

TECHNICAL MANUAL

**OPERATOR AND ORGANIZATIONAL
MAINTENANCE MANUAL**

**RADIO SET
AN/PRC-70**

**U.S. ARMY ELECTRONICS COMMAND
FORT MONMOUTH N.J.**

NOVEMBER 1975

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WARNING

DO NOT TOUCH the LINE binding posts, while pressing the RINGER button on remote control unit. A shock hazard is present at LINE binding posts during RINGER operation.

The fumes of trichloroethane are toxic. Provide thorough ventilation whenever used. DO NOT USE NEAR AN OPEN FLAME. Trichloroethane is not flammable, but exposure of the fumes to an open flame or hot metal surface forms highly toxic phosgene gas.

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Washington, D. C., November 1975

OPERATOR AND ORGANIZATIONAL MAINTENANCE MANUAL

RADIO SET AN/PRC-70

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CHAPTER 1
INTRODUCTION

Section I. GENERAL

1-1. Scope.

This manual contains operator and organizational maintenance instructions for Radio Set AN/PRC-70. Equipment description, installation and operating instructions, and maintenance duties for the operator and organizational repairman are included in this 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. Maintenance Forms and Records.

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by TM 38-750.

1-3. Destruction of Army Materiel to Prevent Enemy Use.

Refer to TM 750-244-2 for destruction of Army materiel to prevent enemy use.

1-4. Administrative Storage.

Refer to TM 740-90-1 for administrative storage procedures.

1-5. Reporting of Errors.

The reporting of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications) and forwarded direct to Commanding General, U.S. Army Electronics Command, ATTN: AMSEL-MA-Q, Fort Monmouth, N.J. 07703.

Section II. DESCRIPTION AND DATA

1-6. Purpose and Use.

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 men 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 all modes. Remote control of the radio set is made possible by using a separate control unit. Two radio sets may be connected in tandem to provide retransmission capability.

1-7. Description

The radio set consists of the items shown on figure FO-1. Further breakdowns of the items are shown on figures FO-2 and FO-3. The items which are not described in separate Technical Manuals (See Appendix A) are described in the following subparagraphs:

a. Receiver-Transmitter RT-1133/PRC-70 (see figure FO-1). The Receiver-Transmitter RT-1133/PRC-70 (referred to hereafter as the RT unit) is the major assembly of the AN/PRC-70 radio set. This unit is housed in a metal case assembly and contains the receive and transmit circuitry. Two finger-operated release latches are provided to attach the battery case to the RT unit. The operator's controls and the various connectors are located on the front panel of the RT unit.

b. Accessory Carrying Bag (see figure FO-2). The Accessory Carrying Bag is a nylon duck bag with a shoulder strap. This bag is used for carrying the following equipment:

- (1) Handset H-138B/U
- (2) Headset H-251/U
- (3) Telegraph Key KY-605/U
- (4) Whip Antenna Assembly AS-2974/PRC-70
- (5) Low Radiating Angle Antenna Assembly AS-2973/PRC-70
- (6) Burst Cable Assembly

c. Carrying Kit (see figure FO-1). The Carrying Kit is used to carry the radio set in the one-man portable configuration. In the two-man load configuration, it is also used to carry additional components (the Ancillary Carrying Bag), of the radio set to the selected site of operation. The kit contains the following items:

- (1) Rucksack frame
- (2) Packboard plate and shelves for rucksack frame
- (3) Packboard webbing

d. Two-Man Load Carrying Bags (see figure FO-1). The Two-Man Load Carrying Bags are used whenever additional operating methods are required. The bags are identified as the Mast Carrying Bag and Ancillary Carrying Bag and are carried by a second man. The Mast Carrying Bag and Ancillary Carrying Bag contents are shown in figure FO-3. When the Two-Man Load Carrying Bags are used, an additional carrying kit (1A7) is required to carry the Ancillary Carrying Bag. This bag is mounted on the carrying kit in the same manner as the Receiver-Transmitter.

e. Doublet Antenna Assembly AS-2975/PRC-70 (see sheet 2 of figure FO-3). The Doublet Antenna is a half-wave portable antenna capable of being tuned to an operating frequency between 2 and 30 MHz. The assembly consists of the following components:

- (1) Two lengths of antenna wire with frequencies marked on the wires at intervals corresponding to 90% of a quarter wavelength for every half MHz from 2 to 30 MHz. Each wire is wound on a lightweight hand reel.
- (2) A balun assembly which couples and matches the feed line to the two balanced antenna wires.
- (3) A 40-foot coaxial feed line (or cable assembly).

f. Whip Antenna Assembly AS-2974/PRC-70 (see figure FO-2). The whip antenna consists of a foldable 6-foot antenna and a foldable 9-foot antenna. These 2 antennas may be joined together to form a 15-foot whip antenna. The 6-foot antenna is used in the 4 to 76 MHz range, the 9-foot antenna is used in the 3 to 76 MHz range, and the 15-foot antenna is used in the 2 to 30 MHz range. The following accessories are provided with the whip antenna:

- (1) An adjustable antenna base used with the 6-foot or 9-foot section.
- (2) A rigid antenna base used with the 15-foot during stationary setup.
- (3) A halyard assembly with stakes and guy ropes used with the 15-foot antenna setup.
- (4) A grounding stake assembly used to ground and stabilize the radio set during operation with any antenna in any configuration other than portable.

g. Low Radiating Angle Antenna Assembly AS-2973/PRC-70 (see figure FO-2). This assembly consists of a 300-foot length of antenna wire wound on a reel, a 40-foot length of nylon cord wound on a lightweight bobbin with a 6-ounce lead fishing weight (or sinker) attached. This antenna is used in the 6 to 30 MHz frequency range.

h. Mast Assembly (see sheet 1 of figure FO-3). The mast assembly is used to erect the Doublet Antenna (AS-2975/PRC-70) and may also be used to erect the 300-foot Low Radiating Angle Antenna (AS-2973/PRC-70). The assembly consists of the following items:

(1) Two 15-foot masts, each consisting of five 3-foot sections. The two 15-foot masts can be joined together to form a 30-foot mast for erecting the low radiating angle antenna

- (2) Two base assemblies with locking pins
- (3) Six stake assemblies
- (4) Two guy plates
- (5) One insulator
- (6) One transition adapter
- (7) One halyard assembly
- (8) Eight guy rope assemblies
- (9) Guy rope bobbin assemblies (two each)
- (10) Mast Carrying Bag

i. Burst CW Cable Assembly (see figure FO-1). This assembly is located in the Accessory Bag and consists of two cables with their connectors and is designed to adapt the radio set to Keyer KY-468/GRA-71(KE-8B), and Recorder Signal Data, RO-291/GSH-6 equipment for burst CW transmission and reception.

j. Maintenance Cable Assembly (see figure FO-1). This assembly consists of adapter cables used by higher category maintenance for testing and troubleshooting the RT unit. The maintenance cable assembly is not used for operator or organizational maintenance.

1-8. Technical Characteristics.

The following subparagraphs describe the technical characteristics of the radio set.

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

Input Voltage - - - - - 20 to 32 Vdc

Power Requirements

Receive Mode - - - - - 7 watts maximum

Low-power Xmit Mode - - - - - 50 watts maximum

High-power Xmit Mode

FSK, CW, FM, and AM - - - - - 160 watts maximum

SSB - - - - - 115 watts maximum

Power Output:

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

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

Low-power Mode - - - - - transmitter output reduced 10 ± 1 dB below high power output in all modes

Frequency Range - - - - - 2.000 to 75.9999 MHz in 100 Hz steps

Duty Cycle - - - - - 9 to 1 receive-to-transmit ratio. Three minute maximum transmit time without external forced air cooling.

Modes: Upper sideband voice; 2 kHz Tone-keyed CW, FSK burst (Tones 1575 Hz and 2425 Hz); Compatible AM (2.000-75.9999 MHz); FM (30.0000-75.9999 MHz)

Receiver Sensitivity:

FM - - - - - $0.60 \mu V$

SSB, FSK, CW - - - - - 0.25 to $0.50 \mu V$ (varies with frequency)

AM - - - - - $2.50 \mu V$

Receiver Signal-to-noise Ratio - - - - - 10 dB at referenced sensitivity

Receiver Selectivity:

FM -----	32 kHz @ 6 dB
	70 kHz @ 60 dB
SSB, CW, FSK-----	2.8 kHz @ 6 dB
	4.0 kHz @ 26 dB
	6.0 kHz @ 60 dB
AM -----	6.0 kHz @ 6 dB
	14.0 kHz @ 60 dB

b. Doublet Antenna AS-2975/PRC-70:

Frequency Range -----	2 to 30 MHz
Input Impedance-----	72 ohms

c. Whip Antenna AS-2974/PRC-70:

6-foot Section -----	4 to 76 MHz
9-foot Section -----	3 to 76 MHz
15-foot Section-----	2 to 30 MHz

d. Low Radiating Angle Antenna AS-2973/PRC-70:

Frequency Range -----	6 to 30 MHz
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1-9. Physical Characteristics.

Table 1-1 lists the physical characteristics of the items comprising the radio set.

Table 1-1. Items Comprising an Operable Equipment

Item	Quantity	Height (in.)	Depth (in.)	Width (in.)	Weight (lb.)
Radio Set AN/PRC-70					
Consisting of:					
Receiver-Transmitter					
RT-1133/PRC-70	1	4.00	8.20	12.19	18.6
Antenna (Doublet)					
AS-2975/PRC-70	1	320 feet long			7.5
Antenna (Whip)					
AS-2974/PRC-70	1	15 (9+6) feet long			1.75
Antenna (Low Radiating Angle)					
AS-2973/PRC-70	1	300 feet long			2.26
Mast Assembly	1	30 (15+15) feet long			13.5
Carrying Bags (Two-Man Load)					
SMD745651 (Two Bags)	1				
Mast Bag					
SMD746294	1	40	3	7	1.2
Ancillary					
SMD746295	1	20	5	15	1.4

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

Item	Quantity	Height (in.)	Depth (in.)	Width (in.)	Weight (lb.)
Carrying Kit					
SMD745652	2	22	7	14	4.7
Burst CW Cable Assembly					
SMD745653	1	6 feet long			.6
Maintenance Cable Assembly					
SMD745654	1	5 feet long			.45
Accessory Carrying Bag					
SMD746298	1	23	5	7.5	1.2
Note: The following equipment is used with, but is not part of the AN/PRC-70:					
Headset H-251/U	1	8	4	4	.7
Handset H-138B/U	1	8	2	2	.5
Telegraph Key KY-605/U	1	5	3	3	.4
Battery BB-651/U	1	4	5	13	13.5
Battery BB-534/U	1	4	6	13	12.5
Battery Charger PP-6355/U	1	12	5	4	6.75
AC Power Supply/Battery					
Charger PP-6148/U	1	9	14	6	19.5

1-10. Operating Modes and Frequencies.

The relationship between the various modes, frequencies, and antenna assemblies of the radio set are shown in table 1-2.

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
	15-foot Whip - - - - -	2 to 30 MHz
	300-foot Low Radiating	
	Angle - - - - -	6 to 30 MHz
	Half-wave Doublet - - -	2 to 30 MHz

CHAPTER 2

SERVICE UPON RECEIPT AND INSTALLATION

Section I. SYSTEMS PLANNING

2-1. General.

This section describes system configurations of the AN/PRC-70. This information will aid in planning for its use. Figure FO-4 shows the one and two-man load configurations of the radio set.

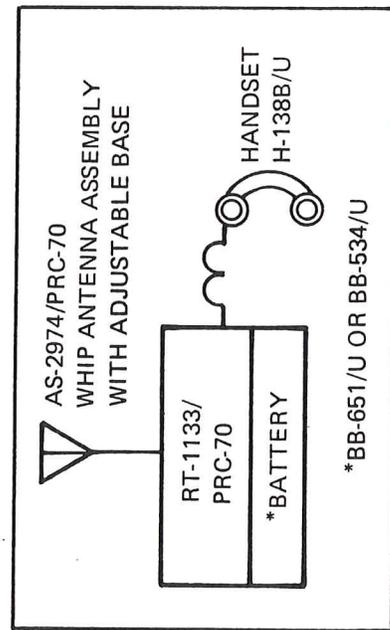
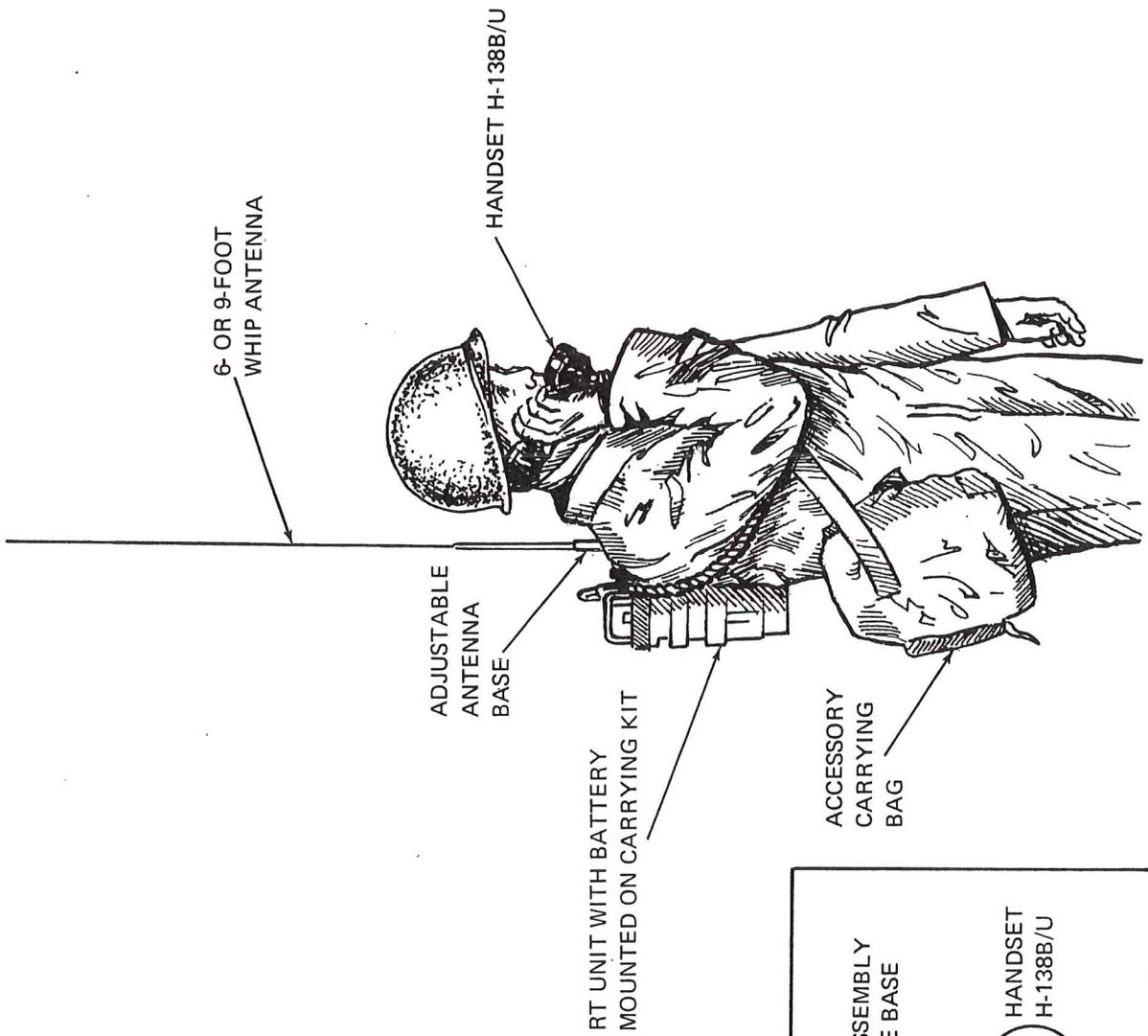
NOTE

Alternate configurations, within system limitations, may be designed for specific applications.

2-2. One-Man Portable and Stationary Configurations.

a. One-Man, Whip Antenna Portable Configuration (Voice Only). This configuration allows the radio set to be transported and operated in the voice mode by one man, on foot, or in a vehicle. Figure 2-1 illustrates this configuration which includes the following items:

- (1) Receiver-Transmitter RT-1133/PRC-70
- (2) Battery BB-651/U or BB-534/U
- (3) Handset H-138B/U



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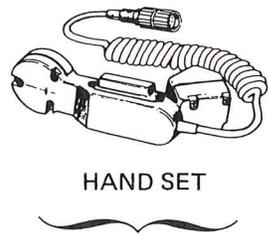
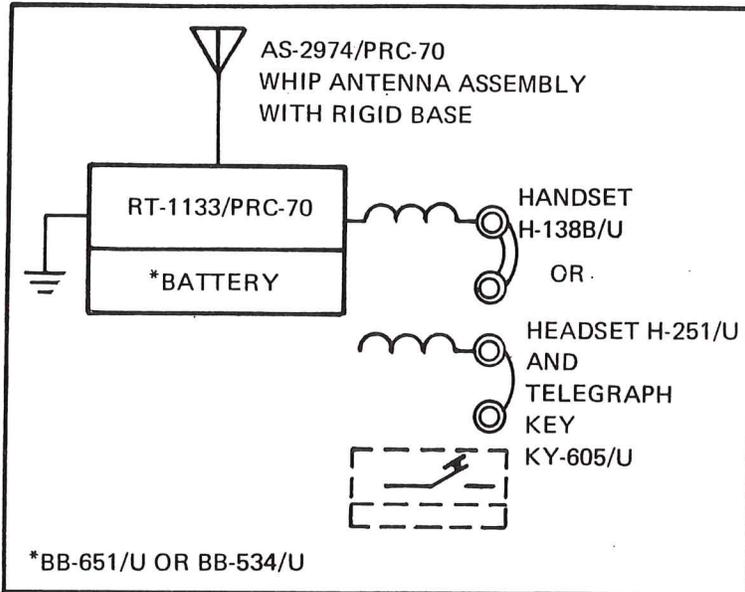
Figure 2-1. Radio set AN/PRC-70 one-man, whip antenna, portable configuration (voice only)

- (4) Whip Antenna AS-2974/PRC-70 (6 or 9-foot)
- (5) Carrying Kit
- (6) Accessory Carrying Bag

b. One-Man, Whip Antenna, Stationary Configuration (Voice or CW). This configuration allows the radio set to be transported to any location by one man and then operated in a stationary condition in the CW or voice mode. Figure 2-2 illustrates the configuration which includes the following items:

- (1) Receiver-Transmitter RT-1133/PRC-70
- (2) Battery BB-651/U or BB-534/U
- (3) Handset H-138B/U
- (4) Whip Antenna AS-2974/PRC-70 (6, 9 or 15-foot)
- (5) Carrying Kit
- (6) Accessory Carrying Bag
- (7) Headset H-251/U
- (8) Telegraph Key KY-605/U
- (9) Grounding Stake Assembly

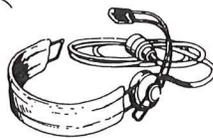
c. One-Man, Low Radiating Angle Antenna, Stationary Configuration (Voice or CW). This configuration allows the radio set to be transported to any location by one man and then operated in a stationary condition in the CW or voice mode. Figure FO-5 illustrates the configuration which includes the following items:



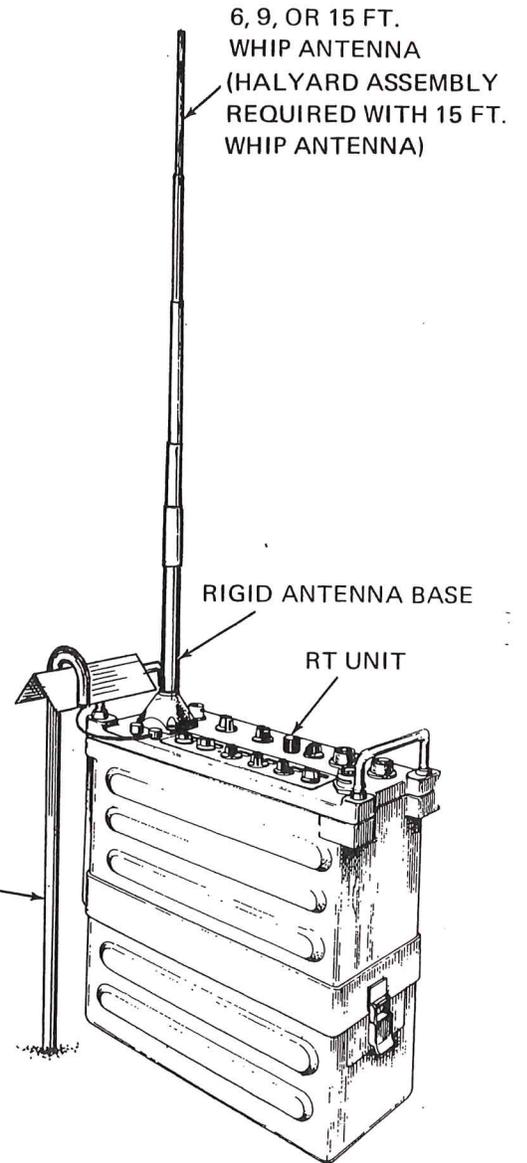
OR



AND



GROUNDING
STAKE ASSEMBLY



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Figure 2-2. Radio Set AN/PRC-70 One-Man, Whip Antenna, Stationary Configuration (Voice or CW)

- (1) Receiver-Transmitter RT-1133/PRC-70
- (2) Battery BB-651/U or BB-534/U
- (3) Headset H-251/U
- (4) Telegraph Key KY-605/U
- (5) Low Radiating Angle Antenna (300 ft.) AS-2973/PRC-70
- (6) Carrying Kit
- (7) Accessory Carrying Bag
- (8) Handset H-138B/U
- (9) Grounding Stake Assembly

2-3. Two-Man Semi-Fixed Configurations.

Semi-fixed location, two-man configurations are described in the following paragraphs:

a. Two-Man, Doublet Antenna, Two-Mast, Semi-Fixed Configuration (Voice or CW). This configuration allows the radio set to be operated in CW or voice modes from semi-fixed locations. Figure FO-6 illustrates this configuration which includes the following items:

- (1) Receiver-Transmitter RT-1133/PRC-70
- (2) Battery BB-651/U or BB-534/U
- (3) Handset H-138B/U
- (4) Doublet Antenna AS-2975/PRC-70
- (5) Mast Assembly

- (6) Ancillary and Mast Carrying Bags
- (7) Carrying Kit (two required)
- (8) Accessory Carrying Bag
- (9) Headset H-251/U
- (10) Telegraph Key KY-605/U
- (11) Grounding Stake Assembly

b. Two-Man, Low-Radiating Angle Antenna, 30-foot Mast, Semi-Fixed Configuration (Voice or CW). This configuration allows the radio set to be operated in voice or CW mode from semi-fixed locations. Figure FO-7 illustrates this configuration which includes the following items:

- (1) Receiver-Transmitter RT-1133/PRC-70
- (2) Battery BB-651/U or BB-534/U
- (3) Headset H-251/U
- (4) Telegraph Key KY-605/U
- (5) Low Radiating Angle Antenna (300 ft.) AS-2973/PRC-70
- (6) Mast Assembly
- (7) Ancillary and Mast Carrying Bags
- (8) Carrying Kit (two required)
- (9) Accessory Carrying Bag
- (10) Handset H-138B/U
- (11) Grounding Stake Assembly

2-4. Fixed Configurations.

These configurations are described in Chapter 6.

Section II. SITE AND SHELTER REQUIREMENTS

2-5. Siting Requirements.

a. Stationary Configurations. Within tactical limitations, confirm stationary configurations to obtain the following operating conditions:

- (1) Antenna clear of nearby obstructions
- (2) Maximum elevation above surrounding terrain
- (3) Good ground conditions (portable grounding stake installed)

b. Semi-fixed Configurations. The exact siting requirements for semi-fixed configurations will depend upon the antenna type being used. The following general requirements should be followed when choosing a site for any of the semi-fixed configurations:

- (1) Ample clear space to install 300-foot low radiating angle antenna or half-wave doublet antenna
- (2) Antenna site as high above surrounding terrain as possible
- (3) Good ground conditions available

c. Fixed Configurations. Siting and shelter requirements for fixed configurations will depend on the configuration being used. The requirements listed for semi-fixed configurations should be followed along with the following requirements when choosing a site for fixed configurations:

- (1) Adequate shelter available for operators and equipment
- (2) Availability of electrical power

Section III. SERVICE UPON RECEIPT OF MATERIAL

2-6. Unpacking.

Figure 2-3 shows typical packaging for the RT-1133/PRC-70. No special procedures are required for unpacking other than those listed in SB 38-100.

2-7. Checking Unpacked Equipment.

a. Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on DD Form 6 (paragraph 1-2).

b. Check the equipment against the components listed in table 1-1, as well as the packing slip to see if the shipment is complete. Report all discrepancies in accordance with paragraph 1-2. The equipment should be placed in service even though a minor assembly or part, that does not affect proper functioning, is missing.

c. Check to see whether the equipment has been modified. (Equipment which has been modified will have the MWO number on the front panel, near the nomenclature plate.) Check also to see whether all currently applicable MWO's have been applied. (Current MWO's applicable to the equipment are listed in USASA PAM 310-6 or DA PAM 310-7, as applicable).

d. For dimensions, weights, and volume of packaged items, see SB 700-20.

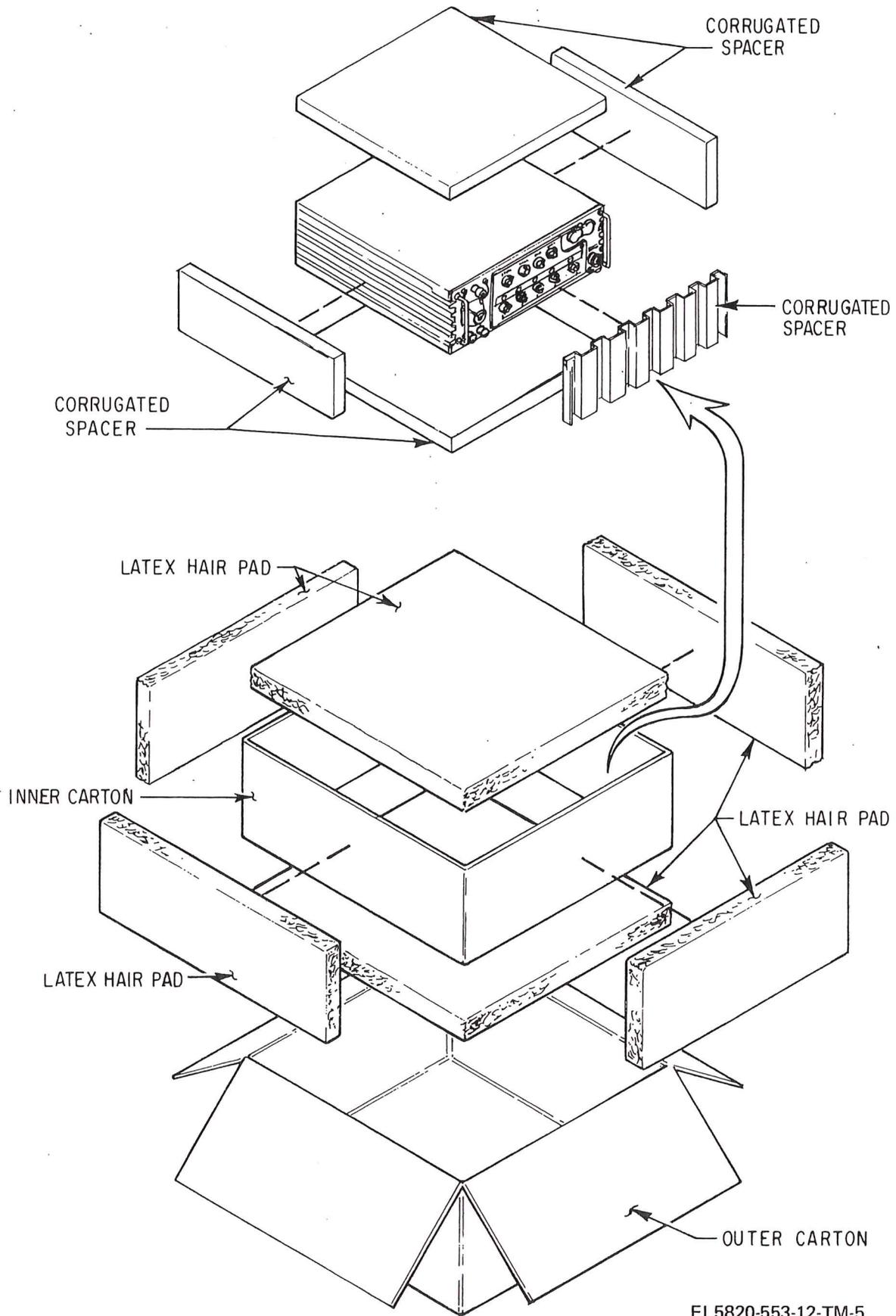


Figure 2-3. Typical Packaging for RT Unit

Section IV. INSTALLATION INSTRUCTIONS

2-8. Assembly of Equipment.

a. Battery Installation. Installation using BB-651/U, BB-534/U or equipment type battery.

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

(2) Place the RT unit over the battery being careful to mate the RT connector to the battery connector.

(3) Press the two units together for a firm and flush fit.

(4) Connect and lock the two side latches.

b. One-Man, Whip Antenna, Portable Configuration (Voice Only). Figure 2-1 shows the one-man portable configuration. For operation in this configuration, assemble equipment as follows:

(1) Place the RT unit with battery (refer to paragraph 2-8a.) on carrying kit cargo support shelf with top edge of control panel toward rucksack frame.

(2) Install one cargo strap from carrying kit around the RT unit in area where two case sections join. Tighten strap.

(3) Install one cargo strap through each RT unit handle and through openings in packboard plate. Tighten these straps.

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 stud may snap.

- (4) Install adjustable antenna base in RT unit WHIP connector.
- (5) Assemble the whip antenna by unfolding either the 6-foot or the 9-foot section and pressing ferrules together.
- (6) Screw whip antenna into adjustable antenna base.
- (7) Connect H-138B/U Handset to AUDIO connector on RT unit.
- (8) Refer to Chapter 3 for operation of AN/PRC-70.

c. One-Man, Whip Antenna, Stationary Configuration (For Voice or CW Operation). Figure 2-2 illustrated the equipment setup for this configuration.

- (1) Upon arrival at the selected site remove RT unit from carrying kit and place it on the ground so that control panel faces up as shown in figure 2-2.
- (2) Remove whip antenna assembly (see figure FO-2) from Accessory Carrying Bag.
- (3) Drive grounding stake into ground next to left side of RT unit so that top of stake assembly fits over handle of RT unit (see figure 2-2), thereby stabilizing position of unit.

(4) Connect the ground wire to GND terminal of RT unit. The other end of the ground wire should already be attached to the curved end of the grounding stake as indicated in figure FO-2.

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 stud may snap.

(5) Install the rigid antenna base to the RT unit WHIP connector.

(6) Assemble the whip antenna by unfolding either the 6-foot or the 9-foot section (or both) and pressing ferrules together. If the 15-foot antenna setup is desired, join the 6 and 9 foot sections together (6-foot on the bottom) inserting the center plate and tube assembly of the halyard assembly between the 2 antenna sections, over the top section of 6-foot whip.

(7) Screw whip antenna into rigid antenna base. If halyard assembly has been installed, drive the stake at the end of each of the 3 ropes into the ground so that antenna is supported equally in three equiangular directions.

(8) For Voice operation connect Handset H-318B/U to AUDIO connector on RT unit.

(9) For CW operation connect Headset H-251/U to AUDIO connector and Telegraph Key KY-605/U to RXMT connector on RT unit.

(10) Refer to Chapter 3 for operation of AN/PRC-70.

d. One-Man, Low Radiating Angle Antenna, Stationary Configuration (Voice or CW). Figure FO-5 illustrated the equipment setup for this configuration.

(1) Upon arrival at the selected site, walk toward distant antenna support (tree, post, etc.) from 300 feet away and unreel antenna wire. Remove wire from reel.

(2) Remove nylon cord and weight from bobbin.

(3) Clip end of cord to eye at end of 300-foot wire antenna.

(4) Remove RT unit from packboard assembly and place it on the ground at end of 300-foot wire antenna so that control panel faces up as shown in figure FO-5.

(5) Remove grounding stake assembly and low radiating angle antenna assembly (see figure FO-2) from Accessory Carrying Bag.

(6) Drive grounding stake into ground next to left side of RT unit so that top of stake assembly fits over handle of RT unit (see figure FO-5), thereby stabilizing position of unit.

(7) Connect the ground wire to GND terminal of RT unit. The other end of the ground wire should already be attached to the curved end of the grounding stake as indicated in figure FO-2.

(8) Tie rope on strain relief (figure 2-4, view A) at end of 300-foot antenna to handle of RT unit.

(9) Connect end of antenna wire to WIRE terminal on RT unit.

(10) Toss lead weight and cord over support. Pull cord until antenna is elevated. Be sure that wire is free of all tree branches, etc.

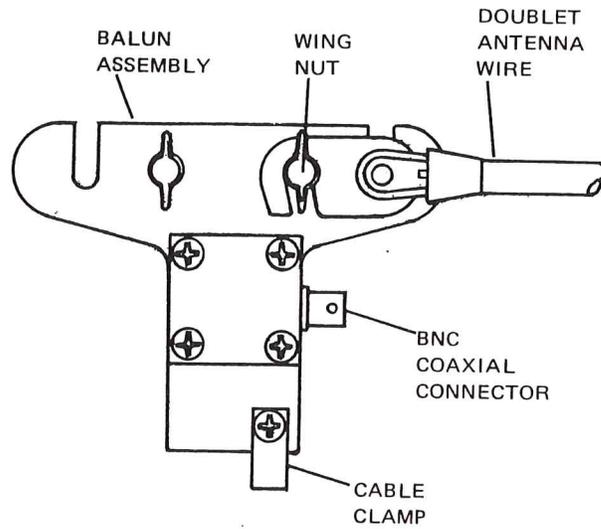
(11) For Voice operation connect Handset H-138B/U to AUDIO connector on RT unit.

(12) For CW operation connect Headset H-251/U to AUDIO connector and Telegraph Key KY-605/U to RXMT connector on RT unit.

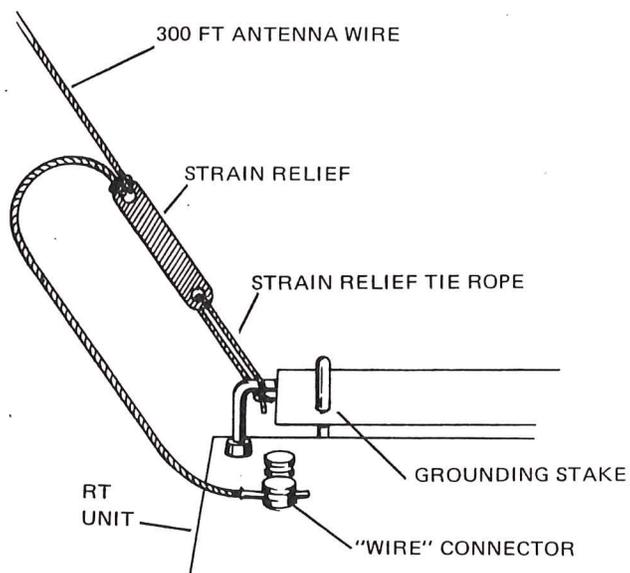
(13) Refer to Chapter 3 for operation of AN/PRC-70.

e. Two-Man, Doublet Antenna, Two-Mast, Semi-Fixed Configuration (Voice or CW). Figure FO-6 illustrates the equipment setup for this configuration.

(1) Upon arrival at the selected site remove RT unit from packboard assembly and place it on the ground so that control panel faces up as shown in figure FO-6, view A.



(B)



(A)

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Figure 2-4. Strain relief and doublet antenna reel installation

(2) Remove grounding stake assembly (see figure FO-2) from Accessory Carrying Bag.

(3) Drive grounding stake into ground next to left side of RT unit so that top of stake assembly fits over handle of RT unit (see Figure FO-6), thereby stabilizing position of unit.

(4) Connect the ground wire to GND terminal of RT unit. The other end of the ground wire should already be attached to the curved end of the grounding stake as indicated in figure FO-2.

(5) Remove contents of both Ancillary and Mast Carrying Bags (figure FO-3, sheets 1 and 2). The mast sections and accessories will be found in the Mast Carrying Bag. The doublet antenna assembly is stored in the Ancillary Carrying Bag.

(6) On both antenna reel assemblies, figure FO 2-4, view B, loosen wing-nuts securing wire ends to frames.

(7) Connect wire end terminals to terminals of balun assembly.

(8) Connect cable assembly (a coaxial feedline) to BNC connector on balun assembly (if not already attached).

(9) Loosen center wing-nut on each reel assembly and raise reel handles.

(10) Unreel proper length of wire from each reel (as marked on wire) for operating frequency. Tighten center wing-nuts on reels. Route wire through clamps at end of reel frame as shown in figure FO-6 and tighten wing-nut.

(11) Remove nylon cord from bobbins.

(12) Clip a length of nylon cord to each reel bracket, using holes provided.

(13) Assemble two 15-foot masts by combining five 3-foot sections for each mast.

(14) Install guy plate on one end of each 15-foot mast.

(15) Attach three guy ropes and short nylon halyard to each guy plate.

(16) Route each nylon cord from reel assembly through clip on guy plate.

(17) One man will load mast erect while other man drives guy rope stake assemblies into ground. Erect both masts with proper separation between masts to match longest doublet antenna length to be used.

(18) Pull antenna wire tight and erect other mast at both masts and tie.

(19) Connect remaining connector of coaxial cable assembly to ANT connector on RT unit.

(20) For Voice operation connect Handset H-138B/U to AUDIO connector on RT unit.

(21) For CW operation connect Headset H-251/U to AUDIO connector and Telegraph Key KY-605/U to RXMT connector on RT unit.

(22) Refer to Chapter 3 for operation of AN/PRC-70.

f. Two-Man, Low Radiating Angle Antenna, 30-foot Mast, Semi-Fixed Configuration (Voice or CW). Figure FO-7 illustrates the equipment setup for this configuration.

(1) Upon arrival at the selected site remove RT unit from packboard assembly and place it on the ground so that control panel faces up as shown in figure FO-7.

(2) Remove grounding stake assembly and low radiating angle antenna assembly AS-2973/PRC-70 (see figure FO-2) from Accessory Carrying Bag.

(3) Drive grounding stake into ground next to left side of RT unit so that top of stake assembly fits over handle of RT unit (see figure FO-7), thereby stabilizing position of unit.

(4) Connect the ground wire to GND terminal of RT unit. The other end of the ground wire should already be attached to the curved end of the grounding stake as indicated in figure FO-2.

- (5) Remove mast sections and accessories from Mast Carrying Bag. Contents of bag will correspond with items shown in figure FO-3, sheet 1.
- (6) Drive base assembly into ground at site which has been selected for 30-foot mast (at least 300 feet from RT unit).
- (7) Connect insulator to base assembly with base pin.
- (8) Connect the five large diameter mast sections together and connect the lowest one to the insulator.
- (9) Connect blue guy plate assembly and transition adapter to top of joined mast sections.
- (10) Attach four blue tipped guy rope assemblies to blue plate so that they will be located at 90 degree intervals.
- (11) Join the five small diameter mast sections together and connect them to the transition adapter.
- (12) Attach the red guy plate assembly to the top section of the mast.
- (13) Attach four red tipped guy ropes to the red guy plate assembly so that their orientation is the same as that of the guy ropes attached to the lower guy plate.
- (14) Attach halyard assembly to the hook of the red guy plate assembly.

(15) Walk away from RT unit and unreel antenna wire. Remove reel, tie rope.

(16) Tie rope on strain relief to handle of RT unit and connect end of antenna wire to WIRE terminal on RT unit.

(17) Clip the end of halyard to the eye in the 300-foot antenna wire.

(18) The two men can now lift the end of the mast assembly, and by walking toward the base, push the mast up into a vertical position.

(19) While one man holds the mast in position, the other will take four of the stake assemblies and use them to fasten the guy ropes from the lower guy plate to the ground. Tighten guy ropes.

(20) Secure each of the four guy ropes attached to the upper guy plate to one of the four stake assemblies as indicated in figure FO-7. Tighten guy ropes.

(21) Use the halyard to pull the slack out of the antenna until it is extended between the top of the mast and the RT unit in the manner shown in figure FO-7. Secure halyard.

(22) For Voice operation connect Handset H-138B/U to AUDIO connector on RT unit.

(23) For CW operation connect Headset H-251/U to AUDIO connector and Telegraph Key KY-605/U to RXMT connector on RT unit.

(24) Refer to Chapter 3 for operation of AN/PRC-70.

g. Fixed Configurations. Assembly of these configurations is described in Chapter 6.

CHAPTER 3
OPERATING INSTRUCTIONS

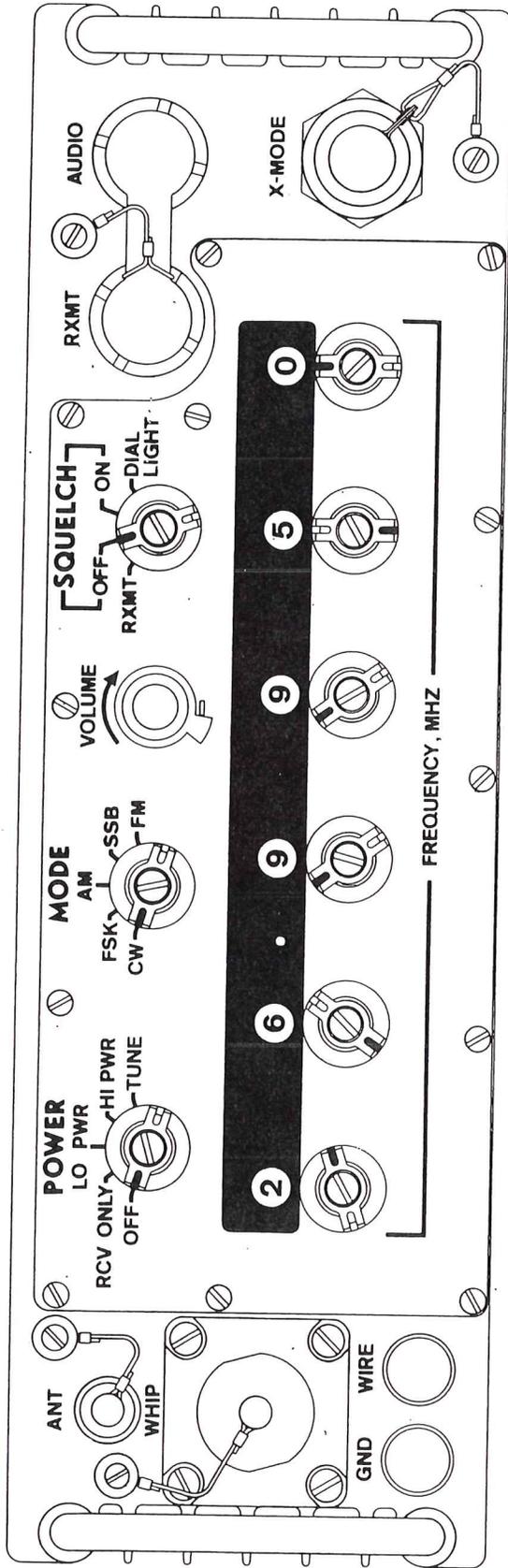
Section I. CONTROLS AND INSTRUMENTS

3-1. Damage From Improper Settings.

No damage will result to the equipment from improper control settings. 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. To maximize battery life use other settings of these controls when possible.

3-2. RT-1133/PRC-70 Controls.

Figure 3-1 shows the RT-1133/PRC-70 controls. Table 3-1 lists the operator controls, indicators, and connectors and describes their functions.



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Figure 3-1. RT-1133/PRC-70 controls.

Table 3-1. Controls, Indicators, and Connectors

Control, indicator, or connector	Function
POWER switch	Sets major functions of RT-1133/PRC-70 as follows:
Positions:	
OFF	Disconnects all power from 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	Actuates 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 control	Selects operating mode of unit. Modes are CW, FSK, AM, SSB, and FM.*
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.

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

Table 3-1. Controls, Indicators, and Connectors - Continued

Control, indicator, or connector	Function
SQUELCH switch	
Positions (continued)	
OFF	Disables squelch circuit.
ON	Enables receiver squelch in voice modes. Squelch is automatically 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	Used to connect unit to second RT-1133/PRC-70 in retransmit mode. Also used to connect Telegraph Keys KY-605/U or KY-468/GRA-71(KE-8B) to unit for CW or FSK operation.
AUDIO connector	Used to connect Handset H-138B/U to unit for normal voice operation. Also used to connect C-2328/GRA-39 to unit for remote operation.
X-MODE connector	Used to connect voice security applique to unit for secure voice operation. 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.

Table 3-1. Controls, Indicators, and Connectors - Continued

Control, indicator, or connector	Function
ANT connector	Used to connect feedline for Doublet Antenna Assembly AS-2975/PRC-70 to unit.
WHIP connector	Used to connect Whip Antenna Assembly AS-2974/PRC-70 to unit.
GND connector	Used to connect ground wire to unit.
WIRE connector	Used to connect feedline from low Radiating Angle Antenna Assembly AS-2973/PRC-70 to unit.
FREQUENCY MHZ controls and indicators:	Operating frequency is changed (in conjunction with TUNE) by rotating frequency select knobs while observing frequency readout numerals. FM transmit is disabled by these controls below 30.0000 MHz setting.
10 MHz	
1 MHz	
100 kHz	
10 kHz	
1 kHz	
100 Hz	

Section II. OPERATION UNDER USUAL CONDITIONS

3-3. Types of Operation.

Three basic types of operation are possible using the Radio Set AN/PRC-70: one-man portable and stationary, two-man semi-fixed, and fixed configuration. Paragraphs 2-2 through 2-4 and Chapter 6 describe various equipment configurations possible in each type of operation. Alternate configurations are also possible. Additionally, the AN/PRC-70 may be operated with high-power output (approximately 30 watts), low-power output (approximately 3 watts) or in receive only. Instructions for operating the equipment under typical conditions are given in paragraph 3-4 through 3-6 and in Chapter 6.

3-4. Preliminary Starting Procedures.

Prior to operating the AN/PRC-70, proceed as follows:

a. Assemble equipment in desired configuration as described in paragraph 2-8**b** through 2-8**f**.

b. Set controls on RT-1133/PRC-70 as follows:

<u>Control</u>	<u>Setting</u>
POWER switch	OFF
MODE switch	Operating mode desired
VOLUME control	Midrange
SQUELCH switch	OFF
FREQUENCY, MHz controls	Operating frequency desired

3-5. Initial Adjustments.

No initial adjustments of the AN/PRC-70 are necessary.

3-6. Operating Procedures.

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

- (1) Set RT-1133/PRC-70 POWER switch to RCV ONLY.
- (2) Adjust RT-1133/PRC-70 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.

- (3) Set RT-1133/PRC-70 POWER switch to TUNE momentarily and release. Allow 10 seconds for tuning to complete. (Tuning is complete when TUNE tone disappears from handset.)
- (4) Set RT-1133/PRC-70 POWER switch to HI PWR or LO PWR, as required.
- (5) Set RT-1133/PRC-70 SQUELCH switch to ON (If desired).

NOTE

Each time the RT-1133/PRC-70 FREQUENCY MHz controls are reset, momentarily set the POWER switch to TUNE and release. The set automatically tunes within 10 seconds. LO PWR may be selected after this time.

b. Voice Mode Operation. Transmit in any of the voice modes by pressing the H-138B/U Handset push-to-talk button and speaking into the microphone.

c. Standard CW Operation.

(1) Use Headset H-251/U for CW reception.

(2) To transmit in the standard CW mode, key the RT-1133/PRC-70 with KY-605/U.

NOTE

The AN/PRC-70 will automatically switch to transmit and remain in transmit during the pauses between characters. The AN/PRC-70 will return to the receive mode after a pause of about 1.2 seconds with the key open.

d. Miscellaneous Operating Notes.

(1) Changing settings of RT-1133/PRC-70 controls is not recommended while transmitter is keyed.

(2) To read FREQUENCY, MHz dials in poor light, set SQUELCH switch to DIAL LIGHT.

NOTE

The switch is spring-loaded in this position and will return to ON when released.

(3) AN/PRC-70 will not be operationally compatible with FM sets having 25-kHz channelization unless RT-1133/PRC-70 has been modified for this mode.

NOTE

This modification is performed by direct support maintenance personnel.

e. Equipment Shutdown. To shut down the equipment simply set the RT-1133/PRC-70 POWER switch to OFF.

f. Special Tuning Procedures. There may be occasional loads and frequencies which the antenna matching network will have difficulty tuning. If several attempts at tuning fail, the operator should try the following procedures:

(1) Alter the environment of the antenna. Objects near the antenna (including the operator, other people, and the handset cable) affect the impedance of the antenna. To attempt to make the radio tune, the operator can try to tune after performing one or more of the following:

- (a) The operator can move his hand close to the antenna
- (b) The operator can change his position relative to the antenna
- (c) Move the handset cable
- (d) 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 in 100 kHz steps to a frequency that it will tune.

(b) Change back to the desired frequency. This will often solve the problem.

(3) Change antennas. If all other methods fail, changing the antenna length should permit tuning on the desired frequency.

Section III. OPERATION UNDER UNUSUAL CONDITIONS

3-7. Operation Under Emergency Conditions.

a. Operation on Low Batteries. Any or all of the following procedures may be used to conserve the batteries in RT-1133/PRC-70 in an emergency:

(1) Set POWER switch to RCV ONLY during intervals between transmissions.

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

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

(4) Avoid setting SQUELCH switch to DIAL LIGHT.

b. Operation with Power Supply PP-6148/U. If serviceable batteries are not available, the AN/PRC-70 may be operated from PP-6148/U; proceed as follows:

(1) Remove RT-1133/PRC-70 Battery by releasing two latches on sides of case.

(2) Connect RT-1133/PRC-70 to PP-6148/U mating power connector.

(3) Operate PP-6148/U as directed by its appropriate technical manual.

c. Operation with Random-Length Antennas. In an emergency, the AN/PRC-70 may be operated using practically any random length of wire as an antenna. The antenna coupler in RT-1133/PRC-70 automatically tunes for the best possible match with the antenna when the POWER switch is set to TUNE. Connect the random-length antenna to the WIRE terminal of RT-1133/PRC-70. If a grounded wire or pipe is used as an antenna, connect RT-1133/PRC-70 to a point, selected by trial and error, some distance from the grounded end of the antenna.

3-8. 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 strong interference heard on the receiver may be caused by enemy jamming, signals from a friendly station, noise from a local source, or the receiver may be defective. To determine whether or not the interference is originating in the receiver, disconnect and remove the antenna leads, or temporarily connect the WHIP post to the chassis. If the interference continues, the receiver is defective. Enemy jamming signals may be typed as 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 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 consist of noise, laughter, singing, music, various tones, or almost any unusual sound, or it may be a combination of these sounds. Various types of modulated jamming signals are explained below.

(1) Spark. This is one of the simplest, most effective, and most 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 large 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.

3-9. Antijamming Procedures.

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

- a. Operate RT-1133/PRC-70 as outlined in paragraph 3-6.
- b. Detune FREQUENCY, MHz dial several degrees on either side of received signal. This may cause some separation of received signal and jamming signal. Do not transmit on unauthorized frequencies.
- c. Vary VOLUME control. This may reduce jamming signal enough to permit weak signal to be heard.
- d. Use either SSB or standard CW mode. These modes are less susceptible to jamming.

Section IV. PREPARATION FOR MOVEMENT

3-10. One-Man Portable Configuration Movement.

The one-man portable configuration of the AN/PRC-70 may be transported while assembled if continued use is anticipated. The whip antenna may be folded if the AN/PRC-70 will be transported in a vehicle. However, if the AN/PRC-70 will not be used immediately at the new location, the equipment should be disassembled.

Proceed as follows:

- a. Set POWER switch to OFF.
- b. Unscrew whip antenna from adjustable antenna base.
- c. Fold the whip antenna by pulling ferrules apart. (Start with top section first.)
- d. Unscrew adjustable antenna base from WHIP terminal on RT unit.
- e. Disconnect Handset H-138B/U from AUDIO connector.
- f. Stow whip antenna, adjustable antenna base, Handset H-138B/U, and other loose items in Accessory Carrying Bag.
- g. (Optional) Remove RT unit from Carrying Kit by removing attaching straps and remove battery by releasing 2 latches on sides of case.

3-11. One-Man Stationary Configuration Movement.

Since there are 2 configurations in this category, proceed according to either subparagraph a. or subparagraph b. below, whichever is applicable.

- a. If the whip antenna is being used, proceed as follows:
- (1) Set POWER switch to OFF.
 - (2) Unscrew whip antenna from rigid antenna base.
 - (3) If 15-foot whip was installed, disconnect 6-foot section from 9-foot section. If halyard assembly was used, remove the 3 stakes from the ground.
 - (4) Fold each antenna section by pulling ferrules apart. (Start with top sections first.)
 - (5) Unscrew rigid antenna base from WHIP terminal on RT unit.
 - (6) Disconnect ground wire from GND terminal on RT unit.
 - (7) Pull grounding stake out of the ground.
 - (8) If Handset H-138B/U was used, disconnect it from AUDIO connector on RT unit.
 - (9) If Headset H-251/U was used, disconnect it from AUDIO connector and disconnect Telegraph Key KY-605/U from RXMT connector.
 - (10) Stow whip antenna, halyard assembly, rigid antenna connector, grounding stake assembly, handset, headset, telegraph key, and any other loose items in Accessory Carrying Bag.
 - (11) (Optional) Remove battery from RT unit by releasing 2 latches on side of case. Also, RT unit may be mounted on Carrying Kit.

b. If Low Radiating Angle (L.R.A.) antenna is being used, proceed as follows:

- (1) Set POWER switch to OFF.
- (2) Pull distant end of L.R.A. antenna back over support if there are no obstructions; otherwise, perform step (3), then remove cord from weighted end and proceed to step (4).
- (3) Unclip nylon cord from antenna wire.
- (4) Wind nylon cord and weight on lightweight bobbin.
- (5) Walk toward RT unit while winding antenna wire onto reel.
- (6) Untie strain relief rope from handle of RT unit and disconnect antenna wire from WIRE terminal on RT unit.
- (7) Wind remaining wire onto reel.
- (8) Secure end of wire under reel assembly frame.
- (9) Disconnect ground wire from GND terminal on RT unit.
- (10) Pull grounding stake out of the ground.
- (11) If Handset H-138B/U was used, disconnect it from AUDIO connector on RT unit.
- (12) If Headset H-251/U was used, disconnect it from AUDIO connector and disconnect Telegraph Key KY-605/U from RXMT connector.

(13) Stow reel and bobbin assemblies of Low Radiating Angle antenna, grounding stake assembly, handset, headset, and telegraph key in Accessory Carrying Bag.

(14) (Optional) Remove battery from RT unit by releasing 2 latches on side of case. Also, RT unit may be mounted on Carrying Kit.

3-12. Two-Man Semi-Fixed Configuration Movement.

Since there are 2 configurations in this category, proceed according to either subparagraph a. or subparagraph b. below, whichever is applicable.

a. If the doublet antenna, two-mast configuration is being used, proceed as follows:

- (1) Set POWER switch to OFF.
- (2) Disconnect antenna cable assembly from ANT connector on RT unit.
- (3) Loosen guy ropes on one mast and lower mast.
- (4) Loosen guy ropes on second mast and lower mast.
- (5) Unclip antenna ends from halyards.
- (6) Unclip nylon cord from reel brackets and rewind cord on bobbin.
- (7) Disconnect wire end terminals from terminals on balun assembly.

- (8) Loosen both wing-nuts on both reel assemblies and raise reel handles.
- (9) Wind antenna wire onto reel assemblies and tighten center wing-nuts on reels.
- (10) Secure ends of wire under wing-nuts on reel assembly frames and tighten wing-nuts.
- (11) (Optional). Disconnect antenna feedline from BNC connector on balun assembly.
- (12) Remove guy ropes, halyards, and guy plates from mast sections.
- (13) Disassemble mast sections.
- (14) Pull all stakes from ground.
- (15) Pull mast base assemblies from ground.
- (16) Stow all mast assembly items in Mast Carrying Bag.
- (17) Stow all doublet antenna assembly items in Ancillary Carrying Bag.
- (18) Disconnect ground wire from GND terminal on RT unit.
- (19) Pull grounding stake out of the ground.
- (20) If Handset H-138B/U was used, disconnect it from AUDIO connector on RT unit.

(21) If Headset H-251/U was used, disconnect it from AUDIO connector and disconnect Telegraph Key KY-605/U from RXMT connector.

(22) Stow reel and bobbin assemblies of low radiating angle antenna, grounding stake assembly, handset, headset, and telegraph key in Accessory Carrying Bag.

(23) (Optional) Remove battery from RT unit by releasing 2 latches on side of case. Also, RT unit may be mounted on Carrying Kit and battery may be stowed in Ancillary Carrying Bag.

b. If the low radiating angle antenna, 30-foot mast configuration is being used, proceed as follows:

- (1) Set POWER switch to OFF.
- (2) Disconnect antenna wire from WIRE terminal on RT unit.
- (3) While one man holds the mast steady, the other one will pull up the 4 guy rope stakes.
- (4) Together the 2 men will lower the mast to the ground.
- (5) Disconnect the 3 guy ropes from the stake assemblies and the guy plates.
- (6) Remove the halyard assembly from the guy plate assembly.
- (7) Unclip halyard from antenna wire.

- (8) Wind nylon cord and weight on lightweight bobbin.
- (9) Walk toward RT unit while winding antenna wire onto reel.
- (10) Untie strain relief rope from handle of RT unit and disconnect antenna wire from WIRE terminal on RT unit.
- (11) Wind remaining wire onto reel and secure end of wire under reel assembly frame.
- (12) Remove guy ropes, halyards and guy plates from mast sections.
- (13) Disassemble mast section.
- (14) Pull all stakes from ground.
- (15) Pull mast base assembly from ground.
- (16) Stow all mast assembly items in Mast Carrying Bag.
- (17) Disconnect ground wire from GND terminal on RT unit.
- (18) Pull grounding stake assembly out of ground.
- (19) If Handset H-138B/U was used, disconnect it from AUDIO connector on RT unit.
- (20) If Headset H-251/U was used, disconnect it from AUDIO connector and disconnect Telegraph Key KY-605/U from RXMT connector.
- (21) Stow reel and bobbin assemblies of low radiating angle antenna, grounding stake assembly, handset, headset and telegraph key in Accessory Carrying Bag.

(22) (Optional) Remove battery from RT unit by releasing 2 latches on sides of case. RT unit may be mounted on Carrying Kit.

3-13. Fixed Voice Configuration Movement.

- a. Set POWER switch to OFF.
- b. Disassemble doublet antenna, two-mast configuration as described in paragraph 3-12a.
- c. Disconnect Handset H-138B/U from voice security applique.
- d. If applicable, disconnect voice security applique from X-MODE connector. Replace shorting cap on X-MODE connector.

3-14. Fixed 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. Disassemble doublet antenna, two-mast configuration as described in paragraph 3-12a.
- c. Disconnect ground wire from RT unit GND connector.
- d. Disconnect KY-468/GRA-71(KE-8B) from RXMT connector.
- e. Disconnect RO-291/GSH-6 from AUDIO connector.
- f. Stow mast assemblies, Doublet Antenna Assembly AS-2975, and other loose items in carrying bags.

3-15. Retransmit Configuration Movement.

To prepare the retransmit configuration for movement, proceed as follows:

- a. Set POWER switch on each RT unit to OFF.
- b. Disassemble both doublet antenna, two-mast configurations as described in paragraph 3-12a.
- c. Disconnect ground wires from GND connectors.
- d. Disconnect MK-456/GRC from both RXMT connectors.
- e. Stow mast assemblies, Doublet Antenna Assembly AS-2975, and other loose items in carrying bags.

3-16. Remote Control Configuration Movement.

To prepare remote control configuration for movement, proceed as follows:

- a. Set RT unit and C-2329/GRA-39 POWER switches to OFF.
- b. Set C-2328/GRA-39 VOLUME control to OFF.
- c. Disconnect Handset H-138B/U from C-2328/GRA-39.
- d. Disconnect field wire from C-2328/GRA-39 and C-2329/GRA-39 LINE connectors.
- e. Disconnect C-2329/GRA-39 RADIO cable from AUDIO connector on RT unit.
- f. Stow RADIO cable in retaining clip provided on C-2329/GRA-39.

- g. Disassemble antenna as described in applicable paragraph listed below:
- (1) Paragraph 3-11a. for Whip Antenna Assembly AS-2974/PRC-70.
 - (2) Paragraph 3-11b. for Low Radiating Angle Antenna Assembly AS-2973/PRC-70.
 - (3) Paragraph 3-12a. for Doublet Antenna Assembly AS-2975/PRC-70.
- h. Stow loose items in Accessory Carrying Bag or Carrying Bags, as appropriate.

CHAPTER 4

OPERATOR MAINTENANCE INSTRUCTIONS

Section I. TOOLS AND EQUIPMENT

4-1. General.

Tools and test equipment issued with or authorized for use by the operator for the AN/PRC-70 Radio Set are listed in Section III of Appendix B in this manual. No other tools or test equipment are required for operator's maintenance.

Section II. LUBRICATION INSTRUCTIONS

4-2. General.

No lubrication is required for the AN/PRC-70.

Section III. PREVENTIVE MAINTENANCE CHECKS AND SERVICES

4-3. General.

To ensure that the AN/PRC-70 Radio Set is always ready for operation, it must be inspected systematically so that defects may be discovered and corrected before they result in serious damage or failure. The necessary preventive maintenance checks and services to be performed are listed and described in table 4-1. The item numbers indicate the sequence of minimum inspection requirements. Defects discovered during operation of the unit will be noted for future correction to be made as soon as operation has ceased. Stop operation immediately if a deficiency is noted during operation which would damage the equipment. Record all deficiencies together with the corrective action taken on forms prescribed in TM 38-750.

4-4. Cleaning.

Inspect the exterior of AN/PRC-70 for dirt, grease, fungus or corrosion.

Correct discrepancies as follows:

- a. Remove dust and loose dirt with a clean, soft cloth.

WARNING

The fumes of trichloroethane are toxic. Provide thorough ventilation whenever used. DO NOT USE NEAR AN OPEN FLAME. Trichloroethane is not flammable, but exposure of the fumes to an open flame or hot metal surface forms highly toxic phosgene gas.

b. Remove grease, fungus and ground-in dirt using a cloth dampened (not wet) with trichloroethane.

c. Clean control knobs and switches with a cloth dampened with mild soap and water.

4-5. Operational Checks.

Connect the AN/PRC-70 in the configuration required. Perform the starting procedures as specified in paragraph 3-6a. and operate in accordance with paragraph 3-6b. through e. If equipment does not function correctly, refer to section IV, Troubleshooting.

4-6. Battery Replacement.

Refer to paragraph 2-8a.

Table 4-1. Operator/Crew Preventive Maintenance.
Daily Checks and Services

Interval and sequence no.		Item to be inspected procedure	Paragraph or figure reference	Work time (M/H)
B	D A			
<p>B - Before Operation Time required: 1.5 M/H</p>				
<p>D - During Operation</p>				
<p>A - After Operation Time required: 1.3 M/H</p>				
AN/PRC-70				
1		Check that equipment manuals are available.	Figures FO-1, FO-2, FO-3	0.1
2		Check that equipment is complete.	Para. 4-4	0.1
3		Check that equipment is clean and dry and free of grease, dirt and fungus.		0.1
4		Check that painted surfaces are free of bare spots, rust, and corrosion.		0.1
5		Check that connectors are free of corrosion, foreign materials or objects, or damage.		0.1
6	1	Check that all connectors not in use are covered and that covers are securely in place.		0.1

Table 4-1. Operator/Crew Preventive Maintenance
Daily Checks and Services - Continued

Interval and sequence no.		Item to be inspected <u>procedure</u>	<u>Paragraph or figure reference</u>	<u>Work time (M/H)</u>
B	D A			
B - Before Operation Time required: 1.5 M/H				
D - During Operation				
A - After Operation Time required: 1.3 M/H				
AN/PRC-70 - continued				
7	2 7	Check that controls and switches are free of corrosion, looseness, or damage, and operate smoothly.		0.1
8	3 8	Check that cables and cords are not frayed, cut, kinked, or have broken insulation.		0.1
9	4 9	Check that antennas are free of damage and either can be properly installed or already are properly installed.	Para. 2-8b. through f.	0.1
10	10	Check that canvas items are not frayed or torn.		0.1
11	11	Check that buckles and snaps are serviceable.		0.1
12	12	Check that serviceable power supply batteries are installed.	Para. 2-8a.	0.1
13	5	Check that battery compartment gasket is serviceable and that clamps are secured.		0.1
14	6	Check that connectors in use are tight.		0.1

Table 4-1. Operator/Crew Preventive Maintenance

Daily Checks and Services - Continued

B - Before Operation Time required: 1.5 M/H		D - During Operation	A - After Operation Time required: 1.3 M/H
Interval and sequence no.	<u>Item to be inspected procedure</u>	<u>Paragraph or figure reference</u>	<u>Work time (M/H)</u>
B D A			
AN/PRC-70 - continued			
15	7	Check equipment for proper operation.	Para. 4-5. 0.1
	8	Check that equipment does not overheat.	0.1
	13	Check that POWER switch is turned to OFF.	0.1

Section IV. TROUBLESHOOTING

4-7. 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.

4-8. Troubleshooting Chart.

Use the Troubleshooting Chart, table 4-2, to diagnose and correct any equipment failure found during operational checks or normal operation. Any repair that is beyond the scope of the operator shall be referred to organizational maintenance.

Table 4-2. Operator Troubleshooting

Malfunction	Probable cause	Corrective action
1. Unable to transmit or receive.	a. Incorrect frequency setting.	a. Check setting of FREQUENCY controls.
	b. H-138B/U defective.	b. Replace H-138B/U.
	c. BB-651/U or BB-534/U defective.	c. Replace battery.
	d. Antenna defective.	d. Refer to organizational maintenance.
	e. RT-1133/PRC-70 defective.	e. Refer to organizational maintenance.
2. Unable to transmit, reception is satisfactory.	a. H-138B/U defective.	a. Replace H-138B/U.
	b. BB-651/U or BB-534/U weak.	b. Replace battery.
	c. RT-1133/PRC-70 defective.	c. Refer to organizational maintenance.
3. Unable to receive, transmission is satisfactory.	a. Same as malfunction 2.	a. Same as malfunction 2.
	b. Squelch circuit defective or switch incorrectly set.	b. Set SQUELCH to OFF, repeat test.
	c. RT-1133/PRC-70 defective.	c. Refer to organizational maintenance.

Table 4-2. Operator Troubleshooting - Continued

Malfunction	Probable cause	Corrective action
4. Reception is weak.	a. BB-651/U or BB-534/U defective.	a. Replace battery.
	b. H-138B/U defective.	b. Replace H-138B/U.
	c. Station too distant.	c. Increase power and/or change antenna or position.
	d. Antenna defective.	d. Refer to organizational maintenance.
	e. RT-1133/PRC-70 defective.	e. Refer to organizational maintenance.

CHAPTER 5

ORGANIZATIONAL MAINTENANCE INSTRUCTIONS

Section I. TOOLS AND EQUIPMENT

5-1. A list of parts normally stocked for organizational maintenance is contained in TM 11-5820-553-20P. The tools and test equipment required for organizational maintenance are TK-105G and TS-352B/U.

Section II. REPAINTING AND REFINISHING INSTRUCTIONS

5-2. Repainting and Refinishing Supplies.

Refer to SB 11-573, Painting and Preservation Supplies Available for Field Use for Electronics Command Equipment, to determine the proper finish to use.

5-3. Repainting and Refinishing Procedures.

Refer to TB 746-10, Field Instructions for Painting and Preserving Electronics Command Equipment, for refinishing procedures.

CAUTION

Do not paint the following:

- a. Top surface of the WHIP terminal.
- b. GND or WIRE terminals.
- c. Any of the RT-1133/PRC-70 connectors.
- d. FREQUENCY, MHZ windows.
- e. AS-2974/PRC-70 ferrules.
- f. AS-2973/PRC-70.
- g. AS-2975/PRC-70.
- h. Mast Assembly.

Section III. LUBRICATION INSTRUCTIONS

5-4. General.

None required except for the following: every three months clean surfaces and put a thin coat of graphite grease (FSN 9150-753-4648) on threads of male antenna sections and elements.

Section IV. PREVENTIVE MAINTENANCE CHECKS AND SERVICES

5-5. General.

To ensure that the AN/PRC-70 radio set is always ready for operation, it must be inspected systematically so that defects may be discovered and corrected before they result in serious damage or failure. The necessary preventive maintenance checks and services to be performed are listed and described in table 5-1. The item numbers indicate the sequence of minimum inspection requirements. Defects discovered during operation of the unit will be noted for future correction to be made as soon as operation has ceased. Stop operation immediately if a deficiency is noted during operation which would damage the equipment. Record all deficiencies together with the corrective action taken on forms prescribed by TM 38-750.

5-6. Weekly Maintenance.

a. Preventive maintenance of the AN/PRC-70 at the organizational level is performed at weekly intervals unless otherwise directed by the Commanding Officer.

b. Maintenance forms and records to be maintained for preventive maintenance of the equipment are specified in TM 38-750. Equipment with a deficiency not correctable by organizational maintenance, should be deadlined in accordance with TM 38-750.

c. Perform all the inspections listed in the Preventive Maintenance Checks and Services, table 5-1, in the sequence listed.

5-7. Operational Checks.

NOTE

The following operational checks assume all required ancillary equipment is available for all operating modes. Skip checks involving equipment not in inventory.

- a. Install battery on RT-1133/PRC-70 (paragraph 2-8a.).
- b. Install the AN/PRC-70 in one-man portable configuration (paragraph 2-8b.).
- c. Operate AN/PRC-70 in each voice mode (paragraph 3-4 and 3-6a. and b.). Verify that satisfactory communications are possible with a distant station on each assigned operating frequency.
- d. Install AN/PRC-70 in each one-man stationary configuration (paragraph 2-8c. and d.).
- e. Repeat step c.

Table 5-1. Organizational Preventive Maintenance Checks and Services

Sequence	Item to be inspected procedure	Paragraph or figure reference	Work time (M/H)
W-Weekly			
Total man-hours required: 1.8 (M/H)			
AN/PRC-70			
1	Check that equipment manuals are available.		0.1
2	Check that equipment is complete.	Figures FO-1, FO-2 and FO-3	0.1
3	Check that equipment is clean and dry and free of grease dirt, and fungus.	Para. 4-4	0.1
4	Check that painted surfaces are free of bare spots, rust, and corrosion.		0.1
5	Check that connectors are free of corrosion, foreign materials or objects, or damage.		0.1
6	Check that all connectors not in use are covered and that covers are securely in place.		0.1
7	Check that controls and switches are free of corrosion, looseness, or damage, and operate smoothly.		0.1
8	Check that cables and cords are not frayed, cut, kinked, or have broken insulation.		0.1

Table 5-1. Organizational Preventive Maintenance
Checks and Services - Continued

W - Weekly

Total man-hours required: 1.8 (M/H)

Sequence number	Item to be inspected procedure	Paragraph or figure reference	Work time (M/H)
AN/PRC-70 - continued			
9	Check that antennas are free of damage and are capable of being installed.		0.1
10	Check that canvas items are not frayed or torn.		0.1
11	Check that buckles and snaps are serviceable.		0.1
12	Check that power supply battery compartment is free of dust, dirt, grease, fungus, and corrosion.		0.1
13	Check that serviceable power supply batteries are installed.	Para. 2-8a.	0.1
14	Check that battery compartment gasket is serviceable and that cover and clamps are secured.		0.1
15	Check that connectors in use are tight.		0.1
16	Check equipment for proper operation.	Para. 5-6	0.1
17	Check that equipment does not overheat.		0.1
18	Check that POWER switch is turned to OFF.		0.1

f. Operate AN/PRC-70 in standard CW mode (paragraphs 3-4 and 3-6a. and c.). Verify that satisfactory communications are possible with a distant station on each assigned operating frequency.

g. Install AN/PRC-70 in each two-man, semi-fixed configuration paragraph 2-8e. and f.).

h. Repeat step c.

i. Repeat step f.

j. Install AN/PRC-70 in fixed CW or FSK configuration (paragraph 6-3b.).

k. Operate AN/PRC-70 in all burst CW and FSK modes (paragraph 6-3c.).

Verify that satisfactory communications are possible with a distant station on each assigned operating frequency.

l. Install AN/PRC-70 in retransmit configuration (paragraph 6-4b.).

m. Operate AN/PRC-70 in retransmit mode (paragraph 6-4c.). Verify satisfactory two-way communications between two distant stations by retransmitting through AN/PRC-70.

n. Install AN/PRC-70 in remote control configuration (paragraph 6-5b.).

o. Operate AN/PRC-70 in remote control mode (paragraph 6-5c.).

Verify satisfactory communications with distant station.

p. Shut down equipment (paragraph 3-6e.).

Section V. TROUBLESHOOTING

5-8. General.

Prior to performing the troubleshooting procedures specified in this section, perform the inspections specified in the applicable sequence of table 4-1 or table 5-1. After isolation, exchange the defective equipment for serviceable equipment from direct support maintenance.

5-9. Troubleshooting Chart.

Perform the procedures specified in Troubleshooting table 5-2 to isolate and correct a malfunction.

5-10. Equipment Removal and Installation.

The procedures required for removal of defective equipment and installation of serviceable equipment will depend on the configuration in which the AN/PRC-70 is connected. Refer to paragraphs 3-10 through 3-16 for configuration disassembly instructions. Disassemble the configuration only to the extent necessary to remove the defective equipment. Refer to paragraph 2-8 for equipment installation instructions.

Table 5-2. Organizational Maintenance Troubleshooting

Malfunction	Probable cause	Corrective action
1. AN/PRC-70 inoperative.	a. BB-651/U or BB-534/U, or power supply defective.	a. Replace battery. (Paragraph 2-8a.) or power supply.
	b. RT-1133/PRC-70 defective.	b. Replace RT-1133/PRC-70.
2. Incorrect transmission or reception in any configuration.	a. H-138B/U or H-251/U or KY-605/U defective.	a. Replace H-138B/U or H-251/U or KY-605/U.
	b. RT-1133/PRC-70 defective.	b. Replace RT-1133/PRC-70.
	c. BB-651/U or BB-534/U weak.	c. Replace battery.
3. Incorrect operation only in portable or stationary configurations.	a. AS-2974/PRC-70 or AS-2973/PRC-70 defective.	a. Replace AS-2974/PRC-70 or AS-2973/PRC-70.
	b. RT-1133/PRC-70 defective.	b. Replace RT-1133/PRC-70.
4. Incorrect operation only in semi-fixed configurations.	a. AS-2975/PRC-70 or AS-2973/PRC-70 defective.	a. Replace AS-2975/PRC-70 or AS-2973/PRC-70.
	b. RT-1133/PRC-70 defective.	b. Replace RT-1133/PRC-70.

Table 5-2. Organizational Maintenance Troubleshooting - Continued

Malfunction	Probable cause	Corrective action
5. Incorrect operation whenever voice security applique is connected.	a. Voice security applique defective.	a. Replace voice applique.
6. Incorrect burst CW or FSK modes of operation (other modes correct).	a. Keyer KY-468/GRA-71 (KE-8B). b. Defective burst CW cable. c. RT-1133/PRC-70 defective.	a. Replace Keyer. b. Replace burst CW cable. c. Replace RT-1133/PRC-70.
7. Incorrect retransmit mode operation.	a. MK-456/GRC defective. b. Antenna(s) defective. c. RT-1133/PRC-70 defective.	a. Replace MK-456/GRC. b. Replace antenna(s). c. Replace RT-1133/PRC-70.
8. Incorrect remote control mode operation.	a. C-2328/GRA-39 or C-2329/GRA-39 defective. b. Hookup wire defective. c. RT-1133/PRC-70 defective.	a. Replace C-2328/GRA-39 or C-2329/GRA-39. b. Replace hookup wire. c. Replace RT-1133/PRC-70.

Section VI. MAINTENANCE OF RECEIVER-TRANSMITTER
RT-1133/PRC-70

5-11. RT-1133/PRC-70 Corrective Maintenance.

Corrective maintenance of RT-1133/PRC-70 at the organizational maintenance level is limited to the following:

- a. Battery replacement (paragraph 2-8a.).
- b. Tightening of loose knobs, connectors, or terminals.
- c. Touch up of damaged paint (paragraph 5-3).

CHAPTER 6
MATERIEL USED IN CONJUNCTION
WITH MAJOR ITEM

Section I. GENERAL

- 6-1. Itemization of Auxiliary Equipment used for Fixed Configurations.
- a. RO-291/GSH-6 Signal Data Recorder Reproducer Set.
 - b. AN/GRA-71 Coderburst Transmission Group, which includes:
 - (1) KY-468/GRA-71(KE-8B) Automatic Keyer
 - (2) MX-4498/GRA-71(KA-3) Keyer Adapter
 - c. MK-456/GRC Retransmission Cable Kit
 - d. AN/GRA-39 Radio Set Control Group, which includes:
 - (1) C-2328/GRA-39 Remote Control Unit
 - (2) C-2329/GRA-39 Local Control Unit
 - e. PP-6355/U Battery Charger
 - f. PP-6148/U AC Power Supply/Battery Charger
 - g. BB-651/U Battery (Nicad)
 - h. BB-534/U Battery (Silver-Zinc)

- i. KY-605/U Telegraph Key
- j. H-138B/U Handset
- k. H-251/U Headset

Section II. INSTALLATION INSTRUCTIONS FOR
FIXED CONFIGURATIONS

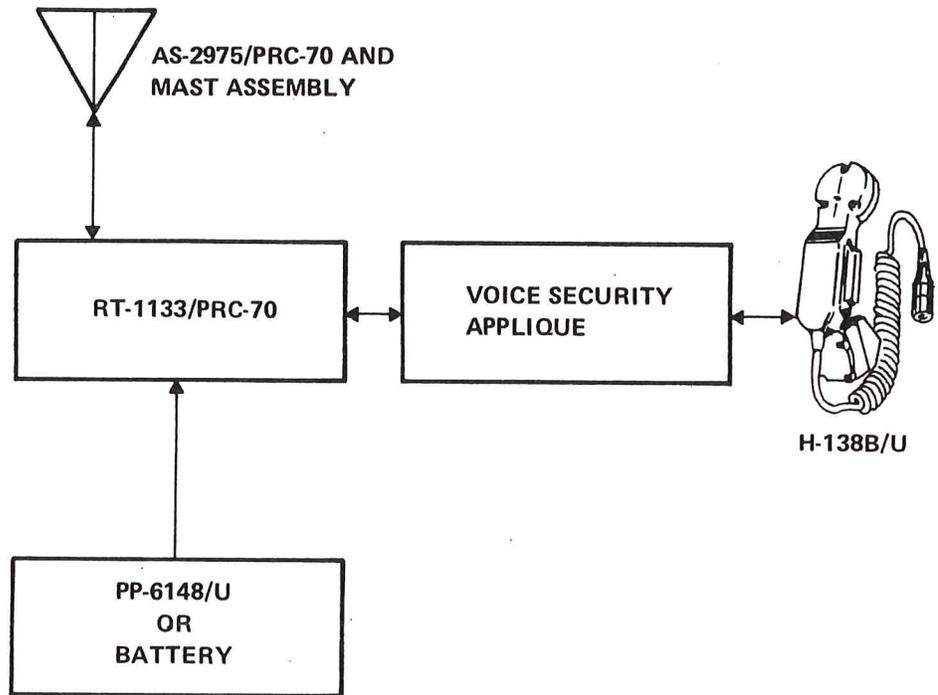
6-2. Fixed Voice Configuration.

a. Equipment Setup. The AN/PRC-70 can be operated in secure or non-secure voice modes from fixed locations. Figure 6-1 (Sheet 1, Part A) illustrates this configuration which includes the following items:

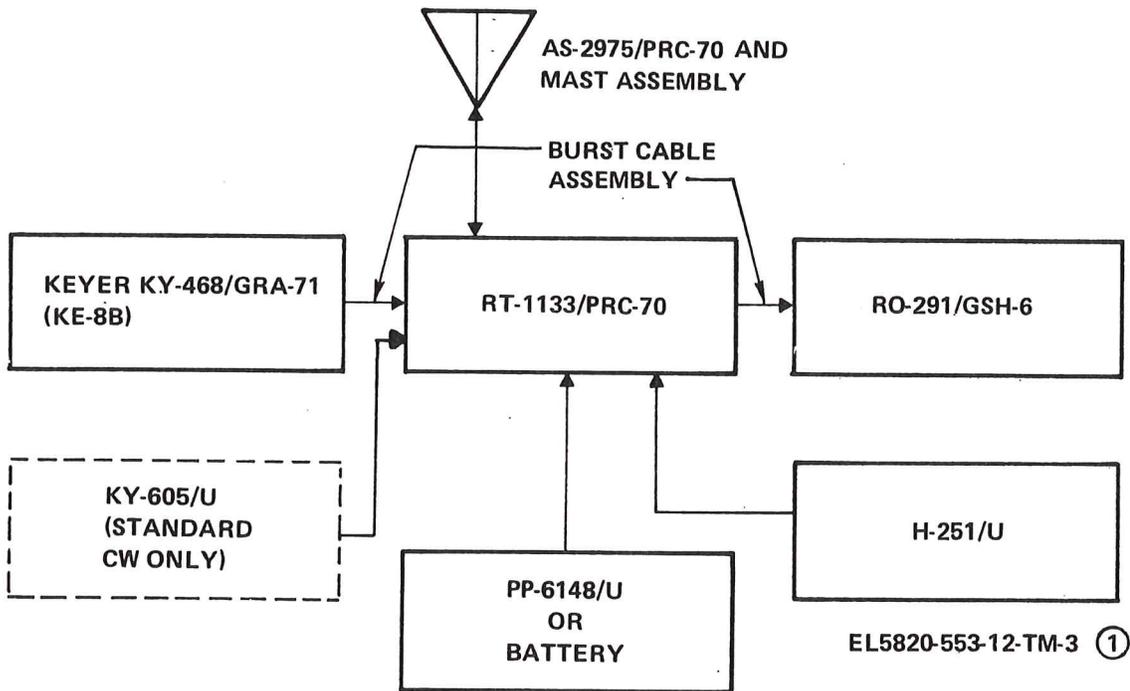
- (1) Receiver-Transmitter RT-1133/PRC-70
- (2) AC Power Supply PP-6148/U (or battery)
- (3) Handset H-138B/U
- (4) Doublet Antenna Assembly AS-2975/PRC-70
- (5) Mast Assembly
- (6) Voice Security Applique (optional)

b. Assembly. Proceed as follows:

- (1) Mount doublet antenna on mast assembly as directed in paragraph 2-8e.
- (2) Connect RT unit to AC Power Supply PP-6148/U (if used).
- (3) Remove shorting cap from X-MODE connector on RT unit.
- (4) Connect voice security applique to X-MODE connector.
- (5) Connect Handset H-138B/U to voice security applique.

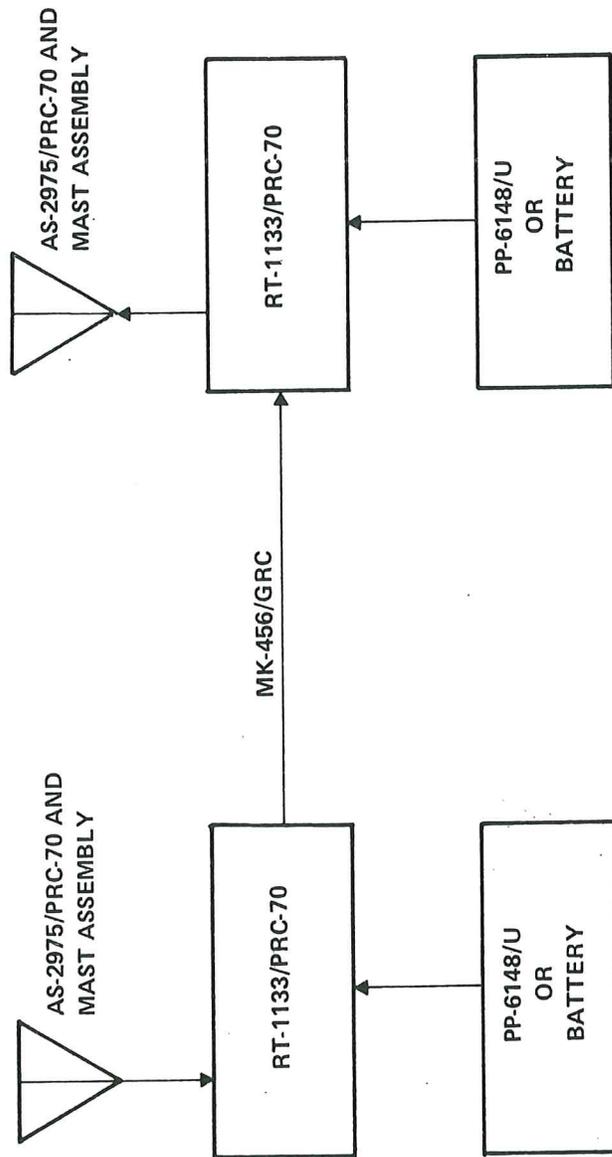


A. FIXED VOICE CONFIGURATION (TYPICAL)



B. FIXED CW OR FSK CONFIGURATION (TYPICAL)

Figure 6-1. Fixed location configurations (sheet 1 of 2)



C. RETRANSMIT CONFIGURATION (TYPICAL)

EL5820-553-12-TM-3 ②

Figure 6-1. Fixed location configurations (sheet 2 of 2)

c. Operating Instructions.

<u>Control</u>	<u>Setting</u>
POWER switch	OFF
MODE switch	Operating mode desired
VOLUME control	Midrange
SQUELCH switch	OFF
FREQUENCY, MHz controls	Operating frequency desired

- (2) No initial adjustments of the AN/PRC-70 are necessary.
- (3) Start the equipment in accordance with the following procedures.
 - (a) Set RT-1133/PRC-70 POWER switch to RCV ONLY.
 - (b) Adjust RT-1133/PRC-70 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.

- (c) Set RT-1133/PRC-70 POWER switch to TUNE momentarily and release. Allow 10 seconds for tuning to complete.
- (d) Set RT-1133/PRC-70 POWER switch to HI PWR or LO PWR, as required.
- (e) Set RT-1133/PRC-70 SQUELCH switch to ON. (If desired.)

(f) Start voice security equipment as directed in applicable Technical Manuals.

NOTE

Each time the RT-1133/PRC-70 FREQUENCY MHz controls are reset, momentarily set the POWER switch to TUNE and release. The set automatically tunes within 10 seconds. LO PWR may be selected after this time.

(4) Voice Mode Operation. Transmit in any of the voice modes by pressing the H-138B/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.

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

(a) Set RT-1133/PRC-70 POWER switch to OFF.

(b) Shut down Voice security equipment as directed in applicable Technical Manuals.

6-3. Fixed CW or FSK Configuration.

a. Equipment Setup. The AN/PRC-70 can be operated in standard or burst CW modes or burst FSK mode from fixed locations. Figure 6-1 (sheet 1, Part B) illustrates this configuration which includes the following items:

- (1) Receiver-Transmitter RT-1133/PRC-70
- (2) AC Power Supply PP-6148/U (or battery)
- (3) Telegraph Key KY-605/U
- (4) Headset H-251/U
- (5) Coderburst Transmission Group AN/GRA-71
- (6) Signal Data Recorder Reproducer Set RO-291/GSH-6
- (7) Doublet Antenna AS-2975/PRC-70
- (8) Mast Assembly
- (9) Burst Cable Assembly

b. Assembly. Proceed as follows:

- (1) Mount doublet antenna on mast assembly as directed in paragraph 2-8e.
- (2) Connect RT unit to AC power supply (if used).
- (3) Connect Automatic Keyer KY-468/GRA-71(KE-8B) to RXMT connector of RT unit. Keyer Adapter MX-4498/GRA-71(KA-3) is not required.
- (4) Connect Signal Data Recorder Reproducer Set RO-291/GSH-6 to AUDIO connector of RT unit.

c. Operating Instructions.

- (1) Preliminary Settings
 - (a) Set controls on RT-1133/PRC-70 as follows:

<u>Control</u>	<u>Setting</u>
POWER switch	OFF
MODE switch	Operating mode desired
VOLUME control	Midrange
SQUELCH switch	OFF
FREQUENCY, MHz controls	Operating frequency desired

(b) Set controls on all ancillary equipment (KY-468/GRA-71 (KE-8B), RO-291/GSH-6, etc.) to preliminary settings listed in applicable Technical Manuals.

(2) Initial Adjustments. No initial adjustments of the AN/PRC-70 are necessary. However, when ancillary equipment (KY-468/GRA-71(KE-8B), etc.) is connected to the AN/PRC-70, the ancillary equipment may require initial adjustment prior to operation. Refer to the applicable Technical Manuals for initial adjustment of ancillary equipment.

(3) Start the equipment in accordance with the following procedures.

(a) Set RT-1133/PRC-70 POWER switch to RCV ONLY.

(b) Set RO-291/GSH-6 ON-OFF switch to ON.

(c) Adjust RT-1133/PRC-70 VOLUME control for suitable audio output level. If RO-291/GSH-6 is connected, adjust RT-1133/PRC-70 VOLUME control for midpoint indication on recorder CAL indicator.

NOTE

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

(d) Set RT-1133/PRC-70 POWER switch to TUNE momentarily and release. Allow 10 seconds for tuning to complete.

(e) Set RT-1133/PRC-70 POWER switch to HI PWR or LO PWR, as required.

(f) Set RT-1133/PRC-70 SQUELCH switch to ON. (If desired.)

(4) Standard CW Operation. To transmit in the standard CW mode, key the RT-1133/PRC-70 with KY-605/U.

NOTE

The AN/PRC-70 will automatically switch to transmit and remain in transmit during the pauses between characters. The AN/PRC-70 will return to the receive mode after a pause of about 1.2 seconds with the key open.

(5) 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-71(KE-8B).

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

(6) Burst CW Reception. Burst CW messages can be received either automatically or manually. Automatic reception occurs when the distant operator transmits the identity tone for five seconds to start RO-291/GSH-6. To receive and record burst CW manually, proceed as follows:

(a) Release RO-291/GSH-6 LOCK button.

(b) Depress RO-291/GSH-6 MANUAL RELEASE button.

(c) When tape stops, push in RO-291/GSH-6 MANUAL RESET button.

(d) Set RO-291/GSH-6 ON-OFF switch to OFF and rewind spring motor.

(7) Burst FSK Operation. Operation in the burst FSK mode is identical to burst CW (paragraph 6-3c. (5) and (6)) except RT-1133/PRC-70 MODE switch is set to FSK.

- (8) To shut down the equipment, proceed as follows:
 - (a) Set RT-1133/PRC-70 POWER switch to OFF.
 - (b) Set RO-291/GSH-6 ON-OFF switch to OFF.

6-4. Retransmit Configuration.

a. Equipment Setup. Two AN/PRC-70 Radio Sets can be operated in tandem for retransmission of received voice signals. Figure 6-1 (sheet 2) illustrates this configuration which includes the following items.

- (1) Two Radio Sets RT-1133/PRC-70
- (2) Two AC Power Supplies PP-6148/U (or two batteries)
- (3) Retransmission Cable Kit MK-456/GRC
- (4) Two Doublet Antennas AS-2975/PRC-70 (or two of the other antennas)
- (5) Two Mast Assemblies

b. Assembly. Perform the following steps:

- (1) Mount the two doublet antennas on the two mast assemblies (refer to paragraph 2-8e.).

NOTE

The Doublet Antennas will operate satisfactorily with the two antennas separated by a minimum of 40 feet. The two antennas should be separated as far as space and lead length allows. If possible, the antennas should be run at right angles to each other.

- (2) Connect MK-456/GRC Retransmission Cable Kit between the RXMT connectors on the two RT units.

c. Operating Instructions

- (1) Set controls on RT-1133/PRC-70 as follows:

NOTE

For retransmit operation, set controls on both RT-1133/PRC-70's to the following settings:

<u>Control</u>	<u>Setting</u>
POWER switch	OFF
MODE switch	Operating mode desired
VOLUME control	Midrange
SQUELCH switch	OFF
FREQUENCY, MHz controls	Operating frequency desired

- (2) Start the equipment in accordance with the following procedures.
- (a) Set RT-1133/PRC-70 POWER switch to RCV ONLY.
 - (b) Adjust RT-1133/PRC-70 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.

- (c) Set RT-1133/PRC-70 POWER switch to TUNE momentarily and release. Allow 10 seconds for tuning to complete.
- (d) Set RT-1133/PRC-70 POWER switch to HI PWR or LO PWR, as required.
- (e) Set RT-1133/PRC-70 SQUELCH switch to ON.
- (f) For retransmit mode, set transmitting RT-1133/PRC-70 SQUELCH switch to RXMT.

(3) Transmit in any of the voice modes by pressing the H-138B/U Handset push-to-talk button and speaking into the microphone.

(4) To transmit in the standard CW mode, key the RT-1133/PRC-70 with KY-605/U while using H-251/U Headset.

NOTE

The AN/PRC-70 will automatically switch to transmit and remain in transmit during the pauses between characters. The AN/PRC-70 will return to the receive mode after a pause of about 1.2 seconds with the key open.

- (5) To shut down the equipment, set both RT-1133/PRC-70

POWER switches to OFF.

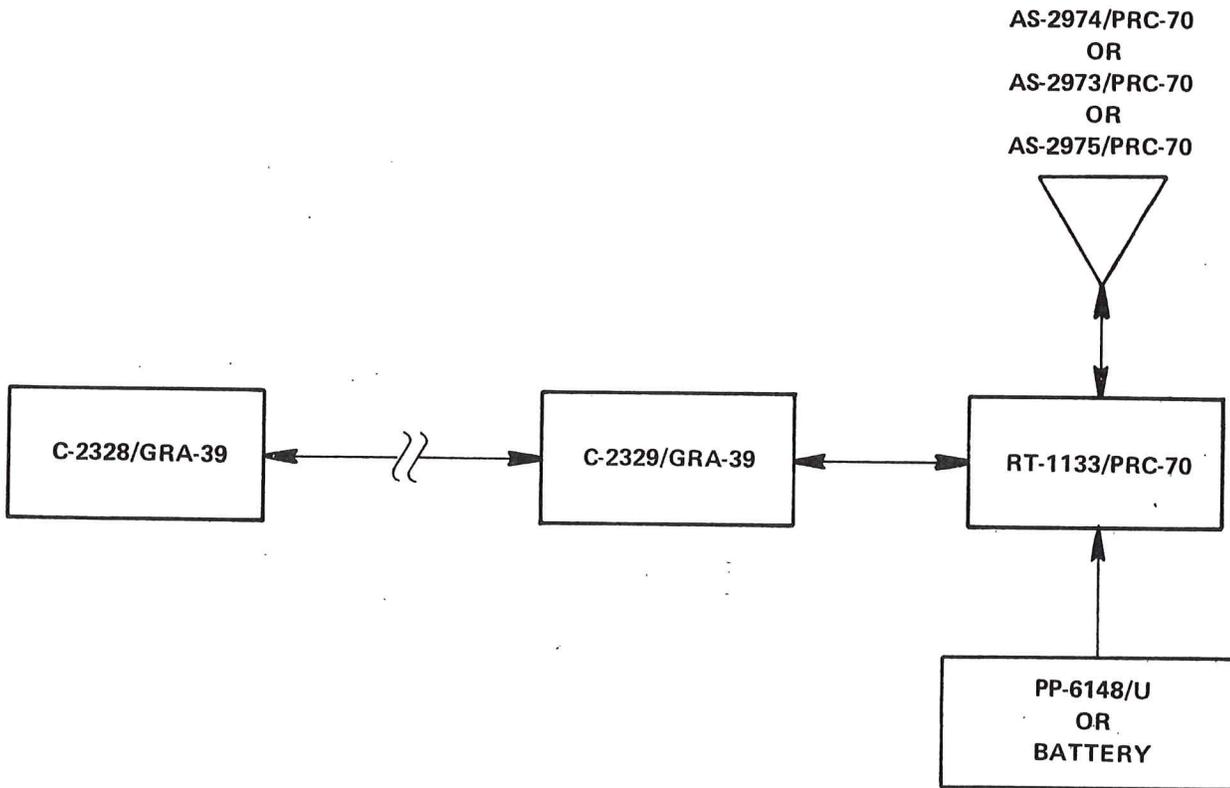
6-5. Remote Control Configuration.

a. Equipment Setup. The AN/PRC-70 can be operated remotely in any of the stationary, semi-fixed, or fixed configurations. Figure 6-2 illustrates this configuration which includes the following items:

- (1) Receiver-Transmitter RT-1133/PRC-70
- (2) AC Power Supply PP-6148/U (or battery)
- (3) Radio Set Remote Control Group AN/GRA-39 components.
- (4) Any of the AN/PRC-70 antenna assemblies.

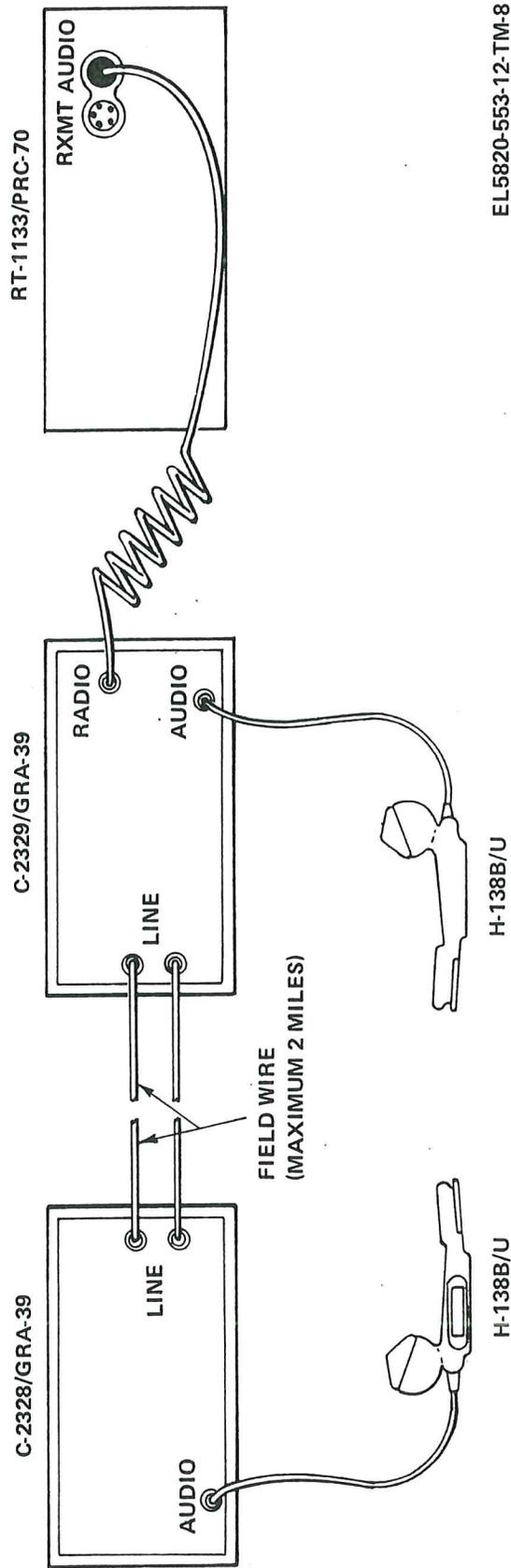
b. Assembly. Install the equipment (see figure 6-3) in the following manner:

- (1) Select one of the AN/PRC-70 antenna assemblies and install it as directed in Chapter 2, Section IV.



EL5820-553-12-TM-4

Figure 6-2. Remote control configuration



EL5820-553-12-TM-8

Figure 6-3. Remote control installation

(2) Remove RADIO cable connector from retaining clip on front panel of C-2329/GRA-39 Radio Set Control Unit.

(3) Connect RADIO cable to AUDIO connector on RT unit.

(4) For local operation connect H-138B/U Handset to AUDIO connector on C-2329/GRA-39 Radio Set Control Unit.

(5) Connect a length of field wire (up to 2 miles) between C-2329/GRA-39 Local Control Unit and C-2328/GRA-39 Remote Control Unit, using LINE connectors on each unit.

(6) For remote operation connect H-138B/U Handset to AUDIO connector on C-2328/GRA-39 Remote Control Unit.

c. Operating Instructions.

(1) Preliminary settings.

(a) Set controls on RT-1133/PRC-70 as follows:

<u>Control</u>	<u>Setting</u>
POWER switch	OFF
MODE switch	Operating mode desired
VOLUME control	Midrange
SQUELCH switch	OFF
FREQUENCY, MHz controls	Operating frequency desired

(b) Set controls on C-2328/GRA-39, and C-2329/GRA-39 to preliminary settings listed in applicable Technical Manuals.

(2) No initial adjustments of the AN/PRC-70 are necessary. However, when ancillary equipment (C-2328/GRA-39, C-2329/GRA-39) is connected to the AN/PRC-70, the ancillary equipment may require initial adjustment prior to operation. Refer to the applicable Technical Manuals for initial adjustment of ancillary equipment.

(3) Start the equipment in accordance with the following procedures:

(a) Set RT-1133/PRC-70 POWER switch to RCV ONLY.

(b) Set C-2329/GRA-39 POWER switch to ON and BUZZER VOLUME control to midrange.

(c) Set C-2328/GRA-39 VOLUME and BUZZER VOLUME controls to mid range.

(d) Adjust RT-1133/PRC-70 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.

(e) Set RT-1133/PRC-70 POWER switch to TUNE momentarily and release. Allow 10 seconds for tuning to complete.

(f) Set RT-1133/PRC-70 POWER switch to HI PWR or LO PWR, as required.

(g) Set RT-1133/PRC-70 SQUELCH switch to ON.

(4) For remote control telephone communications only, proceed as follows:

WARNING

DO NOT TOUCH LINE binding posts, while pressing RINGER button on remote control unit. A shock hazard is present at LINE binding posts during RINGER operation.

(a) Press RINGER button on C-2328/GRA-39 or C-2329/GRA-39 to gain attention of distant operator.

(b) Set C-2328/GRA-39 TEL-RAD-RAD/SPKR switch to TEL.

(c) Set C-2329/GRA-39 TEL-REMOTE-RADIO switch to TEL.

(d) Press H-138B/U Handset push-to-talk button to talk to other operator and release to listen.

(5) Remote control AN/PRC-70 operation from C-2328/GRA-39.

For remote control in this mode, proceed as follows:

NOTE

The TEL-REMOTE-RADIO switch on C-2329/
GRA-39 must be set to REMOTE.

(a) On C-2328/GRA-39, set TEL-RAD-RAD/SPKR switch to
either RAD or RAD/SPKR.

(b) Adjust VOLUME control to desired listening level in H-138B/U
Handset or on loudspeaker.

(c) Press H-138B/U Handset push-to-talk button to transmit
and release to receive.

(6) Local control AN/PRC-70 operation from C-2329/GRA-39.

For this mode of operation, proceed as follows:

(a) On C-2329/GRA-39, set TEL-REMOTE-RADIO switch to
RADIO.

(b) Press H-138B/U Handset push-to-talk button to transmit
and release to receive.

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

(a) Set RT-1133/PRC-70 POWER switch to OFF.

(b) Set C-2329/GRA-39 POWER switch to OFF.

(c) Set C-2328/GRA-39 VOLUME control to OFF.

APPENDIX A

REFERENCES

Publication	Title
DA PAM 310-4	Index of Technical Manuals, Technical Bulletins, Supply Manuals (types 7, 8, and 9), Supply Bulletins, and Lubrication Orders
DA PAM 310-6	Index of Supply Manuals (other than types 7, 8, and 9)
DA PAM 310-7	Index of Modification Work Orders
SB11-573	Painting and Preservation Supplies Available for Field Use for Electronics Command Equipment
SB38-100	Preservation, Packaging, Packing, and Marking Materials, Supplies, and Equipment Used by the Army
SB700-20	Army Adopted and Other Items of Materiel Selected for Authorization
SB700-20-1	List of Reportable Items, Army Equipment Status Reporting System
TB746-10	Field Instructions for Painting and Preserving Electronics Command Equipment

Publication	Title
TM11-5815-313-12	Operator and Organizational Maintenance Manual, Recorder-Reproducer Set, Signal Data RO-291/ GSH-6
TM11-5820-477-12	Organizational Maintenance Manual, Radio Set Con- trol Groups AN/GRA-39 and AN/GRA-39A
TM11-5820-553-20P	Organizational Maintenance Repair Parts and Special Tools List, Radio Set AN/PRC-70
TM11-5835-224-12	Operator and Organizational Maintenance Manual, Codburst Transmission Group AN/GRA-71
TM38-750	The Army Maintenance Management System (TAMMS)
TM740-90-1	Administrative Storage of Equipment
TM750-244-2	Procedures for Destruction of Electronics Material to Prevent Enemy Use (Electronics Command)

APPENDIX B

MAINTENANCE ALLOCATION CHART

Section I. INTRODUCTION

B-1. General.

This appendix provides a summary of the maintenance operations covered in the equipment literature. It authorizes categories of maintenance for specific maintenance functions or repairable items and components and the tools and equipment required to perform each function. This appendix may be used as an aid in planning maintenance operations.

B-2. Maintenance Functions.

Maintenance functions are limited to the following definitions:

- a. Inspect. To determine serviceability of an item by comparing its physical, mechanical, and electrical characteristics with established standards.
- b. Test. To verify serviceability and to detect electrical or mechanical failure by use of test equipment.
- c. Service. To clean, to preserve, to charge, and to add fuel, lubricants, cooling agents, and air.
- d. Adjust. To rectify to the extent necessary to bring into proper operating range.

e. Align. To adjust specified variable elements of an item to bring to optimum performance.

f. Calibrate. To determine the corrections to be made in the readings of instruments or test equipment used in precise measurement. Consists of the comparison of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared with the certified standard.

g. Install. To set up for use in an operational environment such as an emplacement, site, or vehicle.

h. Replace. To replace unserviceable items with serviceable like items.

i. Repair. Those maintenance operations necessary to restore an item to serviceable condition through correction of material damage or a specific failure. Repair may be accomplished at each category of maintenance.

j. Overhaul. Normally, the highest degree of maintenance performed by the Army in order to minimize time work in process is consistent with quality and economy of operation. It consists of that maintenance necessary to restore an item to completely serviceable condition as prescribed by maintenance standards in technical publications for each item of equipment. Overhaul normally does not return an item to like new, zero mileage, or zero hour condition.

k. Rebuild. The highest degree of materiel maintenance. It consists of restoring equipment as nearly as possible to new condition in accordance with original manufacturing standards. Rebuild is performed only when required by operational considerations or other paramount factors and then only at the depot maintenance category. Rebuild reduces to zero the hours or miles the equipment, or component thereof, has been in use.

l. Symbols. The uppercase letter placed in the appropriate column indicates the lowest level at which that particular maintenance function is to be performed.

B-3. Explanation of Format for Maintenance Allocation Chart.

Purpose and use of the Maintenance Allocation Chart, section II, are as follows:

a. Column 1, Group Number. Column 1 lists group numbers, the purpose of which is to identify components, assemblies, subassemblies and modules with the next higher assembly.

b. Column 2, Functional Group. Column 2 lists the noun names of components, assemblies, subassemblies and modules on which maintenance is authorized.

c. Column 3, Maintenance Functions. Column 3 lists the maintenance category at which performance of the specific maintenance function is authorized. Authorization to perform a function at any category also includes authorization to perform that function at higher categories. The codes used represent the various maintenance categories as follows:

CODE	MAINTENANCE CATEGORY
C	Operator/Crew
O	Organizational Maintenance
F	Direct Support Maintenance
H	General Support Maintenance
D	Depot Maintenance

d. Column 4, Tools and Equipment. Column 4 specifies, by code, those tools and test equipment required to perform the designated function. The numbers appearing in this column refer to specific tools and test equipment which are identified under Tool and Test Equipment Requirements, section III.

e. Column 5, Remarks. Self explanatory.

B-4. Explanation of Format for Tool and Test Equipment Requirements.

The columns in the Tool and Test Equipment Requirements Chart, section III, are as follows:

a. Tools and Equipment Code. The numbers in this column coincide with the numbers used in the Tools and Equipment column of the Maintenance Allocation Chart, section II. The numbers indicate the applicable tool or equipment used for the maintenance category.

b. Maintenance Category. The codes in this column indicate the maintenance category normally allocated to the facility.

c. Nomenclature. This column lists tools, test, and maintenance equipment required to perform the maintenance functions.

d. Federal Stock Number. This column lists the Federal Stock Number of the specific tool or test equipment.

e. Tool Number. Not used.

SECTION II

MAINTENANCE ALLOCATION CHART
FOR
RADIO SET AN/PRC-70

(1) GROUP NO.	(2) FUNCTIONAL GROUP	(3) MAINTENANCE FUNCTION										(4) TOOLS AND EQUIPMENT	(5) REMARKS	
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
	Radio Set AN/PRC-70	C											None	Daily Checks and Services. a. Check to see that equipment required for mission is complete. b. Remove dust, dirt and moisture from equipment surfaces. c. Check all controls for looseness and other damage. d. Inspect battery for leakage, corrosion and swelling. e. Remove battery when radio set is not to be used for 1 or more days. f. During operational check, check to see that mechanical action of each control is smooth and free from external and internal binding.

SECTION II - Continued
 MAINTENANCE ALLOCATION CHART
 FOR
 RADIO SET AN/PRC-70

(1) GROUP NO.	(2) FUNCTIONAL GROUP	(3) MAINTENANCE FUNCTION										(4) TOOLS AND EQUIPMENT	(5) REMARKS	
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
	Radio Set AN/PRC-70 - Continued	0											8	Weekly Checks and Services. a. Inspect cables and cords for fraying, cuts, kinks and broken insulation. b. Inspect canvas items for mildew and tears. c. Inspect antennas for damage, loose fit, and corrosion. d. Inspect battery case and RT-1133/PRC-70 case for damage, loose fit and corrosion.

SECTION II - Continued
 MAINTENANCE ALLOCATION CHART
 FOR
 RADIO SET AN/PRC-70

(1) GROUP NO.	(2) FUNCTIONAL GROUP	(3) MAINTENANCE FUNCTION										(4) TOOLS AND EQUIPMENT	(5) REMARKS	
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
	Radio Set AN/PRC-70 - Continued	○		○ ○									8	Quarterly Checks and Services. a. Check to see that operator and organizational maintenance manuals are on hand. b. Spot-paint bare metal surfaces. c. Clean surfaces and put a thin coat of graphite grease (FSN 9150-753-4648) on threads of male antenna sections and elements.

SECTION II - Continued
 MAINTENANCE ALLOCATION CHART
 FOR
 RADIO SET AN/PRC-70

(1) GROUP NO.	(2) FUNCTIONAL GROUP	(3) MAINTENANCE FUNCTION										(4) TOOLS AND EQUIPMENT	(5) REMARKS	
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL			REBUILD
	Radio Set AN/PRC-70 - Continued	H		H									8	Semi-Annual Checks and Services. a. Internal visual and mechanical inspection except for modules. b. Clean and lubricate preformed packing, gaskets, and O-rings, with insulating silicon compound (FSN6850-880-7616). c. All visual and mechanical inspection plus shop support. Troubleshooting by visual means to determine proper operation of radio set. Troubleshooting (external) to locate faulty receiver-transmitter, antenna, power pack, audio accessories, and cable assemblies. Troubleshooting to locate faulty modules in receiver-transmitter. Performance testing after module replacement, including transmitter output and distortion, receiver input and output.
			C										None	
			O										4, 8, plus substitution of known service-able items.	
			F										1 thru 10	
			F										1, 3, 5, 6, 7, 9, 10	

SECTION II - Continued
 MAINTENANCE ALLOCATION CHART
 FOR
 RADIO SET AN/PRC-70

(1) GROUP NO.	(2) FUNCTIONAL GROUP	(3) MAINTENANCE FUNCTION										(4) TOOLS AND EQUIPMENT	(5) REMARKS		
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL			REBUILD	
1A1A14	1st. IF Selectivity													8	By replacement.
1A1A15	1st. IF AGC and Gain													8	By replacement.
1A1A16	2nd. Mixer													8	By replacement.
1A1A17	2nd. IF													8	By replacement.
1A1A18	Pump (VFO)													8	By replacement.
1A1A19	IF Selectivity													8	By replacement.
1A1A20	DC Control													8	By replacement.
1A1A21	Modulator Squelch													8	By replacement.
1A1A22	Receiver IF and Detector													8	By replacement.
1A1A23	Audio Assembly													8	By replacement.
1A1A24	Coupler Network													8	By replacement.
1A1A25	ALC Assembly													8	By replacement.
1A1A26	Bandswitch													8	By replacement.
1A1A27	Detector													8	By replacement.
1A1A28	Bandpass Filter													8	By replacement.
1A1FL1	Lowpass Filter													8	By replacement.

SECTION II - Continued
 MAINTENANCE ALLOCATION CHART
 FOR
 RADIO SET AN/PRC-70

(1) GROUP NO.	(2) FUNCTIONAL GROUP	(3) MAINTENANCE FUNCTION										(4) TOOLS AND EQUIPMENT	(5) REMARKS			
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL			REBUILD		
1A1A29	Driver and Power Amp														8	By replacement.
1A1A30	Case Assembly														8	By replacement of non-captive (removable) piece parts and subassemblies.
1A1A31	REC/EXCIT Intercon. BD														8	By replacement.
1A1A32	Coupler Intercon. BD														8	By replacement.
1MP1	Battery Case CY-7386/PRC-70														8	By replacement.
1A2	Antenna AS-2975/PRC-70								C						None	By replacement.
1A3	Antenna AS-2974/PRC-70								C						None	By replacement.
1A4	Antenna AS-2973/PRC-70								C						None	By replacement.
1A5	Mast Assembly SMD745650								C						None	By replacement.
1A6	Carrying Bags, Two-Man Load SMD745651														8	By replacement.
1A7	Carrying Kit SMD745652														None	By replacement.
1A8	Cable Assy. Burst CW SMD745653														None	By replacement.

SECTION II - Continued
 MAINTENANCE ALLOCATION CHART
 FOR
 RADIO SET AN/PRC-70

(1) GROUP NO.	(2) FUNCTIONAL GROUP	(3) MAINTENANCE FUNCTION										(4) TOOLS AND EQUIPMENT	(5) REMARKS	
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
1A11	(Nomenclature to be determined) Accessory Carrying Bag SMD745656												None	By replacement.

SECTION III
TOOL AND TEST EQUIPMENT
REQUIREMENTS

TOOLS AND EQUIPMENT CODE	MAINTENANCE CATEGORY	NOMENCLATURE	FEDERAL STOCK NUMBER	TOOL NUMBER
1	F, H	Voltmeter, Electronic AN/URM-145	6625-973-3986	
2	F, H	Voltmeter, Electronic AN/USM-98	6625-753-2115	
3	F, H	Generator, Signal AN/GRM-50	6625-868-8353	
4	O, F, H	Multimeter TS-352B/U	6625-242-5023	
5	F, H	Oscilloscope AN/USM-281A	6625-228-2201	
6	F, H	Counter, Electronic AN/USM-207	6625-911-6386	
7	F, H	Wattmeter AN/URM-120	6625-813-8430	
8	O, F, H	Tool Kit, Electronic Equipment TK-105/G	5180-610-8177	
9	F, H	Oscillator, Audio TS-421/U	6625-669-0228	
10	F, H	Generator, Signal AN/USM-44A	6625-669-4031	
11	F, H	Generator, Signal AN/URM-103	6625-868-8352	
12	F, H	Analyzer, Distortion AN/URM-180	6625-089-4227	
13	F, H	Power Supply, DC HR 40 - 7.5B PP4838/U	6625-931-6793	
14	F, H	Attenuator, Variable, 50 ohm CN796/U	5985-831-5991	

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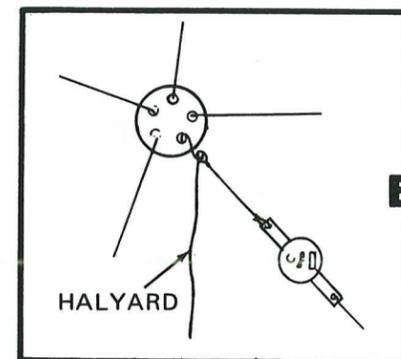
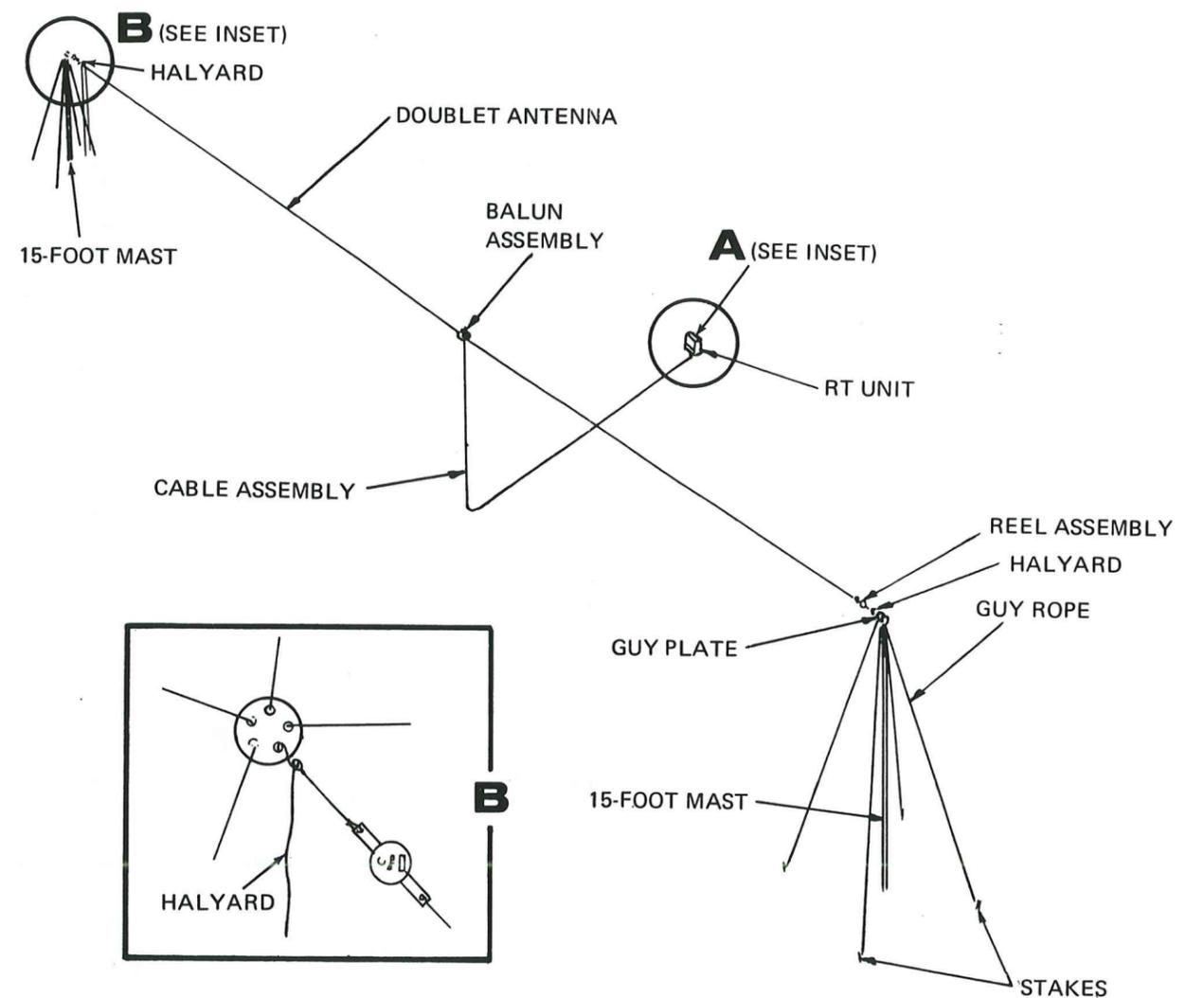
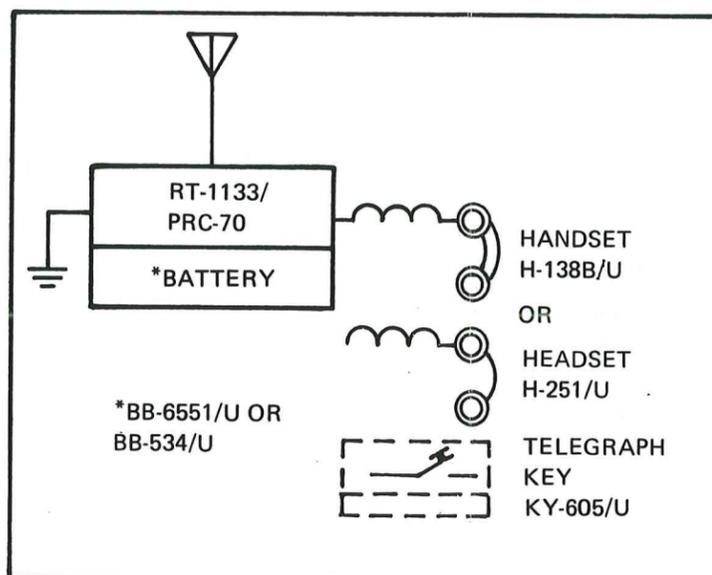
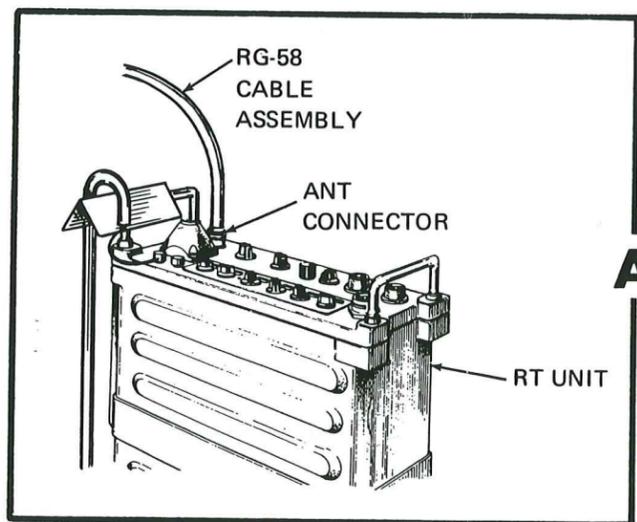
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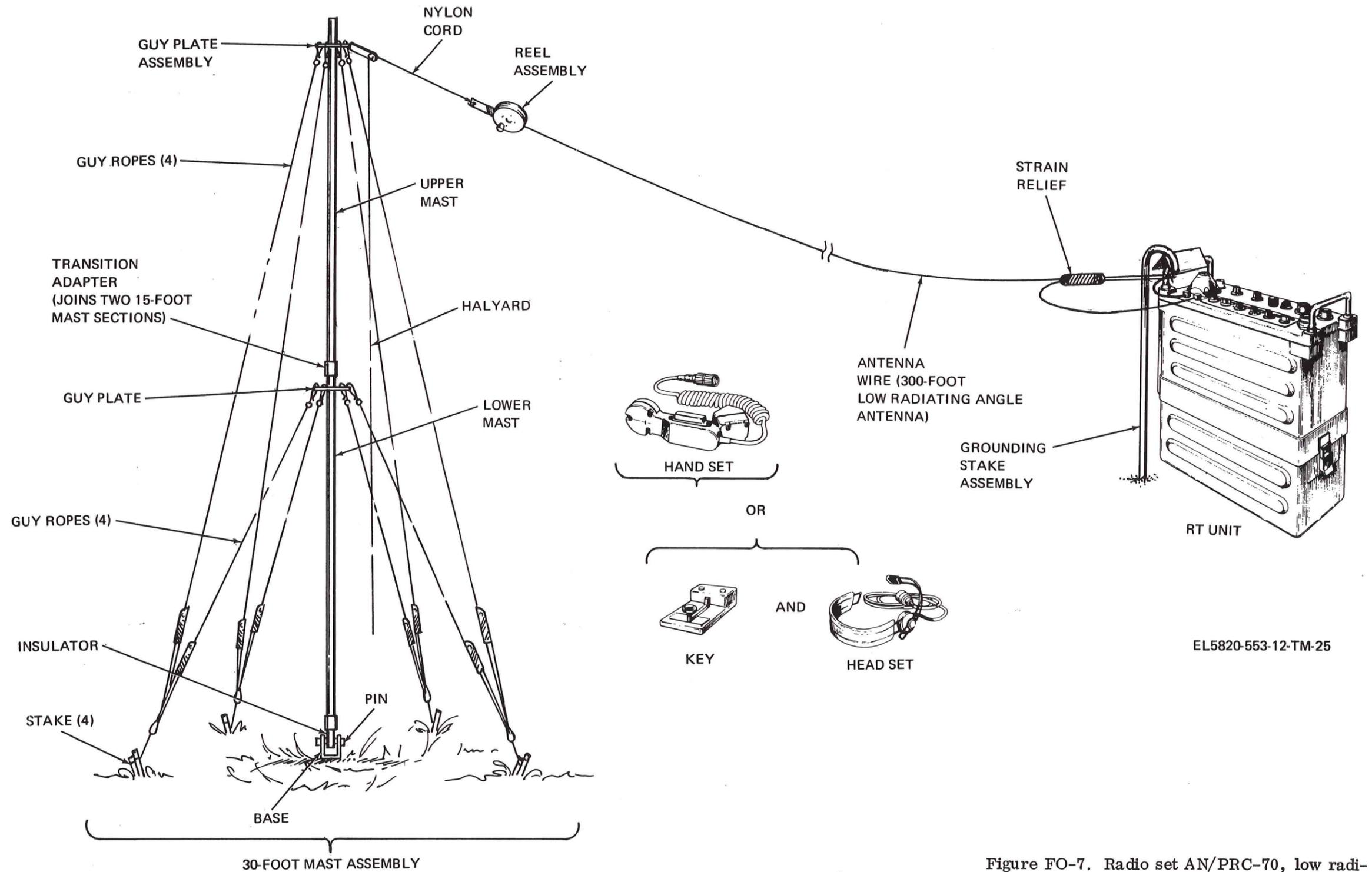
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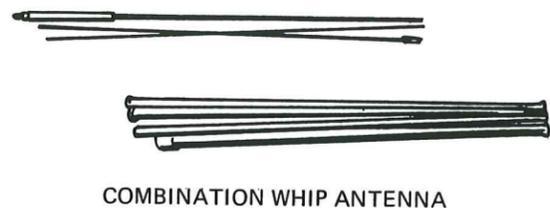
EL5820-553-12-TM-7

Figure FO-6. Radio set AN/PRC-70, two-man, doublet antenna, two-mast, semi-fixed configuration (voice or cw)

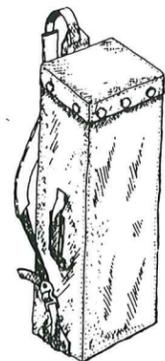


EL5820-553-12-TM-25

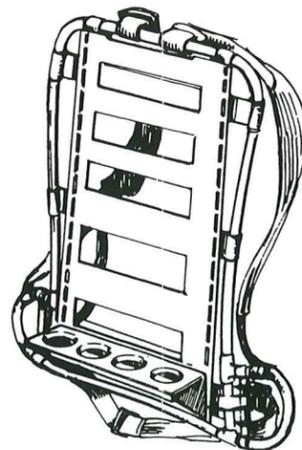
Figure FO-7. Radio set AN/PRC-70, low radiating angle antenna, 30-foot mast, semi-fixed configuration (voice or cw)



COMBINATION WHIP ANTENNA



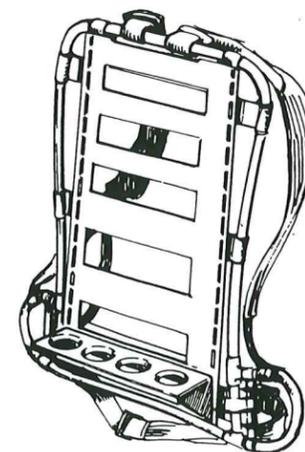
ACCESSORY CARRYING BAG



CARRYING KIT

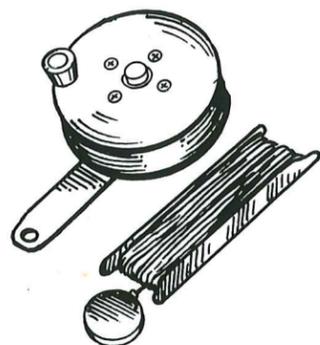


ACCESSORY CARRYING BAG



CARRYING KIT

ONE-MAN VOICE CONFIGURATION



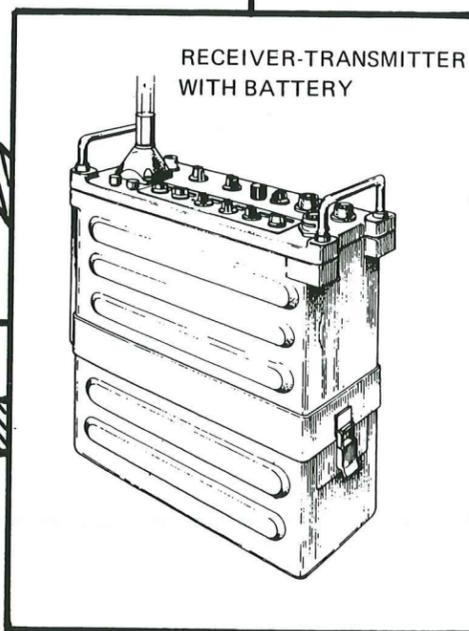
300 FT. LOW RADIATING ANGLE ANTENNA



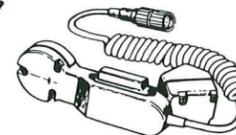
KEY



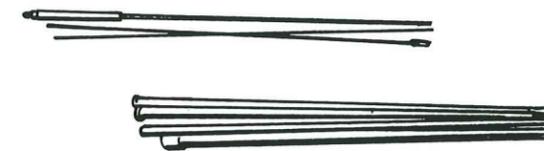
HEAD SET



RECEIVER-TRANSMITTER WITH BATTERY



HAND SET



COMBINATION WHIP ANTENNA

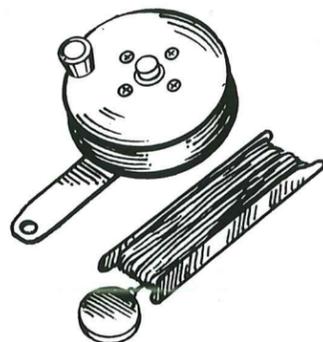
ONE-MAN CW CONFIGURATION



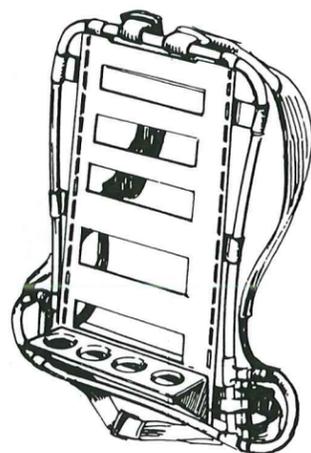
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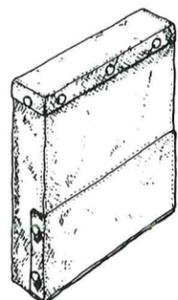
HEAD SET



300 FT. LOW RADIATING ANGLE ANTENNA



CARRYING KIT

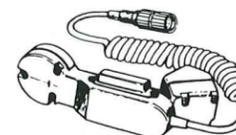


ANCILLARY CARRYING BAG

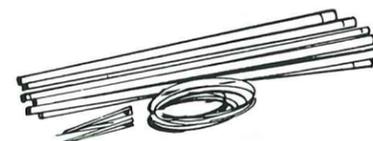


ACCESSORY CARRYING BAG

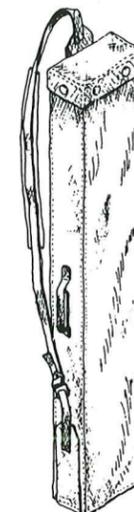
TWO-MAN CONFIGURATIONS (VOICE AND CW)



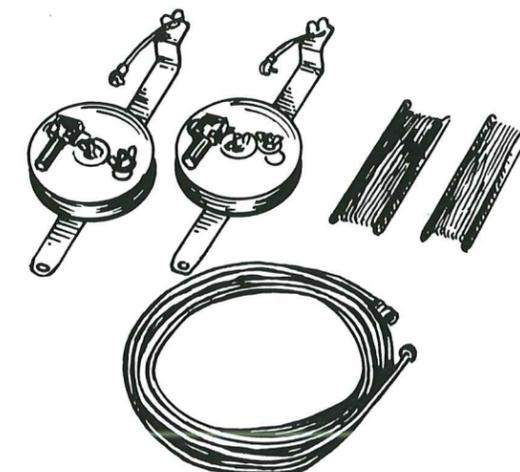
HAND SET



MAST ASSEMBLY



MAST CARRYING BAG



HALF WAVE DOUBLET ANTENNA

NOTE: NOT DRAWN TO SCALE

EL5820-553-12-TM-2

Figure FO-4. One- and two-man load configurations

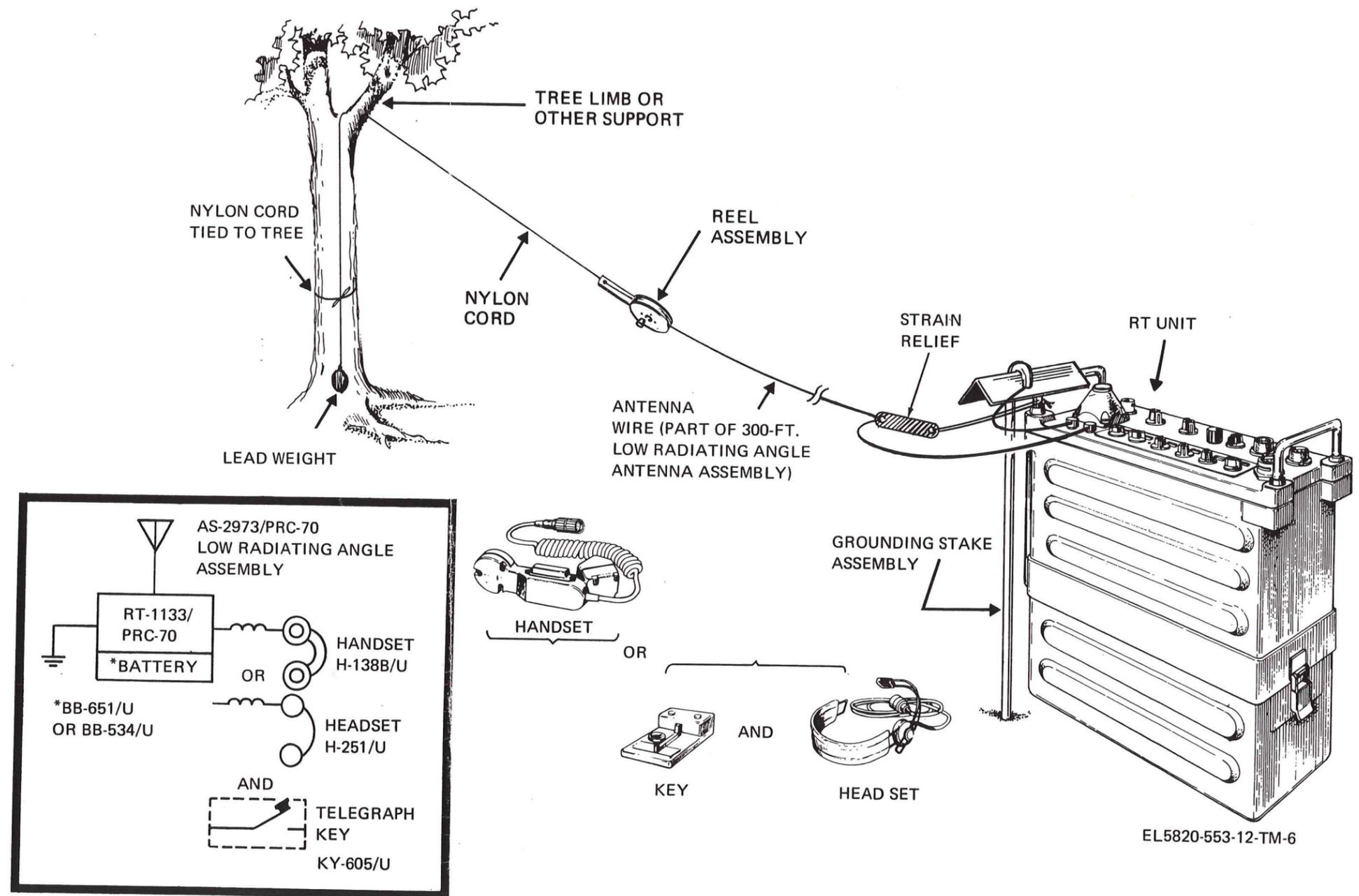
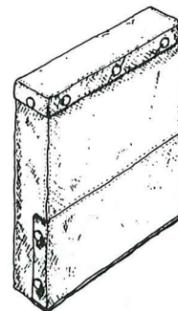
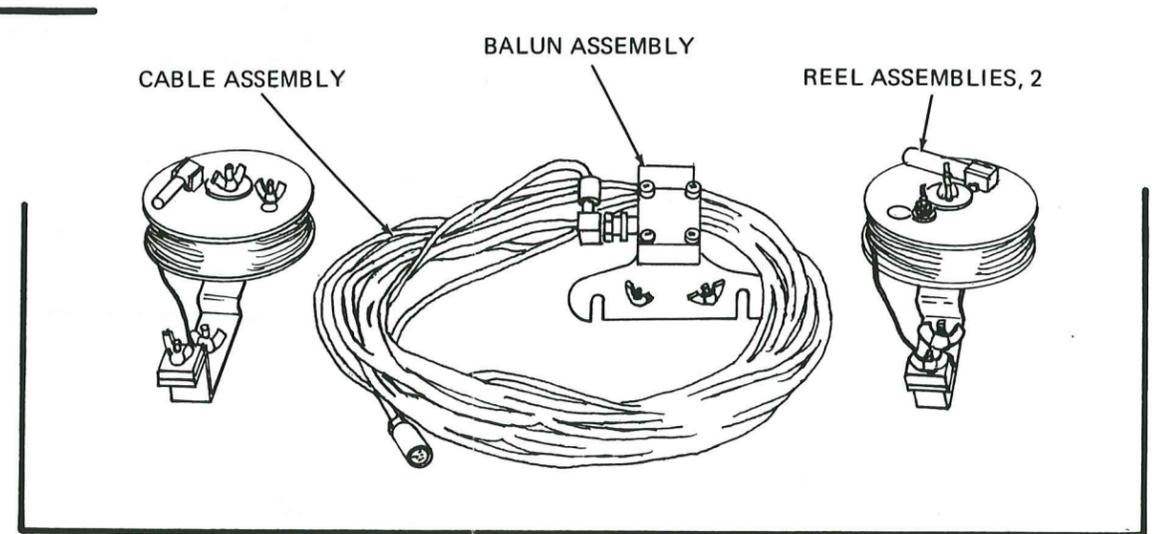


Figure FO-5. Radio set AN/PRC-70, one-man, low radiating angle antenna, stationary configuration (voice or cw)

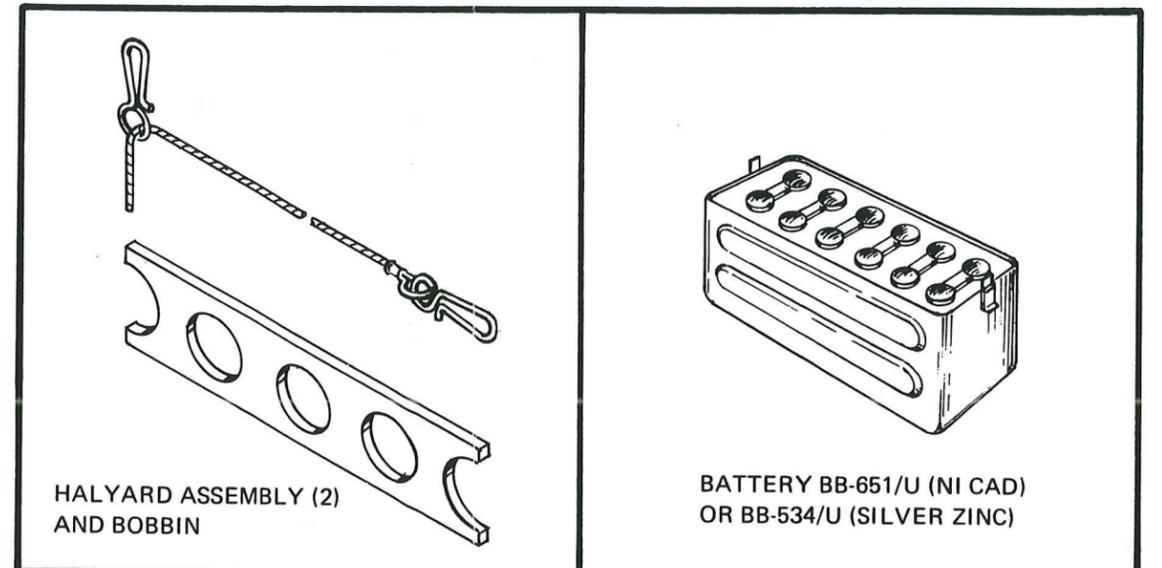


ANCILLARY
CARRYING
BAG

NOTE: NOT DRAWN TO SCALE



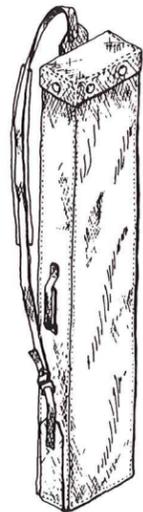
DOUBLET ANTENNA ASSEMBLY AS-2975/PRC-70



EL5820-553-12-TM-24 (2)

Figure FO-3. Contents of two-man load carrying bags (sheet 1 of 2)

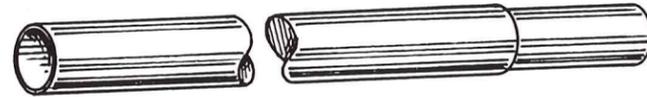
MAST
CARRYING
BAG



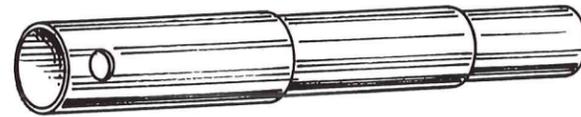
NOTE: NOT DRAWN TO SCALE



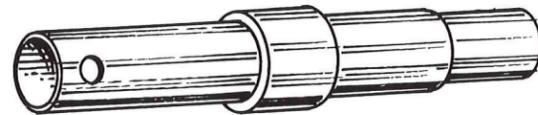
MAST SECTIONS, LARGE DIAMETER, 5



MAST SECTIONS, SMALL DIAMETER, 5



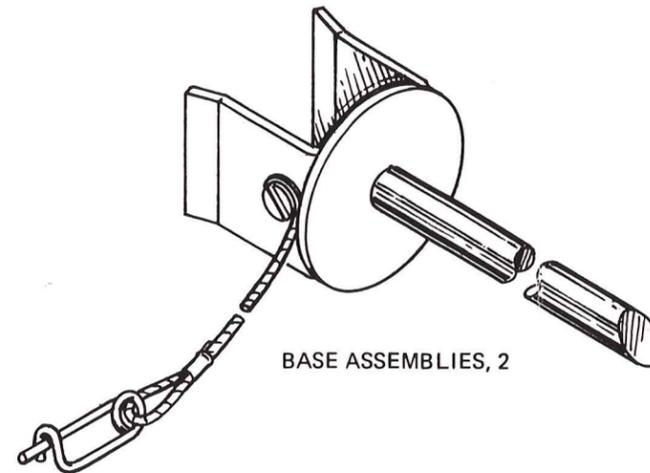
TRANSITION ADAPTER, 1



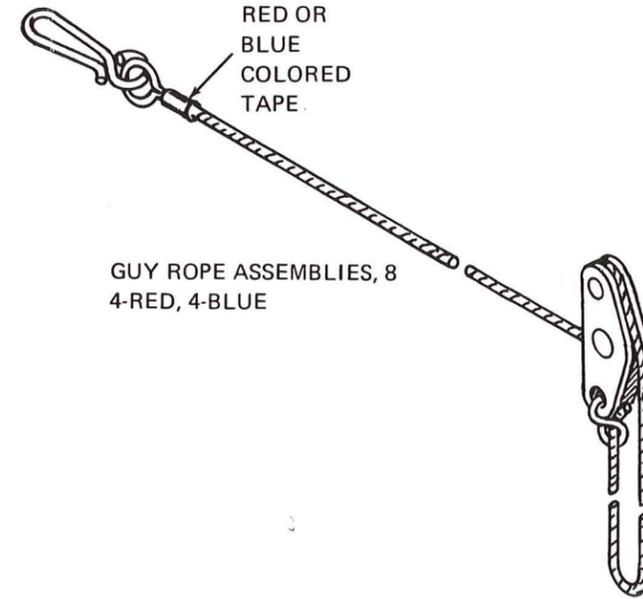
INSULATOR, 1



BASE LOCKING PINS, 2

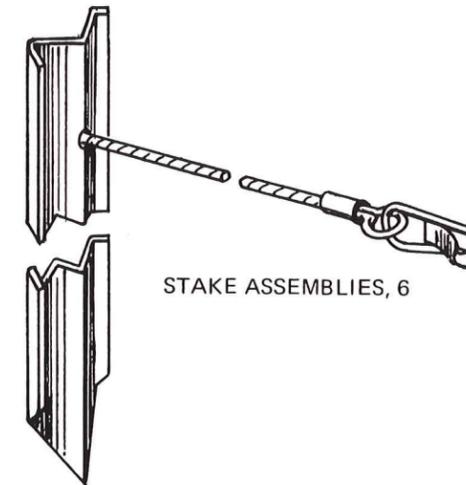


BASE ASSEMBLIES, 2

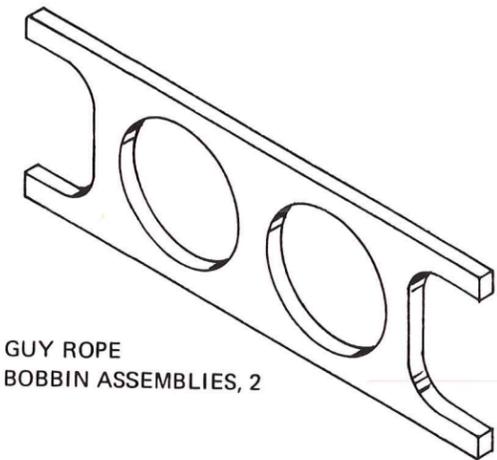


RED OR
BLUE
COLORED
TAPE

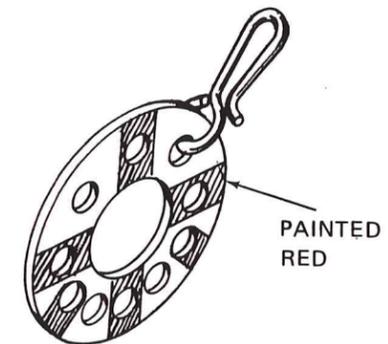
GUY ROPE ASSEMBLIES, 8
4-RED, 4-BLUE



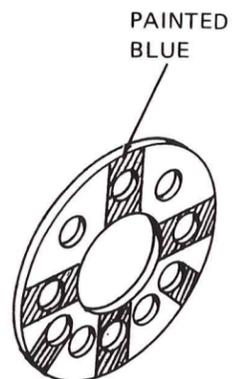
STAKE ASSEMBLIES, 6



GUY ROPE
BOBBIN ASSEMBLIES, 2



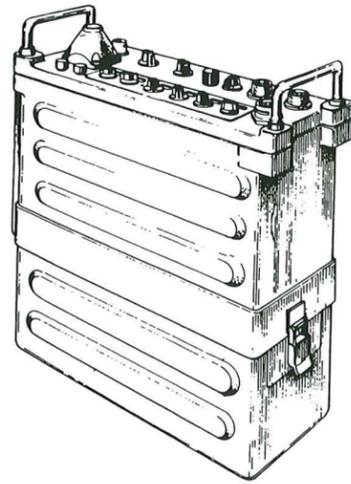
GUY PLATE ASSEMBLY, 1



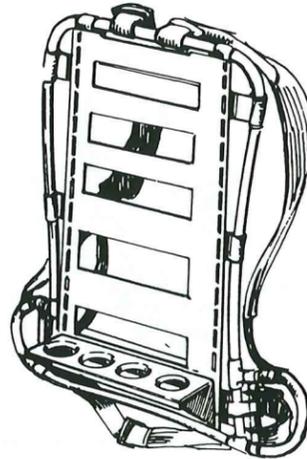
GUY PLATE, 1

EL5820-553-12-TM-24 (1)

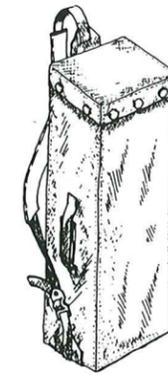
Figure FO-3. Contents of two-man load carrying bags (sheet 2 of 2)



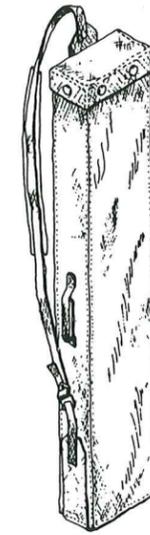
RECEIVER-TRANSMITTER RT-1133/PRC-70
(1A1)
AND BATTERY



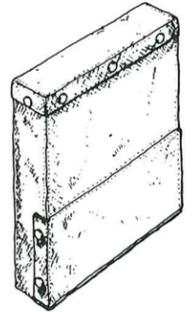
CARRYING KIT
(1A7)



ACCESSORY CARRYING
BAG (1A11)



MAST CARRYING
BAG

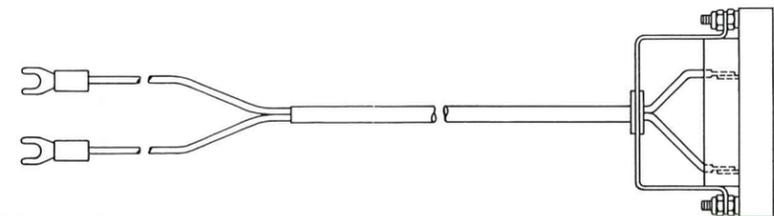
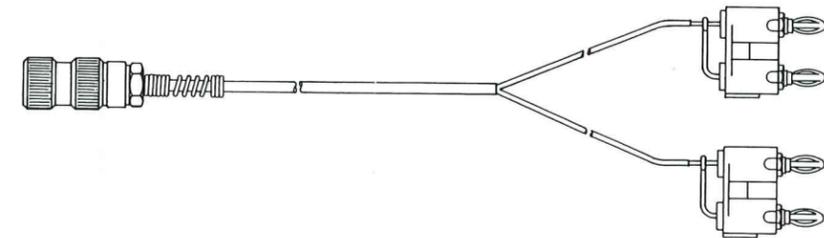


ANCILLARY
CARRYING BAG

TWO-MAN LOAD CARRYING BAGS
(1A6)



BURST CW CABLE ASSEMBLY
(1A8)

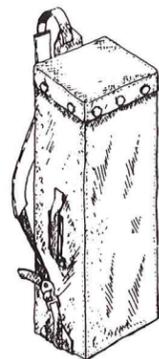


MAINTENANCE CABLE ASSEMBLY
(1A9)

NOTE: NOT DRAWN TO SCALE

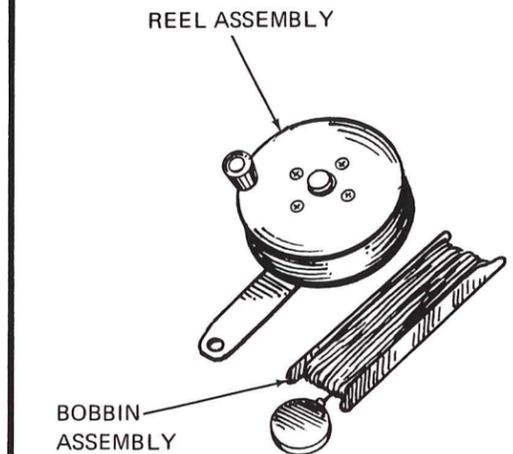
EL5820-553-12-TM-22

Figure FO-1. AN/PRC-70 radio set



ACCESSORY CARRYING BAG

NOTE: NOT DRAWN TO SCALE



REEL ASSEMBLY

BOBBIN ASSEMBLY

LOW RADIATING ANGLE ANTENNA ASSEMBLY AS-2973/PRC-70



HEADSET H-251/U



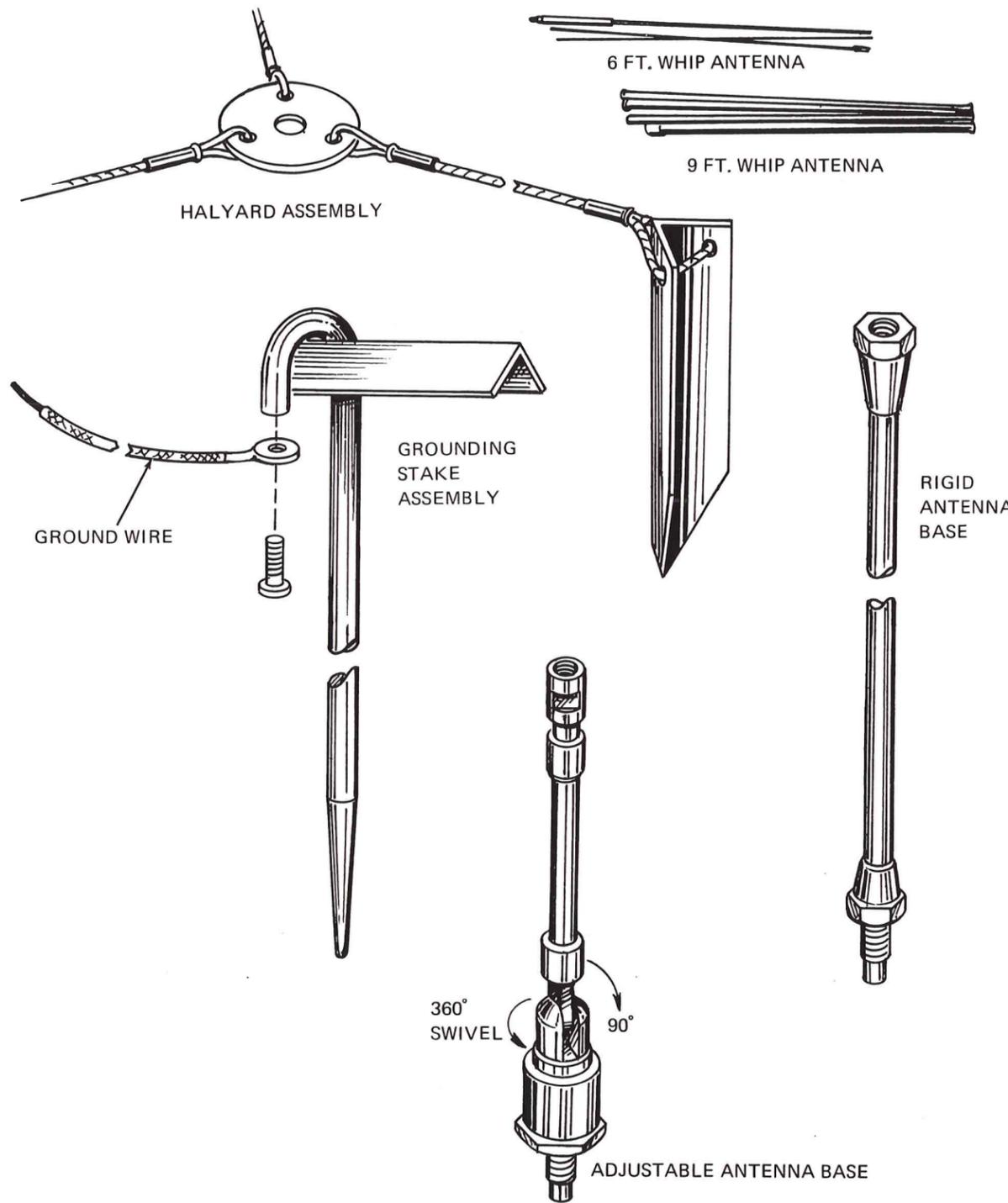
HANDSET H-138B/U



TELEGRAPH KEY KY-605/U



BURST CABLE ASSEMBLY



HALYARD ASSEMBLY

6 FT. WHIP ANTENNA

9 FT. WHIP ANTENNA

GROUND WIRE

GROUNDING STAKE ASSEMBLY

RIGID ANTENNA BASE

360° SWIVEL 90°

ADJUSTABLE ANTENNA BASE

WHIP ANTENNA ASSEMBLY AS-2974/PRC-70

Figure FO-2. Contents of accessory bag

