

ARMY TM 11-5820-553-10
NAVY EE150-SN-OPI-010/E110-PRC 70

OPERATOR'S MANUAL

**RADIO SET AN/PRC-70
(NSN 5820-01-062-8246)**

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

**DEPARTMENTS OF THE ARMY AND THE NAVY
19 FEBRUARY 1982**

W A R N I N G

Serious injury or death could result to personnel if the whip antenna comes in contact with power lines.

When operating in HI PWR with the whip antenna, DO NOT TOUCH the antenna when in transmit mode—an RF burn can result.



This decal is located near the WIRE terminal and WHIP antenna on the front panel of the radio set. It is applicable to BOTH long wire and whip antenna usage.

W A R N I N G

Adequate ventilation should be provided while using TRICHLOROTRIFLUOROETHANE. Prolonged breathing of vapor should be avoided. The solvent should not be used near heat or open flame; the products of decomposition are toxic and irritating. Since TRICHLOROTRIFLUOROETHANE dissolves natural oils, prolonged contact with skin should be avoided. When necessary, use gloves which the solvent cannot penetrate. If the solvent is taken internally, consult a physician immediately.

WARNING

A potential RF radiation hazard exists when Radio Set AN/PRC-70 is operated in HI PWR, with the whip antenna, either 6 or 9 foot (2 or 3 meters). This hazard is increased when the radio is operated in the portable (backpack) mode. For protection against these hazards, observe the following safeguards:

a. Use a dummy load when operating the radio, if possible, such as when performing Preventive Maintenance Checks and Services (PMCS) to determine equipment readiness/availability.

b. Operate the radio in the off-the-back (field-emplaced) mode, if possible, using either the doublet or the long-wire antenna.

c. If a whip antenna must be used for transmissions in the field-emplaced mode, use a microphone cable long enough to maintain a distance of at least 1.7 feet (50 centimeters) from the antenna.

d. If the radio must be operated in the portable (on-the-back) mode, use LO PWR or do not transmit for longer than 30 seconds out of any 6-minute interval.

CAUTION

Do not attach antenna to this unit if high power transmitters in the range 2-76 MHz are being operated within 200 feet.

CAUTION

FREQUENCY STABILITY CHECK

The AN/PRC-70 radio requires a radio frequency stability check annually. Refer to your organizational maintenance schedule to ensure your radio does not become due for this check during a mission.

CAUTION

Handcrank Generator G-76/G must be producing power BEFORE the AN/PRC-70 is turned on. Failure to do this may damage the radio.

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 POWERLINES.

IF YOU MUST ERECT THESE LONG RANGE ANTENNAS NEAR POWERLINES, 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.

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 CANNOT AVOID THESE AREAS, GET SPECIFIC INSTRUCTIONS FROM YOUR SUPERVISOR AS TO WHAT CLEARANCE 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, STOP 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.

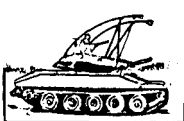
WARNING

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 POWERLINES.

- 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 WOODEN POLE OR A 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

WARNING



HIGH VOLTAGE
is used in the operation of this equipment

DEATH ON CONTACT
may result if personnel fail to observe safety precautions

Never work on electronic equipment unless there is another person nearby who is familiar with the operation and hazards of the equipment and who is competent in administering first aid. When the technician is aided by operators, he must warn them about dangerous areas.

Whenever possible, the power supply to the equipment must be shut off before beginning work on the equipment. Take particular care to ground every capacitor likely to hold a dangerous potential. When working inside the equipment, after the power has been turned off, always ground every part before touching it.

Be careful not to contact high-voltage connections or 115 volt ac input connections when installing or operating this equipment.

Whenever the nature of the operation permits, keep one hand away from the equipment to reduce the hazard of current flowing through the body.

Warning: Do not be misled by the term "low voltage." Potentials as low as 50 volts may cause death under adverse conditions.

For Artificial Respiration, refer to FM 21-11.

CHANGE DEPARTMENTS OF THE ARMY
AND THE NAVY
NO. 2 Washington, DC, 1 August 1987

**OPERATOR'S MANUAL
RADIO SET AN/PRC-70
(NSN 5820-01-062-8246)**

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NO. 1 Washington, DC, 18 November 1983

OPERATOR'S MANUAL
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3-5 and 3-6	3-5 and 3-6
4-1 and 4-2	4-1 and 4-2
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TECHNICAL MANUAL NO.

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70

DEPARTMENTS OF THE

ARMY AND THE NAVY

Washington, DC, 19 Feb 82

OPERATOR'S MANUAL RADIO SET AN/PRC-70 (NSN 5820-01-062-8246)

REPORTING 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 back of this manual direct to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-ME-MP, Fort Monmouth, New Jersey 07702-5000.

For Navy, mail comments to the Commander, Space and Naval Warfare Systems Command, ATTN: SPAWAR8122, Washington, DC 20363-5100.

In either case, a reply will be furnished direct to you.

	Paragraph	Page
Chapter	1. INTRODUCTION	
Section	I. General	
	Scope	1-1 1-1
	Consolidated Index of Army Publications and Blank Forms	1-2 1-1
	Maintenance Forms, Records, and Reports	1-3 1-1
	Reporting Equipment Im- provement Recommendations (EIR)	1-4 1-2
	Warranty Information	1-5 1-2
	II. Description and Data	
	Equipment Characteristics, Capabilities, and Features	1-6 1-2

		Paragraph	Page
	Location and Description		
	of Major Components.	1-7	1-3
	System Application.	1-8	1-7
	Tabulated Data	1-9	1-7
Chapter	2 OPERATING		
	INSTRUCTIONS		
Section I.	Controls and Indicators		
	Damage From Improper		
	Settings	2-1	2-1
	Operator/Crew Controls	2-2	2-1
Section II.	Operation Under Usual		
	Conditions		
	Types of Operation	2-3	2-5
	Preliminary Starting		
	Procedures	2-4	2-5
	Portable Configuration.	2-5	2-5
	Fixed Configuration.	2-6	2-7
	Initial Adjustments.	2-7	2-15
	Operating Procedures	2-8	2-15
III.	Operation Under Unusual		
	Conditions		
	Operation Under Emer-		
	gency Conditions	2-9	2-21
	Recognition and Identi-		
	fication of Jamming	2-10	2-23
	Antijamming Procedures	2-11	2-24
IV.	Preparation for Movement		
	Portable Configuration		
	Movement	2-12	2-26
	Fixed Configuration		
	Movement	2-13	2-26
	Fixed Voice Configura-		
	tion Movement	2-14	2-27
	CW or FSK Configuration		
	Movement	2-15	2-27
	Retransmit Configuration		
	Movement	2-16	2-28
Chapter	3. MAINTENANCE		
	INSTRUCTIONS		
Section I.	Tools and Equipment		
	General.	3-1	3-1
II.	Lubrication Instructions		
	General	3-2	3-1

	Paragraph	Page
III. Preventive Maintenance		
Checks and Services		
(PMCS)		
General	3-3	3-1
Preventive Maintenance		
Checks and Services.	3-4	3-2
Maintenance of the Radio		
Set	3-5	3-2
IV. Troubleshooting		
General	3-6	3-3
V. Maintenance of Radio Set		
General	3-7	3-3
 Chapter 4. MATERIEL USED IN CONJUNCTION WITH MAJOR ITEM		
Section I. General		
List of Auxiliary Equip- ment	4-1	4-1
II. Installation Instruc- tions for Auxiliary Equipment		
Voice Security Equip- ment Configuration	4-2	4-1
Code Burst and CW Configuration	4-3	4-4
Digital Message Device Group		
OA-8990 Configuration	4-4	4-8
Handcrank Generator		
Configuration	4-5	4-10
Power Supply Configuration	4-6	4-14
 Appendix A. REFERENCES		A-1
B. COMPONENTS OF END ITEM LIST		
Section I. Introduction		B-1
II. Integral Components of		
End Item		B-3
C. ADDITIONAL AUTHORI- ZATION LIST		
Section I. Introduction		C-1
II. Additional Authorization		
List		C-2

	Paragraph	Page
D. EXPENDABLE SUPPLIES AND MATERIALS LIST		
Section	I. Introduction	D-1
	II. Expendable Supplies and Material List	D-2

LIST OF ILLUSTRATIONS

<i>Number</i>	<i>Title</i>	<i>Page</i>
1-1	Radio Set AN/PRC-70	1-4
1-2	Contents of Accessory Carrying Bag	1-5
2-1	RT-1133 / PRC-70 Controls	2-2
2-2	Radio Set AN/PRC-70 Portable Con- figuration	2-6
2-3	Doublet Antenna AS-2975/PRC-70	2-8
2-4	Long Wire Antenna Configuration	2-11
2-5	Retransmit Configuration	2-13
4-1	Voice Security Equipment Configuration	4-2
4-2	CW Configuration	4-5
4-3	Digital Message Device Group (DMDG), OA-8990/P Configuration	4-8
4-4	Handcrank Generator, G-76/G Con- figuration,	4-10
4-5	Battery Charging with Handcrank Generator G-76/G	4-12
4-6	Power Supply, PP-6148/U Configuration	4-16

CHAPTER 1

INTRODUCTION

Section I. GENERAL**1-1. Scope**

This manual contains operator instructions for Radio Set AN/PRC-70. Equipment description, installation instructions, and maintenance duties for the operator are included in the manual. Operating and maintenance instructions for the auxiliary equipment used with the AN/PRC-70 are contained in separate technical manuals. Refer to appendix A for a listing of these manuals.

1-2. 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.

1-3. 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. Navy personnel will report maintenance performed utilizing the Maintenance Data Collection Subsystem (MDCS) IAW OPNAVINST 4790.2, Vol 3 and unsatisfactory material/conditions (UR submissions) IAW OPNAVINST 4790.2, Vol 2, chapter 17.

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 4355.73B/AFR 400-54/MCO 4430.3H.

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 P4610.19D/DLAR 4500.15.

1-4. Reporting Equipment Improvement Recommendations (EIR)

a. Army. If your Radio Set AN/PRC-70 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 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—PA—MA—D, Fort Monmouth, New Jersey 07703—5000. We'll send you a reply.

b. Navy. Navy personnel are encouraged to submit EIR's through their local Beneficial Suggestion Program.

1-5. Warranty Information

Radio Set AN/PRC-70 is warranted by the contractor for a period of 12 months. It starts on the date of Government acceptance indicated on the appropriate DD Form 2408-9. Report all defects in material or workmanship to your supervisor who will take appropriate action through your Organization's maintenance shop.

Section II. DESCRIPTION AND DATA

1-6. Equipment Characteristics, Capabilities and Features (fig. 1-1)

Radio Set AN/PRC-70, referred to hereafter as the radio set, is a medium-to-long-range communications set which operates in the 2 to 76 MHz frequency band. Various configurations of this equipment are possible so that it may be transported by one or two persons or installed at fixed sites such as field headquarters, command posts, etc. The radio set may be operated in all kinds of

weather and terrain. Operating modes include amplitude modulation (AM), single sideband (SSB), continuous wave (CW), frequency modulation (FM), and frequency-shift keying (FSK). Provisions are included for the connection of separate security devices to allow secure communications in selected modes. Two radio sets may be connected together for retransmission purposes.

**1-7. Location and Description of Major
Components**

The radio set consists of the items shown in figures 1-1 and 1-2. The items not described in separate technical manuals are described in the following subparagraphs.

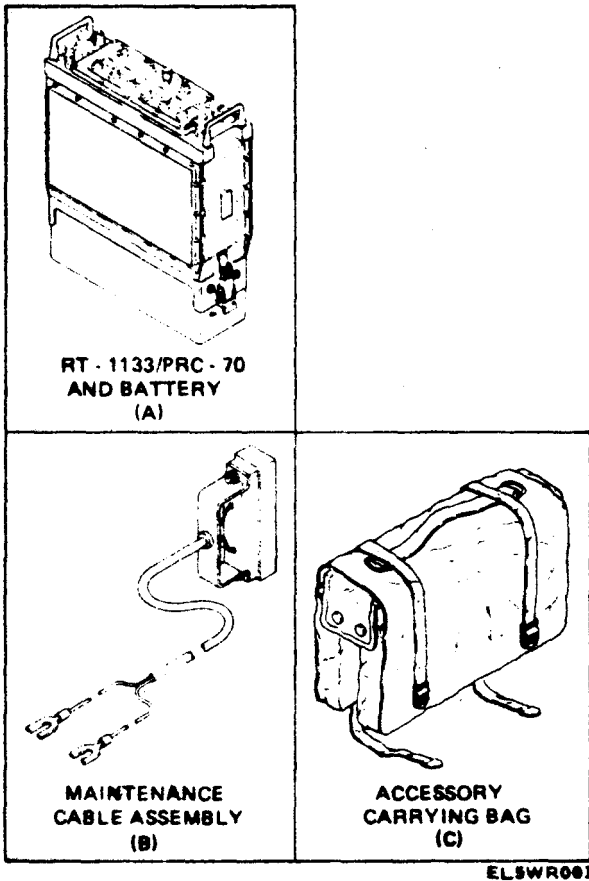
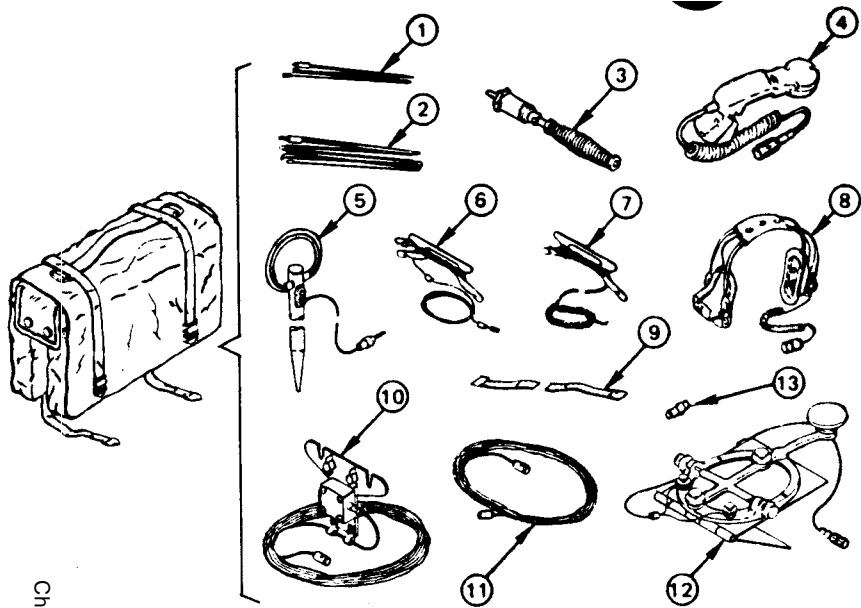


Figure 1-1. Radio Set AN/PRC- 70.



1. 6 FT WHIP ANT (4 SECTIONS)
2. 9 FT WHIP ANT (6 SECTIONS)
3. SWIVEL ANT BASE
4. HANDSET H-250/U
5. GND ROD
6. WIRE ROPE ASSY (2 EA)
7. HALYARD ASSY (2 EA)
8. HEADSET H-251/U
9. 5 FT MEASURING TAPE
10. BALUN ASSY WITH RG-58
CABLE ASSY AND BNC ADAPTER
11. RG-58 CABLE ASSY
12. CW KEY KY-116/U WITH CABLE
CX-13101/PRC-70
13. ADAPTER UG-914/U

Figure 1-2. Contents of Accessory Carrying Bag.

EL5ER002

TM 11-5820-553-10

a. Receiver-Transmitter RT-1133/PRC-70. The Receiver-Transmitter RT-1133/PRC-70 (A, fig. 1-1) is the major assembly of the radio set. Receiver-Transmitter RT-1133/PRC-70 is referred to hereafter as the RT unit. The RT unit is housed in a metal case and contains the receive and transmit circuits. Controls for the operator and cable connectors are located on the front panel of the RT unit.

b. Accessory Carrying Bag. The accessory carrying bag (C, fig.1-1) is used for carrying the following items (fig. 1-2):

- (1) Handset H-250/U.
- (2) Headset H-251/U.
- (3) CW Key KY-116/U with Cable CX-13101/PRC-70.
- (4) Doublet Antenna AS-2975 PRC-70 consisting of:
 - (a) 5-foot measuring tape.
 - (b) Ground rod.
 - (c) Balun assembly with RG-58 Cable Assembly.
 - (d) 25-foot RG-25 Cable Assembly with BNC adapter.
 - (e) Halyard assembly (2 each).
 - (f) Wire rope assembly (2 each).
- (5) Whip Antenna AS-2974/PRC-70 consisting of:

- (a) 6-foot whip (4 sections).
- (b) 9-foot whip (6 sections).
- (c) Swivel antenna base.

c. Maintenance Cable Assembly. This assembly (B, fig. 1-1) connects the RT unit to a power supply for operating, testing, and troubleshooting the RT unit without a battery.

d. Doublet Antenna AS-2975/PRC-70. This assembly is a half-wave portable antenna that is adjustable for an operating frequency between 2 and 30 MHz and is only used in fixed configurations.

TM 11-5820-553-10/EE150-SN-OPI-010/E110-PRC 70

e. Whip Antenna AS-2974/PRC-70. This assembly consists of a foldable 6-foot antenna, a foldable 9-foot antenna, and a swivel antenna base. The 6-foot antenna is used for the 4 to 76 MHz range and the 9-foot antenna is used for the 3 to 76 MHz range. The whip antenna assembly is required for portable configurations.

1-8. System Application

The radio set is a lightweight transceiver designed for manpack use. It operates in the frequency range of 2 to 76 MHz in AM, CW, SSB, and FSK modes and from 30 to 76 MHz in FM mode. The radio set has a long-range communications capability up to 2500 miles (4000 km). The 30 to 76 MHz SSB mode offers flexibility for setting up communication nets and links. The built-in antenna coupler is automatic, and provides the best match with whip, long wire, and doublet antenna assemblies.

1-9. Tabulated Data

The following subparagraphs describe the technical data for the radio set. Table 1-1 lists the physical data of the items of the radio set. The relationship between the various modes, frequencies, antenna assemblies and distances are shown in tables 1-2 and 1-3.

a. Receiver-Transmitter RT-1133/PRC-70

Input Voltage +20 to +32 vdc

Power Consumption:

Receive Mode 7 watts maximum

Low-Power Transmit Mode. 50 watts maximum

High-Power Transmit Mode

FSK, CW, FM, AM 160 watts maximum

SSB 115 watts maximum

Power Output:

Duty Cycle9 to 1 receive-to-transmit ratio.

High-Power Mode	
CW, FM*, FSK	21-42 watts average
SSB	21-42 watts peak envelope power
AM	7.5 watts carrier, 7.5 watts upper sideband. 30 watts PEP at 85% modulation minimum
Low-Power Mode3 watts, +2dB, -2.5 dB
Frequency Range	2.000 to 75.9999 MHz in 100 Hz steps

* FM transmit enabled only in 30.0000 to 75.9999 MHz range.

NOTE

A temperature-sensing switch is located in the power amplifier module. If continuous transmission at HI PWR is required during high temperatures the RT unit may switch to lower power (approximately 3 watts) after approximately 10 minutes of such operation. When the temperature is sufficiently reduced the RT unit will automatically return to the higher power level.

Receiver Sensitivity:

FM	0.60 μ V
SSB, FSK, CW	0.375 to 0.50 μ V (varies with frequency)
AM	2.50 μ V

Receiver Signal-to-Noise

Ratio	10 dB at referenced sensitivity
-----------------	---------------------------------

Receiver Selectivity:

FM32 kHz at 6dB 70 kHz at 60 dB
SSB, CW, FSK	2.8 kHz at 6 dB 4.0 kHz at 26 dB 6.0 kHz at 60 dB
AM	6.0 kHz at 6 dB 14.0 kHz at 60 dB

- b. *Doublet Antenna AS-2975/PRC-70*
 Frequency Range 2 to 30 MHz
 (normal range)
 Input Impedance. 50 ohms
- c. *Whip Antenna AS-2974/PRC-70*
 6-foot section 4 to 76 MHz
 9-foot section 3 to 76 MHz

Table 1-1. Items Comprising an Operable Equipment

NSN	Item	Qty	Dimensions			
			Length (in.)	Depth (in.)	Width (in.)	Weight (lb.)
5820-01-062-8246	Radio Set AN/PRC-70 Consisting of:					
5820-01-073-9114	Receiver- Transmitter RT-1133/ PRC-70	1	4	11.9	13.25	21.0
5995-01-092-5943	Maintenance Cable Assembly Accessory Carrying Bag	1	60	-	-	0.45
5985-01-073-5602	Doublet Antenna AS-2975/ PRC-70	1	2808	-	-	5.25
5985-01-073-5601	Whip An- tenna AS-2974/ PRC-70 (6 ft)	1	72	-	-	0.75
	(9 ft)	1	108	-	-	1.00
5965-01-017-0549	Headset H-251/U	1	8	4	4	0.7
5965-00-043-3463	Handset H-250/U	1	8	2	2	0.5
5805-00-503-3395	CW Key KY- 116/U with	1	5	3	3	0.4

Table 1-1. Items Comprising an Operable Equipment- Continued

NSN	Item	Qty	Dimensions			
			Length (in.)	Depth (in.)	Width (in.)	Weight (lb.)
5995-01-073-6123	Cable CX-13101/ PRC-70 Ground Rod SMC 746768/800- 45 NOTE	1	18	-	0.75	0.8
The following equipment is required but not supplied as part of the AN/PRC-70.						
6140-01-089-7636	Battery BB-542/U	1	12.2	2.56	4.0	7.0

Table 1-2. Operating Modes, Antennas, and Frequencies

Operating Mode	Antenna	Frequency
FM	6-foot whip	30 to 76 MHz
	9-foot whip	30 to 76 MHz
CW, FSK, AM, SSB	6-foot whip	4 to 76 MHz
	9-foot whip	3 to 76 MHz
	Doublet	2 to 30 MHz (normal)

Table 1-3. Operating Modes, Antennas, and Distances

Mode	Antenna	Distance Range
CW	AS-2975/PRC-70	up to 2,500 miles*
SSB Voice, AM	AS-2975/PRC-70	0-500 miles
SSB Voice, FM	AS-2974/PRC-70	0-25 miles
AM	AS-2974/PRC-70	0-15 miles
FM	AS-2974/PRC-70	0-15 miles

*Long wire antenna may be used (para 2-6b).

CHAPTER 2

OPERATING INSTRUCTIONS

Section I. CONTROLS AND INDICATORS

2-1. Damage From Improper Settings

No damage will result to the equipment from improper control settings at turn-on. Battery life will be shortened by some control settings. Maximum battery drain occurs when the POWER switch is set to HI PWR and the SQUELCH switch is held in the DIAL LIGHT position. For best battery life use other settings of the controls when possible.

2-2. Operator/Crew Controls

Figure 2-1 shows the RT unit front panel controls. Table 2-1 lists the operator controls, indicators, and connectors and describes their functions.

CAUTION

Do not change front panel controls while RT unit is transmitting.

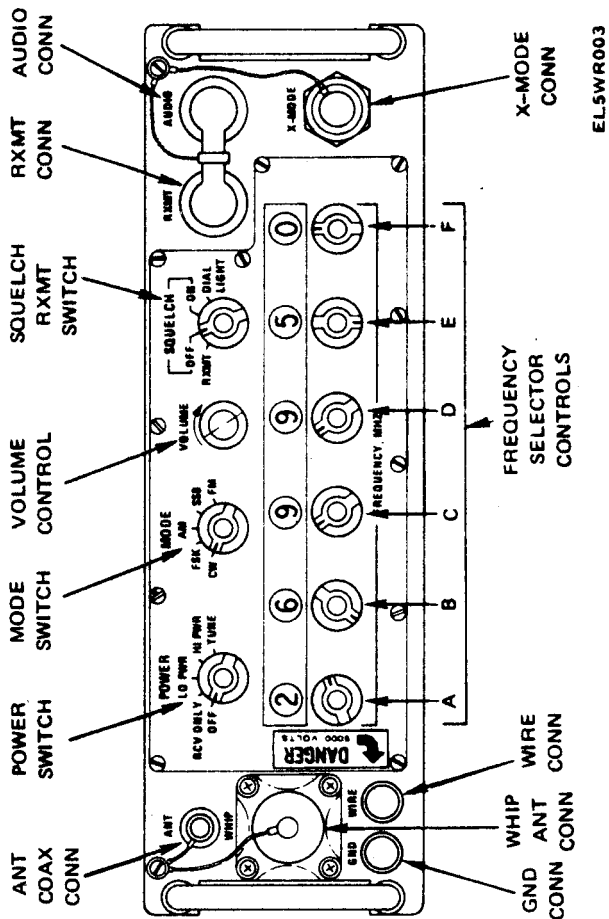


Figure 2-1. RT-1133/PRC-70 Controls.

Table 2-1. Controls, Indicators and Connectors

Control, indicator, or connector	Function
POWER switch	Sets major functions of RT-1133/PRC-70 as follows:
Positions:	
OFF	Removes all power from RT unit.
RCV ONLY	Applies power to receive circuits only.
LO PWR	Allows transmission in low-power mode when transmitter is keyed. Output is approximately 3 watts.
HI PWR	Allows transmission in high-power mode when transmitter is keyed. Output is approximately 30 watts.
TUNE	Starts automatic tuning sequence in unit to tune antenna coupler. Switch is spring loaded in this position and returns to HI PWR position when released.
MODE switch	Selects operating mode of unit. Modes are CW, FSK, AM, SSB, and FM*.
* Transmit enables only	only in 30.0000 to 75.9999 MHz range.
VOLUME control	Sets volume of received audio.
SQUELCH switch	Controls operation of receiver squelch and unit dial lights as follows:
Positions:	
RXMT	Actuates switching circuit which controls second RT-1133/PRC-70 in retransmit mode.
OFF	Disables squelch circuit.
ON	Enables receiver squelch in voice modes. Squelch is disabled if MODE switch is set to CW or FSK.
DIAL LIGHT	Momentary switch position; applies power to dial lights. Switch returns to ON position when released.
RXMT connector	Connects unit to second RT unit RT-1133/PRC-70 in retransmit mode. Connects CW Key KY-116/U for CW or FSK operation.
AUDIO connector	Connects Handset H-250/U to RT unit for normal voice operation and Headset H-251/U during CW or FSK operation.
X-MODE connector	Connects voice security applique to unit for secure voice operation.

Table 2-1. Controls, Indicators and Connectors—Continued

Control, indicator or connector	Function
------------------------------------	----------

CAUTION

Dummy shorting caps for AN/PRC-70 and AN/PRC-77 are not interchangeable.

NOTE

Shorting cap must be connected to connector at all times when voice security applique is not being used or power to RT unit will be interrupted.

ANT connector	Connects feedline for Doublet Antenna AS-2975/PRC-70 to RT unit.
---------------	--

NOTE

Installing the coax connector of the doublet antenna to the antenna connector removes all R.F. power from the wire connector post.

WHIP connector	Connects whip Antenna AS-2974/PRC-70 to RT unit.
----------------	--

NOTE

Installing the antenna swivel base to the whip connector removes all R.F. power from the antenna and wire connectors.

WIRE connector	Connects random wire length antennas to RT unit.
----------------	--

GND connector	Connects ground wire to RT unit.
FREQUENCY selector controls and indicators:	Operating frequency is changed by rotating frequency selector controls while observing frequency readout numerals. FM transmit is disabled by these controls below 30.0000 MHz setting.

- | | |
|---|-----------------------------|
| A | Megahertz tens selector |
| B | Megahertz unit selector |
| C | Kilohertz hundreds selector |
| D | Kilohertz tens selector |
| E | Kilohertz units selector |
| F | Hertz hundreds selector |

**Section II. OPERATION UNDER
USUAL CONDITIONS**

2-3. Types of Operation

Two types of operation are possible using the radio set: portable and fixed configurations. Refer to Chapter 4, Section II, for the installation and operation of configurations using auxiliary equipment.

2-4. Preliminary Starting Procedures

Before operating the radio set, set controls as follows:

<i>Control</i>	<i>Setting</i>
POWER switch	OFF
MODE switch	Operating mode desired
VOLUME control	Midrange
SQUELCH switch	OFF
FREQUENCY selector controls	Operating frequency desired

2-5. Portable Configuration

Figure 2-2 shows the portable configuration. For operation in this configuration, assemble equipment as follows:

CAUTION

The antenna base must be screwed down all the way until the antenna base meets with the connector. If a gap is left between the antenna base and the connector, the antenna base screw may break.

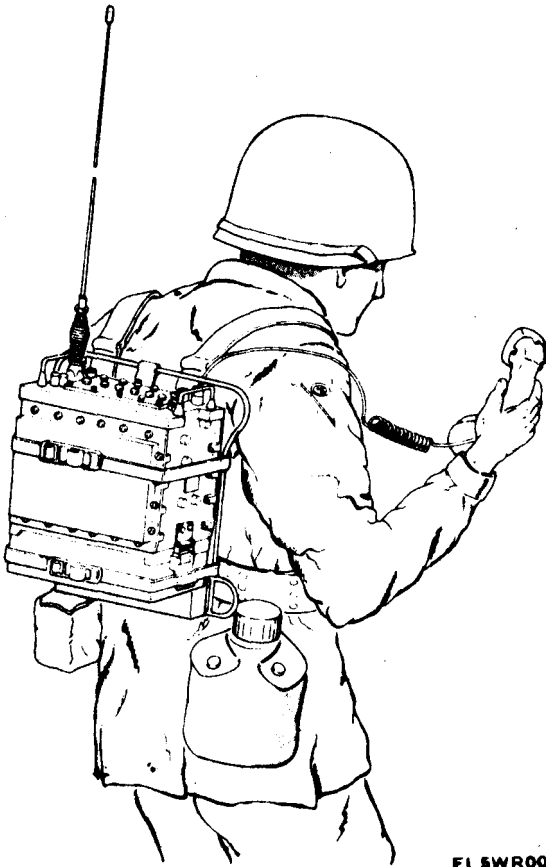


Figure 2-2. Radio Set AN/PRC- 70 Portable Configuration.

a. Install the antenna swivel base in RT unit WHIP connector.

b. Assemble the whip antenna by unfolding either the 6-foot or the 9-foot section, and pressing ferrules together.

c. Screw whip antenna into the antenna swivel base.

d. For voice operation, connect Handset H-250/U to the AUDIO connector on the RT unit.

e. For CW operation, connect Headset H-251/U to the AUDIO connector and CW Key KY-116/U with cable CX- 13101/PRC-70 to the RXMT connector on the RT unit.

2-6. Fixed Configuration

This paragraph contains setup and assembly for operable equipment in fixed configurations. Non-portable equipment use is determined by the local commander.

NOTE

When using the doublet antenna, the direction of the antenna wire should be at right angles to the desired direction of transmission.

a. *Installation of Doublet Antenna.* Figure 2-3 shows the equipment setup for this configuration. The halyard assemblies may be attached to any suitable structure, manmade or natural, that will provide maximum height, correct antenna length, and antenna orientation at a right angle to the direction of desired transmission.

EL5WR005

1. HALYARD ASSY
2. WIRE ROPE ASSY
3. BALUM ASSY
4. ANTENNA WIRE
5. RG-58 CABLE ASSY
6. ANTENNA CONN
7. RT UNIT
8. GROUND ROD
9. LEAD WEIGHT

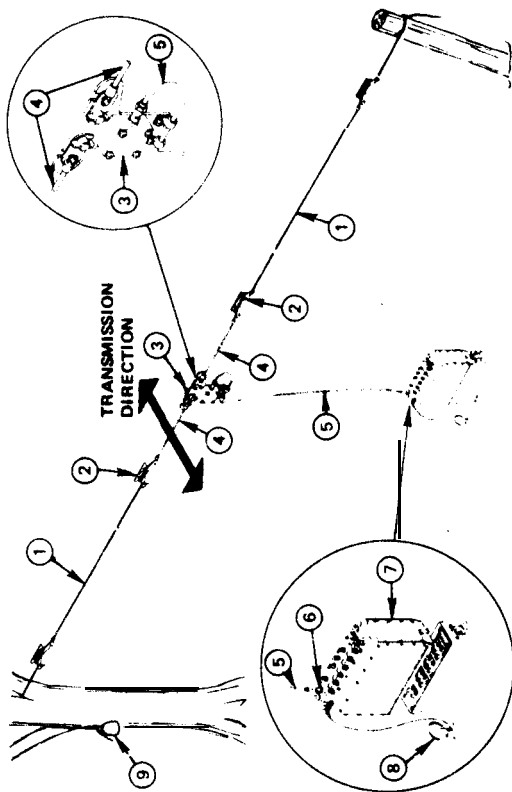


Figure 2-3. Doublet Antenna AS-2975/PRC-70.

(1) Select a good location for the installation of the doublet antenna.

(2) Calculate antenna length of each leg by the following formula:

$$\frac{234}{\text{Operating Frequency in MHz}} = (\text{ft}) \text{ of one leg}$$

NOTE

Total antenna length is the length of both antenna pieces added together.

EXAMPLE

Operating Frequency is 2 MHz, $\frac{234}{2 \text{ MHz}} =$

117 (ft) each antenna leg.

Total antenna length for 2 MHz = 2 x 117 ft or 234 ft.

NOTE

Due to corrosive effects of weather on the antenna wire the radio may not tune to this length. To compensate for this effect, the length of each leg of the AS-2975/PRC-70 including bobbins, should be shortened by one foot below the length calculated from the standard formula 234 ft. (MHz).

(3) Remove Doublet Antenna Assembly AS-2975/PRC-70 from accessory carrying bag (fig. 1-2).

(4) Connect the two wire rope assemblies to the balun assembly as shown in figure 2-3.

(5) Unwind the desired antenna wire length as determined by (2) above on both wire rope assemblies.

(6) Unwind the nylon rope from the two halyard assemblies.

(7) Connect the end of the rope of the halyard assemblies to the reel of the two-wire rope assemblies.

(8) Secure the halyard assemblies to the

selected structures.

(9) Place the RT unit under the balun assembly near the RG-58 Cable Assembly.

(10) Place ground rod in the ground near the RT unit. Connect the ground wire to the GND terminal on the RT unit.

(11) Connect the RG-58 Cable Assembly to the ANT connector on the RT unit. If necessary, use the extra 25-foot RG-58 Cable Assembly with Adapter UG-914/U.

b. Operation With Long Wire Antenna. The radio set may be operated by using the two wire rope assemblies and the two halyard assemblies of the doublet antenna. The two guy hooks of the wire rope assembly are overlaid and bolted together. This will provide an antenna wire length of 234 feet. The arrangement of equipment is shown in figure 2-4. This long wire antenna arrangement can be used at any operating frequency from 6 to 30 MHz.

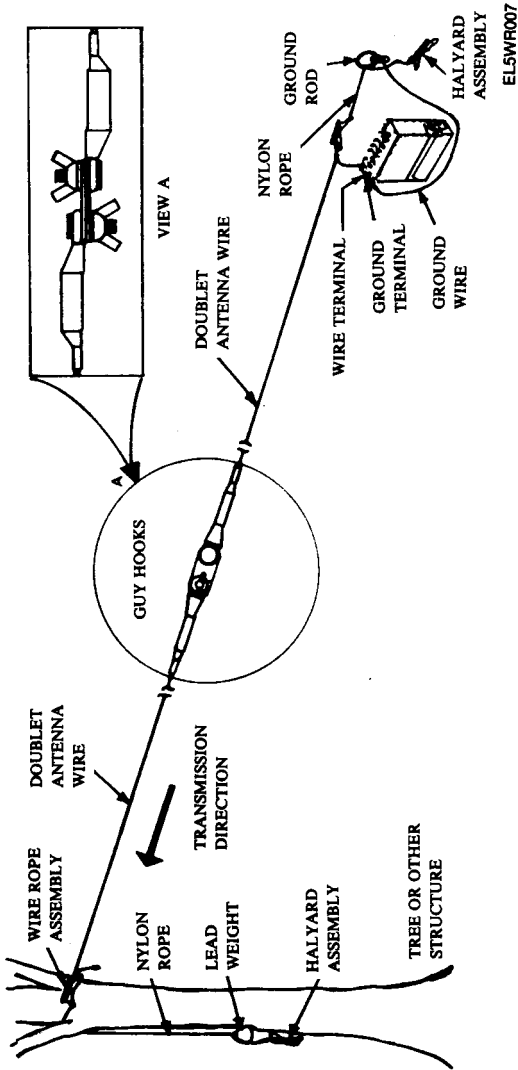


Figure 2-4. Long Wire Antenna Configuration

c. Retransmit Configuration.

(1) *Equipment setup.* Two radio sets can be operated together to establish retransmission of voice signals on AM, FM, and SSB. Figure 2-5 shows this configuration which includes the following items:

(a) Two Receiver-Transmitters RT-1133/PRC-70.

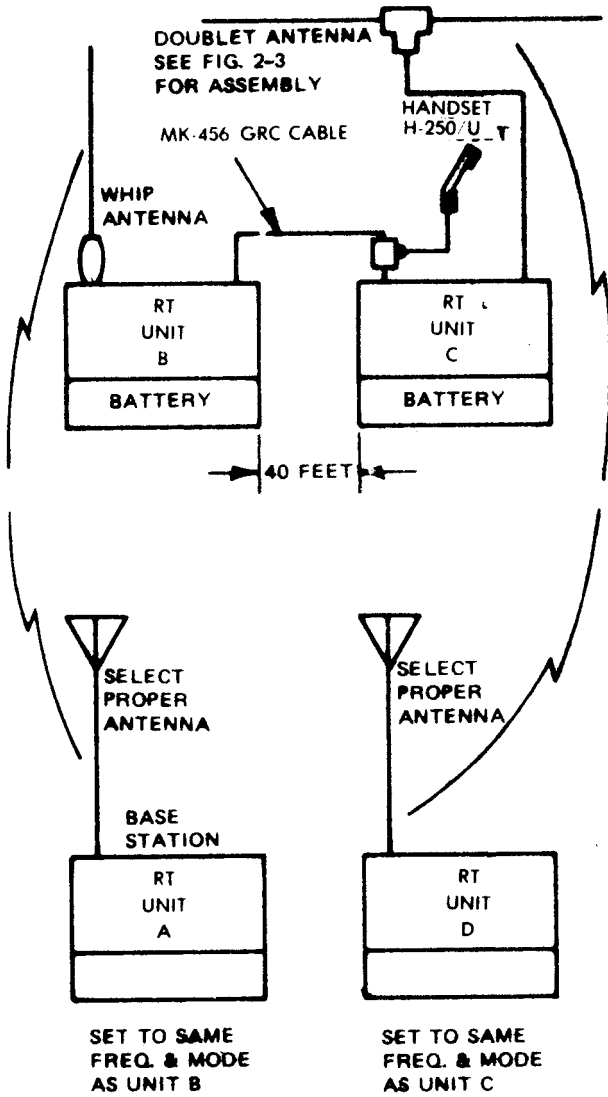
(b) Two Batteries BB-542/U.

(c) Transmission Cable Kit MK-456 or MK-456A/GRC.

(d) One Doublet Antenna AS-2975/PRC-70.

(e) One 6-foot or 9-foot Whip Antenna AS-2974/PRC-70.

(f) Handset H-250/U.



EL5WR006

Figure 2-5. Retransmit Configuration.

TM 11-5820-553-10

(2) *Assembly.* Assemble the doublet antenna as described in paragraph 2-6. Perform the following steps:

(3) *Operating Instructions.*

(a) Set controls on RT unit as follows:

<i>Control</i>	<i>Setting</i>
POWER switch	OFF
MODE switch	Operating mode desired
VOLUME control	Midrange
SQUELCH switch	OFF
FREQUENCY SELECTOR switch	To assigned operating frequencies

(b) Initial tune up.

1. Turn RT unit B POWER switch to HI PWR.

2. Set VOLUME control to a level which permits monitoring of any radio traffic on the specified frequencies. If undesired traffic exists, turn squelch switch to RMXT and observe if the unit stays squelched. If the squelch breaks, even marginally, do not use that frequency. A good link check can be made at this point using the received desired frequency to assure that it will break the squelch.

3. Perform the coupler tune sequence by momentarily setting the POWER switch to TUNE. This switch is spring loaded and will return to the HI PWR position.

4. Set the POWER switch to HI PWR or LO PWR as desired.

5. Tune unit C in a similar manner and set both units' SQUELCH switch to RXMT position.

6. Connect RXMT Cable CX-4656/GRC.

7. Set RT units A and B to FM mode on the specified VHF frequency.

8. Set RT units C and D to the SSB mode on the specified VHF frequency.

9. Communication link can be established by voice transmission from unit A to reception at

unit D. Proper relay operation can be determined by monitoring communications at CX-4656/GRC audio connector. To prevent a loss of message, the operator at the transmitting end should wait until his unit squelches (noise is muted) before responding to the received message. This will take approximately 2 seconds.

10. To shut down the equipment, set both RT unit POWER switches to OFF.

2-7. Initial Adjustments

No adjustments of the radio set are necessary.

2-8. Operating Procedures

a. *Equipment Starting.* Start the equipment in accordance with the following procedures:

WARNING

Serious injury or death could result to personnel if the whip antenna comes in contact with power lines.

- (1) Set RT unit to desired frequency.
- (2) Set RT unit POWER switch to RCV ONLY.
- (3) Adjust RT unit VOLUME control for suitable audio output level.

NOTE

The POWER switch is spring loaded in the TUNE position and will return to HI PWR when released. When RT unit is in the coupler tuning mode, radio silence is broken.

When the POWER switch is placed in the TUNE (momentary spring loaded) position, the coupler unit will automatically tune to match the power amplifier to the antenna being used. If a good match is made, the tune cycle will stop and the RT will be ready for use. If a

good match cannot be made within 15 seconds, the coupler will stop the tune cycle. A no-tune condition will exist and is indicated by a series of 2000 Hz beeps when the RT is keyed. In SSB mode, the operator must talk into the handset to detect a no-tune condition.

(4) Momentarily set RT unit POWER switch to TUNE and release. Allow 15 seconds for tuning to be completed (when TUNE tone disappears from handset). Once coupler tuning is completed, the MODE switch can be changed without having to retune.

(5) A beeper (no-tune) tone will result if the antenna coupler does not provide a proper match. Some power may be available and communication should be attempted even though the antenna is not optimum matched. Several corrective actions may be taken to improve the match and are listed below:

(a) Move POWER switch to RCV ONLY and try tuning again.

(b) Change frequency and try tuning again.

(c) Check antenna for damage.

(d) Check doublet antenna for proper length.

(e) Move to different location if near some large object (tree, rock building, etc.).

(f) Check battery. Hold dial lamp switch on and key transmitter. Dial lamps should not go out.

WARNING

When operating in HI PWR with the whip antenna, do not touch the antenna when in transmit mode—an RF burn can result.

A potential RF radiation hazard exists when Radio Set AN/PRC-70 is operated with the whip antenna, either 2 or 3 meters. This hazard is increased when the radio is operated in the portable (back-pack) mode. For protection against these

hazards, observe the following safeguards:

a. Use a dummy load when operating the radio, if possible, such as when performing Preventive Maintenance Checks and Services (PMCS) to determine equipment readiness/availability.

b. Operate the radio in the off-the-back (field-emplaced) mode, if possible, using either the doublet or the long-wire antenna.

c. If a whip antenna must be used for transmissions in the field-emplaced mode, use a microphone cable long enough to maintain a distance of at least 50 centimeters from the antenna.

d. If the radio must be operated in the portable (on-the-back) mode, do not transmit for longer than 30 seconds out of any 6-minute interval.

(6) Set RT unit POWER switch to LO PWR.

(7) Set RT unit SQUELCH switch to ON (if desired).

NOTE

If RT unit FREQUENCY selectors are reset, momentarily set POWER switch to TUNE and release. After retuning is completed (within 15 seconds), LO PWR position of POWER switch may be selected.

b. Voice Mode Operation. Transmit in any of the voice modes by pressing the H-250/U Handset push-to-talk button and speaking into the microphone.

c. Standard CW Operation. Use Headset H-251/U for CW operation. To transmit in the standard CW mode, key the RT unit with CW Key KY-116/U.

WARNING

Serious injury or death could result to personnel if the whip antenna comes in contact with power lines.

d. Miscellaneous Operating Notes.

(1) Changing settings of RT unit controls should not be done while transmitter is keyed.

(2) To read FREQUENCY selector dials in poor light, set SQUELCH switch to DIAL LIGHT. The switch is spring-loaded in this position and will return to ON when released.

(3) The radio set will not operate well with FM sets having 25-kHz channelization unless the RT unit has been modified for this mode. Such modification can be performed by depot support maintenance personnel.

e. Equipment Shutdown. To shut down the equipment set the RT unit POWER switch to OFF.

f. Special Tuning Procedures. Certain frequencies and loading conditions may affect tuning. If several attempts at tuning fail, the operator should try the following steps:

(1) *Change the location of the antenna.* Objects near the antenna (including the operator, other people, and the handset cable) affect the impedance of the antenna. The operator can try to tune the radio set after doing one or more of the following:

(a) Change his position relative to the antenna.

(b) Move the handset cable away from the antenna.

(c) Move the radio position if it is sitting close to a tree, post, or some other conductor.

(2) *Change frequency.*

(a) Change the frequency of the radio set in 100 kHz steps to a frequency at which it will tune.

(b) Change frequency as in (2)(a) then, change

back to the desired frequency. This will often solve the problem.

g. Field Checkout. There may be times when the operator wants to know the operational condition of the unit without breaking radio silence. The following steps will provide a partial check and may lead to the corrective action required:

(1) With POWER switch OFF, attach battery.

(2) Set FREQUENCY to 10.997 MHz, MODE switch to SSB, and SQUELCH switch to OFF. Do not connect any antenna to the radio.

(3) Turn POWER switch to RCV ONLY and adjust VOLUME control to obtain a suitable level of tone which should have a frequency of approximately 3000 Hz.

(4) Change the FREQUENCY to 10.998 MHz and observe that tone changes to a frequency of approximately 2000 Hz. This test indicates that power supplies, audio, and IF circuits, volume control, and handset or headset are operable. If no audio is heard, turn VOLUME control fully clockwise. If audio is still not heard, try a new handset and/or new battery.

(5) To check squelch operation, set FREQUENCY to 10.898 MHz and turn SQUELCH switch to ON. The radio should mute (no audio or noise unless strong traffic exists on that frequency). Set FREQUENCY to 10.998 MHz and observe that squelch breaks and 2000 Hz tone is heard.

(6) A battery check can be accomplished by setting controls as given below:

(a) FREQUENCY at 10.998 MHz.

(b) Turn SQUELCH switch to DIAL LIGHT and observe light level. While holding switch in DIAL LIGHT position, change FREQUENCY to 14.998 MHz. The bandswitch motor will run and lights should not dim (motor drains about 200 mA from battery).

(7) Transmitter (hot tune) check can be accomplished into an antenna as given below.

NOTE

Radio silence will be broken.

(a) Set FREQUENCY to assigned frequency.

(b) Turn POWER switch to TUNE and note presence of a tone in handset while coupler is tuning (Radio silence is broken.)

(c) Note that tune sequence finishes in less than 15 seconds and that tone shuts off.

(d) Key transmitter and observe that voice sidetone is heard.

(e) If a series of beeps (a 2000 Hz tone coming on at an interval of approximately 1 second) is heard, try the following procedure:

1. Move POWER switch to RCV ONLY and try tuning again.

2. Change frequency and try tuning again.

3. Check antenna for damage or doublet antenna for correct length.

4. Move to a different location if near some large object (tree, building, etc.).

5. Change battery if available.

(8) Changing batteries.

(a) *Battery removal.*

1. Position RT-1133/PRC-70 (RT unit) with battery assembly attached on a flat surface. Insure POWER switch on RT unit is in OFF position.

2. Unfasten battery side latches.

3. Lift RT unit away from battery.

(b) *Battery installation.*

1. Place a fully charged battery on a flat surface with latches pulled out and down.

2. Ensure POWER switch on RT unit is in OFF position. Place RT unit over battery and carefully mate battery connector with RT unit connector.

3. Press two units together and lock side latches.

Section III. OPERATION UNDER UNUSUAL CONDITIONS

2-9. Operation Under Emergency Conditions

a. *Operation Under Extreme Climatic Conditions.*

The AN/PRC-70 is designed to operate in a wide variety of climates. Some of the extreme climatic conditions that may be encountered are moist heat, dry heat, cold, rain, freezing rain, and snow. These conditions are discussed, and information for equipment operation and maintenance during their occurrence is provided in the following subparagraphs:

(1) *Extreme moist heat.* In warm damp climates or swampy regions, the equipment is subject to damage from moisture and fungus. Observe the

following precautions:

(a) Check the equipment frequently for condensed moisture and fungus growth. Clean equipment surfaces using a mild detergent solution. Thoroughly wipe moisture from the exterior of the equipment with a lint-free cloth; remove fungus immediately.

(b) Warm damp climate promotes rust. Inspect facilities and equipment for signs of loose paint and corrosion. Refer to TM 11-5820-553-23 section I of chapter 2 for refinishing and repainting information.

(2) *Extreme rainfall.* During periods of extreme rainfall, site facilities and equipment are subject to damage from water seepage around weather seals. Inspect weather seals on electrical equipment for aging and resultant water seepage.

(3) *Extreme dry heat.* In hot, dry climates, exposed electrical connectors, receptacles, and terminals are subject to damage from blown dirt and dust. Lubricants used on moving parts may become contaminated with sand and grit and accelerate parts wear by the resulting abrasive action. Minimize the effects of extreme dry heat by observing that electrical connectors and receptacles have protective covers installed when not in use.

(4) *Extreme cold.* Subzero temperatures and climatic conditions associated with cold weather affect the operating efficiency of equipment. Extreme cold causes cables and wires to become hard, brittle, and difficult to handle. Ice formation can cause damage to facilities and equipment. Under certain conditions it may be advisable to discontinue terminal operations. The following precautionary measures apply:

(a) Be careful when handling power and signal cables.

(b) Ensure that external connectors and

receptacles are kept free of frost, snow, and ice. Keep protective covers installed on unused electrical receptacles. Never drag or place an unprotected cable connector in the snow.

(c) Keep batteries fully charged.

(5) *Freezing rain.* A freezing rain condition, commonly known as sleet, can occur when the ambient temperature drops to between +27°F and +32°F (-2.8°C and 0°C) during precipitation conditions. On these occasions, the ice levels on the antenna may accumulate to a level that can result in excessive loads being placed on the antenna drive mechanism. A sleet condition is apparent by an accumulative level of ice building up on exposed surfaces.

(6) *Salt air and sea spray.* Operation of AN/PRC-70 equipment in an area where salt air and sea spray are prevalent requires the following preventive and protective maintenance procedures. With fresh water, wash down antenna and support equipment to prevent salt accumulation.

b. *Operation on Low Batteries.* Any or all of the following procedures may be used to save the batteries in RT unit in an emergency.

(1) Set POWER switch to LO PWR for transmitting if good communications can be established using this mode.

(2) If possible, use SSB voice or standard CW mode.

(3) Use an external light source to check frequency and controls.

2-10. Recognition and Identification of Jamming

It is likely that under real or simulated tactical conditions the receiver will be jammed by the enemy. Enemy jamming is done by transmitting a strong signal on the same frequency as that used for

communication, thereby making it difficult or impossible to receive the desired signal. Unusual noises or interference heard on the receiver may be **caused by enemy jamming, noise from a local source** or a bad receiver. To determine whether or not the interference is in the receiver, disconnect and remove the antenna leads, and/or temporarily connect the WIRE post to the chassis. If the interference continues, the receiver is bad. Enemy jamming signals may be a continuous wave or modulated. A jamming signal may be intended to block a single frequency. This is called spot jamming. The enemy may use one or several transmitters to jam a block or band of frequencies. This method is called barrage jamming.

a. Continuous-Wave (CW) Jamming. CW jamming is transmitted as a steady carrier. This signal beats with another signal and produces a steady tone. CW jamming signals may also be keyed by using a random on-and-off signal or using actual code characters keyed to the same rate or a little faster than the signal being received.

b. Modulated Jamming. Modulated jamming signals may be noise, laughter, singing, music, various tones, or almost any unusual sound, or it may be a number of these sounds. Various types of modulated jamming signals are explained below.

(1) *Spark.* This is one of the simplest, most effective, and easily produced jamming signals. This type of signal sounds very rough, raspy, and sometimes like an operating electric motor with sparking brushes. The signal is very broad; therefore, it will interfere with a larger number of communication channels.

(2) *Sweep-through.* This signal is the result of sweeping or moving a carrier back and forth at a slow or rapid rate. The numerous signals of varying amplitude and frequency produce a sound like that

of a low-flying airplane passing overhead. This type of jamming is effective over a broad range of frequencies. When it is varied rapidly, it is effective against all types of voice signals.

(3) *Stepped tones or bagpipes.* This signal usually consists of several separate tones. The tones are transmitted in the order of first increasing and then decreasing pitch, repeated over and over. The audible effect is like the sound of a Scottish bagpipe.

(4) *Noise.* Noise is random both in amplitude and frequency. It produces a sound similar to that heard when a receiver is not tuned to a station and the VOLUME control is turned to maximum.

(5) *Gulls.* This signal consists of a quick rise and slow fall of a variable audio frequency. The sound is similar to the cry of the sea gull.

(6) *Tone.* This signal consists of a single audio frequency of unvarying tone. It produces a steady howl. Another method of tone jamming is to vary it slowly. This produces a howling sound of varying pitch.

2-11. Antijamming Procedures

When it is determined that the incoming signal is being jammed, notify your immediate supervisor and continue to operate the equipment. To provide maximum understanding of jammed signals, follow one or more of the procedures in the following steps. If these procedures do not provide satisfactory operation, change to an alternate frequency.

a. Operate RT unit as outlined in paragraph 2-8.

b. Tune FREQUENCY, using 100 Hz dial on either side of received signal. This may separate the received signal and jamming signal.

NOTE

Do not transmit on unauthorized frequencies.

c. Vary VOLUME control. This may reduce

jamming signals enough to permit weak signals to be heard.

d. Use either SSB or standard CW mode. These modes are less affected by jamming.

Section IV. PREPARATION FOR MOVEMENT

2-12. Portable Configuration Movement

The portable configuration of the radio set may be carried while assembled if continued use is needed. The whip antenna may be folded if the radio set will be transported in a vehicle. However, if the radio set will not be used right away at the new location, the equipment should be taken apart as follows:

a. Set POWER switch to OFF.

b. Unscrew whip antenna from the antenna swivel base.

c. Fold the whip antenna by pulling ferrules apart. (Start with top section first.)

d. Unscrew the antenna swivel base from WHIP terminal on RT unit.

e. For voice operation, remove Handset H-250/U from the AUDIO connector on the RT unit.

f. For CW operation, remove Headset H-251/U from AUDIO connector and CW Key KY-116/U with cable CX-13101/PRC-70 from RXMT connector on RT unit.

g. Put whip antenna, antenna swivel base, Handset H-250/U, Headset H-251/U, CW Key KY-116/U and all other loose items in accessory bag.

2-13. Fixed Configuration Movement

When the doublet antenna configuration is being used, proceed as follows:

- a.* Set POWER switch to OFF.
- b.* Remove RF cable assembly from ANT connector on RT unit.
- c.* Loosen and remove halyard assemblies from supporting structures.
- d.* Remove halyard assembly from wire rope assembly and rewind cord.
- e.* Disconnect wire rope assembly and terminals from terminals on balun assembly.
- f.* Rewind antenna wire on reel of rope assembly and secure.
- g.* Put all doublet antenna assembly items in accessory carrying bag.
- h.* Remove ground wire from GND terminal on RT unit.
- i.* Pull ground rod assembly out of the ground.
- j.* If Handset H-250/U was used, remove it from AUDIO connector on RT unit.
- k.* If headset H-251/U was used, remove it from the AUDIO connector and disconnect CW Key KY-116/U from RXMT connector on RT unit.
- l.* Put all assemblies in accessory carrying bag.

2-14. Fixed Voice Configuration Movement

- a.* Set POWER switch to OFF.
- b.* Disassemble doublet antenna configuration as described in paragraph 2-13.
- c.* Remove Handset H-250/U from voice security applique.
- d.* If applicable, remove security applique from X-MODE connector. Replace shorting cap on X-MODE connector.

2-15. CW or FSK Configuration Movement

To prepare the fixed CW or FSK configuration for movement, proceed as follows:

- a.* Set POWER switch to OFF.
- b.* Separate doublet antenna configuration as

described in paragraph 2-13.

c. Remove ground wire from RT unit GND connector.

d. Remove KY-468/GRA-71(KE-8B) from RXMT connector.

e. Put Doublet Antenna Assembly AS-2975/PRC-70, and other loose items in carrying bags.

2-16. Retransmit Configuration Movement

To prepare the retransmit configuration for movement, proceed a:

a. Set POWER switch on each RT unit to OFF.

b. Separate doublet antenna configurations as described in paragraph 2-13.

c. Remove ground wires from GND connectors.

d. Remove MK-456/GRC from both RXMT connectors.

e. Put Doublet Antenna Assembly AS-2975/PRC-70, and other loose items in carrying bags.

CHAPTER 3

MAINTENANCE INSTRUCTIONS

Section I. TOOLS AND EQUIPMENT

3-1. General

There are no tools or test equipment issued at this level of maintenance.

Section II. LUBRICATION INSTRUCTIONS

3-2. General

No lubrication is required for the radio set.

Section III. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

3-3. General

Always keep the radio set ready for operation. It must be inspected routinely so that defects may be discovered and corrected before serious damage or failure results. The preventive maintenance checks and services to be done are listed and described in table 3-1. The item numbers show the order of minimum inspection requirements. Defects discovered during operation of the unit will be noted for correction when operation has ceased. Stop operation immediately if a failure is found during operation which would damage the equipment.

a. Before you Operate. Always keep in mind the CAUTIONS and WARNINGS. Perform your before (B) PMCS.

b. While you Operate. Always keep in mind the CAUTIONS and WARNINGS. Perform your

during (D) PMCS.

c. After you Operate. Be sure to perform your after (A) PMCS.

d. If Your Equipment Fails to Operate. Refer to troubleshooting, Section IV. Report any deficiencies using the proper form, see TM 38-750.

3-4. Preventive Maintenance Checks and Services (PMCS)

Refer to table 3-1. Checks and services are numbered in order. The item number column will be used as a source of item numbers for the TM Number column on DA Form 2404, Equipment Inspection and Maintenance Work Sheet, in recording results of PMCS.

3-5. Maintenance of the Radio Set

a. Cleaning.

(1) Remove dust and loose dirt from the surface of equipment with a clean, soft cloth, item 1, appendix D.

WARNING

Adequate ventilation should be provided while using TRICHLOROTRIFLUOROETHANE. Prolonged breathing of vapor, should be avoided. The solvent should not be used near heat or open flame; the products of decomposition are toxic and irritating. Since TRICHLOROTRIFLUOROETHANE dissolves natural oils, prolonged contact with skin should be avoided. When necessary, use gloves which the solvent cannot penetrate. If the solvent is taken internally, consult a physician immediately.

(2) Remove grease, fungus, and ground-in dirt with a cloth dampened (not wet) with TRI-

CHLOROTRIFLUOROETHANE, item 2, appendix D.

(3) Clean control knobs, switches, and indicators with a cloth dampened with mild soap and water.

b. Inspection.

(1) Inspect interconnecting cables, doublet antenna, and cords for fraying, cuts, kinks and broken insulation.

(2) Inspect canvas items for mildew, torn and corroded, broken, or loose buckles and snaps.

(3) Inspect antennas for damage, loose fit, and corrosion.

(4) Inspect RT unit and battery assembly for damage, loose fitting latches, knobs, and switches, and corrosion.

Section IV. TROUBLESHOOTING

3-6. General

An equipment malfunction under field conditions necessitates the operator to isolate the trouble to an operator-replaceable unit and, if possible, return the unit to an operating condition. Perform field checkout procedures of paragraph 2-8g and refer to table 3-2 to determine failed operator-replaceable unit. Any repair that is beyond the scope of the operator shall be referred to organizational maintenance.

Section V. MAINTENANCE OF RADIO SET

3-7. General

There are no maintenance procedures which are the responsibility of the operator/crew as allocated by the maintenance allocation chart, except for visual inspection.

Table 3-1. Operator/Crew Preventive Maintenance Checks and Services (PMCS)

NOTE

If the equipment must be kept in continuous operation, check and service only those items that can be checked and serviced without disturbing operation. Make the complete checks and services when the equipment can be shut down. Within the designated interval, these checks are to be performed in the order listed.

B—Before Operation D—During Operation
 A—After Operation C—Combat Ready

Item no.	Interval				Item to be inspected	Procedure	For readiness reporting, equipment is not ready/available if
	B	D	A	C			
1	•	•			AN/PRC-70	Check that equipment manuals are available.	
2	•	•			Radio Set AN/PRC-70	Check that equipment is complete.	
3	•	•			Radio Set AN/PRC-70	Check that equipment is clean.	
4	•	•			RT Unit	Check that painted surfaces are free of bare spots, rust, and corrosion.	
5	•	•			RT Unit	Check that connectors are free of corrosion, foreign materials, and damage.	
6	•	•			Carrying Bags	Check that canvas items are not worn or torn and buckles and snaps work good.	

Table 3-1. Operator/Crew Preventive Maintenance Checks and Services (PMCS) — Continued

Item no.	Interval B D A C	Item to be inspected	Procedure	For readiness reporting, equipment is not ready/ available if
7	• •	RT Unit	Check that connectors not in use are securely covered.	
8	• •	RT Unit	Check that controls and switches are free of corrosion, are not loose or damaged, and operate smoothly.	
9	• •	Handset and Cables	Check that cables and cords are not worn, cut, kinked, or have broken insulation.	
10	• •	Antennas	Check that antennas are free of damage and can be properly installed.	
11	•	RT Unit	Check that connectors in use are tight.	
12	• • • •	Radio Set AN/PRC-70	Check equipment for proper operation (para 2-8).	AN/PRC-70 fails to operate correctly.
NOTE				
See DD 314 Preventative Maintenance Schedule and record to see if Frequency Stability Check is due.				
13	•	RT Unit	Check that equipment does not overheat.	
14	•	RT Unit	Check that POWER switch is turned off.	

Table 3-2. Operator Troubleshooting

Malfunction	Probable Cause	Corrective Action
1. No Transmit or Receive.	<i>a. Antenna Whip.</i>	(1) Make sure antenna is fully screwed into whip antenna connector.
		(2) Try both 6 ft. and 9 ft. whip sections.
		(3) Use doublet antenna.
	<i>b. Antenna Doublet.</i>	(1) Check all connections for proper fit.
		(2) If coax is suspected, substitute with extra 25 ft. coax section.
		(3) Use long wire or whip setup if necessary.
	<i>c. Handset.</i>	(1) Check connector for proper fit.
		(2) Replace handset with headset and telegraph key if possible.
		(3) Substitute with another handset if available.
	<i>d. RT-1133/PRC-70.</i>	(1) Check all switch positions for proper settings.
		(2) Substitute another RT-1133/PRC-70 if available.
	<i>e. Battery.</i>	(1) Make sure battery is properly seated into rear connector of RT unit.
		(2) Remove battery and replace with good battery if available.
		(3) Remove battery and recharge using G-76/G, Handcrank Generator or PP-6148/U, Power Supply, Battery Charger if

Table 3-2. Operator Troubleshooting-Continued

Malfunction	Probable Cause	Corrective Action	
2. No Transmit/ Receive OK.	<i>a.</i> Handset.	available. (4) Use G-76/G or PP-6148/U as power source. (1) Remove handset connector and clean connector and radio contacts with pencil eraser. (2) Replace handset with headset and telegraph key if possible. (3) Substitute another handset if available.	
	<i>b.</i> RT-1133/ PRC-70.	(1) Check RT unit POWER switch for proper setting. (2) Substitute another RT-1133/PRC-70 if available.	
	<i>c.</i> Battery.	(1) Remove battery and replace with good battery if available. (2) Remove battery and recharge using G-76/G, Handcrank Generator or PP-6148/U, Power Supply, Battery Charger if available. (3) Use G-76/G or PP-6148/U as power source.	
	3. Transmit OK/ No Receive.	<i>a.</i> Handset.	(1) Remove handset connector and clean connector and radio contacts with pencil eraser. (2) Replace handset with headset and telegraph key if possible.

TM 11-5820-553-10

Table 3-2. Operator Troubleshooting- Continued

Malfunction	Probable Cause	Corrective Action
	<p>b. RT-1133/ PRC-70.</p>	<p>(3) Substitute another handset if available.</p> <p>(1) Check all switch positions for proper settings.</p> <p>(2) Substitute another RT-1133/PRC-70 if available.</p>
<p>4. No Transmit or Receive in one or more Modes.</p>	<p>RT-1133/ PRC-70.</p>	<p>(1) Try to communicate in another operating mode.</p> <p>(2) Substitute another RT-1133/PRC-70 if available.</p>
<p>5. No Transmit in HI PWR/LO PWR and Receive OK.</p>	<p>RT-1133/ PRC-70.</p>	<p>(1) Transmit in LO PWR setting using whip or doublet or long wire antenna if possible.</p> <p>(2) Substitute another RT-1133/PRC-70 if available.</p>
<p>6. No Transmit in LO PWR/HI PWR and Receive OK.</p>	<p>RT-1133/ PRC-70.</p>	<p>(1) Transmit in HI PWR setting using doublet, long wire or whip antenna if possible.</p> <p>(2) Substitute another RT-1133/PRC-70 if available.</p>

CHAPTER 4
MATERIEL USED IN
CONJUNCTION WITH
MAJOR ITEM

Section I. GENERAL

4-1. List of Auxiliary Equipment

- a.* Voice Security Equipment.
- b.* Code Burst Transmission Group AN/GRA-71 (Cable Assembly SM-C-746195).
- c.* Digital Message Device Group OA-8990/P.
- d.* Handcrank Generator G-76/G.
- e.* Power Supply Battery Charger PP-6148/U.
- f.* Battery BB-542/U.

Section II. INSTALLATION
INSTRUCTIONS FOR AUXILIARY
EQUIPMENT

4-2. Voice Security Equipment Configuration

- a. Equipment Setup.* The radio set can be operated in secure or nonsecure voice modes from fixed locations. Figure 4-1 shows this configuration which includes the following items:

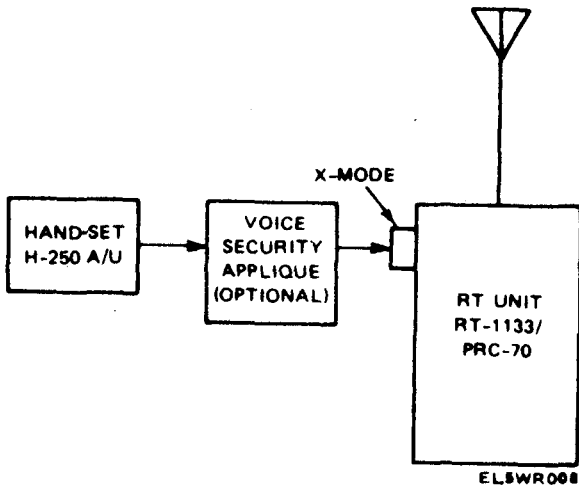


Figure 4-1. Voice Security Equipment Configuration

- (1) Receiver Transmitter RT-1133/PRC-70.
- (2) Handset H-250/U.
- (3) Doublet Antenna Assembly AS-2975/PRC-70 or Whip Antenna AS-2974/PRC-70.

(4) Voice Security Applique (optional).

b. Assembly. Proceed as follows:

(1) Assemble whip antenna and connect to RT unit WHIP connector, or assemble doublet antenna on structures as directed in paragraph 2-6a.

(2) Remove shorting cap from X-MODE connector on RT unit.

(3) Connect voice security applique to X-MODE connector.

(4) Connect Handset H-250/U to voice security applique.

c. Operating Instructions.

(1) Preliminary Control Settings.

<i>Control</i>	<i>Setting</i>
POWER switch	OFF
MODE switch	AM or SSB
VOLUME control	Midrange
SQUELCH switch	OFF
FREQUENCY selector controls	Operating frequency desired

(2) Start the equipment in accordance with the following steps:

(a) Set RT unit POWER switch to RCV ONLY.

(b) Adjust RT unit VOLUME control for proper audio output level.

(c) Set RT unit POWER switch to TUNE and release. Allow 15 seconds for tuning to be completed.

(d) Set RT unit POWER switch to HI PWR or LO PWR, as required.

NOTE

The POWER switch is spring loaded in the TUNE position and will return to HI PWR when released.

(e) Set RT unit SQUELCH switch to ON (if desired).

(f) Start voice security equipment as directed in applicable technical manuals.

WARNING

When operating in HI PWR with the whip or long wire antenna, DO NOT TOUCH the antenna when in transmit mode—an RF burn can result.

NOTE

If RT unit FREQUENCY selector controls are reset, momentarily set POWER switch to TUNE and release. The set should retune within 15 seconds.

TM 11-5820-553-10

LO PWR position of POWER switch may be selected after this time.

(3) Transmit in any of the voice modes by pressing the H-250/U Handset push-to-talk button and speaking into the microphone. With voice security equipment connected, wait until the security tone is heard before speaking.

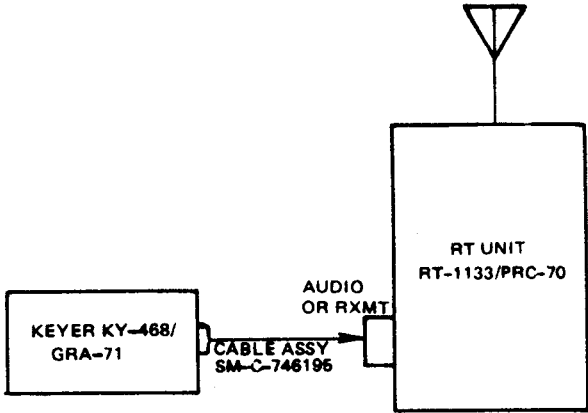
(4) To shut down the equipment, proceed as follows:

(a) Set RT unit POWER switch to OFF.

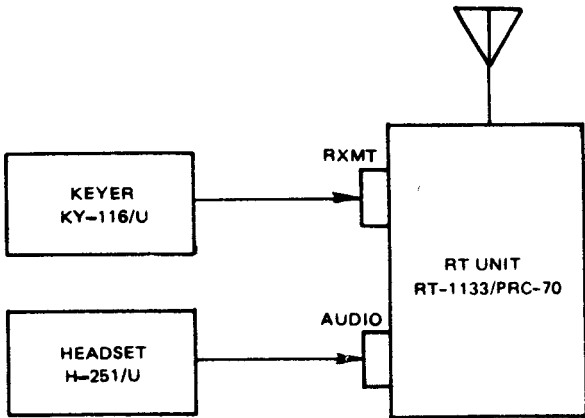
(b) Shut down voice security equipment as directed in applicable technical manuals.

4-3. Code Burst and CW Configuration

a. Equipment Setup. The radio set can be operated in standard CW modes from fixed locations. Figure 4-2 shows this configuration which includes the following items:



AUTOMATIC
(A)



MANUAL
(B)

EL5WR009

Figure 4-2. CW Configuration.

TM 11-5820-553-10

- (1) Receiver-Transmitter RT-1133/PRC-70.
- (2) CW Key KY-116/U with cable CX-13101/PRC-70.
- (3) Headset H-251/U.
- (4) Code Burst Transmission Group AN/GRA-71.
- (5) Doublet Antenna AS-2975/PRC-70 or Whip Antenna AS-2974/PRC-70.

b. Assembly. Proceed as follows:

(1) Assemble whip antenna and connect to RT unit WHIP connector, or assemble doublet antenna on structures as directed in paragraph 2-6a.

(2) *Automatic mode.*

(a) Connect in accordance with figure 4-2(A) automatic setup.

(b) Prepare message as required in accordance with instructions for Code Burst Transmission Group AN/GRA-71.

(3) *Manual Mode.*

(a) Connect in accordance with figure 4-2(B) manual setup.

(b) Connect CW Key KY-116/U with cable to RXMT connector of RT unit.

(c) Connect Headset H-251/U to AUDIO connector of RT unit.

c. Operating Instructions.

(1) *Preliminary settings.*

(a) Set controls on RT unit as follows:

<i>Control</i>	<i>Setting</i>
POWER switch	OFF
MODE switch	CW or FSK
VOLUME control	Midrange
SQUELCH switch	OFF
FREQUENCY selector controls	Operating frequency desired

(b) Set controls on all ancillary equipment to preliminary settings listed in applicable technical manuals.

(2) *Equipment starting.* Start the equipment

using the following procedures:

(a) Set RT unit POWER switch to RCV ONLY.

(b) Adjust RT unit VOLUME control for proper audio output level.

WARNING

When operating in HI PWR with the whip or long wire antenna, DO NOT TOUCH the antenna when in transmit mode—an RF bum can result.

(c) Set RT unit POWER switch to TUNE and release. Allow 15 seconds for tuning to be completed.

NOTE

The POWER switch is spring loaded in the TUNE position and will return to HI PWR when released.

(d) Set RT unit POWER switch to HI PWR LO PWR, as required.

(e) Set RT unit SQUELCH switch to ON (if desired).

(3) *Standard (manual mode) CW operation.* To transmit in the standard CW mode, key the RT unit with CW Key KY-116/U.

NOTE

The RT unit remains in a keyed condition but produces no RF output during the pauses between characters. With the key open the RT unit returns to the receive mode after a pause of about 1.2 seconds.

(4) *Burst CW Transmission.* To transmit in the burst CW mode, proceed as follows:

(a) Wind drive motor and load tape cartridge in KY-468/GRA-7 (KE-8B).

(b) To transmit identity tone (optional), press KY-468/GRA-71(KE-8B) IDY switch up and hold

TM 11-5820-553-10

for at least five seconds.

(c) Turn IDY switch OFF and immediately set KY-468/GRA-71(KE-8B) motor ON-OFF switch to ON.

(d) When transmission is complete, set KY-468/GRA-71(KE-8B) ON-OFF switch to OFF.

(e) Remove tape cartridge from KY-468/GRA-71(KE-8B).

(5) To shut down the equipment, set RT unit POWER switch to OFF.

4-4. Digital Message Device Group OA-8990 Configuration

a. *Equipment Setup.* The radio set can be operated with a DMDG unit from fixed or portable locations. Figure 4-3 shows this configuration which includes the following items:

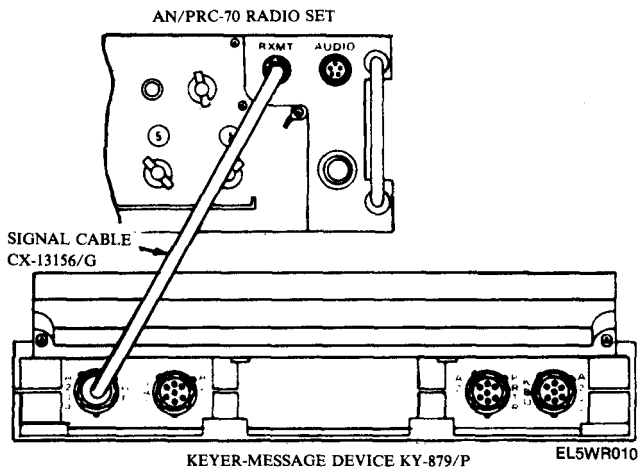


Figure 4-3. Digital Message Device Group (DMDG), OA-8990/P configuration

- (1) Receiver-Transmitter RT-1133/PRC-70.
- (2) Digital Message Device Group OA-8990/P.

(3) Doublet Antenna AS-2975/PRC-70 or Whip Antenna AS-2974/PRC-70.

b. Assembly. Proceed as follows:

(1) Assemble whip antenna and connect to RT unit WHIP connector, or assemble doublet antenna on structures as directed in paragraph 2-6a.

(2) Connect OA-8990 DMDG, HF connector (A2J4) to RXMT connector of RT unit using Cable, CX-13156/GR.

c. Operating Instructions.

(1) *Preliminary Settings.*

(a) Set controls on RT unit as follows:

<i>Control</i>	<i>Setting</i>
POWER switch	OFF
MODE switch	SSB
VOLUME control	Midrange
SQUELCH switch	OFF
FREQUENCY selector	Operating frequency desired
controls	

(b) Set controls on ancillary equipment to preliminary setting listed in applicable technical manuals.

(2) *Equipment starting.* Start the equipment using the following procedures:

(a) Set RT unit POWER switch to RCV ONLY.

(b) Adjust RT unit VOLUME control for proper audio output level.

WARNING

When operating in HI PWR with the whip antenna, DO NOT TOUCH the antenna when in transmit mode—an RF burn can result.

(c) Set RT unit POWER switch to TUNE and release. Allow 15 seconds for tuning to be completed.

NOTE

The POWER switch is spring loaded in

the TUNE position and will return to HI PWR when released.

(d) Set RT unit POWER switch to HI PWR or LO PWR as desired.

(e) Set RT unit SQUELCH switch to ON (if desired).

(3) *DMDG Operation.* To transmit using the DMDG, refer to procedures in TM 11-5820-887-10.

4.5. Handcrank Generator Configuration

a. *Equipment Setup.* The radio set can be operated without batteries by using the G-76/G, Handcrank Generator as a power source. Figure 4-4 shows this configuration which includes the following items:

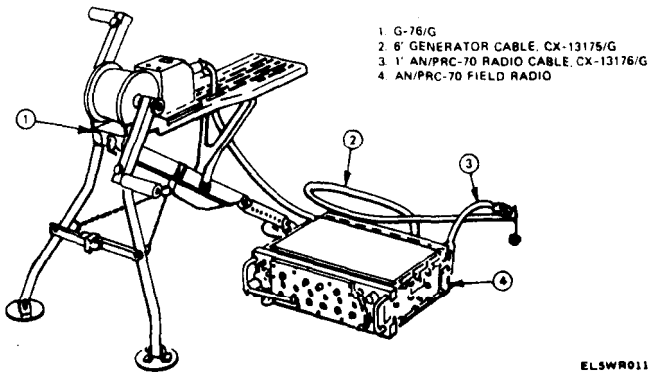


Figure 4-4. Handcrank Generator, G-76/G Configuration

- (1) Receiver-Transmitter RT-1133/PRC-70.
- (2) Handcrank Generator G-76/G.
- (3) Cable Assembly CX-13175/G.
- (4) Cable Assembly CX-13176/G.

b. Assembly.

(1) Setup G-76/G Handcrank Generator as shown in TM 11-6115-470-10.

(2) Connect G-76/G to AN/PRC-70 using CX-13175/G and CX-13176/G.

(3) Connect other ancillary equipment for configuration previously described.

c. Operating Instruction.

CAUTION

Handcrank Generator G-76/G must be producing power BEFORE the AN/PRC-70 is turned on. Failure to do this may damage the radio.

(1) Operate G-76/G in accordance with instructions in TM 11-6115-470-10.

(2) Use previously described operating instructions for RT unit, for the desired configuration.

d. Battery Charging Instructions. The G-76/G Handcrank Generator can be used to charge the BB-542/U Battery. Figure 4-5 shows this setup. This method of charging is only to be used when standard battery charging procedures cannot be followed.

- 1. G-76/G
- 2. 6' GENERATOR CABLE, CX-13175/G
- 3. BB-542/U BATTERY

ELSWR012

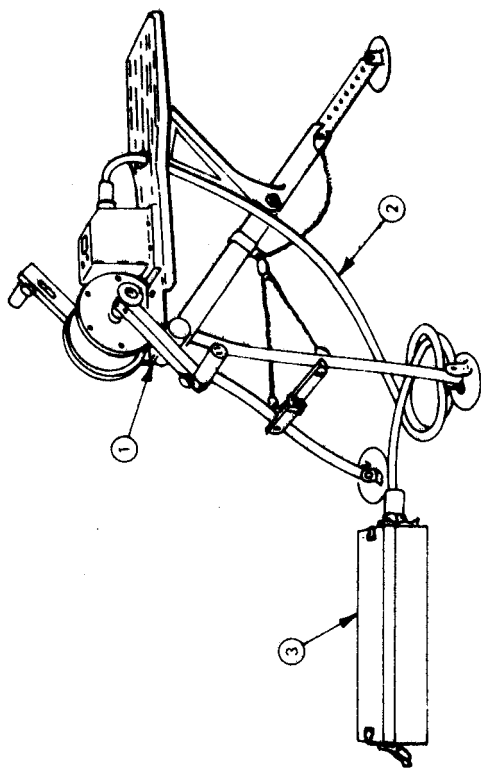


Figure 4-5. Battery Charing with Handcrank Generator G-76/G.

(1) *Temperatures above 50°F.* Connect cable from G-76/G to MS3112E-14-5S connector on side of battery. Crank generator at a speed sufficient to cause 2A indicator light on generator to turn on. Continue cranking at 2A rate until load suddenly lowers due to opening of pressure switch within the battery. The 2A light on generator will be extinguished and will not turn on, no matter how fast the generator is cranked. Battery is now fully charged. The battery may also be charged in small increments to replace the energy removed by radio operation. Two minutes of cranking at 3 amperes will replace the energy taken out by approximately 1 minute of transmission or 20 minutes of receiving.

(2) *Temperatures between 30 and 50°F.* Connect cable from G-76/G to MS3112E-14-5S connector on side of battery. Crank generator at a speed sufficient to cause 2A indicator light on generator to turn on. Continue cranking until G-76/G 2A light goes out and stays out irrespective of charging speed. This will indicate that the battery is fully charged. At temperatures between 30 and 50° F, the load on the generator may not change significantly when the pressure switch opens because the heater circuit will start drawing power after the battery is fully charged. The G-76/G does not provide any indication of the current in the heater circuit. The battery may also be charged intermittently as directed above.

(3) *Temperatures below 30°F.* At temperatures much below 30° F, intermittent charging is not recommended because a significant amount of cranking energy will be required to bring the battery to 30°F before high rate charging will start. The suggested procedure for *minimum cranking* time and effort is as follows:

(a) Start with a battery that is almost completely discharged.

(b) Keep battery in heated area if possible.

(c) Wrap battery with insulating material such as a blanket, sleeping bag, coat, etc., to prevent heat loss.

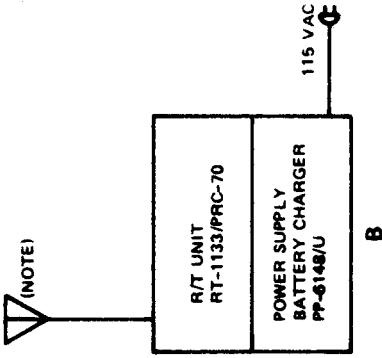
(d) Crank at highest sustained rate possible, use two men cranking to minimize exposure time and resulting heat loss.

For each 10°F that the battery is below 30°F 2 minutes of heating at 130 watts, or 3 minutes at 90 watts, will be required before high rate charging will start. Thus, with the battery at -20° F, approximately 10-15 minutes of heating will be required to bring it to 30° F where high rate charging can begin. When high rate charging starts, the current will be automatically switched by the G-76/G generator from the heater to the battery. At this time the 2 ampere light will go on if the generator is being cranked at a fast enough rate. If the external temperature is low, the heater will switch on for 2 to 3 minute periods every 5 to 10 minutes during the charge, extinguishing the 3 ampere light on the generator while still maintaining a load on the generator. Total charge time at a 90 watt level will vary from about 45 minutes at 20° F to 65 minutes at -25° F. After the battery has been completely charged, the heater load will still be maintained on the G-76/G generator until the battery temperature reaches approximately 50°F. It is therefore difficult to determine when cranking can be stopped; however, if cranking has continued continuously at 2 amps or above for the times given previously, and the 2 ampere light cannot be lit after about 3 minutes of additional cranking, then the battery is fully charged.

4-6. Power Supply Configuration

a. Equipment Setup. The radio set can be operated without batteries by using the PP-6148/U

Power Supply. The PP-6148/U Power Supply requires external ac power. Figure 4-6 shows this configuration which includes the following items:



NOTE:
USE DOUBLET OR LONG WIRE ANTENNA
WHEN TRANSMITTING IN HI PWR MODE.

EL5WR013

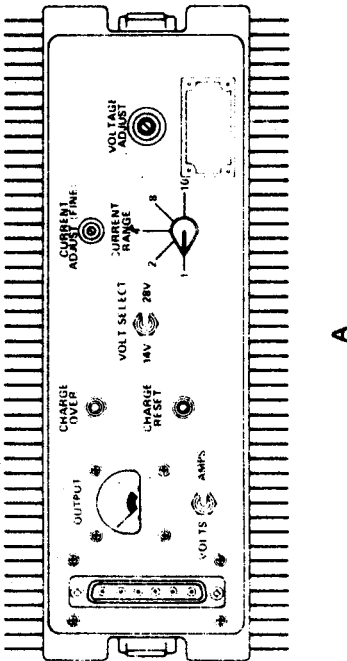


Figure 4-6. Power Supply, PP-6148/U Configuration.

- (1) Receiver-Transmitter RT-1133/PRC-70.
- (2) Power Supply PP-6148/U.

b. Assembly.

(1) Set PP-6148/U switches as required and in accordance with operating instructions in TM 11-6130-356-15.

(2) Clamp RT unit onto PP-6148/U in the same manner as the battery.

(3) Connect other ancillary equipment for desired configuration.

c. Operating Instructions.

CAUTION



When using this configuration with the RT-1133/PRC-70 in the HI PWR mode, use doublet or long wire antenna only. Transmitting in HI PWR mode with a whip antenna connected to the RT unit may affect the voltage regulation of the PP-6148/U or other power supply. This could cause an over-voltage condition and damage the PP-6148/U or the RT-1133/PRC-70.

(1) Use previously described operating instructions for RT unit for the desired configuration.

(2) Use operating instructions in the PP-6148/U technical manual.

APPENDIX A

REFERENCES

- | | |
|-------------------|--|
| DA Pam 310-1 | Consolidated Index of Army Publications and Blank Forms. |
| DA Pam 738-750 | The Army Maintenance Management System (TAMMS).  |
| SB 700-20 | Army Adopted/ Other Items Selected for Authorization/ List of Reportable Items. |
| TB 43-0118 | Field Instructions for Painting and Preserving Communications-Electronics Equipment.  |
| TB SIG 291 | Safety Measures to be Observed When Installing and Using Whip Antennas, Field-Type Masts, Towers and Antennas and Metal Poles that are used with Communications, Radar and Direction Finder Equipment. |
| TM 11-5820-887-10 | Operator's Manual, Digital Device Group, OA-8990/P (NSN 5820-01-102-3921). |

TM 11-5820-553-10/EE150-SN-OPI-010/E110-PRC 70

- TM 11-5835-224-12 Operator's and Organizational Maintenance Manual, Coder-Burst Transmission Group, AN/GRA-71 (NSN 5820-00-056-6860).
- TM 11-5995-202-15 Operator's, Organizational, Direct Support, General Support, and Depot Maintenance Manual for Transmission Cable Kits, MK-456/GRC and MK-456A/GRC (NSN 5995-00-937-1544).
- TM 11-6115-470-10 Operator's Manual for Direct Current Generator G-76/G (NSN 6115-01-082-8107), G-76/G(V)1 and (V)2.
- TM 11-6130-356-12 Operator's and Organizational Maintenance Manual for Power Supply, PP-6148/U (NSN 6130-01-062-3618).
- TM 11-6140-203-14-5 Operator's, Organizational, Direct Support and General Support Maintenance Manual Battery BB-542/U.
- TM 750-244-2 Procedures for Destruction of Electronics Materiel to Prevent Enemy Use (Electronics Command).

APPENDIX B

COMPONENTS OF END ITEM LIST

Section I. INTRODUCTION

B-1. Scope

This appendix lists integral components of and basic issue items for the AN/PRC-70 to help you inventory items required for safe and efficient operation.

B-2. General

This Components of End Item List is divided into the following sections:

a. Section II. Integral Components of the End Item. Not applicable. These items, when assembled, comprise the AN/PRC-70 and must accompany it whenever it is transferred or turned in. The illustrations will help you identify these items.

b. Section III. Basic Issue Items. Not applicable.

B-3. Explanation of Columns

a. Illustration. This column is divided as follows:

(1) *Figure number.* Indicates the figure number of the illustration on which the item is shown.

(2) *Item number.* The number used to identify item called out in the illustration.

b. National Stock Number. Indicates the National stock number assigned to the item and which will be used for requisitioning.

c. Part Number. Indicates the primary number used by the manufacturer, which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items. Following the part number, the Federal Supply Code for Manufacturers (FSCM) is shown in parentheses.

d. Description. Indicates the Federal item name and, if required, a minimum description to identify the item.

e. Location. The physical location of each item listed is given in this column. The lists are designed to inventory all items in one area of the major item before moving onto an adjacent area.

f. Usable on Code. Not applicable. "USABLE ON" codes are included to help you identify which component items are used on the different models. Identification of the codes used in these lists are:

Code

Used on

g. Quantity Required (Qty Reqd). This column lists the quantity of each item required for a complete major item.

h. Quantity. This column is left blank for use during an inventory. Under the Rcvd column, list the quantity you actually receive on your major item. The Date columns are for your use when you inventory the major item at a later date; such as for shipment to another site.

(Next printed page is B-3)

SECTION II INTEGRAL COMPONENTS OF END ITEM

(1) ILLUSTRATION		(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION PART NUMBER (FSCM)	(4) LOCATION	(5) USABLE QTY ON CODE	(6) QTY REGD	(7) QUANTITY	
							RCVD	DATE
1-1	A	5820-01-073-914	RECEIVER-TRANSMITTER RT-1133/PRC-70			1		
1-1	B	5995-01-092-5943	MAINTENANCE CABLE ASSEMBLY SH-C-746321			1		
1-1	C		ACCESSORY CARRYING BAG SM-B-746874			1		
1-2	1	5985-01-098-0047	6-FOOT WHIP ANTENNA SM-D-745660			1		
1-2	2	5985-01-098-1660	9-FOOT WHIP ANTENNA SM-D-957108			1		
1-2	3	5985-01-098-0192	ADJUSTABLE ANTENNA BASE SM-C-746767			1		
1-2	4	5965-00-043-3463	HANDSET H-250/U			1		

SECTION II INTEGRAL COMPONENTS OF END ITEM

(1) ILLUSTRATION		(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION	(4) LOCATION	(5) USABLE ON CODE	(6) QTY REQD	(7) QUANTITY	
							PART NUMBER	(FSCM)
1-2	5		GROUND ROD ASSEMBLY SM-C-746768			1		
1-2	6	5985-01-098-2112	WIRE ROPE ASSEMBLY SM-D-957100			2		
1-2	7	5965-01-098-0988	HALLYARD ASSEMBLY SM-D-957118			2		
1-2	8	5965-01-017-0549	HEADSET H-251/U			1		
1-2	9		5-FOOT MEASURING TAPE SM-B-957097			1		
1-2	10	5985-01-092-5985	BALUN ASSEMBLY SM-D-745664			1		
			WITH CABLE ASSEMBLY SM-D-746787			1		

SECTION II INTEGRAL COMPONENTS OF END ITEM

(1) ILLUSTRATION		(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION PART NUMBER (FSCM)	(4) LOCATION	(5) USABLE ON CODE	(6) QTY REQD	(7) QUANTITY	
							RCVD	DATE
1-2	13	5935-01-037-3476	AND ADAPTER U6-914/U		1			
1-2	11	6145-00-542-6092	CABLE ASSEMBLY SM -B -746787 CABLE (26 FT.) WITH	(80045)	1			
1-2	12	5935-01-043-0629 5805-00-503-3395 5995-01-073-6123	2-BNC CONNECTOR #39012/16-00 CM KEY KY-116/U WITH CX- 13101/PRC-70		1			

(Edition of 1 Jun 76 is obsolete)

DRSEL-NA FORM 6010, (1 Mar 77)

HISA-FM 545-77

APPENDIX C

ADDITIONAL AUTHORIZATION LIST

Section I. INTRODUCTION

C-1. Scope

This appendix lists additional items you are authorized for the support of the AN/PRC-70.

C-2. General

This list identifies items that do not have to accompany the AN/PRC-70 and that do not have to be turned in with it. These items are all authorized to you by CTA, MTOE, TDA, or JTA.

C-3. Explanation of Listing

National stock numbers, descriptions, and quantities are provided to help you identify and request the additional items you require to support this equipment. The items are listed in alphabetical sequence by item name under the type document (i.e., CTA, MTOE, TDA, or JTA) which authorizes the item(s) to you.

(Next printed page is C-2)

SECTION II ADDITIONAL AUTHORIZATION LIST

(1) NATIONAL STOCK NUMBER	(2) DESCRIPTION PART NUMBER AND FSCM	(3) UNIT OF MEAS	(4) QTY AUTH
	AN/GRA-71 CODE BURST TRANSMISSION GROUP (CABLE ASSEMBLY SM-C-746195 IS REQUIRED FOR USE WITH AN/GRA-71) TRANSMISSION CABLE KIT PK-456/GRC HANDCRANK GENERATOR G-76/G POWER SUPPLY BATTERY CHARGER PP-6142/U DIGITAL MESSAGE DEVICE GROUP OA-8990 BATTERY BB-542/U	EA EA EA EA EA EA EA	1 1 1 1 1 1 1 1

APPENDIX D
EXPENDABLE SUPPLIES AND
MATERIALS LIST

Section I. INTRODUCTION

D-1. Scope

This appendix lists expendable supplies and materials you will need to operate and maintain the AN/PRC-70. These items are authorized to you by CTA 50-970, Expendable Items (Except Medical, Class V, Repair Parts, and Heraldic Items).

D-2. Explanation of Columns

a. Column 1—Item number. This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the material (e.g., “Use cleaning compound, item 5, App. D”).

b. Column 2—Level. This column identifies the lowest level of maintenance that requires the listed item.

C—Operator/Crew

O—Organizational Maintenance/Aviation Unit Maintenance

F—Direct Support Maintenance/Aviation Intermediate Maintenance

H—General Support Maintenance

c. Column 3—National Stock Number. This is the National stock number assigned to the item; use it to request or requisition the item.

d. Column 4—Description. Indicates the Federal

item name and, if required, a description to identify the item. The last line for each item indicates the Federal Supply Code for Manufacturer (FSCM) in parentheses followed by a part number.

d. Column 4—Description. Indicates the Federal item name and, if required, a description to identify the item. The last line for each item indicates the part number followed by the Federal Supply Code for Manufacturer (FSCM) in parentheses, if applicable.

e. Column 5— Unit of Measure (U/M). Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in, pr). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

(Next printed page is D-2)

SECTION II EXPENDABLE SUPPLIES AND MATERIALS LIST

(1) ITEM NO.	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION PART NO. AND FSCM	(5) UNIT OF MEAS
1	C	7920-00-985-5849	CLOTH, POLISHING 13 1/2 X 11 IN.	EA
2	C	6850-00-984-5853	TRICHLOROFLUOROETHANE, CLEANING SOLVENT: 5-GALLON CONTAINER	AR
3	C	6850-00-105-3084	16-OZ. CONTAINER WEIGHT, LEAD, BANK 2100-8 OZ. (10266)	AR EA

By Order of the Secretary of the Army, the Navy,
and the Air Force.

E. C. MEYER
General, United States Army
Chief of Staff

Official:


ROBERT M. JOYCE
Brigadier General, United States Army
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PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO	
2-25	2-28			<p>Recommend that the installation antenna alignment procedure be changed throughout to specify a 2° IFF antenna lag rather than 1°</p> <p>REASON: Experience has shown that with only a 1° 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° without degradation of operation.</p>
3-10	3-3		3-1	<p>Item 5, Function column. Change "2 db" to "3db."</p> <p>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.</p> <p>Add new step f.1 to read, "Replace cover plate removed step e.1, above."</p> <p>REASON: To replace the cover plate.</p>
5-6	5-8			<p>Zone C 3. On J1-2, change "+24 VDC to "+5 VDC."</p> <p>REASON: This is the output line of the 5 VDC power supply. +24 VDC is the input voltage.</p>

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