

TECHNICAL MANUAL

**OPERATOR'S AND ORGANIZATIONAL
MAINTENANCE MANUAL
[INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST]**

RADIO SET AN/PRC-47

TECHNICAL MANUAL

No. 11-5820 -509-12

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 26 July 1974**OPERATOR'S AND ORGANIZATIONAL MAINTENANCE MANUAL
[INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST]****RADIO SET AN/PRC-47****Current as of 22 April 1974**

CHAPTER	1. INTRODUCTION		
SECTION	I. General	Paragraph	Page
	Scope	1-1	1-1
	Indexes of publications ..	1-2	1-1
	Forms and records...	1-3	1-1
	II. Description and data		
	Purpose and use	1-4	1-1
	Technical characteristics.....	1-5	1-2
	Items comprising an operable equipment	1-6	1-2
	Description		
CHAPTER	2. INSTALLATION		
SECTION	I. Service upon receipt of equipment		
	Siting instructions.....	2-1	2-1
	Shelter requirements	2-2	2-1
	Packaging data.....	2-3	2-1
	Unpacking instructions	2-4	2-1
	Checking unpacked equipment	2-5	2-4
	II. Installation instructions		
	Tools, test equipment, and materials required	2-6	2-4
	Assembly of component items.....	2-7	2-4
	Vehicular installation.	2-8	2-5
	Power check	2-9	2-6
	Preparation of radio set for man/pack transportation.....	2-10	2-6
CHAPTER	3. OPERATION		
SECTION	I. Controls and indicators		
	Control panel	3-1	3-1
	Description of front panel controls, indicators, and receptacles.....	3-2	3-1
	II. Operation under usual conditions		
	General	3-3	3-3
	Preliminary starting procedures	3-4	3-3
	Receive operation.	3-5	3-3
	Transmit operation	3-6	3-3
	Voice (usb) operation	3-7	3-4
	Telegraph (cw) operation	3-8	3-4
	Teletype (fsk) operation.....	3-9	3-4
	Remote control operation	3-10	3-4
	Tuning power amplifier	3-11	3-4
	Tuning with 50-ohm load	3-12	3-6
	Stopping procedures	3-13	3-6
	III. Operation under unusual conditions		
	General	3-14	3-7
	Operation in extreme cold.....	3-15	3-7
	Operation in tropical conditions	3-16	3-7
	Operation in desert conditions	3-17	3-7
	Emergency operation	3-18	3-7
	Operation during electronic jamming	3-19	3-7

*This manual supersedes TM 11-5820-509 - 12, 19 November 1963 and TM 11 5820 - 509-12P, 30 September 1963.

TM 11-5820-509-12

Section III (continued)		Paragraph	Page
	Antijamming techniques	3-20	3-8
CHAPTER	4. OPERATOR AND ORGANIZATIONAL MAINTENANCE		
SECTION	I. Operator's maintenance		
	Scope of operator's maintenance	4-1	4-1
	Materials required	4-2	4-1
	Operator's preventive maintenance	4-3	4-1
	Operator's preventive maintenance checks and services periods.....	4-4	4-1
	Daily preventive maintenance checks and services chart	4-5	4-1
	Cleaning	4-6	4-1
	II. Organizational maintenance		
	Scope of organizational maintenance	4-7	4-2
	Test equipment, tools, and material required.....	4-8	4-2
	Organizational maintenance.....	4-9	4-2
	Weekly maintenance	4-10	4-2
	Weekly preventive maintenance checks and services chart	4-11	4-2
	Quarterly maintenance.....	4-12	4-2
	Quarterly preventive maintenance checks and services chart	4-13	4-3
	Touch up painting instruction.	4-14	4-3
	III.. Organizational troubleshooting		
	General	4-15	4-3
	Organizational troubleshooting chart.....	4-16	4-3
	Removal and replacement procedures	4-17	4-3
APPENDIX	A. REFERENCES		A-1
	B. BASIC ISSUE ITEMS LIST AND ITEMS TROOP INSTALLED OR AUTHORIZED LIST AND ORGANIZATIONAL MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS LIST.		
SECTION	I. Introduction		B-1
	II. Basic issue items list (not applicable)		
	III. Items troop installed or authorized list (not applicable)		
	IV. Repair tools list		B-3
	V. Special tools list (not applicable)		
	VI. Federal Stock Number and Part Number (Not applicable)		
APPENDIX	C. MAINTENANCE ALLOCATION		
SECTION	I. Introduction		C-1
	II. Maintenance allocation chart		C-3

LIST OF ILLUSTRATIONS

Figure No.	Title	Page
1-1	Radio Set AN/PRC-47.....	1-0
1-2	Antenna AS-1320/PRC-47.....	1-6
1-3	Ac and dc power cables	1-6
1-4	Radio set rucksack frames.	1-7
1-5	Case, Radio Set CY-3700/PRC-47.....	1-8
1-6	Receiver-Transmitter, Radio RT-671 /PRC-47.....	1-9
1-7	Radio set ground plane radial system placement	1-10
1-8	Radio set accessories.....	1-11
2-1	Packaging details, Radio Set Case CY-3700/PRC-47 (less electrolyte).....	2-2
2-2	Case. Radio Set CY-3700/PRC-47, packing details.....	2-3
2-3	Receiver-transmitter rucksack frame packing.....	2-7
2-4	Battery rucksack frame packing.....	2-7
3-1	Receiver-Transmitter. Radio RT-671 /PRC-47, front panel controls, indicators, and receptacles.....	3-1
3-2	Power amplifier load-tune chart.....	3-6
3-3	Power amplifier load and tune controls.....	3-6
B-1	Receiver-Transmitter, Radio RT-671/PRC-47, parts location	B-4

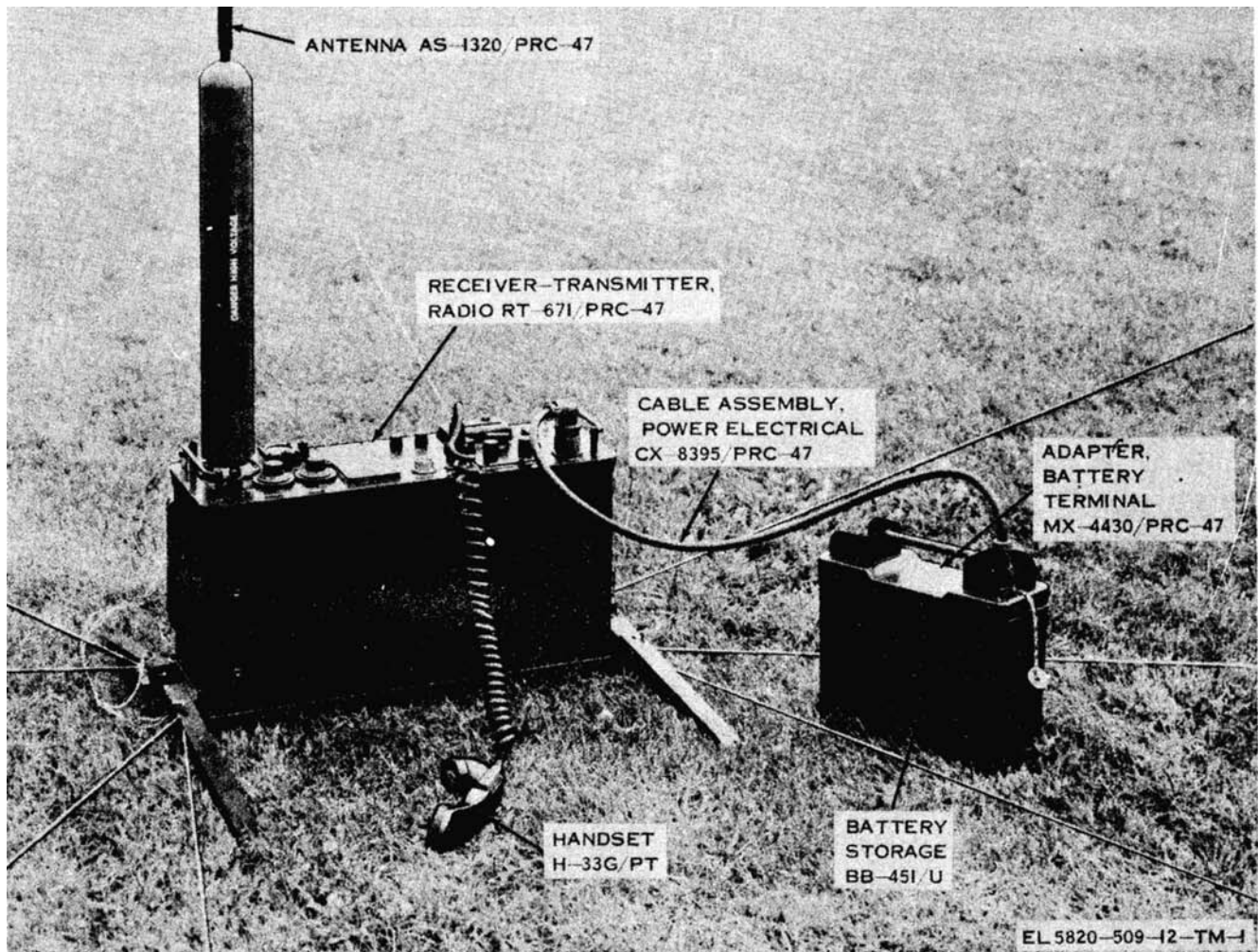


Figure 1-1. Radio Set AN/PRC-47

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1-1. Scope

This manual describes Radio Set AN /PRC-47 (fig. 1-1) and includes instructions for installation, operation, organizational maintenance, shipment and limited storage, and demolition to prevent enemy use. The manual provides instructions for operation under usual and unusual conditions, and includes procedures for the cleaning, inspection, and maintenance of the AN/PRC-47 by the operator and organizational maintenance personnel. The repair parts list is contained in Appendix B and the maintenance allocation in Appendix C.

1-2. 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 this equipment.

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

1-3. Forms and Records

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

b. *Report of Packaging and Handling Deficiencies.* Fill out and forward DD Form 6 (Report of Packaging and Handling Deficiencies) as prescribed in AR 700-58/NAVSUP PUB 378/AFR 71-4/MCO P4030.29, and DSAR 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 65-38/NAVSUPINST 4610.33/AFM 75-18MCO P4610.19A, and DSAR 4500.15.

d. *Reporting of Equipment Manual Improvements.* Report of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA form 2028 (Recommended Changes to Publications and Blank Forms) and forwarded direct to Commander, U.S. Army Electronics Command, ATTN: AMSEL- Fort Monmouth, NJ 07703.

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

f. *Destruction of Army Materiel to Prevent Enemy Use.* For information on this subject, refer to TM 750-244-2.

Section II. DESCRIPTION AND DATA

1-4. Purpose and Use

a. *Purpose.* Radio Set AN/PRC-47 (fig. 1-1) is a high frequency radio communications system. The radio set primarily provides 10,000 channels of upper sideband (usb) voice transmission and reception, continuous wave (cw) telegraphy, or frequency shift keying (fsk) teletype in the 2,000- 11.999-mHz frequency range. The radio set can be operated from its own control panel or controlled by a remote power control panel, such as Control Group AN/GRA-6, for at least a 2-mile distance.

b. *Use.* Radio Set AN/PRC-47 is used for two-way high-frequency (hf) radio communications. It is normally used in the portable (man carried) configuration,

but can be vehicular-mounted or used as a fixed station, such as in a shelter. In the portable configuration, one member of the two- team carries the receiver-transmitter, and the other member carries the battery pack and accessories. When the radio set is vehicular-power is supplied from the dc vehicular generator; when used as a fixed station, normal single-phase power is required. The radio set is also capable of frequency shift keying (fsk) communication when used in conjunction with the fsk converter such as Converter-Oscillator CV-786/TRC-75.