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TECHNICAL MANUAL

OPERATOR'S AND ORGANIZATIONAL MAINTENANCE MANUAL

RADIO SET AN/PRC-104(A) (NSN 5820-01-141-7953)

HEADQUARTERS, DEPARTMENT OF THE ARMY

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Technical Manual

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REPORTING OF ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSELME-MP, Fort Monmouth, NJ 07703-5007. A reply will be furnished to you.

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SECTION 0

GENERAL

0-1. SCOPE. This manual covers Radio Set AN/PRC-104(A). This manual provides instructions for general support maintenance. Throughout this manual AN/PRC-104 should be AN/PRC-104(A).

0-2. CONSOLIDATED INDEX OF ARMY PUBLICATIONS AND BLANK FORMS. Refer to the latest issue of DA Pam 310-1 to determine whether there are new editions, changes or additional publications pertaining to the equipment.

0-3. MAINTENANCE FORMS, RECORDS, AND REPORTS

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

b. *Report of Packaging and Handling Deficiencies*. Fill out and forward SF 364 (Report of Discrepancy (ROD)) as prescribed in AR 735-11-2/DLAR 4140.55/NAVMATINST 4355.74A/AFR-400-54/MCO 4430.3F.

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

0-4. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR). If your Radio Set AN/PRC-104(A) needs improvement, let us know. Send us an EIR. You, the user, are the only one ,who can tell us why you don't like the design. Put it on an SF 368 (Quality Deficiency Report). Mail it to Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-ME-MP, Fort Monmouth, New Jersey 07703-5007. We'll send you a reply.

0-5. ADMINISTRATIVE STORAGE. Administrative Storage of equipment issued to and used by Army activities will have preventive maintenance performed in accordance with the PMCS charts before storing. When removing the equipment from administrative storage the PMCS should be performed to assure operational readiness. Disassembly and repacking of equipment for shipment or limited storage are covered in TM 740-90-1.

0-6. DESTRUCTION OF ARMY ELECTRONICS MATERIEL. Destruction of Army electronics materiel to prevent enemy use shall be in accordance with TM 750-244-2.

Figure 1-0. Radio Set AN/PRC-104

CHAPTER 1

GENERAL INFORMATION

SECTION I

GENERAL INFORMATION

1-1. SCOPE OF THE TECHNICAL MANUAL.

1-2. This technical manual provides operator's and organizational maintenance information covering Radio Set AN/PRC-104 (radio set). The information includes operating instructions, installation and setup, theory of operation and maintenance data. Additionally, the propagation of radio waves in the high frequency (hf) radio spectrum is discussed relative to optimizing communications with this radio set. Complete coverage for Battery Case CY-7875/ PRC-104 (battery pack) is provided in this manual, because the battery pack is maintained entirely at the organizational level.

1-3. Complete coverage of the radio set, including Receiver-Transmitter RT-1209/URC (receiver/ exciter) and Radio Frequency Amplifier AN1-6874/ PRC-104 (amplifier/coupler), for field and depot levels of maintenance is provided in the following manuals:

1. General Support Maintenance Manual TM 11-5820-919-40-1. Contains reference data, theory of operation and disassembly and reassembly for the complete radio set. It also provides test troubleshooting, alignment and repair data for the radio set and the receiver/exciter and amplifier/coupler units necessary to replace unit components and modules.

2. General Support Maintenance Manual TM 11-5820-919-40-2. Contains maintenance prints for the radio set, units and modules.

   Maintenance prints include all schematics; power distribution; component location; test and alignment setup; performance test and alignment required for complete field maintenance of the radio set.

3. Rebuild Standards RS-07748A-50/4. Contains depot-unique repair and rebuild data for the radio set that is not covered in the field maintenance manuals.

4. Repair Parts and Special Tools List TM 11-5820-919-24P. Contains complete parts ordering data for all levels of radio set maintenance.

1-4. Chapter 1 of this technical manual provides general reference data and information on the physical aspects and technical characteristics of the radio set. It also covers setup, initial checkout, and demolition to prevent enemy use. Chapter 2 contains operating instructions, and also discusses various operating environments for optimizing communication. Chapter 3 provides system and functional theory of operation. Chapter 4 contains maintenance instructions including preventive maintenance, troubleshooting, and repair down to replacement of units and accessories. Appendix I, at the back of this manual, contains a list of abbreviations used. Appendix II1 provides a discussion of hf radio wave propagation and gives Situational examples for optimizing communications. Appendix III provides instructions for use of the dipole antenna kit.

1-5. EQUIPMENT DESCRIPTION.

1-6. INTRODUCTION. The AN/PRC-104 is a state-of-the-art lightweight radio transceiver that operates in the high frequency (hf) and upper part of the low frequency (lf) portions of the radio spectrum.

The receiver/transmitter circuits can be tuned to any frequency between 2.0000 and 29.9999 MHz in 100 Hz increments, making it possible to tune up to 280,000 separate frequencies. The radio set operates in the upper sideband (USB) or lower sideband (LSB) modes for voice communications, CW for Morse code, or frequency shift keying (FSK) for transmission of teletype or other data. In the man-pack configuration the radio set is designed to be carried and operated by one man or, with the proper accessories, can be configured for vehicular or fixed station use.