

CHANGE }
No. 6 }

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, 29 August 1975

Organizational Maintenance Manual RECEIVER GROUP OA-1451/PRR, OA-1451A/PRR, AND OA-1451B/PRR

TM 11-5825-203-20, 10 April 1961, is changed as follows:

The title is changed as shown above.

Page 2. Paragraph 1.1 is superseded as follows:

1.1. Indexes of Publications

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

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

Paragraph 2 is superseded as follows:

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 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 and DSR 4145.8.

c. *Discrepancy in Shipment Report (DISREP) (SF 361)*. Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361) as prescribed in AR 55-38 and DSR 4500.15.

Paragraphs 2.1, 2.2, and 2.3 are added after paragraph 2.

2.1. Reporting of Errors

The reporting of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications and Blank Forms) and

forwarded direct to Commander, US Army Electronics Command, ATTN: AMSEL-MA-Q, Fort Monmouth, NJ 07703.

2.2. Administrative Storage

For procedures, forms, and records, and inspections required during administrative storage of this equipment, refer to TM 740-90-1.

2.3. Destruction of Army Materiel

Destruction of Army materiel to prevent enemy use shall be as prescribed in TM 750-244-2.

Page 6. Paragraphs 6.1 and 6.2 and figures 3.1 and 3.2 are added after paragraph 6.

6.1. Radio Receiver R-744B/PRR Controls and Indicators

(fig. 3.2)

Controls or indicator	Function
MEGACYCLES dial	Indicates frequency to which receiver is tuned.
CAL ADJ control	Adjusts position of tuning indicator to calibrate MEGACYCLES dial.
TUNING control	Tunes receiver to desired frequency.
DIAL LOCK	Locks TUNING control.
VEH POWER receptacle	Connector for vehicular power source.
POWER switch:	
BATT	Receiver operates from internal batteries.
OFF	Turns receiver off.
VEH	Receiver operates from vehicular electrical system.
DF ANT connector	Connector for direction finder antenna.
Antenna selector switch	Connects whip antenna or direction finder antenna to receiver input.
ANT connector	Connector for whip antenna.

<i>Controls or indicator</i>	<i>Function</i>
AF GAIN control	Controls volume to the headset.
AUDIO jack	Connector for headset.
LITE DIM control	Controls illumination of MEGACYCLES dial.
OPERATE switch:	
FM	Permits reception of fm signals.
AM	Permits reception of am signals.
CW	Permits reception of cw signals.
CAL	Provides calibration signals for check or adjustment of MEGACYCLES dial.
NOTE	
Be sure that all antennas are disconnected from the receiver when the OPERATE switch is in CAL POSITION.	
METER switch:	
SIG	Meter indicates relative strength of received signal.
1.5V	Meter measures filament supply voltage.
45V	Meter measures plate supply voltage.
Meter	Indicates voltage determined by setting of METER switch.

<i>Controls or indicator</i>	<i>Function</i>
DIODE OUTPUT	Connector for transmission cable to Azimuth Indicator IP-740/GR.
RF GAIN control	Controls sensitivity of the receiver.
LITE (dial lamp)	Illuminates the MEGACYCLES dial.

6.2. Description, Radio Receiver R-744B/PRR

(fig. 3.1)

The R-744B/PRR receiver is a shock-mounted vehicular or portable radio receiver which is continuously tunable over a frequency range from 20 MHz to 100 MHz. The receiver provides reception of cw, am., and fm signals. All operating controls and connectors are located on the front panel. When used in the shelter mode of operation, vehicular power is transmitted through a cable to the front panel VEH POWER receptacle. When the R-744B/PRR is removed from the shelter during man-portable operation, power is supplied by self-contained batteries. Access to batteries is provided by a removable panel at each end of cover assembly. The R-744B/PRR has direction-finding capability with the addition of diode module U209.

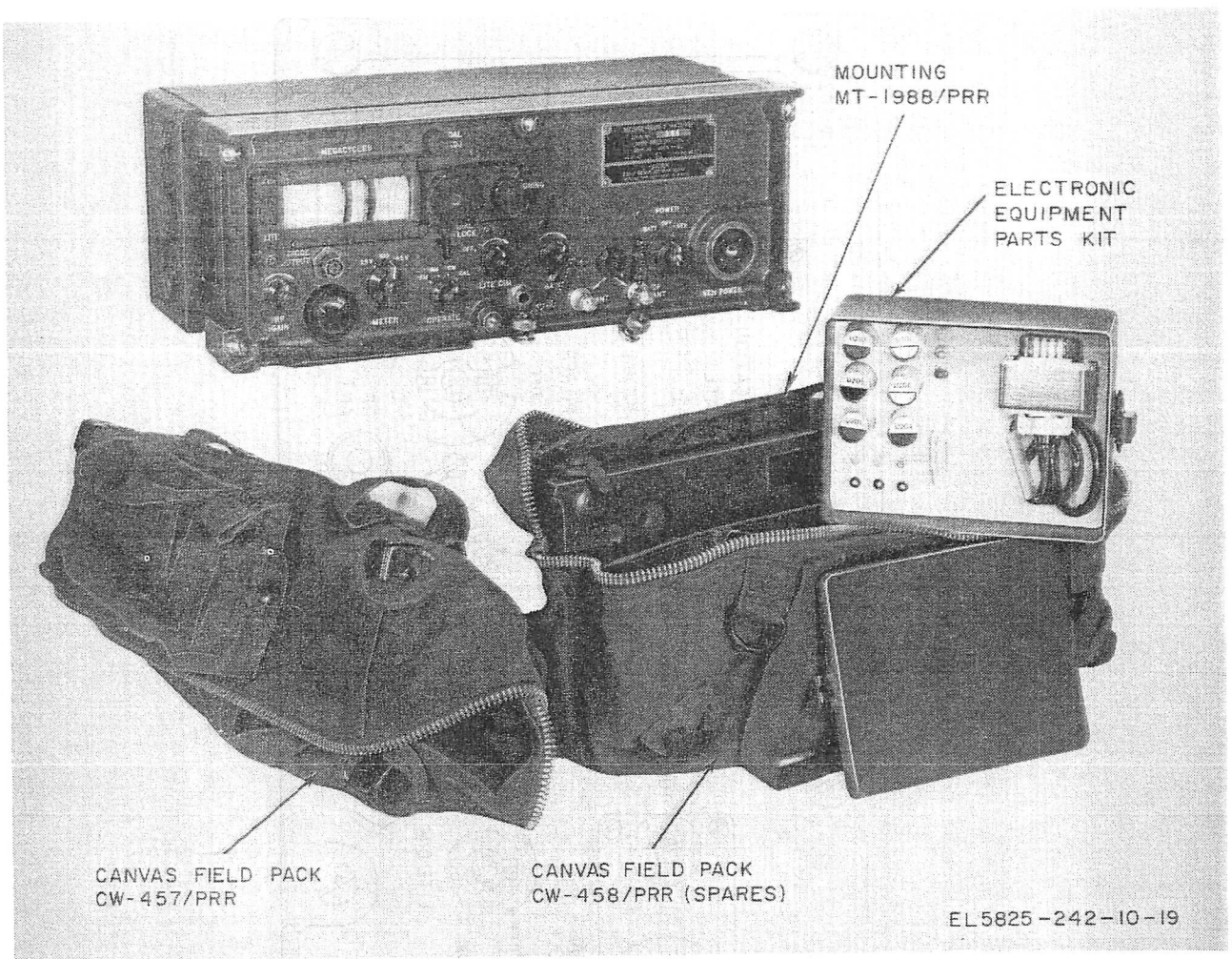


Figure 3.1. Radio Receiver R-744B/PRR.

Figure 9.2. Radio Receiver R-744B PRR controls and indicators.

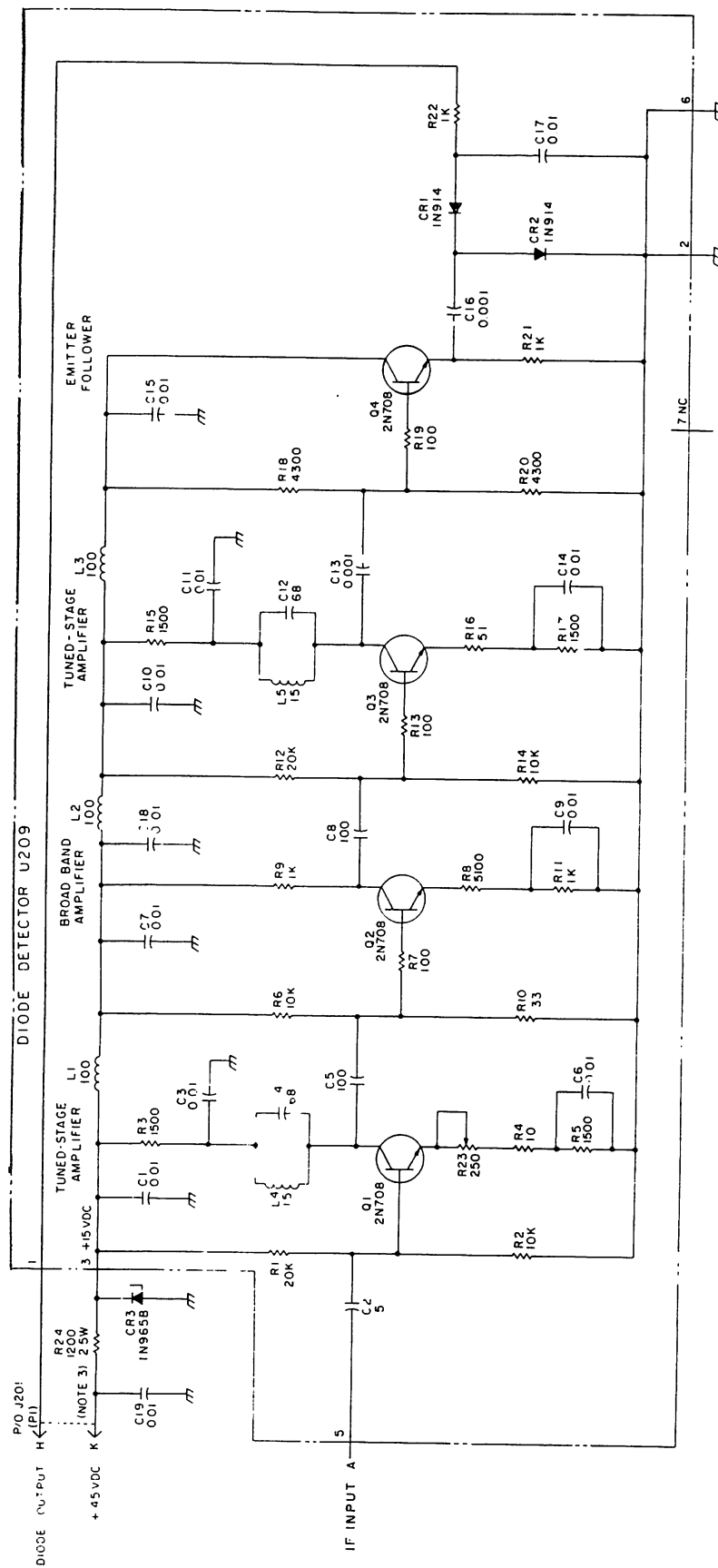
Page 9. Make the following changes to figure 5: Draw a block above block U203, draw a connecting line and label top block, U209 DIODE MODULE (R-744B/PRR).

Page 14. Paragraph 14.1 and figures 9.1 and 9.2 are added after paragraph 14.

14.1. Diode Module U209, R-744B/PRR
(figs. 9.1 and 9.2)

A portion of the if. signal is routed from pin 2 of U203 to the if. input on pin 5 of diode module U209

where the signal is amplified and rectified. The diode output signal is routed from pin 1 of U209 to pin H of J201-P1 then to front-panel DIODE OUTPUT receptacle J4. The diode output signal is also routed to P302 as follows: from J4 (DIODE OUTPUT receptacle on front panel), the signal is routed to pin 9 of J3-P303, then to pin 4 of P302 located in the BA-403/U battery compartment. The diode output signal is for use with a bearing indicator when the R-744B/PRR is part of a direction-finding set.



NOTES

- 1 UNLESS OTHERWISE INDICATED, RESISTANCES ARE IN OHMS, CAPACITANCES ARE IN UUF, INDUCTANCES ARE IN UH
- 2 CONNECTORS VIEWED FROM PIN OR RECEPTACLE SIDE
- 3 PIN 4 OF 4209 USED AS TIE POINT FOR JUNCTION OF C15 & R24 (+4.5VDC)

EL5825 - 242-25-TM-72

Figure 9.1. Radio Receiver R-744B/PRR, diode module U209, schematic diagram.

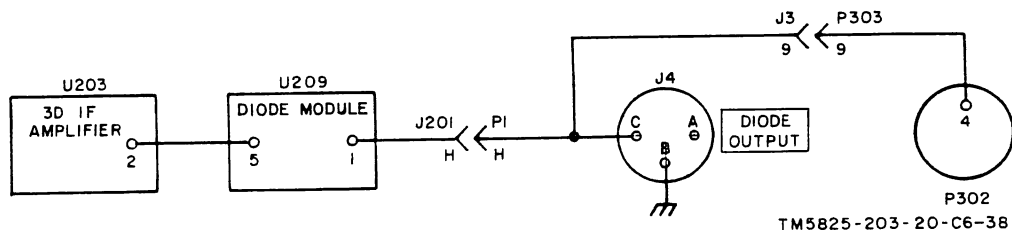


Figure 9.2. Diode output block diagram, R-744B/PRR.

Page 15. Make the following changes to figure 10:
From terminal 2 of if. amplifier U203, draw a line
and label, TO PIN 5 of U209.

Add the following note:

3. Corrections to U203 If. Amplifier apply to
R-744B/PRR.

Page 16. Figure 11.1 is added after figure 11.

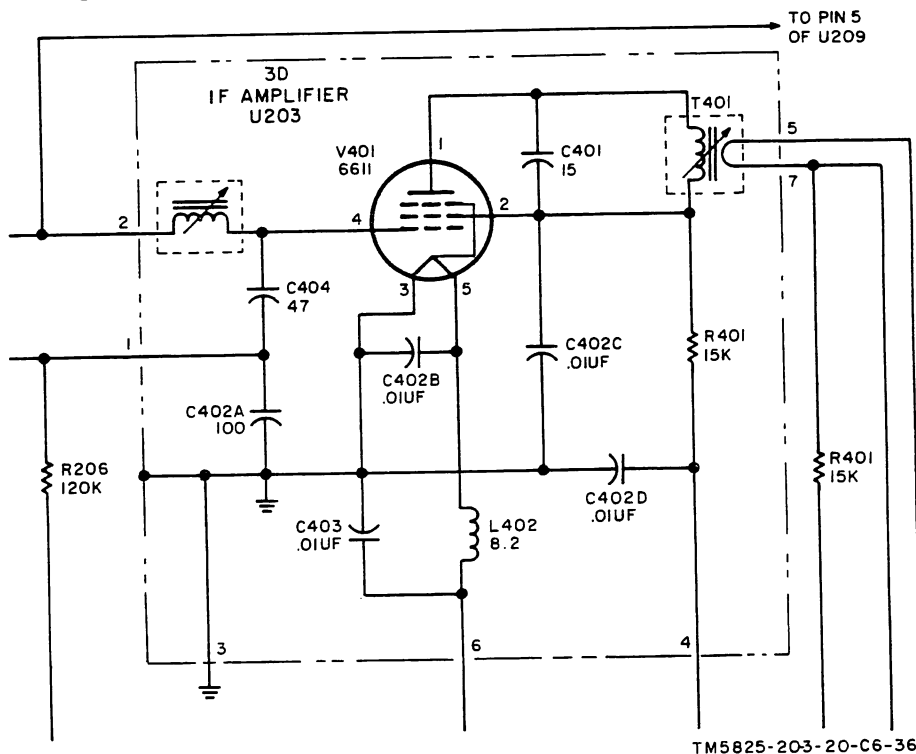


Figure 11.1. If. amplifier U203, schematic diagram, R-744B/PRR.

Page 20. Subparagraph c is added after paragraph 19b.

c. On the R-744B/PRR auxiliary audio output is
routed from AUDIO jack J5 to pin 10 of J3-P303
then to pin 5 of P302 in BA-403/U battery
compartment.

Page 34. Paragraph 36.1 and figures 19.1 and 19.2
are added after paragraph 36.

36.1. Vhf Receiver R-744B/PRR If. Diode Module Troubleshooting

(fig. 19.1)

a. *Equipment Required.* Refer to paragraph 39.1
for equipment requirements.

b. *Vhf Receiver R-744B/PRR If. Diode Module
Short Circuit Test.* Remove cover and test for
short circuit in accordance with the chart below.
Refer to paragraph 50 for receiver removal-
replacement procedures.

Point of measurement	Normal indication	Isolating procedure
Between plug P1, pin K, and chassis ground.	9,000 ohms	If indication is lower than normal, check for short across capacitor C19, diode CR3, and capacitor C1, C7, C18, C10, or C15.

c. *Vhf Receiver R-744B If. Diode Module Test Setup.* Fabricate test fixture (fig. 19.1) and connect diode module (fig. 19.2). Set signal generator, connected to if. input cable, for a frequency of 4.3 MHz, with modulation selector set to CW and

output adjusted to 0.005 rms.

d. *Vhf Receiver If. Diode Module Troubleshooting Chart.* Use the following chart as an aid to troubleshooting the diode module.

<i>Symptom</i>	<i>Probable cause</i>	<i>Checks and corrective measures</i>
No diode output control.	Faulty potentiometer.	Check potentiometer R23 in tuned stage amplifier.
No diode output.	Faulty stage of diode module.	Refer to figure 9.1 and test diode module in accordance with procedure (para 39.1b). Recheck receiver with a 40-MHz input.

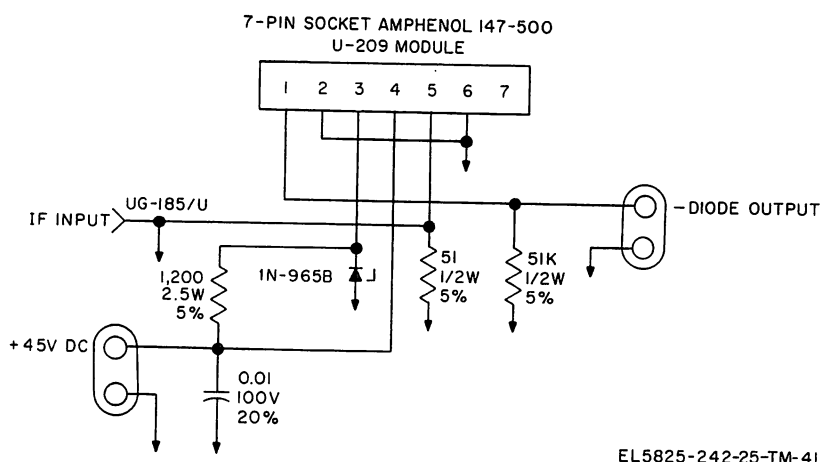


Figure 19.1. Vhf receiver R-744B, if. diode module, test fixture schematic diagram.

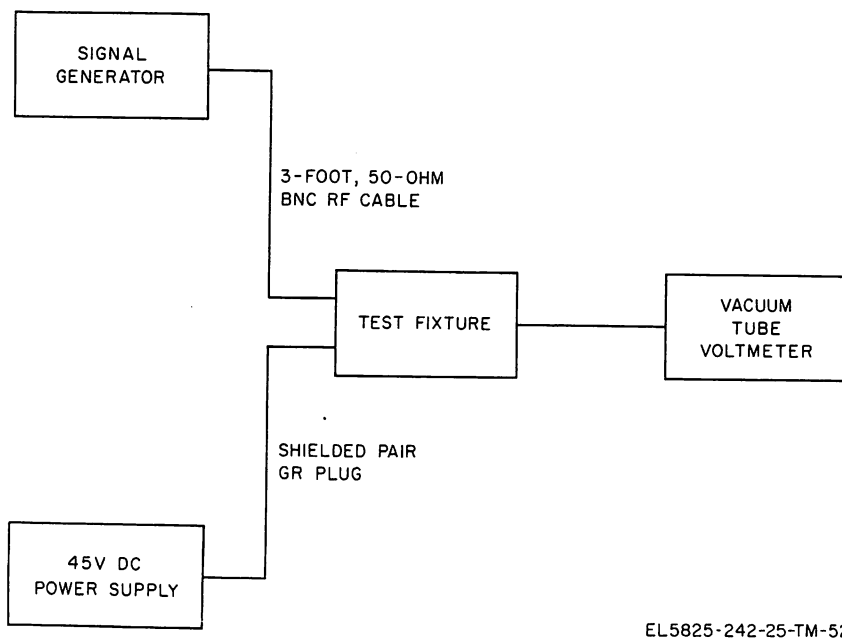


Figure 19.2. Vhf receiver, R-744B, if. diode module, test connection diagram.

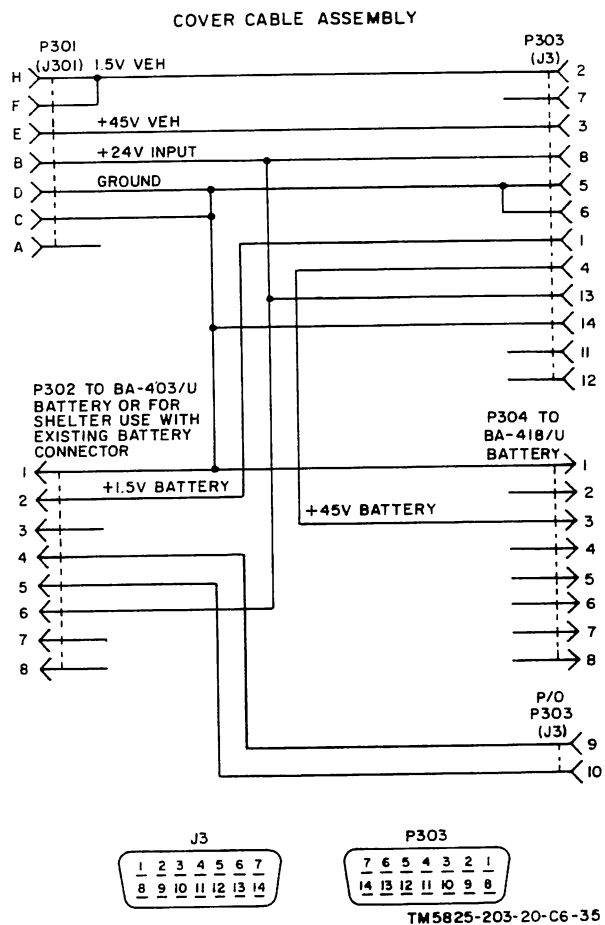


Figure 21.1. Cover cable assembly, wiring diagram and J3-P303 socket, R-744B/PRR.

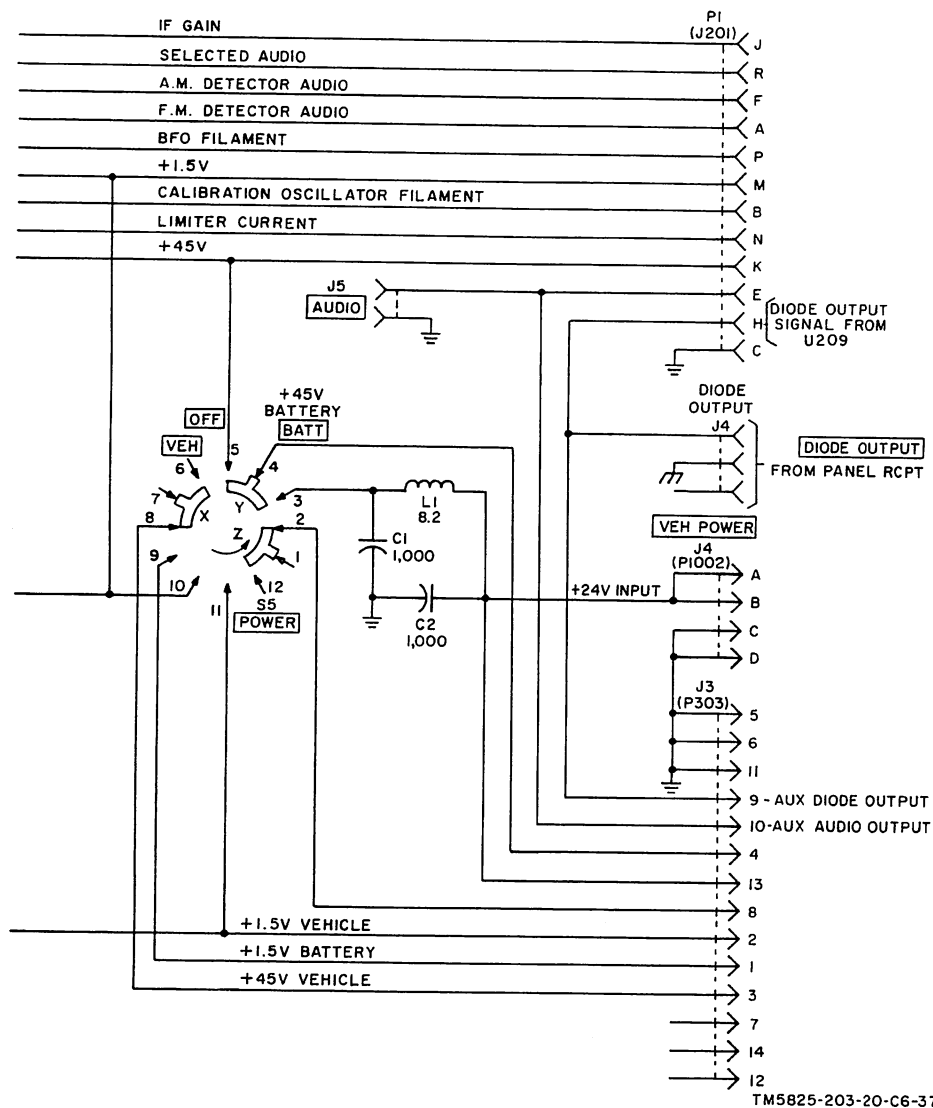


Figure 21.2. Wiring diagram, J201-P1, J4, and J3-P303, R-744B/PRR.

Page 39. The following sentence is added to subparagraph 39c(3): On the R-744B/PRR, check for audio signal on pin 5 of P302 in the BA-403/U battery compartment.

Page 43. Add paragraph 39.1 after paragraph 39.

39.1. Vhf Receiver R-744B If. Diode Module Test

a. Equipment Required.

- (1) Signal Generator, RF AN/URM-25, or equivalent.
- (2) 45-Volt DC Power Supply, Power Design 3650S, or equivalent.
- (3) Electronic Voltmeter ME-26A/U, or equivalent.

- (4) Test Fixture TF-830/13, or equivalent (fig. 19.1).

b. Test Procedure.

- (1) Be sure all power is off.
- (2) Fabricate test fixture in accordance with test fixture schematic diagram (fig. 19.1) and then make test connections per test fixture connection diagram (fig. 19.2).
- (3) Turn on power supply and adjust for +45 volts dc ± 1 . Then, turn off power supply.
- (4) Insert module into test fixture socket; be sure that module can be fully down and making contact with header. Again turn on power supply and check to see that power supply voltage is still +45 volts dc ± 1 .

(5) Set signal generator to 4.3 MHz, modulation selector to CW, and output to 0.005 volt rms.

(6) Connect vtvm to diode output and tune signal generator for maximum dc voltage output. Observe frequency for maximum output, using signal generator vernier (one division equals 4kHz) and built-in crystal calibrator to set 4.3-MHz point (4.3 MHz $\pm$ 30 kHz).

(7) Adjust potentiometer R23 for diode output of -2.5 volts dc. If unable to make this adjustment, enter minimum or maximum voltage obtainable to facilitate troubleshooting.

(8) Turn off all power, disconnect test equipment, and remove module.

Page 57. Paragraph 54.1 and figures 30.2 and 30.3 are added after paragraph 54.

54.1. Disassembly-Assembly of Diode Module U209, R-744B/PRR

a. Disassembly.

(1) Remove diode module from if. assembly by pulling module from socket.

(2) Unsolder base and remove case from diode module. Remove insulator.

(3) Remove 5 screws, 10 spacers and 5 flat washers, lockwashers and hex nuts.

(4) Separate assembly boards from spacers and repair or replace defective component or connection on assembly boards.

b. Assembly.

(1) Place assembly boards on spacer and secure with 5 screws, 10 spacers and 5 flat washers, lockwashers and hex nuts.

(2) Install insulator.

(3) Install and solder base to diode module.

(4) Install diode module in if. assembly.

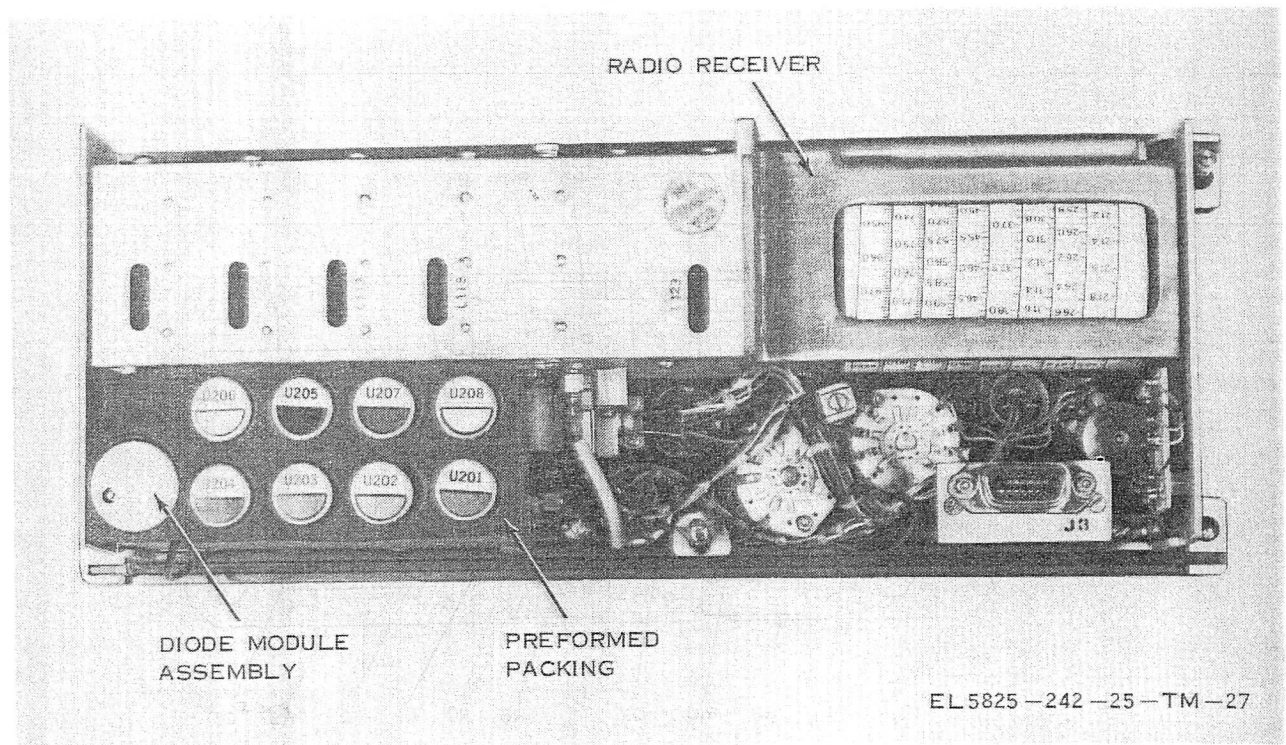
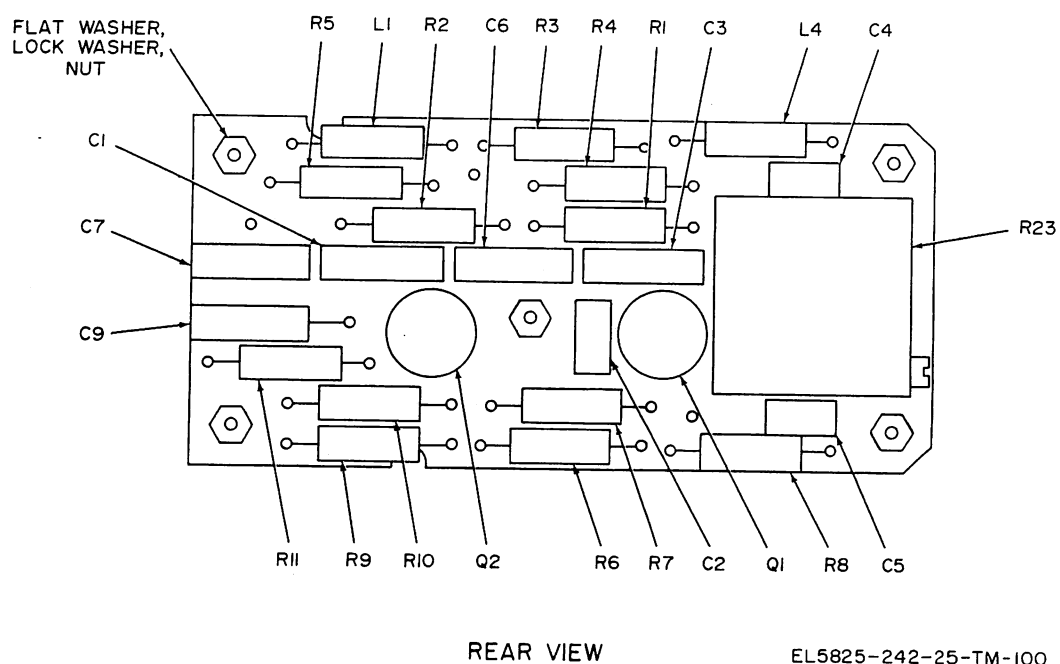
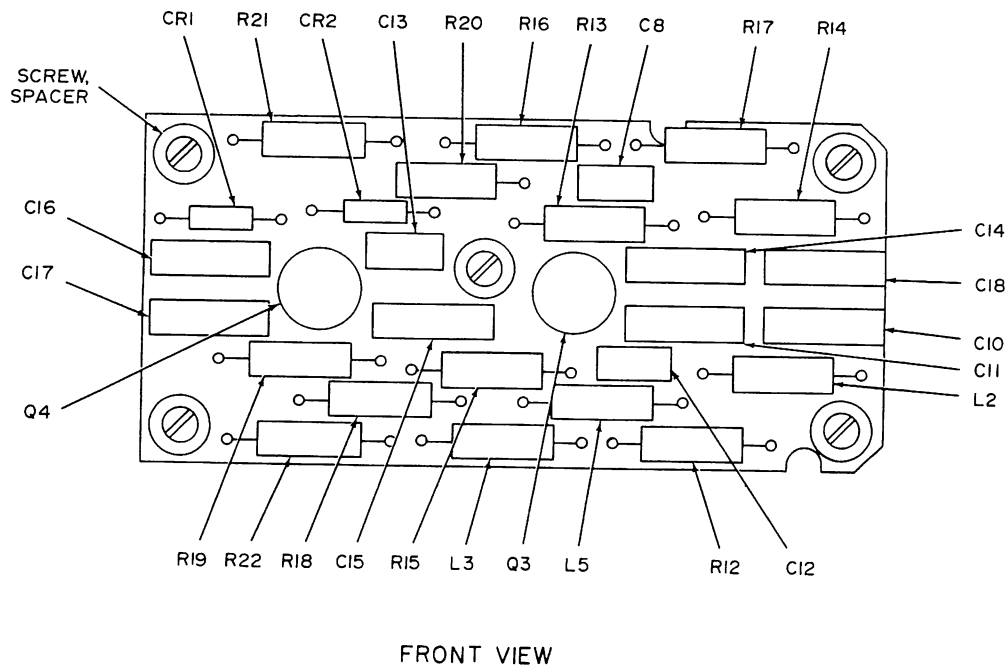


Figure 30.2. Vhf receiver, R-744B/PRR (unit 22 and 23), rear view.



EL5825-242-25-TM-100

Figure 30.3. Vhf receiver, R-744BIPRR, diode module 22 and 23A1A3A1, component location diagram.

Page 60. Paragraph 59.1 and figure 31.1 are added after paragraph 59.

59.1. Vhf Receiver Diode Output Test

Perform test after repair of diode module.

a. Connect equipment as shown in test setup (fig. 31.1) and operate vhf receiver in vehicular power supply mode.

b. Set function selector switch on vhf receiver to AM and turn RF GAIN control fully clockwise.

c. Set signal generator for 40-MHz test frequency and modulate 30 percent at 1 kHz.

d. Adjust receiver tuning controls to test frequency.

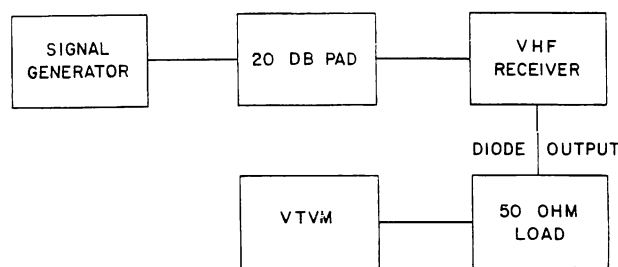
e. Adjust sensitivity of receiver to attain 10-db signal-to-noise ratio and check to see that receiver sensitivity is 1 microvolt.

f. Check to see that indication of vtm is not less than -2.5 volts dc at diode output receptacle.

g. Check for presence of -2.5 vdc on pin 4 of P302.

h. Turn off power and disconnect equipment.

Page 66. Make the following changes to figure 34 2: From terminal 2 of if. amplifier U203, draw a line and label, TO PIN 5 OF U209.



EL5825-242-25-TM-118

Figure 31.1. Vhf receiver, R-744B/PRR diode output test setup.

Add the following note:

5. Corrections to U203 if. amplifier apply to R-744B/PRR.

By Order of the Secretary of the Army:

Official:

VERNE L. BOWERS

Major General, United States Army

The Adjutant General

FRED C. WEYAND

General, United States Army

Chief of Staff

Distribution:

To be distributed in accordance with DA Form 12-51, (qty rqr block no. 842). Organizational Maintenance requirements for O A-1451/PRR.

☆U.S. GOVERNMENT PRINTING OFFICE: 1975-665668/103

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Changes in force: C 2, C 3, C 4, and C 5

TM 11-5825-203-20
C 5

CHANGE }
No. 5 }

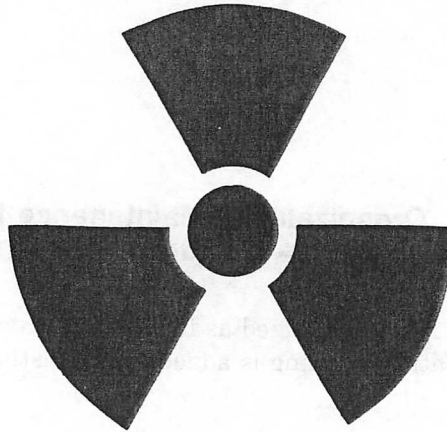
HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 9 April 1975

Organizational Maintenance Manual
RECEIVER GROUP OA-1451/PRR AND OA-1451A/PRR

TM 11-5825-203-20, 10 April 1961, is changed as follows:

Inside front cover. Radiation warning is added after existing notice.

WARNING RADIATION HAZARD



**RADIOACTIVE MATERIAL
CONTROLLED DISPOSAL REQUIRED
ACCOUNTABILITY NOT REQUIRED**

STD RW -2

Meter, arbitrary Ra 226 0.03uCi 6625-00-618-2068
scale

Radiation Hazard Information: The following radiation hazard information must be read and understood by all personnel before operating or repairing Receiver Group OA-1451/PRR and OA-1451A/PRR.

Hazardous radioactive materials are present in the above listed component of the R-744A/PRR.

The component is potentially hazardous when broken. See qualified medical personnel and the local Radiological Protection Officer (RPO) immediately, if you are exposed to or cut by a broken component. First aid instructions are contained in TB 43-0116, TB 43-0122, and AR 755-15.

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. Disposal of broken, unserviceable, or unwanted radioactive components will be accomplished in accordance with the instructions in AR 755-15.

By Order of the Secretary of the Army:

FRED C. WEYAND
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 12-51 (qty rqr block no. 842), Organizational maintenance requirements for OH-1451/PRR.

☆ U.S. GOVERNMENT PRINTING OFFICE: 1975-665140/896

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Organizational Maintenance Manual

RECEIVER GROUP OA-1451/PRR AND OA-1451A/PRR

CHANGE }
No. 4 }

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D. C. 20315, 14 October 1964

TM 11-5825-203-20, 10 April 1961, is changed as follows:

The title of the manual is changed as shown above.

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

Page 2, chapter 1. Add the following note below the chapter heading:

Note. Receiver Group OA-1451A/PRR and Radio Receiver R-744A/PRR are similar to Receiver Group OA-1451/PRR and Radio Receiver R-744/PRR. Information in this manual applies to both sets unless otherwise specified.

Paragraph 2c (page 1 of C 2). Delete the fourth sentence and substitute: 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.

b. To gain access to the R-744A/PRR gears and bushings within the gearbox, proceed as directed in paragraph 53a(6.1)(a) and (b).

- (1) Remove the two flathead screws from the bottom of the gearbox.
- (2) Remove bottom plate and gasket. Be careful not to damage the gasket.

c. Lubricate all gears with Grease, Aircraft and Instrument (GL), MIL-G-3278. Spread a small amount of grease over the gear teeth. Wipe off the excess grease; do not overlubricate.

d. To replace the R-744A/PRR gearbox, proceed as follows:

- (1) Replace the gasket and bottom plate.

Tighten the two flathead screws until they are snug.

- (2) Complete the reassembly as outlined in paragraph 53b(4.1) and (5.1).

Page 58. Add figure 30.1 after paragraph 57.

Page 56, paragraph 53a(6). Add subparagraph (6.1) after subparagraph (6).

(6.1). On the R-744A/PRC (fig. 30.1) proceed as follows:

- (a) Remove the center screw from the coarse and fine tuning knobs. Loosen the recessed head setscrews and remove the tuning knobs and O-rings.
- (b) Remove the four gearbox mounting screws and remove the gearbox, taking care not to damage the gasket.

Add subparagraph (7.1) after subparagraph (7).

(7.1). On the R-744A/PRR (fig. 30.1), proceed as follows:

Add subparagraph (7.1) after subparagraph (7).

(7.1). On the R-744A/PRR (fig. 30.1), proceed as follows:

- (a) Loosen the setscrew in the collar on the internal end of the dial lock shaft, and remove the collar.
- (b) Remove the dial lock shaft, bushing, and locking pin.
- (c) Remove the drive assembly by loosening the setscrews.

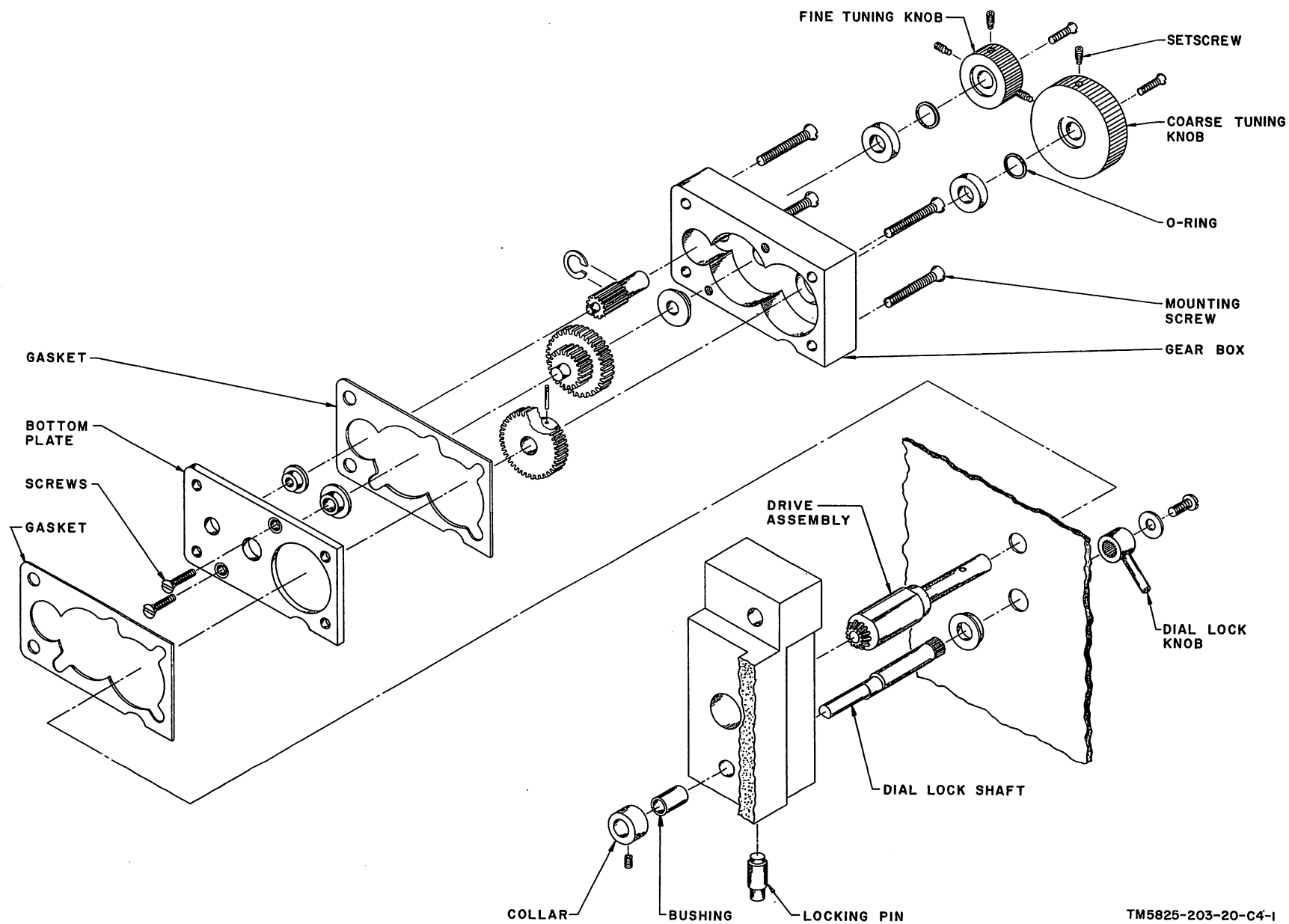


Figure 30.1. Disassembly of OA-1451A/PRR gear box.

TM5825-203-20-C4-1

Page 57, paragraph 53b. Add subparagraph (2.1) after subparagraph (2).

(2.1). On the R-744A/PRR (fig. 30.1), perform the following procedure:

- (a) Insert the drive assembly firmly, meshing the bevel gear of the drive assembly with the bevel gear of the tuner shaft, and tighten the two holding screws. The gears must mesh tightly to eliminate backlash.
- (b) Insert the locking pin, bushing, and dial lock shaft.
- (c) Replace the dial lock shaft collar.

Add subparagraph (4.1) after subparagraph (4).

(4.1). On the R-744A/PRR (fig. 30.1), proceed as follows:

- (a) Replace the gearbox gasket and the four gearbox mounting screws.
- (b) Tighten the screws uniformly.

DA Pam 310-4

Index of Technical Manuals, Technical Bulletins, Supply Manuals (Types 4, 6, 7, 8, and 9), Supply Bulletins, Lubrication Orders, and Modification Work Orders.

By Order of the Secretary of the Army:

Official:

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

Add subparagraph (5.1) after subparagraph (5).

(5.1). On the R-744A/PRR (fig. 30.1), perform the following procedure:

- (a) Replace the O-rings, coarse and fine tuning knobs, and the center screws.
- (b) Tighten the two recessed head set-screws in each tuning knob.

Page 57, paragraph 55. Delete paragraph 55 and substitute:

55. Lubrication

a. The only components that require lubrication at organizational level are the bevel gears in the rf tuning assembly, and the bushings and gears in the gearbox on R-744A/PRR. The bevel gears (fig. 31) are exposed when the receiver is removed from the cover assembly. Lubrication of the bevel gears should be performed when repairs are made in the rf tuning assembly.

Page 67, appendix I (page 2 of C 2). Add the following reference:

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

Distribution:

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 11-57
 11-97
 11-98
 11-117
 11-155
 11-157
 11-500 (AA-AE) (4)
 11-557
 11-587
 11-592
 11-597
 32-56
 32-57
 32-78
 32-500

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

USAR: None.

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

U. S. GOVERNMENT PRINTING OFFICE: 1964-750576

944-161

Organizational Maintenance Manual
RECEIVER GROUP OA-1451/PRR

CHANGE }
No. 3 }

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 10 March 1964

TM 11-5825-203-20, 10 April 1961, is changed as follows:

Page 67, appendix II (as added by C 1, 11 Sep 1961), delete and substitute:

APPENDIX II

MAINTENANCE ALLOCATION

RECEIVER GROUP OA-1451 (XE-3/PRR AND RECEIVER GROUP OA-1451/PRR

Section 1. INTRODUCTION

1. General

a. This section assigns maintenance functions to be performed on components, assemblies, and subassemblies 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 component. Components, assemblies, and subassemblies are listed in top-down order. That is, the assemblies which are part of a component are listed immediately below that component, and the subassemblies which are part of an assembly

are listed immediately below that assembly. Each generation breakdown (components, assemblies, or subassemblies) is listed in disassembly order or alphabetical order.

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

- (a) *Service.* To clean, to preserve, and to replenish lubricants.
- (b) *Adjust.* To regulate periodically to prevent malfunction.
- (c) *Inspect.* To verify serviceability and to detect incipient electrical or mechanical failure by scrutiny.
- (d) *Test.* To verify serviceability and to detect incipient electrical or mechanical failure by use of special

* This change supersedes C 1, 11 September 1961.

equipment such as gages, meters, etc.

- (e) *Replace*. To substitute serviceable components, assemblies, or subassemblies, for unserviceable components, assemblies, or subassemblies.
- (f) *Repair*. To restore an item to serviceable condition through correction of a specific failure or unserviceable condition. This function includes but is not limited to welding, grinding, riveting, straightening, and replacement of parts other than the trial and error replacement of running spare type items such as fuses, lamps, or electron tubes.
- (g) *Align*. To adjust two or more components of an electrical system so that their functions are properly synchronized.
- (h) *Calibrate*. To determine, check, or rectify the graduation of an instrument, weapon, or weapons system, or components of a weapons system.
- (i) *Overhaul*. To restore an item to *completely serviceable* condition as prescribed by serviceability standards. This is accomplished through employment of the technique of "Inspect and Repair Only as Necessary" (IROAN). Maximum utilization of diagnostic and test equipment is combined with minimum disassembly of the item during the overhaul process.
- (j) *Rebuild*. To restore an item to a standard as near as possible to original or new condition in appearance, performance, and life expectancy. This is accomplished through the maintenance technique of complete disassembly of the item, inspection of all parts or components, repair or replacement of worn or unserviceable elements

using original manufacturing tolerances and/or specifications and subsequent reassembly of the item.

- (3) *1st, 2d, 3d, 4th, 5th echelons*. 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 column.

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

- (1) *Tools required for maintenance functions*. This column lists tools, test, and maintenance equipment required to perform the maintenance functions.
- (2) *1st, 2d, 3d, 4th, 5th echelon*. The dagger (†) indicates the echelons normally allocated the facility.
- (3) *Tool code*. This column lists the tool code assigned.

2. Maintenance by Using Organizations

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

SECTION II. MAINTENANCE ALLOCATION CHART

PART OR COMPONENT	MAINTENANCE FUNCTION	ECHELON					TOOLS REQUIRED	REMARKS
		1	2	3	4	5		
RECEIVER GROUPS OA-1451(XE-3)/PRR AND OA-1451/PRR	service	X					19	No tools or test equipment required
	adjust	X					19	
	inspect	X					1,2,4,6,8,9,10,11,12,15,16,19	
	test	X					1,2,3,4,5,7,8,9,10,11,12,14,17,18	
	repair	X					19	
	align	X					1,2,4,6,9,11,12,14,19	
	calibrate	X					1,2,4,5,7,9,11,12,13,14,17,18	
	rebuild				X		17,18	
	overhaul			X			17,18	
CABLE ASSEMBLY, POWER, ELECTRICAL CX-4377(XE-3)/U AND CX-4377/U	service	X					19	Plus Depot Facilities Plus Depot Facilities
	inspect	X						
	test	X					8	
	repalce	X					19	
	repair	X					19	
CASE, ACCESSORIES CY-2331(XE-3)/PRR AND CY-2331/PRR	service	X					19	
	inspect	X						
	repair	X					19	
CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL	service	X					19	
	inspect	X						
	test	X					8-	
	repair	X					19	
FIELD PACK, CANVAS CW-457(XE-3)/PRR AND CW-457/PRR	service	X					19	17,18
	inspect	X						
	repair				X			
FIELD PACK, CANVAS CW-458(XE-3)/PRR AND CW-458/PRR	service	X					19	17,18
	inspect	X						
	repair				X			
MOUNTING MT-1988/PRR	service	X					19	19
	inspect	X						
	repair	X						
POWER SUPPLY PP-1481(XE-3)/PRR AND PP-1481/PRR	service	X					19	8 19 19
	inspect	X						
	test	X					8	
	replace	X					19	
	repair	X					19	
BOARD, PRINTED CIRCUIT	service	X					19	8 17,18
	inspect	X						
	test	X					8	
	replace				X		17,18	

PART OR COMPONENT	MAINTENANCE FUNCTION	ECHELON					TOOLS REQUIRED	REMARKS
		1	2	3	4	5		
RECEIVER GROUPS OA-1451(XE-3)/PRR AND OA-1451/PRR (continued)								
RECEIVER, RADIO R-744/(XE-3)/PRR, R-744/PRR AND R-744A/PRR	service	X					19	
	adjust		X				19	
	inspect	X						
	test		X				1,2,4,5,6,7,8,9,10, 11,12,13,15,19	
	replace		X				19	
	repair		X				19	
	align		X				1,2,4,5,6,7,8,9,10, 11,12,13,15,19	
	calibrate			X			1,2,4,5,6,7,9,11,12, 13,17,18	
AMPLIFIER, AUDIO FREQUENCY	service		X				19	
	inspect		X					
	test		X				8	
	replace		X				19	
AMPLIFIER-DETECTOR	service		X				19	
	inspect		X					
	test		X				8	
	replace		X				19	
AMPLIFIER, IF	service		X				19	
	inspect		X					
	test		X				8	
	replace		X				19	
CALIBRATOR, FREQUENCY	service		X				19	
	inspect		X					
	test		X				6,7,8	
	replace		X				19	
DETECTOR, RADIO FREQUENCY	service		X				19	
	adjust			X			17,18	
	inspect		X					
	test		X				8	
	replace		X				19	
OSCILLATOR, RADIO FREQUENCY	service		X				19	
	inspect		X					
	test		X				6,7,8	
	replace		X				19	
TUNER ASSEMBLY	service		X				19	
	adjust		X				19	
	inspect		X					
	test		X				8	
	replace		X				19	
	repair		X				19	Not stocked - but issued upon proper authorization
	align		X				19	
	rebuild			X			See remarks	Done at contractor's plant under support contract
	overhaul			X			See remarks	

SECTION III. ALLOCATION OF TOOLS FOR MAINTENANCE FUNCTIONS

PART OR COMPONENT	ECHOLON					TOOL CODE	REMARKS
	1	2	3	4	5		
RECEIVER GROUPS OA-1451(XE-3) AND OA-1451/PRR (continued)							
ADAPTER UG-327/U						1	
ADAPTER UG-335/U						2	
ANALYZER, SPECTRUM TS-723/U						3	
ATTENUATOR CN-39/U						4	
AUDIO OSCILLATOR TS-382/U						5	
FREQUENCY METER AN/URM-26						6	
FREQUENCY METER AN/URM-32						7	
MULTIMETER AN/URM-105						8	
MULTIMETER ME-26A/U						9	
MULTIMETER TS-352/U						10	
POWER SUPPLY PP-1243/U						11	
SIGNAL GENERATOR AN/URM-48						12	
SIGNAL GENERATOR TS-497/URR						13	
TEST SET, ELECTRON TUBE TV-2/U						14	
TEST SET ELECTRON TUBE TV-7/U						15	
VOLTMETER ME-30/U						16	
TOOL KIT, RADAR & RADIO REPAIRMAN TK-87/U						17	
TOOL KIT, SUPPLEMENTARY, RADAR & RADIO REPAIRMAN TK-88/U						18	
TOOL KIT, RADIO REPAIRMAN TK-115/G						19	

TECHNICAL MANUAL

Organizational Maintenance Manual

RECEIVER GROUP OA-1451/PRR

TM 11-5825-203-20

CHANGE No. 2

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 5 September 1963

TM 11-5825-203-20, 10 April 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 2, paragraph 1. 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 your equipment. DA Pam 310-4 is an index of current technical manuals, technical bulletins, supply bulletins, lubrication orders, and modification work orders that are available through publications supply channels. The index lists the individual parts (-10, -20, -35P, etc.) and the latest changes to and revisions of each equipment publication.

Paragraph 2 (page 1 of C 1). 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 71-4 (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. One information copy will be furnished to the individual's immediate supervisor (e.g., officer, noncommissioned officer, supervisor, etc.).

Page 26. Make the following changes:

Delete paragraph 28 and substitute:

28. 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 Receiver Group OA-1451/PRR at the second echelon level are made at 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.

c. Clean rust and corrosion from metal surfaces by lightly sanding them with fine sandpaper. Brush two thin coats of the proper paint on bare metal to protect it from further corrosion. Refer to the applicable cleaning and refinishing practices specified in TM 9-213.

Add paragraphs 28.1 and 28.2 after paragraph 28.

28.1. Quarterly Maintenance

Quarterly preventive maintenance checks and services on Receiver Group OA-1451/PRR are required. All deficiencies or shortcomings will be

checked 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. 28.2) in the sequence listed.

28.2. Quarterly Preventive Maintenance Checks and Services

Sequence No.	Item	Procedure	References
1	Installation	Check to see that the equipment is properly installed.	Pars. 5 and 6.
2	Preservation	Check all surfaces for evidence of fungus. Remove rust and corrosion, and spot-paint bare spots.	Par. 28.
3	Publications	Requisition all operator and organizational maintenance manuals covering Receiver Group OA-1451/PRR that are not on hand or in usable condition (including all current changes publications).	DA Pam 310-4.
4	Modification work orders	Check to see whether any MWO's are required for Receiver Group OA-1451/PRR. Check to see if applicable MWO's have been applied and MWO number is stamped as required. Perform modification, or request modification as applicable.	See applicable MWO; See DA Pam 310-4 for MWO listing.
5	Accessible pluckout items	Check seating of tubes, and pluckout units (U201 through U208). Firmly seat them if necessary.	Fig. 2.
6	Mounting MT-19S8/PRR	Check to see that the equipment mounting and clamps are not so bent, broken, or out of shape as to endanger equipment or personnel.	Fig. 3.
7	Gaskets	Inspect the rubber gasket behind the front panel for moisture or for missing sections. See that a section of the gasket is not broken, brittle, loose, cracked, pinched, or mismatched.	None.
8	Interior cleaning	Remove dust and dirt from the interior of the OA-1451/PRR with a clean lint-free cloth or soft brush.	None.
9	Transformers and chokes	Inspect transformers and chokes for signs of overheating.	Figs. 24 and 25.
10	Capacitors	Check all capacitors for evidence of leaks, bulges, and corrosion.	Figs. 24 and 25.
11	Resistors	Inspect all resistors for evidence of blistering or overheating (charring).	Figs. 24 and 25.
12	Spare parts	Check all spare parts (operator and organizational) for general condition and method of storage. There should be no evidence of overstock, and all shortages must be on valid requisition.	App. II and fig. 2, TM 11-5825-203-10.
13	Equipment performance	Check the operation of the OA 1451/PRR	Par. 33.

Page 27. Delete figure 18.

Page 28. Delete figure 19.

Page 67, appendix I. Add the following references:

TM 38-750 The Army Equipment Record System and Procedure.
TM 9-213 Painting Instructions for Field Use.

By Order of the Secretary of the Army:

Official:

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

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

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WRAMC (1)

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Army Pic Cen (2)
USA Mbr Spt Cen (1)
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Chicago Proc Dist (1)
USARCARIB Sig Agcy (1)
Sig Fld Maint Shop (3)
Units organized under following
TOE's (2 copies each unit
unless otherwise indicated):
11-7
11-16
11-57
11-97
11-98
11-117
11-155
11-157
11-500 (AA AC) (4)
11-557
11-587
11-592
11-597

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

USAR: None.

For explanation of abbreviations used, see AR 320 50.