	10–2,000 cps
GREEN		5	5		± 5%				F				500		
BLUE		6	6											−55° to +150°C	
PURPLE (VIOLET)		7	7												
GREY		8	8												
WHITE		9	9												
GOLD				0.1			± 5%	± 5%							
SILVER	CN				± 10%	± 10%	± 10%	± 10%							

TABLE II – For use with Group II, General Purpose, Style CK

COLOR	TEMP. RANGE AND VOLTAGE – TEMP. LIMITS[3]	1st SIG FIG	2nd SIG FIG	MULTIPLIER[1]	CAPACITANCE TOLERANCE	MIL ID
BLACK		0	0	1	± 20%	
BROWN	AW	1	1	10	± 10%	
RED	AX	2	2	100		
ORANGE	BX	3	3	1,000		
YELLOW	AV	4	4	10,000		CK
GREEN	CZ	5	5			
BLUE	BV	6	6			
PURPLE (VIOLET)		7	7			
GREY		8	8			
WHITE		9	9			
GOLD						
SILVER						

TABLE III – For use with Group III, Temperature Compensating, Style CC

COLOR	TEMPERATURE COEFFICIENT[4]	1st SIG FIG	2nd SIG FIG	MULTIPLIER[1]	CAPACITANCE TOLERANCE		MIL ID
					Capacitances over 10uuf	Capacitances 10uuf or less	
BLACK	0	0	0	1		± 2.0uuf	CC
BROWN	−30	1	1	10	± 1%		
RED	−80	2	2	100	± 2%	± 0.25uuf	
ORANGE	−150	3	3	1,000			
YELLOW	−220	4	4				
GREEN	−330	5	5		± 5%	± 0.5uuf	
BLUE	−470	6	6				
PURPLE (VIOLET)	−750	7	7				
GREY		8	8	0.01			
WHITE		9	9	0.1	± 10%		
GOLD	+100					± 1.0uuf	
SILVER							

1. The multiplier is the number by which the two significant (SIG) figures are multiplied to obtain the capacitance in uuf.
2. Letters indicate the Characteristics designated in applicable specifications: MIL–C–5, MIL–C–91, MIL–C–11272, and MIL–C–10950 respectively.
3. Letters indicate the temperature range and voltage-temperature limits designated in MIL–C–11015.
4. Temperature coefficient in parts per million per degree centigrade.

STD–C2

Figure 18. MIL-STD capacitor color codes.

TEAR ALONG PERFORATED LINE

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PAGE NO.	PARA-GRAPH	FIGURE NO.	TABLE NO.

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

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