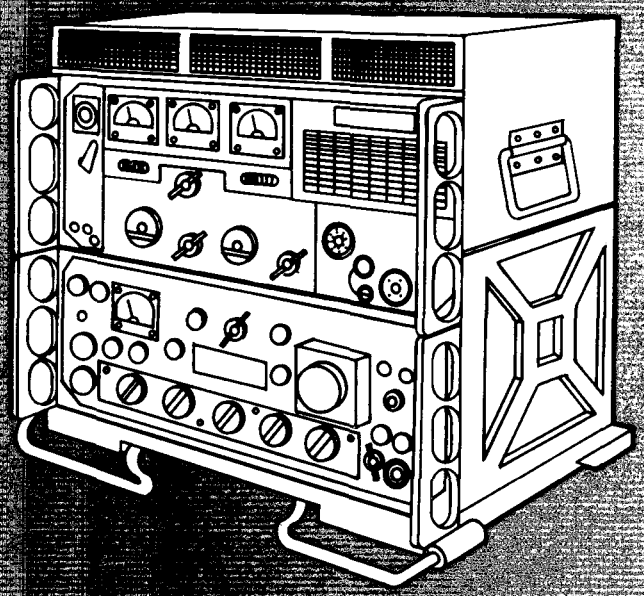
TM 11-5820-520-20

[illegible] MAINTENANCE MANUAL



MAINTENANCE INSTRUCTIONS PAGE 2-0

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MAINTENANCE PROCEDURES PAGE 2-19

PREPARATION FOR STORAGE & SHIPMENT PAGE 2-24

RADIO SETS

[illegible] (NSN 5820-00-402-2263)

AND

[illegible] (NSN 5820-00-223-7548)

HEADQUARTERS, DEPARTMENT OF THE ARMY

NOVEMBER 1962

This copy is a reprint which includes current pages from Change 1.

DANGEROUS VOLTAGES EXIST IN THIS EQUIPMENT

Voltages as high as 128 volts ac, 3,000 volts dc, and 10,000 volts RF are used in the operation of Amplifier, Radio Frequency AM-3349/GRC-106.

DANGEROUS VOLTAGES EXIST AT AM-3349/GRC-106 50 OHM
LINE AND WHIP ANTENNA CONNECTORS

DON'T TAKE CHANCES!

Be careful when working near the antenna or the antenna connectors. RF voltages as high as 10,000 volts exist at these points. Maintenance personnel should be familiar with the safety requirements in TB SIG 291 before installing or operating Radio Sets AN/GRC-106(*). DEATH ON CONTACT may result if you fail to follow these precautions and requirements. Set all equipment to OFF before connecting any power leads to a power source.

Fumes of TRICHLOROTRIFLUOROETHANE are poisonous; provide thorough ventilation whenever it is used. Do not use it near open flames or a hot surface. Do not get it on your skin.

Use gloves, sleeves and an apron which the solvent cannot penetrate. If the solvent is taken internally, see a doctor immediately.

CHANGE

No. 1

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

ORGANIZATIONAL MAINTENANCE MANUAL
RADIO SETS
AN/GRC-106 (NSN 5820-00-402-2263)
AND
AN/GRC-106A (NSN 5820-00-223-7548)

TM 11-5820-520-20, 22 November 1982, is changed as follows:

1. Remove old pages and insert new pages as indicated below. New or changed material is indicated by a vertical bar in the margin of the page. Changes to illustrations are indicated by a miniature pointing hand.

Remove pages	*Insert pages*
Inside Front Cover	None
b through e	A through E/(F blank)
i through 1-2	i through 1-2
2-1 and 2-2	2-1 and 2-2
2-7 through 2-16	2-7 through 2-16
2-19 and 2-20	2-19 and 2-20
2-23 and 2-24	2-23 and 2-24
A-1/A-2 blank	A-1/(A-2 blank)
B-3 through B20	B-3 through B-24
C-1 and C-2	C-1 and C-2
Glossary and Index 1	Glossary-1/(Glossary-2 blank)
Index 2	Index-1 Index-2

2. File this change sheet in the front of the publication for reference purposes.

By Order of the Secretary of the Army:

CARL E. VUONO
General, United States Army
Chief of Staff

Official:

WILLIAM J. MEEHAN II
Brigadier General, United States Army
The Adjutant General

DISTRIBUTION:
To be distributed in accordance with DA Form 12-51 unit requirements for AN/GRC-106.

WARNING

DANGEROUS VOLTAGES EXIST IN THIS EQUIPMENT

Voltages as high as 128 volts ac, 3,000 volts dc, and 10,000 volts RF are used in the operation of Amplifier, Radio Frequency AM-3349/GRC-106.

DO NOT REMOVE EQUIPMENT FROM CHASSIS CASE.

DANGEROUS VOLTAGES EXIST AT AM-33491/GRC-106 50 OHM LINE AND WHIP ANTENNA CONNECTORS

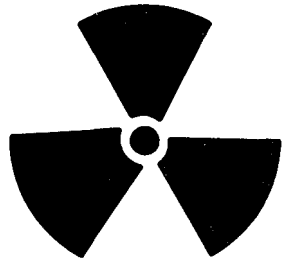
DON'T TAKE CHANCES!

Be careful when working near the antenna or the antenna connectors. RF voltages as high as 10,000 volts exist at these points. Maintenance personnel should be familiar with the safety requirements in TB SIG 291 before installing or operating Radio Sets AN/G RC-106(*). DEATH ON CONTACT may result if you fail to follow these precautions and requirements. Set all equipment to OFF before connecting any power leads to a power source.

Fumes of TRICHLOROTRIFLUROETHANE are poisonous; provide thorough ventilation whenever it is used. Do not use it near open flames or a hot surface. Do not get it on your skin.

Use gloves, sleeves and an apron which the solvent cannot penetrate. If the solvent is taken internally, see a doctor immediately.

WARNING
RADIATION HAZARD



RADIOACTIVE MATERIAL
CONTROLLED DISPOSAL REQUIRED
ACCOUNTABILITY NOT REQUIRED

Meter, electrical indicating . . . . . .RA 226. . . . . .1.0 uCi 6625-01-044-1801

Meter, electrical indicating . . . . . .RA 226 . . . . . .1.0 uCi 6625-00-226-5679

Meter, signal level . . . . RA 226 . . . . 0.6 uCi 6625-00-226-5680

Radiation Hazard Information: The following radiation hazard information must be read and understood by all personnel before operating or repairing Radio Sets AN/GRC-106 and AN/GRC-106A. Hazardous radioactive materials are present in the above listed components of the AM-3349/GRC-106, RT-662/GRC, and RT-834/GRC.

The components are potentially hazardous when broken. See qualified medical personnel and the local Radiological Protection Officer (RPO) immediately, if you are exposed to or cut by broken components. First aid instructions are contained in TB 43-0116, TB 43-0122, and AR 385-11.

NEVER place radioactive components in your pocket.

Use extreme care NOT to break radioactive components while handling them.

NEVER remove radioactive components from cartons until you are ready to use them

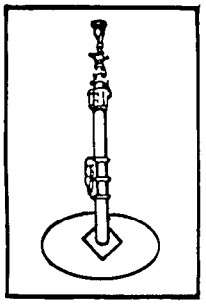
If any of these components are broken, notify the local RPO immediately.

The RPO will survey the immediate area for radiological contamination and will supervise the removal of broken components.

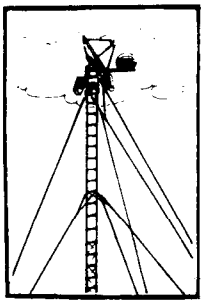
The above listed radioactive components will NOT be repaired or disassembled.

FIXED OPERATION WITH LONG RANGE ANTENNAS

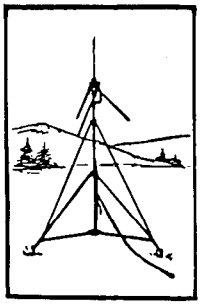
WARNING



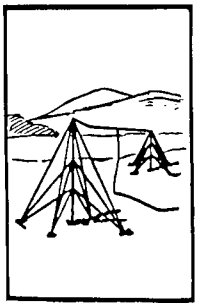
TELESCOPING ANTENNA MAST



TYPICAL TOWER



EXTENDED RANGE ANTENNA



DOUBLET ANTENNA

NEVER ERECT THESE LONG RANGE ANTENNAS DIRECTLY UNDER POWER LINES.

IF YOU MUST ERECT THESE LONG RANGE ANTENNAS NEAR POWER LINES, POWERLINE POLES OR TOWERS, OR BUILDINGS WITH OVERHEAD POWERLINE CONNECTIONS, NEVER PUT THE ANTENNA CLOSER THAN TWO TIMES THE ANTENNA HEIGHT FROM THE BASE OF THE POWERLINE, POLE, TOWER OR BUILDINGS, 100 FEET AWAY IS A GOOD SAFE ROUND NUMBER TO REMEMBER,

NEVER ATTEMPT TO ERECT ANY LONG RANGE ANTENNA WITHOUT A FULL TEAM.

BEFORE ERECTING ANY LONG RANGE ANTENNA, INSPECT ALL THE PARTS MAKING UP THE ANTENNA KIT. DO NOT ERECT THE ANTENNA IF ANY PARTS ARE MISSING OR DAMAGED.

DO AS MUCH OF THE ASSEMBLY WORK AS POSSIBLE ON THE GROUND.

WHEN ERECTING THE ANTENNA, ALLOW ONLY TEAM PERSONNEL IN THE ERECTION AREA.

MAKE SURE THAT THE AREA FOR THE ANCHORS IS FIRM. IF THE GROUND IS MARSHY OR SANDY, GET SPECIFIC INSTRUCTIONS FROM YOUR CREW CHIEF OR SUPERVISOR ON HOW TO REINFORCE THE ANCHORS,

WHEN SELECTING LOCATIONS FOR ANCHORS, AVOID TRAVELED AREAS AND ROADS. IF YOU CANN AVOID THESE AREAS, GET SPECIFIC INSTRUCTIONS FROM YOUR SUPERVISOR AS TO WHAT CLEAR ANCE YOUR GUY WIRES AND ROPES MUST HAVE OVER THE TRAVELED AREAS AND ROAD.

CLEARLY MARK ALL GUY WIRES AND ROPES WITH THE WARNING FLAGS OR SIGNS SUPPLIED BY YOUR UNIT. IN AN EMERGENCY, USE STRIPS OF WHITE CLOTH AS WARNING STREAMERS.

IF YOU SUSPECT THAT POWERLINES HAVE MADE ACCIDENTAL CONTACT WITH YOUR ANTENNA, ST OPERATING, ROPE OFF THE ANTENNA AREA, AND NOTIFY YOUR SUPERIORS.

IF THE WEATHER IN YOUR AREA CAN CAUSE ICE TO FORM ON YOUR LONG RANGE ANTENNA AND ITS GUY WIRES AND ROPES, ADD EXTRA GUYS TO SUPPORT THE SYSTEM. ROPE OFF THE AREA AND POST IT WITH WARNING SIGNS LIKE BEWARE OF FALLING ICE.

DO NOT TRY TO ERECT ANY ANTENNA DURING AN ELECTRICAL STORM.

KEEP A SHARP EYE ON YOUR ANCHORS AND GUYS. CHECK THEM DAILY AND IMMEDIATELY BEFORE AND AFTER BAD WEATHER.

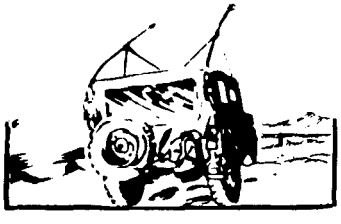
WARNING

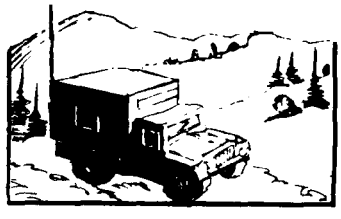
SERIOUS INJURY OR EVEN DEATH CAN HAPPEN IF THE FOLLOWING ARE NOT CAREFULLY OBSERVED WHEN INSTALLING AND USING THE ANTENNAS USED WITH YOUR RADIO SETS.

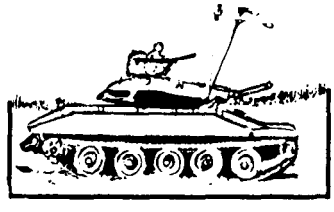
BEFORE ANY MISSION FIND OUT

1. **ARE THERE ANY POWERLINES IN YOUR AREA OF OPERATION?**
2. **HOW HIGH ARE THESE POWERLINES?**
3. **HOW TALL ARE THE POLES OR TOWERS CARRYING POWERLINES?**

MOBILE OPERATION WITH WHIP ANTENNAS







DO NOT STOP YOUR VEHICLE UNDER POWER LINES.

- **IF POSSIBLE, TRY TO MAINTAIN MOBILE COMMUNICATIONS WITH YOUR ANTENNA(S) TIED DOWN.**
- **MAKE SURE AN ANTENNA TIP CAP IS SECURELY TAPED ON THE END OF EACH WHIP ANTENNA,**
- **DO NOT LEAN AGAINST OR TOUCH A WHIP ANTENNA WHILE THE TRANSMITTER IS ON.**
- **DURING CROSS-COUNTRY OPERATION, DO NOT ALLOW ANYONE TO STICK AN ARM, LEG OR WEAPON OVER THE SIDES OF THE VEHICLE, IF YOUR ANTENNA ACCIDENTALLY TOUCHES A POWERLINE AND A LEG, ARM OR WEAPON CONTACTS A DAMP BUSH OR THE GROUND, A SERIOUS OR FATAL ACCIDENT CAN HAPPEN.**
- **IF YOU ARE NOT SURE THAT AN ANTENNA ON YOUR VEHICLE WILL CLEAR A POWERLINE, STOP BEFORE YOU GET CLOSE TO THE POWERLINE AND EITHER CAREFULLY TIE DOWN THE ANTENNA OR REMOVE ANTENNA SECTIONS TO MAKE SURE THAT YOU CAN SAFELY DRIVE UNDER THE POWERLINE.**

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

1 DO NOT TRY TO PULL OR GRAB THE INDIVIDUAL

2 IF POSSIBLE, TURN OFF THE ELECTRICAL POWER

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

4 SEND FOR HELP AS SOON AS POSSIBLE

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

TECHNICAL MANUAL

No. 11-5820-520-20

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, *22 November 1982*

ORGANIZATIONAL MAINTENANCE MANUAL

RADIO SETS
AN/GRC-106 (NSN 5820-00-402-2263)
AND
AN/GRC-106A (NSN 5820-00-223-7548)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. if you find any mistakes or if yaw know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 Iocated in the back of this manual direct to: Commander, Communications-Electronics Commandand Fort Monmouth, ATTN: AMSEL-LC-ME-PS, Fort Monmouth, New Jersey 07703-5000. In either case, a reply will be furnished direct to you.

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III	Technical Principles of Operation.	1-2
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III	Preventive Maintenance Check and Services (PMCS)	2-2
IV	Troubleshooting	2-6
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VI	Preparation for Storage and Shipment	2-24
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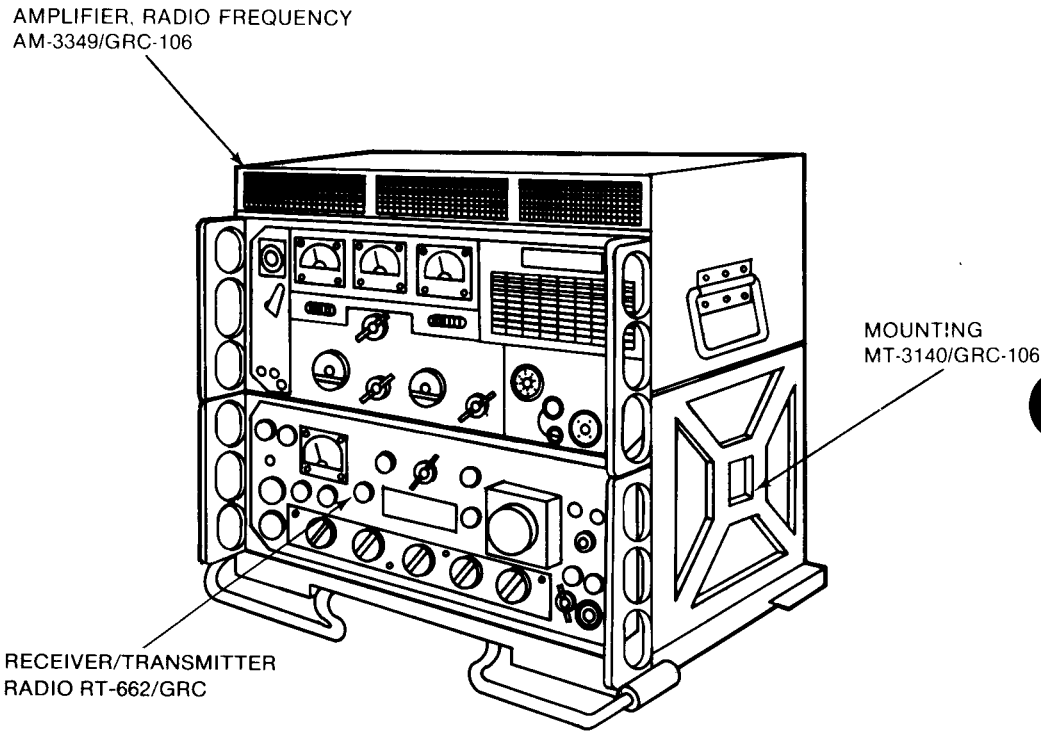
APPENDIX B	**Maintenance Allocation CHART (MAC)**	**B-1**
APPENDIX C	**EXPENDABLE SUPPLIES AND MATERIALS LIST**	**C-1**
GLOSSARY		**Glossary**
INDEX		**Index-1**

*This manual supersedes the Organizational Maintenance portion of TM 11-5820-520-12, February 1971, including all changes.



RADIO SET AN/GRC-106

CHAPTER 1
INTRODUCTION

Section I. GENERAL INFORMATION

1-1. SCOPE

- **TYPE OF MANUAL: Organizational Maintenance.**

- **MODEL NUMBER AND EQUIPMENT NAME: AN/G RC-106(*) Radio Sets.**

Nomenclature followed by (*) indicates model of Radio Sets referenced in this manual. Radio Set AN/GRC-106(*) represents sets AN/GRC-106 and AN/GRC-106A.

- **PURPOSE OF EQUIPMENT: The AN/G RC-106(*) is primarily intended for use as a mobile radio link in a communications network. However, it can be used in a fixed mobile station.**

1-2. MAINTENANCE FORMS, RECORDS, AND REPORTS

- **CONSOLIDATED INDEX OF ARMY PUBLICATIONS AND BLANK FORMS**

  Refer to the latest issue of DA PAM 25-30 to determine whether there are new editions, changes or additional publications pertaining to the equipment.

- **REPORTS OF MAINTENANCE AND EQUIPMENT STATUS**

  Reports of Maintenance and Unsatisfactory Equipment. Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-750 as contained in Maintenance Management Update.

  Reporting of Item and Packaging Discrepancies. Fill out and forward SF 364 (Report of Discrepancy (ROD)) es prescribed in AR 735-11-2/DLAR 4140.55/SECNAVINST 4355.18/AFR 400-54/MCO 4430.3J.

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

1-3. DESTRUCTION OF ARMY ELECTRONICS MATERIEL TO PREVENT ENEMY USE

Destruction of Army electronics materiel to prevent enemy use shall be in accordance with TM 750-244-2.

1-4. PREPARATION FOR STORAGE AND SHIPMENT

Refer to Chapter 2, Section VII of this manual.

1-5. NOMENCLATURE CROSS-REFERENCE LIST

COMMON NAME	NOMENCLATURE
Radio Set	**AN/GRC-106(*)**
RT	**Receiver-Transmitter, Radio RT-662/GRC or RT-834/GRC**
Amplifier	**Amplifier, Radio Frequency AM-3349/GRC-106**
Remount	**Mounting MT-3140/GRC-106**
Telegraph Key	**Key, Telegraph KY-116/U**
Loudspeaker	**Dynamic Loudspeaker LS-166/U**
Headset	**Headset, Electrical H-227/U**
Handset	**Handset H-33(*)/PT**
Microphone	**Microphone, Carbon M-29B/U**

COMMON NAME	NOMENCLATURE
Whip Antenna	Antenna Elements: 3 Mast Sections MS-116A; Mast Section MS-117A; Mast Section MS-118A; Mast Base AB-6521GR; Antenna Bag CW-206/GR; Antenna Cover; Rope (20 feet); Adapter, Connector UG-306/U; Antenna Sheath Clamp, Brass
Doublet Antenna	Antenna Group AN/GRA-50

NOTE

If either component of the radio set requires repair, turn in both the amplifier and receiver/transmitter.

1-6. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR's)

If your equipment needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know what you don't like about the design or performance. Put it on SF 368 (Product Quality Deficiency Report). Mail it to: Commander, U.S. Army Communications-Electronics Command and fort Monmouth, ATTN: AMSEL-PA-MA-D, Fort Monmouth, New Jersey 07703-5000. We'll send you a reply.

Section II. EQUIPMENT DESCRIPTION AND DATA

1-7. EQUIPMENT CHARACTERISTICS, CAPABILITIES AND FEATURES

Refer to operator's manual.

1-8. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

Refer to operator's manual.

1.9. DIFFERENCES BETWEEN MODELS

Refer to operator's manual.

1-10. EQUIPMENT DATA

Refer to operator's manual.

1-11. SAFETY, CARE AND HANDLING

Observe all WARNINGS, CAUTIONS and NOTES in this manual. This equipment can be extremely dangerous if these instructions are not followed.

Section III. TECHNICAL PRINCIPLES OF OPERATION

1-12. TECHNICAL PRINCIPLES OF OPERATION

The AN/GRC-106(*) transmits upper sideband (usb), usb compatible amplitude-modulated (am) and continuous wave (cw) signals; it can also transmit frequency-shift keyed (fsk) and narrow frequency-shift keyed (risk) signals when the appropriate teletypewriter equipment is used. The AN/G RC-106(*) receives usb, usb compatible am, cw and conventional double-sideband am signals; it can also receive fsk and nsk signals when the appropriate teletypewriter equipment is used. See Figure 1-1 for a simplified equipment application diagram of the AN/G RC-106(*). Refer to operator's manual.

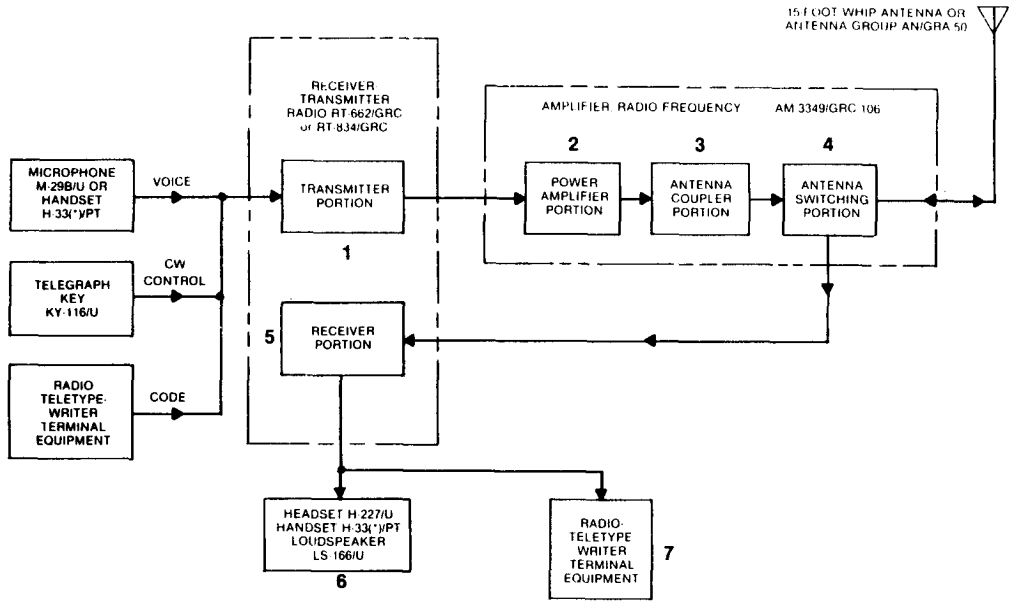


FIGURE 1-1. RADIO SETS AN/GRC-108(*): SIMPLIFIED PRINCIPLES OF OPERATION.

1 Voice, cw and code signals are applied to TRANSMITTER PORTION of RT unit, where they are modulated and converted into a Radio Frequency (RF) signal.

2 This RF signal is applied to POWER AMPLIFIER PORTION of Amplifier, where its level is raised to a nominal 400 watts peak envelope power (pep).

3 It is then applied to ANTENNA COUPLER PORTION, where it is sent through switching and impedance-matching circuits for transmission. The ANTENNA COUPLER PORTION matches the 15-FOOT WHIP ANTENNA or ANTENNA GROUP AN/G RA-50 to POWER AMPLIFIER PORTION to ensure proper power transfer.

4 All incoming signals are received by the ANTENNA SWITCHING PORTION of Amplifier,

5 . . .and applied to RT RECEIVER PORTION.

6 Usb, usb compatible am, cw and conventional double-sideband am signals are converted into Intermediate Frequency (IF) signals for monitoring by HEADSET H-227/U, HANDSET H-33(*)/PT or LOUDSPEAKER LS-166/U.

7 Fsk or nsk signals are also converted into IF signals and applied to RADIO TELETYPEWRITER TERMINAL EQUIPMENT for transferal to page printers or tape punches for message interpretation.

CHAPTER 2
MAINTENANCE INSTRUCTIONS

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Disassembly, equipment 2-24
PMCS Table 2-4
Preventive maintenance checks and services (PMCS) 2-2
Removal, equipment 2-19
Repacking for storage or shipment 2-24
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Replacements, repairs and 2-22
Service upon receipt 2-1
Troubleshooting 2-6
Troubleshooting Table 2-7
Unpacking 2-1

Section I. REPAIR PARTS, SPECIAL TOOLS AND SUPPORT EQUIPMENT

2-1. TOOLS AND TEST EQUIPMENT

Tools and test equipment required for organizational maintenance of AN/GRC-106(*) are listed in the Maintenance Allocation Chart (MAC) in Appendix B of this manual.

2-2. SPECIAL TOOLS, TMDE AND SUPPORT EQUIPMENT

There are no special tools or TMDE required for this equipment.

Section II. SERVICE UPON RECEIPT

2-3. REPAIR PARTS

See TM 11-5620-520-20 P-1, TM 11-5820-520-20 P-2.

2.4. UNPACKING AN/GRC.106(*)

CAUTION

When cutting wire strips on containers, be careful not to damage contents.

ITEM	ACTION	REMARKS
1, Carton	Use tin shears or diagonal cutting pliers to cut and fold back metal straps.	
	Cut tape on carton and fold back flaps.	
2. AN/GRC-106(*)	Remove from carton and take off any packing material.	
	Inspect for damage done during shipment.	Report any damage on an SF 364 (Report of Discrepancy (ROD)).
	Compare with packing list,	Be sure shipment is complete. Report any differences according to instructions in DA PAM 738-750.
	Check for modifications.	Check on front panel near nomenclature plate for any modification work order (MWO) numbers. They will appear ONLY if the unit has been used or reconditioned. Current MWO's which apply to AN/GRC-106(*) are listed in DA PAM 750-10. Apply all URGENT MWO's. Schedule all NORMAL MWO's.

SECTION III. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

2-4. GENERAL

The following information is for MONTHLY preventive maintenance checks and serices (PMCS) of AN/GRC-106(*). Monthly PMCS should be performed every 30 days of 8 - hour - per - day operation. If the equipment is operated 16 hours - per - day check it at 15 - day intervals. Monthly PMCS should be done if AN/GRC-106(*) is in standby (ready for immediate operation) condition but is not needed if the equipment is in limited storage. Maintenance forms and records to be used and maintained on this equipment are specified in DA PAM 738 - 750. Perform all checks and services in sequence listed in Table 2-1.

a. Tools, Test Equipment and Material needed for Organizational level PMCS.

- Tools you will need for PMCS on AN/GRC-106(*) are in Tool Kit, Electronic Equipment TK 101/G (SC 5180-91-CL-R13).
- Required test equipment: Multi meter, AN/PSM-45
- Required Material: Cement, RTV 112 (Rem 5. Appendix C)
  Cleaning cloth (Item 2, Appendix C)
  Silicone compound (Item 3, Appendix C)
  Trichlorotrifluoroethane (Item 1, Appendix C)

WARNING

Fumes of TRICHLOROTRIFLUOROETHANE are poisonous. Provide adequate ventilation whenever you use TRICHLOROTRIFLUOROETHANE. Do not use solvent near heat or open flame. TRICHLOROTRIFLUOROETHANE will not burn, but heat changes the gas into poisonous, irritating fumes. DO NOT breathe the fumes or vapors. TRICHLOROTRIFLUOROETHANE dissolves natural skin oils. DO NOT get the solvent on your skin. Use gloves, sleeves and an apron which the solvent cannot penetrate. If the solvent is taken internally, see a doctor immediately.

b. Routine Services

Routine services are a collection of checks and observations performed by the operator at all times. Routine services are not listed in the preventive maintenance checks and services table, in order to separate the nonoperational from the operational services.

You should perform the following routines as necessary:

- Clean
- Dust
- Wash
- Check for cut or frayed cables
- Check for dented, bent, or broken components
- Check for rusting
- Check controls for smooth operation
- Cover unused receptacles
- Check for loose nuts, bolts, and connectors
- Check for completeness of equipment

Service the following items:

- Radio antennas and elements

DA FORM 2404, EQUIPMENT INSPECTION AND MAINTENANCE WORKSHEET.

EQUIPMENT INSPECTION AND MAINTENANCE WORKSHEET

For use of this form, see TM 38-750; the proponent agency is the Office of the Deputy Chief of Staff for Logistics.

1. ORGANIZATION	2. NOMENCLATURE AND MODEL
COMPANY A 210 SIG BATTALION	Radio Set AN/GRC-106

3. REGISTRATION/SERIAL/FSN	4a. MILES	b. HOURS	c. ROUNDS FIRED	d. HOT STARTS	5. DATE	6. TYPE INSPECTION
5820-00-402-2263					16 Dec '80	PMCS

7. APPLICABLE REFERENCE

TM NUMBER	TM DATE	TM NUMBER	TM DATE
11-5820-520-20	15 Dec '80		

INSTRUCTIONS - Perform each check listed in the TM applicable to the inspection performed. Following the sequence listed in pertinent TM, complete form as follows:

COLUMN a - Enter TM item number.

COLUMN b - Enter the applicable condition status symbol.

COLUMN c - Enter deficiencies and shortcomings.

COLUMN d - Show corrective action for deficiency or shortcoming listed in Column c.

COLUMN e - Individual ascertaining completed corrective action initial in this column.

ALL INSPECTIONS AND EQUIPMENT CONDITIONS RECORDED ON THIS FORM HAVE BEEN DETERMINED IN ACCORDANCE WITH DIAGNOSTIC PROCEDURES AND STANDARDS IN THE TM CITED HEREON.

9a. SIGNATURE (Person(s) performing inspection)	9b. TIME	9a. SIGNATURE (Maintenance Supervisor)	9b. TIME	10. MANHOURS REQUIRED
John Doe	0.1 hr	Sgt. James Johnson	0.1 hr	0.2 hr

TM ITEM NO. a	STATUS b	DEFICIENCIES AND SHORTCOMINGS c	CORRECTIVE ACTION d	INITIAL WHEN CORRECTED
3		Broken antenna support cover washer	Replaced washer	JD

NOTE

Local command SOP should provide instructions on how to complete DA FORM 2404 in accordance with command policy. In addition TM 38-750 (TAMMS) provides information needed for completion of this form.

TABLE 2-1. MONTHLY PMCS TABLE

ITEM NO.	ITEM TO BE INSPECTED	PROCEDURES
1	Amplifier Blower (AM-3349/GRC-106)	Check the blower for cleanliness and effectiveness in exchanging air. Refer to paragraph 2-9.
2	Fuses	Check fuses in equipment for proper values and type. Refer to paragraph 2-7.

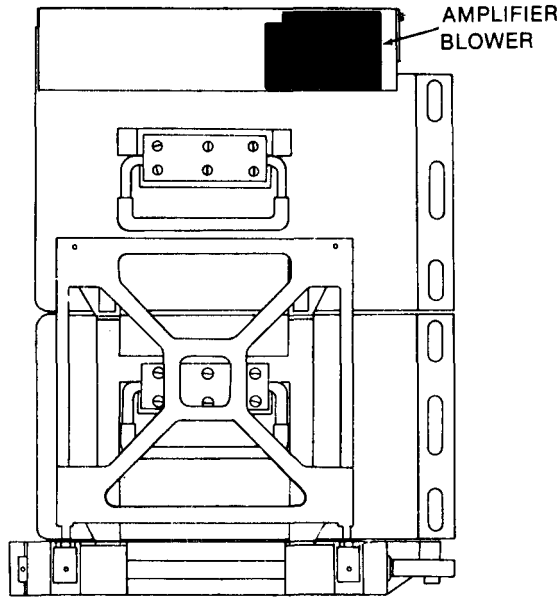


Table 2.1. MONTHLY PMCS TABLE. Continued

ITEM NO.	ITEM TO BE INSPECTED	PROCEDURES
3	Mast Base AB-652/GRC	Inspect to ensure that there are no bums or cracks and operator maintenance has been performed. Refer to paragraph 2-9. NOTE Operational checks are to be conducted in accordance with local command Standard Operating Procedures (SOP). NOTE If any portion of your radio set fails to operate, refer to Chapter 2, Section IV (Troubleshooting) for possible problems. Report any malfunctions or failures on the proper DA Form 2404 or refer to TM 38-750.

SECTION IV. TROUBLESHOOTING

2-5. GENERAL

- Troubleshooting at the Organizational Maintenance level requires you to locate any trouble as quickly as possible.
- Once trouble is located, repair or replace the part if you are authorized to do so or determine if a higher category of maintenance is required. Repairs by Organizational Maintenance are limited by tools, test equipment and replacement parts allocated to that level.

NOTE

Before using Troubleshooting Table (Table 2-2). check your work order and talk to the Operator, if possible, for a description of symptoms if trouble occurred while equipment was in operation.

Troubleshooting Table (Table 2-2)

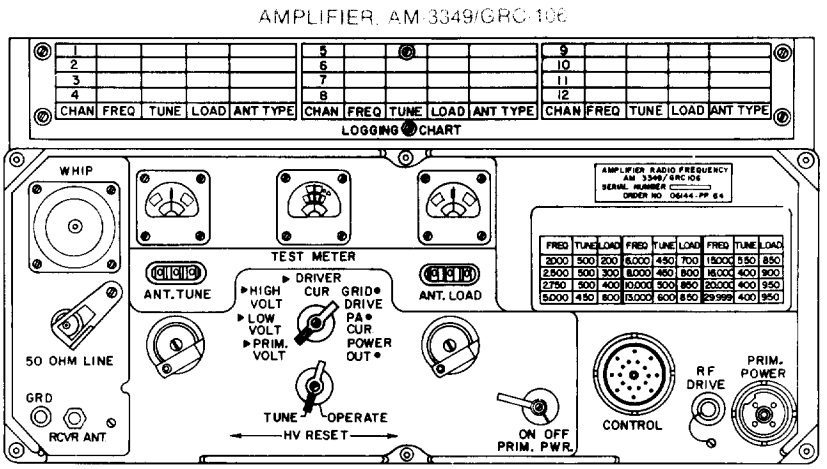
- Table 2-2 lists common problems that may occur during operation or maintenance of AN/GRC-106(*).
- Follow these steps to use Table 2-2:
  1. Find the problem under MALFUNCTION.
  2. Check for possible causes of the problem under TEST OR INSPECTION.
  3. Use the procedures under CORRECTIVE ACTION to correct the problem.
- This manual cannot list all trouble that may occur, nor everything to check, nor all possible procedures to correct troubles listed. If trouble is not listed in Table 2-2 or is not corrected by the procedures under CORRECTIVE ACTION, notify your supervisor.

Table 2-2 TROUBLESHOOTING

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION



1. Blower motors do not energize.

Step 1. Check for defect in CX-10071/U or CX-1009/U cables by setting the PRIM. PWR. switch to OFF, then immediately back to ON. You should hear the blower motors. If you do not hear them, see if signal level meter pointer on the RT is all the way to the right.

If pointer is not all the way to the right, higher category of maintenance required.

Step 2. Check for defect in RT or for low voltage circuit breaker (PRIM. PWR. switch) drop out by first checking to see if signal level meter pointer is all the way to the right.

If it is, disconnect CX-10071/U from PRIM. POWER connector (para 2-8). Use Multimeter AN/PSM-45 to check for 27 volts dc between pins A or B (+) and C or D(-) on CX-10071/U connector. If 27 volts dc is not present, replace CX-10071/U.

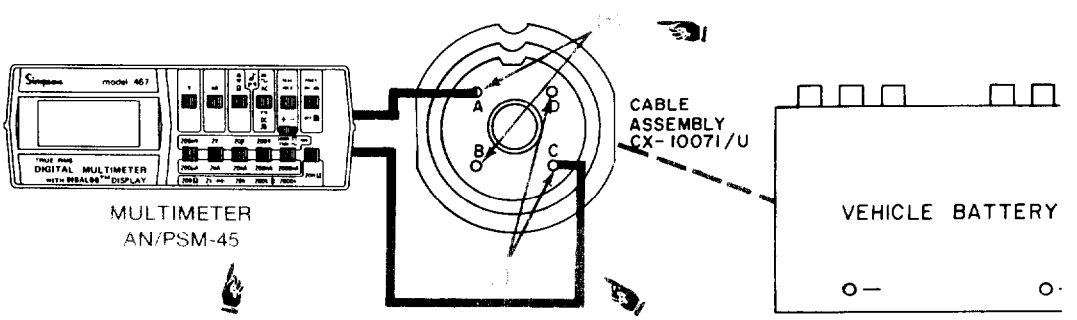


Table 2-2. TROUBLESHOOTING - Continued

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

CAUTION

Do not damage CX-10099/U in any way. Disconnect both ends of CX-10099/U to make a continuity check. Both ends of the cable must be removed together to prevent damage to the cable. Installations that use CX-1106(*)/G will not have this problem.

If 27 volts is present, disconnect CX-10099/U (para 2-8) and use Multimeter AN/PSM-45 to check continuity between pins N and A, N and D.

If there is continuity, replace CX-10099/U.

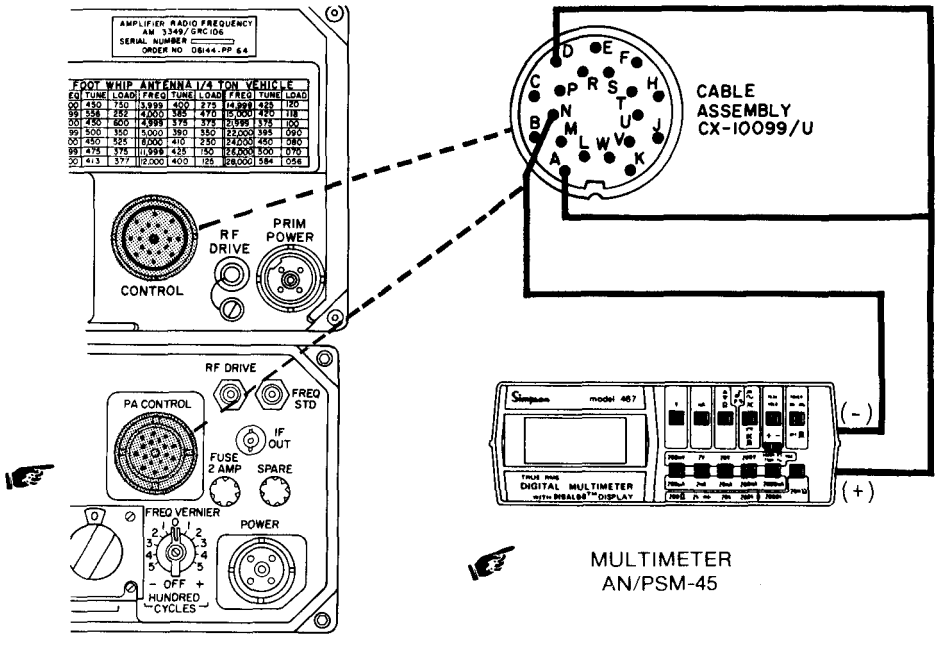
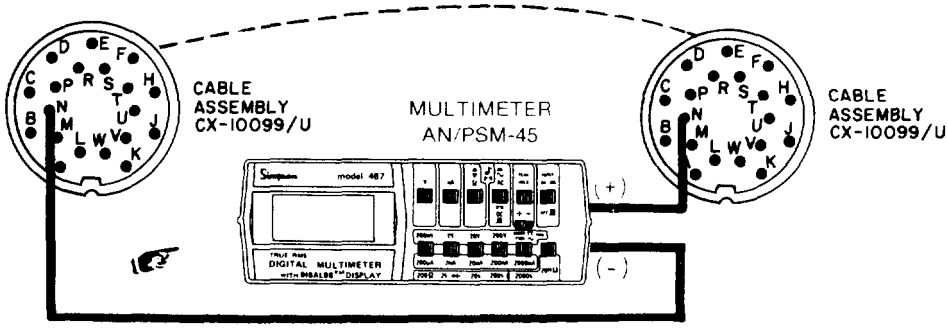


Table 2-2. TROUBLESHOOTING Continued

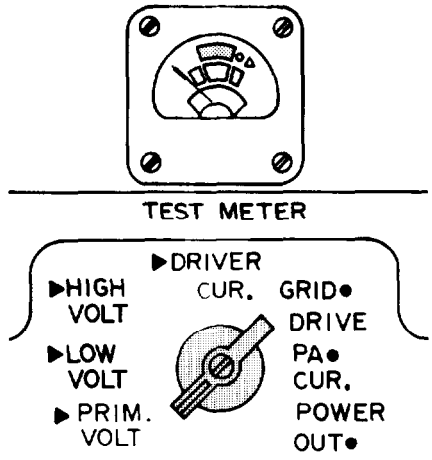
MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION

If continuity does not exist, use Multimeter AN/PSM-45 to check continuity at pin N on both ends of CX-10099/U connectors.



If continuity exists there, higher category of maintenance required.
If there is no continuity there, replace defective CX-10099/U and reconnect CX-10071/U to PRIM. POWER connector.

2. When TEST METER selector switch is set to PRIM. VOLT, TEST METER pointer does not move into dark green top scale.



Check for defect in amplifier by making sure blower motors are working.

If they are working, higher category of maintenance required.
If they are not working, turn PRIM. PWR. switch to OFF, then immediately back to ON. If blower motors still do not work or the pointer does not move into dark green scale, higher category of maintenance required.

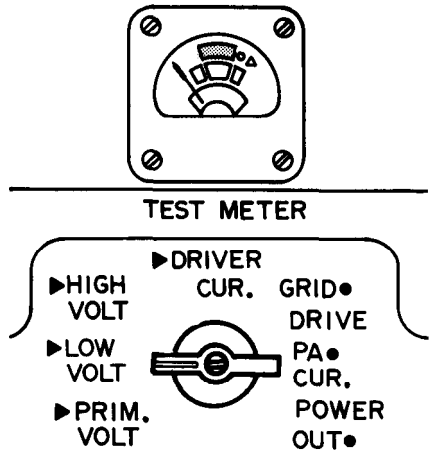
Table 2-2. TROUBLESHOOTING - Continued

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

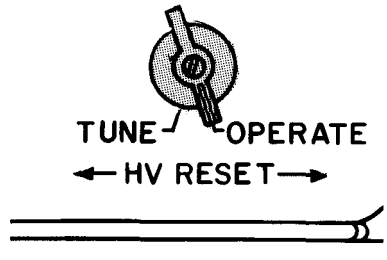
3. When TEST METER selector switch is set at LOW VOLT, TEST METER pointer does not move into dark green top scale.



CAUTION

The amplifier HV RESET switch should not stay in TUNE position for longer than 2 minutes. If more than 2 minutes are needed, turn amplifier HV RESET switch to OPERATE and RT SERVICE SELECTOR switch to STAND BY for 5 minutes cooling. After 5 minutes cooling, turn RT SERVICE SELECTOR switch back to SSB NSK and amplifier HV RESET switch back to TUNE.

Step 1. Check for high voltage (HV RESET switch) drop out by turning HV RESET switch to OPERATE. Wait 30 seconds and set switch to TUNE. TEST METER pointer should move into dark green top scale.



If pointer does not move into top scale, higher category of maintenance required.

Table 2-2. TROUBLESHOOTING - Continued

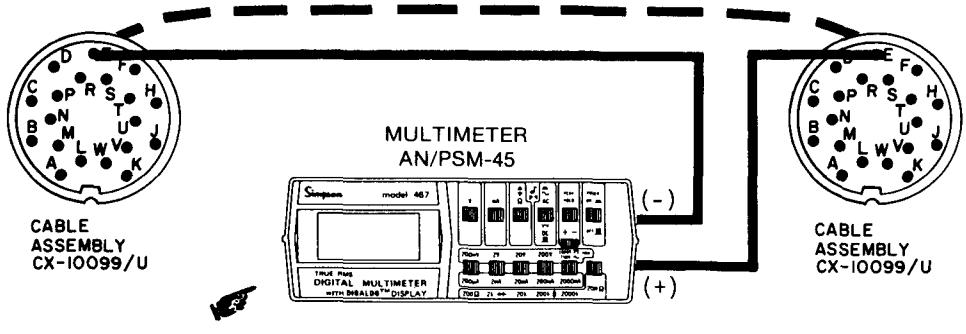
MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

Step 2. Check for defect in CX-10099/U cable by first disconnecting it from CONTROL and PA CONTROL connectors (para 2-8).

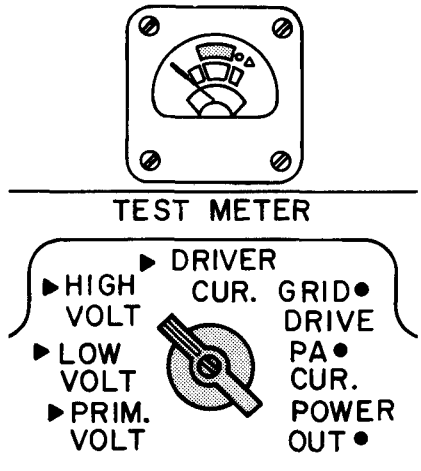
Use Multi meter AN/PSM-45 to check continuity of all pins of the connector on each end of CX-10099/U, Check pins of corresponding letters together (pin A with pin A, pin B with pin B, etc.).



If there is continuity at all pins, higher category of maintenance required.

If any connection is open, replace CX-10099/U and reconnect it to, CONTROL and PA CONTROL connectors.

4. When TEST METER selector switch is set to HIGH VOLT, TEST METER pointer does not move into dark green top scale.



This indicates defective amplifier AM-3349/GRC-106. Higher category of maintenance is required.

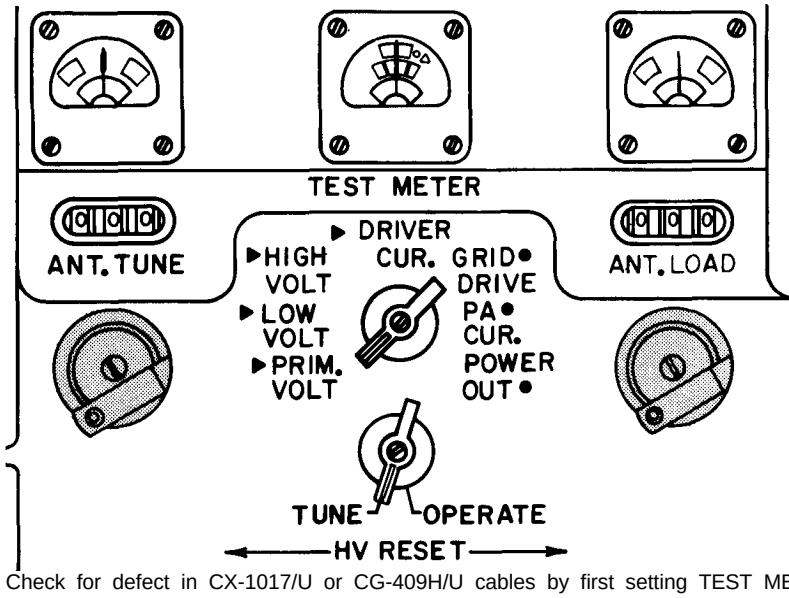
Table 2-2. TROUBLESHOOTING . Continued

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

5. When ANT. TUNE and ANT. LOAD controls are adjusted, ANT. LOAD meter pointer does not move.



Step 1. Check for defect in CX-1017/U or CG-409H/U cables by first setting TEST METER switch to GRID DRIVE. TEST METER pointer should move just to the left of the gray bottom scale.

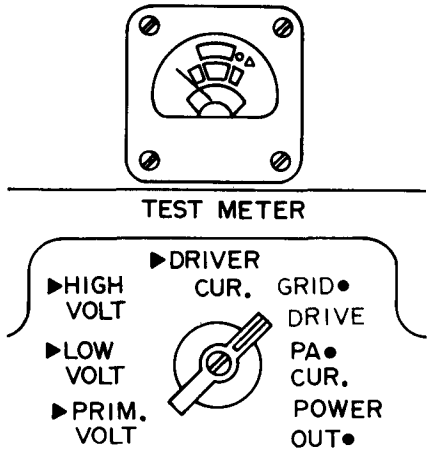


Table 2-2. TROUBLESHOOTING . Continued

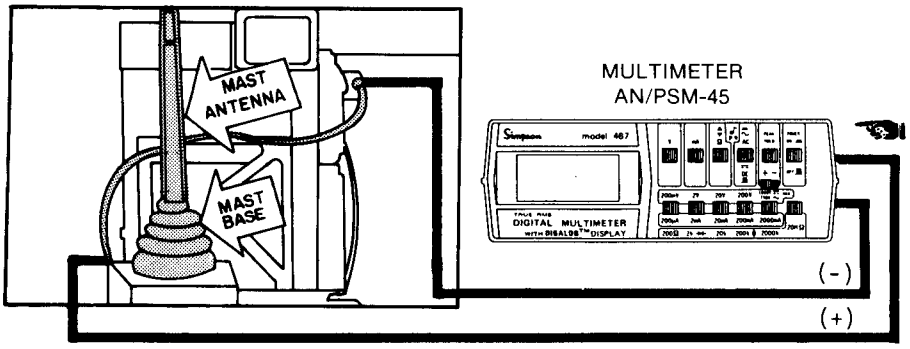
MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

Use extreme care when disconnecting CX-10171/U or when working near antenna. RF voltages as high as 10,000 volts exist at WHIP connector and on the antenna. Set RT SERVICE SELECTOR switch to OFF.

If the pointer moves to the left of the bottom scale, disconnect antenna lead (CX-10171/U) from WHIP connector.
Use Multimeter AN/PSM-45 to check CX-10171/U for continuity to Mast Base AB-652/GR and for shorts to vehicle body.



If CX-10171/U show continuity and is not shorted, be sure antenna is installed properly. If antenna is working properly, reconnect CX-10171/U to WHIP connector. Higher category of maintenance required.

Step 2. If TEST METER pointer does not move with TEST METER switch set at GRID DRIVE, check signal level meter indication on RT. Signal level meter pointer should be in the upper three-quarters of the scale.

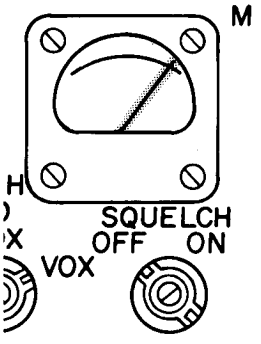


Table 2-2. TROUBLESHOOTING - Continued

MALFUNCTION

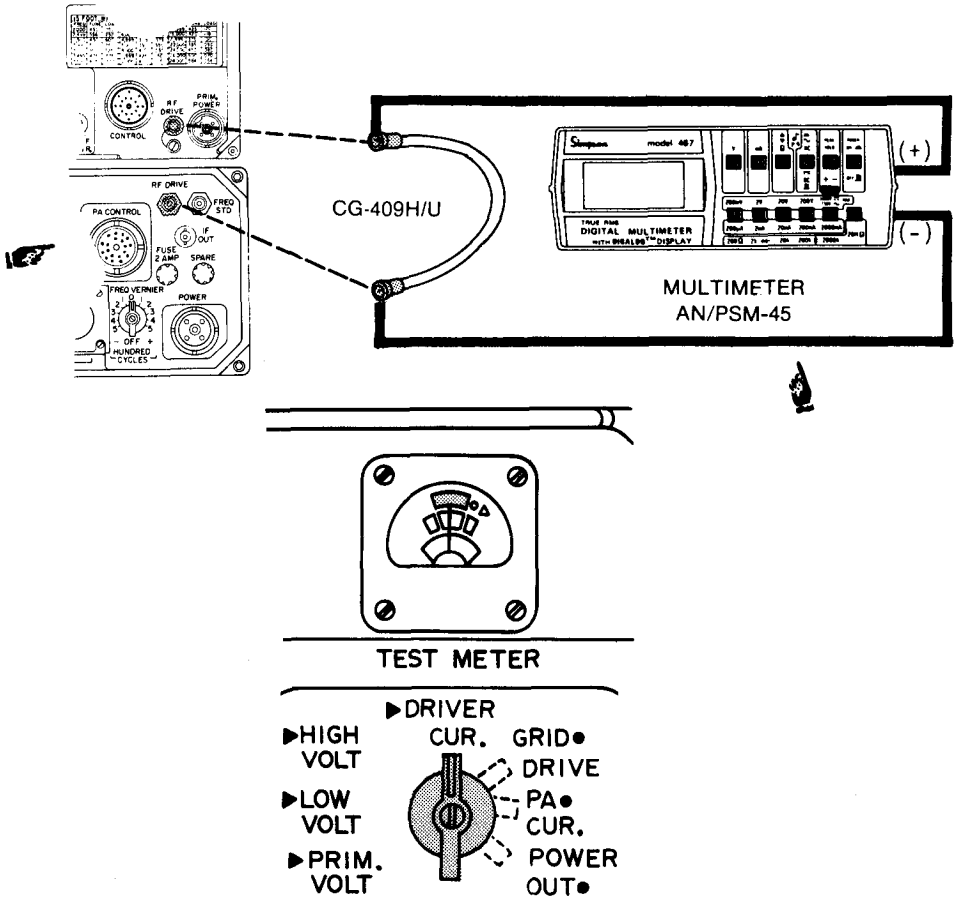
TEST OR INSPECTION

CORRECTIVE ACTION

If it is not, a higher category of maintenance required.

If it is in the upper part of the scale, disconnect CG-409H/U from both RF DRIVE connectors (para 2-8).

Use Multimeter AN/PSM-45 to check for continuity and shorts. If there is continuity in CG-409H/U, set TEST METER selector switch to DRIVER CUR.



TEST METER pointer should move into dark green top scale.

If pointer does not move into top scale. higher category of maintenance required.

Reconnect CG-409H/U to both RF DRIVE connectors.

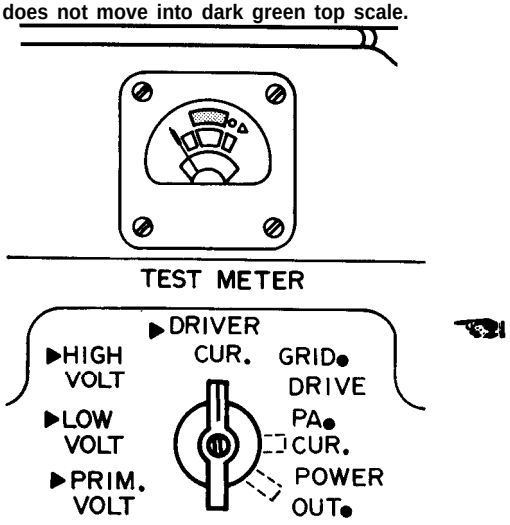
Table 2-2. TROUBLESHOOTING - Continued

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

6. When TEST METER selector switch is set at DRIVER CUR., PA CUR. or POWER OUT, TEST METER pointer does not move into dark green top scale.



Step 1. Turn HV RESET switch to TUNE, wait 60 seconds, and turn back to OPERATE,

Step 2. If TEST METER pointer does not move into green area, higher maintenance is required.

7. Signal level meter pointer is not all the way to the right.

Step 1. Check for defect in RT or in CX-10071/U by disconnecting CX-10071/U from POWER connector (para 2-8).

Step 2. Use Multimeter AN/PSM-45 to check for 27 volts dc between pins A or B and C or D of cable connector. Refer to Malfunction 1, Step 2 for test set-up.

If 27 volts dc is absent, replace CX-10071/U.
If 27 volts dc is present, higher category of maintenance required.

6. Unable to receive.

Step 1. Check for defect in CG-409H/U cable, handset, loudspeaker, or headset by first disconnecting CG-409H/U from RECEIVER IN connector. Connect a coaxial cable from FREQ STD connector to RECEIVER IN connector.

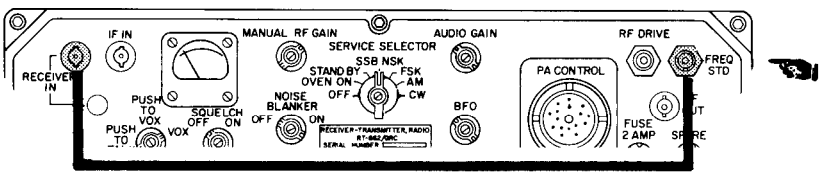


Table 2-2. TROUBLESHOOTING - Continued

MALFUNCTION

TEST OR INSPECTION

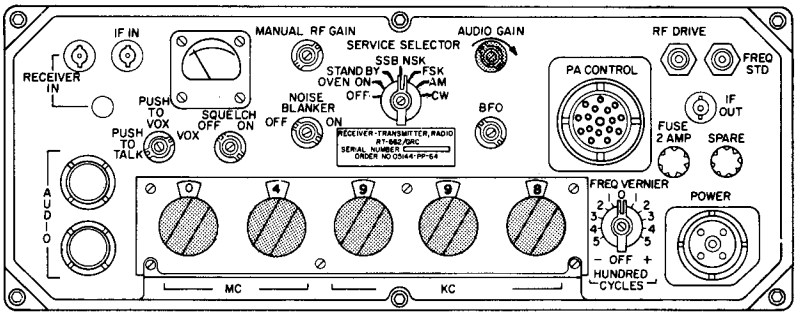
CORRECTIVE ACTION

NOTE

When receiving with Amplifier PRIM. PWR. switch at ON, RT will be in TRANSMIT unless HV RESET switch is set to OPERATE.

Step 2. Set RT-662/GRC MC and KC controls to 04998 or RT-834/GRC MHz, KHz and 100 Hz controls to 049980.

Step 3. Turn AUDIO GAIN control all the way to the right.



RT-662/GRC

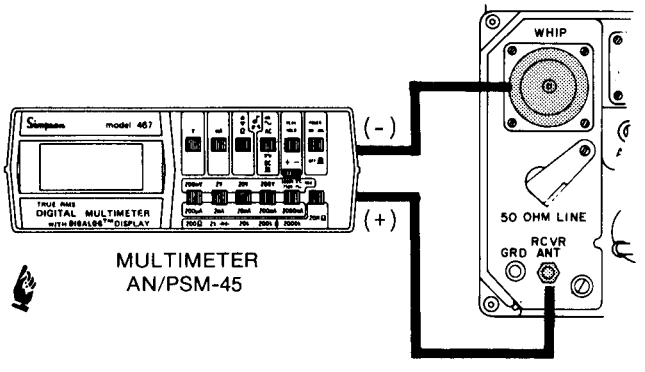
Step 4. Listen for a 2-kHz tone in the audio accessory.

If You hear a 2-kHz tone, disconnect CG-409H/U from RCVR ANT. connector (para 2-8)

Use Multimeter AN/PSM-45 to check CG-409H/U for continuity or shorts. Refer to Malfunction 5, Step 2 for test set-up.

If CG-409H/U shows no continuity or is shorted, replace it.

If CG-409H/U is not defective, use Multi meter AN/PSM-45 to check continuity between WHIP and RCVR ANT. connectors (see figure).



MULTIMETER AN/PSM-45

Table 2-2. TROUBLESHOOTING - Continued

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
		If there is no continuity, higher category of maintenance required. If you do not hear the 2-kHz tone, check for defective loudspeaker, handset and headset. If you still do not hear the 2-kHz tone, higher category of maintenance required.
		Disconnect coaxial cable from RECEIVER IN and FREQ STD connectors and reconnect CG-409H/U to Receiver IN and RCVR ANT. connectors.
9. Unable to transmit		
	Step 1. Check for defect in telegraph key, handset, or headset by first setting RT SERVICE SELECTOR switch to CW, then keying radio set.	
		Signal level meter pointer should move slightly upscale. If the pointer does not move, replace keying device. If this replacement does not solve the problem, higher category of maintenance required.
	Step 2. If the pointer moves upscale, set amplifier TEST METER selector switch to POWER OUT. Key the radio set; TEST METER pointer should move into dark green top scale.	

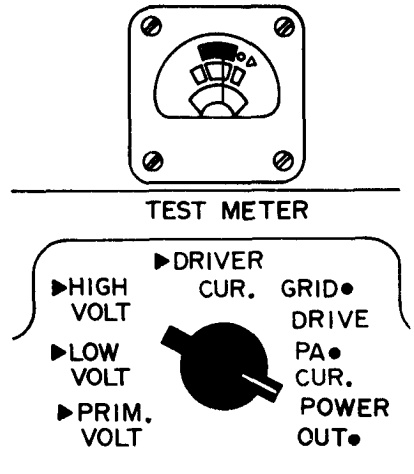


Table 2.2. TROUBLESHOOTING - Continued

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
		If the pointer moves into the top scale, the receiver at the remote station is defective.
		If the pointer moves into the gray bottom scale to the left of the top scale, set TEST METER switch to GRID DRIVE. Key the radio set; TEST METER pointer should now move into dark green top scale.
		If the pointer moves into the top scale, the receiver at the remote station is defective.
		If TEST METER pointer moves to right of top scale, set TEST METER selector switch to PA CUR. Key the radio set; TEST METER pointer should now move to at least the start of the gray bottom scale.
		If none of the above procedures solve the problem, higher category of maintenance required.

SECTION V. MAINTENANCE PROCEDURES

2-6. GENERAL

Organizational Maintenance of Radio Sets AN/GRC-106(*) is limited to:

1. INSPECTION
   - Antenna.
   - Mounting bases.
   - Installed items.
   - Accessible pluckout items.

2. REMOVAL
   - Whip antenna mast sections.
   - Cables.

3. CLEANING
   - Mast Base AB-652/GR.
   - Heat exchanger assembly.

4. REPAIRS AND REPLACEMENTS
   - Whip antenna mast sections.
   - Front panel controls.

5. PRESERVATION
   - Metal surfaces.

2-7. INSPECTION

- ANTENNA. Be sure none of the whip sections are bent or damaged.
- MOUNTING BASES. Be sure mountings are stable and secure. Check for loose or missing hardware.
- INSTALLED ITEMS. Be sure all equipment is properly installed. Check for proper positioning and tightening of all nuts, bolts and washers.
- ACCESSIBLE PLUCKOUT ITEMS. Check seating of all lamps and fuses and position them properly if necessary.

2-6. REMOVAL

a. Whip Antenna Mast Sections

WARNING

During removal, disassembly, erection, assembly or repair of the whip antenna, follow all safety requirements in TB 43-0129. Injury or DEATH could result by failing to follow safe practices. Be sure all equipment is turned OFF.

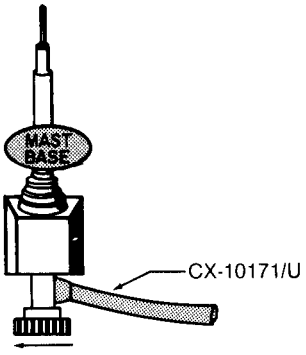
1. Remove antenna sheath clamp.
2. Remove antenna cover.
3. Unscrew the bottom MS-116A from Mast Base AB-652/GR.
4. Disassemble the four mast sections by unscrewing them.

b. Cables

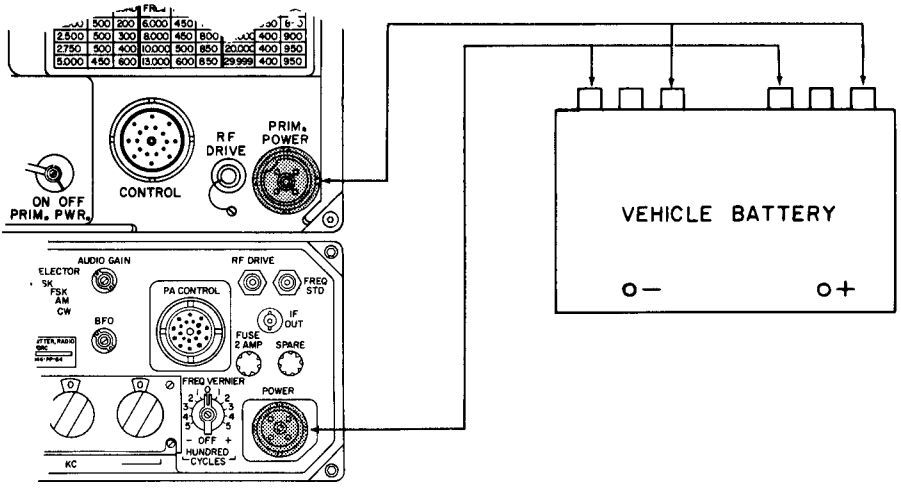
CAUTION

Do not pull on the cables themselves hold the connectors when pulling cables from their sockets.

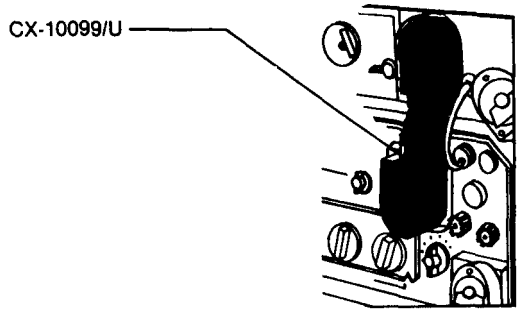
1. CX-10171/U Remove CX-10171/U from the whip antenna by turning the binding post to the left and pulling CX-10171/U out of the slot in the binding post. Remove CX-10171/U from the amplifier by unscrewing the connector and pulling it straight out of the WHIP connector.



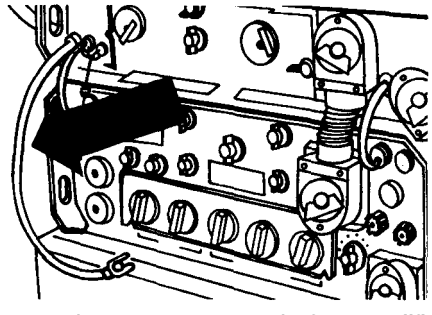
2. CX-10071/U. Remove the two battery lugs on each CX-10071/U cable from the vehicle storage battery terminals. To remove CX-10071/U from the PRIM. POWER connector on amplifier or the POWER connector on the RT unit, pry up the screw handle on the cable connector and turn it to the left until CX-10071/U is free from the power connectors.

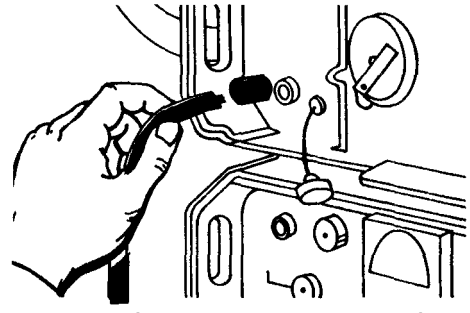


3. **CX-1009/U. Remove CX-1009/U from the amplifier CONTROL connector and the RT unit PA CONTROL connector by prying up the screw handle on the cable connector and turning it to the left until CX-10099/U is free from the control connectors.**

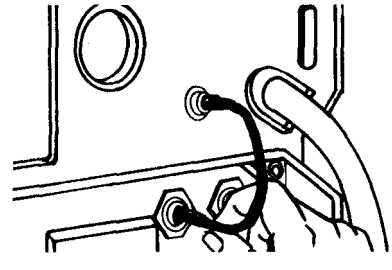


4. **Bonding Jumper. Remove the end of the jumper from the vehicle chassis (see figure, below left). Remove the other end from amplifier binding post by pushing in on the post and pulling the cable free (see figure, below right).**





5. **CG-409H/U. Remove CG-409H/U from amplifier RF DRIVE and RCVR ANT. connectors and RT unit RF DRIVE and RECEIVER IN connectors by depressing the coaxial connector on the CG-409H/U and turning it to the left. When it is loose, pull the coaxial connector straight out from the front panel connectors.**



2-9. CLEANING

WARNING

Fumes of TRICHLOROTRIFLUOROETHANE are poisonous. Provide adequate ventilation whenever you use TRICHLOROTRIFLUOROETHANE. Do not use solvent near heat or open flame. TRICHLOROTRIFLUOROETHANE will not burn, but heat changes the gas into poisonous, irritating fumes. DO NOT breathe the fumes or vapors. TRICHLOROTRIFLUOROETHANE dissolves natural skin oils. DO NOT get the solvent on your skin. Use gloves, sleeves and an apron which the solvent cannot penetrate. If the solvent is taken internally, see a doctor immediately.

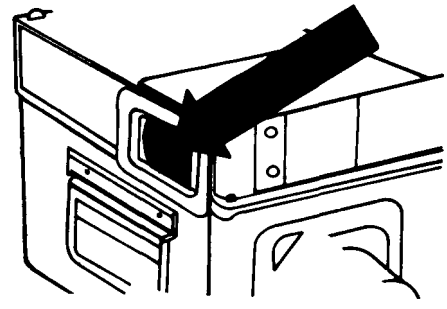
a. Mast Base AB-652/GR

Disassemble mast base (using a suitable crescent wrench) to check for any entry of water. Clean with a wire brush and trichlorotrifluoroethane (Item 1, Appendix C). Coat exterior parts with a light film of silicone compound. If necessary, replace washer (NSN 5999-00-264-9213) which is used to cover the antenna support when the mast sections are removed.

b. Amplifier Blower

NOTE

The amplifier blower is watertight and isolated from all other components of amplifier. Water will pass through the amplifier blower assembly without damaging any other chassis components.



To clean the amplifier blower, you do not have to remove the chassis. Turn the amplifier with its left side (as viewed from the front panel) up and flush out the assembly grillwork with water.

2-10. REPAIRS AND REPLACEMENTS

a. Whip Antenna Moat Sections

WARNING

Follow all safety requirements in TB SIG 291 during removal, disassembly, replacement or assembly of the whip antenna. Injury or DEATH could result by failing to follow safe practices. Be sure all equipment is turned OFF.

1. Replace any defective mast sections with a spare of the same type.
2. Screw two MS-116A's, the MS-117A and the MS-118A together.
3. Screw the remaining MS-116A into Mast Base AB-652/GR.
4. Slide the antenna cover over the MS-116A attached to AB-652/GR. Secure the cover with the antenna sheath clamp.
5. Screw the four assembled mast sections into the MS-116A attached to AB-652/GR.

b. Front Panel Controls

Replace all knobs, fuses, external screws, running spare items and external cables, when they are cracked, broken, frayed, worn out or out of the groove.

2-11. PRESERVATION

Whenever necessary:

NOTE

Be sure the chassis is tightly secured to the case before performing the procedure below.

- Remove rust and corrosion from metal surfaces by lightly sanding with fine sandpaper. Brush two thin coats of the proper paint on bare metal to protect it from further corrosion. Refer to applicable procedures in TB 43-0118.

SECTION VI. PREPARATION FOR STORAGE AND SHIPMENT

2-12. DISASSEMBLY OF EQUIPMENT

Use the procedures below when placing AN/GRC-106(*) in storage or moving it to a different location.

a. Disconnecting Cables

- Refer to paragraph 2-8b.
- Disconnect any minor electrical component that may be connected to RT AUDIO connectors.

b. Antenna Disassembly

- Refer to paragraph 2-8a.
- Remove Mast Base AB-652/GR from the vehicle. Refer to paragraph 2-9a.

c. Component Disassembly

- Pull the release handles on RT Mount toward you while turning them toward the outside of the unit.
- Lift amplifier off the RT or off of its own RT Mount.
- Lift RT off of RT Mount if necessary.
- Unscrew the two insulators (IN-104) from the left crossbar assembly.
- Remove crossbar assemblies from RT Mount by loosening the jamnuts and adjusting screws.
- Remove loudspeaker if it has been installed in the vehicle.

2-13. REPACKING FOR STORAGE OR SHIPMENT

a. AM-3349/GRC-106

- Fold a piece of corrugated cardboard (W5C, B-flute) to form a spring (shock) pad for bottom of a corrugated cardboard carton. Set the spring pad in the carton.
- Place amplifier in carton (12 x 15 x 19 7/8 inches).
- Fold sheets of corrugated cardboard to form spring pads for the front, rear and sides of amplifier and set them in place.
- Slide a sheet of corrugated (A/B) doublewall cardboard between the front spring pad and carton wall.
- Fold a sheet of corrugated cardboard to form a spring pad for the top of amplifier. Set it in place.
- Close the carton and seal it with water resistant tape (PPP-T-76, 3-inch).

b. RT-662/GRC OR RT-834/GRC

- Follow instructions in paragraph 2-13a above, using a 19 7/8 x 15 1/4 x 9 5/8 inch corrugated cardboard carton.

c. Audio Accessories

- Wrap handset and headset in grade A wrapping paper.
- Wrap all audio accessories with flexible corrugated cardboard and tape these wrappings.
- Place handset, telegraph key, and cable CX-1852/U in barrier bags.
- Fold sheets of flexible corrugated cardboard to form small containers for all other accessories.
- Arrange the packaged accessories in the bottom of a 6 3/4 X 13 X 13 1/2 inch corrugated cardboard carton.
- Fold a sheet of flexible corrugated cardboard to form a spring pad and set it in place.
- Close the carton and seal it with water-resistant tape (PPP-T-76, 2-inch).

d. Antenna Group AN/GRA-50

- Place all small hardware in a 3 X 5 inch envelope.
- Wrap all units in flexible corrugated cardboard and tape these wrappings.
- Arrange these packages in the bottom of a 6 5/8 X 14 1/2 X 14 1/2 inch corrugated cardboard carton.
- Fold a sheet of flexible corrugated cardboard to form a spring pad and set it in place.
- Close the carton and seal it with water-resistant tape (PPP-T-76, 2-inch).

e. Whip Antenna Group

- Place Adapter UG-201A/U, Adapter UG-306/U, the antenna sheath clamp, the five mast sections and the insulators in barrier bags.
- Arrange bags in the bottom of a 6318 x 10 1/2 x 49 1/2 inch corrugated cardboard carton.
- Fold flexible corrugated cardboard to form fillers as needed.

Ž Close the carton and seal it with water-resistant tape (PPP-T-76, 3-inch).

f. Cables

- Coil the two CX-10071/U and the CX-10171/U. Place each in a clear bag.
- Place each of the other cables in a barrier bag.
- Arrange cables in the bottom of a 8 1/2 X 11 3/8 X 13 3/8 inch corrugated cardboard carton.
- Fold flexible corrugated cardboard to form fillers where needed.
- Close the carton and seal it with water-resistant tape (PPP-T-76, 2-inch).

g. Mechanical installation Material

- Place all small hardware in a 3 X 5 inch paper envelope.
- Wrap the RT Mount and the two crossbar assemblies in flexible corrugated cardboard and tape these wrappings. Use 3/4-inch masking tape.
- Arrange these packages in the bottom of a 5 1/2 X 14 7/8 X 19 5/8 inch corrugated cardboard carton.
- Fold flexible corrugated cardboard to form fillers as needed.
- Close the carton and seal it with water-resistant tape (PPP-T-76, 3-inch).

h. Running Spare Parts

- Place all small hardware in a 3 X 5 inch paper envelope.
- Place fuses and insulator in clear bags.
- Wrap the two 1/2 X 9/16-inch wrenches with flexible corrugated cardboard and tape these wrappings with 3/4-inch masking tape.
- Arrange packages in the bottom of a carton.
- Fold flexible corrugated cardboard to form fillers as needed.
- Close the carton and seal it with water-resistant tape (PPP-T-76, 2-inch).

i. Manuals

- Place each manual in a barrier bag and seal the bags with 3/4-inch masking tape.

2-14. SHIPPING CRATE

. To store or ship the entire AN/GRC-106(*), use a 17 1/2 X 27 1/2 X 51 inch plywood crate (nailed per PPP-B-621).

2-15. TYPES OF STORAGE

- Short term (administrative) = 1 to 45 days. All equipment in administrative storage must be able to be made ready within 24 hours for use on a mission. Before placing any item in administrative storage, perform the next scheduled PMCS and correct or repair any deficiencies you find. The administrative storage site should provide required protection from extreme weather conditions and allow you to reach the equipment for visual inspections or exercises when applicable.
- Intermediate = 46 to 180 days.
- Long term or flyable = no time limit.

APPENDIX A
REFERENCES

A-1. INTRODUCTION Following is a list of all forms, technical bulletins, and technical manuals referenced in this manual.

A-2. FORMS

Equipment Inspection and Maintenance Worksheet . . . . . DA Form 2404
Report of Discrepancy (ROD). . . . . Form SF 364
Quality Deficiency Report . . . . . Form SF 368
Recommended Changes to Equipment Technical Manuals . . . . . DA Form 2028-2
Recommended Changes to Publications and Blank Forms. . . . . DA Form 2028

A-3. TECHNICAL BULLETINS

Field Instructions for Painting and Preserving Communications-Electronics Equipment . . . . . TB 43-0118
Identification of Radioactive items in the Army Supply System . . . . . TB 430116
Instructions for Safe Handling and Identification of U.S. Army Electronics-Command Managed Radioactive Items in the Army Supply System.. . . . . TB 43-0122
Safety Measures to be Observed When Installing and Using Whip Antennas, Field-Type Masts, Towers, end Antennas, and Metal Poles That are Used with communications, Radar, and Direction Finder Equipment (TO-31 P5-1-1) . . . . . TB 43-0129

A-4. TECHNICAL MANUALS

Operator's and Organizational Maintenance Manual Suppressor, Electrical Transient MX-7778/GRC (NSN 5915-00-937-9564) . . . . . TM 11-5915-223-12

Operator's Manual: Radio Sets AN/GRC-106 (NSN 5820-00-402-2263) and AN/GRC-106A (NSN 5820-00-223-7548) . . . . . TM 11-5820-520-10

Operator's, Organizational, Direct Support, General Support, and Depot Maintenance Manual: Antenna Group AN/GRA-50 (NSN 5985-00-892-0758) . . . . . TM 11-5820-467-15

Organizational Maintenance Repair Parts and Special Tools List: Radio Sets AN/GRC-106 (NSN 5820-00-402-2263) and AN/GRC-106A (NSN 5820-00-223-7548) . . . . . TM 11-5820-520-20P

Organizational Repair Parts and Special Tools List for Radio Set AN/GRC-106 (NSN 5820-00-402-2263) . . . . . TM 11-5820-520-20P-1

Organizational Repair Parts and special Tools List for Radio Set AN/GRC-106A (NSN 5820-00-223-7548) . . . . . TM 11-5820-520-20P-2

Operator's, Organizational, Direct Support and General Support Maintenance Manual for Muitimeter, Digital AN/PSM-45 (NSN 6625-01-139-2512) . . . . . TM 11-6625-3052-14

Procedures for Destruction of Electronic Materiel to Prevent Enemy Use (Electronics Command). . . . . TM 750-244-2

A-5. MISCELLANEOUS PUBLICATIONS

consolidated Index of Army Publications and Forms . . . . . DA PAM 25-30
Ionization and Radiation Protection. . . . . AR 385-11
Sets, Kits, and Outfits Component List : Tool Kit, Electronic Equipment TK 101/G (NSN 5180-00464-5178) . . . . . SC 5180-91-CL-R13
The Army Maintenance Management System (TAMMS) . . . . . DA PAM 738 750
US Army Equipment Index of Modification Work Orders. . . . . DA PAM 750-10
Vehicular Radio Sets and Authorized installations . . . . . SB 11-131

APPENDIX B
MAINTENANCE ALLOCATION

Section I. INTRODUCTION

B-1. GENERAL INFORMATION

This appendix provides a summary of maintenance operations for AN/GRC-106(*). It authorizes categories of maintenance for specific maintenance functions on repairable items and components, as well as tools and equipment needed to perform each function. Use this appendix as an aid in planning maintenance operations.

B-2. MAINTENANCE FUNCTION

Maintenance functions will be limited to and defined as follows:

a. INSPECT. To visually examine an item and compare its physical, mechanical and/or electrical characteristics with established standards in order to determine its serviceability.

b. TEST. To measure mechanical or electrical characteristics of an item and compare those characteristics with prescribed standards in order to verify serviceability.

c. SERVICE. Procedures required periodically to keep an item in proper operating condition, e.g., to clean (decontaminate), preserve, drain, paint, or to fill up fuel, lubrication, hydraulic fluid, or compressed air supplies.

d. ADJUST. To set operating characteristics to the specified parameters and keep them within their prescribed limits.

e. ALINE. To adjust specified variable elements of an item to bring about the best or desired performance.

f. CALIBRATE. To correct test measuring and diagnostic equipment used in precision measurements. Must compare two instruments, one of which is a certified standard of known accuracy, to detect and adjust any differences in the accuracy of the instrument being compared.

g. INSTALL. To place, seat or fix into position an item, part or module (component or assembly) to allow proper functioning of equipment or system.

h. REPLACE. To substitute a functioning like type part, subassembly or module (component or assembly) for its unserviceable counterpart.

i. REPAIR. To correct specific damage, fault, malfunction or failure in a part, subassembly, module (component or assembly), end item or system by applying maintenance services (a-f, h above) or other maintenance actions (welding, grinding, riveting, straightening, facing, remachining or resurfacing).

j. OVERHAUL. The highest degree of maintenance applied to Army equipment. This function does not normally return an item to "like new" condition but restores it to completely serviceable/operational conditions according to maintenance standards (i.e., DMWR) in appropriate technical publications.

k. REBUILD. The highest degree of materiel maintenance applied to Army equipment. To restore unserviceable equipment to a "like new" condition according to original manufacturing standards. This function includes returning to zero those age measurements (hours, miles, etc.) considered in classifying Army equipment/components.

B-3. COLUMN ENTRIES

a. COLUMN 1: GROUP NUMBER. Identifies components, assemblies, subassaemblies and modules with next higher assembly.

b. COLUMN 2: COMPONENT ASSEMBLY. Lists the noun names of components, assemblies, subassemblies and modules for which maintenance is authorized.

c. COLUMN 3: MAINTENANCE FUNCTION. Lists functions to be performed on item listed in column 2. When items are listed without maintenance functions, it is only to have group numbers in MAC and RPSTL coincide.

d. COLUMN 4: MAINTENANCE CATEGORY. Lists a "work time" figure in the appropriate subcolumn(s) to show the lowest level of maintenance authorized to perform the function listed in Column 3. If number or complexity of tasks within limited maintenance function varies at different maintenance categories, appropriate "work time" figures will be shown for each category. Task-hours specified by "work time" figures represent the average time needed to restore a subassembly, module (component or assembly), end item or system to serviceable conditions under typical field operating conditions. The "work time" figure includes preparation time, troubleshooting time, and quality asaurance/quality control time as well as time required to perform specific tasks identified for maintenance functions authorized in the maintenance allocation chart (MAC). Subcolumns of Column 4 are as follows:
C - Operator/Crew
O - Organizational
F - Direct Support
H - General Support
D - Depot

e. COLUMN 5: TOOLS AND EQUIPMENT. Specifies by code those common tool sets (not individual tools) and special tools, test and support equipment needed to perform the designated function (Refer to Section III).

f. COLUMN 6: REMARKS. Contains an alphabetic code leading to the appropriate remark in Section IV.

B-4. TOOLS AND TEST EQUIPMENT REQUIREMENTS

a. TOOL OR TEST EQUIPMENT REFERENCE CODE. Numbers in this column coincide with number used in Column 5 of the MAC and indicate applicable tool or test equipment for maintenance functions.

b. MAINTENANCE CATEGORY. Codes in this column indicate maintenance category allocated the tool or test equipment.

c. NOMENCLATURE. Lists noun name and nomenclature of tools and test equipment needed to perform maintenance functions.

d. NATIONAL/NATO STOCK NUMBER. Lists National/NATO stock number of specified tool or test equipment.

e. TOOL NUMBER. Lists manufacturer's part number of tool, followed by (5 digit) Federal Supply Code for Manufacturers in parentheses.

B-5. REMARKS

a. REFERENCE CODE. Refers to appropriate item in Section II, Column 6.

b. REMARKS. Provides necessary information to explain items appearing in Section II.

Section II. MAINTENANCE ALLOCATION CHART FOR RADIO SETS AN/GRC-106 AND AN/GRC-106A

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQUIPMENT	(6) REMARKS
00	RADIO SETS AN/GRC-106 AND AN/GRC-106A	Inspect		0.2					
		Test		0.3				1	A
		Test			0.5			3 thru 16	B
		Test				1.0		4 thru 37	C
		Test					2.0	4 thru 38	D
		Service		1.0				1, 2	E
		Service			2.0			4, 5	F
		Adjust			1.0			3 thru 16	G
		Adjust				2.0		4 thru 37	H
		Adjust					2.0	4 thru 38	I
		Aline			2.0			3 thru 16	J
		Aline				4.0		4 thru 37	K
		Aline					5.0	4 thru 38	L
		Install		0.2				2	
		Replace		0.4				2	
		Repair		0.1				1, 2	M
		Repair			2.5			3 thru 16	N
		Repair				10.0		4 thru 37	O
		Repair					20.0	4 thru 38	P
		Overhaul					40.0	4 thru 38	

Section II. MAINTENANCE ALLOCATION CHART FOR RADIO SETS AN/GRC-106 AND AN/GRC-106A - Continued

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQUIPMENT	(6) REMARKS
01	RECEIVER-TRANSMITTERS	Inspect		0.2					
	RT-662/GRC AND	Test			0.5			3 thru 16	B
	RT-834/GRC	Test				1.0		4 thru 37	C
		Test					2.0	4 thru 38	D
		Service		0.5				1, 2	E
		Service			1.0			4, 5	F
		Adjust			1.0			3 thru 16	G
		Adjust				2.0		4 thru 37	Q
		Adjust					4.0	4 thru 38	R
		Aline			1.0			3 thru 16	J
		Aline				1.0		4 thru 37	S
		Aline					2.0	4 thru 38	L
		Install		0.1				2	
		Replace		0.2				2	
		Repair		0.5				1, 2	M
		Repair			1.0			3 thru 16	N
		Repair				5.0		4 thru 37	T
		Repair					10.0	4 thru 38	P
		Overhaul					20.0	4 thru 38	
0101	PANEL-CHASSIS ASSEMBLY 1A1	Inspect			0.1				
		Test			0.3			3 thru 16	
		Replace			0.1			4	
		Repair			0.2			4, 5	

Section II. MAINTENANCE ALLOCATION CHART FOR RADIO SETS AN/GRC-106 AND AN/GRC-106A - Continued

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQUIPMENT	(6) REMARKS
010101	FRONT PANEL ASSEMBLY 1A1A1	Service			1.0			4, 5	F
		Test			0.5			3 thru 16	B
		Test				0.5		4 thru 37	D
		Adjust			0.5			3 thru 16	R
		Aline				0.5		4 thru 37	L
		Repair		0.5				4, 5	M
		Repair			0.9			3 thru 16	U
		Repair				1.5		4 thru 37	V
		Replace					2.0	4 thru 38	
		Repair					2.0	4 thru 38	P
01010101	FRONT END PROTECTION ASSEMBLY 1A1A1A10	Test				0.5		4 thru 37	
		Aline				0.5		4 thru 37	
		Replace			1.0			4 thru 38	
		Repair				1.5		4 thru 37	
010102	CHASSIS ASSEMBLY 1A1A2	Test			0.5			3 thru 16	B
		Test				0.5		4 thru 37	C
		Adjust				0.5		4 thru 37	
		Repair			0.9			3 thru 16	W
		Repair				1.5		4 thru 37	X
		Replace					2.0	4 thru 38	
		Repair					2.0	4 thru 38	P

Section II. MAINTENANCE ALLOCATION CHART FOR RADIO SETS AN/GRC-106 AND AN/GRC-106A - Continued

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQUIPMENT	(6) REMARKS
01010201	INTERNAL ALC ASSEMBLY 1A1A2A5	Test			0.3			3 thru 16	B
		Test				0.5		4 thru 37	C
		Replace			0.5			4, 5	
		Repair				1.5		4 thru 37	
01010202	100 HZ SYNTHESIZER 1A1A2A8	Test			0.3			3 thru 16	B
		Test				0.5		4 thru 37	C
		Adjust				0.5		4 thru 37	
		Replace			0.9			4, 5	
		Repair				1.5		4 thru 37	
01010203	VOLTAGE REGULATOR ASSEMBLY 1A1A2A9	Test			0.3			3 thru 16	B
		Test				0.5		4 thru 37	C
		Adjust				0.5		4 thru 37	
		Replace			0.9			4, 5	
		Repair				1.5		4 thru 37	
010103	TUNING DRIVE 1A1A3	Test			0.5			3 thru 6	
		Service			0.9			4, 5	F
		Replace			0.5			4, 5	
		Repair					1.0	4, 5, 6, 27	
0102	100 KHZ SYNTHESIZER MODULE 1A2	Test			0.3			3 thru 16	B
		Test				0.5		4 thru 37	C
		Adjust				1.0		4 thru 37	
		Replace			0.5			4, 5	
		Repair				4.0		4 thru 37	

Section II. MAINTENANCE ALLOCATION CHART FOR RADIO SETS AN/GRC-106 AND AN/GRC-106A - Continued

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQUIPMENT	(6) REMARKS
0103	FREQUENCY STANDARD MODULE 1A3	Test			0.3			3 thru 16	B
		Test				0.5		4 thru 37	C
		Adjust				1.0		4 thru 37	
		Replace			0.5			4, 5	
		Repair				3.0		4 thru 37	
0104	10 AND 1 KHZ SYNTHESIZER MODULE 1A4	Test			0.3			3 thru 16	B
		Test				0.5		4 thru 37	C
		Adjust				1.0		4 thru 37	
		Replace			0.5			4, 5	
		Repair				3.0		4 thru 37	
0105	TRANSMITTER IF AND AUDIO MODULE 1A5	Test			0.3			3 thru 16	B
		Test				0.5		4 thru 37	C
		Adjust				1.0		4 thru 37	
		Aline				1.0		4 thru 37	
		Replace			0.5			4, 5	
		Repair				4.0		4 thru 37	
0106	FREQUENCY DIVIDERS MODULE 1A6	Test			0.3			3 thru 16	B
		Test				0.5		4 thru 37	C
		Adjust				1.0		4 thru 37	
		Replace			0.5			4, 5	
		Repair				4.0		4 thru 37	

Section II. MAINTENANCE ALLOCATION CHART FOR RADIO SETS AN/GRC-106 AND AN/GRC-106A - Continued

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQUIPMENT	(6) REMARKS
0107	RECEIVER IF MODULE 1A7	Test			0.3			3 thru 16	B
		Test				0.5		4 thru 37	C
		Aline				1.0		4 thru 37	
		Replace			0.5			4, 5	
		Repair				4.0		4 thru 37	
0108	TRANSLATOR MODULE 1A8	Test				0.3		4 thru 37	C
		Test					1.0	4 thru 38	D
		Adjust					1.0	4 thru 38	
		Replace				0.5		4, 5	
		Repair					6.0	4 thru 38	
0109	MHZ SYNTHESIZER MODULE 1A9	Test			0.3			3 thru 16	B
		Test				0.5		4 thru 37	C
		Adjust				1.0		4 thru 37	
		Replace			0.5			4, 5	
		Repair				2.0		4 thru 37	
0110	RECEIVER AUDIO MODULE 1A10	Test			0.3			3 thru 16	B
		Test				0.5		4 thru 37	C
		Adjust				1.0		4 thru 37	
		Replace			0.5			4, 5	
		Repair				2.0		4 thru 37	

Section II. MAINTENANCE ALLOCATION CHART FOR RADIO SETS AN/GRC-106 AND AN/GRC-106A - Continued

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQUIPMENT	(6) REMARKS
0111	DC-TO-DC CONVERTER AND REGULATOR MODULE 1A11	Test			0.3			3 thru 16	B
		Test				0.5		4 thru 37	C
		Adjust				1.0		4 thru 37	
		Replace			0.5			4, 5	
		Repair				2.0		4 thru 37	
0112	RF AMPLIFIER MODULE 1A12	Test				0.3		4 thru 37	C
		Test					1.5	4 thru 38	D
		Adjust					1.0	4 thru 38	
		Aline					2.0	4 thru 38	
		Replace				0.5		4, 5	
		Repair					4.0	4 thru 38	
0113	CASE ASSEMBLY 1A13	Replace					0.1	4	
		Repair					0.1	4, 5	

Section II. MAINTENANCE ALLOCATION CHART FOR RADIO SETS AN/GRC-106 AND AN/GRC-106A - Continued

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQUIPMENT	(6) REMARKS
02	AMPLIFIER, RADIO	Inspect		0.2					
	FREQUENCY	Test			0.5			3 thru 16	Y
	AM-3349/GRC-106	Test				1.0		4 thru 37	C
		Test					2.0	4 thru 38	D
		Service		0.5				2	E
		Service			2.0			4, 5	F
		Adjust			1.0			3 thru 16	Z
		Adjust				2.0		4 thru 37	AA
		Adjust					2.0	4 thru 37	AB
		Aline			1.0			3 thru 16	I
		Aline				2.0		4 thru 38	AC
		Aline					2.0	4 thru 38	L
		Install		0.1				2	
		Replace		0.2				2	
		Repair			2.0			3 thru 16	AD
		Repair				4.0		4 thru 38	AE
		Repair					10.0	4 thru 38	P
		Overhaul					20.0	4 thru 38	
0201	CHASSIS-PANEL ASSEMBLY	Inspect			0.1				
	2A1	Test			0.3			3 thru 16	
		Replace			0.1			4	
		Repair			0.2			4, 5	AF
		Repair				0.5		4 thru 37	AG

Section II. MAINTENANCE ALLOCATION CHART
FOR
RADIO SETS AN/GRC-106 AND AN/GRC-106A - Continued

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQUIPMENT	(6) REMARKS
020101	CHASSIS ASSEMBLY 2A1A1	Test			0.5			3 thru 16	B
		Test				1.0		4 thru 37	C
		Adjust			1.0			3 thru 16	
		Replace			1.0			4 thru 38	
		Repair			1.0			3 thru 16	AH
		Repair				2.0		4 thru 37	P
		Overhaul					20.0	4 thru 38	
0210101	POWER AMPLIFIER PLENUM 2A1A1A2	Test			0.5			3 thru 16	B
		Test				1.0		4 thru 37	C
		Adjust			1.0			3 thru 16	
		Repair			1.0			2 thru 16	AI
		Replace				1.0		4 thru 37	
		Repair				2.0		4 thru 37	P
0201010101	VOLTAGE REGULATOR ASSEMBLY 2A1A1A2A2	Test			0.5			3 thru 16	B
		Test				1.0		4 thru 37	C
		Adjust			1.0			3 thru 16	
		Replace				1.0		4 thru 37	
		Repair				2.0		4 thru 37	
0201010102	AUTOMATIC PHASE CONTROL TUNE ASSEMBLY 2A1A1A2A4	Test			1.0			3 thru 16	B
		Test				1.0		4 thru 37	C
		Adjust			1.0			3 thru 16	
		Replace				1.0		4 thru 37	
		Repair				1.0		4 thru 37	

Section II. MAINTENANCE ALLOCATION CHART FOR RADIO SETS AN/GRC-106 AND AN/GRC-106A - Continued

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQUIPMENT	(6) REMARKS
02010102	ELECTRICAL CHASSIS 2A1A1A3	Test				1.0		3 thru 37	
		Replace				1.0		4 thru 37	
		Repair				1.0		3 thru 37	
020102	POWER AMPLIFIER PANEL 2A1A5	Test			0.5			3 thru 16	B
		Test				1.0		4 thru 37	C
		Replace			0.5			4, 5	
		Repair		1.0				4, 5	AJ
		Repair			2.0			3 thru 16	AK
		Repair				2.0		4 thru 37	
		Repair					2.0	4 thru 38	P
02010201	FILTER ASSEMBLY 2A1A5A1	Test				0.3		4 thru 37	C
		Test					1.0	4 thru 38	D
		Replace				1.0		4, 5	
		Repair					1.0	4 thru 38	
02010202	DC-TO-DC CONVERTER ASSEMBLY 2A1A5A2	Test				1.0		4 thru 37	
		Replace			1.0			4, 5	
		Repair			1.0			4, 5	AL
		Repair					1.0	4 thru 38	AM
0201020201	SCREEN RECTIFIER ASSEMBLY 2A1A5A2A4	Test					1.0	4 thru 38	
		Replace					1.0	4 thru 38	
		Repair					1.0	4 thru 38	

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQUIPMENT	(6) REMARKS
0201020202	START CIRCUIT ASSEMBLY 2A1A5A2A6	Test			0.5			3 thru 16	B
		Test				1.0		4 thru 37	C
		Replace			0.5			4, 5	
		Repair				1.0		4 thru 37	
02010203	PLATE ASSEMBLY 2A1A5A3	Test				1.0		4 thru 37	
		Replace				1.0		4 thru 37	
		Repair				2.0		4 thru 37	
02010204	GEAR DRIVE ASSEMBLY 2A1A5A4	Test			0.2			3 thru 16	
		Service			2.0			4, 5	F
		Replace			1.5			4, 5	
		Repair				2.0		4, 5	
02010205	TERMINAL BOARD ASSEMBLY 2A1A5A5	Test			0.5			4 thru 16	B
		Test				1.0		4 thru 37	C
		Replace			0.5			4, 5	
		Repair				1.0		4 thru 37	
02010206	FRONT PANEL ASSEMBLY 2A1A5A6	Inspect				0.3			
		Test			0.3			4 thru 16	B
		Test				0.5		4 thru 37	C
		Test					1.0	4 thru 38	D
		Repair			1.0			4 thru 16	AT
		Replace				1.0		4 thru 37	
		Repair				1.0		4, 5	AU

Section II. MAINTENANCE ALLOCATION CHART FOR RADIO SETS AN/GRC-106 AND AN/GRC-106A - Continued

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQUIPMENT	(6) REMARKS
02010207	PROTECTION CIRCUIT ASSEMBLY 2A1A5A7	Test				1.0		4 thru 37	C
		Test					1.0	4 thru 38	D
		Replace				1.0		4, 5	
		Repair					1.0	4 thru 38	
0202	TURRET ASSEMBLY 2A2	Service			1.0			4, 5	F
		Test				0.3		4 thru 37	C
		Test					1.0	4 thru 38	D
		Adjust					1.0	4 thru 38	
		Replace			1.0			4 thru 16	
		Repair			2.0			4 thru 16	AN
		Repair					4.0	4 thru 38	P
020201	DRUM, TURRET 2A2A1	Test			0.5			4 thru 37	
		Test					1.0	4 thru 37	
		Replace			1.0			4, 5	
		Repair					2.0	4 thru 38	
020202	DRIVE, TURRET 2A2A2	Test					0.5	4 thru 38	
		Replace					2.0	4, 5	
		Repair					2.0	4 thru 38	
0203	ANTENNA COUPLER ASSEMBLY 2A3	Test			0.3			4 thru 16	B
		Test					1.0	4 thru 38	D
		Adjust					1.0	4 thru 38	
		Aline					1.0	4 thru 38	
		Replace			1.0			4, 5	
		Repair					2.0	4 thru 38	

Section II. MAINTENANCE ALLOCATION CHART FOR RADIO SETS AN/GRC-106 AND AN/GRC-106A - Continued

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQUIPMENT	(6) REMARKS
0204	DISCRIMINATOR ASSEMBLY 2A4	Test			0.3			3 thru 16	B
		Test					1.0	4 thru 38	D
		Adjust					1.0	4 thru 38	
		Aline					1.0	4 thru 38	
		Replace			1.0			4, 5	
		Repair					2.0	4 thru 38	
0205	CASE ASSEMBLY 2A6	Test			0.3			3 thru 16	
		Replace			1.0			4	
		Repair			1.0			4, 5	AO
		Repair					2.0	4 thru 38	P
020501	INVERTER ASSEMBLY 2A6A1	Test			0.5			3 thru 16	
		Replace			1.0			4, 5	
		Repair				2.0		4 thru 37	
0206	RELAY ASSEMBLY 2A7	Test			1.0			3 thru 16	B
		Test				1.0		4 thru 37	C
		Replace			1.0			4, 5	
		Repair				2.0		4 thru 37	
0207	DRIVER ASSEMBLY 2A8	Test			0.5			3 thru 16	B
		Test					1.0	4 thru 38	D
		Adjust				1.0		4 thru 37	
		Aline			0.5			3 thru 16	
		Replace			1.0			4, 5	
		Repair			0.5			3 thru 16	AP
		Repair					2.0	4 thru 38	P

Section II. MAINTENANCE ALLOCATION CHART FOR RADIO SETS AN/GRC-106 AND AN/GRC-106A - Continued

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQUIPMENT	(6) REMARKS
0208	PA STATOR ASSEMBLY 2A9	Test				0.5		4 thru 37	
		Adjust				1.0		4 thru 37	
		Aline			0.5			4, 5	
		Replace			1.0			4, 5	
		Repair				2.0		4 thru 37	

Section II. MAINTENANCE ALLOCATION CHART FOR RADIO SETS AN/GRC-106 AND AN/GRC-106A - Continued

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQUIPMENT	(6) REMARKS
03	MOUNTING ASSEMBLY MT-3140/GRC-106	Inspect		0.1					
		Service		0.2				2	
		Install		0.4				2	
		Replace		0.1				2	
		Repair					1.0	4, 5	
04	INTERCONNECTION CABLES	Inspect	1.0						
		Test		0.2				1, 2	AQ
		Test				0.3		4, 5, 27	D
		Replace		0.4				2	
		Repair				1.5		4, 5, 27	
05	ANTENNA GROUP AN/GRA-50								AR
06	LOUDSPEAKER LS-166/U								AS
07	GROUNDING KIT	Inspect		0.2					
		Service		0.5					
		Install		0.5					
		Replace		0.5					
		Repair		0.5					

Section II. MAINTENANCE ALLOCATION CHART FOR RADIO SETS AN/GRC-106 AND AN/GRC-106A - Continued

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQUIPMENT	(6) REMARKS
08	MAST SECTIONS MS-116A, MS-117A, AND MS-118A	Inspect Service Install Replace		0.2 0.5 0.5 0.5					
09	TELEGRAPH KEY KY-116/U								
10	HEADSET H-227/U								
11	HEADSET H-33/PT								
12	MICROPHONE M-29B/U								

Section III. TOOL AND TEST EQUIPMENT REQUIREMENTS FOR AN/GRC-106 AND AN/GRC-106A

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL/ NATO STOCK NUMBER	TOOL NUMBER
1	O	MULTIMETER, DIGITAL AN/PSM-45	6625-01-139-2512	
2	O	TOOL KIT, ELECTRONIC EQUIPMENT TK-101/G	5160-00-064-5178	
3	F,H	TRANSCEIVER TEST SET AN/GRM-114A	6625-01-144-4481	
4	O,F,H,D	TOOL KIT, ELECTRONIC EQUIPMENT TK-100/G	5180-00-605-0079	
5	O,F,H,D	TOOL KIT, ELECTRONIC EQUIPMENT TK-105/G	5180-00-610-8177	
6	F,H,D	POWER SUPPLY PP-4763	5820-00-937-7690	
7	F,H,D	MULTIMETER ME-303A/U	6625-01-969-4105	
8	F,H,D	PROBE T-CONNECTOR HP-11042A	5985-00-713-4356	
9	F,H,D	OSCILLOSCOPE, DUAL TRACE AN/USM-488	6625-01-187-7847	
10	F,H,D	ELECTRONIC COUNTER AN/USM-459	6625-01-061-8928	
11	F,H,D	ELECTRONIC VOLTMETER AN/URM-145D	6625-01-119-7271	
12	F,H,D	SIGNAL GENERATOR SG-1112(V)1/U (2 EA. AT D)	6625-00-566-3067	

Section III. TOOL AND TEST EQUIPMENT REQUIREMENTS FOR AN/GRC-106 AND AN/GRC-106A - Continued

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL/ NATO STOCK NUMBER	TOOL NUMBER
13	F,H,D	SIGNAL GENERATOR SG-1171/U (2 EA. AT H AND D)	6625-01-133-6160	
14	F,H,D	TEST SET ELECTRONIC TUBE, TV-2C/U	6625-00-849-5694	
15	F,H,D	ATTENUATOR, VARIABLE CN-1128/U	5985-00-957-1860	
16	F,H,D	ADAPTOR, CONNECTOR (USED ON AN/URM-145D), A1 309	5935-00-937-4035	
17	F,H,D	TORQUE WRENCH, 0-150 INCH LB, TQ 12BL	5120-00-230-6380	
18	F,H,D	KEY, SOCKET HEAD SCREW, S048-4	5120-00-827-2967	
19	F,H,D	EXTENSION SOCKET HEAD WRENCH, FX2	5120-00-243-1689	
20	F,H,D	CROW ATTACHMENT, GGG-C-1507	5120-00-181-6764	
21	F,H,D	HANDLE, SOCKET WRENCH, GGG-W-641	5120-00-240-5396	
22	F,H,D	SOCKET, F261	5120-00-235-5807	
23	F,H,D	UNIVERSAL JOINT, A-A-2169	5120-00-224-9215	
24	F,H,D	THERMOMETER, GGG-T-336	6685-00-444-6000	
25	F,H,D	STOP WATCH, GG-S-764	6645-00-250-4680	
26	F,H,D	BLOWER, EXTERNAL (ANY EQUAL TO P/A BLOWER)		

Section III. TOOL AND TEST EQUIPMENT REQUIREMENTS FOR AN/GRC-106 AND AN/GRC-106A. Continued

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL/ NATO STOCK NUMBER	TOOL NUMBER
27	F,H,D	MULTIMETER, DIGITAL AN/USM-486/U	6625-01-145-2430	
28	F,H,D	SPECTRUM ANALYZER AN/USM-489(V)/1	6625-01-079-9495	
29	F,H,D	ATTENUATOR, BIRD 8325	5985-00-433-0067	
30	F,H,D	DUMMY LOAD GROUP OA-4539/GRC-106	5985-00-089-4379	
31	F,H,D	SIMULATOR, RF SM-442A/GRC	6625-00-937-4029	
32	F,H,D	DISTORTION ANALYZER TS-4084/G	6625-01-217-0054	
33	F,H,D	COMBINING NETWORK, AUDIO (FABRICATED ITEM)		
34	F,H,D	TRANSISTOR TEST SET TS-1 836/U	6625-00-893-2628	
35	F,H,D	POWER SUPPLY HP6456B	6130-00-104-5326	
36	F,H,D	LEVEL METER, FREQUENCY SELECTIVE AN/USM-490	6625-01-138-3351	
37	F,H,D	GENERATOR, SIGNAL 550L	6625-01-112-1926	
38	F,H,D	COMBINING NETWORK, RF (FABRICATED ITEM)		

Section IV. REMARKS

REFERENCE CODE	REMARK
A	Operational test only.
B	All tests except GS and Depot tests.
C	All tests except Depot tests.
D	All tests.
E	Service by cleaning external surfaces only.
F	Service by lubricating.
G	All adjustments except module adjustments.
H	All adjustments except 1A8, 1A12, 2A2, 2A3, and 2A4 modules.
I	All adjustments.
J	Mechanical alinement only.
K	All alinements except 1 A12, 2A3, and 2A4 modules.
L	All alinements.
M	Repair by replacement of knobs, fuse, external screws, running spare items, or external cables.
N	Repair by replacement of tubes, modules, and other plug-in/pluck-out items, switches, external connectors, or meters.
O	Repair of all modules except 1 A8, 1A12, 2A2, 2A3, and 2A4.
P	All repairs.
Q	All module adjustments except 1A8 and 1A12.
R	All adjustments.
S	All alinements except 1A12.
T	Repair of all modules except 1A8 and 1A12.
U	Repair by replacement of J16, J17, J24, M7, rf filters, 1A1A1A10, capacitor assemblies 1A1A1A6 and 1A1A1A5, or resistor assembly 1A1A1A7.

Section IV. REMARKS. Continued

REFERENCE CODE	REMARK
V	Repair by replacement of resistors, diodes, switches, or fuse holder.
W	Repair by replacement of miscellaneous hardware, internal alc assembly 1A1A2A5, tuning drive 1A1A3, or voltage regulator assembly 1A1A2A9.
X	Repair by replacement of all major subassemblies, miscellaneous hardware, or miscellaneous electrical components.
Y	All test except GS and individual subassembly tests.
Z	All adjustments except 2A2, 2A3, 2A4, 2A8, and 2A9 modules.
AA	All adjustments except 2A2, 2A3, and 2A4 modules.
AB	All adjustments.
AC	All alinements except 2A3, and 2A4 modules.
AD	Repair by replacement of tubes, relays, GS level assemblies, switches external connectors, meters, or rf coil strips.
AE	All repairs except Depot repairs.
AF	Repair by replacement of chassis or front panel.
AG	Repair by replacement of internal miscellaneous hardware.
AH	Repair by replacement of tube 2A1A1V1, or 2A1A1V2.
Al	Repair by replacement of vaneaxial fan.
AJ	Repair by replacement of miscellaneous hardware, electrical connector cover, or knobs.
AK	Repair by replacement of miscellaneous hardware, switches except GS switches, electronic component assemblies, gasket, protection circuit assembly 2A1A5A7, de-to-de converter assembly 2A1A5A2, transistor 2A1A5Q1 or rf filter box 2A1A5A1.
AL	Repair by replacement of 2A1A5A2A6.
AM	Repair by replacement of 2A1A5A2A4.
AN	Repair by replacement of transformer assemblies 2A2A1 Al through 2A2A1A15 and or filter assemblies 2A2A1A16 through 2A2A1A31.

Section IV. REMARKS - Continued

REFERENCE CODE	REMARK
AO	Repair by replacement of motor amplifier inverter, miscellaneous hardware, exhaust screen, or vaneaxial fan.
AP	Repair by replacement of tube 2A8V1, tube shielding, or spacer plate.
AQ	Test by continuity checks only.
AR	See TM 11-5820-467-15.
AS	See TM 11-5965-222-14P.
AT	Repair by replacement of miscellaneous hardware, switch assembly, miscellaneous switches, filter box, gasket, protection circuit, or dc-to-dc converter 2A1A5A2.
AU	Repair by replacement of miscellaneous hardware, miscellaneous switches, contacts, relays, gear set, wiring harness, or front panel.

APPENDIX C
EXPENDABLE SUPPLIES AND MATERIALS

Section I. INTRODUCTION

C-1. G&4 GENERAL INFORMATION

This appendix lists expendable supplies and materials You will need to operate and maintain AN/GRC-106(*). These items are authorized to you by CTA 50-970, Expendable items.

C-2. EXPLANATION OF COLUMNS

a. **ITEM NO.** This number is referenced in the narrative instructions to identify the material (for example, "Use cleaning compound, Item 5, App. C").

b. **LEVEL.** Shows the lowest level of maintenance that needs the listed item.

C - Crew/Operator
O - Organizational Maintenance

c. **NATIONAL STOCK NUMBER.** Shows the National Stock Number assigned to each item and used to requisition that item.

d. **DESCRIPTION.** Shows the National Item Name and (if required) a short description to identify and locate the item. The last line for each item shows the Federal Supply Code for Manufacturers (FSCM) in parentheses, followed by the part number.

e. **UNIT OF MEASURE (U/M).** Shows the amount of the item needed to perform the actual operational/maintenance function. This measure is shown by a two-letter abbreviation (for example EA, OZ, IN).

Section II. EXPENDABLE SUPPLIES AND MATERIALS LIST

ITEM NO.	LEVEL	NATIONAL STOCK NUMBER	DESCRIPTION	U/M
1	C	6850-00-105-3084	Trichlorotrifluoroethane	QT
2	C	8305-00-267-3015	Cleaning cloth	YD
3	0	6850-00-880-7616	Silicone compound	OZ
4	0	5350-00-264-3485	Sandpaper, PP-105	SH

GLOSSARY

Alternating current (ac) . . . . . Electrical current continuously reversing direction and changing in power.

Continuity . . . . . The condition of a circuit when it has a closed, continuous electrical path.

Continuous wave (cw) . . . . . Electrical current with constant frequency and power.

Direct current (dc) . . . . . Electrical current flowing in one direction and constant in power.

Receiver-Transmitter (RT) . . . . . When used in this manual, refers to either RT-662/GRC or RT-834/GRC.

Remote site . . . . . One located up to two miles away to provide additional communication.

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TM 11-5840-340-12	23 Jan 74	Radar Set AN/PRC-76

BE EXACT PIN-POINT WHERE IT IS				IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:
PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO	
2-25	2-28			Recommend that the installatior antenna alignment procedure be changed throughout to specify a 2^{o} IFF antenna lag rather than 1^{o}. REASON: Experience has shown that with only a 1^{o} lag, the antenna servo system is too sensitive to wind gusting in excess of 25 knots, and has a tendency to rapidly accelerate and decelerate as it hunts, causing strain to the drive train. Hunting is minimized by adjusting the lag to 2^{o} without degradation of operation.
3-10	3-3		3-1	Item 5, Function column. Change "2 db" to "3db." REASON: The adjustment procedure the the TRANS POWER FAULT indicator calls for a 3 db (500 watts) adjustment to light the TRANS POWER FAULT indicator.
5-6	5-8			Add new step f.1 to read, "Replace cover plate removed in step e.1, above." REASON: To replace the cover plate.
		F03		Zone C 3. On J1-2, change "+24 VDC to "+5 VDC." REASON: This is the output line of the 5 VDC power supply. +24 VDC is the input voltage.

SAMPLE

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SIGN HERE: SSG I. M. DeSpiritof

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