

**TECHNICAL MANUAL**

**OPERATOR'S AND ORGANIZATIONAL MAINTENANCE MANUAL  
(INCLUDING REPAIR PARTS AND SPECIAL TOOLS LISTS)**

**RADIO SETS AN/PRC-74B (NSN 5820-00-935-0030) AND  
AN/PRC-74C (NSN 5820-00-177-1641); AND  
POWER SUPPLIES PP-4514/PRC-74 (NSN 5820-00-942-0821)  
AND PP-4514A/PRC-74 (NSN 5820-00-177-4581); AND  
BATTERY BOXES CY-6121/PRC-74 (NSN 5820-00-908-3127),  
AND CY-6314/PRC-74  
AND CY-6314A/PRC-74 (NSN 5820-00-156-3934)**

This copy is a reprint which includes current pages from Changes 1 through 7. Title was changed to read as shown above by C 6.

CHANGE  
No. 8

HEADQUARTERS  
DEPARTMENT OF THE ARMY  
Washington, DC, 15 February 1988

**Operator's and Organizational  
Maintenance Manual  
(Including Repair Parts and Special Tools List)**

**RADIO SETS AN/PRC-74B (NSN 5820-00-935-0030)  
AND AN/PRC-74C (NSN 5820-00-177-1641)  
POWER SUPPLIES PP-4514/PRC-74 (NSN 5820-00-942-0821)  
AND PP-4514A/PRC-74 (NSN 5820-00-177-4581)  
BATTERY BOXES CY-6121/PRC-74 (NSN 5820-00-908-3127)  
CY-6314/PRC-74 (NSN 5820-00-935-0382)  
AND CY-6341A/PRC-74 (NSN 5820-00-156-3934)**

TM 11-5820-590-12-1, 3 March 1967, is changed as follows:

1. Remove old pages and insert new pages as indicated below. New or changed material is indicated by a vertical bar in the margin of the page. Added or revised illustrations are indicated by a vertical bar adjacent to the identification number.

<i>Remove pages</i>	<i>Insert pages</i>
G and H .....	G and H
i and ii .....	i and ii
1-1 through 1-4.....	1-1 through 1-4
3-4.1 and 3-4.2.....	3-4.1 and 3-4.2
4-1 through 4-4.....	4-1 through 4-4
6-1 and 6-2.....	6-1 and 6-2
A-1 .....	A-1/(A-2 blank)

2. File this change sheet in the front of the publication for reference purposes.

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*General, United States Army*  
*Chief of Staff*

OFFICIAL:

R. L. DILWORTH  
*Brigadier General, United States Army*  
*The Adjutant General*

DISTRIBUTION:

To be distributed in accordance with DA Form 12-51 literature requirements for AN/PRC-74, A, B, C.

CHANGE }  
NO.7 }

HEADQUARTERS  
DEPARTMENT OF THE ARMY  
WASHINGTON DC, 1 October 1981

**Operator's and Organizational  
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(Including Repair Parts and Special Tools Lists)  
RADIO SETS AN/PRC 74B (NSN 5280-00-935-0030) AND  
AN/PRC -74C (NSN 5820-00-177-1641): AND  
POWER SUPPLIES PP-4514/PRC-74 (NSN 5820-00-942-0821) AND  
PP 4514A/PRC 74 (NSN 5820-00-177-4581); AND  
BATTERY BOXES CY 6121/PRC 74 (NSN 5820-00-908-3127), AND  
CY 6314/PRC 74  
AND CY 6314A/PRC 74 (NSN 5820-00-156-3934)**

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<i>Remove</i>	<i>Insert</i>
i and ii .....	A through H
iii and iv .....	i through iii
1-1 and 1-2 .....	1-1
3-3 and 3-4 .....	3-3 and 3-4
4-1 and 4-2 .....	4-1 and 4-2
None .....	3 2028-2's w/Sample (back of Manual)

3. File this change sheet in the front of the manual for reference purposes.

By Order of the Secretary of the Army:

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

Official:

ROBERT M. JOYCE  
*Brigadier General, United States Army*  
*The Adjutant General*

DISTRIBUTION:

To be distributed in accordance with DA Form 12-51, Operator TM Literature requirements for AN/PRC-74.



**WARNING**  
**AVOID R. F. BURNS**

Do not touch the antenna when the radio set is being tuned or transmitting.

**WARNING**  
**DANGEROUS VOLTAGES EXIST IN THIS EQUIPMENT**

Be careful when working on universal power supply circuits or on ac line connections.

**WARNING**  
**DANGEROUS CHEMICALS ARE USED IN NICKEL-CADMIUM BATTERIES**

The electrolyte used in nickel-cadmium batteries contains potassium hydroxide (KOH), which is a caustic chemical agent. Serious and deep burns of body tissue will result if the electrolyte comes in contact with the eyes or any part of the body. Use rubber gloves, rubber apron, and protective goggles when handling the electrolyte. If accidental contact with the electrolyte is made, use ONLY clean water and immediately (seconds count) flush contaminated areas. Continue flushing with large quantities of clean water for at least 15 minutes. Seek medical attention without delay.

**WARNING**  
**EXPLOSIVE GASES ARE GENERATED BY NICKEL-CADMIUM BATTERIES**

Hydrogen and oxygen gases are generated in explosive proportions while the nickel-cadmium battery is being charged. Charge the nickel-cadmium battery in a well-ventilated area to reduce concentrations of explosive gases. Turn off the battery charger before connecting or disconnecting the nickel-cadmium battery to prevent arcing. Do not use matches or an open flame in the charging area. Arcs, flumes, or sparks in the charging area will ignite the gases and cause an explosion. The battery box cover must be removed and the battery case vent plug (if used) must be open when charging.

**WARNING**

Remove all jewelry and wristwatches when working on batteries. Be extremely careful when using metal tools.

**WARNING**

Operator and maintenance personnel should be familiar with the requirements of TB SIG 291 before attempting installation or operation of equipment covered in this manual. Failure to follow requirements of TB SIG 291 could result in injury or DEATH.

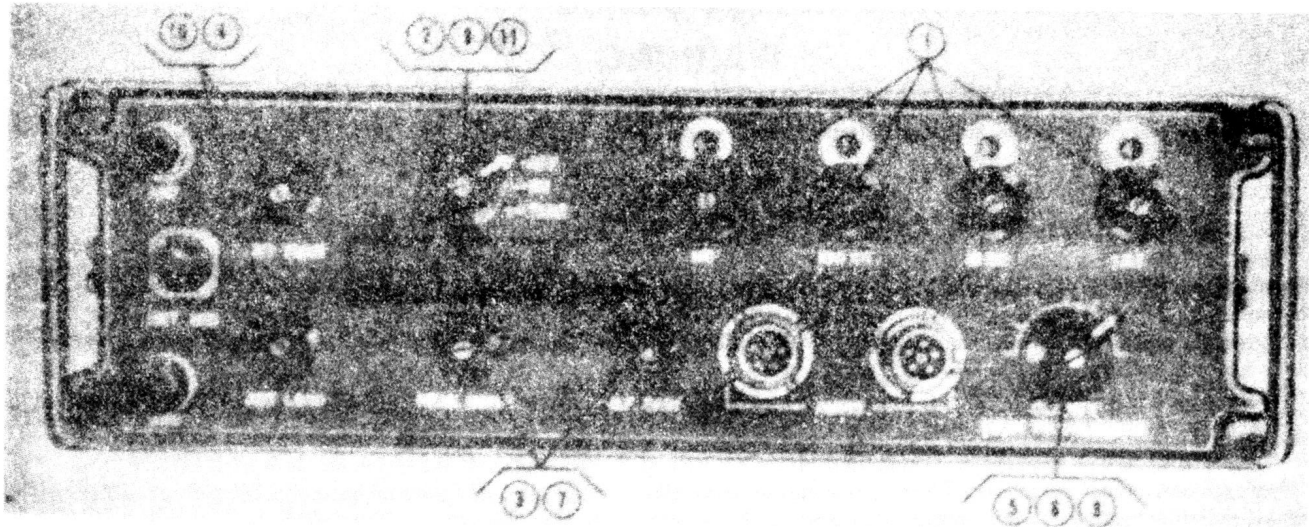
**CAUTION**

Do not use the whip antenna at 3.5 MHz or below. Use the components of Antenna Kit MK-911A/PRC-74.

**CAUTION**

Do not operate the radio set with one BA-4386/U. Use two BA-4386/U's in parallel at all times.

## CONDENSED OPERATING INSTRUCTIONS FOR RADIO SET AN/PRC-74B



### Receive Mode

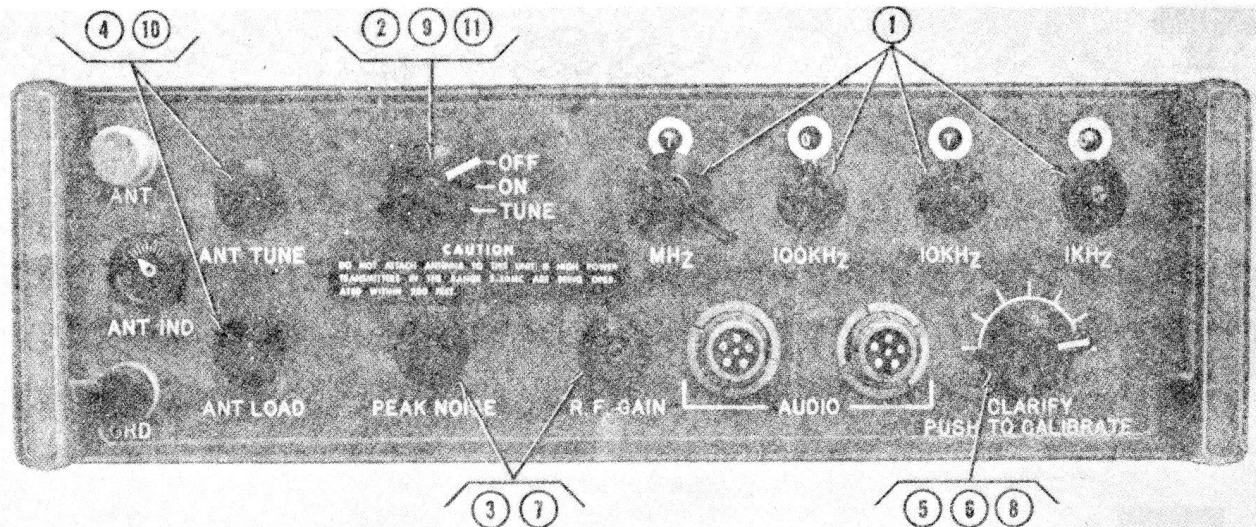
- a. Attach whip antenna mounting bracket to receiver-transmitter
- b. Install whip antenna and adjust to desired frequency range.
- c. Attach lead wire from whip antenna to front panel ANT terminal.
- d. Connect headset to either front panel AUDIO jack.
- e. The numbers (1) through (8) below are the same as the numbers on the diagram.
  - (1) Set front panel MC, 100 KC, 10 KC, and 1 KC selector knobs to the desired frequency.
  - (2) Turn OFF-ON-TUNE switch to ON position.
  - (3) Set RF GAIN control to maximum and adjust PEAK NOISE control for a definite, noticeable increase in noise heard in the headset.
  - (4) Adjust ANT LOAD and ANT TUNE controls for maximum noise heard in headset.
  - (5) Press in CLARIFY/PUSH TO CALIBRATE knob and adjust so that a zero beat condition is observed in the headset
  - (6) Release the CLARIFY/PUSH TO CALIBRATE knob and reset the pointer to midscale.
  - (7) Set RF GAIN control for desired volume of received signal.
  - (8) Adjust CLARIFY knob so that quality of received voice signals is natural.

### Transmit Mode

- f. Perform steps outlined above, do not perform steps (7) and (8) if no received signal is present.
- g. Connect either microphone or key (depending on mode of operation desired) to the remaining audio jack.
- h. The numbers (9) through (11) below are the same as the numbers on the diagram.
  - (9) Turn OFF-ON-TUNE switch to the TUNE position and listen for tone in headset.
  - (10) Adjust ANT TUNE knob to mid position. Adjust ANT LOAD knob until a maximum reading is obtained on ANT IND meter. Adjust ANT TUNE knob until a maximum reading is obtained on ANT IND meter.
  - (11) Release OFF-ON-TUNE knob and allow to return to ON position.
 

Note. Repeat-step h each time transmitting frequency is changed.
- i. Press microphone button and speak directly into the microphone.

## CONDENSED OPERATING INSTRUCTIONS FOR RADIO SET AN/PRC-74C



### Receive Mode

- a. Attach whip antenna mounting bracket to receiver-transmitter.
- b. Install whip antenna and adjust to desired frequency range.
- c. Attach lead wire from whip antenna to front panel ANT terminal.
- d. Connect headset to either front panel AUDIO jack.
- e. The numbers (1) through (8) below are the same as the numbers on the diagram.
  - (1) Set front panel MHZ, 100 KHz, 10 KHz, and 1 KHz selector knobs to the desired frequency.
  - (2) Turn OFF-ON-TUNE switch to ON position.
  - (3) Set RF GAIN control to maximum and adjust PEAK NOISE control for a definite, noticeable increase in noise heard in the headset.
  - (4) Set ANT TUNE to mid range and ANT LOAD for maximum noise heard in headset.
  - (5) Press in CLARIFY/PUSH TO CALIBRATE knob and adjust so that a zero beat condition is observed in the headset.
  - (6) Release the CLARIFY/PUSH TO CALIBRATE knob and reset the pointer to midscale.
  - (7) Set RF GAIN control for desired volume of received signal.
  - (8) Adjust CLARIFY knob so that quality of received voice signals in natural.

### Transmit Mode

- f. Perform steps outlined above, do not perform steps (7) and (8) if no received signal is present.
- g. Connect either microphone or key (depending on mode of operation desired) to the remaining audio jack.
- h. The numbers (9) through (11) below are the same as the numbers on the diagram.
  - (9) Turn OFF-ON-TUNE switch to the TUNE position and listen for tone in headset.
  - (10) Adjust ANT TUNE knob to mid position. Adjust ANT LOAD knob until a maximum reading is obtained on ANT IND meter. Adjust ANT TUNE knob until a maximum reading is obtained on ANT IND meter.
  - (11) Release OFF-ON-TUNE knob and allow to return to ON position.
- Note. Repeat-step h each time transmitting frequency is changed.
- i. Press microphone button and speak directly into the microphone.



**5**

**SAFETY STEPS TO FOLLOW IF SOMEONE IS THE VICTIM OF ELECTRICAL SHOCK**

**1**

**DO NOT TRY TO PULL OR GRAB THE INDIVIDUAL**

**2**

**IF POSSIBLE, TURN OFF THE ELECTRICAL POWER**

**3**

**IF YOU CANNOT TURN OFF THE ELECTRICAL POWER, PULL, PUSH, OR LIFT THE PERSON TO SAFETY USING A WOODEN POLE OR A ROPE OR SOME OTHER INSULATING MATERIAL**

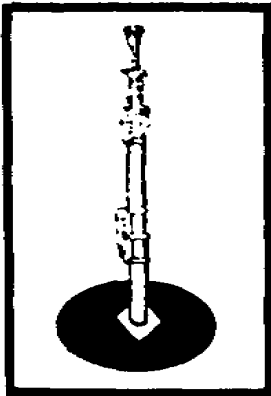
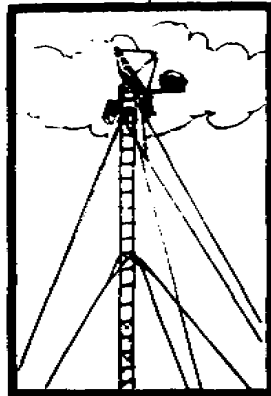
**4**

**SEND FOR HELP AS SOON AS POSSIBLE**

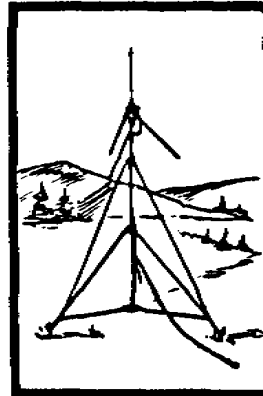
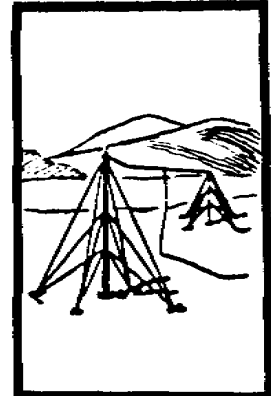
**5**

**AFTER THE INJURED PERSON IS FREE OF CONTACT WITH THE SOURCE OF ELECTRICAL SHOCK, MOVE THE PERSON A SHORT DISTANCE AWAY AND IMMEDIATELY START ARTIFICIAL RESUSCITATION**

## FIXED OPERATION WITH LONG RANGE ANTENNAS

**WARNING**TELESCOPING  
ANTENNA MAST

TYPICAL TOWER

EXTENDED RANGE  
ANTENNA

DOUBLET ANTENNA

**NEVER ERECT THESE LONG RANGE ANTENNAS DIRECTLY UNDER POWERLINES.**

IF YOU MUST ERECT THESE LONG RANGE ANTENNAS NEAR POWERLINES, POWERLINE POLES OR TOWERS, OR BUILDINGS WITH OVERHEAD POWERLINE CONNECTIONS. NEVER PUT THE ANTENNA CLOSER THAN TWO TIMES THE ANTENNA HEIGHT FROM THE BASE OF THE POWERLINE, POLE, TOWER, OR BUILDINGS.

**NEVER ATTEMPT TO ERECT ANY LONG RANGE ANTENNA WITHOUT A FULL TEAM.**

BEFORE ERECTING ANY LONG RANGE ANTENNA, INSPECT ALL THE PARTS MAKING UP THE ANTENNA KIT. DO NOT ERECT THE ANTENNA IF ANY PARTS ARE MISSING OR DAMAGED.

DO AS MUCH OF THE ASSEMBLY WORK AS POSSIBLE ON THE GROUND.

WHEN ERECTING THE ANTENNA, ALLOW ONLY TEAM PERSONNEL IN THE ERECTION AREA.

MAKE SURE THAT THE AREA FOR THE ANCHORS IS FIRM. IF THE GROUND IS MARSHY OR SANDY, GET SPECIFIC INSTRUCTIONS FROM YOUR CREW CHIEF OR SUPERVISOR ON HOW TO REINFORCE THE ANCHORS.

WHEN SELECTING LOCATIONS FOR ANCHORS, AVOID TRAVELED AREAS AND ROADS. IF YOU CAN NOT AVOID THESE AREAS, GET SPECIFIC INSTRUCTIONS FROM YOUR CREW CHIEF OR SUPERVISOR AS TO WHAT CLEARANCE YOUR GUY WIRES AND ROPES MUST HAVE OVER TRAVELED AREAS AND ROAD.

CLEARLY MARK ALL GUY WIRES AND ROPES WITH THE WARNING FLAGS SUPPLIED BY YOUR UNIT. IN AN EMERGENCY, USE STRIPS OF WHITE CLOTH AS WARNING STREAMERS.

IF YOU SUSPECT THAT POWERLINES HAVE MADE ACCIDENTAL CONTACT WITH YOUR ANTENNA, STOP OPERATING, ROPE OFF THE ANTENNA AREA, AND NOTIFY YOUR SUPERIORS.

IF THE WEATHER IN YOUR AREA CAN CAUSE ICE TO FORM ON YOUR LONG RANGE ANTENNA AND ITS GUY WIRES AND ROPES, ADD EXTRA GUYS TO SUPPORT THE SYSTEM. ROPE OFF THE AREA AND POST IT WITH WARNING SIGNS LIKE "BEWARE OF FALLING ICE".

DO NOT TRY TO ERECT ANY ANTENNA DURING AN ELECTRICAL STORM.

KEEP A SHARP EYE ON YOUR ANCHORS AND GUYS. CHECK THEM DAILY AND IMMEDIATELY BEFORE AND AFTER BAD WEATHER.

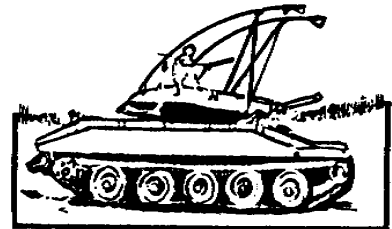
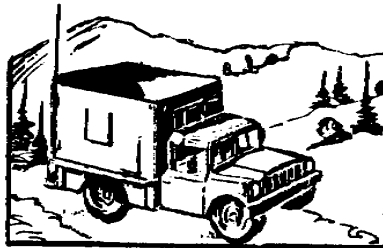
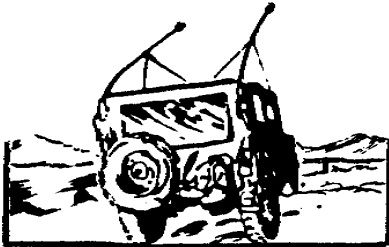
## WARNING

SERIOUS INJURY OR EVEN DEATH CAN HAPPEN IF THE FOLLOWING ARE NOT CAREFULLY OBSERVED WHEN INSTALLING AND USING THE ANTENNAS USED WITH YOUR RADIO SETS

BEFORE ANY  
MISSION FIND  
OUT

1. ARE THERE ANY POWERLINES IN YOUR AREA OF OPERATION ?
2. HOW HIGH ARE THESE POWERLINES ?
3. HOW TALL ARE THE POLES OR TOWERS CARRYING POWERLINES ?

## MOBILE OPERATION WITH WHIP ANTENNAS



### DO NOT STOP YOUR VEHICLE UNDER POWERLINES.

- IF POSSIBLE, TRY TO MAINTAIN MOBILE COMMUNICATIONS WITH YOUR ANTENNA(S) TIED DOWN.
- MAKE SURE AN ANTENNA TIP CAP IS SECURELY TAPED ON THE END OF EACH WHIP ANTENNA.
- DO NOT LEAN ACROSS OR TOUCH A WHIP ANTENNA WHILE THE TRANSMITTER IS ON.
- DURING CROSS-COUNTRY OPERATION, DO NOT ALLOW ANYONE TO STICK AN ARM, LEG OR WEAPON OVER THE SIDES OF THE VEHICLE. IF YOUR ANTENNA ACCIDENTALLY TOUCHES A POWERLINE AND A LEG, ARM, OR WEAPON CONTACTS THE DAMP BUSH OR THE GROUND, A SERIOUS OR FATAL ACCIDENT CAN HAPPEN.
- IF YOU ARE NOT SURE THAT AN ANTENNA ON YOUR VEHICLE WILL CLEAR A POWERLINE, STOP BEFORE YOU GET CLOSE TO THE POWERLINE AND EITHER CAREFULLY TIE DOWN THE ANTENNA OR REMOVE ANTENNA SECTIONS TO MAKE SURE THAT YOU CAN SAFELY DRIVE UNDER THE POWERLINE.

**WARNING**

Remove the magnesium battery from Battery Box CY-6314( )/PRC-74 when the RT-794/PRC is not being used. This is required to insure that hydrogen gas (a by-product of Magnesium Battery, BA-4386/U Discharge Action) does not accumulate. Personnel may be injured and equipment damaged if the gas explodes.

**WARNING**

You can tell the difference between Magnesium Battery, BA-4386, and Lithium Battery, BA-5598, by looking at their size. The Lithium Battery is half the size (smaller than) of the Magnesium Battery

**WARNING****P P-4514/PRC-74****GROUND THE INSTRUMENT**

To minimize shock hazard, the instrument chassis and cabinet must be connected to an electrical ground. The instrument is equipped with a three conductor ac power cable. The power cable must either be plugged into an approved three contact electrical outlet or used with a three contact to two contact adapter with the ground wire (green) firmly connected to an electrical ground (safety ground) at the power outlet. The power jack and mating plug of the power cable must meet International Electrotechnical Commission (IEC) safety standards.

**WARNING**

DO not attempt internal service or adjustment unless another person, capable of rendering first aid and resuscitation, is present.

**WARNING****SAFETY PRECAUTION**

A periodic review of safety precautions in TB-385-4, Safety Precautions for Maintenance of Electrical/Electronic Equipment, is recommended. When the equipment is operated with covers removed, DO NOT TOUCH exposed connections or components. MAKE CERTAIN you are not grounded when making connections or adjusting components inside the test instrument.

**WARNING**

A lithium-sulfur dioxide (Li-SO<sub>2</sub>) battery used with the equipment contains pressurized sulfur dioxide (SO<sub>2</sub>) gas. The gas is toxic, and the battery MUST NOT be abused in any way which may cause the battery to rupture.

**WARNING**

DO NOT heat, short circuit, crush, puncture, mutilate, or disassemble batteries.

**WARNING**

DO NOT USE any battery which shows signs of damage, such as bulging, swelling, disfigurement, brown liquid in the plastic wrap, a swollen plastic wrap, etc.

**WARNING**

DO NOT test Li-SO<sub>2</sub> batteries for capacity.

**WARNING**

DO NOT recharge Li-SO<sub>2</sub> batteries.

**WARNING**

DO NOT use water to extinguish Li-SO<sub>2</sub> battery fires if a shock hazard exists due to high voltage electrical equipment in the immediate vicinity (i.e., greater than 30 volts, alternating current (ac) or direct current (dc)).

**WARNING**

If the battery compartment becomes hot to the touch, if you hear a hissing sound (i.e., battery venting), or smell irritating sulfur dioxide gas, IMMEDIATELY Turn Off the equipment. Remove the equipment to a well ventilated area or leave the area.

**WARNING**

DO NOT use a Halon type fire extinguisher on a lithium battery fire.

**WARNING**

In the event of a fire, near a lithium battery(ies), rapid cooling of the battery(ies) is important. Use a carbon dioxide (CO<sub>2</sub>) extinguisher. Control of the equipment fire, and cooling, may prevent the battery from venting and potentially exposing lithium metal. In the event that lithium metal becomes involved in fire, the use of a graphite based Class D fire extinguisher is recommended, such as Lith-X or MET-L-X.

**WARNING**

DO NOT store lithium batteries with other hazardous materials and keep them away from open flame or heat.



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DEPARTMENT OF THE ARMY  
WASHINGTON, DC, 3 March 1967

No. 11-5820-590-12-1

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AND CY-6314A/PRC-74 (NSN 5820-0-156-3934)**

**REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS**

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in back of this manual direct to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-ME-MP, Fort Monmouth, New Jersey 07703-5000. In either case, a reply will be furnished direct to you.

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	04	Antenna AS-1887A/PRC-74				
		0401 Antenna (No Parts Authorized)				
	05	Base, Antenna Support AB-955/PRC-74				
		0501 Base, Antenna Support (No Parts Authorized)				
	06	Mounting MT-3613/PRC-74				
		0601 Mounting (No Parts Authorized)				
	07	Battery Box CY-6314/PRC-74 and CY-6314A/PRC-74				
		0701 Battery Box (No Parts Authorized)				
		070101 Battery Box Base Assembly (No Parts Authorized)				
		070102 Battery Rtnr Hdw and Cable Assembly		D-8	D-3	
		070103 Battery Cover Assembly (No Parts Authorized)				
	08	Battery Box CY-6121/PRC-74				
		0801 Battery Box .....		D-8	D-4	
	09	Power Supply PP-4514/PRC-74 and PP-4514A/PRV-74				
		0901 Power Supply.....		D-11	D-5	
		090101 Battery Charger Subassembly				
		09010101 Battery Charger Regulator (No Parts Authorized)				
		090102 Power Supply Subassembly (No Parts Authorized)				
		09010201 Power Supply Regulator (No Parts Authorized)				
		090103 Front Panel Subassembly (No Parts Authorized)				
Section	III.	Special Tools List (Not Applicable)				
	IV.	National Stock Number and Part Number Index.....			D-13	

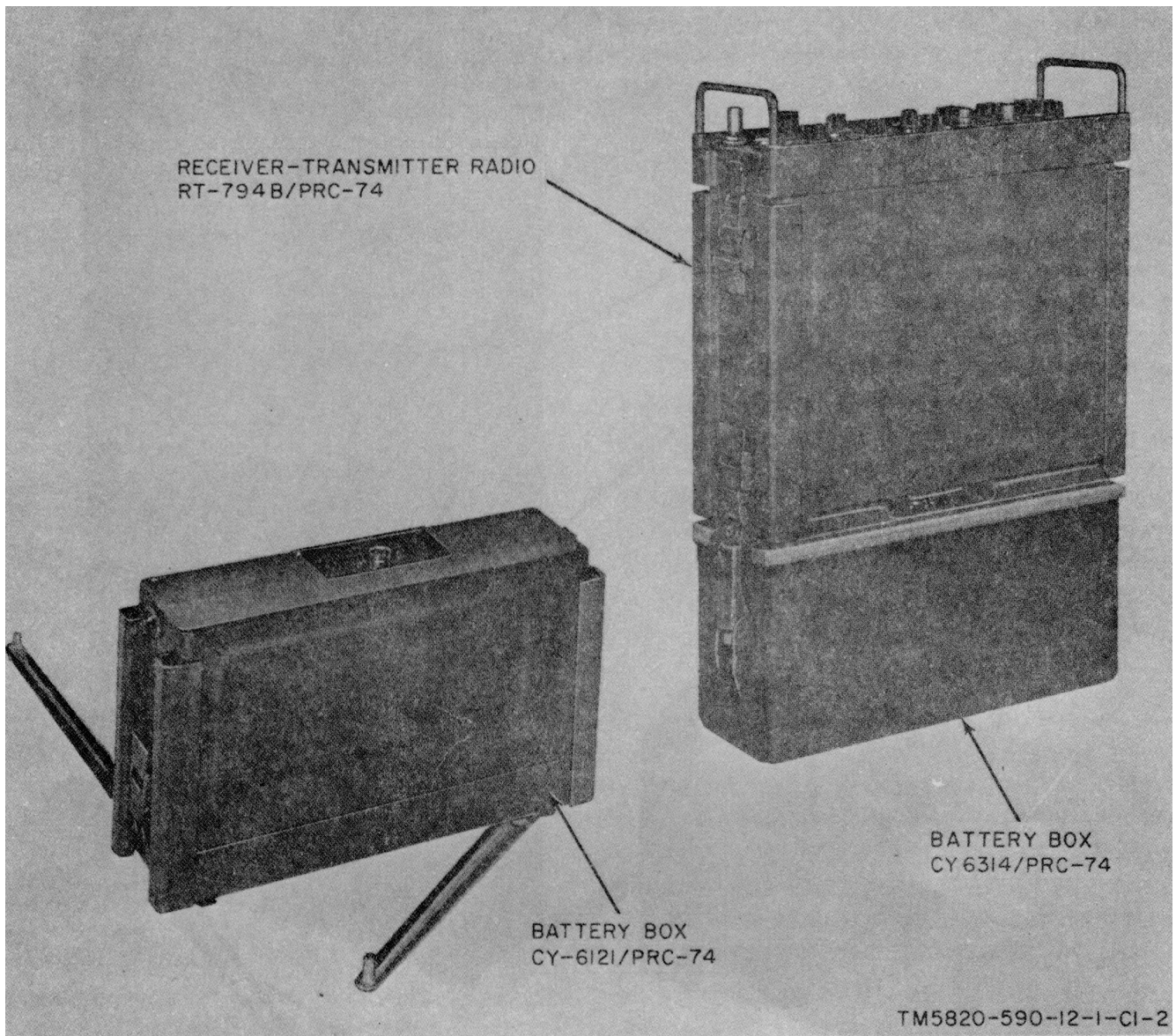


Figure 1-1. Receiver-Transmitter, Radio RT-794B/PRC -74 with wet and dry battery packs.

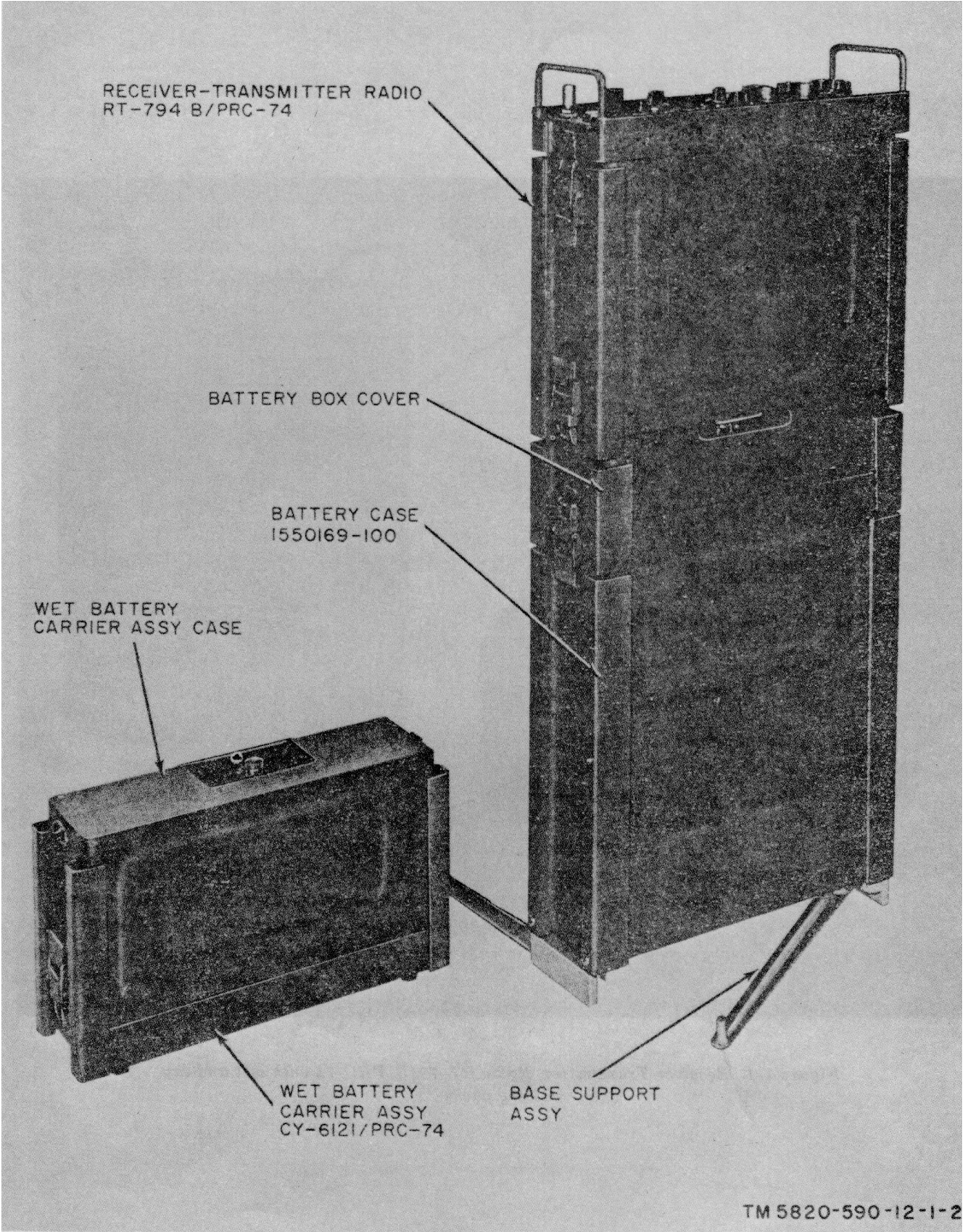


Figure 1-1. Receiver-Transmitter, Radio RT-794B/PRC-74 with wet and dry battery packs



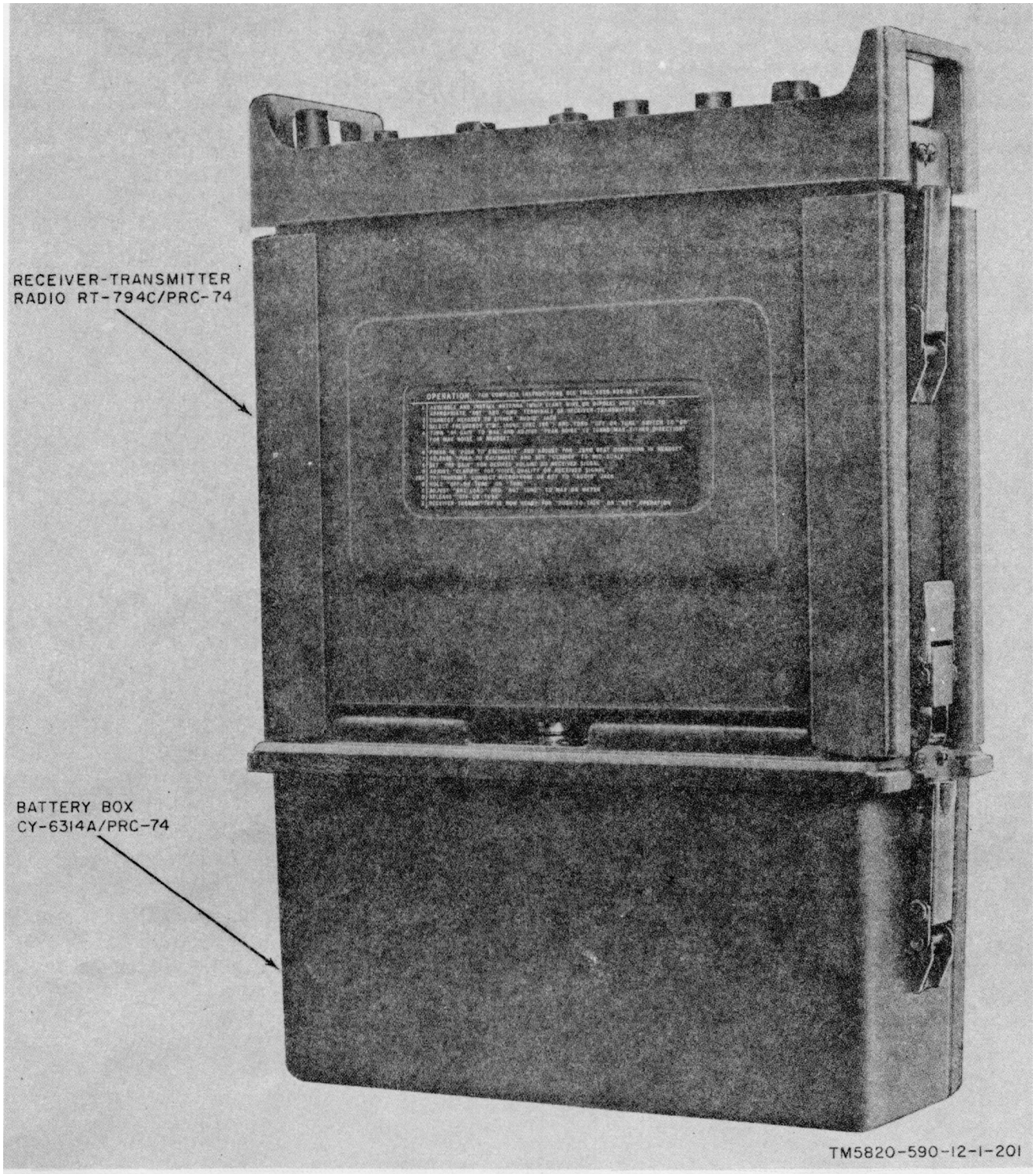


Figure 1-1.1. Receiver-Transmitter Radio, RT-794C/PRC-74 with dry battery pack.

## CHAPTER 1 INTRODUCTION

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### Section I. GENERAL

#### 1-1. Scope

This manual describes Radio Set AN/PRC-74B, Radio Set AN/PRC-74C, Power Supply PP4514/PRC-74, Power Supply PP-4514-A/PRC, Battery Box CY-6121/PRC-74, Battery Box CY6314/PRC-74, and Battery Box CY-6314A/PRC-74 and covers their installation, operation, and maintenance. Unless otherwise indicated, references in this manual to Radio Set AN/PRC-74B also apply to Radio Set AN/PRC-74C, references to Power Supply PP-4514/PRC-74, and references to Battery Box CY-6314/PRC-74 also apply to Battery Box CY-6314A/PRC-74. Operator and organizational maintenance instructions are limited to those services listed in chapters 4 and 5 and in appendix C.

#### 1-2. Consolidated Index of Army Publications and Blank Forms

Refer to the latest issue of DA Pam 25-30 to determine whether there are new editions, changes or additional publications pertaining to the equipment.

#### 1-3. Maintenance Forms, Records, and Reports

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

*b. Report of Packaging and Handling Deficiencies.* Fill out and forward SF 364 (Report of Discrepancy (ROD)) as prescribed in AR 735-

112/DLAR 4140.55/NAVMATINST 4355.73B/AFR 400-54/MCO 4430.3H.

*c. Discrepancy in Shipment Report (DISREP) (SF 361).* Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361) as prescribed in AR 55-38/NAVSUPINST 4610.33C/AFR 7518/MCO P4610. 19D/DLAR 4500.15.

#### 1-3.1 Reporting Equipment Improvement Recommendations (EIRs)

If your equipment needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about the design. Put it on an SF 368 (Quality Deficiency Report). Mail it to: Commander, US Army Communications Electronics Command and Fort Monmouth, ATTN: AMSEL-PA-MA-D, Fort Monmouth, New Jersey 07703-5000. We'll send you a reply.

#### 1-3.2 Administrative Storage

Administrative storage of equipment issued to and used by Army activities will have preventive maintenance performed in accordance with the PMCS charts before storing. When removing the equipment from administrative storage, the PMCS should be performed to assure operational readiness. Disassembly and repacking of equipment for shipment or limited storage are covered in paragraphs 6-1 and 6-2.

#### 1-3.3 Destruction of Army Electronic Materiel

Destruction of Army electronics materiel to prevent enemy use shall be in accordance with TM 750-2442.

### Section II. DESCRIPTION AND DATA

#### 1-4. Purpose and Use

*a.* Radio Set AN/PRC-74B (referred to throughout this manual as the radio set) provides dependable two-way communications within the frequency range from 2 to 17.999 megacycles (mc). Receiver-Transmitter, Radio RT-794B/PRC-74 (fig. 1-1), part of the radio set, is a single sideband (ssb) transceiver which provides either voice or telegraph

continuous-wave (cw) mode of communications. Unless otherwise indicated, references in this manual to Receiver Transmitter, Radio RT-794B/PRC-74 also apply to Receiver-Transmitter, Radio RT-794C/PRC-74 (fig. 1-1.1). The radio set operates at the low end of the high-frequency (HF) spectrum; therefore, signals are propagated by both groundwave and portable stations. This is called net

**Change 8 1-1**

skywave. Groundwave propagation is normally used for communications at distances up to 25 miles. For greater distances, skywave propagation is used and signals reach distant points by refraction from the ionosphere. The operating range of the radio set may be extended to several hundred miles by proper selection of frequency, antenna and time of day.

b. The radio set is primarily designed for use as, man pack set in areas where direct line-of-sight communication is not possible.

**1-5. Technical Characteristics**

*a. Receiver-Transmitter Radio RT-794B/PRC-74*

Frequency range.....	2.000 to 17.999 mc in 1.0 kc steps.
Frequency standard stability.....	± 1.5 parts/million from -30°C to +55°C (AN/PRC-74B). ± 1.5 parts/million from -40°C to +65°C (AN/PRC-74C).
Intermediate frequency.....	1,750 kc.
Transmitter performance: Modulation modes.....	Upper-sideband suppressed carrier, voice or cw.
Carrier suppression.....	40 db below level of a 1,000-cycle modulation usb signal of rated output.
Power output.....	15 watts peak envelope power nominal.
Monitor sidetone.....	Voice or tone as determined by modulation mode.
Tuning indicator.....	Meter (operated by vswr bridge).
Receiver performance: Sensitivity.....	0.7 microvolt for 10 db, signal plus noise to noise.
Selectivity.....	.3-db points at +300 and + 2,700 cps, 45-db points at -350 and + 6,500 cps (referenced to carrier frequency).
Audio output.....	1 mw minimum into a 500-ohm headset.
Audio distortion.....	10 percent maximum at frequencies between 300 cps and 2,700 cps with an audio output level of 4 milliwatts.
Power source.....	Determined by fixed or portable requirements: An external power supply may be used as a power source during fixed operation. For portable use, wet or dry battery pack may be used.
Input power.....	+ 10.5 to + 17.0 volts.

*b. Battery Box CY-6121/PRC-74 and Battery Box CY-6314/PRC-74.*

**NOTE**

The common name for Battery Box CY-6121/PRC-74 is the wet battery pack and the CY-6314/PRC-74 is the dry battery pack.

Wet cell:	
Type.....	Rechargeable nickel-cadmium
Capacity.....	14-ampere hours
Life.....	24 hours with a 1-minute transmit/9-minute receive continuous duty cycle
Terminal voltage.....	1.2 volts per cell (wet battery pack terminal voltage is 12 volts).
Terminal voltage.....	+ 12 volts
Dry cell	
Type.....	BA-4386/U
Quantity.....	2 batteries per pack
Terminal voltage.....	15 volts dc per cell (dry battery pack terminal voltage is + 15 volts).
Capacity.....	14-ampere hours.
Life.....	24 hours, 9 minutes receive, 1 minute transmit duty cycle.
Type.....	BA-5598/U
Terminal voltage.....	12 volts dc.

*c. Power Supply PP-4514/PRC-74.*

**NOTE**

Unless otherwise indicated, references in this manual to Power Supply PP-4514/PRC-74 also apply to Power Supply PP-4514A/PRC-74.

This power supply is *used with* but *not part of* the AN/PRC-74B. It is used with the AN/PRC-74B to recharge the wet battery and to provide a 14-volt dc source during vehicular or semi-permanent operation (pare 2-3b and c). The power supply is issued with four power cables and one battery charger cable (fig.1-8).

Input.....	+ 28 volts, + 10 percent to -25 percent, 110 volts or 220 volts single phase, + 15 percent to -25 percent at line frequency from 47 to 400 cps.
------------	---



Power supply module: Output voltage..... .....	+14 volts ±3 at load currents between 0 and 6.5 amperes
Ripple voltage at output..... .....	1.0 volt peak-to-peak maximum.
Battery charger module, charging rate to wet cell battery..... .....	Variable from 1 to 5 amperes.

1.....	74 110 Volt AC Power Cable W1 CX-10296/U	5995-945-1936
1.....	21-31 Volt DC Power Cable W2 CX-10297/U	5995-930-9083
1.....	220 Volt AC Power Cable W3 CX-10298/U	5995-945-1900
1.....	24 Volt DC Power Cable W4 CX- 10299/U	5995-945-1882
1.....	Battery Charger Cable W5 CX- 10300/U	5995-945-1881
	Running Spares(para 1-6.1)	

**1-6. List of Components**

Note. Power Supply PP-4514( )/PRC-74, Battery Box CY-6121/PRC-74, and Battery Box CY-6314( )/PRC-74 are used with but not part of the radio set.

a. Radio Set AN/PRC-74B Only (fig. 1-3 through 1-7). The following list of components is for Radio Set AN/PRC-74B (FSN 5820-335-0030).

Quantity	Item	FSN
1.....	Receiver Transmitter, Radio RT-794B/PRC-74	5820-935-0031
1.....	Bag, Accessory, CW-863/PRC-74	8105-921-6711
1.....	Mounting, MT-3613/PRC-74	5820-942-0818
1.....	Base, Antenna Support AB- 955/PRC-74	5820-942-0500
1.....	Antenna, AS-1887A/PRC-74	5820-935-0032
1.....	Kit, Wire Antenna MK- 911A/PRC-74	5820-832-8210
1.....	Key, Telegraph KY-562/U	5805-926-0221
1.....	Headset, Electrical H-140( )/U	5965-892-1010
1.....	Microphone, Dynamic M-80/U	5965-875-1313
1.....	Cable, Assembly, Special Purpose CX-10239/PRC-74 (used with Keyer KY- 468/GRA-71) Running spares (para 1-6.1)	5995-930-7016

b. Radio Set AN/PRC-74C Only. Except for Receiver Transmitter, Radio RT-794B/PRC-74 (rt unit) the components and running spares for Radio Set AN/PRC-74C (FSN 5820-177-1641) are the same as the AN/PRC-71B (a above). The rt unit for the AN/PRC-74C is Receiver Transmitter, Radio RT-794C/PRC-74 (FSN 5820-177-1640).

c. Power Supply PP-4514( )/PRC-74 (fig. 1-8). Power Supply PP-4514/PRC-74 (FSN 5820-9420821) and Power Supply PP-4514-A/PRC-74 (FSN 5820-177-4581) contain the following items:

Quantity	Item	FSN
1.....	Power Supply PP-4514/PR-C-	5820-942-0821

d. Battery Box CY-6121/PRC-74 (fig. 1-2). Battery Box CY-6121/PRC-74 (wet battery pack) (FSN 5820-908-3127) is a self contained unit. The following items (1) through (3) below are used with but not part of the wet battery pack and must be requisitioned separately.

(1) Ten each; Battery, Storage BB-418/U (FSN 6140-855-7634).

(2) Ten each; intercell connectors (FSN 5940134-0724).

(3) One each; Power Supply PP-4514/PRC-74 (FSN 5820-942-0821) or Power Supply PP4514A/PRC-74 (FSN 5820-177-4581) for recharging purposes.

e. Battery Box CY-6314( )/PRC-74 (fig. 4-1). Battery Box CY-6314/PRC-74 (FSN 5820-935-0382) and Battery Box CY-6314A/PRC-74 (FSN 6135-1563934) (both are called dry battery packs) are self contained units.

**1-6.1. Running Spares**

a. The following is a list of running spare fuses for the radio set:

In Use	Quantity	Item
1	5	5 Fuses 1AG, 7.5 amp.
1	5	5 Fuses 1AG, 2 amp.

B The following is a list of the running spare fuses and lamps for Power Supply PP-4514/PRC-74:

## C 2, TM 11-5820-590-12-1

In use	Quantity	Item
1	3	Fuses F2A, 32 volts, 15 amp.
1	5	Fuses F2A, 250 volts, 2 amp.
2	5	Fuses F2A, 250 volts, 4 amp.
1	6	Fuses F3A, 250 volts, 6 amp.
2	3	Fuses F3A, 250 volts, 8 amp.
	2	Lamps, MS-25237-327.

### 1-7. Description of Major Components

a. The radio set is a low-powered, fully transistorized receiver-transmitter that can be used for either point-to-point or netting operation. The radio set operates on a single frequency for both transmit and receive functions. The transmitter is enabled by a push to-talk microphone button, a telegraph key, or automatic Keyer KY-468/GRA-71 (part of Coder-Burst Transmission Group AN/GRA71). Coder-burst Transmission Group AN/GRA-71 is *not supplied* as part of the AN/PRC-74B. The receiver is operative only when the transmitter is not being used; therefore, communication is only on a one-way reversible basis.

b. The radio set may be operated from alternating current (ac) or direct current (dc) powerlines, or from a 24-volt vehicle battery when Power Supply PP-4514/PRC-74 is available. During normal operation, the radio set is man-carried and operated from either Battery Box CY-6314/PRC-74 (dry battery pack) or Battery Box CY-6121/PRC-74 (wet battery pack) (fig. 1-2). Latches on two sides of the receiver-transmitter (rt) permit attachment to either the dry or wet battery pack, or to Power Supply PP-4514/PRC-74 (external power supply and battery charger). Retractable legs are provided on the base of the wet battery pack to support Receiver-Transmitter Radio RT-794B/PRC-74 (rt unit) when it is used in an upright position.

c. The radio set can be operated with the use of either Whip Antenna AS-1887A/PRC— 74 ( fig. 1-3) or various configurations of a wire antenna. The Whip antenna consists of Mounting MT-3613/PRC-74 (mounting bracket) which attaches to the radio set (fig. 1-3), a Base, Antenna Support AB-955/PRC-74 which attaches to the mounting bracket, and the whip antenna which attaches to the antenna support. Antenna Kit MK-911A/PRC-74 (shown in the top half of fig. 1-4) consists of two reels of antenna wire with the required antenna

which plugs and weights, two reels of Dacron cord, and a dipole fixture. The components of the wire antenna kit can be arranged in any of the configurations described in paragraph 2-5.

d. Accessory equipment (fig. 1-5) includes Headset H-140/U, Key, Telegraph KY-562/U, and Microphone M-80/U. Bag, Accessories CW-863/PRC-74 (fig. 1-6) is provided to store the antennas and accessory equipment when they are not in use. Cable Assembly, Special Purpose, Electrical CX-10239/PRC-77 (fig. 1-7) permits the use of the radio set with automatic Keyer KY-468/GRA-71 (part of Coder-Burst Transmission Group AN/GRA-71).

e. Battery Box CY-6314A/PRC-74 (fig. 12) consists of two 15-volt battery blocks connected in parallel to provide an open circuit terminal voltage of + 15 volts. Battery capacity is 14-ampere hours with life expectancy of 24 hours (9-minutes receive, 1-minute transmit duty cycle). The radio set will operate on one battery block for a reduced time period. A battery terminal voltage of less than 11 volts, measured during transmission, indicates low batteries which will result in a reduced radio frequency (RF) power output from the radio set.

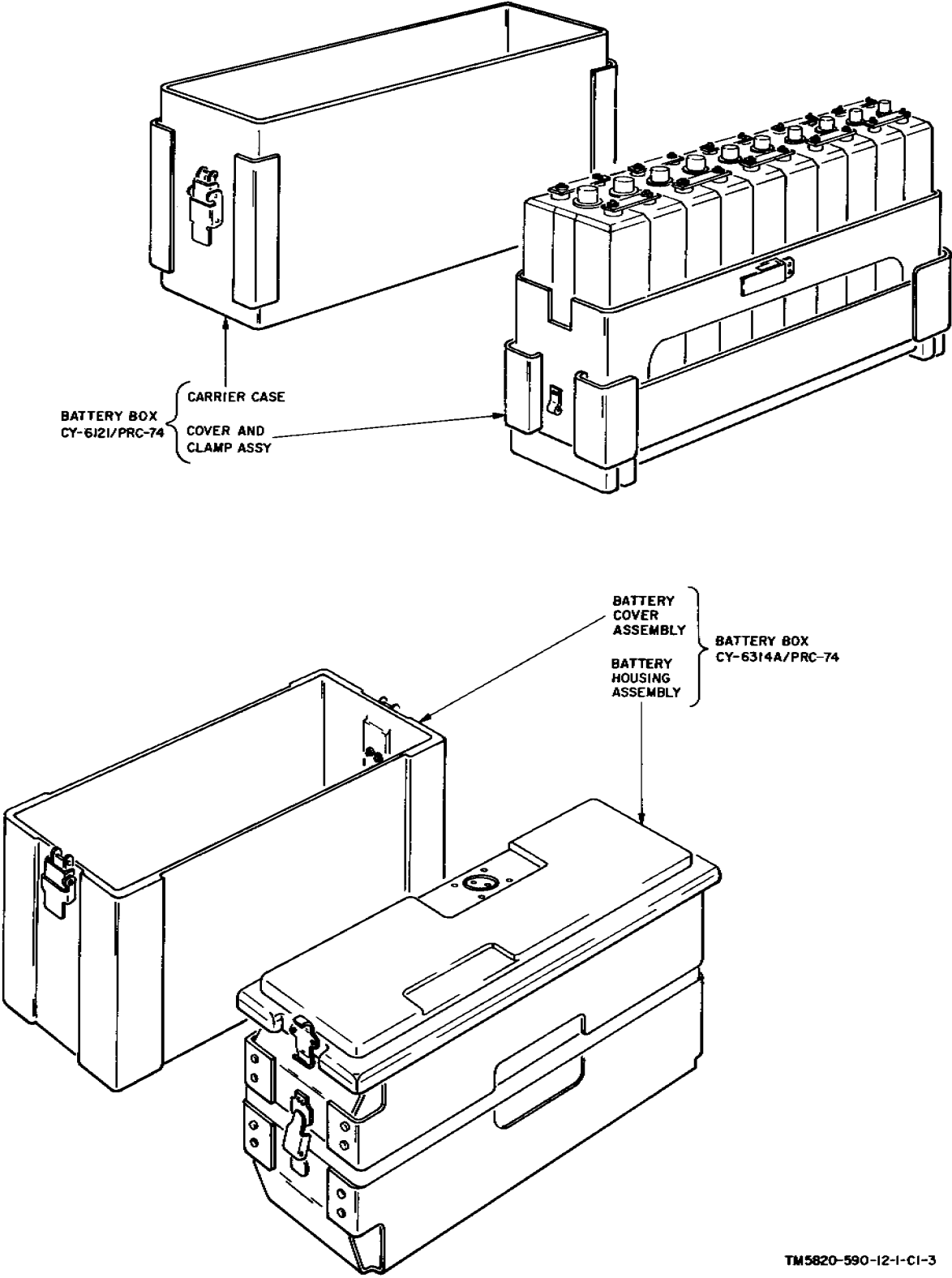
f. The wet cell battery (fig. 1-2) consists of 10 nickel-cadmium cells, connected in series, to provide a nominal voltage of 12.0 volts. The open circuit voltage of a discharged battery is 12.5 volts or less, and that of a full' charged battery will be 13 volts or more. Unless otherwise indicated by a warning tag or the battery, the wet cell battery is always shipped in a discharged state

### 1-8. Description of Power Supply PP— 451 4/PRC-74 (fig. 1-8)

This power supply is used with the AN/PRC-74B when the radio set is installed in a vehicle or is used in a semi-permanent location. This permits the radio set to be operated from 110 or 220 volts ac or 21 to 31 volts dc. Five power cables are provided with the power supply

and are used to connect power from the available voltage source to the power supply. The power supply consists of a battery charger subassembly and power supply subassembly. The battery charger subassembly contains a control for adjusting the charging current from 0 to 5 amperes.

The power supply subassembly provides controls and indicators to establish and monitor the charging rate of the battery charger, the actual charge stored in the wet cell battery, or the voltage supplied to the radio set from the external power source.



TM5820-590-12-1-C1-3

Figure 1-2 Wet and dry battery carrier assemblies, covers removed.

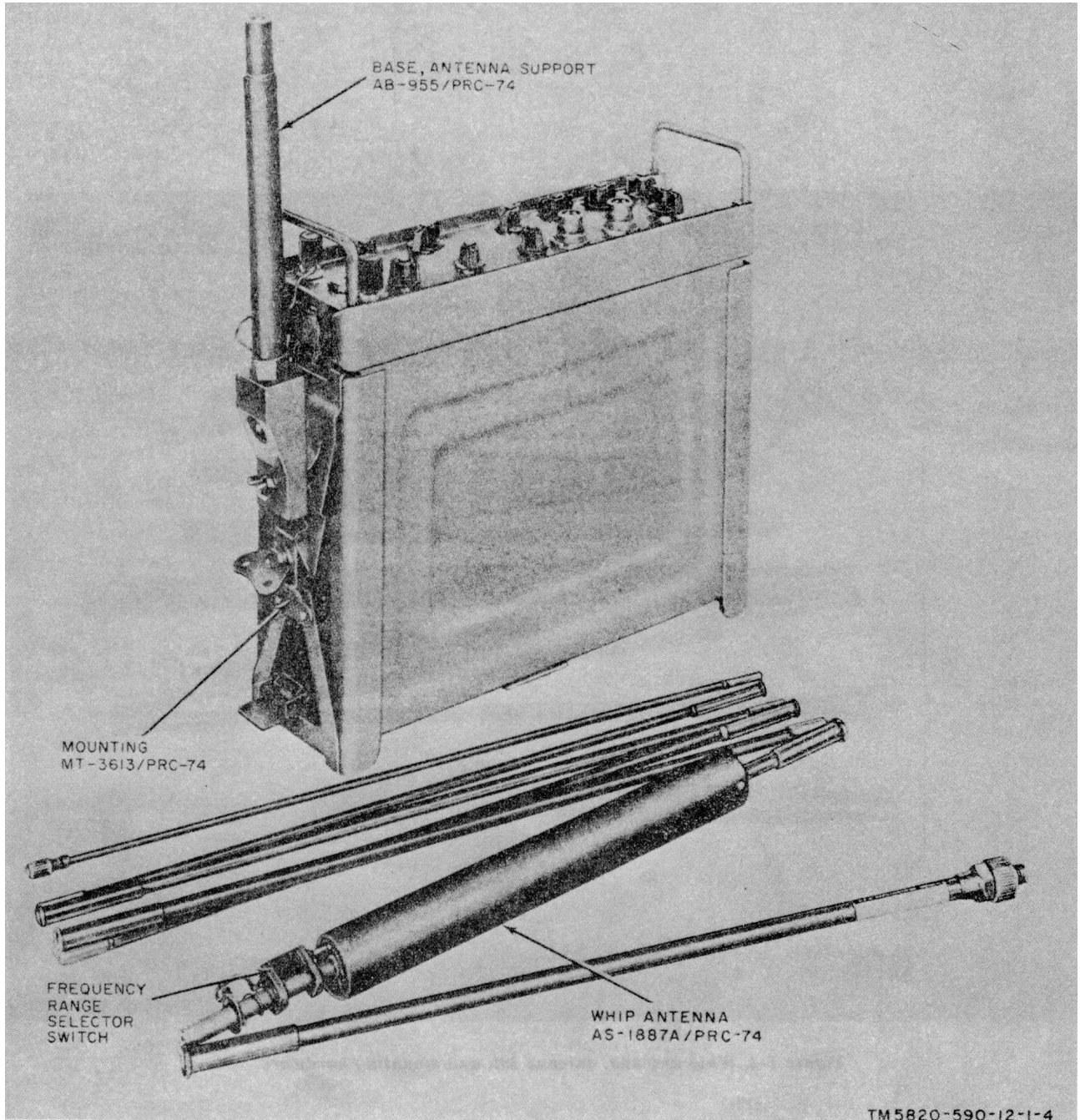


Figure 1-3. Receiver-Transmitter Radio RT-794B/PRC-74 with whip antenna.

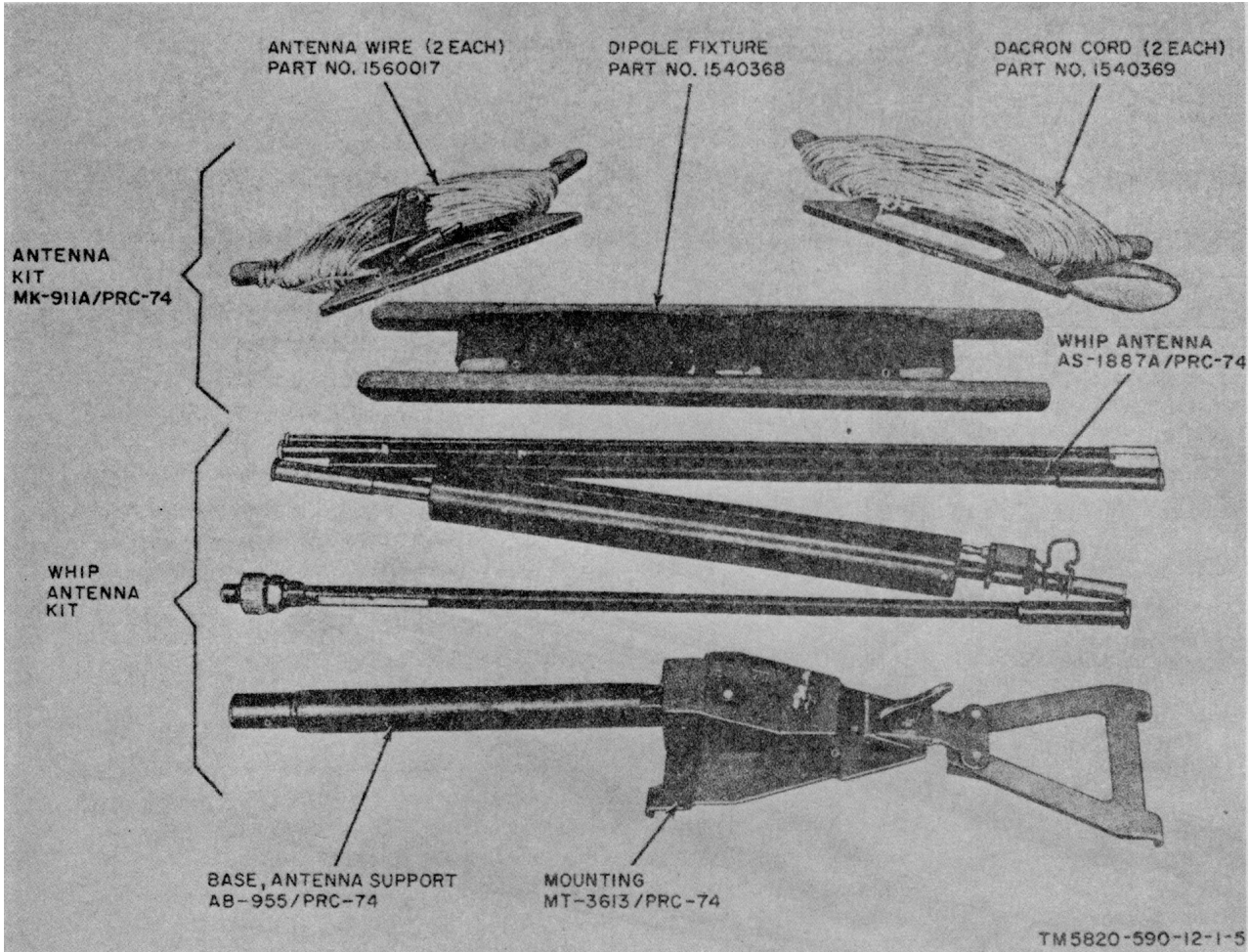
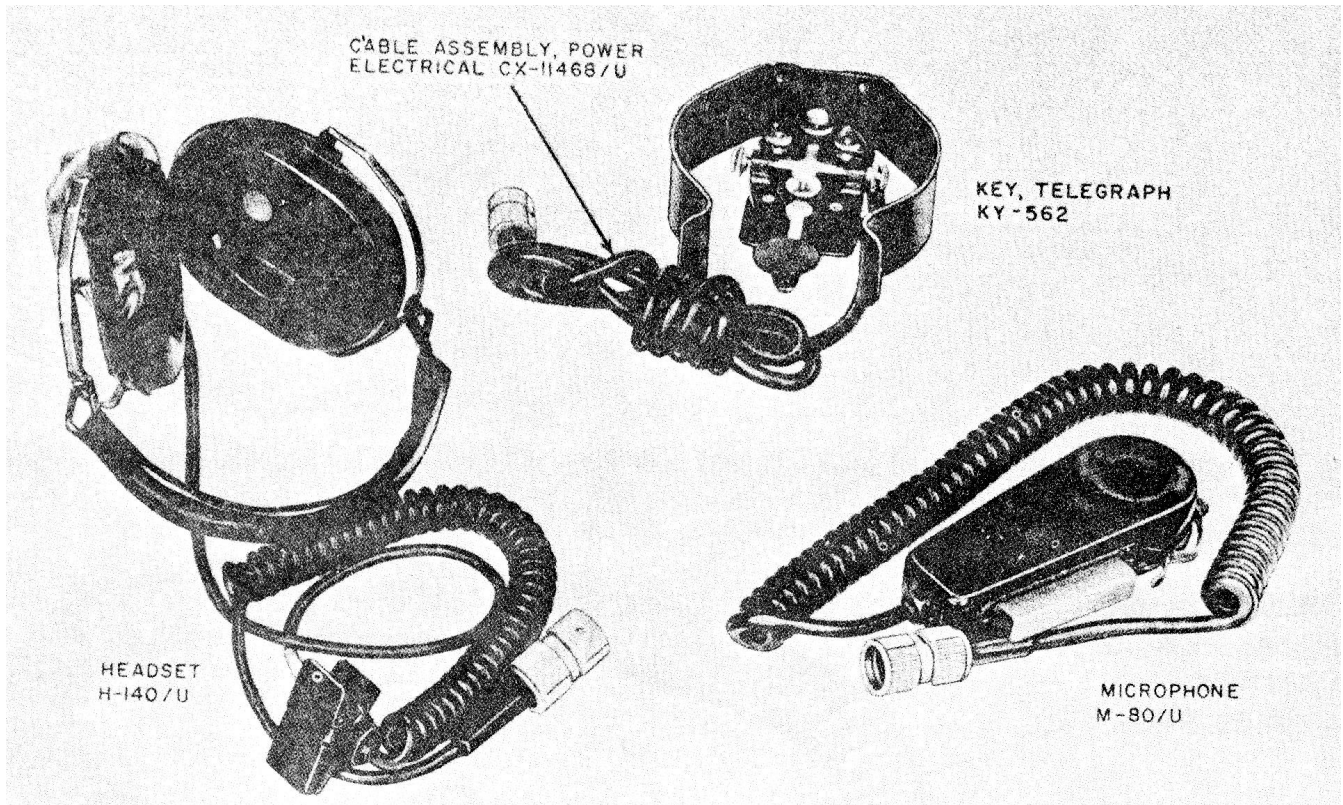
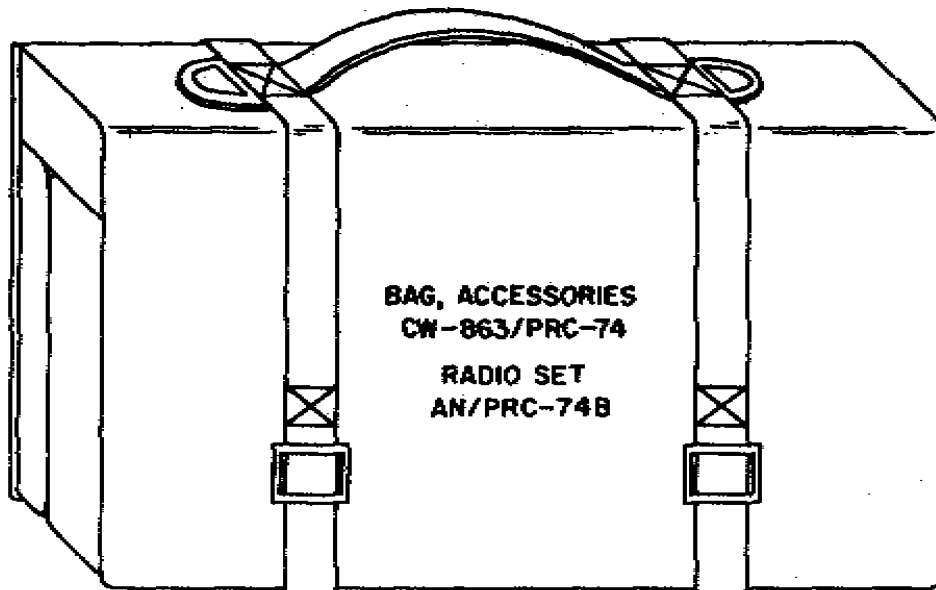


Figure 1-4. Whip antenna, antenna kit, and mounting hardware.



TM5820-590-12-1-18

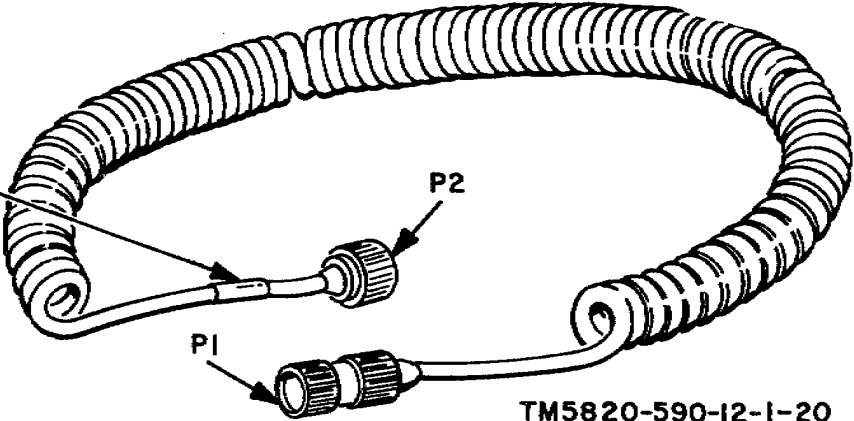
Figure 1-5. Headset, telegraph key, and microphone.



TM5820-590-12-1-5

Figure 1-6, Bag, Accessories CW-863/PRC-74.

CABLE ASSEMBLY  
SPECIAL PURPOSE,  
ELECTRICAL  
CX-10239/PRC-74



TM5820-590-12-1-20

Figure 1-7. Cable Assembly, Special Purpose, Electrical CX-10239/PRC-74 (adapter cable for automatic Keyer KY-468/GRA-71)



### **1-9. Differences in Models**

Radio Set AN/PRC-74C differs from Radio Set AN/PRC-74B in the following details:

*a.* The front panel assembly is marked in Hertz ( Hz ) instead of cycles ( C ) and has molded handles (fig. 3-1, 3-1.1).

*b.* The receiver-transmitter case has ruggedized latches (fig. 1-1.1).

*c.* The frequency synthesizer relocates calibrate crystal Y47 secures switch assemblies A1 and A4 with brackets and changes value of several components .C 2, TM 11-5820-590-12-1.

*d.* The RF module has different chassis plates.

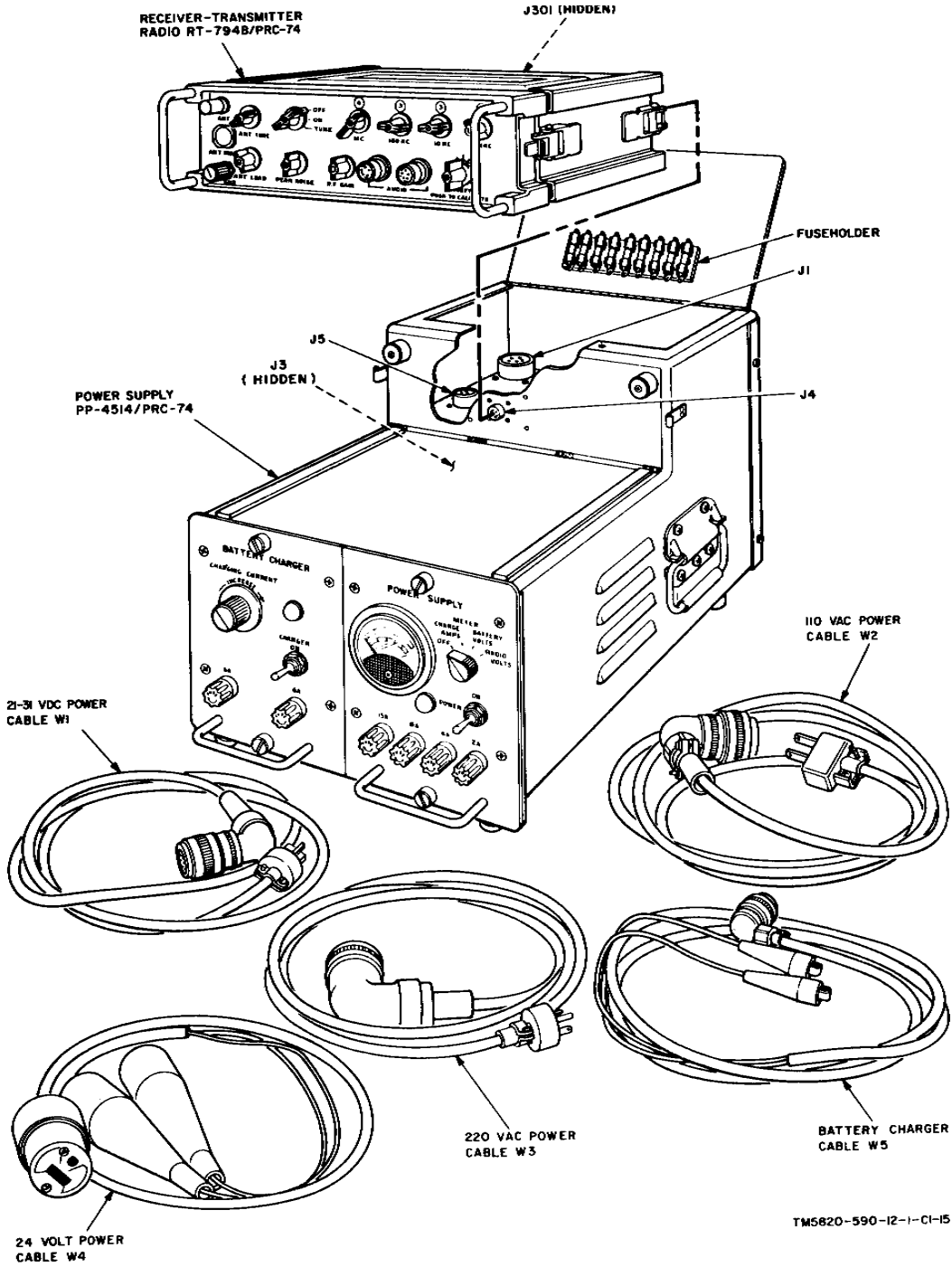
*e.* The IF audio module has added capacitor.

*f.* The power supply module relocates several components.

*g.* The frequency generator has added spring clips.

*h.* All modules have components subject to shifting, secured with sealant.

*i.* Battery Box CY-6314/PRC-74 differs from Battery Box CY-6314A/PRC-74 in the way in which batteries are mounted (para 4-7).



TM5820-590-12-1-CI-15

Figure 1-8. Power Supply PP-4514/PRC-74.

## CHAPTER 2

## INSTALLATION

**Warning.** During installation of this equipment, conform to all safety requirements in TB SIG 291. Injury or DEATH could result from failure to comply with safe practice.

**2-1. Unpacking**

a. When packed for shipment or extended storage, the receiver-transmitter radio, Power Supply PP-4514/PRC-74 and battery packs are packed separately as indicated in figures 2-1, 2-1.1, and 2-1.2. The receiver-transmitter radio and power supply are packed in double cartons with the

outer carton being weather resistant fiberboard. The battery packs are packed in an outer carton only. The outer carton joints are sealed with pressure sensitive waterproof tape. Following is a list showing inner dimensions of cartons used to package the receiver-transmitter radio, power supply and battery packs:

Equipment	Inner Carton Dimension in inches	Outer Carton Dimension in inches	Volume Cu. Ft.	Weight Lbs
Receiver-transmitter radio	17 ¾ X 10¼ X 11 ½	19 ¾ X 12¼ X 13 ¾	2.0	15.25
Power supply	20 ½ X 12 ½ X 11½	22 ¼ X 14 ¼ X 13 ½	2.5	46.00
Wet battery pack		8 ½ X 3 ¾ X 12 ¼	0.3	5.00
Dry battery pack		6 ½ X 4 ¼ X 11 ¾	0.2	4.00

b. *Removing Contents.* Perform the procedures below when unpacking the radio set.

(1) Transport the packing box as close as possible to the desired location before unpacking.

(2) Cut the taped seams of the outer carton with a sharp knife and open the barrier bag.

(3) Remove the four top corner pads.

(4) Cut the taped seams of the inner carton and remove the filler material that surrounds each piece of equipment.

(5) Remove the contents of the box.

b. See that the equipment is complete as listed in paragraph 1-6. Report all discrepancies in accordance with TM 38-750. Shortage of a minor assembly or part that does not affect proper functioning of the equipment should not prevent use of the equipment.

c. If the equipment has been used or reconditioned, see whether it has been changed by a modification work order (MWO). If the equipment has been modified, the MWO number will appear on the front panel near the nomenclature plate. Check to see whether the MWO number (if any) and appropriate notations concerning the modification have been entered in the equipment manual.

**2-2. 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 (para 1-3).

**2-3. Radio Set Installation**

Installation procedures for the radio set depend on the type of operation desired; that is. man pack, vehicular or semi-permanent. Installation procedures for the three types of operation are given in a, b, and c below.

## C 3, TM 11-5820-590-12-1

*a. Man Pack Operation.* The man pack method requires the use of either the dry or wet cell battery packs ( figs. 1-1 and 1-2). To connect either battery pack to the rt unit proceed as follows: Note battery WARNINGS AND CAUTIONS on page i.

(1) Place the battery pack on a flat surface so that the connector on the battery pack is facing upward.

(2) Mate the connector (J301, fig. 1-8) on the bottom of the rt unit with the connector on the battery pack.

(3) Engage and lock the two latches located on both sides of the rt unit.

(4) Connect the rt unit to the antenna (para 2-5).

*b. Vehicular Operation.* The vehicular method requires the use of a vehicle with a 24- t28-volt generating system. To connect the rt unit to the vehicle, remove the battery case from the rt unit by releasing the two snap fasteners that secure the battery case to the rt unit and proceed as follows:

(1) Place the rt unit in its mounting position (fig. 1-8) on Power Supply PP-4514/PRC-74 (external power supply and battery charger) slides and slide the rt unit forward until J301 on the back of the rt unit mates with J4 on the PP-4514/PRC-74 case. Secure the two side latches.

(2) Select two dc power cables (cables W4 and W1, fig. 1-8) and connect the two cables as shown in B. figure 3-4. (The location of J1 on the power supply is shown in fig. 1-8). Be sure to connect the positive terminal of cable W4 to the positive terminal of the vehicle battery and the negative terminal of the cable to the negative terminal of the vehicle battery.

(3) Connect the rt unit to the antenna (para 2-5).

*c. Semi-permanent Operation.* The semi-permanent method requires a source of 220 volts at 50 to 400 cycles per second (cps), or 110 volts at 50 to 400 cps, or a 28-volt dc power supply. To connect the rt unit to the fixed source of power, remove the battery case from the rt unit by releasing the two snap fasteners that secure the battery case to the rt unit, and proceed as follows:

(1) Place the rt unit in its mounting position (fig. 1-8) on the PP-4514/PRC-74 slides and slide the rt unit forward until J301 on the back of the rt unit mates with J4 on the PP-4514/PRC-74. Secure the two side latches.

(2) Refer to figure 1-8 and select the correct power cable for the available power source. *Note.* The selection of the correct power cable for the available power source automatically provides the correct input connections to J1 on the PP-4514/PRC-74. No other adjustments or connections are required when changing from one source of fixed power to another.

(3) Connect the selected cable between J1 on the PP-4514/PRC-74 and the power source as shown in A, fig. 3-4.

(4) Connect the rt unit to the antenna (para 2-5).

*d. Operation With Coder-Burst Equipment.* To operate the radio set with the AN/GRA-71 coder-burst equipment, connect one end of Cable Assembly, Special Purpose, Electrical CX-10239/PRC-74 (fig. 1-7) to J1 on Keyer KY-468 /GRA-71. Connect the other end of this cable to one of the AUDIO connectors on the front panel of the radio set. Operate the equipment as specified in paragraph 3-4. Refer to TM 11 -5835-224-1 2 for additional information on the AN/GRA-71.

### 2-4. Siting

The following should be considered when locating the antenna:

*a.* Radio signals are absorbed and sometimes reflected by nearby obstructions, such as hills, metal buildings and bridges, or telephone lines that extend above the height of the antenna. Transmitted signals have a greater range when the antenna is as high above ground as possible. Transmission and reception are best over water or level ground.

*b.* If transmission and reception in all directions are required, place the antenna on the highest hill within the designated area.

*c.* When in rear areas, avoid placing the radio set near sources of electrical interference, such as powerlines or telephone lines, radar sets, and field hospitals.

d. Try several locations within the general area and select the one that provides the best signals from the desired stations.

e. Enemy jamming action against the receiver is always a possibility. The effects of enemy jamming may be reduced by locating the antenna so that nearby obstructions act as a screen in the direction of probable sites of enemy jamming transmitters. This screening action may also reduce the transmitted signal strength in a direction toward the enemy, thereby making it more difficult for the enemy to intercept the signals.

## 2-5. Antenna Assembly

**Warning.** During installation of this equipment, conform to all safety requirements in TB SIG 291. Injury or DEATH could result from failure to comply with safety practices.

**WARNING. AVOID RF BURNS. Do not touch the antenna when the radio set is being tuned or transmitting.**

**Caution.** Do not use the whip antenna at 3.5 MHz or below.

a. *Whip Antenna.* The whip antenna (fig. 1-3) is the least effective of the three antennas supplied with the radio set; however, it may be erected quickly and requires no support. Connect the whip antenna as follows:

(1) Place the radio set in as high and clear a location as circumstances permit.

*Note.* The whip antenna is mounted on a swivel to permit the operator to place the radio set flat on the ground and swivel the antenna into the upright position. Under combat conditions, this permits the operator to use the radio set from a prone position.

(2) Attach the whip mounting bracket (Mounting MT-3613/PRC-74) to the side of the radio set shown in (fig 1-3).

(3) Assemble the whip antenna.

*Note.* The antenna sections are connected internally by a wire cable that is under tension. When the antenna sections are set in line, the individual sections will automatically snap into place.

(4) Attach the whip antenna to the antenna support base and screw the antenna support base (fig. 1-3) into the whip mounting bracket.

(5) Connect the lead from the antenna base to the ANT (red) terminal (fig. 3-1) of the radio set.

(6) Set the frequency range selector switch (fig. 1-3), located at the bottom of the antenna loading coil, to correspond to the operating frequency.

(7) Tune the radio set as outlined in para 3-2 and 3-3.

*Note.* If time and conditions permit, a counterpoise be connected to the radio set ground terminal as indicated in (8) and (9) below.

(8) Attach one of the antenna reels to the GRD (black) terminal of the radio set.

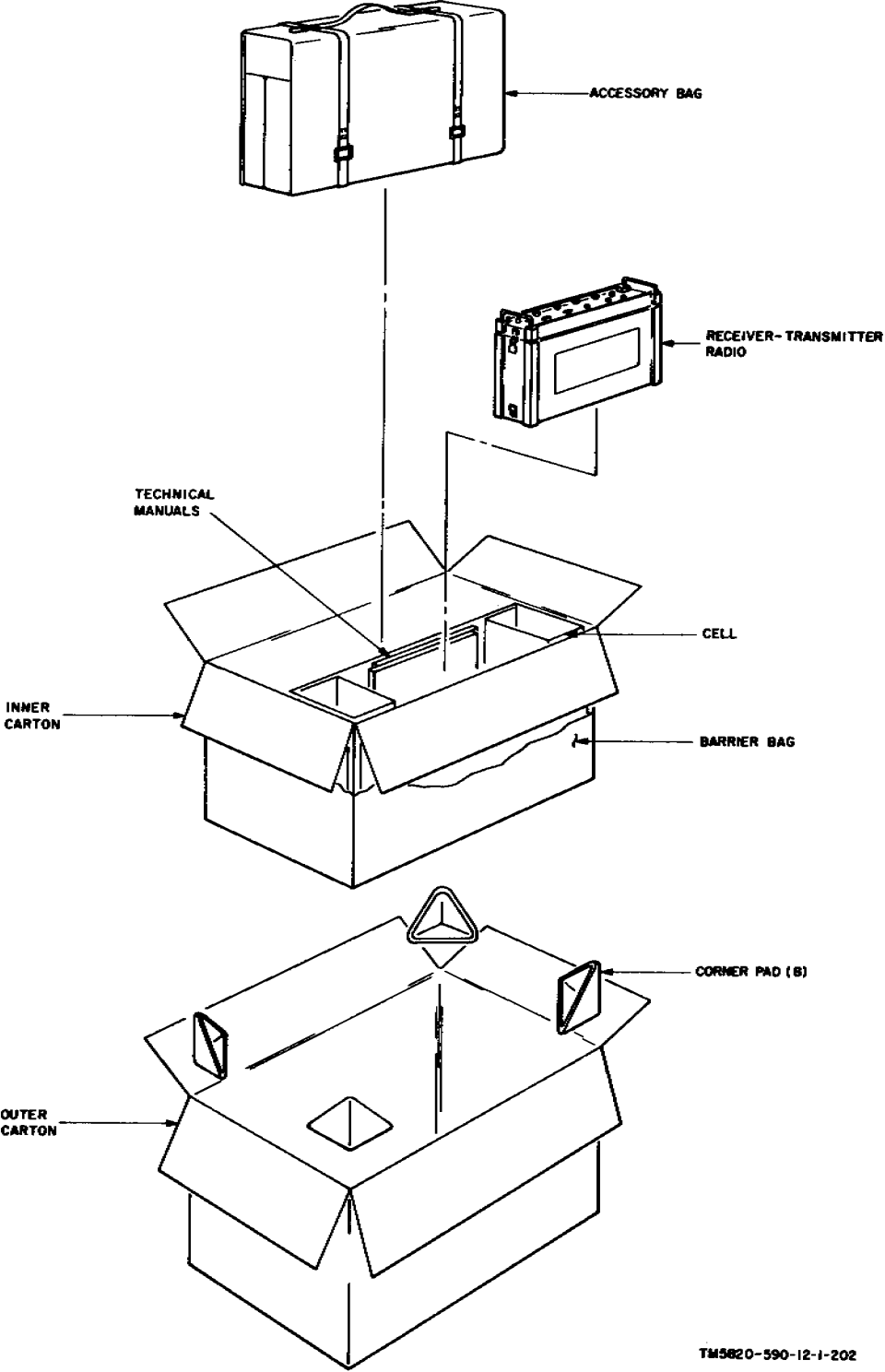
(9) Unwind the antenna wire to approximately twice the length of the whip antenna and lay wire on the ground in a convenient direction away from the radio set. (This wire acts as the counterpoise.)

*Note.* If the radio set is operated near a large metal structure, a clip lead attached to a clean conducting point will permit the structure to be used as a counterpoise in place of the antenna wire.

(10) Check the frequency range selector switch whenever the operating frequency of the radio set is changed.

b. *Slant Wire Antenna.* A slant wire antenna is much more effective than the whip antenna. The slant wire antenna requires the use of dipole antenna wire (fig. 2-5) and an antenna support. It is used when greater range is necessary than the whip antenna can provide, and when time or conditions do not allow the erection of a dipole. The proper arrangement for a slant wire antenna is shown in (fig 2-2). Erect a slant wire antenna as follows:

(1) Decide on the direction that transmission is required and determine the alignment of the antenna.



TM5820-590-12-1-202

Figure 2-1. Receiver-transmitter radio, typical packaging

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(2) Unwind one of the dipole antenna reels to the length specified in the antenna length chart below.

(3) Fasten the antenna wire to the notch on the reel and lay the reel about 20 feet from the antenna support. Position the radio set at the end of the antenna and insert the red plug of the antenna wire into the ANT (red) terminal of the radio set.

(4) Insert the black plug of the remaining antenna reel into the GND (black) terminal. Unwind this wire and lay it on the ground in line with the antenna and in the opposite direction of the antenna support. Unwind the reel until it is about 1 1/2 times the antenna length and place the reel on

the ground. (When the antenna is completely erected, this wire provides a counterpoise.)

(5) Attach a lead weight (fig. 2-3) to one end of the Dacron cord. Throw the weight over any convenient antenna support (such as a tree limb), and then remove the lead weight and fasten the end of the cord to the antenna reel. Raise the antenna, and fasten the cord to hold the antenna in place.

(6) Tune the rt unit (para 3-2 and 3-3).

c. *Dipole Antenna.* The dipole antenna is the most effective antenna and, time and tactical circumstances permitting, should be used in

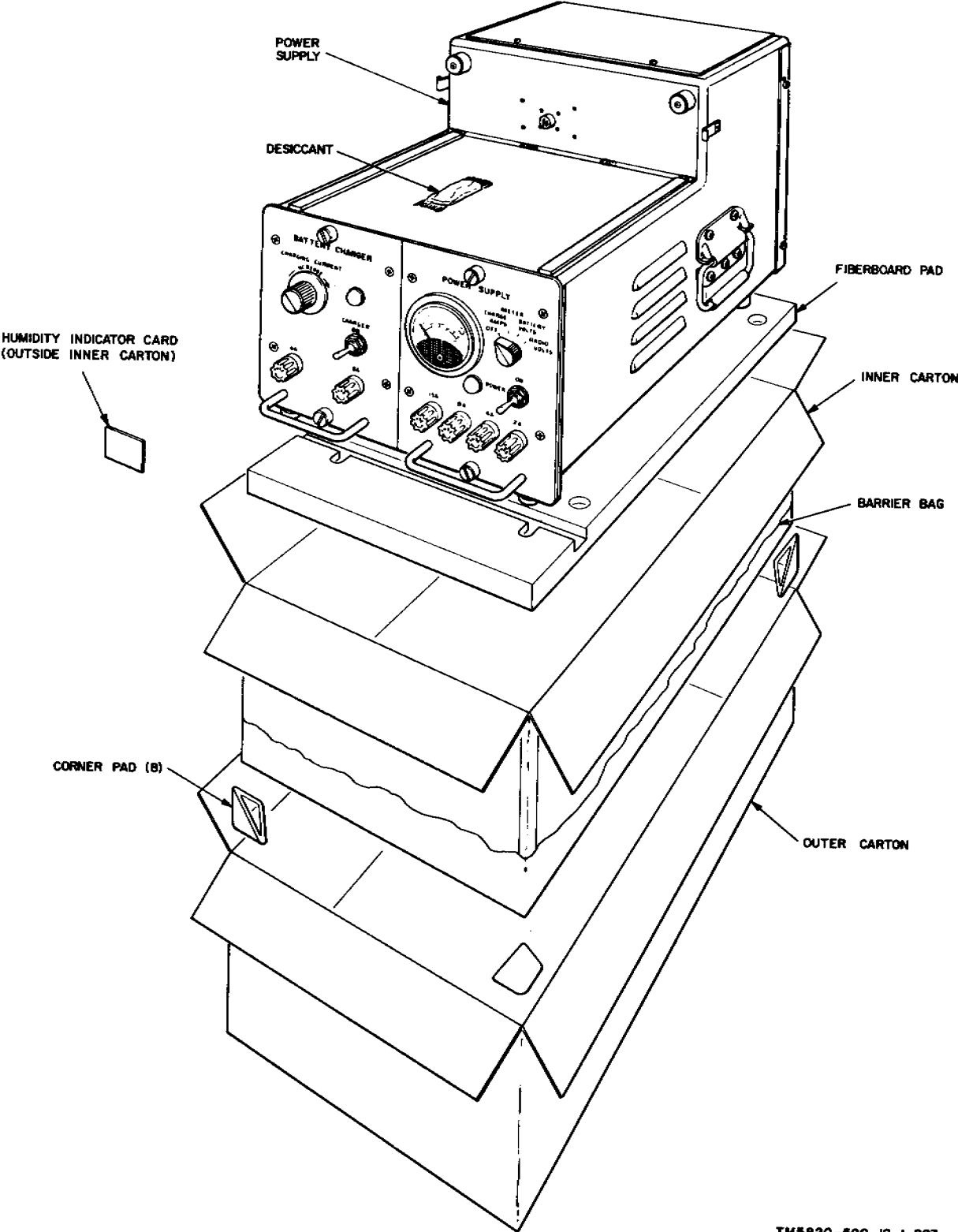
Antenna length chart (each leg).

Frequency (MHz)	Length (Ft.)	Frequency (MHz)	Length (Ft.)	Frequency (MHz)	Length (Ft.)
2.00	117	5.00	47	13.00	18
2.20	106	5.50	43	14.00	17
2.40	98	6.00	39	15.00	16
2.60	90	6.50	36	16.00	15
2.80	84	7.00	33	17.00	14
3.00	78	7.50	31	18.00	13
3.25	72	8.00	29	MEASURE WIRE ACCURATELY FOR OPERATING FREQUENCY  WRONG LENGTH MAY DAMAGE THE RADIO SET	
3.50	67	8.50	28		
3.75	62	9.00	26		
4.00	58	9.50	25		
4.25	55	10.00	23		
4.50	52	11.00	21		
4.75	49	12.00	20		

Formulas for slant wire and dipole antennas :

$$\text{Each leg in feet} = \frac{234}{\text{Frequency in MHz}}$$

$$\text{Full length of dipole antenna in feet} = \frac{468}{\text{Frequency in MHz}}$$



TM5920-590-12-1-203

Figure 2-1.1. Power supply, typical packaging.



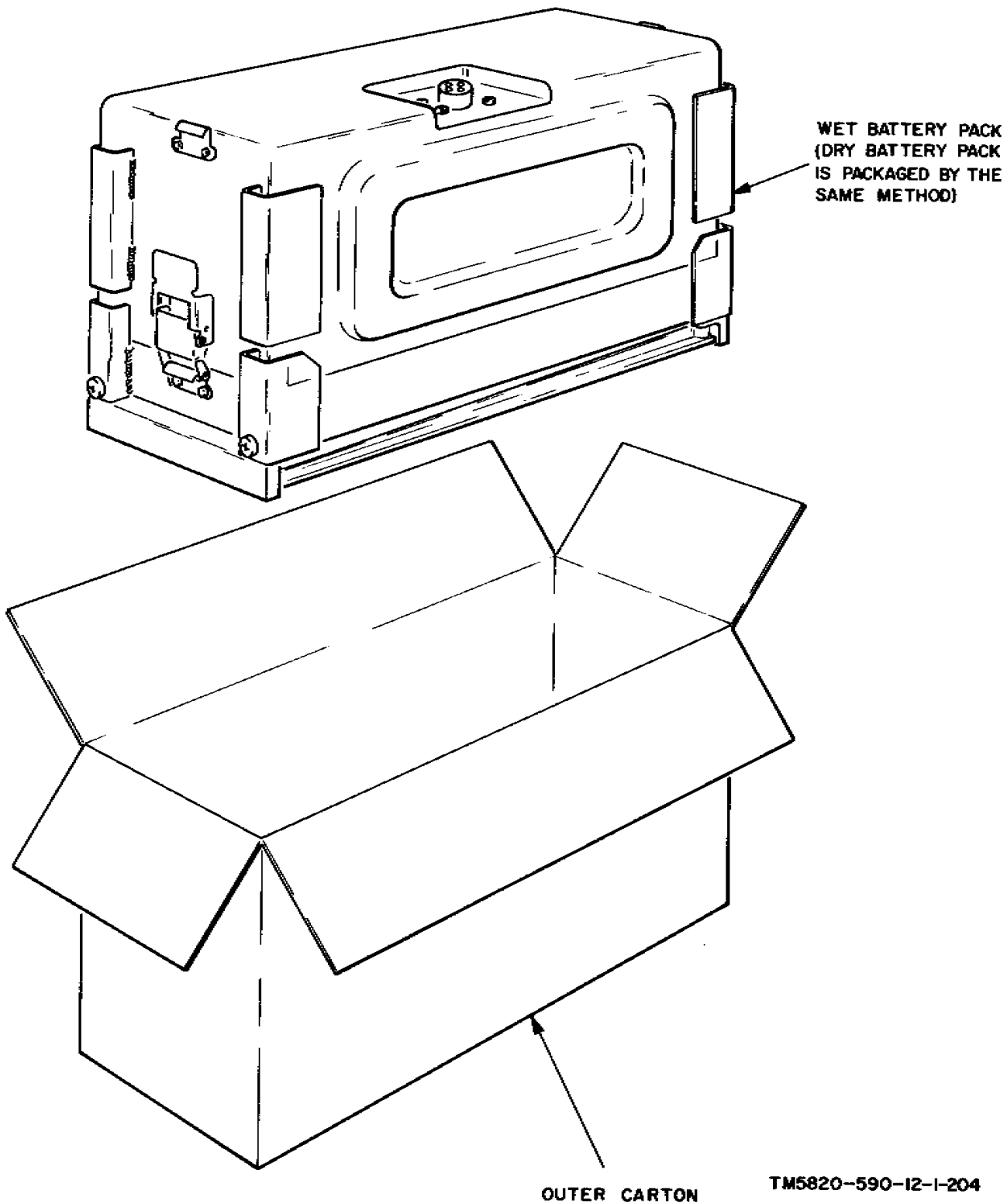


Figure 2-1.2. Battery pack, typical packaging

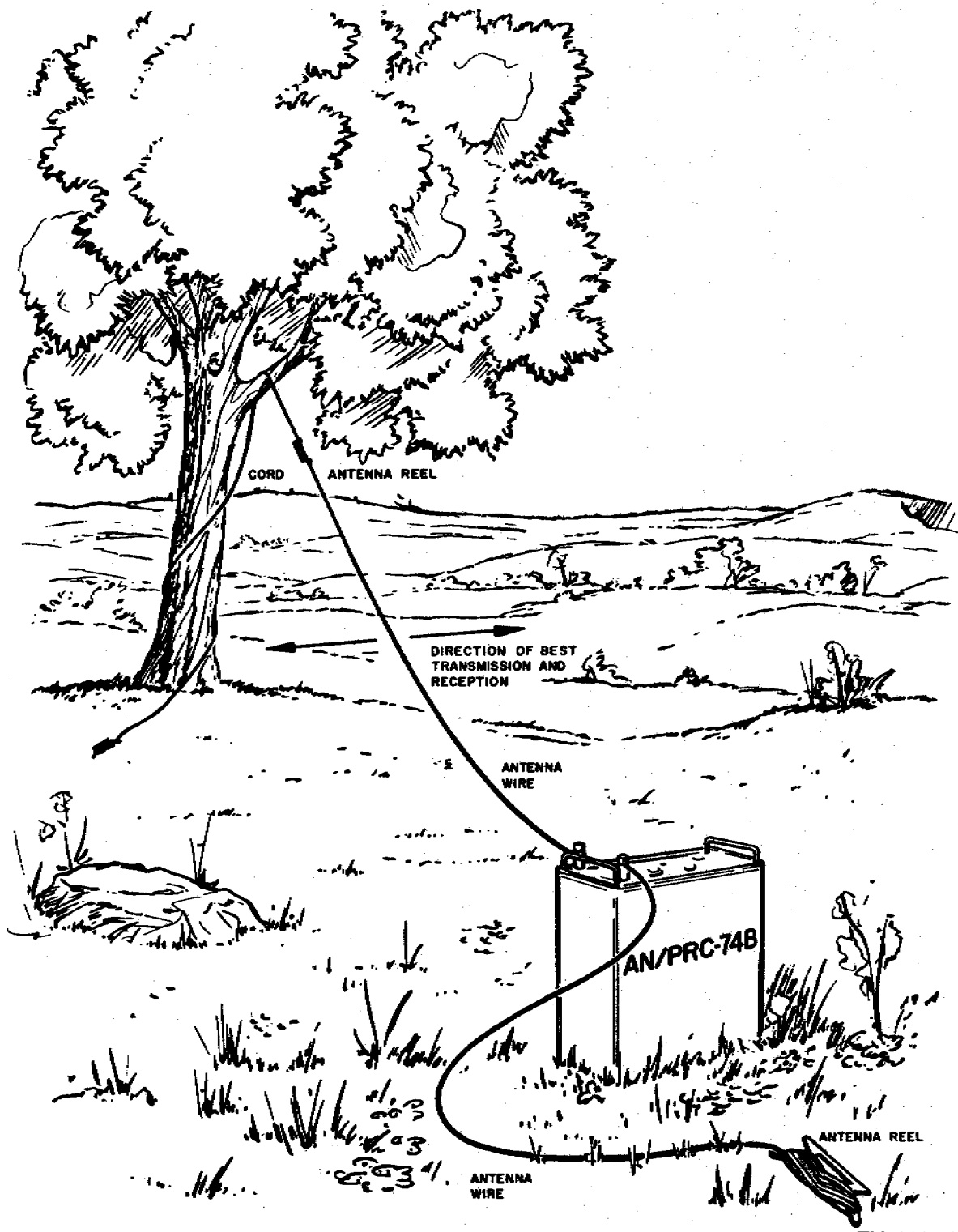
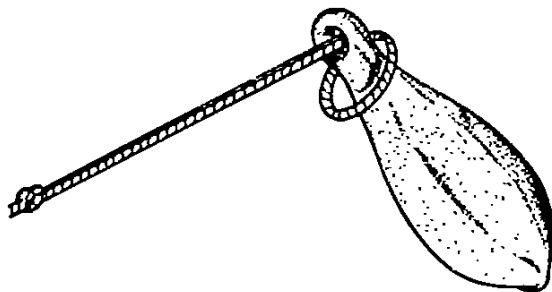
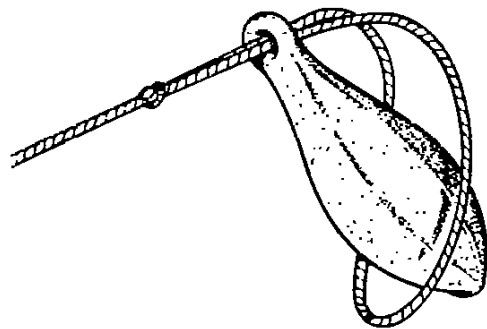
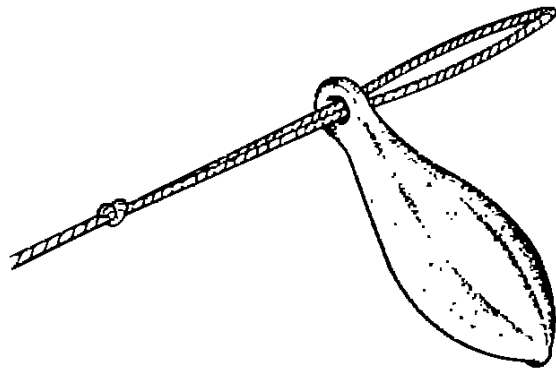


Figure 2-2. Slant wire antenna.

TM5820-590-12-1-7

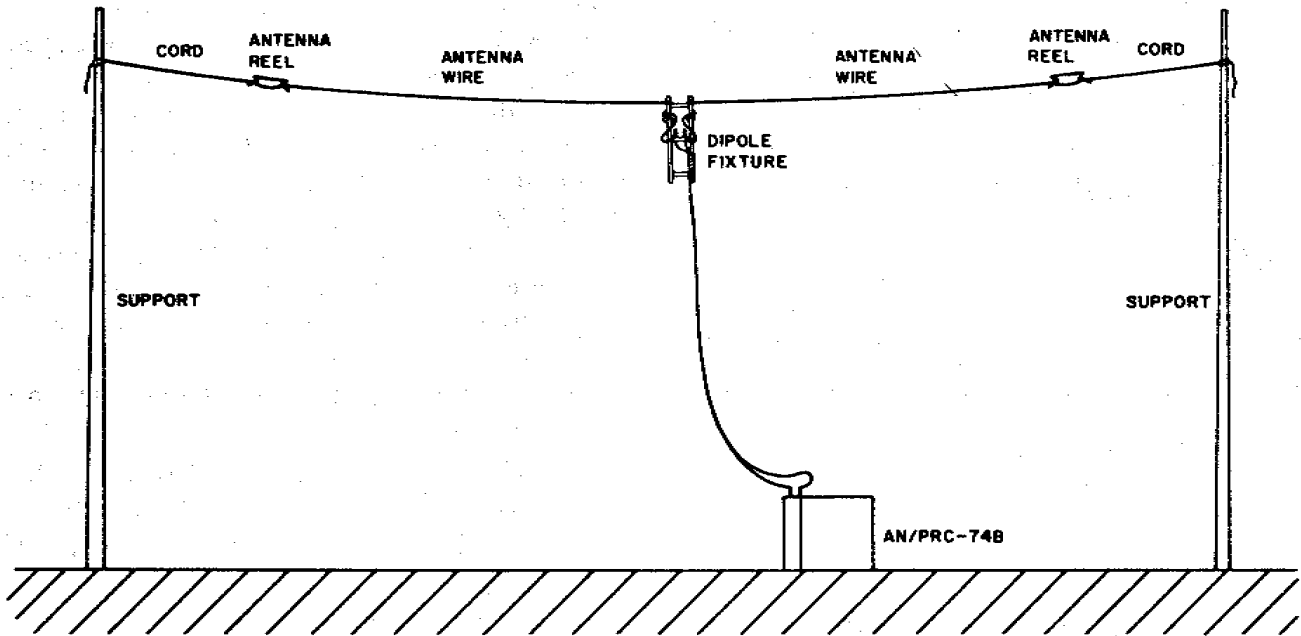


TM5820-590-12-10

Figure 2-3. Attaching weight to Dacron line.

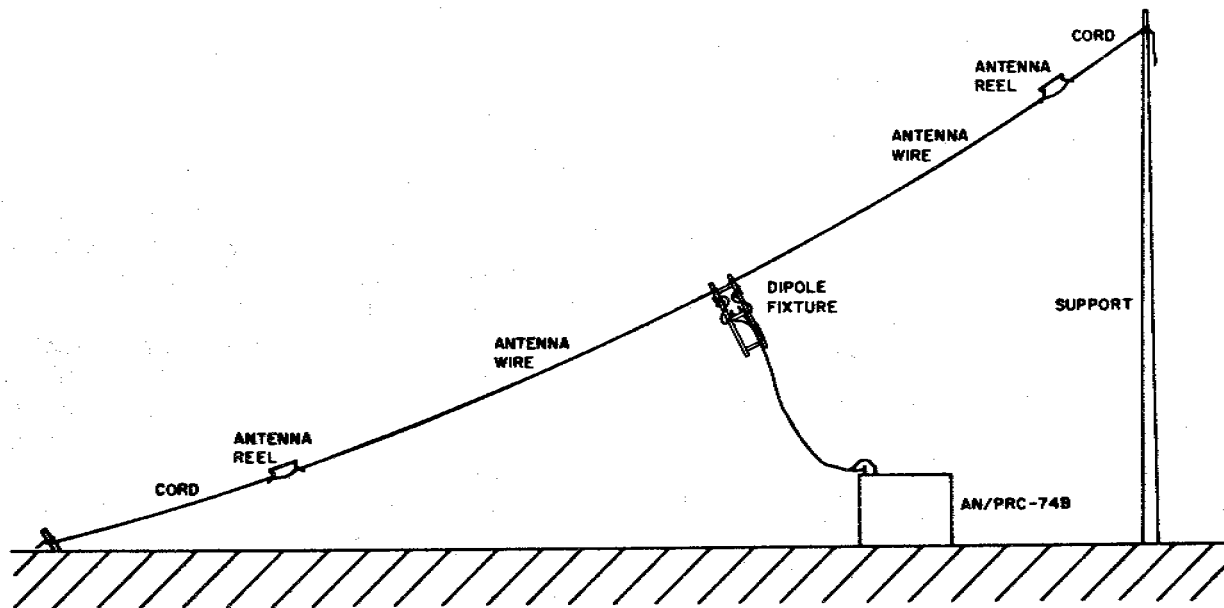
preference to either the whip or slant wire antenna. A dipole antenna is usually erected between two supports as shown in figure 2-4. Antenna supports are not provided with this equipment and it is not always possible to find two supports that are properly oriented and spaced. If only one support is available, or if terrain prohibits, a one-support dipole (figs. 2-5 and 2-6) should be used. Note that for both the dipole and slant wire antennas, the most effective receiving and transmitting direction is broadside, or 90° to the line of the wire. Erect a dipole antenna as follows:

- (1) Attach each dipole antenna wire to the dipole fixture (fig. 2-7).
- (2) Determine the length of each leg of the dipole from the antenna length chart para b (2) above
- (3) Insert either lead of the feedline to the ANT (red) terminal and the other to the GRD (black) terminal on the rt unit front panel.
- (4) If two antenna supports are available, erect the antenna as illustrated in (fig 2-4 ). If only one support is available, use the method shown in (fig 2-5 or 2-6).
- (5) Tune the rt unit as described in para 3-2 and 3-3.



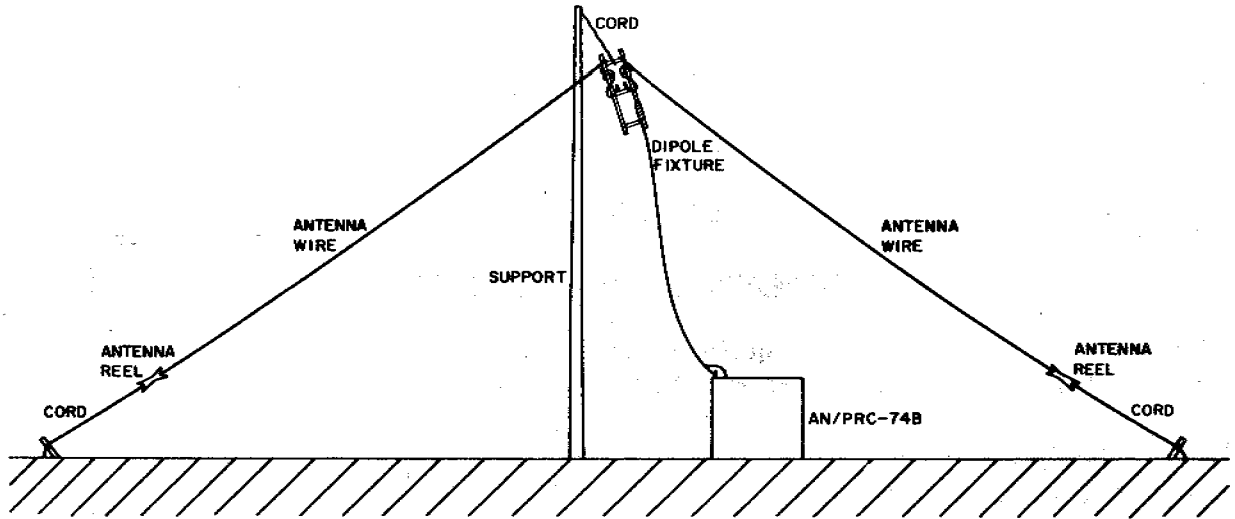
TM5820-590-12-1-8

Figure 2-4 Two-support dipole antenna.



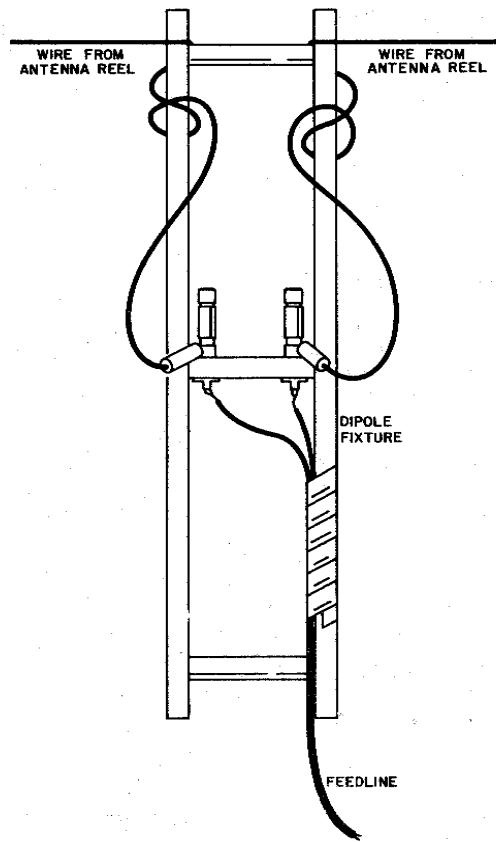
TM5820-590-12-1-9

Figure 2-5. Sloping dipole antenna.



TM5820-590-12-1-10

Figure 2-6. Inverted - V dipole antenna..



TM5820-590-12-14

Figure 2-7. Attaching antenna wires to dipole fixture.

CHAPTER 3

OPERATING INSTRUCTIONS

**Warning.** Before operating this equipment, make certain that all requirements of TO SIG 291 are met. Injury or DEATH could result from improper or careless operation.

**3-1. Controls and Indicators**

*a. Rt Unit (figs. 3-1, 3-1.1)*

Control or indicator	Function
ANT TUNE	Adjusts antenna coupler capacitor.
ANT LOAD	Adjusts antenna coupler inductor.
OFF-ON-TUNE.	Selects required function.
R.F. GAIN	Adjusts receiver gain.
PEAK NOISE	Tunes RF circuits to operating frequency.
AUDIO (2 jacks).	Accepts microphone, key, headset, or Cable Assembly, Special Purpose Electrical CX-10239/PRC74.
CLARIFY	Receiver frequency vernier tuning.
PUSH TO CALIBRATE.	Sets synthesizer to coincide with frequency standard (engages only when pushed in).
MC (MHZ)	Selects frequency in 1-mc steps
100 KC (KHZ)	Selects frequency in 100 kc steps.
10 KC (KHZ)	Selects frequency in 10 kc steps.
1 KC (KHZ)	Selects frequency in 1 kc steps.
ANT. IND. (meter).	Indicates proper tuning for antenna coupler.
ANT (terminal)	Accepts antenna wire or one wire of dipole feedline.
GND (terminal)	Accepts antenna wire used for counterpoise or one wire of dipole feedline

*b. Power Supply Subassembly Part of PP4514/PRC-74 (fig. 3-2).*

Control or indicator	Function				
POWER ON Switch.	Controls input power to power supply				
Power on indicator.	Illuminates when power is applied indicator from an external source.				
METER switch	Four-position switch that selects meter function				
	<table border="0"> <thead> <tr> <th>Sw pos</th> <th>Function</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>Shorts out meter.</td> </tr> </tbody> </table>	Sw pos	Function	OFF	Shorts out meter.
Sw pos	Function				
OFF	Shorts out meter.				

Control or indicator	Function	
	<i>Sw pos</i>	<i>Function</i>
	CHARGE AMPS	Charging rate in amp (1-to 5) of the battery charger.
	BATTERY VOLTS	Charge available in the battery pack.
	RADIO VOLTS	Voltage being supplied to the rt unit.
Fuses	15-ampere fuse dc input.	(15A) for 28-volt.
	2-ampere fuse ac input.	(2A) for 220-volt.
	4-ampere fuse ac input	(4A) for 110-volt.
	8-ampere fuse dc output.	(8A) for 14-volt.

*c. Battery Charger Subassembly Part of PP-4514/PRC-74 (fig. 3-2).*

Control or indicator	Function
CHARGER ON switch.	Applies input power to the battery charger.
Charger on indicator	Illuminates when power is applied to the battery charger.
CHARGING CURRENT INCREASE control.	Controls amount of charge current applied to external batteries.
Fuses	6-ampere fuse (6A) for input. 6-ampere fuse (6A) for output.

*d. Whip Antenna (fig. 1-3).*

Control or indicator	Function
Frequency range selector switch	Selects antenna loading coil frequency ranges comparable with the operating frequency of the radio set

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### 3-2. Receiver Tuning

Connect the rt unit to a suitable power source (para 2-3) and use the following procedure to tune the radio set for receive mode:

a. Connect an antenna to the rt unit (para 2-5).

b. If a vehicular power supply or commercial power source is used (para 2-3), place the POWER ON switch on the PP-4515/PRC74 to ON. Set the METER switch to RADIO VOLTS and check to see that the meter reading is 14 volts +3. If the battery pack is used, omit this step.

c. Plug the headset into either of the AUDIO jacks on the rt unit.

d. Set the four frequency selector knobs to the desired frequency.

e. When using the whip antenna, check the antenna load coil for proper frequency range setting.

f. Turn the OFF-ON-TUNE switch to ON.

g. Set the R.F. GAIN control to maximum and adjust it so that noise is heard in the headset.

h. Rotate the PEAK NOISE knob until a definite noticeable increase in noise is heard in the headset; then adjust it carefully for maximum noise in the headset.

i. If the radio set is to be used for receive mode only, set the ANT TUNE control to mid range and ANT LOAD control for maximum noise in the headset (otherwise these knobs are adjusted in the transmit tune procedure).

j. Push in the PUSH TO CALIBRATE knob and adjust it for a zero beat condition in the headset. Release the knob; then reset the pointer to midscale.

k. Set the R.F. GAIN control to the desired audio volume of the received signal.

l. When receiving voice signals, it may be necessary to adjust the CLARIFY knob so that the quality is natural. Do not push the knob in when making this adjustment.

### 3-3. Transmitting Tuning

Use the following procedure to tune the radio set for transmit mode.

#### WARNING

**AVOID RF BURNS.** Do not touch the antenna when the radio set is being tuned or transmitting.

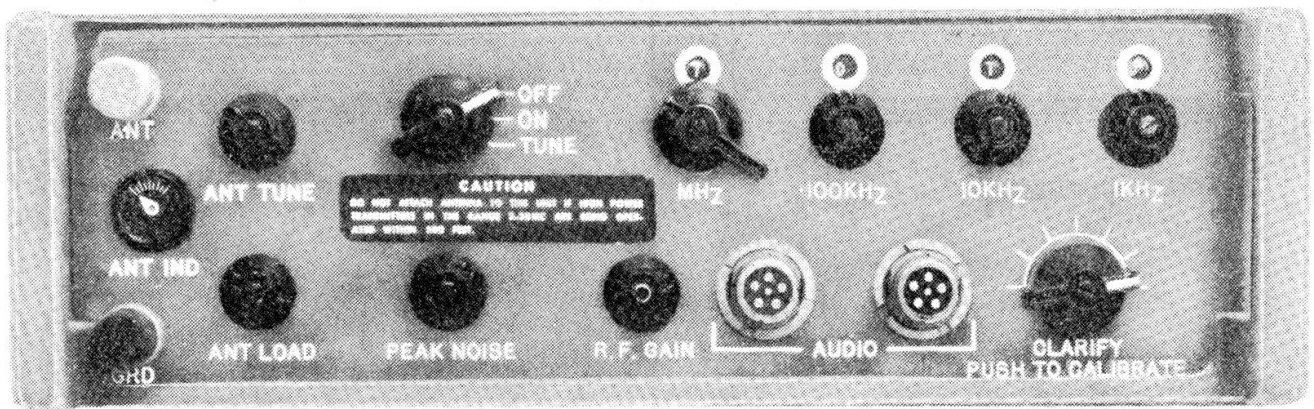
#### CAUTION

Do not attempt to tune the radio set without a suitable antenna connected. Remember that during tuning, the radio set transmits a signal and therefore breaks radio silence.

#### CAUTION

Do not use whip antenna at 3.5 MHz or below.

a. Perform the receiver tuning procedure (para 3-2). After the receiver tuning procedure has been completed, do not make further adjustments to the PEAK NOISE control.



TM5820-590-12-1-C1-16

Figure 3-1. Receiver-Transmitter Radio RT-794B/PRC-74, front panel



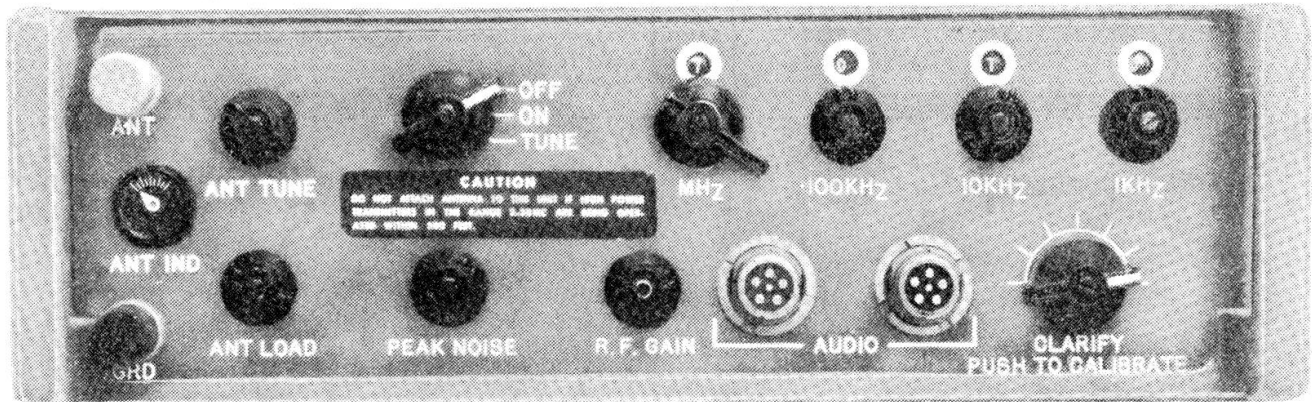


Figure 3-1.1. Receiver-Transmitter Radio RT-794C/PRC-74, front panel

b. Using the left hand as shown in (fig 3-3), turn and hold the OFF-ON-TUNE switch in the TUNE position. A tone should be heard in the headset.

c. With right hand, adjust the ANT TUNE knob midway between the stops. Adjust ANT LOAD knob until maximum reading is obtained on the ANT.IND. meter. Adjust ANT TUNE knob until a maximum reading is obtained on the ANT.IND. meter. Release the OFF-ON-TUNE knob. The knob should return to the ON position.

d. If voice operation is to be used, insert the microphone connector into either of the AUDIO jacks. To transmit, press microphone button and speak directly into the microphone. Hold the microphone one-fourth inch from the lips. When the radio set is transmitting voice, a voice sidetone should be heard in the headset. Releasing the microphone button returns the set to the receiver mode.

e. If telegraph operation is to be used, insert the telegraph key connector into one of the AUDIO jacks. To transmit, begin sending the message with the telegraph key. The radio set automatically goes into transmit mode as soon as the key is depressed, and stays in the transmit mode for 2 seconds after the key has been released. The keyed signal may be monitored by the keyed sidetone heard in the headset.

### 3-4. Coder-Burst Operation

*Note.* In the Coder-burst mode of operation, it is essential that the tape cartridges are encoded and ready for use before turning on the radio set. This will minimize the transmitter *on-air* time.

a. Encode Magazine, Recording Tape MA-9/ GRA-71 (CA-3B cartridge), using one of the coders supplied with the AN/GRA-71 (TM 115835-224-12).

b. Insert the CA-3B cartridge into Keyer KY-468/GRA-71 (KE-8B keyer).

c. Connect the KE-8B keyer to the AN/PRC74B through the special purpose cable as specified in para 2-3d.

d. Tune the AN/PRC-74B as specified in para 3-2 and 3-3.

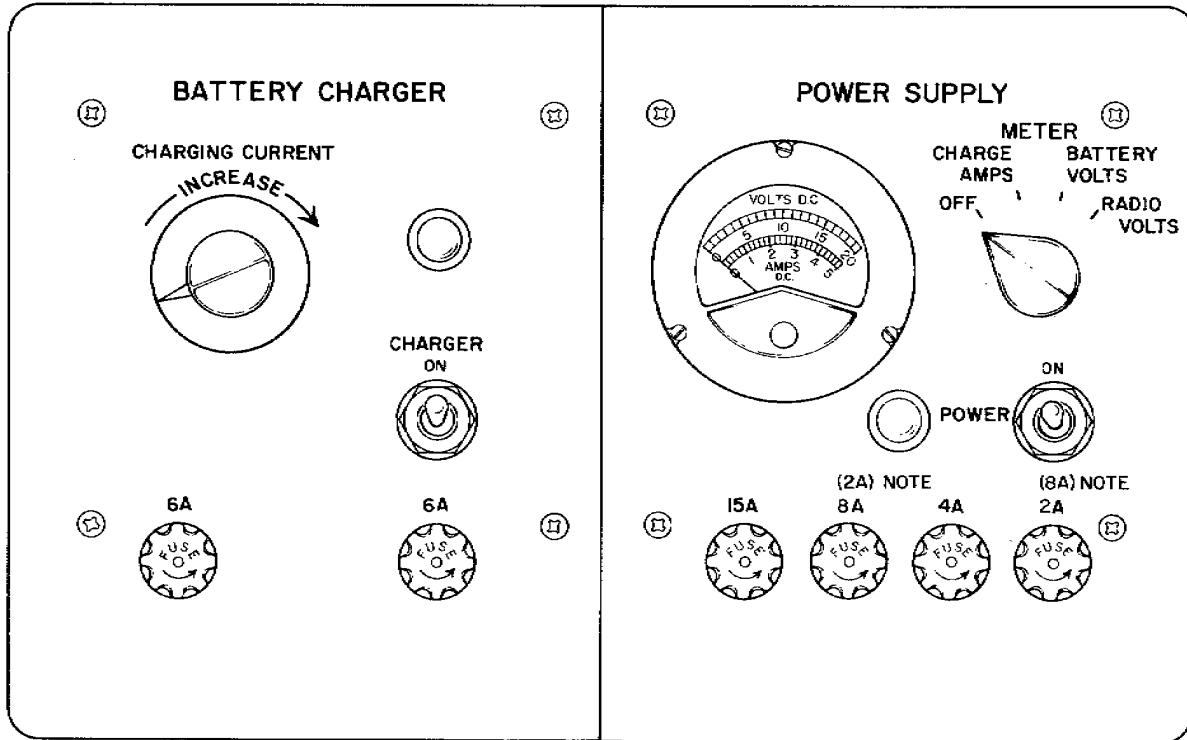
e. On the KE-8B keyer, set the IDY switch to on. The length of time that the IDY switch is left on is pre-determined by local operating procedures. (Setting the IDY switch on causes the transmission of Morse code dots at a 300 words per-minute (wpm) rate.)

f. Turn the IDY switch off and set the OFF-ON switch on the KE-8B keyer to ON. The encoded message will be transmitted automatically.

*Note.* When the AN/GRA-71 is used with the AN/ PRC-74B, Adapter, Keyer MX-4498/GRA-71 is not used. The output of the KE-8B keyer is applied direct to the AN/PRC-74B through Cable Assembly, Special Purpose, Electrical CX-10239/PRC-74 (fig. 1-7).

### 3-5. Netting Procedure

In some operations, a primary or command station communicates with many secondary or *operation*,



NOTE:  
PP-4514/PRC-74 ONLY

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Figure 3-2. Power Supply PP-4514/PRC-74, front panel.

and the command station is called the *net control*. All the secondary stations should synchronize their frequencies with net control. This procedure is called *netting* and is accomplished as follows:

a. Set the radio set to the operating frequency and follow the receiver tuning procedure (para 3-2).

b. After calibration, if the net control station seems off frequency, push in the PUSH TO CALIBRATE control and adjust it slightly clockwise. Release the knob and set the CLARIFY pointer to midscale.

c. If the net station clarity is improved, repeat the adjustment given in *b* above; if the net station clarity is not improved, repeat the procedure *b* above; use counterclockwise rotation of the PUSH TO CALIBRATE control.

### 3-6. Battery Charger Operation

(fig. 3-4)

The battery charger portion of the PP-4514/PRC-74 (fig. 3-2) may be placed in operation at any time, because the battery charger circuits are isolated from the power supply portion of the PP-4514/PRC-

74. To use the battery charger during operation of the radio set, perform the following procedure:

#### WARNING

Always remove all the battery cell vent caps (fig. 5-3) and provide adequate ventilation for the room or shelter during charging operations. Failure to observe this warning may cause an explosion. Note battery warnings and cautions on page A.

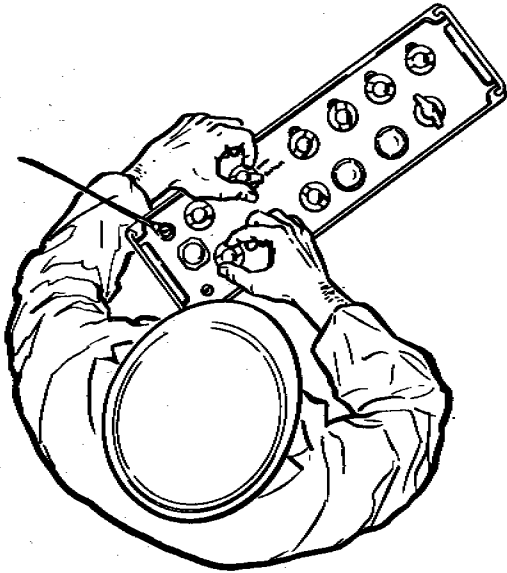
a. Connect accessory cable W5 to jack J5 (A, fig. 3-4) of the external power supply and battery charger assembly housing.

b. Attach the negative and positive battery clips of the accessory cable to the negative and positive terminals of the wet battery.

c. Place the CHARGER ON switch to ON.

d. Place the METER switch to CHARGE AMPS.

e. Set the battery charging rate to the desired level (1 ampere minimum to 5 amperes maximum) by adjusting the CHARGING CURRENT INCREASE potentiometer



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Figure 3-3. Transmitter tuning adjustment.

located on the front panel of the battery charger. The charging rate is indicated on the panel meter of the external power supply. A completely discharged wet cell battery should receive 20 ampere-hours of charge. The suggested charge rate is 5 amperes for a 4-hour period. For complete maintenance instructions for the wet cell battery, refer to (para 5-12).

**Caution.** The battery electrolyte level should be checked only when the battery is fully charged. Add only enough distilled water to cover the plates. If distilled water is added to a discharged battery, the electrolyte will leak out of the vent during charging.

**Warning.** The battery electrolyte is extremely dangerous to the eyes. If electrolyte is splashed on person or clothing, quickly and thoroughly wash the exposed area with water for at least 15 minutes. Seek medical attention without delay.

f. To check the battery voltage under a No load condition, place the METER switch to BATTERY VOLTS and the CHARGER ON switch to OFF, and note the reading on the panel meter.

### 3-7. HF Communications in the 2-18 MHz Range

Effective HF communications in the 2—18 MHz range can be accomplished up to several miles with a ground wave propagation mode, and several hundred miles with the skywave propagation.

a. *Antenna Selection.* Regardless of the propagation mode used, the best possible antenna should always be erected, consistent with the particular time, space, and terrain operating environment. The Accessories Bag CW-63/ PRC-74 contains materials to permit the erection of any one of the following antennas, which are listed in order of decreasing efficiency:

- (1) One-half wave dipole antenna (para 2-5c.).
- (2) One-quarter wave slant wire antenna (para 2-5b.).

**Caution.** Do not use the whip antenna at 3.5 MHz or below.

- (3) Ten-foot whip antenna (para 2-5a.).

b. *Groundwave Propagation.* The primary coverage area in the groundwave mode is small, due to high attenuation of the groundwave in the HF band. The attenuation decreases as the frequency used is decreased. At the minimum AN/PRC-74 frequency of 2 MHz, the effective groundwave range with a one half wave dipole antenna is 5 miles. The groundwave range will be less as the frequency used increases, when a less efficient antenna is used, or when the radio is used in dense foliage.

c. *Skywave Propagation.* Skywave propagation is the most useful communications mode. Since the transmitted signal is directly reflected off the ionosphere, effective communication requires selecting the optimum frequency compatible with the ionosphere conditions. The ionosphere varies depending on latitude, season, time of day, and solar activity.

d. *Frequency Selection.*

- (1) An effective operating frequency is selected considering the ionospheric conditions

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and the required distance of communication. The frequency range for effective skywave propagation is limited on the high end by signal penetration of the ionosphere, and on the low end by excessive ionospheric absorption of the signal.

(2) The maximum usable frequency (MUF) is the highest frequency which will be reflected off the ionosphere. The lowest usable frequency (LUF) is the lowest frequency at which the reflected signal is strong enough for effective communication. Since low frequencies undergo higher absorption than higher frequencies, an optimum traffic frequency (FOT) is selected just below the MUF. It is important to operate the AN/PRC-74, a low power transmitter, as close to the FOT as possible. During atmospheric disturbances, in general the higher the frequency, the better the communications will be.

(3) The use of propagation charts in selecting operating frequencies is essential. Propagation charts are issued monthly by the Communications Engineering Directorate, U.S. Army Strategic Communications Command, Fort Huachuca, Arizona.

### 3-8. Battery/Equipment Overheating

#### **WARNING**

DO NOT use water to extinguish Li-SO<sub>2</sub> battery fires if a shock hazard exists due to high voltage electrical equipment in the immediate vicinity (i.e., greater than 30 volts, alternating current (ac) or direct current (dc)).

#### **WARNING**

If the battery compartment becomes hot to the touch, if you hear a hissing sound (i.e., battery venting), or smell irritating sulfur dioxide gas IMMEDIATELY Turn Off the equipment. Remove the equipment to a well ventilated area or leave the area.

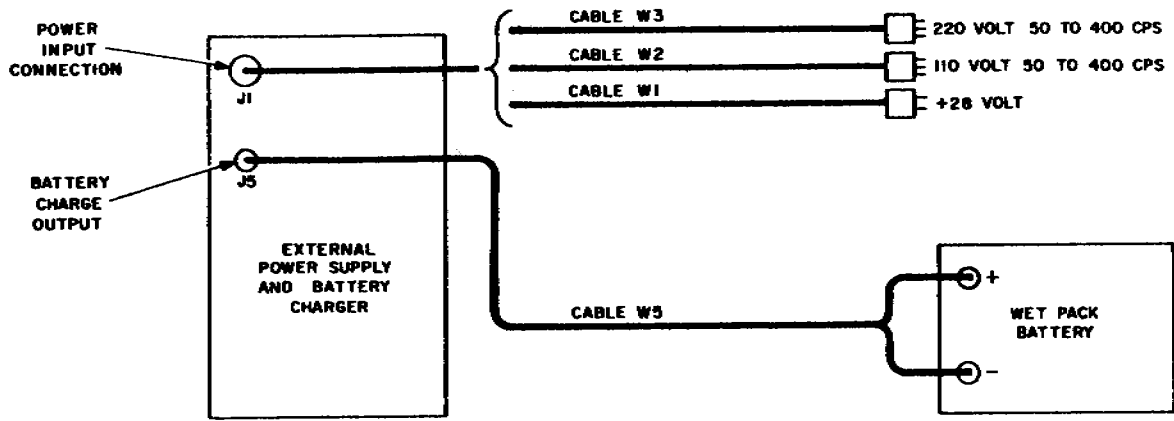
#### **WARNING**

DO NOT use a Halon type fire extinguisher on a lithium battery fire.

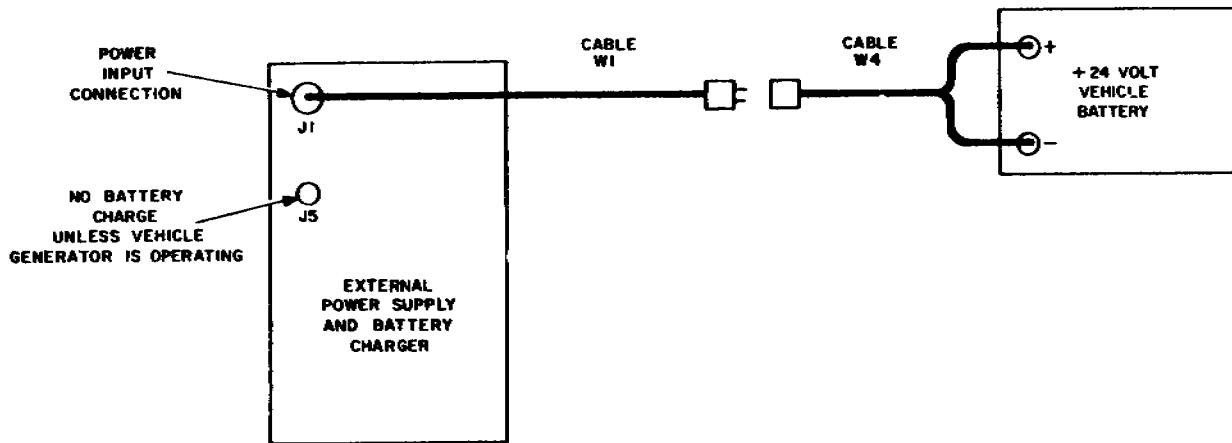
#### **WARNING**

In the event of a fire, near a lithium battery(ies), rapid cooling of the battery(ies) is important. Use a carbon dioxide (CO<sub>2</sub>) extinguisher. Control of the equipment fire, and cooling, may prevent the battery from venting and potentially exposing lithium metal. In the event that lithium metal becomes involved in fire, the use of a graphite based Class D fire extinguisher is recommended, such as Lith-X or MET-L-X.

- a. Allow the equipment to cool at least 1 hour.
- b. Remove and replace battery after the equipment has cooled to the touch.
- c. If there is a safety incident, or if you believe a safety hazard exists, notify your local Safety Office/Officer, file a Quality Deficiency Report, SF Form 368, and notify the CECOM Safety Office, Ft. Monmouth, NJ at AUTOVON 995-3112, Commercial (201)544-3112.



A. FIXED OPERATION



B. 24V BATTERY OPERATION

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Figure 3-4. Power Supply PP-4514/PRC-74, power cable connections.

## CHAPTER 4 OPERATOR'S MAINTENANCE INSTRUCTIONS

### 4-1. Scope of Operator's Maintenance

The maintenance duties assigned to the operator of Radio Set AN/PRC-74B are listed below, together with a reference to paragraphs covering the specific maintenance functions. The duties assigned do not require tools or equipment.

- a. Daily preventive maintenance checks and services (para 4-4).
- b. *Weekly* preventive maintenance checks and services (para 4-5).
- c. Cleaning (para 4-6).
- d. Checking antenna and battery connections (para 4-5).

### 4-2. Operator's Preventive Maintenance

Operator's preventive maintenance is the systematic care, servicing, and inspection of equipment to prevent the occurrence of trouble, to reduce downtime, and to assure that the equipment is serviceable.

a. *Systematic Care.* The procedures given in (para 4-3 through 4-7) cover routine systematic care and cleaning essential to proper upkeep and operation of the equipment.

b. *Preventive Maintenance Checks and Services.* The preventive maintenance checks and services charts (para 4-4 and 4-5) outline functions to be performed at specific intervals. These checks and services are to maintain Army electronic

equipment in a combat-serviceable condition; that is, in good general (physical) condition and in good operating condition. To assist operators in maintaining combat serviceability, the charts indicate what to check, how to check, and the normal conditions; the *references* column lists the illustrations, paragraphs, or manuals that contain detailed repair or replacement procedures. If the defect cannot be remedied by the operator, higher maintenance or repair is required. Records and reports of the checks and services must be made in accordance with the requirements set forth in DA Pam 738-750.

### 4-3. Preventive Maintenance Checks and Services Periods

Preventive maintenance checks and services for Radio Set AN/PRC-74B are required daily or at least once each week if the equipment is kept in standby condition. (para 4-4). specifies the items to be checked and serviced. In addition to the routing daily checks and services, the equipment should be rechecked and serviced immediately before going on a mission and as soon after completion of the mission as possible. para 4-5 specifies additional checks and services that must be performed *once* each week.

### 4-4. Operator's Daily Preventive Maintenance Checks and Services Chart

Sequence No.	Item to be inspected	Procedure	Reference
1	Completeness.....	Check to see that equipment is complete.....	Para 1-6. Para 4-6. Para 3-1.
2	Exterior surfaces.....	Remove dust, dirt, and moisture from equipment surfaces.....	
3	Controls.....	Check all controls for looseness and other damage ..... During operational check (item 5 below), observe that the mechanical action of each control is smooth, and free from external or internal binding.....	
4	Meter movements.....	During operation (item 5 below), check for sticking meter movements or bent needles on the rt unit and power supply (if used).....	Para 3-2 and 3-3.
5	Transmitter-receiver tuning	Check rt unit and antenna for proper operation.....	

### 4-5. Operator's Weekly Preventive Maintenance Checks and Services Chart

Sequence No.	Item to be inspected	Procedure	Reference
1	Exterior surfaces.....	Check all equipment surfaces for rust and corrosion. Clean as required.	Para 4-6.
2	Cables.....	Check power supply and battery charger cables for cuts, cracks, fraying, deterioration, or corrosion. Refer to higher category of maintenance as required.	
3	Connectors.....	Check all equipment connectors for evidence of damage to connectors or pins. Refer to higher category of maintenance as required.	Para 4-7.
4	Antenna kit.....	Check antennas for evidence of kinks, breaks, or strain. Refer to higher category of maintenance as required.	
5	Batteries.....	Check for evidence of condensation, metallic dust, or corrosion. Clean as required.	

#### 4-6. Cleaning

a. *General.* Inspect the exterior of the rt unit and power supply unit. The exterior surfaces should be free of dust, grease, and fungus.

(1) Remove dust and loose dirt with a clean, soft cloth.

##### **WARNING**

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

(2) Remove grease, fungus, and ground-in dirt from the cases; use a cloth dampened (not wet) with Cleaning Compound (6810-664-0273).

(3) Remove dust or dirt from plugs and jacks with a brush.

##### **CAUTION**

Do not press on the meter face (glass) when cleaning; the meter may become damaged.

(4) Clean the front panels, meters, and control knobs, use a soft, clean cloth. If dirt is difficult to remove, dampen the cloth with water; mild soap may be used for more effective cleaning.

b. *Wet Batteries.* Clean wet batteries as follows:

##### **CAUTION**

When cleaning wet batteries, observe the following:

1. Keep open flames and metal objects away from exposed parts of the battery.
2. Do not clean battery tops with solvents, acids, or chemical solutions.
3. Do not use wire brushes to clean batteries.

##### **WARNING**

Avoid contact with electrolyte. If electrolyte is splashed on any person or clothing, wash the exposed area quickly and thoroughly with water for at least 15 minutes. Seek medical attention without delay.

(1) Clean the tops of batteries with water and a brush.

(2) Drain excess water from the battery and allow the battery to dry. Compressed air may be used to aid in drying the battery.

#### 4-7. Dry Battery Replacement

(fig. 4-1 and 4-1.1)

##### **WARNING**

A lithium-sulfur dioxide (Li-SO<sub>2</sub>) battery used with the equipment contains pressurized sulfur dioxide (SO<sub>2</sub>) gas. The gas is toxic, and the battery MUST NOT be abused in any way which may cause the battery to rupture. See the WARNING page of this manual.

##### **WARNING**

DO NOT heat, short circuit, crush, puncture, mutilate, or disassemble batteries.

##### **WARNING**

DO NOT USE any battery which shows signs of damage such as bulging, swelling, disfigurement, brown liquid in the plastic wrap, a swollen plastic wrap, etc.

##### **WARNING**

DO NOT test Li-SO<sub>2</sub> batteries for capacity.

##### **WARNING**

DO NOT recharge LI-SO<sub>2</sub> batteries.

##### **CAUTION**

DO NOT dispose of lithium batteries with ordinary trash/refuse. Turn-in batteries to your local serving Defense Reutilization and Marketing OFFICE.

##### **CAUTION**

ONLY use batteries which have been authorized for this equipment.

a. Release the latch on each side of the rt unit carrier assembly.

b. Lift the rt unit from the battery box.

c. Release the latch on each side of the battery box and remove the battery cover assembly.

d. Replace batteries in Battery Box CY-6314/PRC-74 as follows:

(1) Loosen the four wingnuts at the bottom of the four battery retaining rods.

**CAUTION**

Do not damage cable attached to each battery retainer and the battery case base assembly.

(2) Lift the lower battery retainer to unplug the lower battery.

(3) Slide the lower battery from the lower battery retainer.

(4) Disconnect the upper battery from the upper battery retainer.

(5) Replacement batteries are type BA-4386/U (Magnesium Battery) or BA-5598/U (Lithium Battery). Insert one new battery and connect to the upper battery retainer.

(6) Slide the lower battery between the upper battery and rods and the lower retainer and connect this battery to the lower retainer.

(7) Secure the batteries with the four wingnuts at the bottom of the four battery retaining rods.

e. Replace batteries in Battery Box CY-6314A/PRC-74 as follows:

(1) Release the latch at the side of the battery housing assembly.

(2) Rotate the battery case base assembly up away from the batteries.

(3) Disconnect the upper battery from the battery divider.

(4) Rotate the battery divider upward and disconnect the lower battery.

(5) Replacement batteries are type BA-4386/U (Magnesium Battery) or BA-5598/U (Lithium Battery). Connect a new battery to the underside of the battery divider and rotate the battery divider down onto the battery housing assembly.

(6) Connect a new battery to the topside of the battery divider.

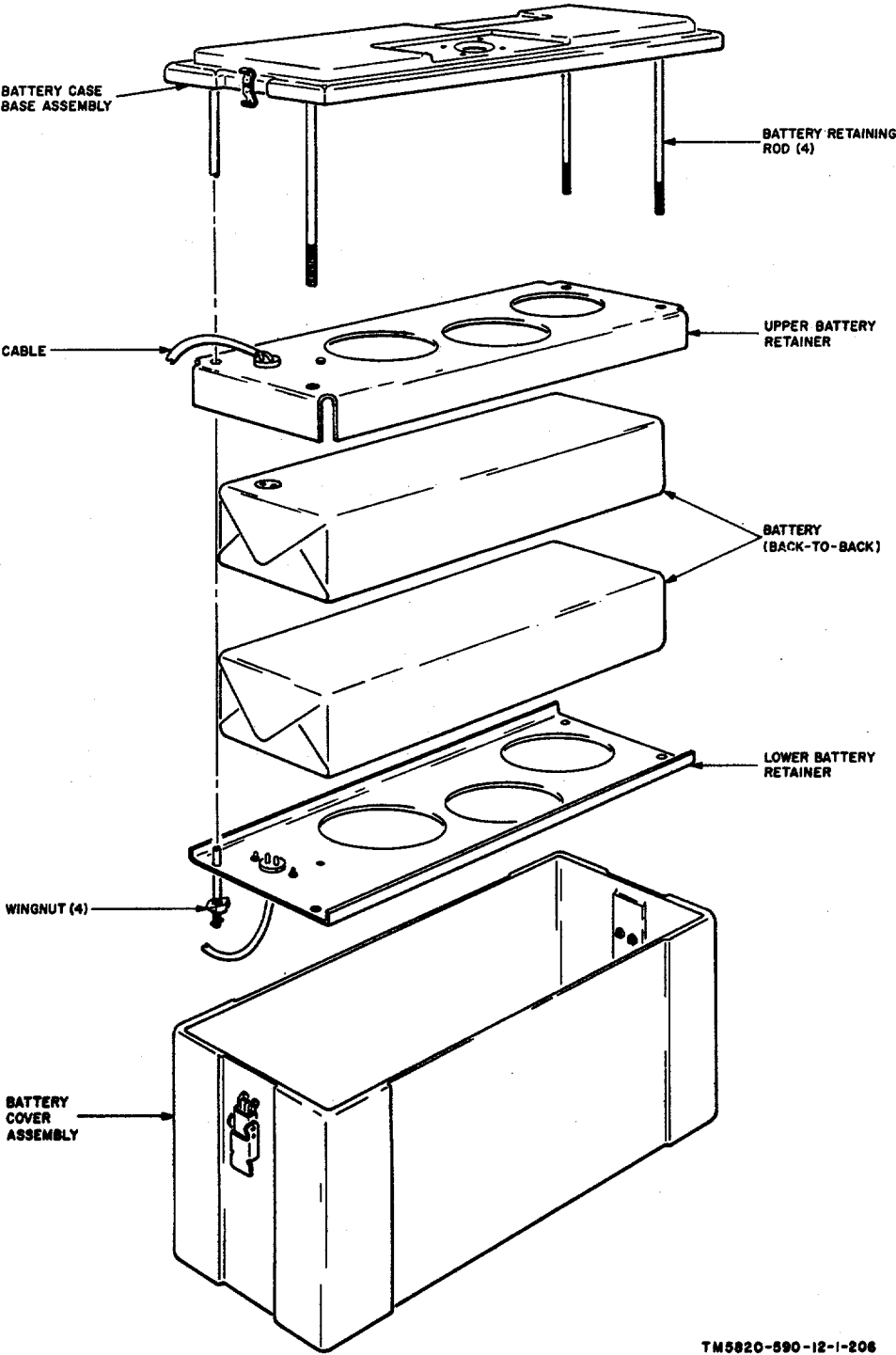
(7) Rotate the battery case base assembly down onto the upper battery and secure the latch at the side of the battery housing assembly.

f. Replace the battery cover assembly and secure the latches.

g. Replace the rt unit carrier assembly to its mounting position top of the battery box base assembly and secure the side latches.

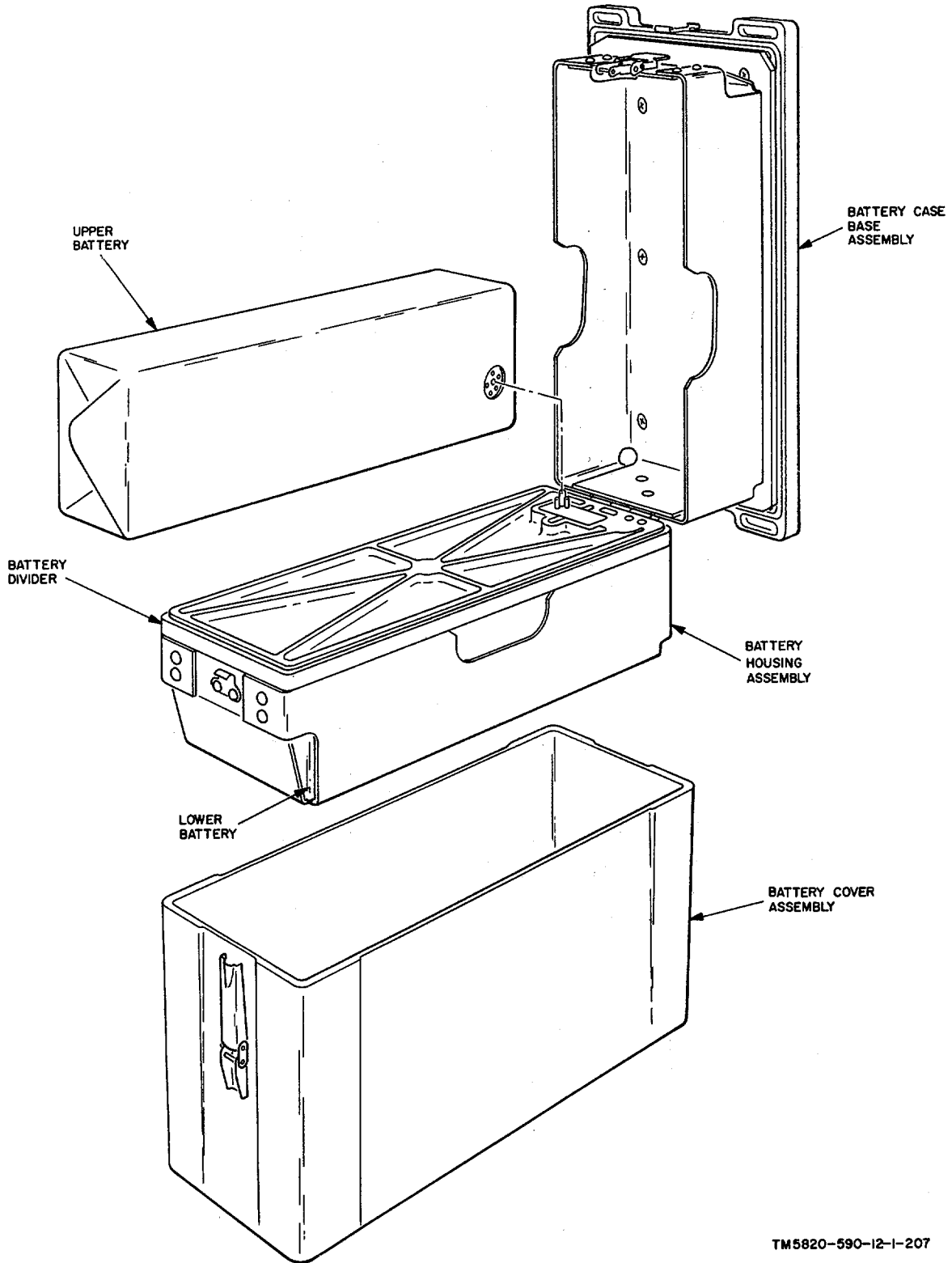
h. Disposition of unserviceable lithium batteries must be through the local servicing Defense Reutilization and Marketing Office ((DRMO)). Coordinate disposition with your local Installation Environmental Office and DRMO.





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Figure 4-1. Dry battery replacement, Battery Box CY-6314/PRC-74 .



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Figure 4-1.1. Dry battery replacement, Battery Box CY-6314A/PRC-74

## CHAPTER 5

## ORGANIZATIONAL MAINTENANCE INSTRUCTIONS

## Section I. ORGANIZATIONAL MAINTENANCE

**5-1. Scope Organizational Maintenance**

a. This chapter contains instructions covering organizational maintenance of the radio set. It includes instructions for performing preventive and periodic maintenance services and repair functions to be accomplished by the accomplished by the organizational repairman. The operating instructions are in paras 3-2 through 3-5.

b. Organizational maintenance of the radio set includes the following:

- (1) Replacement of defective fuses.
- (2) Preventive maintenance (para 5-3 through 5-8).
- (3) Troubleshooting (para 5-9 through 5-13).
- (4) Sectionalization of trouble to a unit or assembly (para 5-10).

**5-2. Tools, Materials, and Test Equipment Required**

The tools, materials and test equipment required for organizational maintenance are listed below.

a. *Tools and Materials.* The tools and materials required for organizational maintenance are contained in Tool Kit, Electronic Equipment TK-101/g.

b. *Test Equipment.* The only test equipment required is Multimeter AN/URM-105.

**5-3. Organizational Preventive Maintenance**

a. *Organizational* preventive maintenance is the systematic care, inspection, and servicing of equipment breakdowns, and assure maximum

operational capability. Preventive maintenance is the responsibility of all categories of maintenance concerned with the equipment, and includes the inspection, testing, and repair or replacement of parts, subassemblies, or units that inspection and tests indicate would probably fail before the next scheduled periodic service. Preventive maintenance checks and services at the organizational maintenance category are made at monthly and quarterly intervals unless otherwise directed by the commanding officer.

b. Maintenance forms and records to be used and maintained on this equipment are specified in TM 38-750.

**5-4. Organizational Monthly Preventive Maintenance Checks and Services**

Perform the maintenance functions indicated in the monthly preventive maintenance checks and services chart (para 5-5) once each month. A month is defined as approximately 30 calendar days of 8-hour-per-day operation. If the equipment is operated 16 hours a day, the monthly preventive maintenance checks and services should be performed at 15-day intervals. Adjustment of the maintenance interval must be made to compensate for any unusual operating conditions. Equipment maintained in a standby (ready for immediate operation) condition must have monthly preventive maintenance checks and services performed on it. Equipment in limited storage (requiring service before operation) does not require monthly preventive maintenance.

**5-5. Organizational Monthly, Preventive Maintenance Checks and Services Chart**

Sequence No.	Item to be inspected	Procedure	References
1	Exterior .....	Check all equipment surfaces for evidence of fungus, rust, corrosion, and other foreign materials. Spot-paint bare spots,	Para 4-6 and 5-8
2	Knobs, dials, and switches.	Observe that the mechanical action of each knob, dial, and switch is smooth, and free of external internal binding. Replace lost or defective knobs as required.	
3	Fuses .....	Check for blown or damaged fuses. See that all operating fuses are of the proper values. Replace as required.	Para 5-11 and 5-13
4	Cables and connections.....	Check all cables for breaks, cracks, and damage to connectors. Clean all module connections and plugs, and check for damage to pins or connectors.	
5	Battery cases.....	Check interiors of battery cases for evidence of water leakage, condensation, and corrosion. Clean as required	Para 4-6
6	Batteries .....	Test batteries under load. Wet battery voltage is between 11 and 17 volts. Charge as required. Dry battery voltage should be at least 11 volts.	

**5-6. Quarterly Maintenance**

Quarterly preventive maintenance checks and services on the radio set are required. Periodic weekly and monthly services constitute a part of the quarterly preventive maintenance checks and services, and must be performed concurrently. All

deficiencies or shortcomings will be recorder in accordance with the requirements of TM 38-750. Perform all the checks and services listed in the quarterly preventive maintenance checks and services chart (para 5-7) in the sequence listed.

**5-7. Quarterly Preventive Maintenance Checks and Services Chart**

Sequence No.	Item to be inspected	Procedure	References
<i>Radio Set AN/PRC-74B</i>			
1	Completeness.....	Insure that the equipment is complete.....	Para. 1-6.....
2	Installation.....	Insure that the equipment is properly installed.....	Para 2-3.....
3	Cleanliness.....	Insure that the equipment is clean.....	Para. 4-6.....
4	Preservation.....	Check all surfaces for evidence of fungus. Remove rust and corrosion, and spot-paint bare spots.	Para 4-6 and 5-8.
5	Publications.....	Insure that all publications are complete, serviceable, and current.	DA Pam 310-4. TM 38-750 and DA Pam 310-4.
6	Modifications.....	Check DA Pam 310-4 to determine whether new applicable MWO's have been published. All URGENT MWO's must be applied immediately. All NORMAL MWO's must be scheduled.	
7	Mounting.....	Insure that all bolts, nuts, and washers are correctly positioned and properly tightened.	App B.
8	Spare parts.....	Check all spare parts (operator and organizational) for general condition and method of storage. There should be no evidence of overstock, and all shortages must be on valid requisitions.	
<i>Receiver-Transmitter Radio RT-794B/PRC-74</i>			
9	Operational check	Operate the rt unit as specified in para 3-2 and 3-3.....	Para. 5-10.....

Sequence No.	Item to be inspected	Procedure	References
		<i>Power Supply PP-4514/PRC-74</i>	
10	External power supply operational check.	Connect the rt unit to the external power supply as outlined in para 2-3v or c (depending on the source power available). Perform the procedures specified in para 3-2a and b.	Para 5-10.
11	Battery charger operational check.	Operate the battery charger as outlined in para 3-6	Para 5-10.

**5-8. Touchup Painting Instructions**

Remove rust and corrosion from metal surfaces by lightly sanding them with a fine sandpaper. Brush two thin coats of paint on the bare metal to protect it

from further corrosion. Refer to the applicable cleaning and refinishing practices specified in TB SIG 364.

**Section II. TROUBLESHOOTING**

**5-9. General**

Troubleshooting of the radio set is based on the operational check contained in the quarterly preventive maintenance checks and services chart. To troubleshoot the equipment, perform the functions listed in steps 9, 10, and 11 of the quarterly preventive maintenance checks and services chart (para 5-7) and proceed through the items until an abnormal condition or result is observed. When an abnormal condition or result is observed, perform the checks and corrective measures indicated in the

troubleshooting chart (para 5-10). If the corrective measures indicated do not result in correction of the trouble, higher category of maintenance is required. Para 5-11, 5-12, and 5-13 contain additional information and step-by-step instructions for performing equipment tests and adjustments to be used during troubleshooting procedures.

**CAUTION:** Do not operate the radio set in a transmit condition unless it is connected to an antenna.

**5-10. Troubleshooting Chart**

<i>Item No.</i>	<i>Trouble symptom</i>	<i>Probable trouble</i>	<i>Checks and corrective measures</i>
1	Rt unit cannot be operated as described in para 3-2 and 3-3	a. Defective fuse F1 or F2 (fig.5-2). b. Low source voltage .....	a. Check fuses; replace as necessary b. (para 5-11b). b. If dry cell battery pack is used,..... replace batteries (para 4-7). If wet cell battery pack is used, charge battery (para 3-6) or replace (para 5-12) as required. If external power supply is used, proceed to item No. 2.
2	External power cannot be operated as described in paragraph 2-3 b or c.	a. Defective fuse in external power supply. b. Poor or defective power cable connections c. Defective power supply.....	a. Check external power supply front panel fused (para 5-13). b. Check power cables. c. Higher category of maintenance required.....
3	Battery charger cannot be operated as described in para 3-6.	a. Defective fuse in battery charger. b. Defect in battery charger	a. Check fuses on front panel of battery charger (para 5-13). b. Refer to para 5-13. If those procedures do not correct trouble, higher category of maintenance is required.

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### 5-11. Supplementary Rt Unit Troubleshooting information

Troubleshooting of the rt unit at organizational maintenance category consists of a power supply voltage test and the replacement of fuses. If the power supply voltage is not as Specified or the replacement of fuses does not correct the trouble, the rt unit must be replaced and forwarded to higher category maintenance personnel.

*a. Power Supply Voltage Test.* When troubleshooting the rt unit is required, the rt unit case must be removed to reach the test points (fig. 5-1). The wet or dry battery must be used as a power source during this test. Check the receiver transmitter power supply as follows:

- (1) Release the latches that attach the rt unit to the power source. Remove the rt unit.
- (2) Release the latches that attach the rt unit front panel to the case.
- (3) Using the handles on each side of the rt unit front panel, remove the rt unit from the case.

#### CAUTION

When using the wet battery as the power source, perform this test with the battery and rt unit connected in the upright position (fig. 1-1). If the dry battery is used, the rt unit and the dry battery may be connected and placed flat with the test points facing upward. Avoid excess movement of the rt unit and the battery to prevent damage to the connectors.

(4) Set the OFF-ON-TUNE switch (fig. 3-1) in the TUNE position and use the AN/URN-105 to make the following dc measurements (fig. 5-1):

- (a) TB201 pin 7: 8.4 to +9.6 volts.
- (b) TB201 pin 5: +10.5 to 17.0 volts.
- (c) TB201 pin 3: +39.0 to + 44.0 volts.

(5) If the readings in (4) above are normal and the radio set does not operate normally, higher category of maintenance is required. If any of the readings in (4) above are not normal, check F1 and F2 in the power supply module (b) below). If fuse replacement does not correct the trouble, higher category of maintenance is required.

(6) After the test has been completed, place the rt unit in the upright position and disconnect it from the battery pack.

(7) Insert the rt unit in the case and secure it with the latch located on each side of the case.

(8) Connect the rt unit to the power source and secure it with the latch located on each side of the case.

*b. Fuse Replacement* (fig. 5-2.) To replace the rt unit fuses, remove the rt unit from the case (a (1), and (3) above) and proceed as follows:

- (1) Remove the three screws that secure the power supply module cover.
- (2) Replace fuse F1 and/or F2 as required.
- (3) Replace the power supply module cover and secure it with the three screws removed in (1) above.
- (4) Replace the rt unit in its case (a (6), (7), and (8) above).

#### NOTE

If the replaced fuse blows, higher category of maintenance is required.

### 5-12. Wet Battery Replacement (fig. 5-3)

When a wet battery cell becomes contaminated or damaged, use the following procedure for removal and replacement.

#### WARNING

Remove all jewelry and wrist watches when working on batteries. Be extremely careful when using metal tools.

#### WARNING

The electrolyte used in nickel-cadmium batteries contains potassium hydroxide (KOH), which is a caustic chemical agent. Serious and deep burns of body tissue will result if the electrolyte comes in contact with the eyes or any part of the body. Use rubber gloves, rubber apron, and protective goggles when handling the electrolyte. If accidental contact with the electrolyte is made, use ONLY clean water and immediately (seconds count) flush contaminated areas. Continue flushing with large quantities of clean water for at least 15 minutes. Seek medical attention without delay.

- a. Release the latches that attach the wet battery to the rt unit.
- b. Disconnect the rt unit from the wet battery carrier assembly.
- c. Release the latch on each side of the battery case, and remove the case.
- d. Disconnect the battery terminal connections.
- e. Release the hold-down clamp that secures the battery cells.
- f. Remove the two sockethead capscrews and washers, and remove the intercell connector that is attached to the damaged cell (or cells). Remove the cell. Note the direction of the polarity symbols.

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*g.* Replacement cells are type BB 418/U or equivalent. Insert the replacement cell with the polarity symbols in the proper direction, and

attach the intercell connector with the washers and sockethead capscrews.

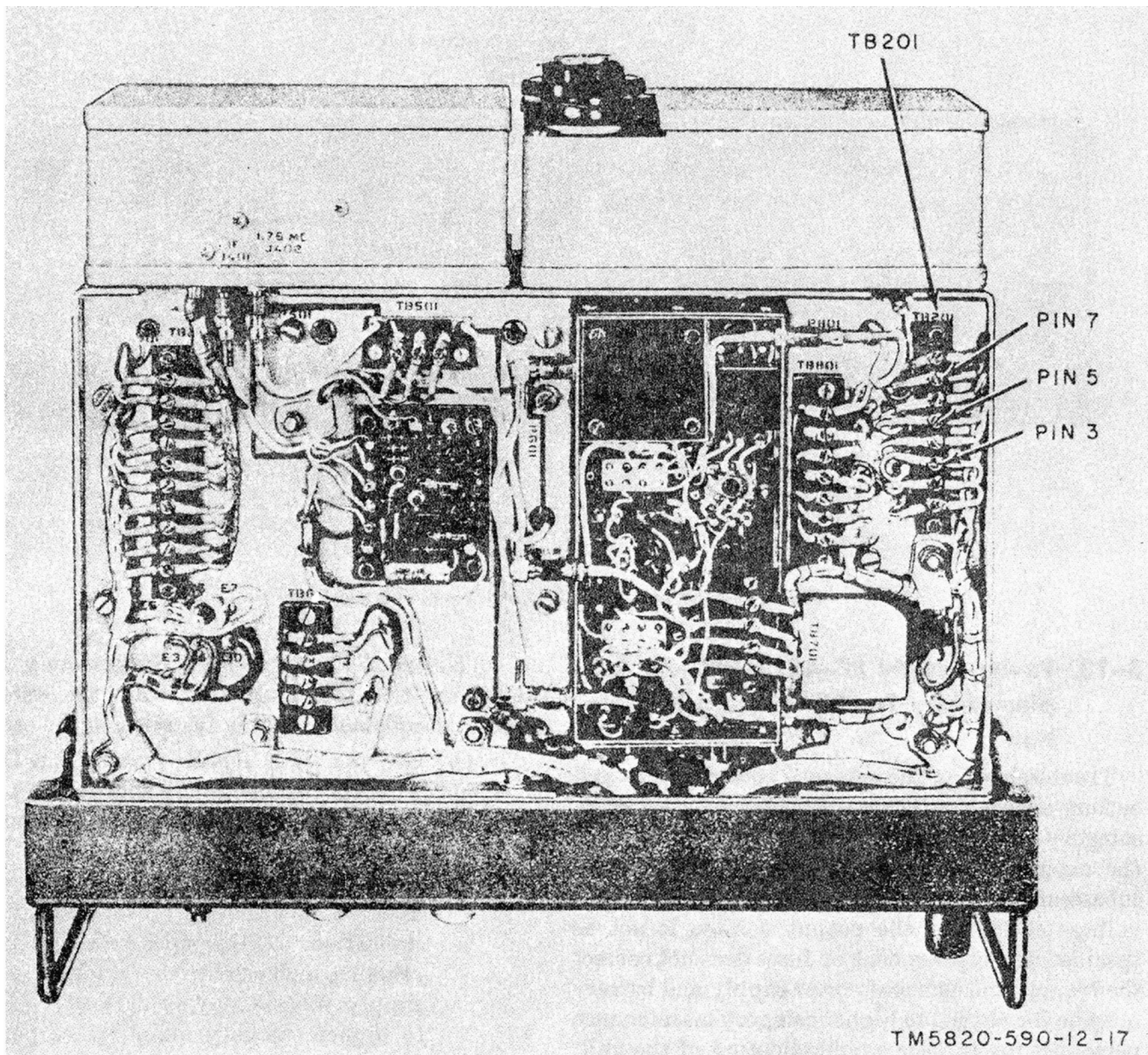


Figure 5-1. Rt unit, location of test points.

- h. Attach the holddown clamp that secures the battery in the battery carrier.
- i. Connect the battery terminals.
- j. Replace the battery case and secure it with the latch located on each side of the case.

*Note.* When the condition of the wet cell battery is not known, it should receive a full charge; the battery is not damaged by overcharging at the specified rate.

**Caution:** Check the level of the electrolyte **AFTER** recharging. If the level is below the top of the plates, add distilled water. When the level is below the top of the plates, add distilled water. When time permits, allow the battery to stand for 12 hours or more after adding water. If the battery must be used immediately, add just enough water to bring the level to one-eighth inch above the top of the plates.

- k. Charge the battery (para 3-6).



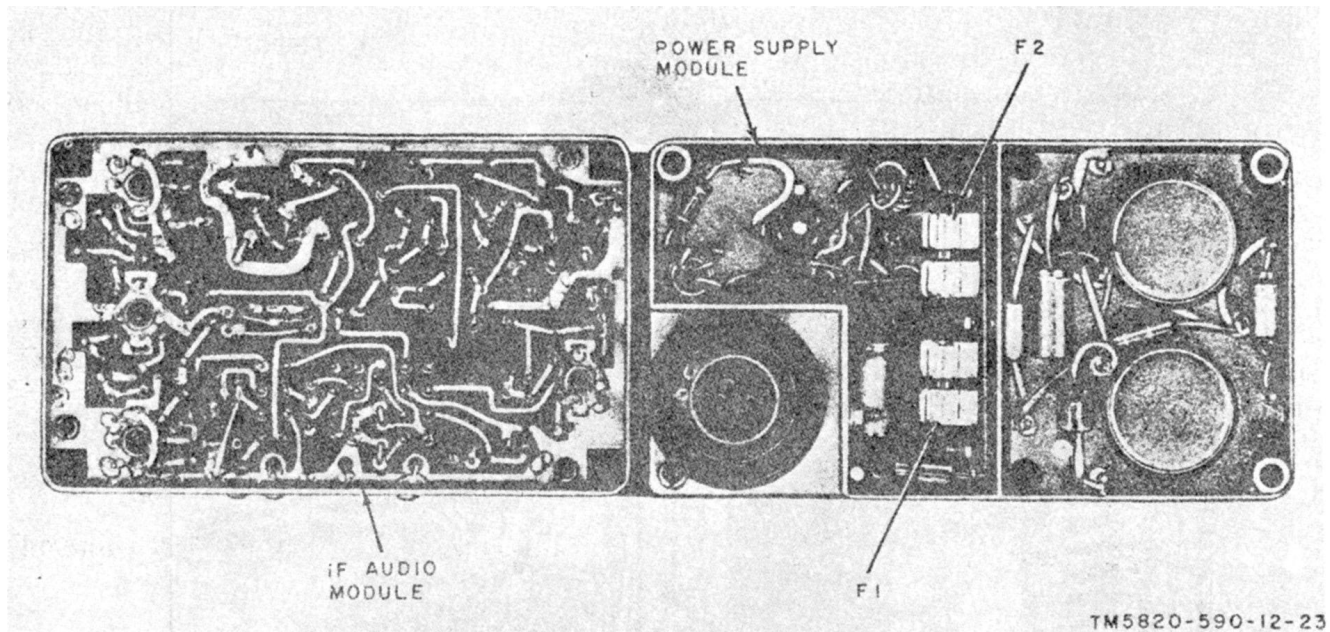


Figure 5-2. Rt unit, rear view, module covers removed.

### 5-13. Power Supply PP-4514/PRC-74 Supplementary Troubleshooting Information

Troubleshooting the external power supply and battery charger at the organizational maintenance category consists of removal and replacement of the external power supply and battery charger subassemblies, replacement of fuses, and an output voltage check. If the output voltage is not as specified and replacement of fuses does not correct the trouble, the external power supply and battery charger must be forwarded to higher category maintenance personnel for further troubleshooting of the unit.

#### a. Subassembly Removal and Replacement.

Use the following procedure for removal and replacement of the external power supply or battery charger subassembly:

(1) Remove the mounting screws located in the top and bottom on the subassembly front panel (fig. 3-2).

(2) Slide the subassembly from the case; use the handle located at the bottom of the subassembly front panel.

(3) To replace the subassembly, insert the subassembly into the case and secure it with the mounting screws.

#### b. External Power Supply Subassembly Test.

Perform the following test with the external power supply subassembly installed in the case:

- (1) Set the METER switch RADI VOLTS. Momentarily short-circuit pins 2 and 6 of J4 (fig. 1-8) of the module case.
- (2) Check to see that front panel meter of the external power supply drops to a 0-volt indication. If the panel meter indication remains unchanged, the external power supply sub assembly is defective. Refer to higher category maintenance personnel.

#### c. Battery charger Subassembly Test. Perform the following test with the battery charger installed in the case:

- (1) Connect battery charger cable W5 to J5 of the case.
- (2) Set the METER switch to CHARGE AMPS and turn the CHARGING CURRENT INCREASE control fully clockwise.
- (3) Connect the power input cable to J1 (A, fig. 3-4) and turn the CHARGER ON switch to ON.

- (4) Momentarily short the battery clips of the battery charger cable W5 together.
- (5) See that the front panel meter of the external power supply drops to 0 volt.
- (6) Check the 6A fuses on the front of the battery charger. If a fuse is found to be open, the battery charger subassembly is defective. Refer to higher category maintenance personnel.

*d. Fuse Replacement.* All fuses in the external power supply and battery charger are located on the front panel. Replacement fuses are stored in a fuseholder panel (fig. 1-8) on the case. Replace fuses ((1) and (2) below) as required:

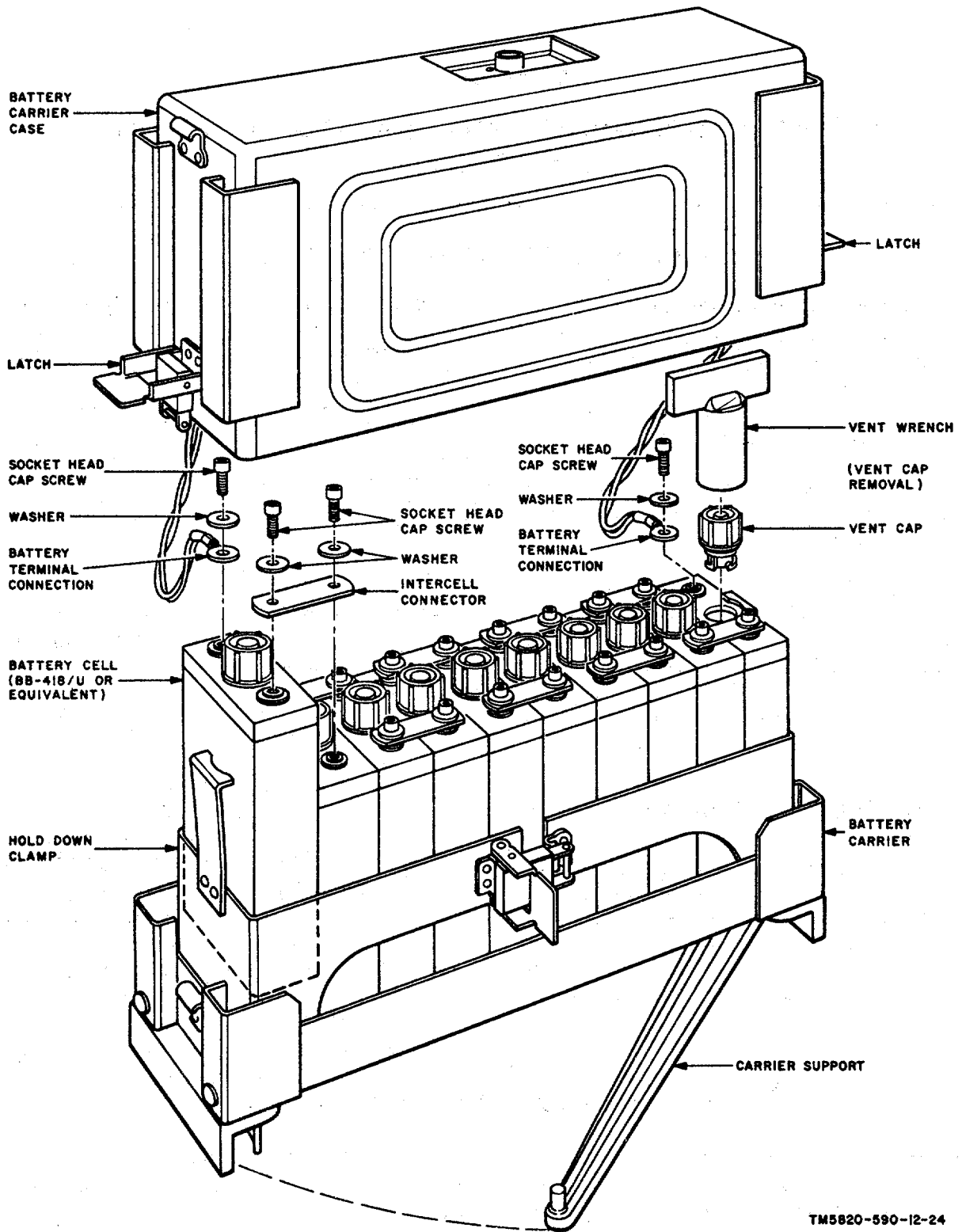
(1) *Battery charger subassembly.* The two 6A fuses protect the input and output circuits of the battery charger.

- (2) *Power supply subassembly.*
  - (a) *15A fuse.* Protects the equipment when a 28-volt dc source is used.
  - (b) *2A fuse.* Protects the equipment when a 220-volt ac source is used.
  - (c) *4A fuse.* Protects the equipment when a 110-volt ac source is used.
  - (d) *BA fuse.* Protects the power supply against external short circuits.

*e. Pilot lamps.* Two indicator lamps are located on the front panel of the PP-4514/PRC-74.

Replace either lamp as follows:

- (1) Unscrew the front panel lens assembly.
- (2) Remove the defective lamp and insert the replacement.
- (3) Replace the front panel lens assembly.



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Figure 5-3. Wet battery and vent cap removal

CHAPTER 6

SHIPMENT, LIMITED STORAGE, AND DEMOLITION TO PREVENT ENEMY USE

Section I. SHIPMENT AND LIMITED STORAGE

**CAUTION**

Be sure the dry batteries are removed or the solution is drained from wet battery as applicable before packing the battery pack.

- (1) Cushion the component to be packed with pads of filler material on all sides.
- (2) (Applies to receiver-transmitter radio only.) Package each technical manual within a close-fitting waterproof bag; seal the bags with waterproof tape.
- (3) Use fiberboard and waterproof tape to form a carton large enough to hold the packaged components. Place all packages in the carton and fill all voids with filler material.
- (4) Seal the carton.
- (5) Cover the carton with moistureproof and vaporproof aluminum foil.

**6-1. Disassembly of Equipment**

- a. Disassemble and remove the antenna and antenna mounting brackets, and place them in the accessory equipment bag.
- b. Remove all accessory equipment (headset, microphone, etc) from the radio set, and place it in the accessory equipment bag.
- c. Remove the radio set from the battery pack by releasing the latches at the bottom of the radio set, and remove the dry batteries from the battery pack. If a wet battery is used, it is not necessary to drain the wet battery for limited storage. If the radio set is being used in conjunction with Power Supply PP4514/PRC-74, remove the radio set from the PP4514/PRC-74 and disconnect all cables.
- d. Coil the power cables and place them in the cable storage compartment of the PP-4514/PRC-74.

**6-2. Repackaging for Shipment or Limited Storage**

The exact procedure for repackaging depends on the material available and the conditions under which the equipment is to be shipped or stored. Adapt the procedures outlined below whenever circumstances permit. The information concerning the original packaging (para 2-1) will also be helpful.

a. *Material Requirements.* The following materials are required for packaging components of the radio set. For stock numbers of materials, consult SB 38-100.

Material	Quantity
Moisture-vaporproof barrier .....	36 sq. Ft.
Waterproof tape.....	18 ft.
Filler material .....	5 lb.
Fiberboard	40 sq ft.

b. *Packaging.*

**6-3. Battery Storage**

**WARNING**

DO NOT store lithium batteries with other hazardous materials and keep them away from open flame or heat.

**CAUTION**

DO NOT store batteries in unused equipment for more than 30 days

- a. Contact your local Fire Department for selection and approval of lithium battery storage areas, and selection of appropriate fire extinguishing equipment.
- b. Store lithium batteries in a cool (i.e., less than 130 degrees F), dry, well ventilated area. For bulk storage use a sprinkler protected area, and as second choice store in non-combustible area.

Section II. DEMOLITION TO PREVENT ENEMY USE

**WARNING**

Be extremely careful with explosives and incendiary devices. Use these items only when the need is URGENT.

**6-4. Authority for Demolition**

The demolition procedures outlined in para 6-5 will be used to prevent the enemy from using or salvaging this equipment. Demolition of the equipment will be accomplished only upon the order of the commanding officer.

**6-5. Methods of Destruction**

Use any of the following methods to destroy the radio set:

*a. Smash.* Smash the controls, meters, and minor components; use sledges, axes, handaxes, pickaxes, hammers, or crowbars.

*b. Cut.* Cut all power cables; use axes, handaxes, or machetes.

*c. Burn.* Burn the cords and technical manuals; use gasoline, kerosene, oil, flamethrowers, or incendiary grenades.

*d. Bend.* Bend the panel and cabinet.

*e. Explode.* If explosives are necessary, use firearms, grenades, or TNT.

*f. Dispose.* Bury or scatter the destroyed parts in slit trenches or foxholes, or throw them into nearby streams.

**APPENDIX A  
REFERENCES**

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DA Pam 25-30.....	Consolidated Index of Army Publications and Blank Forms.
DA Pam 738-750.....	The Army Maintenance Management Systems (TAMMS)
SB 11-6	Dry Battery Supply Data.
TB SIG 291 .....	Safety Measures to be Observed when Installing and Using Whip Antennas, Field Type Masts, Towers, Antennas and Metal Poles that are Used with Communication, Radar, and Direction Finder Equipment.
TB43-0118.....	Field Instructions for Painting and Preserving Communications-Electronics Equipment.
TM 11-5835-224-12.....	Operator's and Organizational Maintenance Manual: Coder-Burst Transmissions Group.
TM 11 -5965-260-15P.....	Operator's, Organizational, Field and Depot Maintenance Repair Parts and Special Tool Lists: Headset Electrical H-140A/U.
TM 11-5965-265-13P.....	Operator's, Organizational and Field (Third Echelon) Repair Parts and Special Tool Lists: Microphone, Dynamic M-80/U.
TM 11-6625-203-12.....	Operator's and Organizational Maintenance: Multimeter AN/URN-105, Including Multimeter ME-77/U.
TM 740-90-1.....	Administrative Storage of Equipment.

**Change 8 A-1**

**APPENDIX B**

**BASIC ISSUE ITEMS**

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This appendix is deleted. Refer to para 1-6 for a list of components.

## APPENDIX C

MAINTENANCE ALLOCATION

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## Section I. INTRODUCTION

**C-1. General**

This appendix provides a summary of the maintenance operations covered in the equipment literature for Radio Sets AN/PRC-74B and AN/PRC-74C and Power Supplies PP-4514/PRC-74 and PP-4514/PRC-74 and Battery Boxes CY-6121/PRC-74, CY-6314/ PRC-74, and CY-6314A/PRC-74. It authorizes categories of maintenance for specific maintenance functions on 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.

**C-2. Maintenance Functions**

Maintenance functions will be limited to and defined as follows:

*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 incipient electrical or mechanical failure by use of special equipment such as gages, meters, etc. This is accomplished with external test equipment and does not include operation of the equipment and operator type tests using internal meters or indicating devices.

*c. SERVICE.* To clean, to preserve, to charge, and to add fuel, lubricants, cooling agents, and air. If it is desired that elements, such as painting and lubricating, be defined separately, they may be so listed.

*d. ADJUST.* To rectify to the extent necessary to bring into proper operating range.

*e. ALIGN.* To adjust two or more components or assemblies of an electrical or mechanical system so that their functions are properly synchronized. This does not include setting the frequency control knob of radio receivers or transmitters to the desired frequency.

*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 encampment, site, or vehicle.

*h. REPLACE.* To replace unserviceable items with serviceable like items.

*i. REPAIR.* To restore an item to serviceable condition through correction of a specific failure or unserviceable condition. This function includes, but is not limited to welding, grinding, riveting, straightening, and replacement of parts other than the trial and error replacement of running spare type items such as fuses, lamps, or electron tubes.

*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.



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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.

### C-3. Explanation of Format

a. *Column 1, group number*. Not used.

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 test 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 in table I.

e. *Column 5, Remarks*. Self-explanatory.

### C-4. Explanation of Format of Table 1, Tool and Test Equipment Requirements

The columns in Table I, Tool and Test Equipment Requirements are as follows:

a. *Tools and Equipment*. The numbers in this column coincide with the numbers used in the tools and equipment column of the Maintenance Allocation Chart. The numbers indicate the applicable tool for the maintenance function.

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

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTIONS										TOOLS AND EQUIPMENT	REMARK	
		I N S P E C T	T E S T	S E R V I C E	A D J U S T	A L L I G N	C A L I B R A T E	I N S T A L L	R E P L A C E	R E P A I R	O V E R H A U L			R E B U I L D
	RADIO SETS AN/PRC-74B and AN/PRC-74C	O F	O F H D	O F									15 16 9,15 5,6,7,8,10,14 16,18,19,20 1 thru 10,12 14,16 thru 20 1 thru 14,16 thru 20	
	RECEIVER TRANSMITTER, RADIO, RT-749B/O PRC-74 and RT-794C/PRC-74	O F	O F H D	F									15 16 9,15 5,6,7,8,10, 14,16,18,19,20 1 thru 10, 12,13,14,16 thru 20 1 thru 14,16 thru 20	By replacing modules only; See equipment requirements for each module Same as for testing Same as for testing

Section II. MAINTENANCE ALLOCATION CHART

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTIONS										TOOLS AND EQUIPMENT	REMARK	
		I N S P E C T	T E S T	S E R V I C E	A D J U S T	A L I G N	C A L I B R A T E	I N S T A L L	R E P L A C E	R E P A I R	O V E R H A U L			R E B U I L D
	AN/PRC-74B and AN//PRC-74C (Continued.)													
	MODULE POWER SUPPLY	F	D	F					F	D		D	14, 16 7,8,9,13,28 14 14,16	
	MODULE, IF/AUDIO UNIT		F			H		F			H		5,7,8,18,25 14 5,6,7,17,18,25 14,16	
	MODULE, FREQUENCY GENERATOR		F					F		H			8,10,13,17,25 14 14,16 6,10,17,25	
	MODULE, SYNTHESIZER		H		D	D		F		H			2,10,13,16,17,25 14 14,16 2,10,16,17,25	

Section II. MAINTENANCE ALLOCATION CHART

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTIONS										TOOLS AND EQUIPMENT	REMARK		
		I N S P E C T	T E S T	S E R V I C E	A D J U S T	A L I G N	C A L I B R A T E	I N S T A L L	R E P L A C E	R E P A I R	O V E R H A U L			R E B U I L D	
	AN/PRC-74B and AN//PRC-74C (Continued.)  MODULE POWER AMPLIFIER   MODULE, RADIOFREQUENCY UNIT   ASSEMBLY PANEL AND CHASSIS		D		D		D		F					7,19,25,28 4,7,19,22,23, 25 thru 28 4,7,19,21,thru23, 25 thru 28 14,16 14,16	
			H					F						4,12,13,16,17,25 14 14,16	
					F									5,14	Shop facilities

SECTION II. MAINTENANCE ALLOCATION CHART

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTIONS										TOOLS AND EQUIPMENT	REMARK	
		I N S P E C T	T E S T	S E R V I C E	A D J U S T	A L I G N	C A L I B R A T E	I N S T A L L	R E P L A C E	R E P A I R	O V E R H A U L			R E B U I L D
	AN/PRC-74B and AN//PRC-74C (Continued.)  POWER SUPPLY PP-4154/PRC-74 and PP-4514A/PRC-74C	O F	O F	O F									15 14,16 9,15 7,8,13,16,24 15 15	By replacement of fuses and power supply and battery charger subassemblies only
	BATTERY CHARGER SUBASSEMBLY	O F	O F	O F			D						14,16	Shop facilities
		O F	O F	O F									15 14,16 9,15 7,8,13,16,24 15 15	By replacement of fuses and and complete battery chargeassy
							D						14,16	Shop facilities

SECTION II. MAINTENANCE ALLOCATION CHART

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTIONS										TOOLS AND EQUIPMENT	REMARK	
		I N S P E C T	T E S T	S E R V I C E	A D J U S T	A L I G N	C A L I B R A T E	I N S T A L L	R E P L A C E	R E P A I R	O V E R H A U L			R E B U I L D
	AN/PRC-74B and AN//PRC-74C (Continued.) POWER SUPPLY SUBASSEMBLY	O F	O F	O F									15 14,16 9,15 7,8,13,16,24 15 15	By replacement of fuses and complete power supply
	POWER CABLES W1, W2, W3, W4, AND W5						D		O				14,16	Shop facilities
	HEADSET, ELECTRICAL, H-140/U	O		O					O					See TM 11-5965-260-15P
	MICROPHONE, DYNAMIC, M-80/U	O		O					O					See TM 11-5965-265-13P
	KEY, TELEGRAPH KY-562/U	O F H		O F					O F				15 16 7,16 15 16 16	
	BAG, ACCESSORIES CW-863/PRC-74	O							O	H				Shop facilities

SECTION II. MAINTENANCE ALLOCATION CHART

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTIONS										TOOLS AND EQUIPMENT	REMARK	
		I N S P E C T	T E S T	S E R V I C E	A D J U S T	A L I G N	C A L I B R A T E	I N S T A L L	R E P L A C E	R E P A I R	O V E R H A U L			R E B U I L D
	AN/PRC-74B and AN//PRC-74C (Continued.)													
	ANTENNA KIT MK-911A/PRC-74	O		O					O					Not maintained
	ANTENNA AS-1887A/PRC-74	O		O					O					Not maintained
	BASE, ANTENNA SUPPORT AB-955/PRC-74	O		O					O					Not maintained
	MOUNTING MT 3613/PRC-74	O							O					Not maintained
	BATTERY BOX CY-6314/PRC-74 and CY-6314A/PRC-74	O		O					O		H			9,15 14,16
	BATTERY BOX CY-6121/PRC-74	O		O					O		H			9,15 14,16

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TABLE 1 TOOL AND TEST EQUIPMENT REQUIREMENTS				
TOOLS AND EQUIPMENT	MAINTENANCE CATEGORY	NOMENCLATURE	FEDERAL STOCK NUMBER	TOOL NUMBER
		AN/PRC-74B and AN//PRC-74C (Continued)		
1	H, D	SPECTRUM ANALYZER TS-723/U	6625-668-9418	
2	H, D	COUNTER, ELECTRONIC, DIGITAL READOUT AN/USM-207	6625-911-6368	
3	H, D	FREQUENCY METER, AN/USM-159	6625-892-5360	
4	H, D	SIGNAL GENERATOR, AN/GRM-50	6625-868-8353	
5	F, H, D	SIGNAL GENERATOR, AN/URM-25D	6625-309-5381	
6	F, H, D	SIGNAL GENERATOR, AN/URM-127	6625-783-5965	
7	F, H, D	MULTIMETER ME-26 ( )/U	6625-360-2493	
8	F, H, D	MULTIMETER ME-30 ( )/U	6625-669-0742	
9	O	MULTIMETER AN/URM-105	6625-581-2036	
10	F, H, D	OSCILLOSCOPE, AN/USM-281A	6625-228-2201	
11	D	FREQUENCY CALIBRATOR AN/URM-18	6625-985-5292	
12	H, D	TEST SET, RADIO AN/URM-134	6625-474-0359	
13	H, D	TEST SET, TRANSISTOR TS-1836( )/U	6625-893-2628	
14	F, H, D	TOOL KIT, ELECTRONIC EQUIPMENT TK-105/G	5180-610-8177	
15	O	TOOL KIT, ELECTRONIC EQUIPMENT TK-101/G	5180-064-5178	
16	F, H, D	TOOL KIT, ELECTRONIC EQUIPMENT TK-100/G	5180-605-0079	
17	H, D	VOLTMETER, ELECTRONIC AN/URM-145	6625-973-3986	
18	F, H, D	DUMMY LOAD, AUDIO (1/2 WATT, 500 OHM RESISTOR)	5905-279-3511	
19	F, H, D	DUMMY LOAD, DA-75	5985-280-3480	
20	F, H, D	WATTMETER AN/URM-120	6624-813-8430	
21	H, D	CLIP-ON DC MILLIAMMETER, HEWLETT-PACKARD NO. 428A	6625-798-0659	



TABLE 1 TOOL AND TEST EQUIPMENT REQUIREMENTS				
TOOLS AND EQUIPMENT	MAINTENANCE CATEGORY	NOMENCLATURE	FEDERAL STOCK NUMBER	TOOL NUMBER
		AN/PRC-74B and AN//PRC-74C (Continued)		
22	H, D	PROBE, COAXIAL MX-3341 (HEWLETT PACKARD TEL CONNECTOR NO. 11042A)		
23	H, D	MULTIMETER TS-352A/U	6625-242-5023	
24	F, H, D	POWER SUPPLY PP-4763/GRC	5820-937-7690	
25	H, D	POWER SUPPLY PP-3940/G (2 EACH)	6130-985-8136	
26	H, D	DUMMY LOAD, (1/2 WATT, 20K OHM RESISTOR)	5905-192-0649	
27	H, D	DUMMY LOAD (20 WATT, 100 OHM RESISTOR)		
28	D	POWER SUPPLY, HEWLETT PACKARD MODEL 6434B, OR EQUAL	NONE	
29	F	TEST SET, RADIO AN/PRM-31B (AN/PRM-31, FSN 6625-935-1359 OR AN/PRM-31A, FSN 6625-143-6683 MAY ALSO BE USED) SEE NOTE	6625-183-0212	
		NOTE: If Test Set, Radio AN/PRM-31 ( ) is available, the following test equipment will not be required for Direct Support Maintenance: 5,6,7,8,10,18,19,20, and 24		

**APPENDIX D  
ORGANIZATIONAL MAINTENANCE REPAIR PARTS AND  
SPECIAL TOOLS LISTS**

**Section I. INTRODUCTION**

**D-1. Scope**

This appendix lists repair parts required for the performance of organizational maintenance of the AN/PRC-74B and AN/PRC-74C. It authorizes the requisitioning and issue of spares and repair parts as indicated by the source and maintenance codes.

**2. General**

This Repair Parts and Special Tools List is divided into the following sections:

*a. Section II. Repair Parts List.* A list of spares and repair parts authorized for use in the performance of maintenance. The list also includes parts which must be removed for replacement of authorized parts. Parts list are composed of functional groups in numeric sequence, with the parts in each group listed in figure and item number sequence. Bulk materials are listed in the NSN sequence.

*b. Section III. Special Tools List.* Not applicable.

*c. Section IV. National Stock Number and Part Number Index.* A list, in National item identification number (NIIN) sequence, of all National stock numbers (NSN) appearing in the listings, followed by a list in alphanumeric sequence, of all part numbers appearing in the listings. National stock numbers and part numbers are cross-referenced to each illustration figure and item number appearance.

**D-3. Explanation of Columns**

*a. Illustration.* This column is divided as follows:

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

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

*b. Source, Maintenance, and Recoverability (SMR) Codes.*

(1) *Source code.* Source codes indicate the manner of acquiring support items for maintenance, repair, or overhaul of end items. Source codes are entered in the first and second positions of the Uniform SMR Code format as follows:

<i>Code</i>	<i>Definition</i>
PA-	Item procured and stocked for anticipated or known usage.
PB-	Item procured and stocked for insurance purposes because essentiality dictates that a minimum quantity be available in the supply system.
PD-	Support item, excluding support equipment procured for initial issue or outfitting and stocked only for subsequent or additional initial issues or outfitting. Not subject to automatic replenishment.
AF-	Item to be assembled at direct support maintenance level.
AH-	Item to be assembled at general support maintenance level.
XA-	Item is not procured or stocked because the requirements for the item will result in the replacement of the next higher assembly.
XB-	Item is not procured or stocked. If not available through salvage, requisition.

**NOTE**

Cannibalization or salvage may be used as a source of supply for any items source coded above, except those coded XA and aircraft support items as restricted by AR 700-42.

(2) *Maintenance code.* Maintenance codes are assigned to indicate the levels of maintenance authorized to USE and REPAIR support items. The maintenance codes are entered in the third and fourth positions of the Uniform SMR Code format as follows:

(a) The maintenance code entered in the third position will indicate one of the following levels of maintenance:

<i>Code</i>	<i>Application/Explanation</i>
C-	Crew or operator maintenance performed within organizational maintenance.
O-	Support item is removed, replaced, used at the organizational level.

(b) The maintenance code entered in the fourth position indicates whether the item is to be repaired and identifies the lowest maintenance level with the capability to perform complete repair (i.e., all authorized maintenance functions.). This position will contain one of the following maintenance codes:

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Code Application/Explanation

- F- The lowest maintenance level capable of complete repair of the support item is the direct support level.
- H- The lowest maintenance level capable of complete repair of the support item is the general support level.
- D- The lowest maintenance level capable of complete repair of the support item is the depot level.
- Z- Non-repairable. No repair is authorized.

(3) *Recoverability code.* Recoverability codes are assigned to support items to indicate the disposition action on unserviceable items. The recoverability code is entered in the fifth position of the Uniform SNR Code format as follows:

Recoverability Application/Explanation  
Codes

- Z- Non-repairable item. When unserviceable, condemn and dispose of at level indicated in position 3.
- F- Repairable item. When uneconomically repairable, condemn and dispose of at the direct support level.
- H- Repairable item. When uneconomically repairable, condemn and dispose of at the general support level.
- D- Repairable item. When beyond lower level repair capability, return to the depot. Condemnation and disposal not authorized below depot level.

c. *National Stock Number.* Indicates the National stock number assigned to the item and will be used for requisitioning purposes.

d. *Part Number.* Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or a range of items.

### NOTE

When a stock-numbered item is requisitioned, the repair part received may have a different part number than the part being replaced.

e. *Federal Supply Code for Manufacturer (FSCM).* The FSCM is a 5-digit numeric code listed in SB-708-42 which is used to identify the manufacturer, distributor, or Government agency etc.

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

g. *Unit of Measure (U/M).* Indicates the standard of the basic quantity of the listed item as used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in, pr, etc). When the unit of measure differs from the unit of issue, the lowest unit of issue that will satisfy the required units of measure will be requisitioned.

h. *Quantity Incorporated in Unit.* Indicates the quantity of the item used in the breakout shown on the illustration figure, which is prepared for a functional group, subfunctional group, or an assembly. A "V" appearing in this column in lieu of a quantity indicates that no specific quantity is applicable, (e.g., shims, spacers, etc.).

## D-4. Special Information

a. Usable on codes are shown in the description column. Uncoded items are applicable to all models. Identification of the usable on codes used in this publication are:

Code	Used on
CNY	AN/PRC-74B
ASY	AN/PRC-74C

b. Action change codes indicated in the left-hand margin of the listing page denote one of the following:

- N- Indicates an added item
- R- Indicates a change in the NSN only
- C- Indicates a change in data

c. Detailed assembly instructions for items source coded to be assembled are found in TM 11-5820-590-12-1. Assembly components are listed immediately following the item to be assembled.

d. National stock numbers (NSN's) that are missing from the P source coded items have been applied for and will be added to this TM by future change/revision when they are entered into the Army Master Data File (AMDF). Until the NSN's are established and published, submit exception requisitions to: Commander, US Army Electronics Command, ATTN: DRSEL-MM, Fort Monmouth, NJ 07703 for the part required to support your equipment.

## D-5. How to Locate Repair Parts

a. When the National stock number or part number is unknown.

(1) *First.* Using the table of contents, determine the functional group within which the item belongs. This is necessary since illustrations are prepared for functional groups and listings are divided into the same groups.

(2) *Second.* Find the illustration covering the functional group to which the item belongs.

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(3) *Third.* Identify the item on the illustration and note the illustration figure and item number of the item.

(4) *Fourth.* Using the Repair Parts Listing, find the figure and item number noted on the illustration.

*b.* When National stock number or part number is known.

(1) *First.* Using the Index of National Stock Numbers and Part Numbers, find the pertinent National stock number or part number. This index

is in NIIN sequence followed by a list of part numbers in alphanumeric sequence. cross-referenced to the illustration figure number and item number.

(2) *Second.* After finding the figure and item number, locate the figure and item number in the repair parts list.

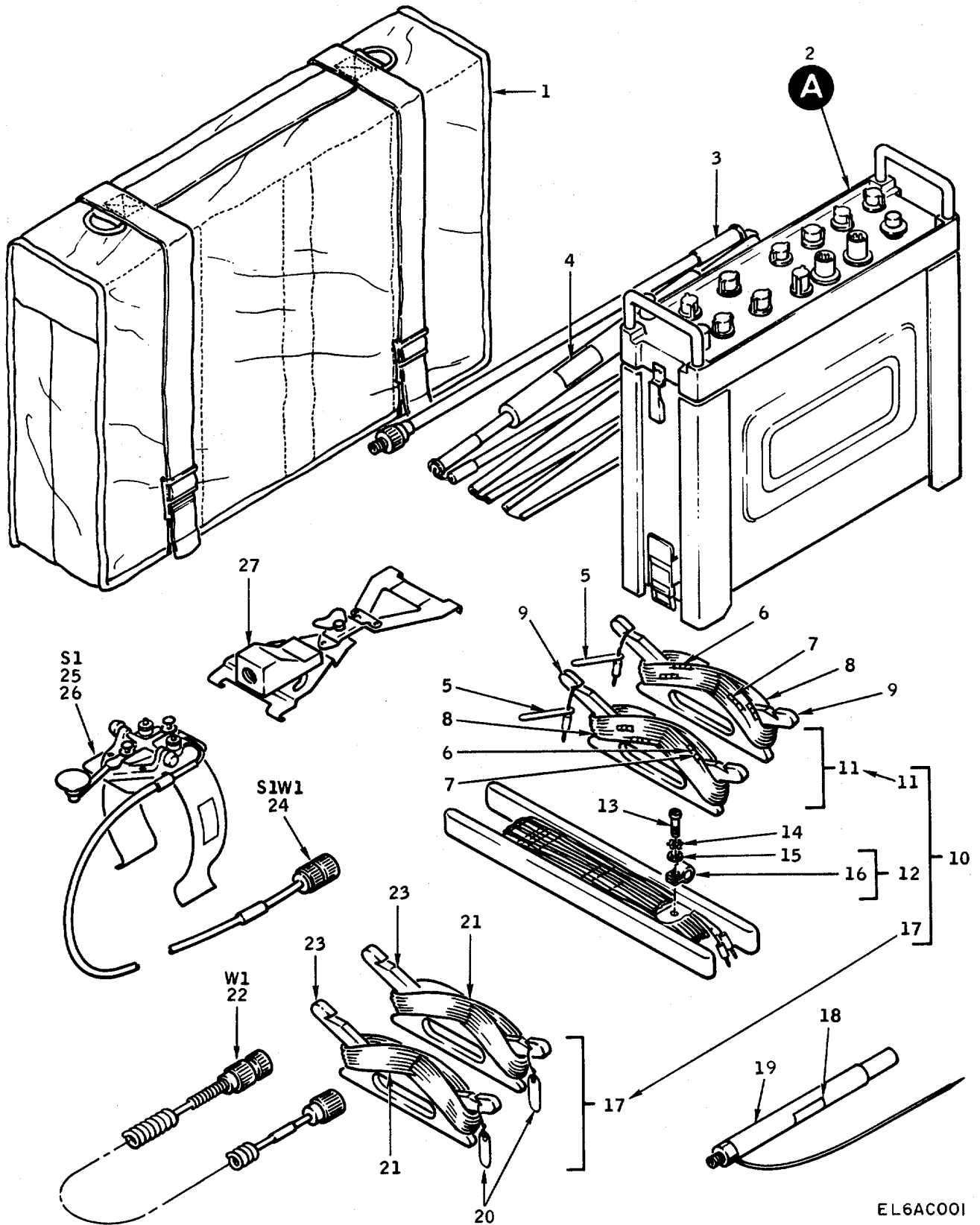
**D-6. Abbreviations**

(Not applicable)

**(Next printed page is D-4)**

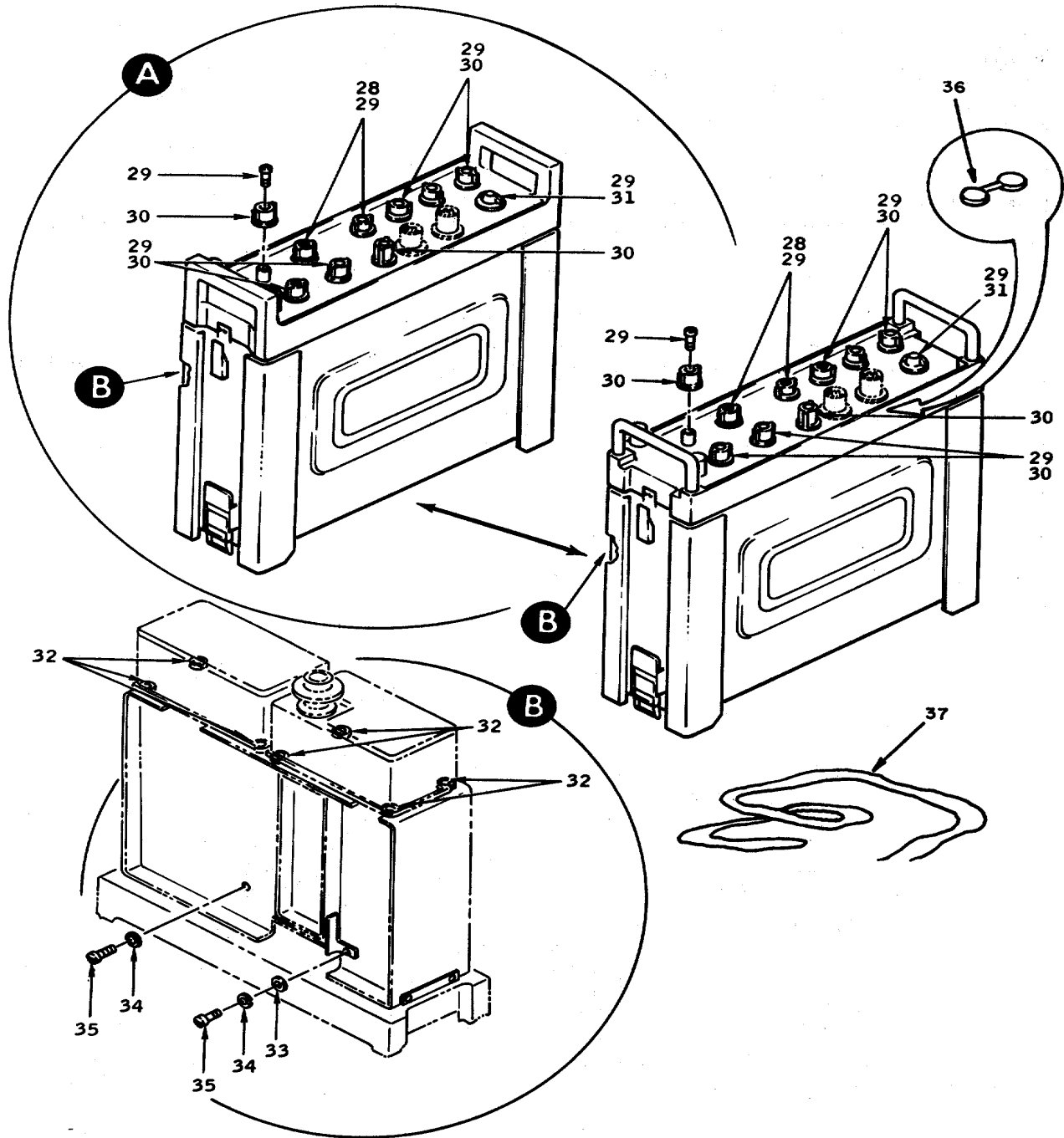
Section II. REPAIR PARTS LIST

(1) ILLUSTRATION		(2)	(3)	(4)	(5)	(6)	(7)	(8)
(a) FIG NO.	(b) ITEM NO.	SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION  <i>USABLE ON CODE</i>	U/M	QTY INC IN UNIT
						GROUP 00		
						RADIO SET AN PRC-74B	CNY	EA 1
						RADIO SET AN PRC-74C	ASY	EA 1
D-1	1	PAOZZ	8105-00-921-6711	CW-863/PRC-74	05869	BAG, ACCESSORY, CARRYING		EA 1
D-1	2	AFODD		RT-794B/PRC-74	05869	RECEIVER-TRANSMITTER, RADIO	CNY	EA 1
D-1	2	AFODD		RT-794C/PRC-74	05869	RECEIVER-TRANSMITTER, RADIO	ASY	EA 1
D-1	3	PACZZ	5820-00-935-0032	AS-1887A/PRC-74	05869	ANTENNA		EA 1
D-1	4	XBOZZ		1559161-011	05869	NAMEPLATE		EA 2
D-1	5	XAOZZ		1541083	05869	LINK ANTENNA		EA 2
D-1	6	XAOZZ		CORI-335	13476	TAG		EA 2
D-1	7	XAOZZ		CRN1-8TYPE2	08795	SLEEVING, ELECTRICAL		EA 20
D-1	8	XAOZZ		996926-093	05436	WIRE, ANTENNA		EA 2
D-1	9	XAOZZ		1560018	05869	REEL, ANTENNA		EA 2
D-1	10	PBOZZ	5820-00-832-8210	MK-911A/PRC-74	05869	KIT, WIFE ANTENNA	CNY	EA 1
D-1	10	PDOZZ	5985-00-432-1485	MK-911B/PRC-74	05869	KIT, WIRE ANTENNA	ASY	EA 1
D-1	11	PAOZZ	5820-00-935-5074	1560017	05869	WIRE, ANTENNA		EA 2
D-1	12	PACFF	5820-00-942-0844	MX-7256/PRC-74	05869	FIXTURE, DIPOLE		EA 1
D-1	13	PAOZZ	5305-00-059-3657	MS51958-61	96906	SCREW, MACHINE		EA 1
D-1	14	PAOZZ	5310-00-209-1239	MS35335-60	96906	WASHER, LOCK		EA 1
D-1	15	PAOZZ	5310-00-167-0801	AN960C10	81349	WASHER, FLAT		EA 1
D-1	16	PAOZZ	5340-00-753-3456	MS25281-2	96906	CLAMP, LOOP		EA 1
D-1	17	PAOZZ	5820-00-945-4319	1540369	05869	TWINE ASSEMBLY		EA 2
D-1	18	XBOZZ		1540911-010	05869	NAMEPLATE		EA 1
D-1	19	PAOFH	5820-00-942-0500	AB-955/PRC-74	05869	BASE, ANTENNA ,WHIP		EA 1
D-1	20	XAOZZ		2100-8OZ	10266	WEIGHT, LEAD BANK		EA 2
D-1	21	XAOZZ		TYPE 20 OLIVE	81349	CORD, NYLON		EA 2
D-1	22	PACFF	5995-00-930-7016	CX-10239/PRC-74	05869	CABLE ASSY, POWER ELECTRICAL		EA 1
D-1	23	XAOZZ		1541082-002	05869	REEL, ANTENNA		EA 2
D-1	24	PAOFF	5820-00-089-9196	CX-11468/U	05869	CABLE, ASSY, POWER ELECTRICAL	CNY	EA 1
D-1	25	PAOZZ	5805-00-409-1106	AMP30371A	12138	KEY, TELEGRAPH ASSY		EA 1
D-1	26	AFOFD		KY-562/U	05869	KEY ASSY, TELEGRAPH		EA 1
D-1	27	PACZZ	5820-00-942-0818	MT-3613/PRC-74	05869	BRACKET, MTG ANTENNA		EA 1
D-1	28	PAOZZ	5355-00-999-9389	V25-1BLK-996939	08730	KNOB, CONTROL		EA 2
D-1	29	PAOZZ		LP56D4054	03038	SCREW, SELF-LKC		EA 9
D-1	30	PAOZZ	5355-00-944-4739	V24-1BLK-996939	08730	KNOB, CONTROL		EA 7
D-1	31	PAOZZ	5355-00-444-4619	V25-2BLK-996939	08730	KNOB, CONTROL		EA 1
D-1	32	PAOZZ	5310-00-809-8546	MS27183-8	96906	WASHER, FLAT		EA 8
D-1	33	PAOZZ	5310-00-632-6721	AN960C4	81349	WASHER, FLAT		EA 2
D-1	34	PAOZZ	5310-00-550-3715	MS35333-70	96906	WASHER, LOCK	CNY	EA 2
D-1	35	PAOZZ	5305-00-550-5002	MS 35233-13	96906	SCREW, MACHINE	CNY	EA 2
D-1	35	PAOZZ	5305-00-054-5651	MS51957-17	96906	SCREW, MACHINE	ASY	EA 2
D-1	36	PAOZZ	5820-00-973-1732	SMB447440	80063	COVER, AUDIO CONNECTOR		EA 1
D-1	37		4020-00-246-0688	SCD86348-1	80063	CORD, NYLON		6 FT 1



EL6AC001

Figure D-1. Radio Set AN/PRC-74B and AN/PRC-74C (Sheet 1 of 2).



EL6AC002

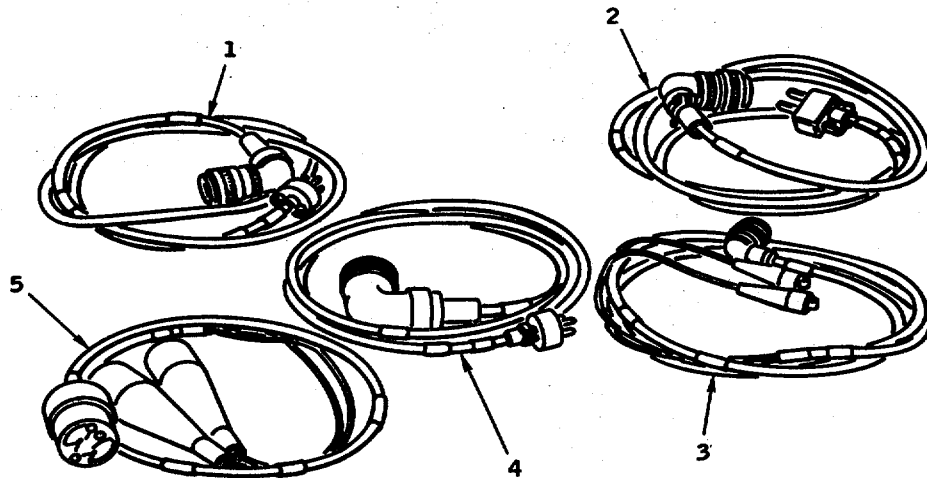
Figure D-1. Radio Set AN/PRC 74B and AN/PRC- 74C (Sheet 2 of 2).

CHANGE 6

D-6

SECTION II. REPAIR PARTS LIST (CONTINUED)

(1) ILLUSTRATION		(2)	(3)	(4)	(5)	(6)	(7)	(8)
(a) FIG NO.	(b) ITEM NO.	SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION  USABLE ON CODE	U/M	QTY INC IN UNIT
						GROUP 020102 CABLE ASSEMBLIES CX-10239/PRC-74		
D-2	1	PAOHH	5995-00-945-1922	1541131-002	05869	CABLE ASSY, SPCL ELEC.....CNY	EA	1
D-2	1	PAOHH	5995-00-495-1004	1598067-002	05869	CABLE ASSY, SPCL ELEC.....ASY	EA	1
D-2	2	PAOZZ	5995-00-945-1936	1541131-001	05869	CABLE ASSY, SPCL ELEC.....CNY	EA	1
D-2	2	PAOZZ	5995-00-495-0999	1598067-001	05869	CABLE ASSY, SPCL ELEC.....ASY	EA	1
D-2	3	PAOZZ	5995-00-945-1881	1541131-005	05869	CABLE ASSY, SPCL ELEC.....CNY	EA	1
D-2	3	PAOZZ	5995-00-494-1007	1598067-005	05869	CABLE ASSY, SPCL ELEC.....ASY	EA	1
D-2	4	PAOZZ	5995-00-945-1900	1541131-003	05869	CABLE ASSY, SPCL ELEC.....CNY	EA	1
D-2	4	PAOZZ	5995-00-495-1005	1598067-003	05869	CABLE ASSY, SPCL ELEC.....ASY	EA	1
D-2	5	PAOZZ	5995-00-945-1882	1541131-004	05869	CABLE ASSY, SPCL ELEC.....CNY	EA	1



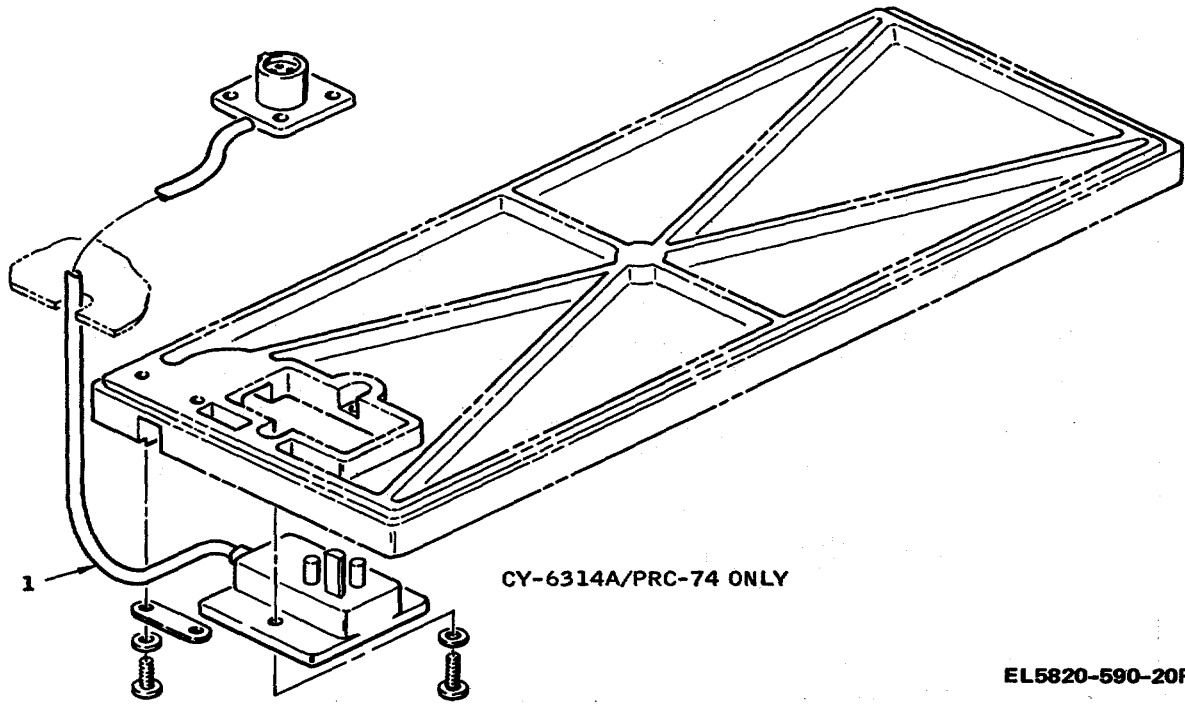
EL5820-590-20P-TM-2

Figure D-2. Cable Assemblies CX-10239/PRC-74



SECTION II. REPAIR PARTS LIST (CONTINUED)

(1) ILLUSTRATION		(2)	(3)	(4)	(5)	(6)	(7)	(8)
(A) FIG NO.	(B) ITEM NO.	SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION  USABLE ON CODE	U/M	QTY INC IN UNIT
D-3	1	PAOZZ	5995-00-476-9511	390032-12	73293	GROUP 070102 BTRY RNTR HDW AND CABLE ASSY CABLE ASSY ASY	EA	1

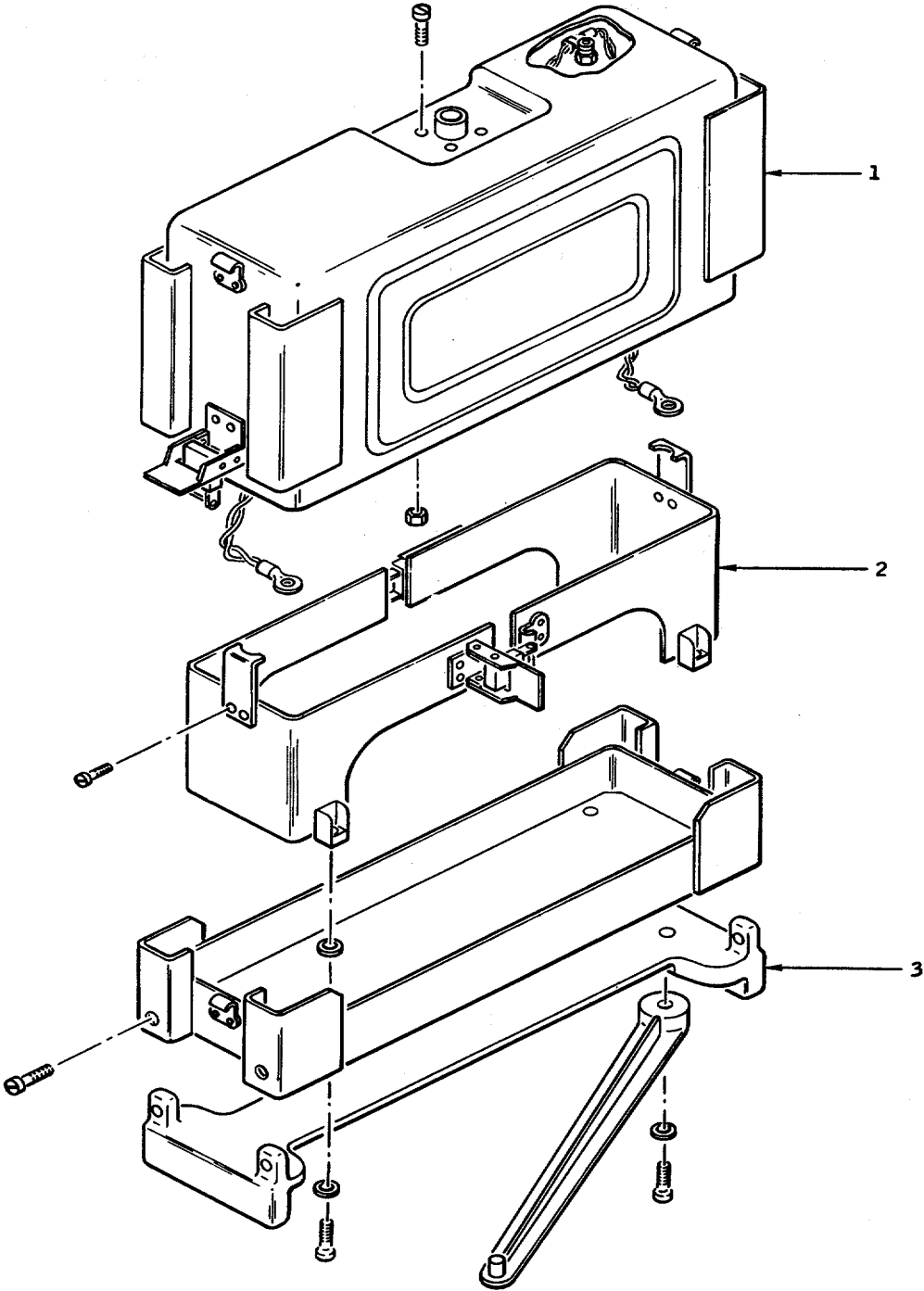


EL5820-590-20P-TM-3

Figure D-3. Battery retainer hardware and cable assembly

SECTION II. REPAIR PARTS LIST (CONTINUED)

(1) ILLUSTRATION		(2)	(3)	(4)	(5)	(6)	(7)	(8)
(a) FIG NO.	(b) ITEM NO.	SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION  <i>USABLE ON CODE</i>	U/M	QTY INC IN UNIT
						GROUP 08 BATTERY BOX CY-6121/PRC-74 GROUP 0801 BATTERY BOX		
D-4	1	AHOHD		1541044	05869	CASE, BATTERY BOX	CNY EA	1
D-4	2	AHOHD		1541046	05869	COVER AND CLAMP ASSY	CNY EA	1
D-4	3	AHOHD		1541504	95869	SUPPORT, BATTERY CASE	CNY EA	1

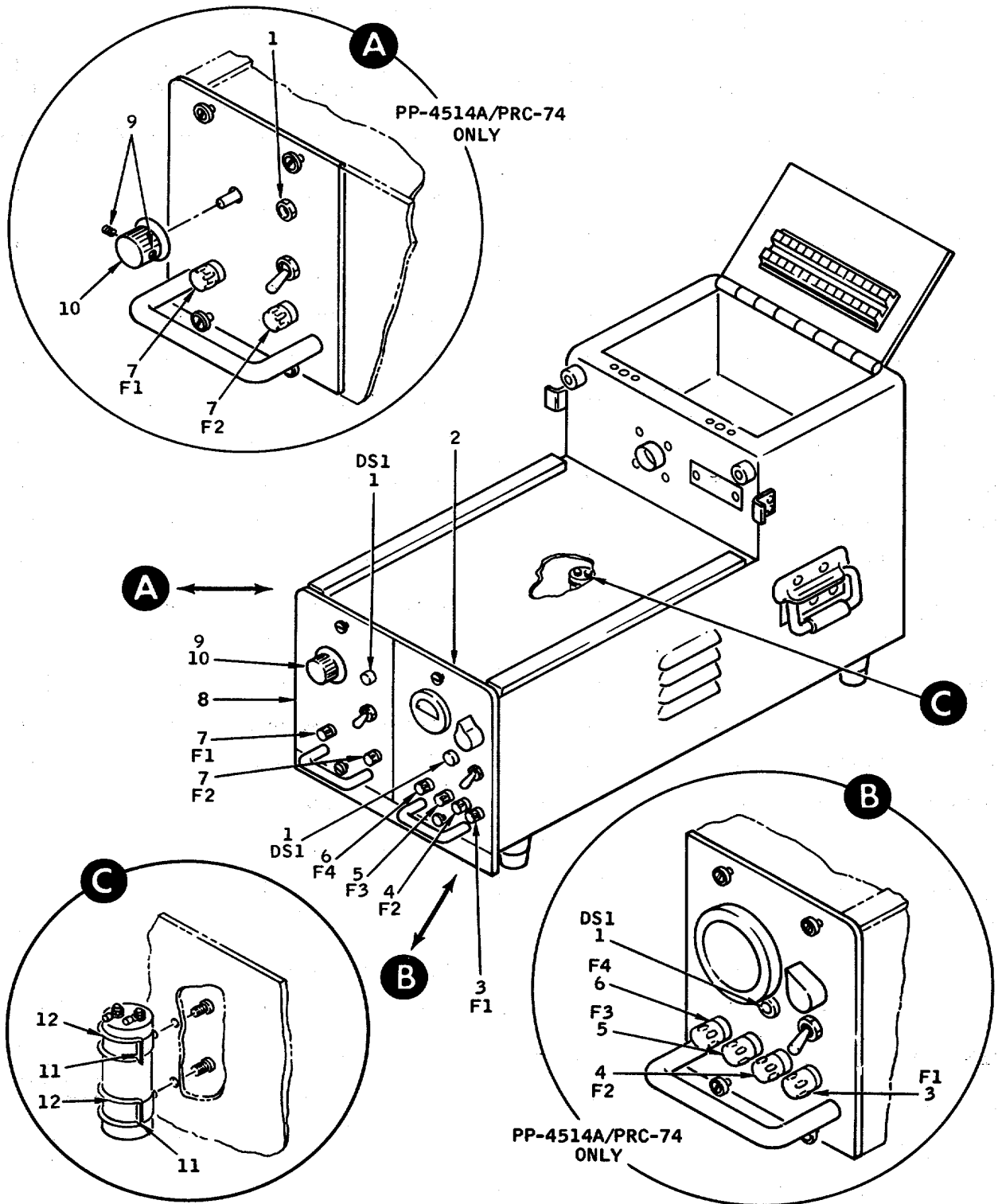


EL5820-590-20P-TM-4

Figure D-4. Battery Box CY-6121/PRC-75

SECTION II. REPAIR PARTS LIST (CONTINUED)

(1) ILLUSTRATION		(2)	(3)	(4)	(5)	(6)	(7)	(8)
(a) FIG NO.	(b) ITEM NO.	SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION  USABLE ON CODE	U/M	QTY INC IN UNIT
						GROUP 09 POWER SUPPLY PP-4514/PRC AND PP-4514A/PRC-74 GROUP 0901 POWER SUPPLY		
D-5	1	PAOZZ	6240-00-155-7836	MS25237-327	96906	LAMP, INCANDESCENT	EA	2
D-5	2	AHOHD		1541128-101	05869	POWER SUPPLY CNY	EA	1
D-5	2	AHOHD		154128-102	05869	POWER SUPPLY ASY	EA	1
D-5	3	PAOZZ	5920-00-012-0157	F02A32V15A	81349	FUSE, CARTRIDGE	EA	1
D-5	4	PAOZZ	5920-00-280-4960	F02A250V2A	81349	FUSE, CARTRIDGE	EA	1
D-5	5	PAOZZ	5920-00-557-2647	F02A250V4A	81349	FUSE, CARTRIDGE	EA	1
D-5	6	PAOZZ	5920-00-557-5033	F03A250V8A	81349	FUSE, CARTRIDGE	EA	1
D-5	7	PAOZZ	5920-00-548-3126	F02A250V6A	81349	FUSE, CARTRIDGE	EA	2
D-5	8	AHOHD		1541125-101	05869	CHARGER, BATTERY CNY	EA	1
D-5	8	AHOHD		1541125-102	05869	CHARGER, BATTERY ASY	EA	1
D-5	9	PAOZZ	5305-00-954-2724	NAS1081C08D4	80205	SET, SCREW ASY	EA	4
D-5	10	PAOZZ	5355-00-579-6390	MS91528-2F2B	96906	DIAL, CONTROL	EA	1
D-5	11	PAOZZ	5340-00-946-9440	C3M	06229	STRAP, RETAINING	EA	2
D-5	12	PAOZZ	5940-00-473-5595	N5	06229	STRAP, RETAINING	EA	2



EL5820-590-20P-TM-5

Figure D-5. Power supplies PP-4514/PRC-74 and PP-4514A/PRC-74

Section IV. NATIONAL STOCK NUMBER AND PART NUMBER INDEX

STOCK NUMBER	FIG. NO.	ITEM NO.	STOCK NUMBER	FIG. NO.	ITEM NO.
5305-00-054-5651	D-1	35	5820-00-945-4319	D-1	17
5305-00-059-3657	D-1	13	5820-00-973-1732	D-1	36
5305-00-550-5002	D-1	35	5920-00-012-0157	D-5	3
5305-00-954-2724	D-5	9	5920-00-280-4960	D-5	4
5310-00-167-0801	D-1	15	5920-00-548-3126	D-5	7
5310-00-209-1239	D-1	14	5920-00-557-2647	D-5	5
5310-00-550-3715	D-1	34	5920-00-557-5033	D-5	6
5310-00-632-6721	D-1	33	5940-00-473-5595	D-5	12
5310-00-809-8546	D-1	32	5985-00-432-1485	D-1	10
5340-00-753-3456	D-1	16	5995-00-476-9511	D-3	1
5340-00-946-9440	D-5	11	5995-00-494-1007	D-2	3
5355-00-444-4619	D-1	31	5995-00-495-0999	D-2	2
5355-00-579-6390	D-5	10	5995-00-495-1004	D-2	1
5355-00-944-4739	D-1	30	5995-00-495-1005	D-2	4
5355-00-999-9389	D-1	28	5995-00-930-7016	D-1	22
5805-00-409-1106	D-1	25	5995-00-945-1881	D-2	3
5820-00-089-9196	D-1	24	5995-00-945-1882	D-2	5
5820-00-832-8210	D-1	10	5995-00-945-1900	D-2	4
5820-00-935-0031	D-1	2	5995-00-945-1922	D-2	1
5820-00-935-0032	D-1	3	5995-00-945-1936	D-2	2
5820-00-935-5074	D-1	11	6240-00-155-7836	D-5	1
5819-00-942-0500	D-1	19	8105-00-921-6711	D-1	1
5820-00-942-0818	D-1	27	<u>LATEST NATIONAL STOCK NUMBER ISSUED</u>		
5820-00-942-0844	D-1	12	4020-00-246-0688	D1	37

**TM 11-5820-590-12-1**

**SECTION IV NATIONAL STOCK NUMBER AND PART NUMBER INDEX**

<b>PART NUMBER</b>	<b>FSCM</b>	<b>FIG. NO.</b>	<b>ITEM NO.</b>	<b>PART NUMBER</b>	<b>FSCM</b>	<b>FIG. NO.</b>	<b>ITEM NO.</b>
AB-955/PRC-74	05869	D-1	19	MS35335-60	96906	D-1	14
AMP30371A	12138	D-1	25	MS51957-17	96906	D-1	35
AN960C10	81349	D-1	15	MS51958-61	96906	D-1	13
AN960C4	81349	D-1	33	MS91528-2F2B	96906	D-5	10
AS-1887A/PRC-74	05869	D-1	3	MT-3613/PRC-74	05869	D-1	27
CORI-33S	13476	D-1	6	MX-7256/PRC-74	05869	D-1	12
CRN1-8TYPE2	08795	D-1	7	NAS1081C08D4	80205	D-5	9
CW-863/PRC-74	05869	D-1	1	N5	06229	D-5	12
CX-10239/PRC-74	05869	D-1	22	RT-794B/PRC-74	05869	D-1	2
CX-11468/U	05869	D-1	24	RT-794C/PRC-74	05869	D-1	2
C3M	06229	D-5	11	SMB447440	80063	D-1	36
F02A250V2A	81349	D-5	4	TYPE 20 OLIVE	81349	D-1	21
F02A250V4A	81349	D-5	5	V24-1BLK-996939	08730	D-1	30
F02A250V6A	81349	D-5	7	V25-1BLK-996939	08730	D-1	28
F02A32V15A	81349	D-5	3	V25-2BLK-996939	08730	D-1	31
F03A250V84	81349	D-5	6	1540369	05869	D-1	17
KY-652/U	05869	D-1	26	1540911-010	05869	D-1	18
LP56D4054	03038	D-1	29	1541044	05869	D-4	1
MK-911A/PRC-74	05869	D-1	10	1541046	05869	D-4	2
MK-911B/PRC-74	05869	D-1	10	1541082-002	05869	D-1	23
MS25237-327	96906	D-5	1	1541083	05869	D-1	5
MS25281-2	96906	D-1	16	1541125-101	05869	D-5	8
MS27183-8	96906	D-1	32	1541125-102	05869	D-5	8
MS35233-13	96906	D-1	35	1541128-101	05869	D-5	2
MS35333-70	96906	D-1	34	1541128-102	05869	D-5	2

SECTION IV NATIONAL STOCK NUMBER AND PART NUMBER INDEX (CONTINUED)

<u>PART NUMBER</u>	<u>FSCM</u>	<u>FIG. NO.</u>	<u>ITEM NO.</u>	<u>PART NUMBER</u>	<u>FSCM</u>	<u>FIG. NO.</u>	<u>ITEM NO.</u>
1541131-001	05869	D-2	2	1560018	05869	D-1	9
1541131-002	05869	D-2	1	1598067-001	05869	D-2	2
1541131-003	05869	D-2	4	1598067-002	05869	D-2	1
1541131-004	05869	D-2	5	1598067-003	05869	D-2	4
1541131-005	05869	D-2	3	1598067-005	05869	D-2	3
1541504	05869	D-4	3	2100-8OZ	10266	D-1	20
1559161-011	05869	D-1	4	390032-12	73293	D-3	1
1560017	05869	D-1	11	996926-093	05436	D-1	8
				<u>LATEST PART NUMBER ISSUED</u>			
				SCD86348-1	80063	D-1	37



By Order of the Secretary of the Army.

HAROLD K. JOHNSON,  
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CofSptS (1)	USASESCS (30)	Sig Ser. Gen Dep (5)
USACDCEA (1)	USAADS (2)	Sig Dep (12)
UBACDCCBRA (1)	USAAMS (2)	Sig FLDMS (2)
USACDCCEA (1)	USAARMS (2)	AMS (1)
USAODCOA (1)	USAIS (2)	USAERDAA (2)
USACDCQMA (1)	USAES (2)	USAERDAW (13)
USACDCTA (1)	USATC (2)	USACRREL (2)
USACDCADA (1)	WRAMC (1)	Units organized under following
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USACDCARTYA (1)	Instl (2) except	11-57
USACDCSWA (1)	Fort Hancock (4)	11-97
USAODCCEA(Ft Huachuca)(1)	Fort Gordon (10)	11-98
USAARENBD (2)	Fort Huachuca (10)	11-117
USAMC (5)	WSMR (5)	11-127
USCONARC (5)	Fort Carson (23)	11-155
ARADCOM (5)	Fort Knox (12)	11-157
ARADCOM Rgn (2)	Army Depot (2) except	11-158
OS Maj Comd (4)	LBAD (14)	11-500 (AA-AC)
LOGCOMD (2)	SAAD (30)	11-587
USAMICOM ( 4 )	TOAD ( 14 )	11-592
USASTRATCOM (4)	LEAD (7)	11-597

NG: State AG (3).

USAR: None.

For explanation of abbreviations used see AR 320-50.

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# THE METRIC SYSTEM AND EQUIVALENTS

## WEIGHT MEASURE

1 Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches  
 1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches  
 1 Kilometer = 1000 Meters = 0.621 Miles

## WEIGHTS

1 Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces  
 1 Kilogram = 1000 Grams = 2.2 lb.  
 1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

## LIQUID MEASURE

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces  
 1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

## SQUARE MEASURE

1 Sq. Centimeter = 100 Sq. Millimeters = 0.155 Sq. Inches  
 1 Sq. Meter = 10,000 Sq. Centimeters = 10.76 Sq. Feet  
 1 Sq. Kilometer = 1,000,000 Sq. Meters = 0.386 Sq. Miles

## CUBIC MEASURE

1 Cu. Centimeter = 1000 Cu. Millimeters = 0.06 Cu. Inches  
 1 Cu. Meter = 1,000,000 Cu. Centimeters = 35.31 Cu. Feet

## TEMPERATURE

$5/9(^{\circ}\text{F} - 32) = ^{\circ}\text{C}$   
 212° Fahrenheit is equivalent to 100° Celsius  
 90° Fahrenheit is equivalent to 32.2° Celsius  
 32° Fahrenheit is equivalent to 0° Celsius  
 $9/5^{\circ}\text{C} + 32 = ^{\circ}\text{F}$

## APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
its	Liters	0.473
arts	Liters	0.946
allons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Square Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
ers	Gallons	0.264
ms	Ounces	0.035
ograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pounds-Feet	0.738
Kilopascals	Pounds per Square Inch	0.145
ometers per Liter	Miles per Gallon	2.354
ometers per Hour	Miles per Hour	0.621

