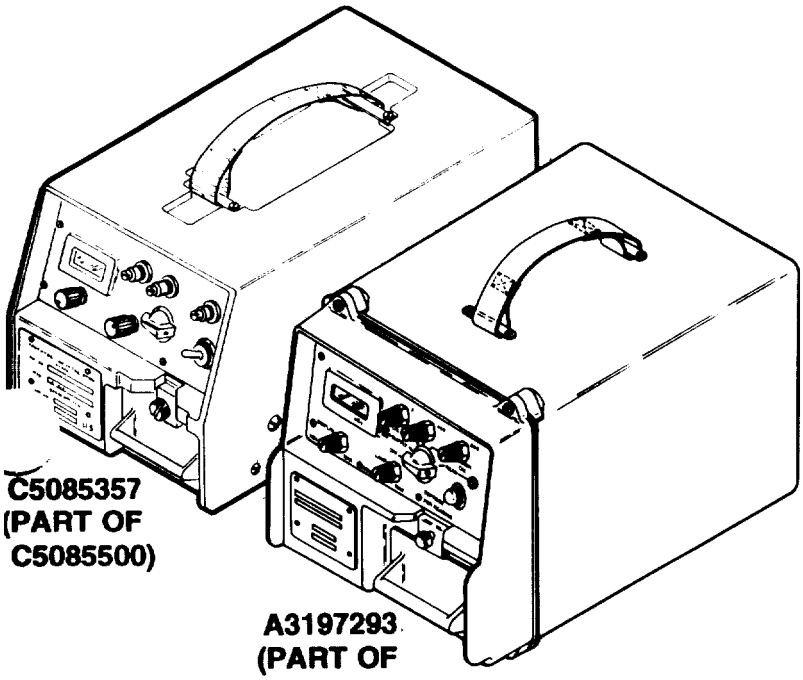
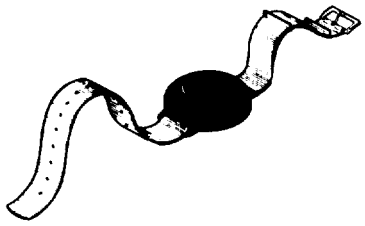
TECHNICAL MANUAL

OPERATOR'S AND UNIT MAINTENANCE MANUAL RADIAC SET AN/PDR-75 (NSN 6665-01-211-4217) (EIC: KYD)



C5085357 (PART OF C5085500)

A3197293 (PART OF A3250780)



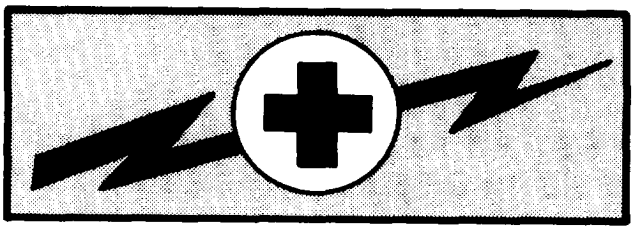
HEADQUARTERS, DEPARTMENT OF THE ARMY

1 JUNE 1995

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

1. DO NOT TRY TO PULL OR GRAB THE INDIVIDUAL
2. IF POSSIBLE, TURN OFF THE ELECTRICAL POWER
3. IF YOU CANNOT TURN OFF THE ELECTRICAL POWER, PULL, PUSH, OR LIFT THE PERSON TO SAFETY USING A WOODEN POLE OR A ROPE OR SOME OTHER INSULATING MATERIAL
4. SEND FOR HELP AS SOON AS POSSIBLE
5. AFTER THE INJURED PERSON IS FREE OF CONTACT WITH THE SOURCE OF ELECTRICAL SHOCK, MOVE THE PERSON A SHORT DISTANCE AWAY AND IMMEDIATELY START ARTIFICIAL RESUSCITATION

WARNING



HIGH VOLTAGE

is used in the operation of this equipment.

DEATH ON CONTACT

may result if personnel fail to observe safety precautions.

Never work on electronic equipment unless there is another person nearby who is familiar with the operation and hazards of the equipment and who is competent in administering first aid. When the technicians are aided by operators, they must be warned about dangerous areas.

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

Be careful not to contact high voltage connections of 115 or 230 V ac input when operating this equipment.

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

For artificial respiration instructions, refer to FM 21-11.

WARNING

HIGH VOLTAGE

Potentials of up to 1200 V dc may be present within the EHT power supply and flash unit and at terminal 606 (EHT) on the EHT power supply. This high voltage may be present even when the reader is not operating or is disconnected from its power source. Operator and organizational maintenance personnel must not remove the side cover of the reader or reader from its metal case unless specifically instructed to do so. Death or serious injury may result from failure to comply with this warning.

WARNING

HIGH INTENSITY LIGHT

High intensity light is generated by the flash tube in the reader during operation of this equipment. This light contains large amounts of ultraviolet energy which may cause severe and permanent damage to the eyes. Do not operate the DEPRESS FOR READING switch when the drawer of the reader is open unless specifically instructed to do so.

WARNING

SEVERE ILLNESS or DEATH may result if you fail to observe the following safety precautions. Both DENATURED and ISOPROPYL ALCOHOLS are toxic, volatile, and flammable. Use only in well ventilated areas away from heat or open flame. Avoid ingestion, prolonged breathing of vapor, and contact with skin.

WARNING

Personal injury may result from failure to close the drawer assembly properly. Close the drawer assembly by grasping the drawer handle firmly with one hand, lowering the drawer cover if necessary, and pushing the drawer into the closed position. The free hand should remain clear of the drawer assembly. Do not touch the transit lock with either hand when closing the drawer assembly.

WARNING

Turn power off and remove reader from its metal case, when internal electronic components are exposed for repair or calibration during maintenance procedures, wait at least 1 minute before touching reader. This procedure is required to ensure that the high voltage capacitor within the flash unit has time to discharge. Failure to do so may result in death or serious injury.

WARNING

LITHIUM BATTERIES

Lithium batteries used with the Radiac Set AN/PDR-75 contain sulfur dioxide and may explode if handled improperly. Do not short circuit, incinerate, mutilate, or attempt to charge these batteries. Serious injury to personnel may result from failure to comply with this warning.

Observe the following precautions when handling lithium batteries to minimize the chance of personal injury or equipment damage.

- **DO NOT parallel batteries without diode protection.**
- **DO NOT short-circuit battery terminals.**
- **DO NOT heat, incinerate, crush, puncture, disassemble, or otherwise mutilate the batteries.**
- **DO NOT attempt to recharge the batteries.**
- **DO NOT bypass the internal fuse or replace it with a fuse of a different rating.**
- **DO NOT store batteries in equipment during long periods of disuse (over 30 days).**
- **TURN EQUIPMENT OFF immediately if you:**

  1) detect overheating in battery compartment

  2) hear hissing sound of venting battery, or

  3) smell irritating sulfur dioxide gas.

  Allow battery to cool for 30 to 60 minutes before removal. Ensure adequate ventilation if venting occurs. Avoid prolonged or repeated breathing of fumes.

- **DO NOT discard batteries. Turn them in to a DRMO (Defense Reutilization and Maintenance Office).**

Technical Manual
No. 11-6665-236-12

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 1 June 1995

Operator's and Unit Maintenance Manual
RADIAC SET
AN/PDR-75
(NSN 6665-01-211-4217) (EIC: KYD)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can 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 or DA Form 2028 (Recommended Changes to Publications and Blank Forms) direct to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-LC-LM-LT, Fort Monmouth, NJ 07703-5007. A reply will be furnished to you.

TABLE OF CONTENTS
PART ONE

*This manual supersedes TM 11-6665-236-12, 1 July 1990.

TABLE OF CONTENTS (CONTINUED)

PART TWO

PART THREE

TABLE OF CONTENTS (CONTINUED)
PART FOUR

TABLE OF CONTENTS (CONTINUED)

PART SEVEN

PART EIGHT

TABLE OF CONTENTS (CONTINUED)

How to Use This Manual

- This manual tells you how to repair and maintain the AN/PDR-75.
- Warnings and Cautions listed throughout the manual are summarized beginning on page A. Be sure to read and understand all of these before attempting any repair or maintenance function.
- Significant subject headings are listed by page numbers on the manual's front cover.
- individual subjects/Items are found by referring to the Subject Index in the rear of this manual.
- Special notes pertain to the Table of Contents and Subject Index as described below. This manual contains two versions of model AN/PDR-75 (C5085500 and A3250780). These two versions are electrically the same and operate identically, but are mechanically different in construction and design.

  a. Each of the four chapters (General Information, Operating Instructions, Operator Maintenance, and Organizational Maintenance) are duplicated in this manual. There is a separate chapter for each of the above subjects for the C5085500 version and for the A3250780 version.

  b. The two versions are easily distinguishable from each other in appearance (See Front Cover illustration). If in doubt however, refer to the instruments' I.D. plate on which the version number will be marked (Computer Indicator C5085357 is part of C5085500 version, Computer Indicator A3197293 is part of A3250780 version).

  c. Refer to Table 3-1 (page 3-1) and Table 3-1.1 (page 3-7) for Operator Troubleshooting.

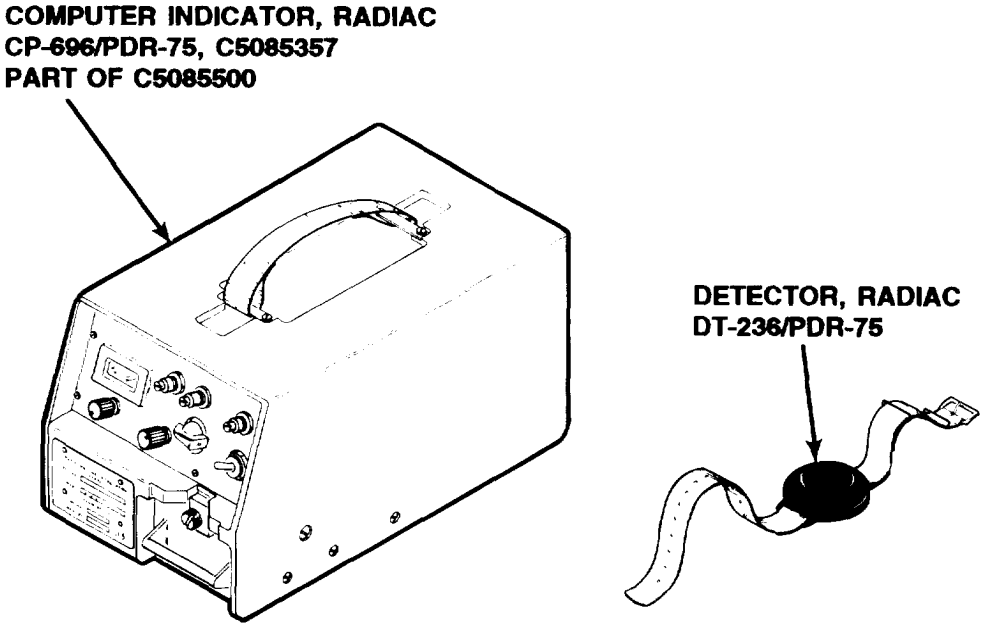
  d. The Subject Index in many cases lists two page numbers for each subject (e.g. 2-4/2-28). The first page number (2-4) shown refers to the C5085500 version and second (2-28) to the A3250780 version.

PART ONE

CHAPTER 1

INTRODUCTION (C5085500)

Section I. GENERAL INFORMATION (C5085500)



NOTE

The Radiac Detector DT-236/PDR-75 is used with, but is not considered part of, the Radiac Set AN/PDR-75. The Radiac Detector DT-236/PDR-75 will be discussed in this manual in conjunction with a discussion of the radiac set.

1-1. SCOPE

Type of Manual:

Operator's and Organizational Maintenance

Model Number and Equipment Name:

Radiac Set AN/PDR-75

Purpose of Equipment:

The Radiac Computer Indicator CP-696/PDR-75 is used to measure the accumulated neutron and gamma radiation dose recorded by the Radiac Detector DT-236/PDR-75. The Radiac Detector DT-236/PDR-75 is worn by personnel who may be exposed to radiation from tactical nuclear weapons.

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 the Maintenance Management Update.

b. Reports of Packaging and Handling Discrepancies. Fill out and forward SF 364 (Report of Discrepancy) (ROD) as prescribed in AR 735-11-2/DLAR 4140.55/SECNAVINST 4355.18/AFR 400-54/MCO 4430.3J.

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

1-4. NOT APPLICABLE

1-5. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR'S)

If your Radiac Set AN/PDR-75 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 your equipment. Let us know why you don't like the design or performance. 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.

1-6. NOMENCLATURE CROSS-REFERENCE LIST.

The following list contains common names used throughout this manual when equipment components are mentioned.

Common Name	Official Nomenclature
Battery and Connector Case	None
Cables	None
Carrying Case	Case, Carrying (C5085373)
Dosimeter	Detector, Radiac DT-236/PDR-75
Radiac Set	Radiac Set (C5085500)
Reader	Computer Indicator, Radiac CP-696/PDR-75

1-7. LIST OF ABBREVIATIONS AND ACRONYMS.

The following list contains the abbreviations and acronyms used throughout this manual. Refer to MIL-STD-12 for abbreviations not contained in this list.

Abbreviation	Term
CCA	Circuit Card Assembly
cGy	Centigray
DPM	Digital Panel Meter
EHT	Extreme High Tension (High Voltage)
PLA	Plug A

1-8. GLOSSARY.

The following definitions are provided to clarify terms used throughout this manual.

Term	Definition
Centigray	Unit of measure of absorbed radiation (One centigray is equal to one rad)
Dose	Accumulative amount of radiation produced or absorbed

1-9. DESTRUCTION OF ARMY ELECTRONICS MATERIEL.

Destruction of Army electronics materiel to prevent enemy use shall be in accordance with TM 750-244-2.

1-10. PREPARATION FOR STORAGE OR SHIPMENT.

Refer to paragraphs 4-12 and 4-13 for procedures covering preparation for storage or shipment.

Section II. EQUIPMENT DESCRIPTION AND DATA (C5085500)

1-11. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES.

CHARACTERISTICS

Reader:

- Allows radiation monitoring of individual personnel
- Provides large scale monitoring for statistical purposes
- Gives virtually instantaneous exposure readings
- Provides accurate readings for extended periods of time after exposure
- May be battery operated
- Portable, durable, and lightweight

Dosimeter:

- Allows radiation monitoring of individual personnel
- Provides accurate readings for extended periods of time after exposure
- Maintenance-free and lightweight.

CAPABILITIES

Reader:

- Measures from 0 to 999 cGy in any combination of neutron and gamma doses
- Indicates over-range doses with flashing digital panel meter (DPM) display
- Designed to nuclear survivability requirements for neutron and gamma radiation fields, electromagnetic pulse (EMP), and thermal flash and air blast
- Provides a single digital display reading in cGy for combined doses of neutron and gamma radiation
- Operates from a power supply of either polarity

Dosimeter:

- Measures from 0 to 999 cGy in any combination of neutron and gamma doses
- Designed to nuclear survivability requirements for neutron and gamma radiation fields and electromagnetic pulses (EMP)

FEATURES

Reader:

- Front panel-mounted controls
- Independent controls for digital panel meter (DPM) display and drawer assembly cover lamp
- Top-mounted fabric carrying strap
- Finish resists infrared detection

Dosimeter:

- Base is keyed to reader drawer assembly locating plate for quick mounting
- Has adjustable fabric strap
- Has durable plastic base and cover

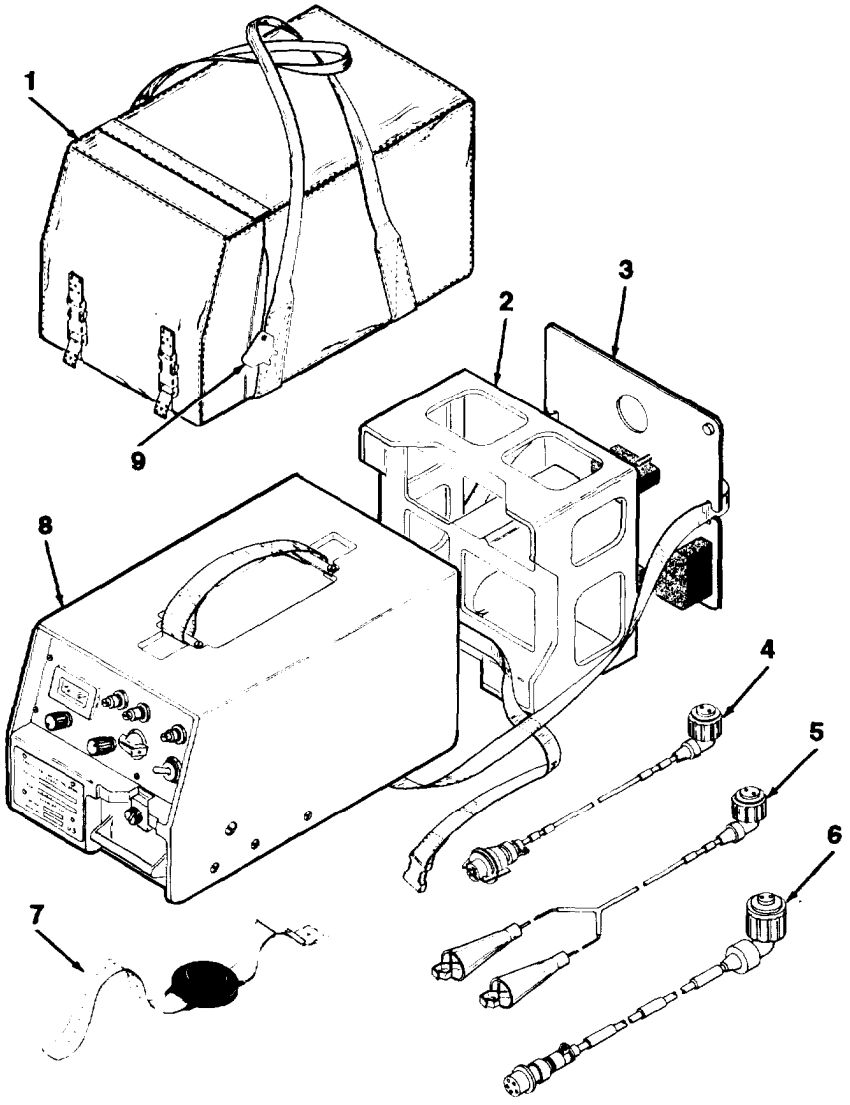
1-12. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

CARRYING CASE (1) - May contain the reader, battery and connector case, cover plate assembly, lithium battery, battery cable, and vehicle cable. Permits the radiac set to be transported in a field environment.

BATTERY AND CONNECTOR CASE (2) - Contains the lithium battery, if used, and is fried to the rear of the reader. Ensures proper positioning of the reader when installed in the carrying case.

COVER PLATE ASSEMBLY (3) - Attaches to the battery and connector case and secures the lithium battery, if used, in the battery and connector case.

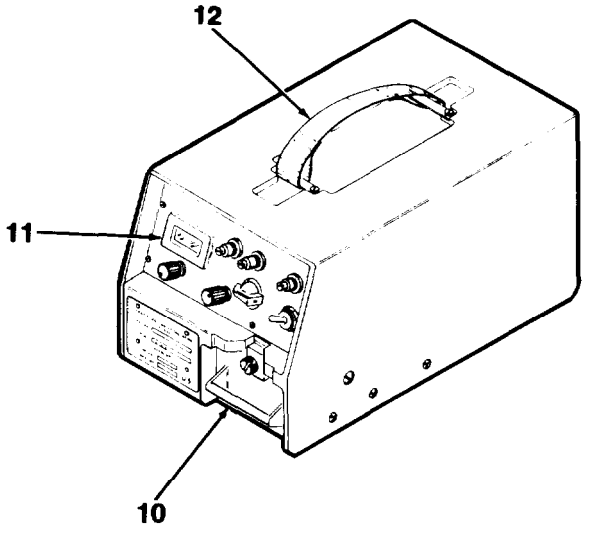
BATTERY CABLE (4) - Attaches to the PLA plug assembly on the reader and to the lithium battery (if used), which supplies power to the reader.
VEHICLE CABLE (5) - Attaches to the PLA plug assembly on the reader and to a source of 24 V dc vehicle power, such as the vehicle battery, which supplies power to the reader.
POWER SUPPLY CABLE (6) - Attaches to the PLA plug assembly on the reader and to the chemical agent automatic alarm (M10A1) power supply, which supplies power to the reader.
DOSIMETER (7) - Worn on wrist. Contains neutron and gamma radiation sensitive components. Radiation exposure alters the physical properties of the components. Dose is detected and displayed by the reader.
READER (8) - Contains the electronic circuitry and internal standards necessary to read a dosimeter, process the resulting data, and display a radiation dose.
KEY (9) - Used to adjust the NEUTRON CAL 0, NEUTRON CAL 800, and GAMMA CAL 800 controls when the reader is installed in the carrying case.



DRAWER ASSEMBLY (10) - Provides an interface between the dosimeter being read and the reader. The dosimeter base is placed in the open drawer assembly. The drawer is then closed and a reading is taken.

FRONT PANEL ASSEMBLY (11) - Contains the controls necessary to operate and adjust the reader, and the digital panel meter (DPM), which displays radiation dose.

CARRYING STRAP (12) - Permits the reader to be carried by hand.



1-13. EQUIPMENT DATA

NOTE

Dimensions and weights provided below are approximate.

DIMENSIONS

Radiac Set (C5085500)

Length	22 inches (560 mm)
Width	13 inches (330 mm)
Height	13 inches (330 mm)

DIMENSIONS (Continued)

Reader (C5085357)	
Length	14 inches (360 mm)
Width	8 inches (205 mm)
Height	8 inches (205 mm)
Dosimeter	
Diameter	1.6 inches (41 mm)
Thickness	0.5 inches (12.5 mm)

WEIGHT

Radiac Set	36 pounds (16.3 kg)
Reader	24 pounds (10.3 kg)
Dosimeter	1.3 ounces (36 g)

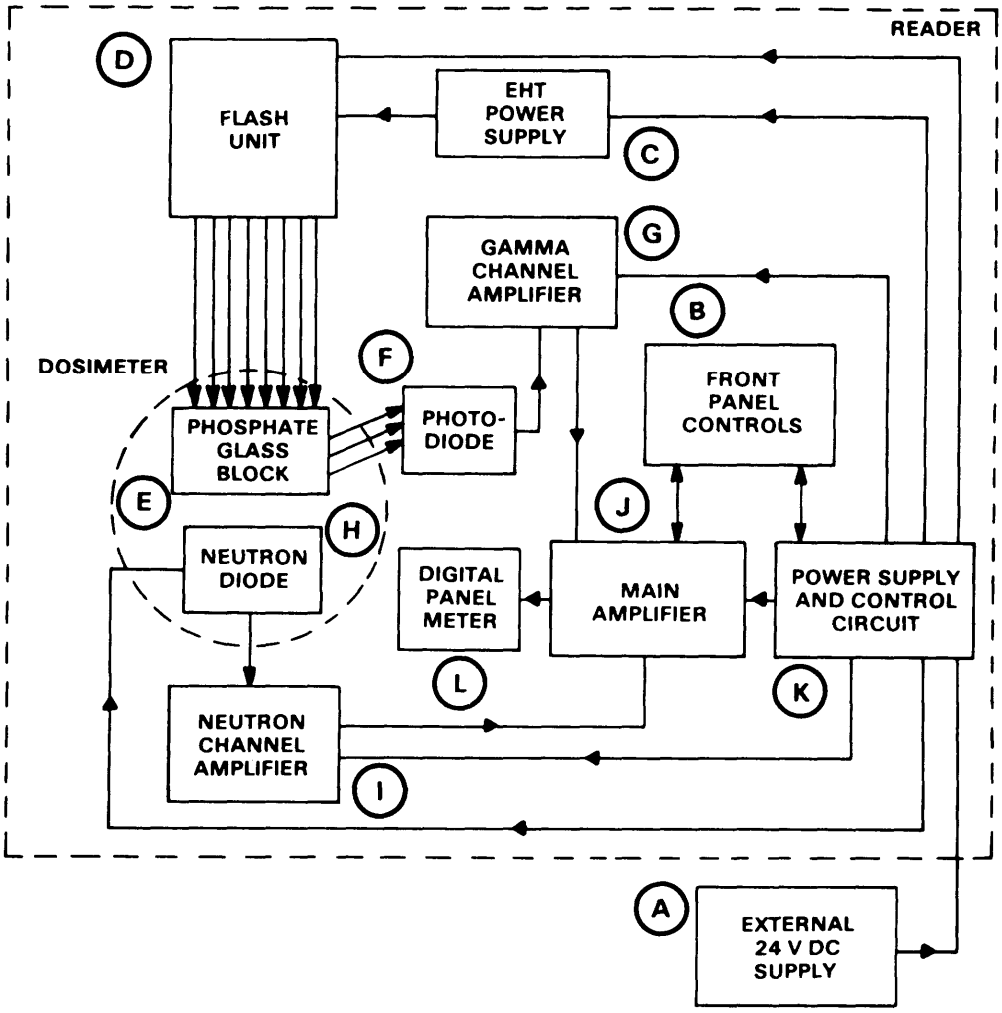
POWER REQUIREMENTS

Reader	21 to 30 V dc, 1.5A (maximum), 10 W (average)
Dosimeter	N/A

PERFORMANCE DATA

Accuracy (System)	Within ±30 percent or ±30 cGy of true total dose with 95 percent confidence at 24 hours after dosing
Range	0 to 999 cGy (combined neutron and gamma dose)
Over-Range	1000 to 5000 cGy (DPM display flashes)
Temperature	
Operating	-26 to + 125°F (-32 to +52°C)
Storage	-70 to + 160°F (-57 to +71°C)
Humidity	0 to 100 percent

Section III. TECHNICAL PRINCIPLES OF OPERATION



(A) **EXTERNAL 24 V DC SUPPLY** is normally a lithium battery, vehicle battery, or chemical agent automatic alarm (M10A1) power supply which provides power to the reader.

(B) **FRONT PANEL CONTROLS** include the DEPRESS FOR READING switch, selector switch, NEUTRON CAL 0 control, NEUTRON CAL 800 control, and GAMMA CAL 800 control.

(C) **EHT POWER SUPPLY** provides the power required to operate the flash unit.

(D) **FLASH UNIT** contains a high voltage capacitor and a flash tube, and produces the high intensity light used to excite the phosphate glass block.

(E) **PHOSPHATE GLASS BLOCK functions on the principle of radiophotoluminescense and normally emits blue/green light when excited by ultraviolet wavelengths; emits orange/red light, however, after exposure to gamma radiation.**

(F) **PHOTODIODE converts orange/red fight to a proportional current which is sensed by the gamma channel amplifier.**

(G) **GAMMA CHANNEL AMPLIFIER integrates current from the photo diode and produces a peak output voltage proportional to the gamma dose.**

(H) **NEUTRON DIODE conduction characteristics are altered by exposure to neutron radiation.**

(I) **NEUTRON CHANNEL AMPLIFIER processes the sampling voltage from the neutron diode.**

(J) **MAIN AMPLIFIER combines and stores and signals from both the neutron channel and gamma channel amplifiers.**

(K) **POWER SUPPLY AND CONTROL CIRCUIT coordinates neutron and gamma radiation sampling in response to front panel control inputs.**

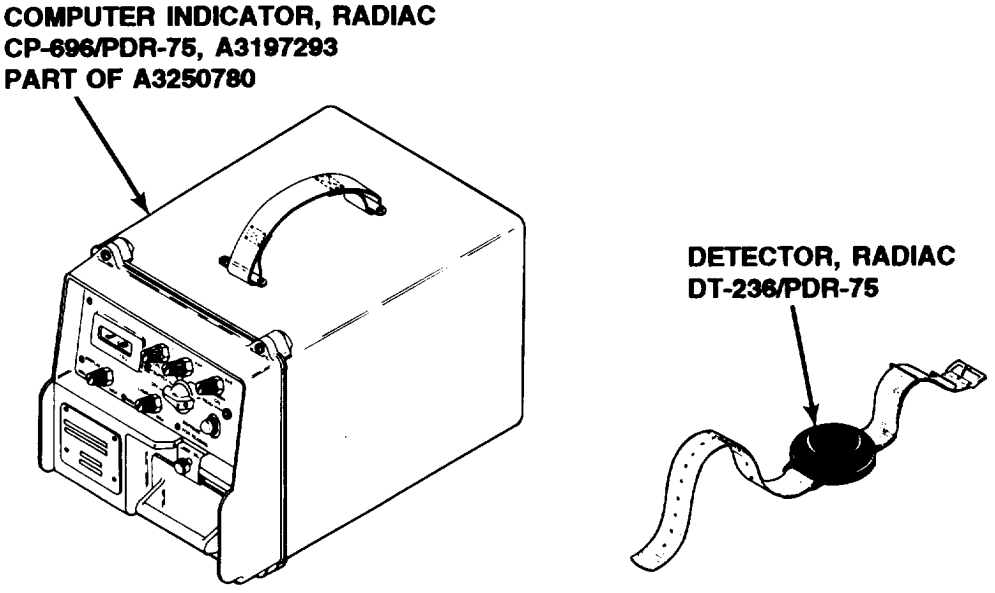
(L) **DIGITAL PANEL METER displays combined neutron and gamma radiation dose determined by the main amplifier.**

PART TWO

CHAPTER 1

INTRODUCTION (A3250780)

Section I. GENERAL INFORMATION (A3250780)



NOTE

The Radiac Detector DT-236/PDR-75 is used with, but is not considered part of, the Radiac Set AN/PDR-75. The Radiac Detector DT-236/PDR-75 will be discussed in this manual in conjunction with a discussion of the radiac set.

1-1.1 SCOPE

Type of Manual:

Operator's and Organizational Maintenance

Model Number and Equipment Name:

Radiac Set AN/PDR-75

Purpose of Equipment:

The Radiac Computer indicator CP-696/PDR-75 is used to measure the accumulated neutron and gamma radiation dose recorded by the Radiac Detector DT-236/PDR-75. The Radiac Detector DT-236/PDR-75 is worn by personnel who may be exposed to radiation from tactical nuclear weapons.

1-2.1 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.

1-3.1 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 the Maintenance Management Update.

b. Reports of Packaging and Handling Discrepancies. Fill out and forward SF 364 (Report of Discrepancy) (ROD) as prescribed in AR 735-11-2/DLAR 4140.55/SECNAVINST 4355.18/AFR 400-54/MCO 4430.3J.

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

1-4.1 NOT APPLICABLE

1-5.1 REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR'S)

If your Radiac Set AN/PDR-75 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 your equipment. Let us know why you don't like the design or performance. Put it on an SF 368 (Quality Deficiency Report). Mail it to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-PA-M-D, Fort Monmouth, New Jersey 07703-5000. We'll send you a reply.

1-6.1. NOMENCLATURE CROSS-REFERENCE LIST.

The following list contains common names used throughout this manual when equipment components are mentioned.

Common Name	Official Nomenclature
Cables	None
Carrying Case	Case, Carrying (A3209749)
Dosimeter	Detector, Radiac DT-236/PDR-75
Radiac Set	Radiac Set (A3250780)
Reader	Computer Indicator, Radic CP-696/PDR-75

1-7.1 LIST OF ABBREVIATIONS AND ACRONYMS.

The following list contains the abbreviations and acronyms used throughout this manual. Refer to MIL-STD-12 for abbreviations not contained in this list.

Abbreviation	Term
CCA	Circuit Card Assembly
cGy	Centigray
DPM	Digital Panel Meter
EHT	Extreme High Tension (High Voltage)
PLA	Plug A

1-8.1 GLOSSARY.

The following definitions are provided to clarify terms used throughout this manual.

Term	Definition
Centigray	Unit of measure of absorbed radiation (One centigray is equal to one rad)
Dose	Accumulative amount of radiation produced or absorbed

1-9.1 DESTRUCTION OF ARMY ELECTRONICS MATERIEL.

Destruction of Army electronics materiel to prevent enemy use shall be in accordance with TM 750-244-2.

1-10.1 PREPARATION FOR STORAGE OR SHIPMENT.

Refer to paragraphs 4-12 and 4-13 for procedures covering preparation for storage or shipment.

Section II. EQUIPMENT DESCRIPTION AND DATA (A3250780)

1-11.1 EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES.

CHARACTERISTICS

Reader:

- Allows radiation monitoring of individual personnel
- Provides large scale monitoring for statistical purposes
- Gives virtually instantaneous exposure readings
- Provides accurate readings for extended periods of time after exposure
- May be battery operated
- Portable, durable, and lightweight

Dosimeter:

- Allows radiation monitoring of individual personnel
- Provides accurate readings for extended periods of time after exposure
- Maintenance-free and lightweight.

CAPABILITIES

Reader:

- Measures from 0 to 999 cGy in any combination of neutron and gamma doses
- Indicates over-range doses with flashing digital panel meter (DPM) display
- Designed to nuclear survivability requirements for neutron and gamma radiation fields, electromagnetic pulse (EMP), and thermal flash and air blast
- Provides a single digital display reading in cGy for combined doses of neutron and gamma radiation
- Operates from a power supply of either polarity

Dosimeter:

- Measures from 0 to 999 cGy in any combination of neutron and gamma doses
- Designed to nuclear survivability requirements for neutron and gamma radiation fields and electromagnetic pulses (EMP)

FEATURES

Reader:

- Front panel-mounted controls
- Independent controls for digital panel meter (DPM) display and drawer assembly cover lamp
- Top-mounted fabric carrying strap
- Finish resists infrared detection

Dosimeter:

- Base is keyed to reader drawer assembly locating plate for quick mounting
- Has adjustable fabric strap
- Has durable plastic base and cover

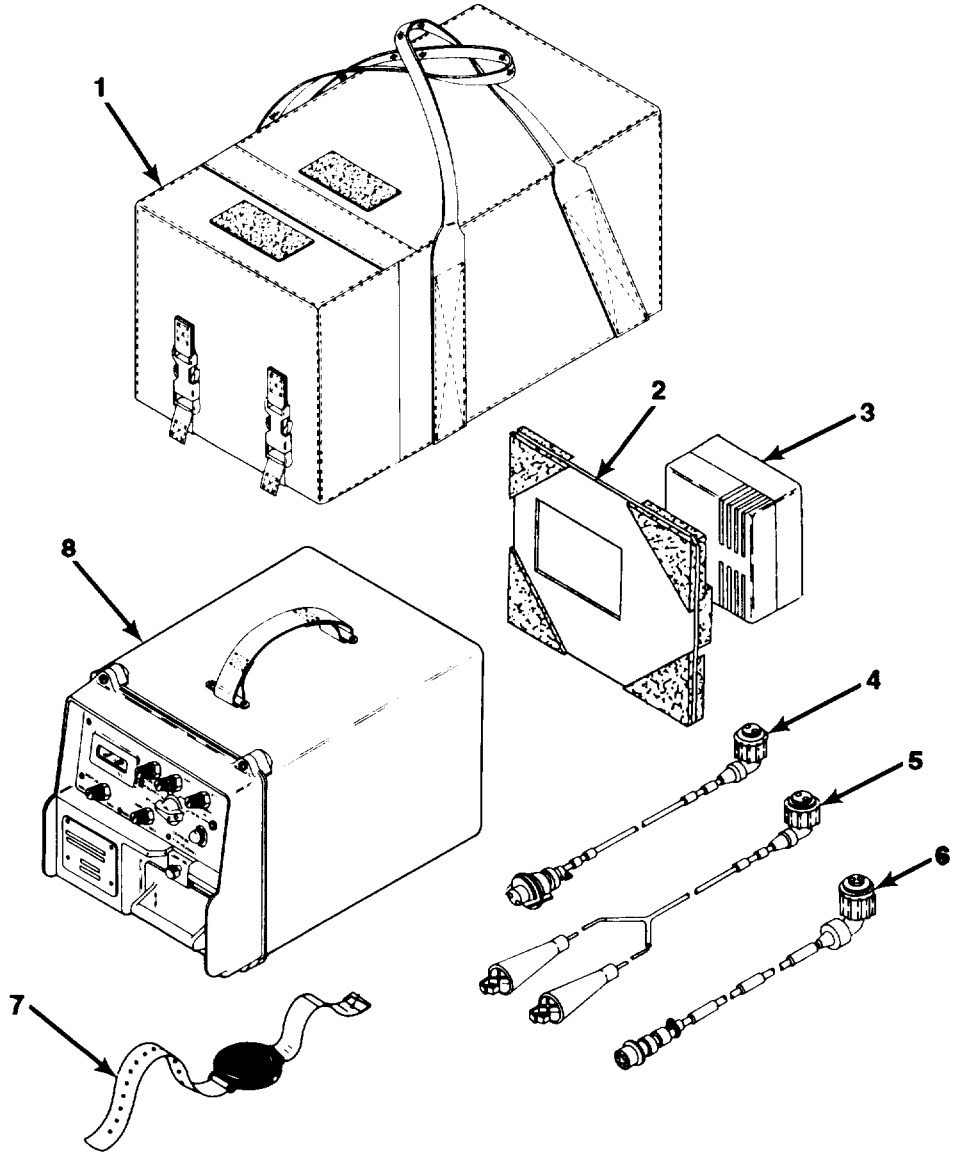
1-12.1 LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

CARRYING CASE (1) - May contain the reader, carrying case base, lithium battery, battery cable, power supply cable and vehicle cable. Permits the radiac set to be transported in a field environment.

CARRYING CASE BASE (2) - Ensures proper positioning of the reader when installed in the carrying case.

LITHIUM BATTERY (3) - If used, supplies power to the reader.

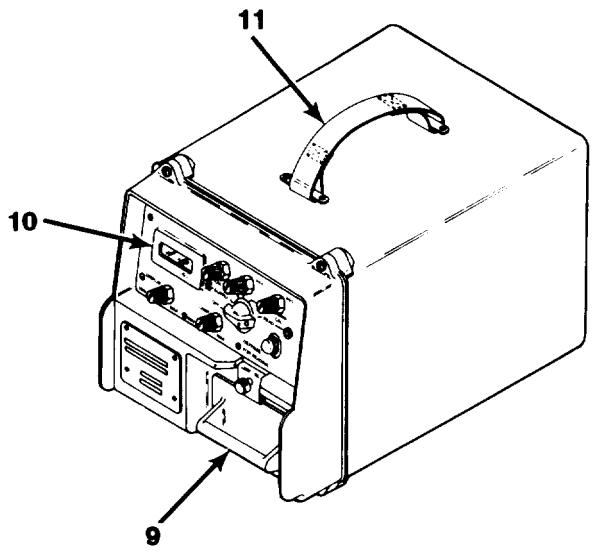
BATTERY CABLE (4) - Attaches to the PLA plug assembly on the reader and to the lithium battery (if used), which supplies power to the reader.
VEHICLE CABLE (5) - Attaches to the PLA plug assembly on the reader and to a source of 24 V dc vehicle power, such as the vehicle battery, which supplies power to the reader.
POWER SUPPLY CABLE (6) - Attaches to the PLA plug assembly on the reader and to the chemical agent automatic alarm (M10A1) power supply, which supplies power to the reader.
DOSIMETER (7) - Worn on wrist. Contains neutron and gamma radiation sensitive components. Radiation exposure alters the physical properties of the components. Dose is detected and displayed by the reader.
READER (8) - Contains the electronic circuitry and internal standards necessary to read a dosimeter, process the resulting data, and display a radiation dose.



DRAWER ASSEMBLY (9) - Provides an interface between the dosimeter being read and the reader. The dosimeter base is placed in the open drawer assembly. The drawer is then closed and a reading is taken.

FRONT PANEL ASSEMBLY (10) - Contains the controls necessary to operate and adjust the reader, and digital panel meter (DPM), which displays radiation dose.

CARRYING STRAP (11) - Permits the reader to be carried by hand.



1-13.1 EQUIPMENT DATA

NOTE

Dimensions and weights provided below are approximate.

DIMENSIONS

Radiac Set (A3250780)

Length	**19.56 inches (496.8 mm)**
Width	**10.82 inches (274.8 mm)**
Height	**10.19 inches (258.8 mm)**

DIMENSIONS (Continued)

Reader (A3197293)

Length	13.90 inches (353.06 mm)
Width	8.90 inches (226.06 mm)
Height	8.10 inches (205.7 mm)

Dosimeter

Diameter	1.6 inches (41 mm)
Thickness	0.5 inches (12.5 mm)

WEIGHT

Radiac Set	27 pounds (12.24 kg)
Reader	21 pounds (9.52 kg)
Dosimeter	1.3 ounces (36 g)

POWER REQUIREMENTS

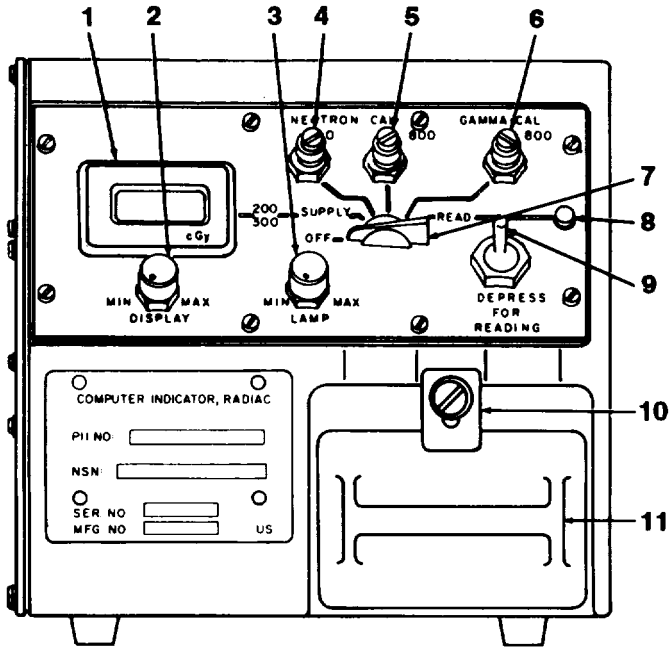
Reader	21 to 30 V dc, 1.5A (maximum), 10 W (average)
Dosimeter	N/A

PERFORMANCE DATA

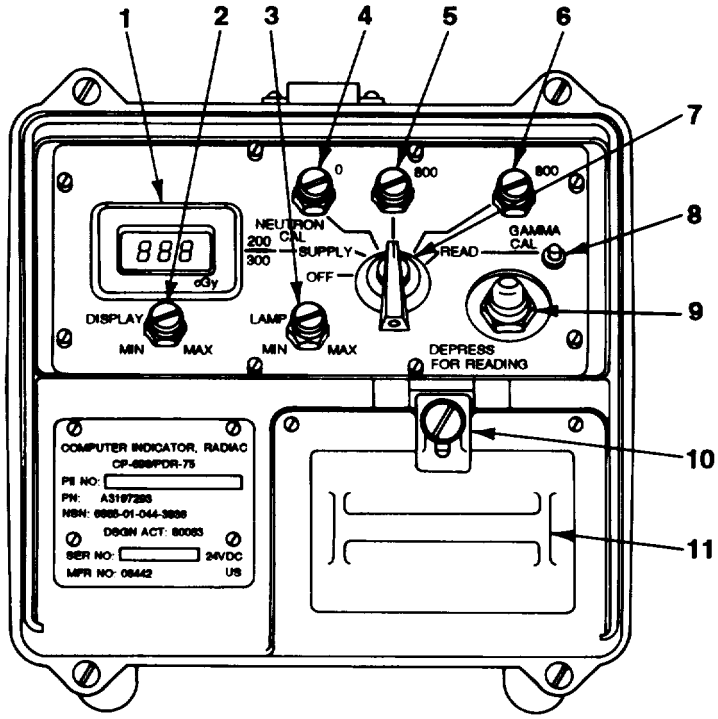
Accuracy (System)	Within ±30 percent or ±30 cGy of true total dose with 95 percent confidence at 24 hours after dosing
Range	0 to 999 cGy (combined neutron and gamma dose)
Over-Range	1000 to 5000 cGy (DPM display flashes)
Temperature	
Operating	-26 to +125°F (-32 to +52°C)
Storage	-70 to +160°F (-57 to +71°C)
Humidity	0 to 100 percent

Section III. TECHNICAL PRINCIPLES OF OPERATION

Technical principles of operation are the same for C5085500 and A3250780 versions and are given on pages 1-8 and 1-9.



C5085357, P/O VERSION C5085500



A3197293, P/O VERSION A3250780

PART THREE

CHAPTER 2

OPERATING INSTRUCTIONS (C5085500)

Section I. DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS(C5085500)

2-1. FRONT PANEL

DIGITAL PANEL METER (1) -Displays total dose of radiation in cGy units when the selector switch is set to READ, shows reader's supply voltage when the selector switch is set to SUPPLY, and verifies reader calibration when the selector switch is set to NEUTRON CAL 0, NEUTRON CAL 800, or GAMMA CAL 800.

DISPLAY CONTROL (2) - Varies brightness of digital panel meter display.

LAMP CONTROL (3) - Varies brightness of lamp in the drawer assembly.

NEUTRON CAL 0 CONTROL (4) - Sets neutron channel zero during operational checks and adjustments.

NEUTRON CAL 800 CONTROL (5) - Sets neutron channel sensitivity during operational checks and adjustments.

GAMMA CAL 800 CONTROL (6) - Sets gamma channel sensitivity during operational checks and adjustments.

SELECTOR SWITCH (7) - Sets operational mode of the reader to OFF, SUPPLY, NEUTRON CAL 0, NEUTRON CAL 800, GAMMA CAL 800, or READ.

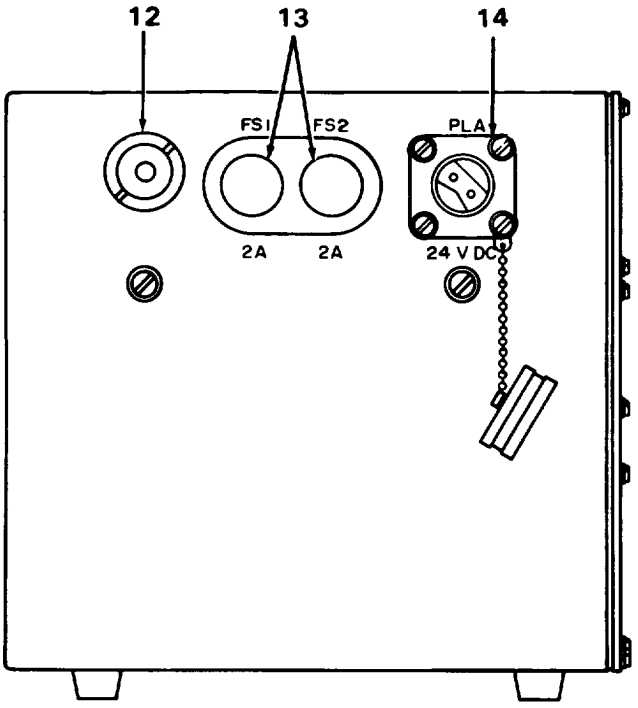
READ LIGHT (8) - Lights when selector switch is set to READ and indicates normal operating condition.

DEPRESS FOR READING SWITCH (9) - Starts the reading cycle.

DRAWER CLOSING BLOCK (10) - Secures drawer assembly in closed position.

DRAWER HANDLE (11) - Used to open and close drawer assembly.

2-2. REAR PANEL



HUMIDITY INDICATOR (12) - Element changes are not required.

FUSES (13) - Protect the reader from currents greater than 2 amperes.

PLUG (14) - Provides input terminal for reader's power supply.

Section II. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)(C5035500)

2-3. PREVENTIVE MAINTENANCE

a. There is no PMCS scheduled for the Radiac Set AN/PDR-75 at the operator level.

b. To ensure that Radiac Set AN/PDR-75 is always ready for operation, it must be inspected systematically so that defects may be discovered and corrected before they result in serious damage or failure. Note defects discovered during operation of the unit and correct them as soon as operation has ceased. Stop operation immediately when you note a deficiency that will damage the equipment. Record all deficiencies and corrective actions taken on DA Form 2404.

c. Routing checks (refer to paragraph 2-4) are not listed as PMCS checks. They are things that you should check and correct as necessary

2-4. ROUTINE CHECKS

The operator should perform the checks listed in Table 2-1 as needed. Correct any deficiencies immediately.

Table 2-1. Routine Maintenance Checks

PROCEDURE	CORRECTIVE ACTION
Check for cut, frayed, or dirty cables.	Forward cut or frayed cables to organizational maintenance.
	Clean dirty cables in accordance with paragraph 3-3.
Ensure that knobs, plug cap, and drawer transit lock and screw are not bent or broken.	Have organizational maintenance replace bent or broken components.
Ensure that carrying strap is not frayed or broken.	Have organizational maintenance replace frayed or broken carrying strap.
Ensure that items not in use are properly stowed.	Stow items properly.
Check the carrying case for holes, rips, dirt, and grease.	Have organizational maintenance replace torn or ripped carrying case. Clean dirty carrying case in accordance with paragraph 3-3.
Check for corrosion or badly damaged paint on reader case and drawer assembly.	Forward corroded or damaged reader to general support maintenance.
Check front panel controls for proper operation.	Have organizational maintenance replace faulty components.
Check for loose or missing screws in case.	Have organizational maintenance tighten or replace screws.
Ensure that DPM glass is not cracked or broken.	Forward reader 10 general support maintenance.

Table 2-1. Routine Maintenance Checks (Continued)

PROCEDURE	CORRECTIVE ACTION
Ensure that drawer assembly slides in and out easily without excessive play.	Forward reader to general support maintenance for adjustment.
Visually ensure that dosimeter contacts in drawer assembly are not excessively bent, twisted, misalined, or dirty. In very cold weather, ensure that contacts are not coated with ice.	Forward reader to general support maintenance for contact adjustment. Clean dirty or icy contacts in accordance with paragraph 3-3.
Ensure that rubber feet on bottom of reader are not cracked or broken.	Have organizational maintenance replace rubber feet.
Refer to component of end item (COEI) per Appendix C and ensure that Radiac Set is complete.	Replace missing components.
Visually ensure that lithium battery, battery and connector case, cover plate assembly, removal strap and protective foam padding of battery and connector case are not damaged.	Have organizational maintenance replace components as required. Secure protective foam padding (item 6, Appendix E) with glue (item 4, Appendix E) if loose, missing, or damaged.

NOTE

The Radiac Set should not be operated in close proximity to high power transmitters or incorrect readings may result.

Section III. OPERATION UNDER USUAL CONDITIONS (C5085500)

2-5. PREPARATION FOR OPERATION.

Upon receipt of the Radiac Set AN/PDR-75, ensure that the reader is clean, dry, and undamaged. Then perform the following procedures:

- Prepare the reader for use prior to reading dosimeters. Refer to paragraph 2-5.a.
- Adjust the reader prior to reading dosimeters, every 1/2 hour during operation any time the ambient temperature changes more than 5° (2.8°C). Refer to paragraph 2-5.b.

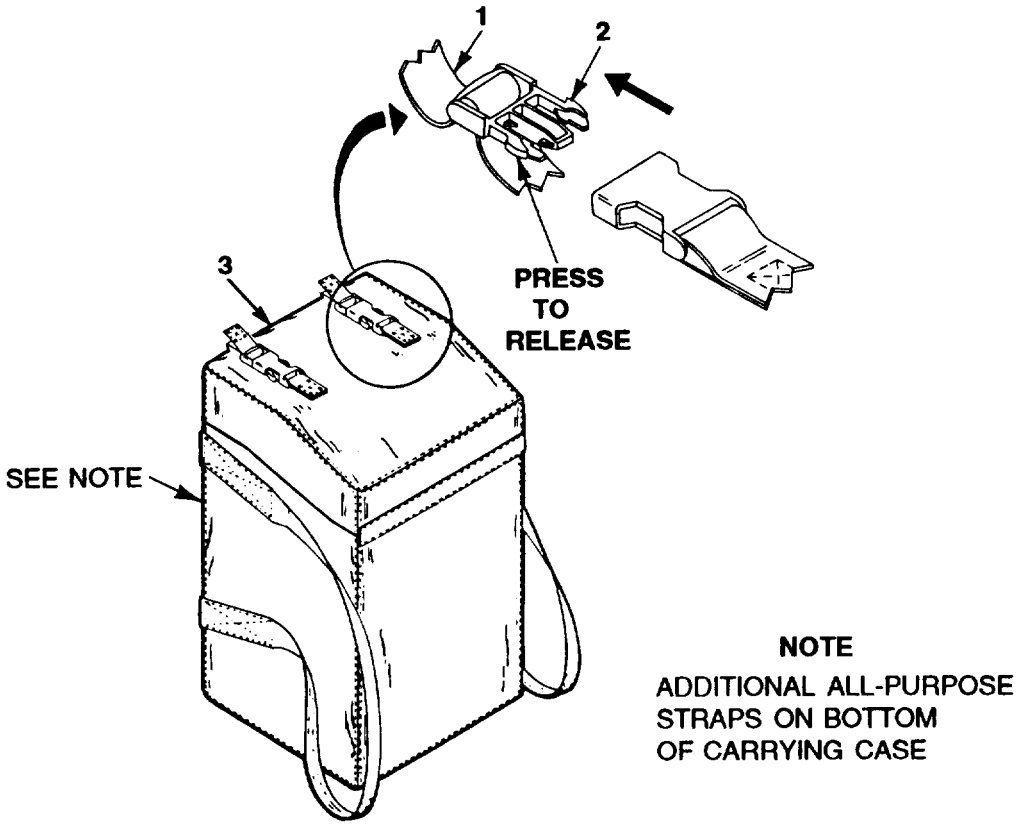
a. Preparation for Use.

NOTES

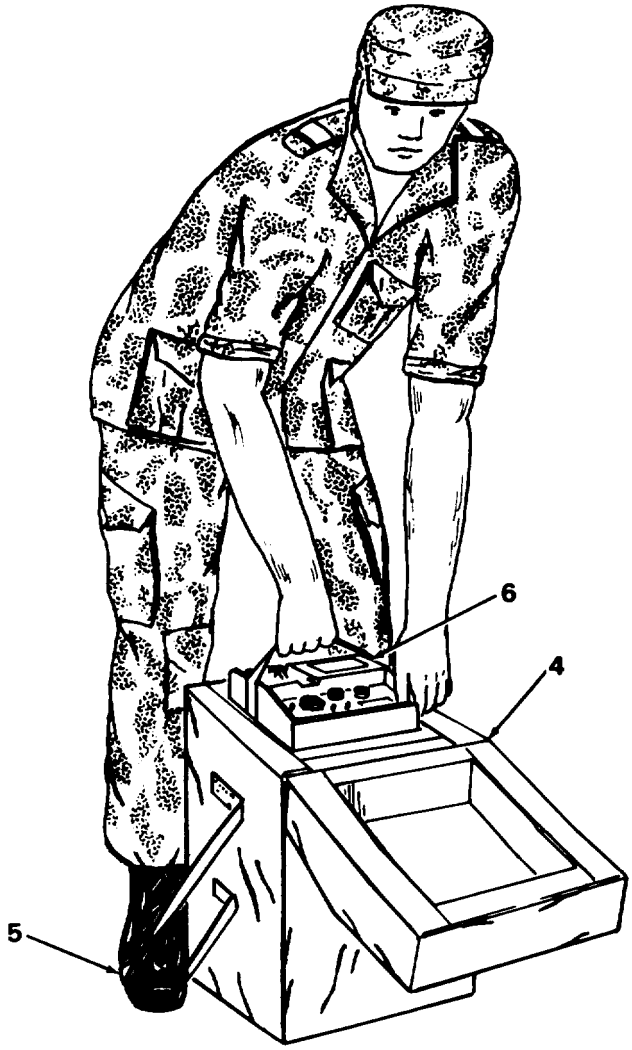
- **Refer to Table 3-1 if any of the following steps cannot be performed as described.**
- **Perform steps 1 through 12, below, only if reader is installed in carrying case. Otherwise, proceed to step 13.**

1. Set carrying case on end opposite front cover flap.

2. Unfasten two straps (1) on front cover of carrying case by pressing sides of buckle release (2). Open case by lifting front cover flap (3).



3. Stand on side of carrying case opposite front cover hinge (4) and place both feet in carrying case handles (5) on either side of case. Standing on handles will keep case stationary as reader is withdrawn.

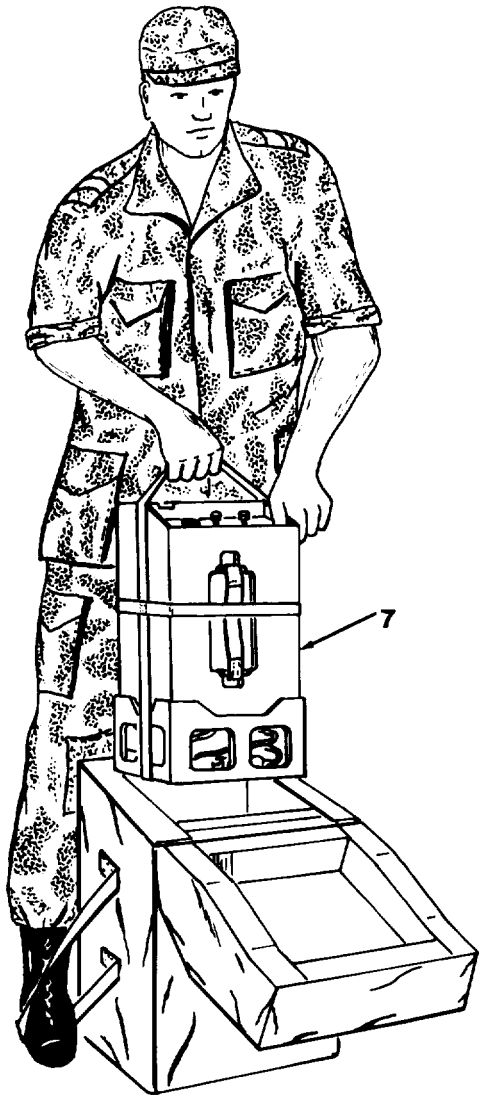


4. Grasp reader removal strap (6) with one hand and grasp reader at edge near front panel assembly with other hand.

CAUTION

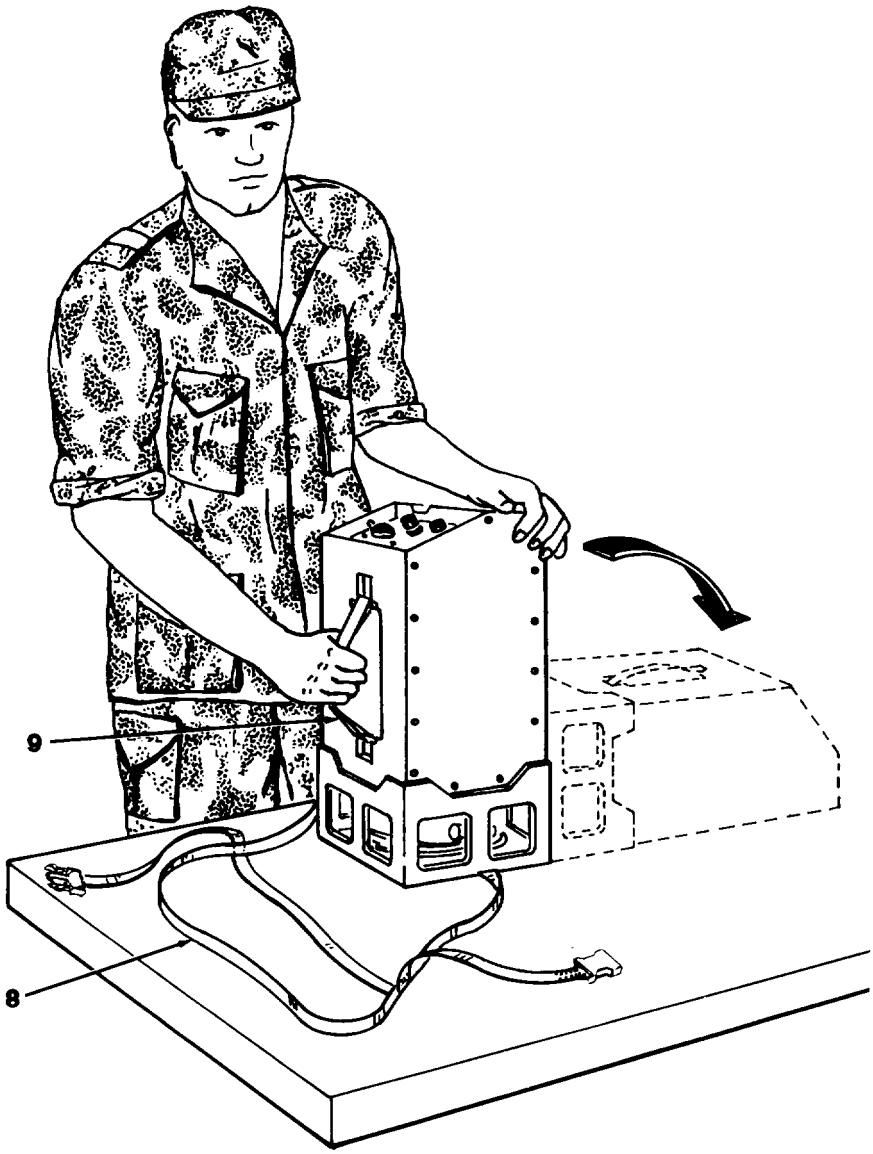
Failure to lift the reader from the carrying case as instructed may result in damage to equipment. The removal strap is attached to the battery and connector case and fastened around the reader. When removing the reader from the carrying case, exercise caution in case the removal strap is not securely fastened around the reader.

5. **Without changing hand or foot positions, lift reader and battery connector case assembly (7) straight up and out of carrying case.**



6. Set reader and battery and connector case assembly on work surface in same position as when removed from case (front panel facing up).

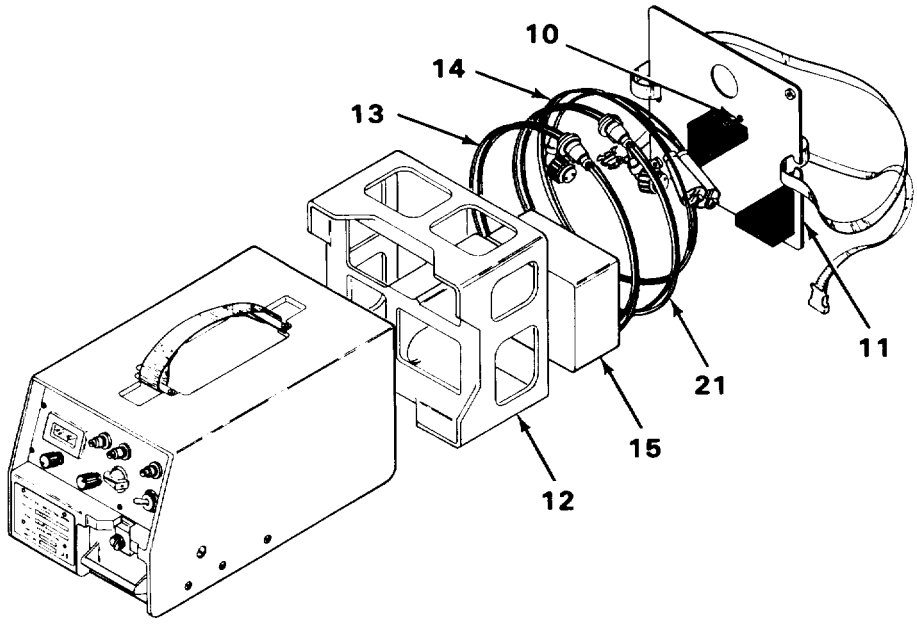
7. Unfasten removal strap (8) and remove strap from reader.



8. Grasp carrying strap (9) with one hand. Support reader at top front corner with other hand.

9. Tip reader and battery and connector case assembly and carefully lower until reader rests in normal operating position. Separate reader from battery and connector case assembly.

10. Release captive screw (10) at center of cover plate assembly (11). Remove cover plate assembly from battery and connector case (12).

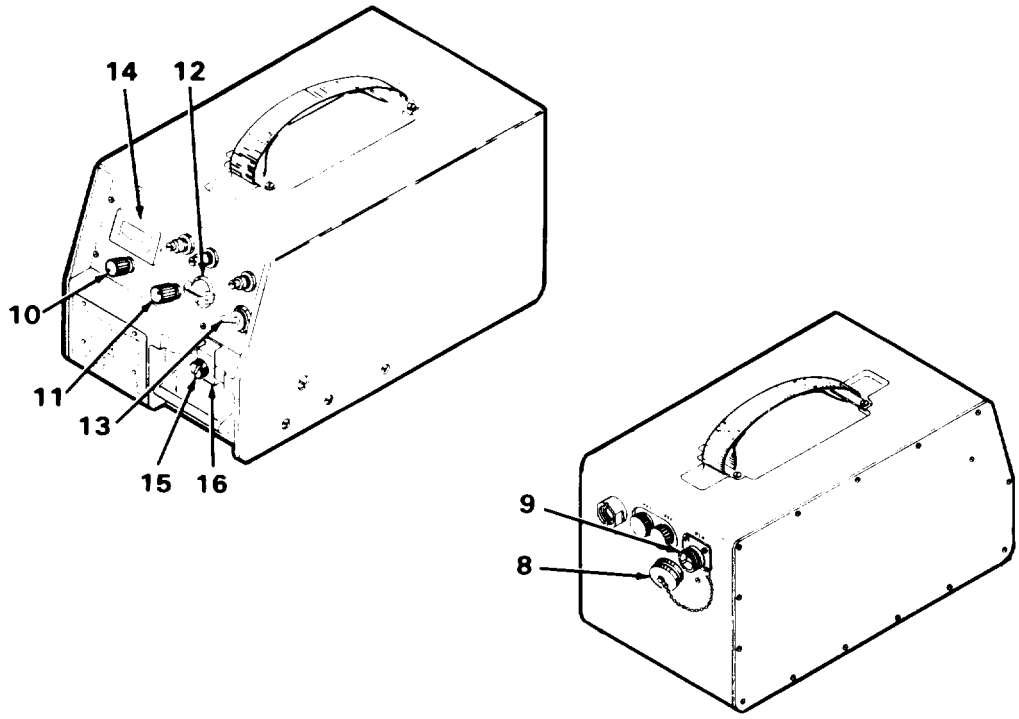


11. Remove power cables (13, 14 and 21) from battery and connector case. Remove lithium battery (15) from battery and connector case, if it will be used.
12. Select appropriate power cable. Set aside other power cables, battery and connector case, cover plate assembly, and lithium battery (if not used).

NOTE

- Whenever possible, the reader should be operated out of the carrying case.
- Should it be necessary to operate the reader in the carrying case, connect the appropriate power cable as indicated in steps 13 and 14, then reassemble the battery and connector case and the cover plate assembly. Be sure to install the lithium battery and the unused power cables, if provided, in the battery and connector case prior to reassembly. Ensure that the cables are routed between foam blocks on the cover plate assembly.
- When using the battery cable for reader operation in the carrying case, the cable must be routed from plug PLA through the battery and connector case to the lithium battery.
- When using the vehicle cable for reader operation in the carrying case, the cable must be routed from plug PLA through the battery and connector case, then through the hole in the cover plate assembly, and finally through the hole in the rear of the carrying case.
- When using the power supply cable, the cable must be routed from plug PLA through the battery and connector case, then through the hole in the cover plate assembly, and finally through the hole in the rear of the carrying case.
- Install the reader and the battery and connector case assembly, as a unit, in the carrying case.

13. Remove cap (8) from PLA plug (9) on the rear panel.



NOTE

The reader operates from a power supply of either polarity. When connecting power cables to the reader plug PLA, it is not necessary to determine power supply polarity.

14. Connect the appropriate power cable to plug PLA (9) and then to the lithium battery (item 1, Appendix E), or vehicle power supply (24 V dc nominal), or chemical agent automatic alarm (M10A1) power supply.

15. Turn DISPLAY (10) control on the front panel fully clockwise. Turn LAMP (11) control fully counterclockwise.

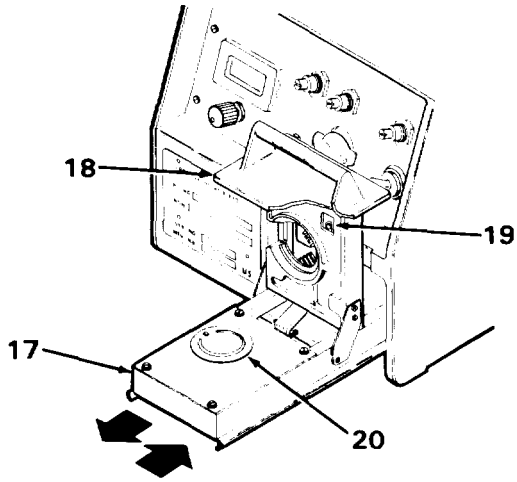
16. Set selector switch (12) on front panel to SUPPLY position.

17. Press and release DEPRESS FOR READING switch (13) on front panel and ensure that reading on DPM (14) is between 200 and 300 and that DPM display remains lit for approximately 2 to 4 seconds.

18. Press and release DEPRESS FOR READING switch (13) again and adjust DISPLAY control (10) until DPM display brightness is satisfactory.

19. Loosen screw (15) one half turn and raise block (16).

20. Grasp drawer handle and pull drawer (17) to its full extent. Lift drawer cover (18).



NOTE

It will not be necessary to perform step 21, below, unless operating the reader under reduced lighting conditions.

21. Adjust LAMP control until illumination from light control film (19) is satisfactory.

22. Ensure that drawer (17) does not contain any dosimeter or other objects on the dosimeter locating plate (20).

WARNING

Personal injury may result from failure to close the drawer assembly properly. Close the drawer assembly by grasping the drawer handle firmly with one hand, lowering the drawer cover if necessary, and pushing the drawer into the closed position. The free hand should remain clear of the drawer assembly. Care should be taken to avoid contacting the transit lock with either hand.

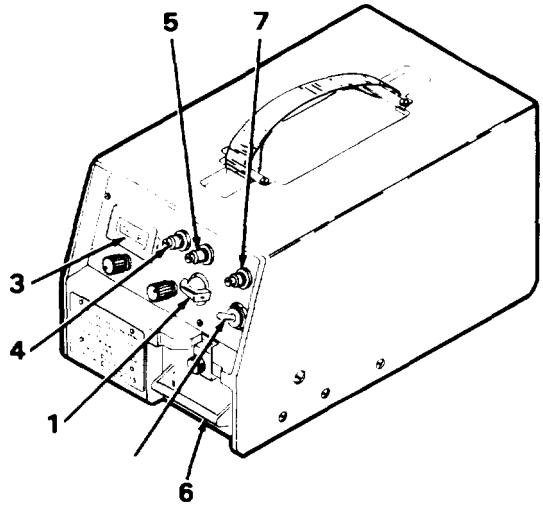
23. Lower drawer cover (18) and close drawer (17).

b. Reader Adjustment.

NOTE

Refer to Table 3-1 if any of the following steps cannot be performed as described.

1. Set selector switch (1) on the front panel to NEUTRON CAL 0 position.



2. Press and release DEPRESS FOR READING switch (2) on front panel and observe reading on DPM (3).

a. If reading is 0 ±2 cGy, proceed to step 3.

NOTE

Ensure that the DPM display is off before pressing the DEPRESS FOR READING switch or an incorrect reading may result. The NEUTRON CAL 0, NEUTRON CAL 800, or GAMMA CAL 800 controls have no effect on the present DPM reading. While the DPM display is off, make small adjustments. Press the DEPRESS FOR READING switch and observe the effect on the DPM. Repeat the sequence as many times as necessary.

b. If reading is not 0 ±2 cGy, use key on carrying case or screwdriver to adjust NEUTRON CAL 0 control (4) until the DPM reading is zero (000) Turn control clockwise if reading is too low, or counterclockwise if reading is too high.

3. Set selector switch (1) to NEUTRON CAL 800 position.

4. Press and release DEPRESS FOR READING switch (2) and observe reading on DPM (3).

a. If reading is between 795 and 805 cGy, proceed to step 6.

b. Refer to NOTE, step 2a, above. If reading is not between 795 and 805 cGy, use key on carrying case or screwdriver to adjust NEUTRON CAL 800 control (5) until DPM reading is 800. Turn control clockwise if reading it too tow, or counterclockwise if reading is too high.

NOTE

Perform step 5 only if the NEUTRON CAL 800 control was adjusted during step 4.

5. **Repeat steps 1 through 4.**

6. **Set selector switch (1) to GAMMA CAL 800 position.**

NOTE

During the following procedure, ensure that the drawer assembly is pulled out of the reader as far as it will go. Do not touch or apply any pressure to the drawer assembly during this procedure or inaccurate readings may result.

7. **Pull out drawer (6) to its full extent.**

WARNING

Ultraviolet light may cause severe and permanent damage to the eyes. Operate the DEPRESS FOR READING switch only when the drawer assembly is in the fully open or closed position or exposure to ultraviolet light may result.

8. **Press and release DEPRESS FOR READING switch (2) and observe reading on DPM (3).**

   a. **If reading is between 785 and 815 cGy, record reading and proceed to step 9.**

   b. **Refer to NOTE, step 2a. If reading is not between 785 and 815 cGy, use key on carrying case or screwdriver to adjust GAMMA CAL 800 control (7) until DPM reading is between 785 and 815 cGy. Turn control clockwise if reading is too few, or counterclockwise if reading is too high. Record final reading.**

9. **Press and release DEPRESS FOR READING switch (2) four more times, observing and recording reading on DPM (3) each time.**

   a. **If the readings taken in steps 8 and 9 were all between 785 and 815 cGy, proceed to step 10.**

   b. **If the readings taken in steps 8 and 9 were not all between 785 and 815 cGy, readjust GAMMA CAL 800 control as in step 8, above. Repeat steps 8 and 9 until all readings are within range.**

WARNING

Personal injury may result from failure to close the drawer assembly properly. Close the drawer assembly by grasping the drawer handle firmly with one hand, lowering the drawer cover if necessary, and pushing the drawer into the closed position. The free hand should remain clear of the drawer assembly. Do not touch the transit lock with either hand when closing the drawer assembly.

10. **Close drawer.**

2.6. OPERATION

Prior to reading dosimeters, ensure that the reader has been prepared in accordance with paragraph 2-5. Then perform the following procedures:

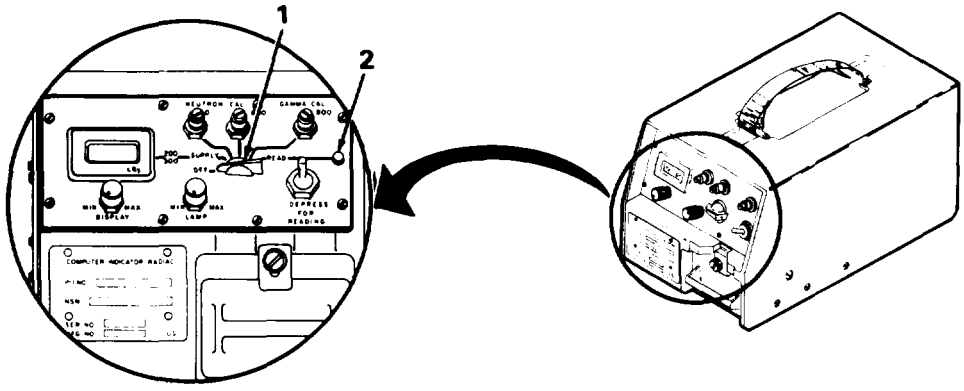
- **Read dosimeters in accordance with paragraph 2-6.a, below.**
- **Perform post operational procedures in accordance with paragraph 2-6.b, below.**

a. Reading Dosimeters.

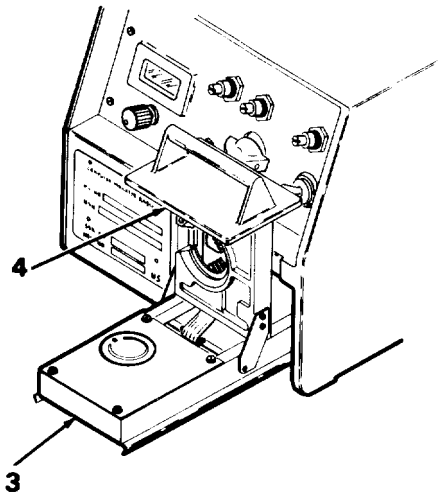
NOTES

- **Refer to Table 3-1 if any of the following steps cannot be performed as described.**
- **Perform reader adjustment in accordance with paragraph 2-5.b every 1/2 hour or when the ambient temperature changes more than 5°F (2.8°C).**
- **Ensure that dosimeters and reader are at the same temperature. If dosimeters have been transported recently from a different environment, allow at least 10 minutes for temperature stabilization prior to reading.**
- **Ensure that dosimeters are clean, dry, and undamaged prior to reading.**

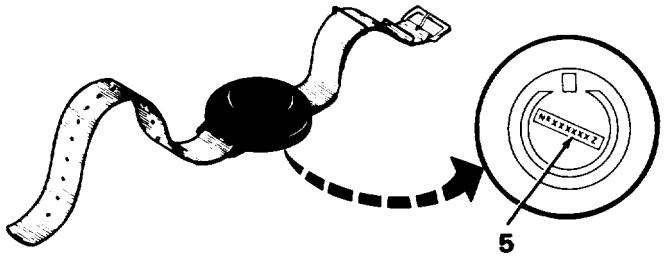
1. **Set selector switch (1) on front panel to READ position and ensure that the indicator light (2) comes on.**



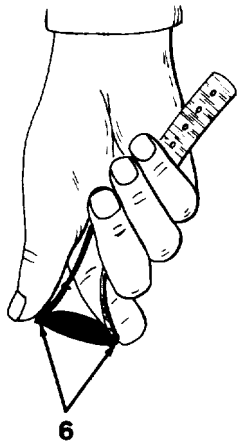
2. Grasp drawer handle and pull drawer (3). Lift drawer cover (4).



3. Record serial marking from dosimeter base (5).



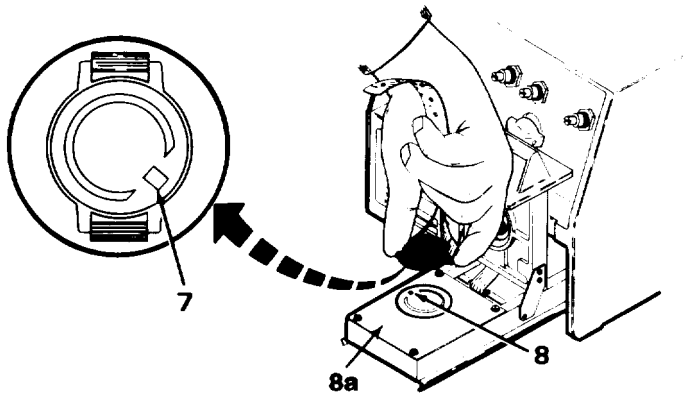
4. Grasp dosimeter by folding straps backward and using strap fittings (6) as finger hold.



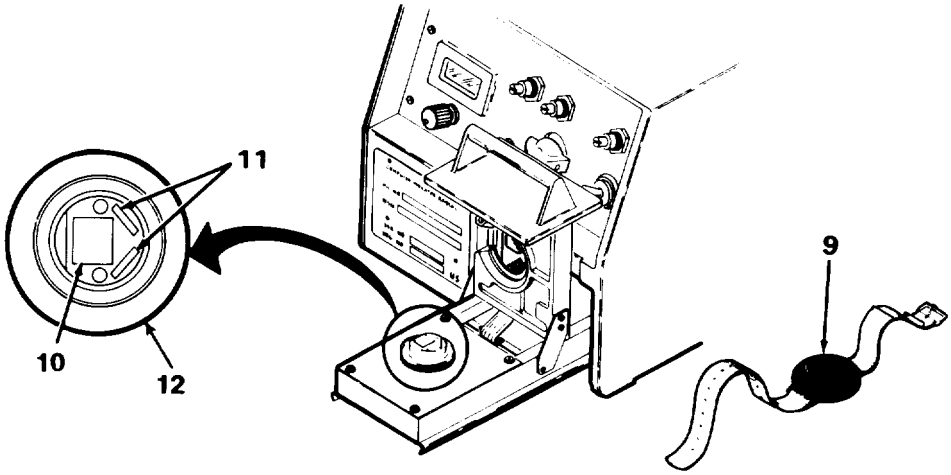
NOTE

Ensure that dosimeter is clean and dry before fitting it on the drawer locating plate, or faulty reading may result

5. Place dosimeter on base of drawer, fitting locator slot (7) in base of dosimeter over locator tab (8) on dosimeter locating plate (8a).



6. Unscrew dosimeter cover (9) by rotating it counterclockwise about half a turn. Carefully lift cover off and set aside in a clean place.



NOTE

When the dosimeter cover is removed, do not touch the phosphate glass (10) or diode contacts (11). Fingerprints may affect the reading.

7. Ensure that dosimeter base (12) is still positioned correctly and securely on dosimeter locating plate (8a). If necessary, adjust dosimeter base by grasping threaded edge.

WARNING

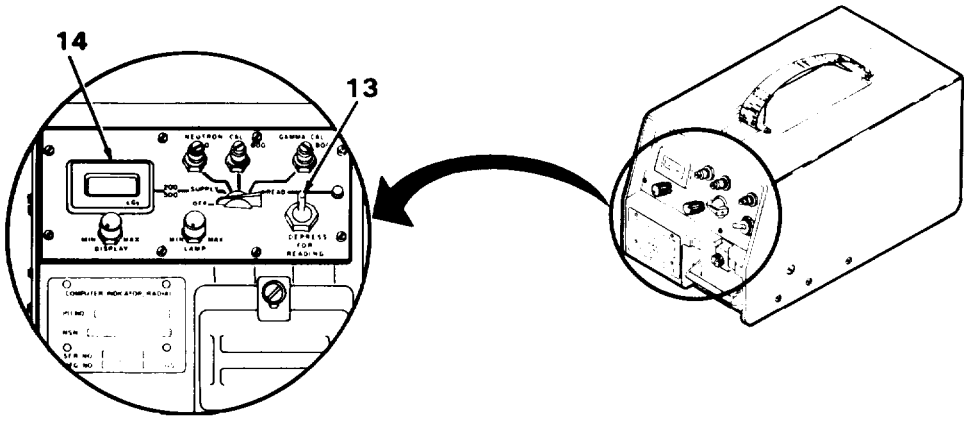
Personal injury may result from failure to close the drawer assembly properly. Close the drawer assembly by grasping the drawer handle firmly with one hand, lowering the drawer cover if necessary, and pushing the drawer into the closed position. The free hand should remain clear of the drawer assembly. Do not touch the transit lock with either hand when closing the drawer assembly.

8. Lower drawer cover and close drawer completely.

NOTE

Consecutive dosimeter readings may not be identical. Record the last reading only.

9. Press and release DEPRESS FOR READING switch (13) and record reading displayed on the DPM (14). Repeat this step if reading was not recorded during the 2 to 4 second display. Refer to Table 3-1 if reading is negative or if DPM display flashes.



10. Pull out drawer and lift drawer cover.

NOTE

Ensure that dosimeter base and cover are clean, dry, and undamaged before reassembling. Notify your supervisor if dirt or damage is detected.

11. With straps folded backward and using strap fittings as finger holds, immediately screw dosimeter cover clockwise onto dosimeter base, applying some downward pressure. Tighten cover by rotating it approximately one eighth of a turn past the point at which resistance is felt from the sealing ring.

12. Remove dosimeter from base of drawer.

13. Repeat steps 3 through 12 for all dosimeters to be read. When fast reading has been taken, proceed to paragraph 2-6.b, below.

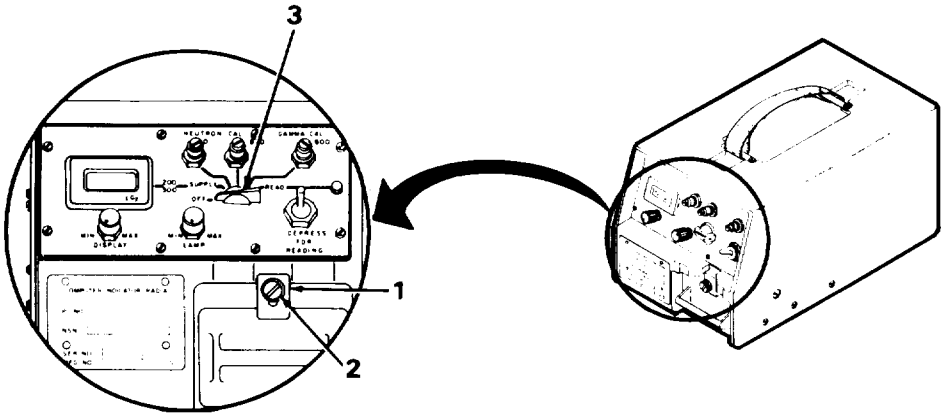
b. Post-Operational Procedure

1. Ensure that final dosimeter has been removed from base of drawer.

WARNING

Personal injury may result from failure to close the drawer assembly properly. Close the drawer assembly by grasping the drawer handle firmly with one hand, lowering the drawer cover if necessary, and pushing the drawer into the closed position. The free hand should remain clear of the drawer assembly. Do not touch the drawer closing block with either hand when closing the drawer assembly.

2. Lower drawer cover and close drawer.

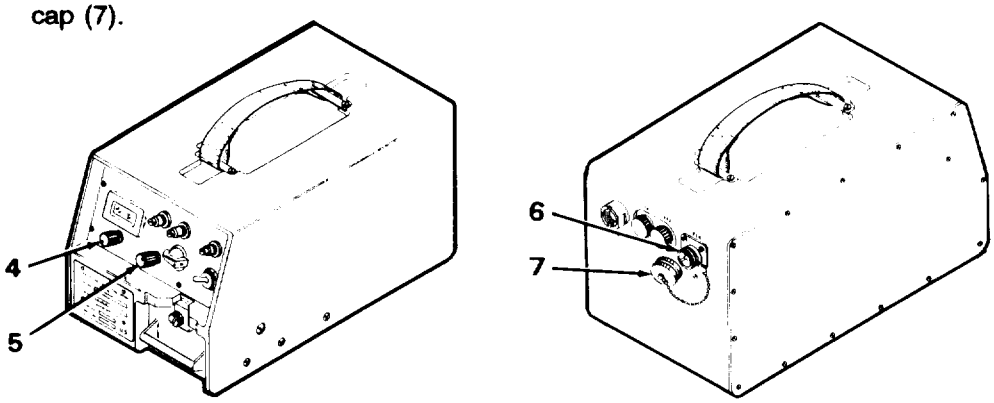


3. Lower drawer closing block (1), and tighten screw (2) as necessary to hold drawer in closed position.

4. Set selector switch (3) to OFF position.

5. Turn DISPLAY (4) and LAMP (5) controls counterclockwise.

6. Disconnect power cable from power source, if power supply is being used. Turn power supply off first, then disconnect cable from plug PLA (6) and replace cap (7).



NOTE

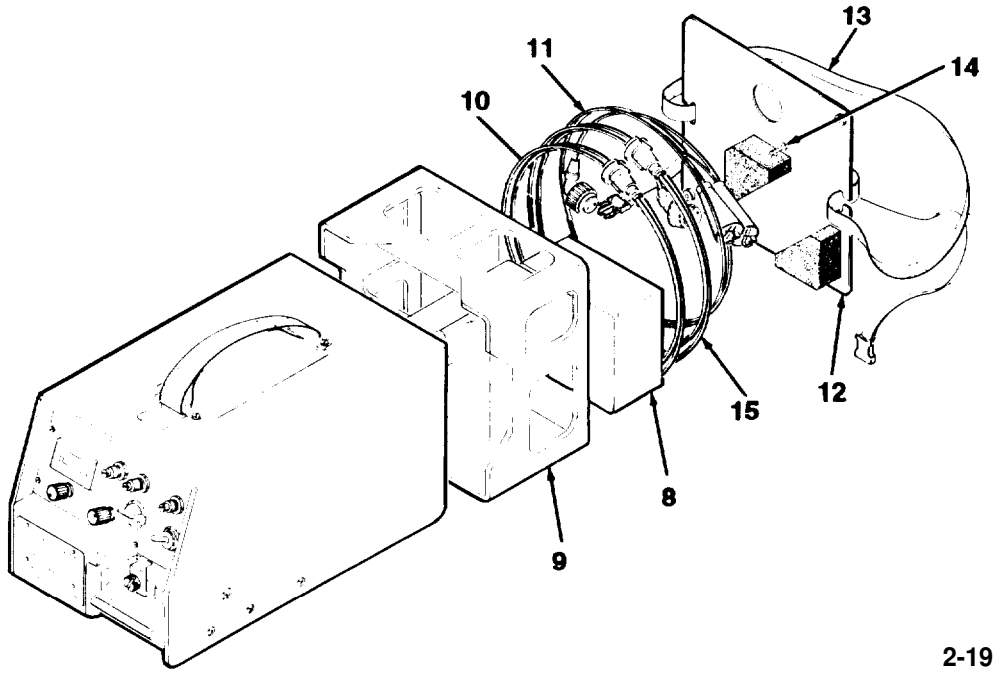
Perform steps 7 through 11, below, only if reader is to be installed in carrying case.

7. Install lithium battery (8) in battery and connector case (9). Wind power cables (10, 11, and 15) around center bracket of connector case. Position cable ends so that they will not contact battery.

NOTE

Ensure that cables are routed between foam blocks on the cover plate assembly.

8. Install cover plate assembly (12) with removal strap (13) on connector case, tightening captive screw (14) at center of cover plate.



9. Position battery and connector case and cover plate assembly on reader and position removal strap around reader. Ensure that free ends of shorter strap are securely fastened together at bottom of reader.

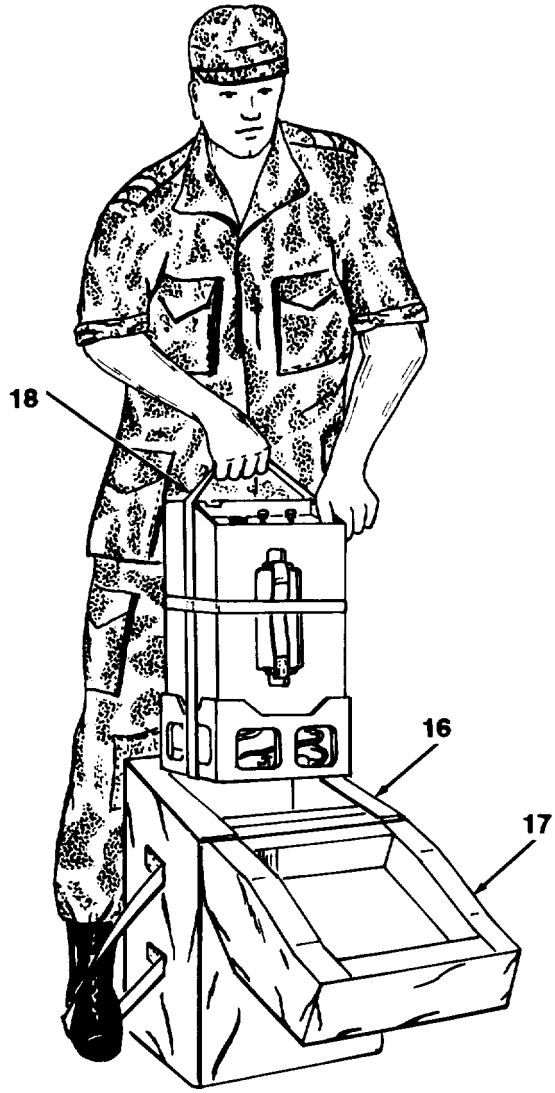
CAUTION

Failure to install the reader in the carrying case as instructed may result in damage to equipment. When the reader is lifted by the removal strap, it may fall from the battery and connector case unless the strap is correctly positioned and securely fastened.

CAUTION

Prior to placing the reader in the carrying case, ensure that the key is placed securely under the Velcro flap of the carrying case or damage to the reader finish may result.

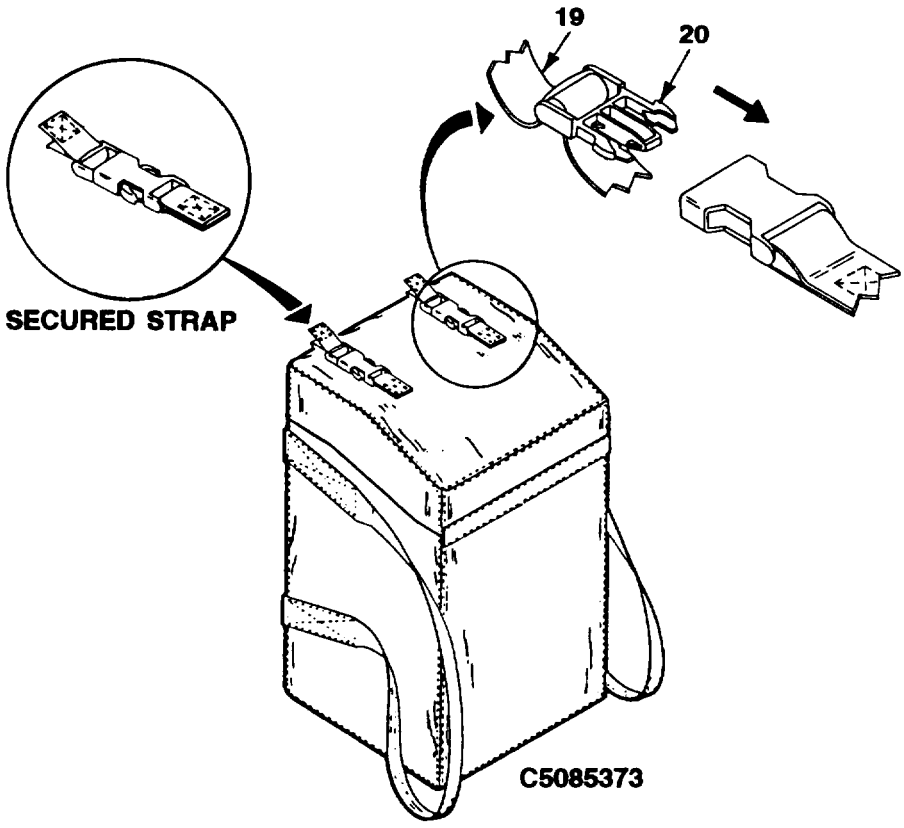
10. Set carrying case (16) on end opposite front cover flap (17) and open flap. Grasp removal strap (18) with one hand and grasp reader at edge near front panel assembly with other hand. Lift reader and carefully lower it into carrying case.


18
16
17

NOTE

Ensure that selector switch is set to OFF position before closing carrying case flap.

11. Close front cover flap on carrying case. Fasten two straps (19) on front cover flap by inserting buckle release (20) into other half of buckle and secure as shown.



Section IV. OPERATION UNDER UNUSUAL CONDITIONS (C5085500)

2-7. OPERATING PRECAUTIONS FOR UNUSUAL WEATHER.

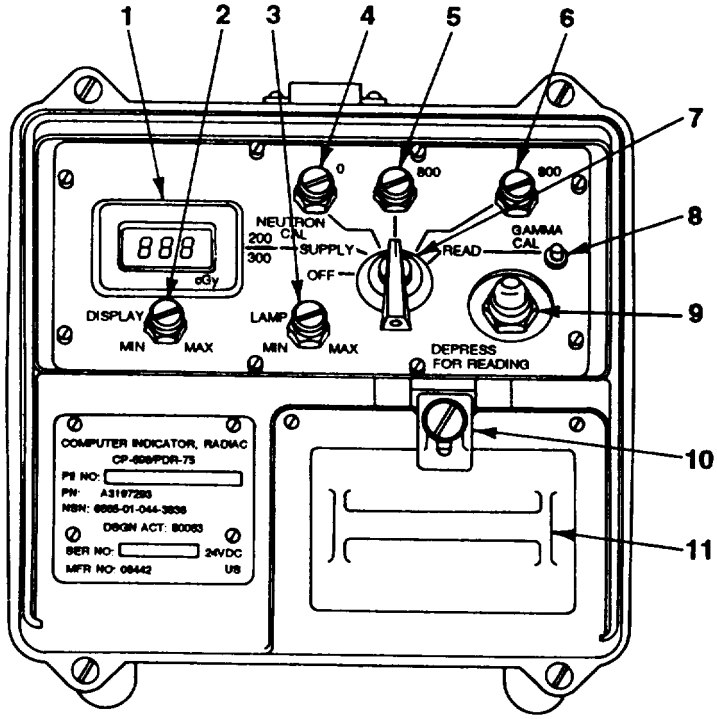
Radiac Set AN/PDR-75 operates normally under the following environmental conditions

- Storage temperature between -70 and +160°F (-57 to +71°C).
- Operating temperatures between -26 and +125°F (-32 to +52°C).
- Humidity between 0 and 100 percent.

Do not remove reader from carrying case for operation in rain, salt air, sea spray, duststorms, sandstorms, snow, or mud. During operation in rain or snow, ensure that drawer assembly is protected from precipitation when it is in the open position. The carrying case front flap can be used to shield the reader from precipitation. If contaminated water (rain water, salt water, etc.) enters drawer assembly, flush out with fresh water and dry completely. Dosimeters must also be protected from precipitation. At low temperatures, ensure that ice does not remain on dosimeter contacts. Clean contacts before use in accordance with paragraph 3-3. Ensure that dosimeter and reader are at the same temperature. Adjust the reader frequently during operation in changing conditions, in accordance with paragraph 2-5.b. After operation in unusual weather, ensure that radiac set passes routine checks described in paragraph 2-4.

2-8. EMERGENCY PROCEDURES

If power to the reader fails, set selector switch on front panel to OFF position and apply 21 to 30 V DC vehicle, battery, chemical agent automatic alarm (M10A1) power supply, or portable power supply as applicable. Prepare reader for operation in accordance with paragraph 2-5. Continue reading dosimeters in accordance with paragraph 2-6.



A3197293, P/O VERSION A3250780

PART FOUR

CHAPTER 2

OPERATING INSTRUCTIONS (A3250780)

Section I. DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS (A3250780)

2-1.1 FRONT PANEL

DIGITAL PANEL METER (1) -Displays total dose of radiation in cGy units when the selector switch is set to READ, shows reader's supply voltage when the selector switch is set to SUPPLY, and verifies reader calibration when the selector switch is set to NEUTRON CAL 0, NEUTRON CAL 800, or GAMMA CAL 800.

DISPLAY CONTROL (2) - Varies brightness of digital panel meter display.

LAMP CONTROL (3) - Varies brightness of lamp in the drawer assembly.

NEUTRON CAL 0 CONTROL (4) - Sets neutron channel zero during operational checks and adjustments.

NEUTRON CAL 800 CONTROL (5) - Sets neutron channel sensitivity during operational checks and adjustments.

GAMMA CAL 800 CONTROL (6) - Sets gamma channel sensitivity during operational checks and adjustments.

SELECTOR SWITCH (7) - Sets operational mode of the reader to OFF, SUPPLY, NEUTRON CAL 0, NEUTRON CAL 800, GAMMA CAL 800, or READ.

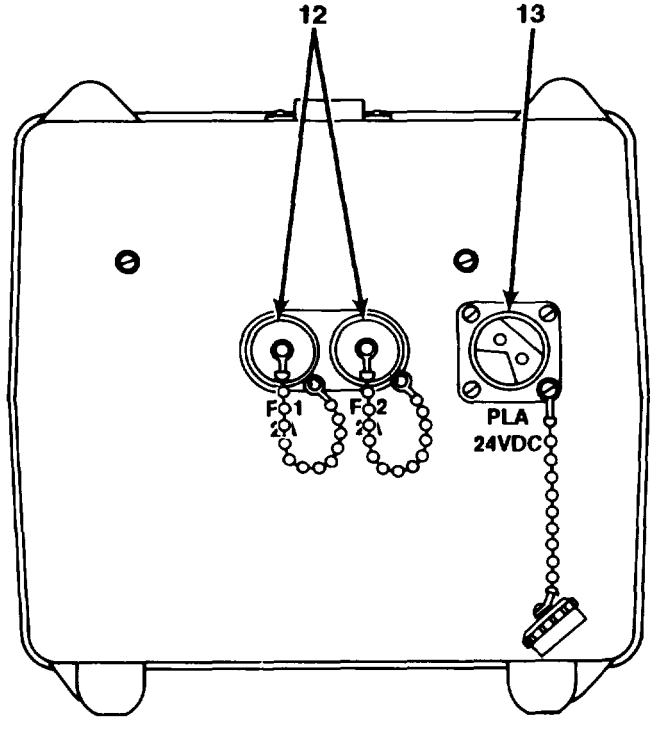
READ LIGHT (8) - Lights when selector switch is set to READ and indicates normal operating condition.

DEPRESS FOR READING SWITCH (9) - Starts the reading cycle.

DRAWER CLOSING BLOCK (10) - Secures drawer assembly in closed position.

DRAWER HANDLE (11) - Used to open and close drawer assembly.

2-2.1 REAR PANEL



FUSES (12) - Protect the reader from currents greater than 2 amperes.

PLUG (13) - Provides input terminal for reader's power supply.

Section II. OPERATOR Preventive MAINTENANCE CHECKS AND SERVICES (PMCS)(A3250780)

2-3.1 PREVENTIVE MAINTENANCE

a. **There is no PMCS scheduled for the Radiac Set AN/PDR-75 at the operator level.**

b. **To ensure that Radiac Set AN/PDR-75 is always ready for operation, it must be inspected systematically so that defects may be discovered and corrected before they result in serious damage or failure. Note defects discovered during operation of the unit and correct them as soon as operation has ceased. Stop operation immediately when you note a deficiency that will damage the equipment. Record all defiencies and corrective actions taken on DA Form 2404.**

c. **Routing checks (refer to paragraph 2-4.1) are not listed as PMCS checks. They are things that you should check and correct as necessary.**

2-4.1 ROUTINE CHECKS

The operator should perform the checks listed in Table 2-1.1 as needed. Correct any deficiencies immediately.

Table 2-1.1. Routine Maintenance Checks

PROCEDURE	CORRECTIVE ACTION
Check for cut, frayed, or dirty cables.	Forward cut or frayed cables to organizational maintenance.
	Clean dirty cables in accordance with paragraph 3-3.1
Ensure that knobs, plug cap, and drawer transit lock and screw are not bent or broken.	Have organizational maintenance replace bent or broken components.
Ensure that carrying strap is not frayed or broken.	Have organizational maintenance replace frayed or broken carrying strap.
Ensure that items not in use are properly stowed.	Stow items properly.
Check the carrying case for holes, rips, dirt, and grease.	Have organizational maintenance replace torn or ripped carrying case. Clean dirty carrying case in accordance with paragraph 3-3.1.
Check for corrosion or badly damaged paint on reader case and drawer assembly.	Forward corroded or damaged reader to general support maintenance.
Check front panel controls for proper operation.	Have orgranizational maintenance replace faulty components.
Check for loose or missing screws in case.	Have organizaitonal maintenance tighten or replace screws.
Ensure that DPM glass is not cracked or broken.	Forward reader to general support maintenance.

Table 2-1.1. Routine Maintenance Checks (Continued)

PROCEDURE	CORRECTIVE ACTION
Ensure that drawer assembly slides in and out easily without excessive play.	Forward reader to general support maintenance for adjustment.
Visually ensure that dosimeter contacts in drawer assembly are not excessively bent, twisted, misaligned, or dirty. In very cold weather, ensure that contacts are not coated with ice.	Forward reader to general support maintenance for contact adjustment. Clean dirty or icy contacts in accordance with paragraph 3-3.1.
Ensure that rubber feet on bottom of reader are not cracked or broken.	Have organizational maintenance replace rubber feet.
Refer to components of end item (COEI) per Appendix C and ensure that Radiac Set is complete.	Replace missing components.
Visually ensure that the carrying case complete assembly, lithium battery, and 3 cables are not damaged.	Have organizational maintenance replace components as required.

NOTE

The radiac set should not be operated in close proximity to high power transmitters or incorrect readings may result.

Section III. OPERATION UNDER USUAL CONDITIONS (A3250780)

2-5.1 PREPARATION FOR OPERATION.

Upon receipt of the Radiac Set AN/PDR-75, ensure that the reader is clean, dry, and undamaged. Then perform the following procedures:

- Prepare the reader for use prior to reading dosimeters. Refer to paragraph 2-5.1a.
- Adjust the reader prior to reading dosimeters, every 1/2 hour during operation any time the ambient temperature changes more than 5° (2.8°C). Refer to paragraph 2-5.1 b.

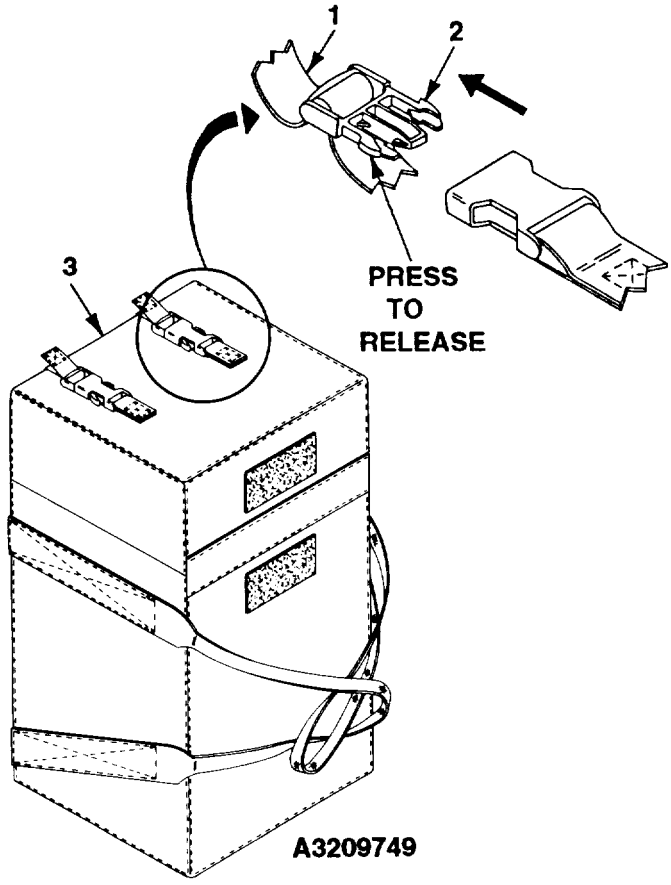
a. Preperation for Use.

NOTES

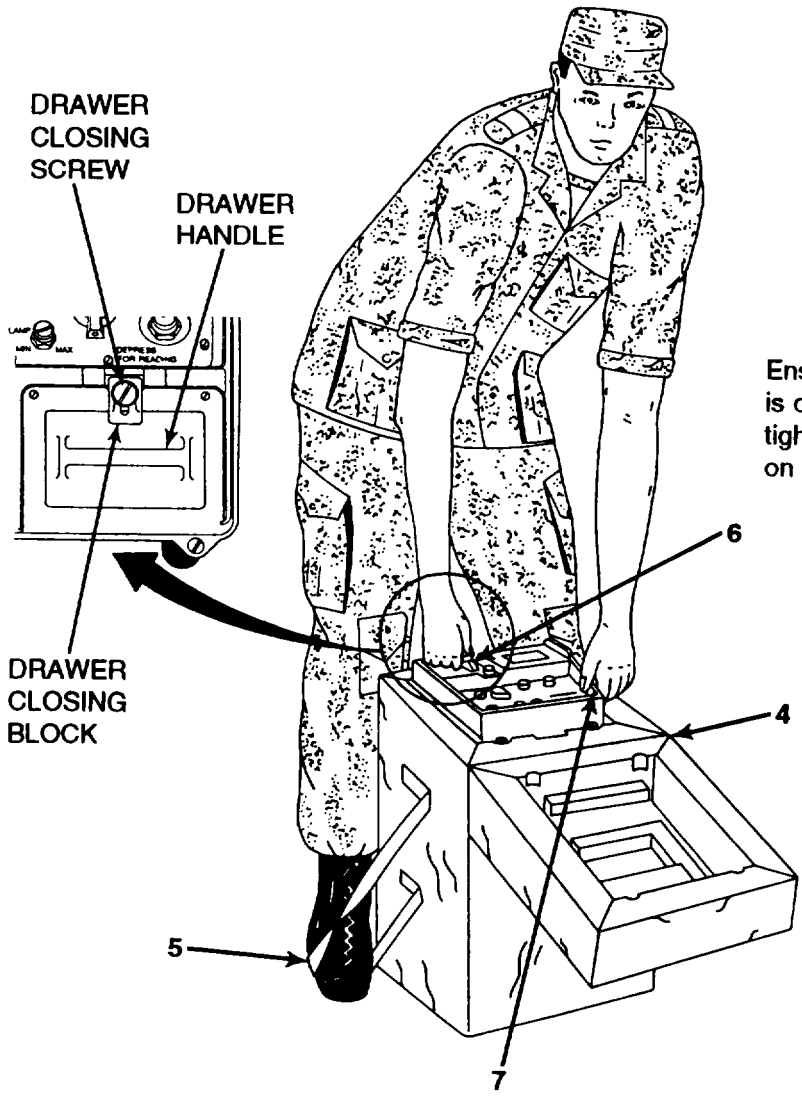
- **Refer to Table 3-1.1 if any of the following steps cannot be performed as described.**
- **Perform steps 1 through 7, below, only if reader is installed in carrying case. Otherwise, proceed to step 8.**

1. Set carrying case on end opposite front cover flap.

2. Unfasten two straps (1) on front cover of carrying case by pressing sides of buckle release (2). Open case by lifting front cover flap (3).



3. Stand on side of carrying case opposite front cover hinge (4) and place both feet in carrying ease handles (5) on either side of case. Standing on handles will keep case stationary as reader is withdrawn.

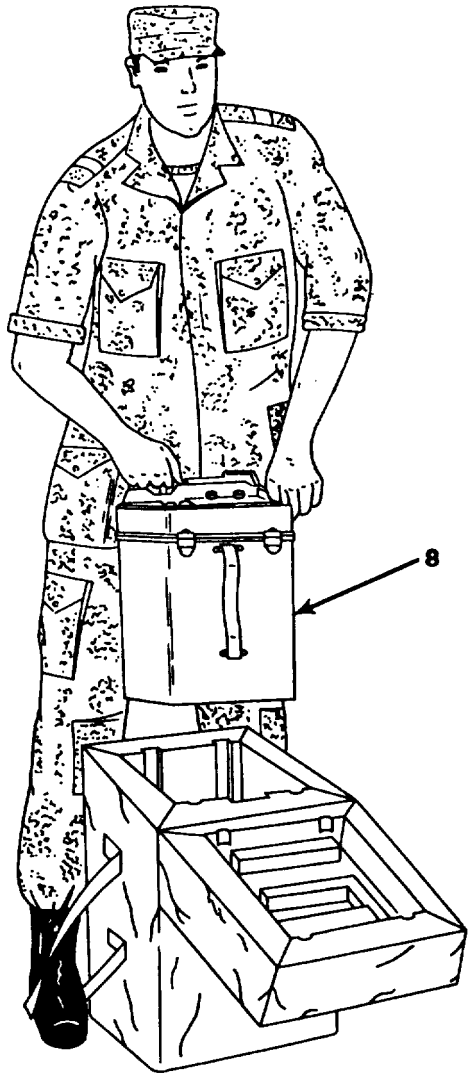


CAUTION

Ensure drawer block/lock is down and screw is tight, before pulling on drawer handle.

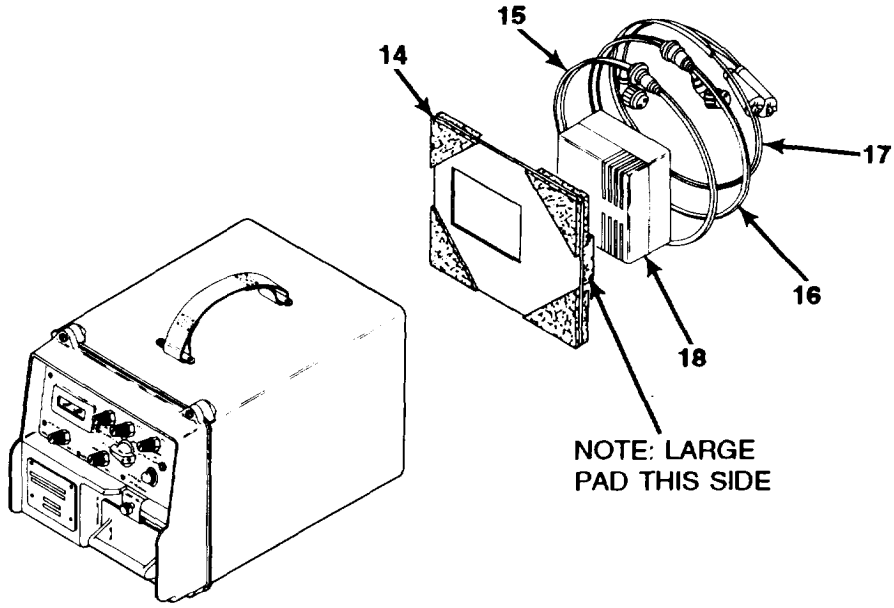
4. Grasp drawer handle (6) and protective side flange (7) on front panel face of reader.

5. Lift reader (8) straight up and out of carrying case.



6. Remove Carrying Case Base (14), cables (15, 16 and 17) and lithium battery (18) out of Carrying Case.

7. Select appropriate power cable. Set aside other power cables, carrying case base, and lithium battery.



NOTES

- Whenever possible, the reader should be operated out of the carrying case.

- If lithium battery is to be used to power the reader in the carrying case, route battery cable from reader through the carrying case base (14) to the battery (18). Reassemble all parts and reader into the carrying case. See 7a, b, c, d and e, next page, for more detail.

- If either a power supply or vehicle power is to be used to power the reader in the carrying case, route the appropriate cable through the carrying case base (14) and out the bottom flap in the carrying case. Reassemble all parts and reader into the carrying case.

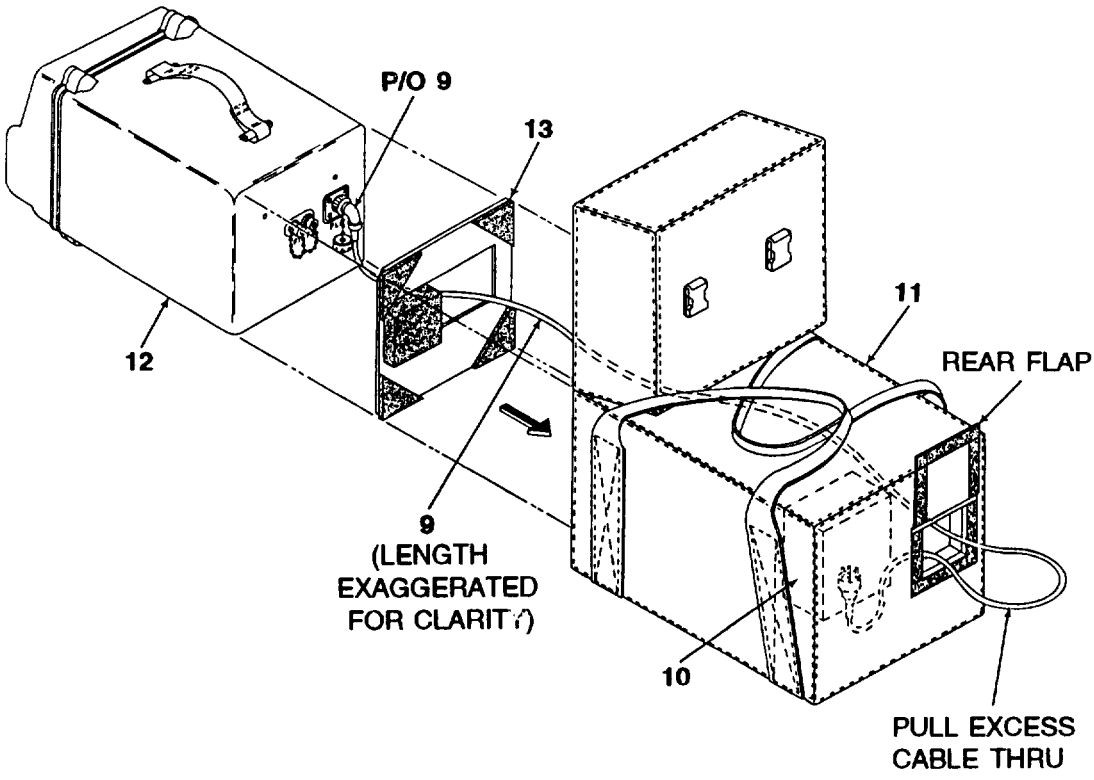
a. Connect battery cable (9) to lithium battery (10) in the carrying case (11).

b. Connect opposite end of battery cable (9) to reader (12) (Power Off) after feeding cable thru carrying case base (13).

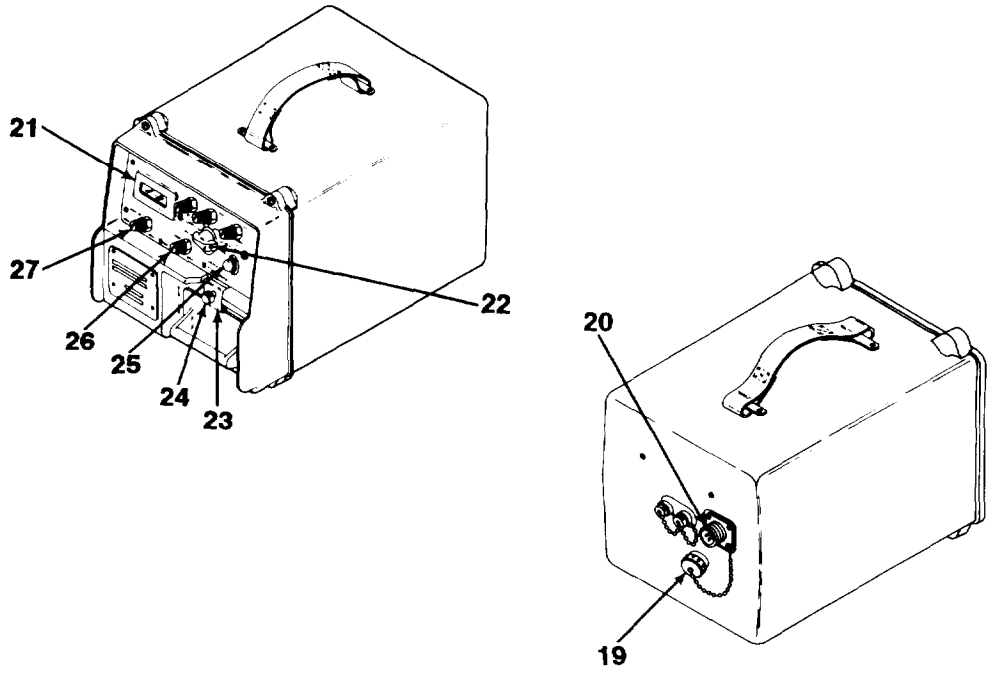
c. Reinstall carrying case base (13) in carrying case (11).

d. Open rear flap and install reader (12) while pulling excess cable thru the rear flap.

e. Tuck the excess cable back thru rear flap and close.



8. Remove cap (19) from PLA plug (20) on the rear panel.



NOTE

The reader operates from a power supply of either polarity. When connecting power cables to the reader plug PLA, it is not necessary to determine power supply polarity.

9. Connect the appropriate power cable to plug PLA (20) and then to the lithium battery (item 1, Appendix E), vehicle power supply (24 V dc nominal), or chemical agent automatic alarm (M10A1) power supply.

10. Turn DISPLAY (27) control on the front panel fully clockwise. Turn LAMP (26) control fully counterclockwise.

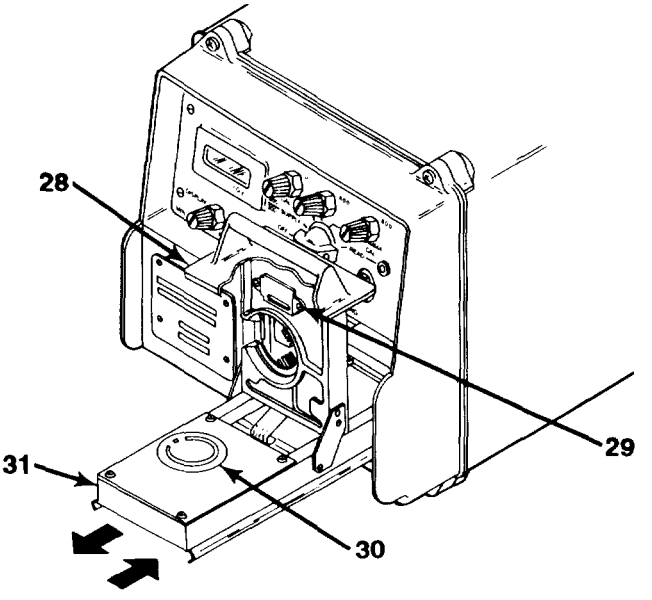
11. Set selector switch (22) on front panel to SUPPLY position.

12. Press and release DEPRESS FOR READING switch (25) on front panel and ensure that reading on DPM (21) is between 200 and 330 and that DPM display remains lit for approximately 2 to 4 seconds.

13. Press and release DEPRESS FOR READING switch (25) again and adjust DISPLAY control (27) until DPM display brightness is satisfactory.

14. Loosen screw (24) one half turn and raise block (23).

15. Grasp drawer handle and pull drawer (31) to its full extent. Lift drawer cover (28).



NOTE

It will not be necessary to perform step 16, below, unless operating the reader under reduced lighting conditions.

16. Adjust LAMP control until illumination from light control film (29) is satisfactory.

17. Ensure that drawer (31) does not contain any dosimeter or other objects on the dosimeter locating plate (30).

WARNING

Personal injury may result from failure to close the drawer assembly property. Close the drawer assembly by grasping the drawer handle firmly with one hand, lowering the drawer cover if necessary, and pushing the drawer into the closed position. The free hand should remain clear of the drawer assembly. Care should be taken to avoid contacting the drawer closing block with either hand.

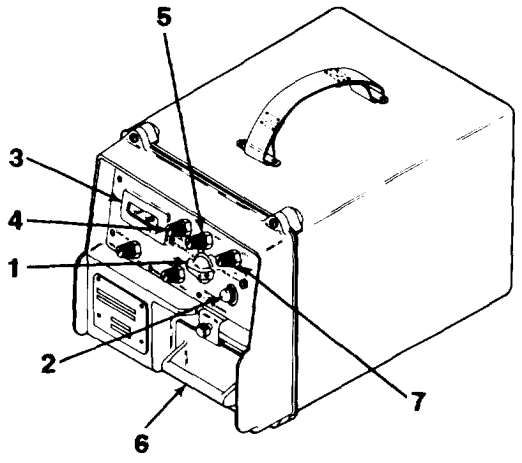
18. Lower drawer cover (28) and close drawer (31).

b. Reader Adjustment.

NOTE

Refer to Table 3-1.1 if any of the following steps cannot be performed as described.

1. Set selector switch (1) on the front panel to NEUTRON CAL 0 position.



2. Press and release DEPRESS FOR READING switch (2) on front panel and observe reading on DPM (3).

   a. If reading is 0 ±2 cGy, proceed to step 3.

NOTE

Ensure that the DPM display is off before pressing the DEPRESS FOR READING switch or an incorrect reading may result. The NEUTRON CAL 0, NEUTRON CAL 800, or GAMMA CAL 800 controls have no effect on the present DPM reading. While the DPM display is off, make small adjustments. Press the DEPRESS FOR READING switch and observe the effect on the DPM. Repeat the sequence as many times as necessary.

   b. If reading is not 0 ±2 cGy, adjust NEUTRON CAL 0 control (4) until the DPM reading is zero (000). Turn control clockwise if reading is too few, or counterclockwise if reading is too high.

3. Set selector switch (1) to NEUTRON CAL 800 position.

4. Press and release DEPRESS FOR READING switch (2) and observe reading on DPM (3).

   a. If reading is between 795 and 805 cGy, proceed to step 6.

   b. Refer to NOTE, step 2a, above. If reading is not between 795 and 805 cGy, adjust NEUTRON CAL 800 control (5) until DPM reading is 800. Turn control clockwise if reading it too low, or counterclockwise if reading is too high.

NOTE

Perform step 5 only if the NEUTRON CAL 800 control was adjusted during step 4.

5. **Repeat steps 1 through 4.**

6. **Set selector switch (1) to GAMMA CAL 800 position.**

NOTE

During the following procedure, ensure that the drawer assembly is pulled out of the reader as far as it will go. Do not touch or apply any pressure to the drawer assembly during this procedure or inaccurate readings may result.

7. **Pull out drawer (6) to its full extent.**

WARNING

Ultraviolet light may cause severe and permanent damage to the eyes. Operate the DEPRESS FOR READING switch only when the drawer assembly is in the fully open or closed position or exposure to ultraviolet light may result.

8. **Press and release DEPRESS FOR READING switch (2) and observe reading on DPM (3).**

   a. If reading is between 785 and 815 cGy, record reading and proceed to step 9.

   b. Refer to NOTE, step 2a. If reading is not between 785 and 815 cGy, adjust GAMMA CAL 800 control (7) until DPM reading is between 785 and 815 cGy. Turn control clockwise if reading is too few, or counterclockwise if reading is too high. Record final reading.

9. **Press and release DEPRESS FOR READING switch (2) four more times, observing and recording reading on DPM (3) each time.**

   a. If the readings taken in steps 8 and 9 were all between 785 and 815 cGy, proceed to step 10.

   b. If the readings taken in steps 8 and 9 were not all between 785 and 815 cGy, readjust GAMMA CAL 800 control as in step 8, above. Repeat steps 8 and 9 until all readings are within range.

WARNING

Personal injury may result from failure to close the drawer assembly properly. Close the drawer assembly by grasping the drawer handle firmly with one hand, lowering the drawer cover if necessary, and pushing the drawer into the closed position. The free hand should remain clear of the drawer assembly. Do not touch the transit lock with either hand when closing the drawer assembly.

10. **Close drawer.**

2.6.1 OPERATION (A3197293)

Prior to reading dosimeters, ensure that the reader has been prepared in accordance with paragraph 2-5.1. Then perform the following procedures:

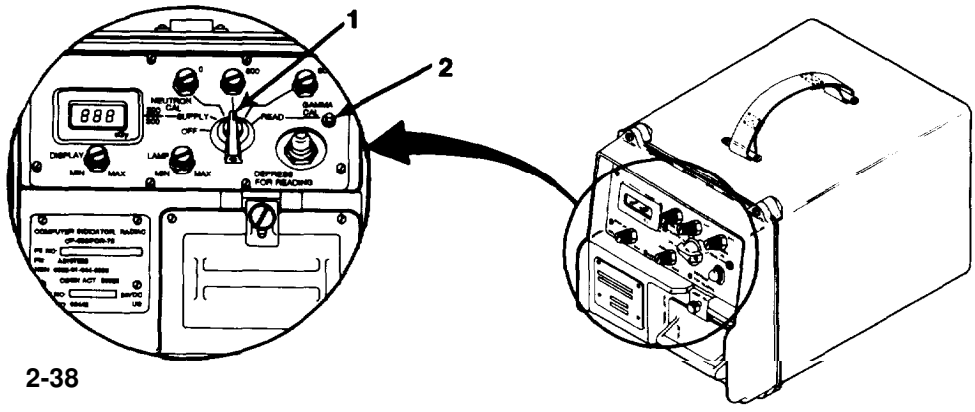
- **Read dosimeters in accordance with paragraph 2-6.1a, below.**
- **Perform post operational procedures in accordance with paragraph 2-6.1 b.**

a. Reading Dosimeters.

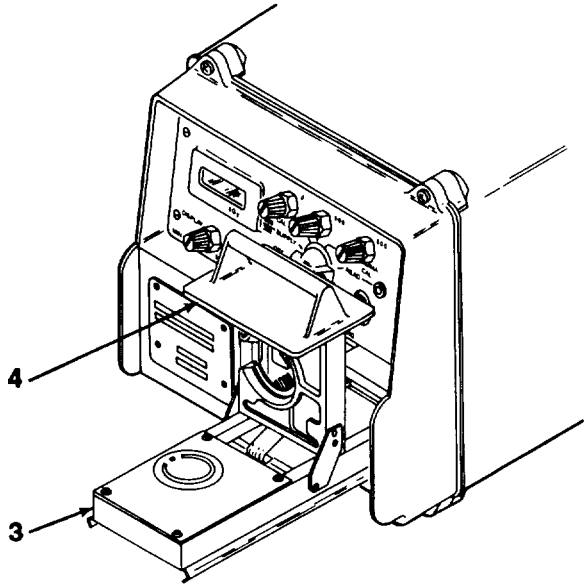
NOTES

- **Refer to Table 3-1.1 if any of the following steps cannot be performed as described.**
- **Perform reader adjustment in accordance with paragraph 2-5.1b every 1/2 hour or when the ambient temperature changes more than 5°F (2.8°C).**
- **Ensure that dosimeters and reader are at the same temperature. If dosimeters have been transported recently from a different environment, allow at least 10 minutes for temperature stabilization prior to reading.**
- **Ensure that dosimeters are clean, dry, and undamaged prior to reading.**

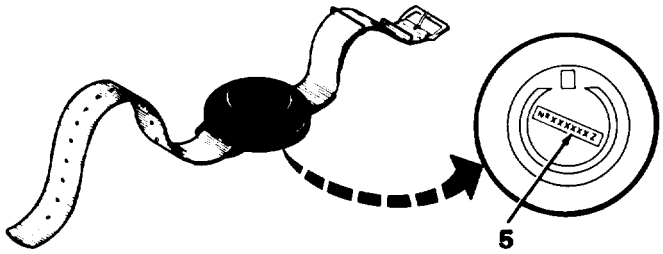
1. Set selector switch (1) on front panel to READ position and ensure that the indicator light (2) comes on.



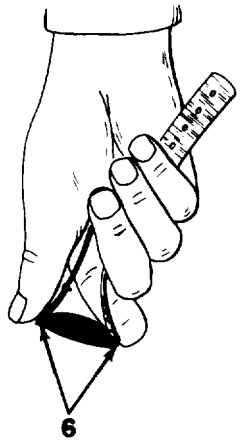
2. Grasp drawer handle and pull drawer (3). Lift drawer cover (4).



3. Record serial marking from dosimeter base (5).



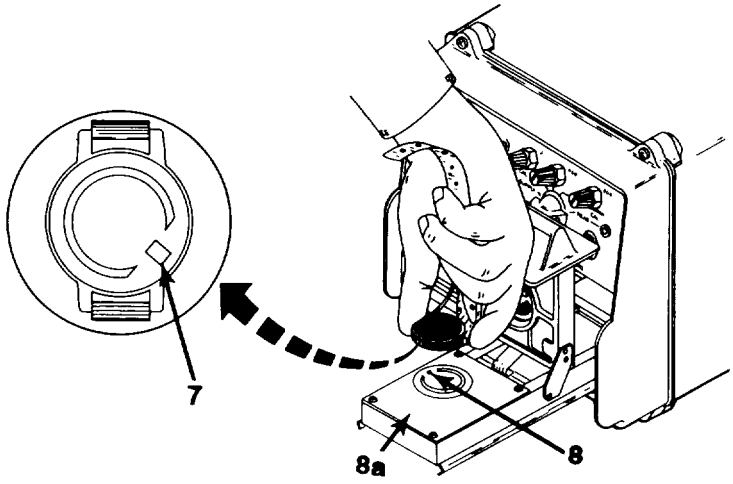
4. Grasp dosimeter by folding straps backward and using strap fitings (6) as finger hold.



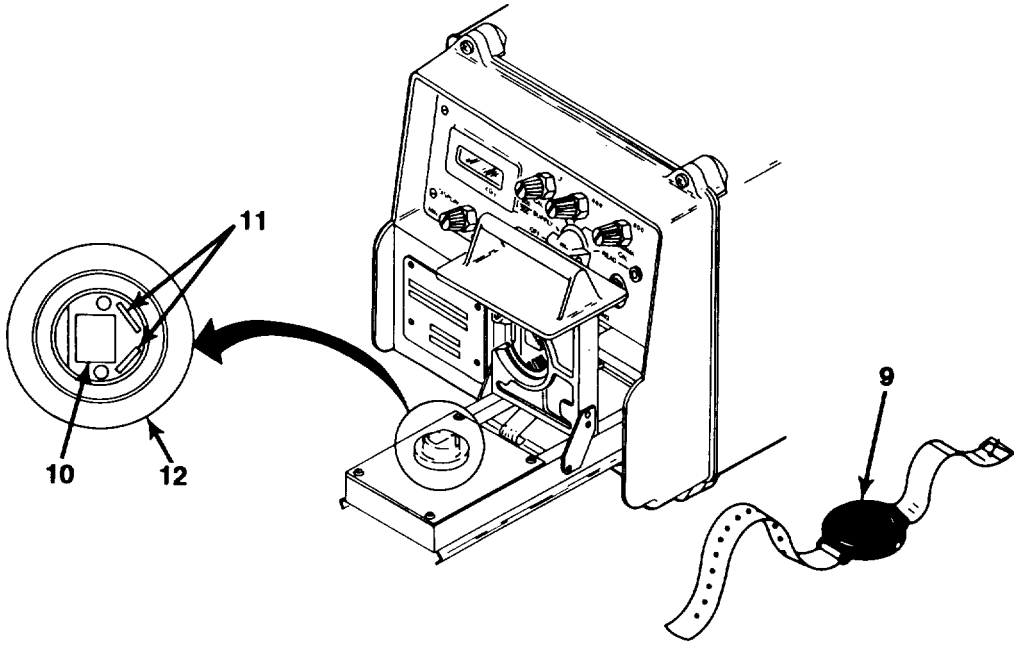
NOTE

Ensure that dosimeter is clean and dry before fitting it on the drawer locating plate, or faulty reading may result.

5. Place dosimeter on base of drawer, fitting locator slot (7) in base of dosimeter over locator tab (8) on dosimeter locating plate (8a).



6. Unscrew dosimeter cover (9) by rotating it counterclockwise about half a turn. Carefully lift cover off and set aside in a clean place.



NOTE

When the dosimeter cover is removed, do not touch the phosphate glass (10) or diode contacts (11). Fingerprints may affect the reading.

7. Ensure that dosimeter base (12) is still positioned correctly and securely on dosimeter locating plate (8a). If necessary, adjust dosimeter base by grasping threaded edge.

WARNING

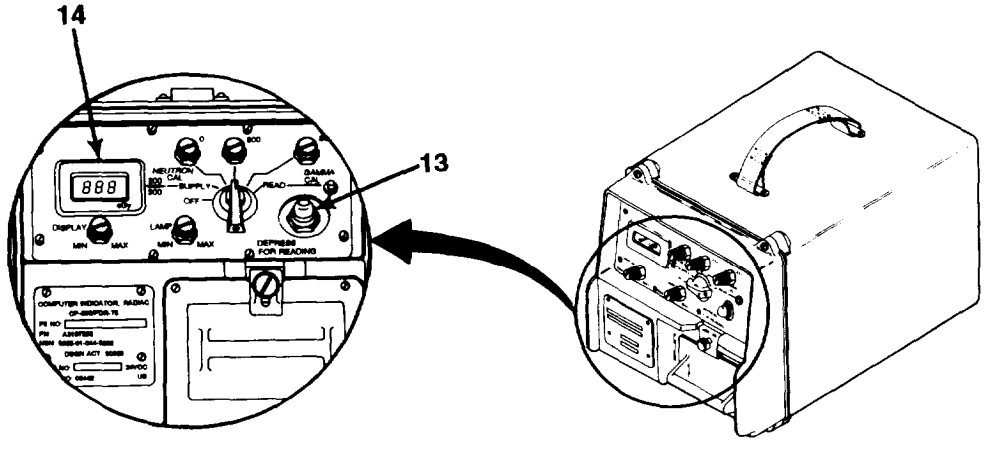
Personal injury may result from failure to close the drawer assembly property. Close the drawer assembly by grasping the drawer handle firmly with one hand, lowering the drawer cover if necessary, and pushing the drawer into the closed position. The free hand should remain clear of the drawer assembly. Do not touch the transit lock with either hand when closing the drawer assembly.

8. Lower drawer cover and close drawer completely.

NOTE

Consecutive dosimeter readings may not be identical. Record the last reading only.

9. Press and release DEPRESS FOR READING switch (13) and record reading displayed on the DPM (14). Repeat this step if reading was not recorded during the 2 to 4 second display. Refer to Table 3-1.1 if reading is negative or if DPM display flashes.



10. Pull out drawer and lift drawer cover.

NOTE

Ensure that dosimeter base and cover are clean, dry, and undamaged before reassembling. Notify your supervisor if dirt or damage is detected.

11. With straps folded backward and using strap fittings as finger holds, immediately screw dosirneter cover clockwise onto dosimeter base, applying some downward pressure. Tighten cover by rotating it approximately one eighth of a turn past the point at which resistance is felt from the seating ring.

12. Remove dosimeter from base of drawer.

13. Repeat steps 3 through 12 for all dosimeters to be read. When last reading has been taken, proceed to paragraph 2-6.1b, below.

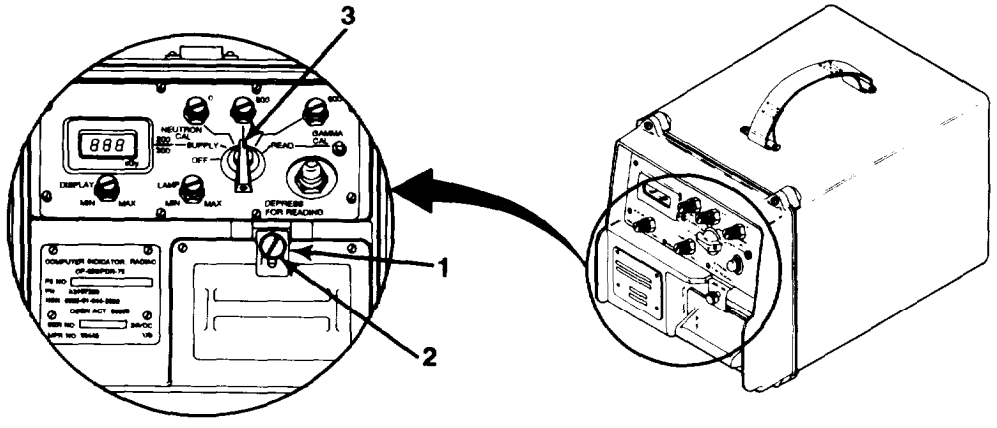
b. Post-Operational Procedure

1. Ensure that final dosimeter has been removed from base of drawer.

WARNING

Personal injury may result from failure to close the drawer assembly properly. Close the drawer assembly by grasping the drawer handle firmly with one hand, lowering the drawer cover if necessary, and pushing the drawer into the closed position. The free hand should remain clear of the drawer assembly. Do not touch the drawer closing block with either hand when closing the drawer assembly to prevent injury to fingers.

2. Lower drawer cover and close drawer.

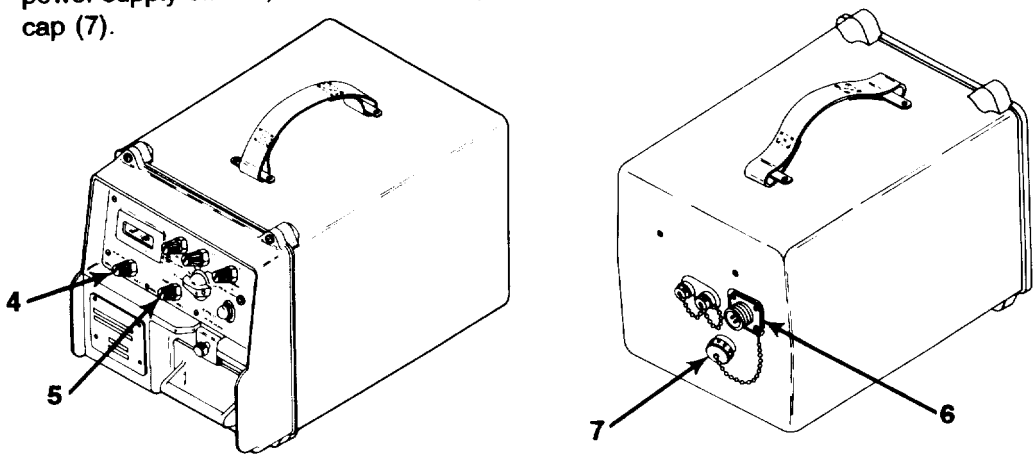


3. Lower drawer closing block (1), and tighten screw (2) as necessary to hold drawer in closed position.

4. Set selector switch (3) to OFF position.

5. Turn DISPLAY (4) and LAMP (5) controls counterclockwise.

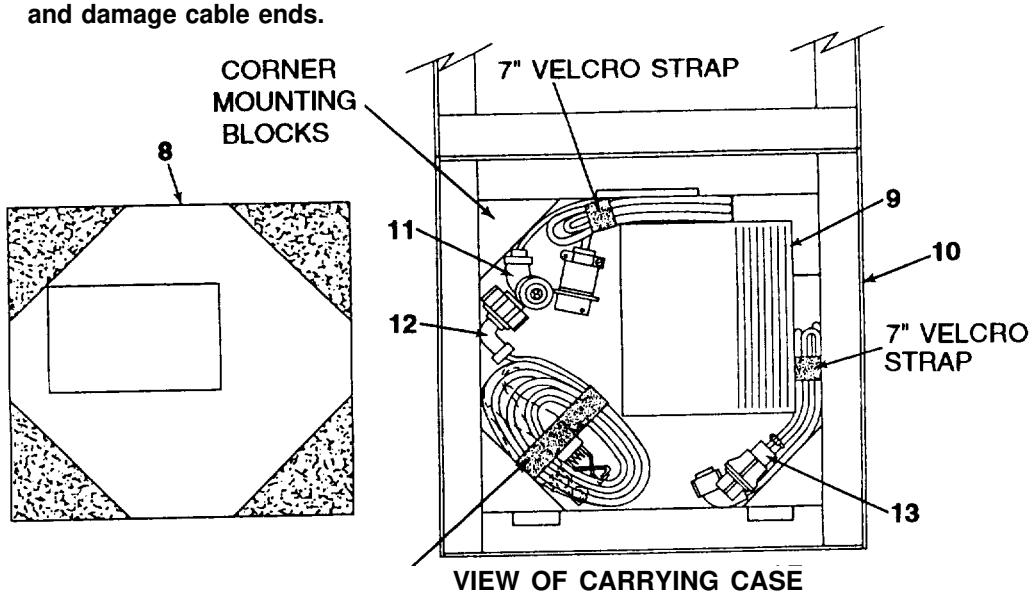
6. Disconnect power cable from power source, if power supply is being used. Turn power supply off first, then disconnect power cable from plug PLA (6) and replace cap (7).



NOTE

Perform steps 7 through 9, only if reader is to be installed in carrying case.

7. **Place lithium battery (9) into recess at bottom of carrying case (10) as shown. Tightly coil 3 (three) power cables (11, 12 and 13) separately and store in bottom of carrying case (10). Position cable ends so that they will not contact battery, and damage cable ends.**



12" VELCRO STRAP

VIEW OF CARRYING CASE WITH FLAP IN OPEN POSITION (READER AND CARRYING CASE BASE REMOVED)

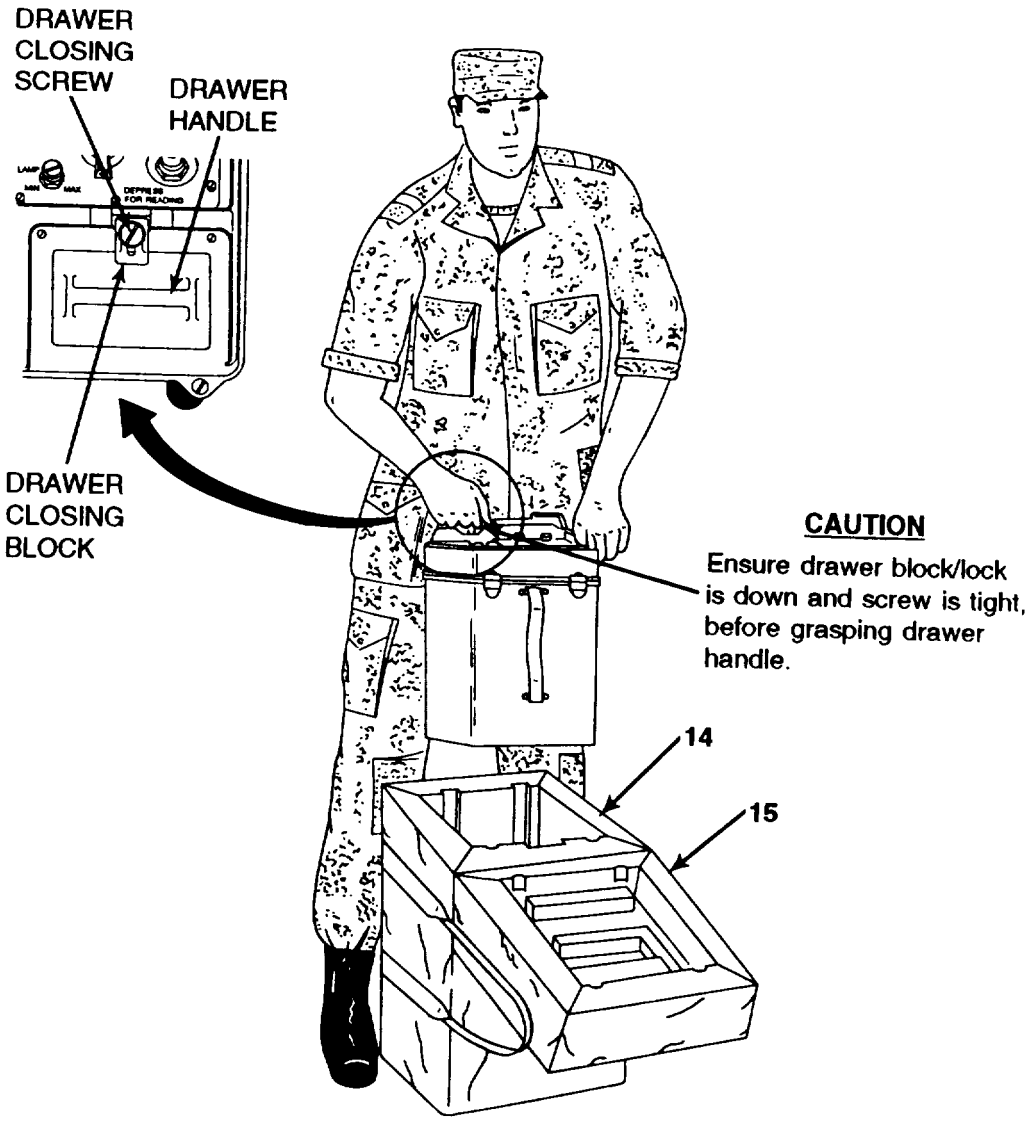
8. **Reinstall Carrying Case Base (8) onto 4 corner mounting blocks in Carrying Case (10).**

9. **Replace Reader into Carrying Case (10).**

CAUTION

Failure to install the reader in the carrying case as instructed may result in damage to equipment. Lift the reader by the drawer handle and the protective side flange on front panel face, see caution below.

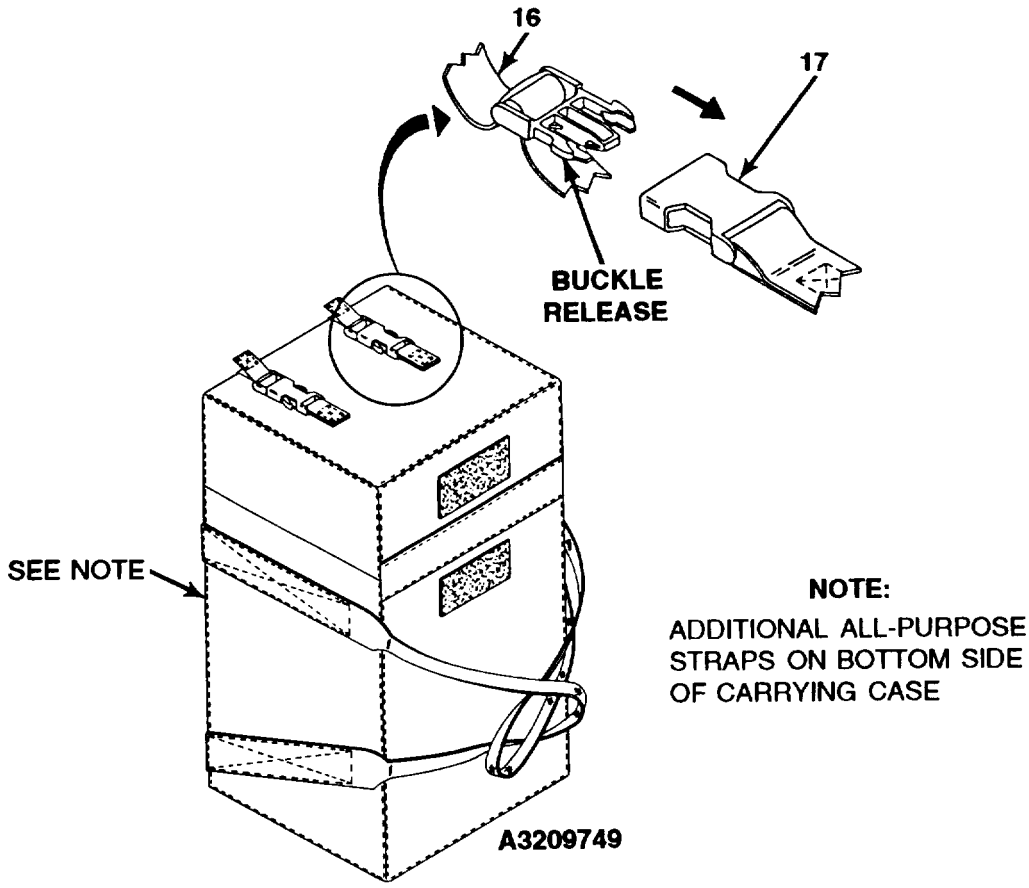
10. **Set carrying case (14) on end opposite front cover flap (15) and open flap. Grasp drawer handle and protective side flange with 2 (two) hands, lift and carefully lower it into carrying case.**



NOTE

Ensure that selector switch is set to OFF position before closing carrying case flap.

11. Close front cover flap on carrying case. Fasten two straps (16) on front cover flap by inserting buckle release into buckles (17).



Section IV. OPERATION UNDER UNUSUAL CONDITIONS (A3250780)

2-7.1 OPERATING PRECAUTIONS FOR UNUSUAL WEATHER.

Radiac Set AN/PDR-75 operates normally under the following environmental conditions

- Storage temperature between -70 and +160°F (-57 to +71°C).
- Operating temperatures between -26 and +125°F (-32 to +52°C).
- Humidity between 0 and 100 percent.

Do not remove reader from carrying case for operation in rain, salt air, sea spray, duststorms, sandstorms, snow, or mud. During operation in rain or snow, ensure that drawer assembly is protected from precipitation when it is in the open position. The carrying case front flap can be used to shield the reader from precipitation. If contaminated water (rain water, salt water, etc.) enters drawer assembly, flush out with fresh water and dry completely. Dosirneters must also be protected from precipitation. At low temperatures, ensure that ice does not remain on dosimeter contacts. Clean contacts before use in accordance with paragraph 3-3.1. Ensure that dosirneter and reader are at the same temperature. Adjust the reader frequently during operation in changing conditions, in accordance with paragraph 2-5.1b. After operation in unusual weather, ensure that radiac set passes routine checks described in paragraph 2-4.1.

2-8.1 EMERGENCY PROCEDURES

If power to the reader fails, set selector switch on front panel to OFF position and apply 21 to 30 V DC vehicle, battery, chemical agent automatic alarm (M10A1) power supply, or portable power supply as applicable. Prepare reader for operation in accordance with paragraph 2-5.1. Continue reading dosimeters in accordance with paragraph 2-6.1.

PART FIVE
CHAPTER 3
OPERATOR MAINTENANCE (C5085500)

Section I. LUBRICATION INSTRUCTIONS (C5085500)

No lubrication is required for maintenance of the Radiac Set AN/PDR-75.

Section II. OPERATOR TROUBLESHOOTING PROCEDURES (C5085500)

3-1. GENERAL.

Table 3-1 fists the common malfunctions which you may find during the operation or maintenance of the Radiac Set AN/PDR-75 or its components. You should perform the tests or inspections and corrective actions in the order listed.

This manual cannot fist all malfunctions that may occur, nor all tests or inspections and corrective actions. If a rnalfunction is not listed or is not corrected by listed corrective actions, notify your supervisor.

After performing CORRECTIVE ACTION, verify that the MALFUNCTION has been eliminated.

3-2. TROUBLESHOOTING

Table 3-1. Operator Troubleshooting

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION	
1. DIGITAL PANEL METER DOES NOT LIGHT WHEN DEPRESS FOR READING SWITCH IS PRESSED.	
Step 1.	Set selector switch to READ position and ensure that READ light is on. If READ fight is on, proceed to step 2. If READ fight is not on, proceed to step 3.
Step 2.	Press and release the DEPRESS FOR READING switch after the following action and recheck the DPM. Turn DISPLAY control fully counterclockwise and then fully clockwise.
Step 3.	Press and release the DEPRESS FOR READING switch after each of the following actions and recheck the DPM. Set selector switch to OFF position. Ensure that power cable is connected properly and that cable connectors are clean and tightened. Return selector switch to original position. If battery is in use, set selector switch to OFF position. Replace battery in accordance with paragraph 3-4. Return selector switch to original position.
Step 4.	If failure persists, notify organizational maintenance.

Table 3-1. Operator Troubleshootlng (Continued)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
2. DIGITAL PANEL METER READING IS NOT BETWEEN 200 AND 330 WHEN SELECTOR SWITCH IS SET TO SUPPLY POSITION
Step 1. If DPM reading is above 330 or if DPM is flashing, perform all of the following actions and then recheck the reading. If failure persists, notify organizational maintenance. If applicable, set selector switch to OFF position and ensure that vehicle power supply is rated at 21 to 30 V dc or that portable power supply is set for 21 to 30 V dc. Connect reader to battery or correct power supply (21 to 30 V dc).
Step 2. If DPM reading is below 200, recheck the reading after each of the following actions. If failure persists, notify organizational maintenance. If applicable, set selector switch to OFF position and ensure that vehicle power supply is rated at 21 to 30 V dc or that portable power supply is set for 21 to 30 V dc. Set selector switch to OFF position. Ensure that power cable is connected properly and that cable connectors are clean and tightened. Return selector switch to SUPPLY position. If battery is in use, set selector switch to OFF position. Replace battery in accordance with paragraph 3-4. Return selector switch to SUPPLY position.
3. DIGITAL PANEL METER READING DOES NOT LAST FOR 2 TO 4 SECONDS.
Notify general support maintenance.
4. NO LIGHT EXISTS INSIDE DRAWER. BUT DIGITAL PANEL METER LIGHTS WHEN DEPRESS FOR READING SWITCH IS PRESSED.
Step 1. Perform the following action and recheck the light. Turn LAMP control fully counterclockwise and then fully clockwise.
Step 2. If failure persists, notify general support maintenance.

Table 3-1. Operator Troubleshooting (Continued)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
5. PROPER DIGITAL PANEL METER READINGS CANNOT BE OBTAINED DURING READER ADJUSTMENT
Step 1. Perform the following action and try the adjustment again. Set selector switch to SUPPLY position and ensure that DPM reading is between 200 and 330. If DPM reading is not between 200 and 330, refer to MALFUNCTION 2.
Step 2. If failure persists, notify general support maintenance.
6. INDICATOR LIGHT DOES NOT COME ON WHEN SWITCH IUS SET TO READ POSITION.
Step 1. Set selector switch to SUPPLY position and ensure that DPM reading is between 200 and 330. If DPM reading is not between 200 and 330, refer to MALFUNCTION 2.
Step 2. If failure persists, notify general support maintenance.
7. DRAWER ASSEMBLY DOES NOT OPEN OR CLOSE EASILY.
Step 1. Perforrn the following actions and try to close the drawer again. If dosirneter is installed, reposition dosimeter securely on dosirneter locating plate. Ensure that drawer is free of foreign objects and that transit lock block is not obstructing drawer movement.
Step 2. If failure persists, notify general support maintenance.
6. DIGITAL PANEL METER FLASHES WHILE READING DOSIMETER.
Step 1. Perform reader adjustment in accordance with paragraph 2-5.b. if failure persists, proceed to step 2.
Step 2. Reposition dosimeter in accordance with paragraph 2-6a and ensure that dosimeter contacts in drawer assembly are clean (refer to paragraph 3-3) and are positioned against dosimeter when drawer cover is closed. (Check by looking through cutout on top of drawer cover). If failure persists, proceed to step 3.

Table 3-1. Operator Troubleshooting (Continued)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
8. DIGITAL PANEL METER FLASHES WHILE READING DOSIMETER (CONTINUED). Step 3. Try reading three more dosimeters from the same batch. If some readings are successful, continue reading dosimeters and record numbers on bases of dosimeters that cannot be read. If display flashes during all three readings, notify your supervisor.
9. DIGITAL PANEL METER SHOWS EXCESSIVE NEGATIVE READING (-10 TO -99). Refer to MALFUNCTION 8, steps 1 and 2. If failure persists, notify general support maintenance.

Section III. OPERATOR MAINTENANCE PROCEDURES (C5085500)

3-3. CLEANING

WARNING

SEVERE ILLNESS or DEATH may result if you fail to observe the following safety precautions. Both DENATURED and ISOPROPYL ALCOHOLS are toxic, volatile, and flammable. Use only in well ventilated areas away from heat or open flame. Avoid ingestion, prolonged breathing of vapor, and contact with skin.

a. Reader Case and Drawer Assembly. Clean the external metal case of light dirt using soap and water. Clean off grease using a small amount of isopropyl alcohol (item 10, Appendix E) on a cloth. Brush any dust or dirt out of the drawer assembly using a soft brush. Clean the inside of the drawer assembly using a lint free cloth dampened with water. In case of extreme contamination, drawer assembly may be flushed with clean water.

b. Dosimeter Contacts. Gently scrape ice from the dosimeter contacts, if necessary, ensuring that contacts do not become bent, broken, or misaligned. Clean dosimeter contacts with a cloth dampened with isopropyl alcohol.

c. Cables. Clean cables using a cloth dampened with isopropyl alcohol. Cable connectors that are difficult to clean with a cloth should be cleaned with a short bristle brush.

d. Carrying Case. Brush any dirt from carrying case using a stiff bristle brush. Use isopropyl alcohol (item 10, Appendix E) on any spots of grease.

3-4. COMPONENT REPLACEMENT.

a. Battery Replacement.

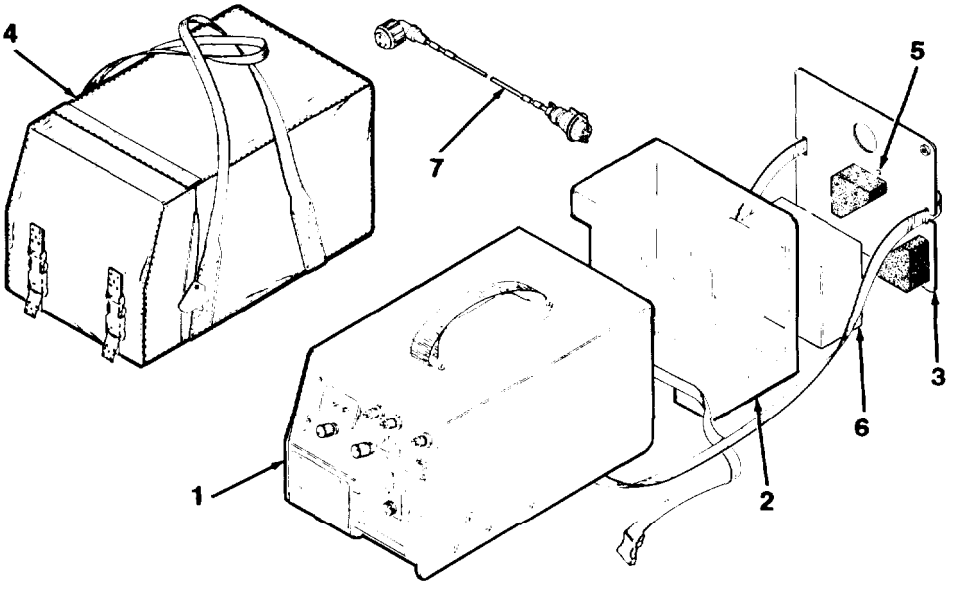
1. Refer to paragraph 2-5.a and remove reader (1), battery and connector case (2), and cover plate assembly (3) from carrying case (4) as required.

2. Remove cover plate assembly (3) by releasing captive screw (5).

WARNING

LITHIUM BATTERIES

Lithium batteries used with the Radiac Set AN/PDR-75 contain sulfur dioxide and may explode if handled improperly. Do not short circuit, incinerate, mutilate, or attempt to charge these batteries. Serious injury to personnel may result from failure to comply with this warning.



3. Remove old battery (6) from battery and connector case (2) and disconnect battery cable (7) if applicable.

4. Install new battery (item 1, Appendix E) and original battery cable (7) in battery and connector case (2). Connect battery cable to battery and reader as required.

5. Replace cover plate assembly (3) and tighten captive screw (5).

6. Reinstall reader (1), battery and connector case (2), and cover plate assembly (3) in carrying case (4) as a unit.

PART SIX
CHAPTER 3
OPERATOR MAINTENANCE (A3250780)

Section I. LUBRICATION INSTRUCTIONS (A3250780)

No lubrication is required for maintenance of the Radiac Set AN/PDR-75.

Section IL OPERATOR TROUBLESHOOTING PROCEDURES (A3250780)

3-1.1 GENERAL.

Table 3-1.1 lists the common malfunctions which you may find during the operat ion or maintenance of the Radiac Set AN/PDR-75 or its components. You should perform the tests or inspections and corrective actions in the order listed.

This manual cannot list all malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, notify your supervisor.

After performing CORRECTIVE ACTION, verify that the MALFUNCTION has been eliminated.

3-2.1 TROUBLESHOOTING

Table 3-1.1 Operator Troubleshooting

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION	
1. DIGITAL PANEL METER DOES NOT LIGHT WHEN DEPRESS FOR READING SWITCH IS PRESSED.	
Step 1.	Set selector switch to READ position and ensure that READ light is on. If READ light is on, proceed to step 2. If READ light is not on, proceed to step 3.
Step 2.	Press and release the DEPRESS FOR READING switch after the following action and recheck the DPM. Turn DISPLAY control fully counterclockwise and then fully clockwise.
Step 3.	Press and release the DEPRESS FOR READING switch after each of the following actions and recheck the DPM. Set selector switch to OFF position. Ensure that power cable is connected properly and that cable connectors are clean and tightened. Return selector switch to original position. If battery is in use, set selector switch to OFF position. Replace battery in accordance with paragraph 3-4.1. Return selector switch to original position.
Step 4.	If failure persists, notify organizational maintanence

Table 3-1.1 Operator Troubleshooting (Continued)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTiON

2. DIGITAL PANEL METER READING IS NOT BETWEEN 200 AND 330 WHEN SELECTOR SWITCH IS SET TO SUPPLY POSITION

Step 1. if DPM reading is above 330 or if DPM is flashing, perform all of the following actions and then recheck the reading. If failure persists, notify organizational maintenance.

If applicable, set selector switch to OFF position and ensure that vehicle power supply is rated at 21 to 30 V dc or that portable power supply is set for 21 to 30 V dc.

Connect reader to battery or correct power supply (21 to 30 V dc).

Step 2. If DPM reading is below 200, recheck the reading after each of the following actions. If failure persists, notify organizational maintenance.

If applicable, set selector switch to OFF position and ensure that vehicle power supply is rated at 21 to 30 V dc or that portable power supply is set for 21 to 30 V dc.

Set selector switch to OFF position. Ensure that power cable is connected properly and that cable connectors are clean and tightened. Return selector switch to SUPPLY position.

If battery is in use, set selector switch to OFF position. Replace battery in accordance with paragraph 3-4.1. Return selector switch to SUPPLY position.

3. DIGITAL PANEL METER READING DOES NOT LAST FOR 2 TO 4 SECONDS.

Notify general support maintenance.

4. NO LIGHT EXISTS INSIDE DRAWER, BUT DIGITAL PANEL METER LIGHTS WHEN DEPRESS FOR READING SWITCH IS PRESSED.

Step 1. Perform the following action and recheck the light

Turn LAMP control fully counterclockwise and then fully clockwise.

Step 2. If failure persists, notify general support maintenance

Table 3-1.1 Operator Troubleshooting (Continued)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

5. PROPER DIGITAL PANEL METER READINGS CANNOT BE OBTAINED DURING READER ADJUSTMENT

Step 1. Perform the following action and try the adjustment again.

Set selector switch to SUPPLY position and ensure that DPM reading is between 200 and 330. If DPM reading is not between 200 and 330, refer to MALFUNCTION 2.

Step 2. If failure persists, notify general support maintenance.

6. INDICATOR LIGHT DOES NOT COME ON WHEN SWITCH IS SET TO READ POSITION.

Step 1. Set selector switch to SUPPLY position and ensure that DPM reading is between 200 and 330.

If DPM reading is not between 200 and 330, refer to MALFUNCTION 2.

Step 2. If failure persists, notify general support maintenance.

7. DRAWER ASSEMBLY DOES NOT OPEN OR CLOSE EASILY.

Step 1. Perform the following actions and try to close the drawer again.

If dosimeter is installed, reposition dosimeter securely on dosimeter locating plate.

Ensure that drawer is free of foreign objects and that drawer closing block is not obstructing drawer movement.

Step 2. If failure persists, notify general support maintenance.

a. DIGITAL PANEL METER FLASHES WHILE READING DOSIMETER.

Step 1. Perform reader adjustment in accordance with paragraph 2-5.1b.

If failure persists, proceed to step 2.

step 2. Reposition dosimeter in accordance with paragraph 2-6.1a and ensure that dosimeter contacts in drawer assembly are clean (refer to paragraph 3-3.1) and are positioned against dosimeter when drawer cover is closed. (Check by looking through cutout on top of drawer cover).

If failure persists, proceed to step 3.

Table 3-1.1 Operator Troubleshooting (Continued)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
8. DIGITAL PANEL METER FLASHES WHILE READING DOSIMETER (CONTINUED).
step 3. Try reading three more dosimeters from the same batch. If some readings are successful, continue reading dosimeters and record numbers on bases of dosimeters that cannot be read. If display flashes during all three readings, notify your supervisor.
9. DIGITAL PANEL METER SHOWS EXCESSIVE NEGATIVE READING (-10 TO -99).
Refer to MALFUNCTION 8, steps 1 and 2. If failure persists, notify general support maintenance.

Section III. OPERATOR MAINTENANCE PROCEDURES (A3250780)

3-3.1 CLEANING

WARNING

SEVERE ILLNESS or DEATH may result if you fail to observe the following safety precautions. Both DENATURED and ISOPROPYL ALCOHOLS are toxic, volatile, and flammable. Use only in well ventilated areas away from heat or open flame. Avoid ingestion, prolonged breathing of vapor, and contact with skin.

a. Reader Case and Drawer Assembly. Clean the external metal case of light dirt using soap and water. Clean off grease using a small amount of isopropyl alcohol (item 10, Appendix E) on a cloth. Brush any dust or dirt out of the drawer assembly using a soft brush. Clean the inside of the drawer assembly using a lint free cloth dampened with water. In case of extreme contamination, drawer assembly maybe flushed with clean water.

b. Dosimeter Contacts. Gently scrape ice from the dosimeter contacts, if necessary, ensuring that contacts do not become bent, broken, or misaligned. Clean dosimeter contacts with a cloth dampened with isopropyl alcohol.

c. Cables. Clean cables using a cloth dampened with isopropyl alcohol. Cable connectors that are difficult to clean with a cloth should be cleaned with a short bristle brush.

d. Carrying Case. Brush any dirt from carrying case using a stiff bristle brush. Use isopropyl alcohol (item 10, Appendix E) on any spots of grease.

3-4.1 COMPONENT REPLACEMENT.

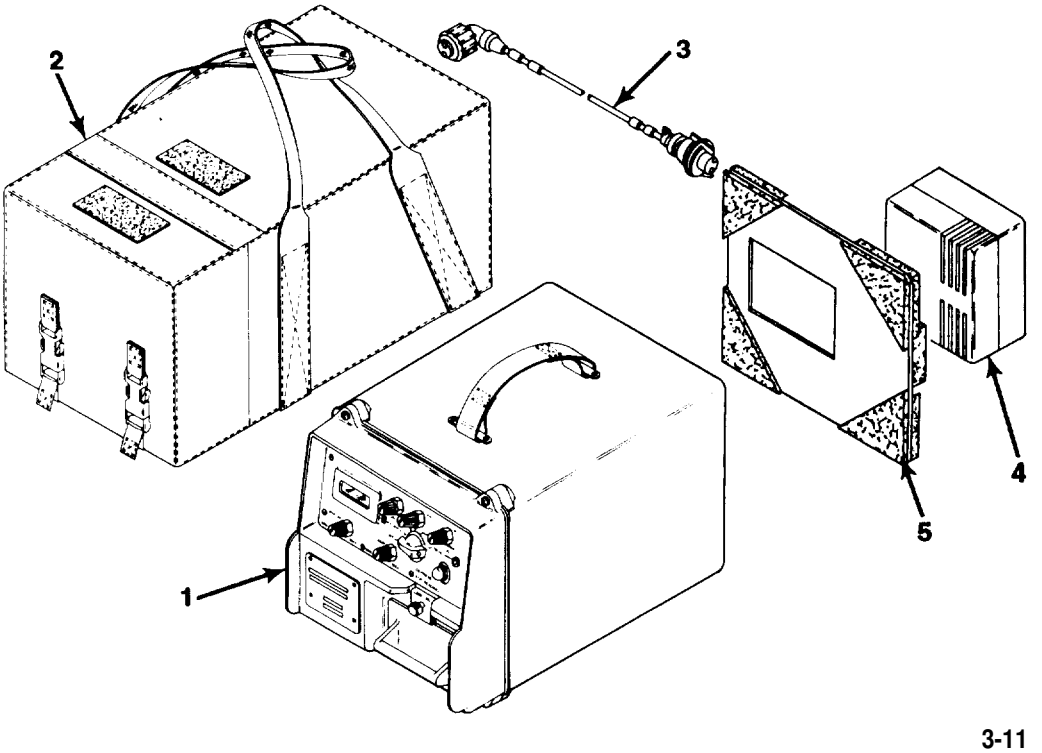
a. Battery Replacement.

1. Refer to paragraph 2-5.1a for removal of reader (1), and carrying case base (5) from carrying case (2).

WARNING

LITHIUM BATTERIES

Lithium batteries used with the Radiac Set AN/PDR-75 contain sulfur dioxide and may explode if handled improperly. Do not short circuit, incinerate, mutilate, or attempt to charge these batteries. Serious injury to personnel may result from failure to comply with this warning.



2. Remove old battery (4) and carrying case base (5) and disconnect battery cable (3) if applicable.

3. Install new battery (item 1, Appendix E) and original battery cable (3) in bottom of carrying case base (2). Route battery cable (3) through carrying case base (5) to battery (4) and reader (1) as required.

4. Replace carrying case base (5) and battery (4) in carrying case (2).

5. Reinstall reader (1) in carrying case (2) as a unit.

PART SEVEN

CHAPTER 4

ORGANIZATIONAL MAINTENANCE (C5085500)

Section I. REPAIR PARTS, SPECIAL TOOLS, AND TMDE (C5085500)

4-1. COMMON TOOLS AND EQUIPMENT.

Authorized common tools and equipment are listed in the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

4-2. SPECIAL TOOLS AND TMDE

Special tools and TMDE are listed in Appendix B in this manual, and in TM 11-6665-236-40P.

4-3. REPAIR PARTS.

Repair parts are listed and illustrated in TM 11-6665-236-20P covering organizational maintenance for this equipment.

Section II. SERVICE UPON RECEIPT (C5085500)

4-4. GENERAL

There are no special unpacking requirements for the Radiac Set AN/PDR-75.

4-5. CHECKING UNPACKED EQUIPMENT.

Follow preparation for use instructions in paragraph 2-5. prior to using the Radiac Set AN/PDR-75. Check unpacked equipment in accordance with the routine checks in paragraph 2-4.

4-6. SITE AND SHELTER REQUIREMENTS.

The Radiac Set AN/PDR-75 must be operated in an environment conforming to the requirements for temperature and humidity as outlined in paragraph 1-13. The radiac set requires readjustment during use whenever the ambient temperature changes more than 5°F (2.8°C). Optimum results will be achieved when the radiac set is operated in an environment in which the temperature can be expected to remain relatively stable.

NOTE

The radiac set should not be operated in close proximity to high power transmitters or incorrect readings may result.

Section III. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)(C5085500)

There is no PMCS scheduled for the Radiac Set AN/PDR-75 at the organizational level. To ensure that the radiac set is always ready for operation, it is inspected systematically so that defects may be discovered and corrected before they result in serious damage or failure, Perform routine checks (refer to paragraph 2-4 when possible during organizational maintenance procedures and correct defects as necessary, Record all deficiencies and corrective actions taken on DA Form 2404.

Section IV. ORGANIZATIONAL TROUBLESHOOTING PROCEDURES (C5085500)

4-7. GENERAL

Table 4-1 lists common malfunctions which may occur during operation or maintenance of the Radiac Set AN/PDR-75. Perform the tests or inspections and corrective actions in the order listed.

The following troubleshooting table cannot list all possible malfunctions, tests or inspections, or corrective actions. If a malfunction is not listed or cannot be corrected by performing the tests or inspections and corrective actions provided, notify your supervisor.

After performing CORRECTIVE ACTION, ensure that the MALFUNCTION has been eliminated.

4-8. TROUBLESHOOTING

Table 4-1. Troubleshooting

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION	
1. DIGITAL PANEL METER DOES NOT LIGHT WHEN DEPRESS FOR READING SWITCH IS DEPRESSED	
Step 1.	Check that power supply is 21 to 30 V dc. Replace or repair power supply.
	NOTE If fuses blow persistently, notify general support maintenance.
step 2.	Check continuity of fuses FS1 and FS2 in accordance with paragraph 4-9. Replace fuses FS1 or FS2, as necessary, in accordance with paragraph 4-9.
Step 3.	Check continuity of vehicle cable, battery cable, or power supply cable as necessary, in accordance with paragraph 4-9. Replace vehicle cable, battery cable, or power supply cable as necessary, in accordance with paragraph 4-9.
Step 4.	If failure persists, notify general support maintenance.
2. DIGITAL PANEL METER READING IS NOT BETWEEN 200 AND 330 WHEN SELECTOR SWITCH IS SET TO SUPPLY POSITION.	
Step 1.	Check that power supply is 21 to 30 V dc Replace or repair power supply.
Step 2.	If failure persists, notify general support maintenance.

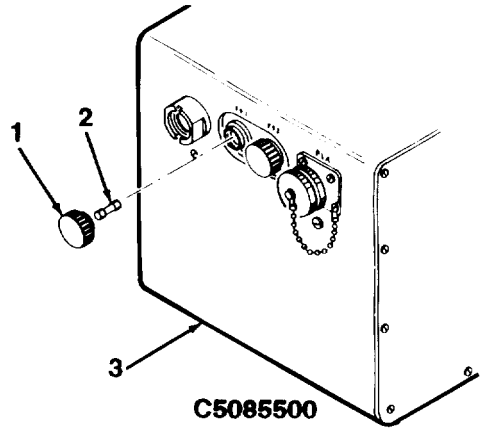
Section V. ORGANIZATIONAL MAINTENANCE PROCEDURES (C5085500)

4-9. REPAIR OF RADIAC SET.

a. General. Repair of the Radiac Set AN/PDR-75 at the organizational level is indicated by the above paragraph and page listing and the maintenance allocation chart in Appendix B.

b. **Fuses.** Repair fuses FS1 and FS2 as follows:

1. Remove fuse cap (1) and fuse (2) from the reader (3).



2. Using multimeter AN/PSM-45 or equivalent, check continuity of fuses FS1 and FS2.

3. Replace fuses FS1 and FS2 as necessary (See Appendix E).

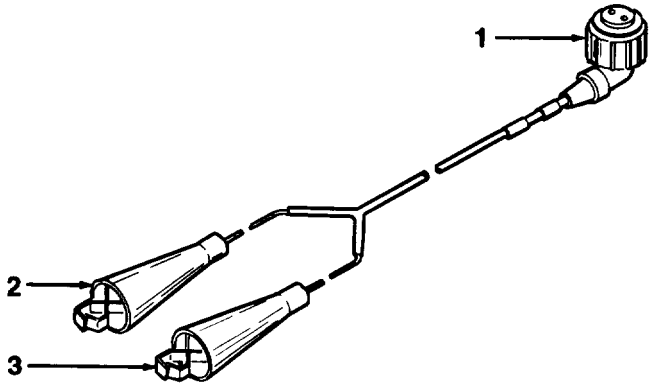
4. Replace fuse cap if damaged.

5. With fuse (2) installed in fuse cap (1), install the fuse and cap assembly in the reader (3).

c. Vehicle Cable. Repair the vehicle cable as follows

1. Disconnect the vehicle cable from the reader and vehicle power source.

2. Using multimeter AN/PSM-45 or equivalent, check for continuity between pin A of the PLA plug connector (1) and the red shrouded clip (2) at the other end of the cable.



3. Using multimeter AN/PSM-45 or equivalent, check for continuity between pin B of the PLA plug connector (1) and the black shrouded clip (3) at the other end of the cable.

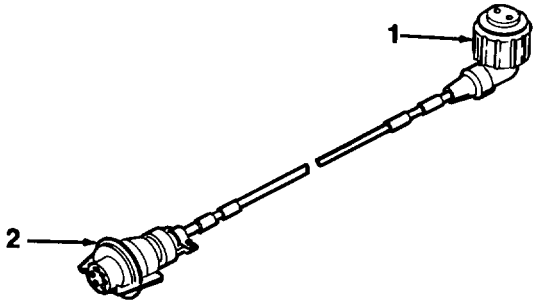
4. Using multimeter AN/PSM-45 or equivalent, check that no continuity exists between red shrouded clip (2) and black shrouded clip (3).

5. Replace the vehicle cable if continuity was not indicated in steps 2 or 3, above, or if continuity was detected in step 4.

d. Battery Cable. Repair the battery cable as follows:

1. Disconnect the battery cable from the reader and the lithium battery.

2. Using multimeter AN/PSM-45 or equivalent, check for continuity between pin A of the PLA plug connector (1) and pin 4 of the 24 V DC SUPPLY connector (2) at the other end of the cable.



3. Using multimeter AN/PSM-45 or equivalent, check for continuity between pin B of the PLA plug connector (1) and pin 2 of the 24 V DC SUPPLY connector (2) at the other end of the cable.

4. Using multimeter AN/PSM-45 or equivalent, check for continuity between pins 1 and 5 of the 24 V DC SUPPLY connector (2).

5. Replace the battery cable if continuity was not indicated in steps 2, 3, or 4 above.

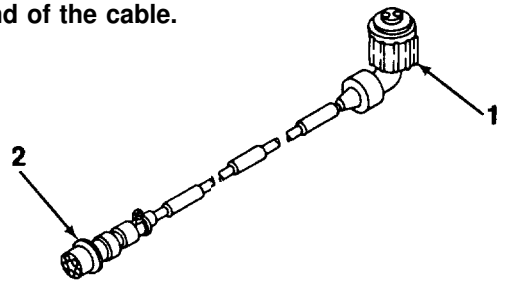
6. Using multimeter AN/PSM-45 or equivalent, check that no continuity exists between pins 2 and 4 of the 24 V DC SUPPLY connector (2).

7. Replace the battery cable if continuity was indicated in step 6, above.

e. Power Supply Cable. Repair the power supply cable as follows

1. Disconnect the power supply cable from the reader and the chemical agent automatic alarm (M10A1) power supply.

2. Using multimeter AN/PSM-45 or equivalent, check for continuity between pin A of the PLA plug connector (1) and pin B of the power supply connector (2) at the end of the cable.



3. Using multimeter AN/PSM-45 or equivalent, check for continuity between pin B of the PLA plug connector (1) and pin E of the power supply connector (2) at the other end of the cable.

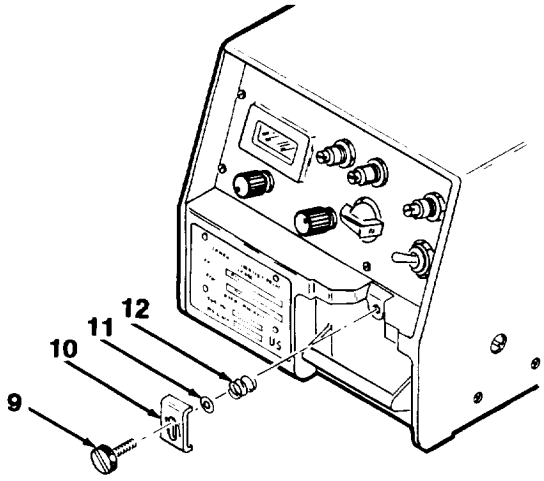
4. Replace the power supply cable if continuity was not indicated in step 2 or 3, above.

5. Using multimeter AN/PSM-45 or equivalent, check that no continuity exists between pins B and E of the power supply connector (2).

6. Replace the power supply cable if continuity was indicated in step 5, above.

f. Drawer Block and Screw Replacement.

1. Remove screw (9), block (10), washer (11), and spring (12) from reader.



NOTE

Ensure that the block (10) installed in the following step is installed so that the larger end rests against the reader body and the smaller end rests against the drawer cover.

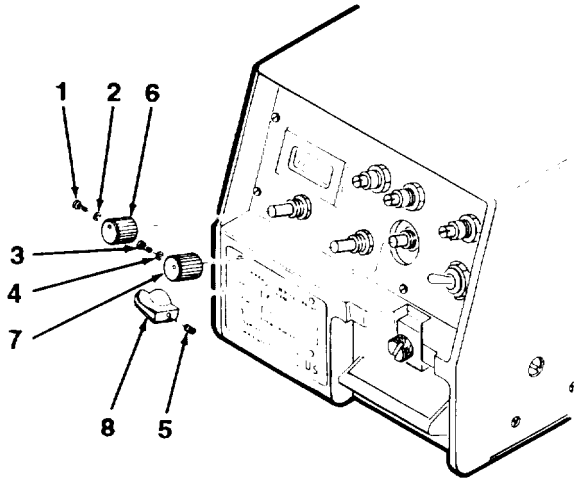
2. Stack new block (10), washer (11), and spring (12) onto new screw (9) and install all four components in the reader as a unit.

g. Front Panel Knob Replacement.

NOTE

There is no washer associated with the selector switch knob.

1. **Remove setscrew (1, 3, or 5) and washer (2 or 4) from appropriate knob (6, 7, or 8).**



2. **Pull knob (6, 7, or 8) off of front panel.**

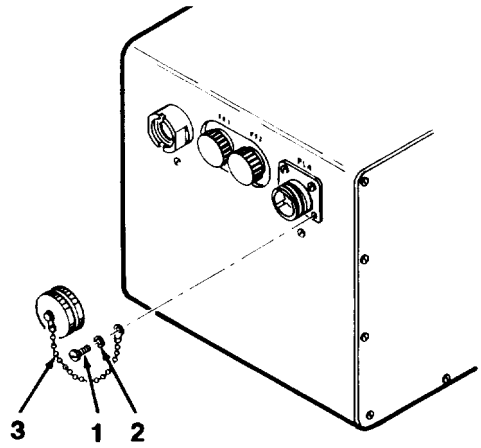
NOTE

Ensure that replacement selector switch knob DISPLAY control knob, and LAMP control knob are oriented properly on their respective shafts before performing step 3.

3. **Install replacement knob (6, 7, or 8) using washer (2 or 4) and setscrew (1, 3, and 5) as applicable. Tighten setscrew**

h. Plug PLA Cap Replacement.

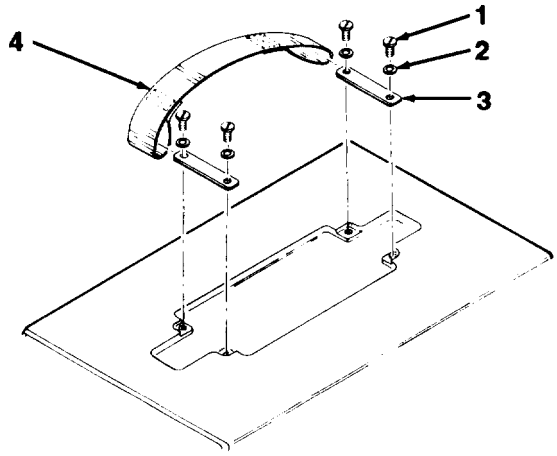
1. Remove screw (1) and washer (2) attaching cap chain (3) to reader.



2. Attach new cap chain (3) to reader using screw (1) and washer (2).

i. Carrying Strap Replacement.

1. Remove four screws (1) and washers (2) holding two bars (3) in place.

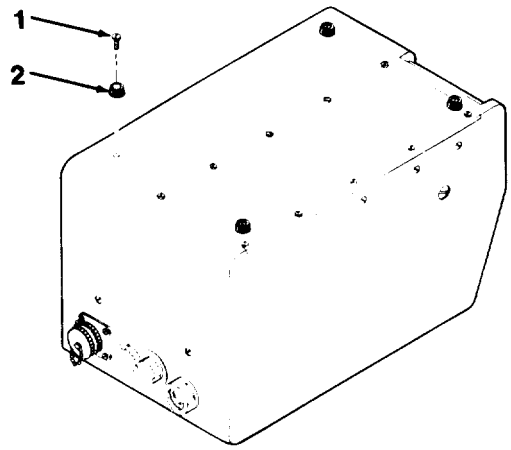


2. Slide bars (3) out of old carrying strap (4)

3. Slide bars (3) into replacement carrying strap (4) and attach handle to reader using four screws (1) and washers (2).

j. Rubber Foot Replacement.

1. Remove screw (1) and rubber foot (2) from bottom of reader.



2. Press screw (1) into new rubber foot (2) and install the two as a unit. Tighten screw, ensuring that it is snugly seated in the new rubber foot.

4-10. CLEANING.

Refer to paragraph 3-3 for instructions on cleaning the Radiac Set AN/PDR-75.

4-11. PAINTING.

NOTE

Do not paint undamaged surface areas or parts of the reader such as knobs or digital panel meter (DPM) display glass that were not painted to begin with.

Painting of the Radiac Set AN/PDR-75 at the organizational level is limited to touch-up painting of the reader. Inspect painted surfaces of the reader for damage and clean damaged surfaces in accordance with cleaning instructions in paragraph 3-3. Prepare damaged reader surfaces for painting by lightly sanding these areas with sandpaper (item 8, Appendix E). Apply two light coats of paint (item 7, Appendix E), allowing the paint to dry between coats. Refer to TB 43-0118, Field Instructions for Painting and Preserving Electronics Command Equipment.

Section VI. PREPARATION FOR STORAGE OR SHIPMENT (C5085500)

4-12. PREPARATION FOR STORAGE.

Perform the following steps prior to storing the Radiac Set AN/PDR-75.

a. Perform the routine checks of the Radiac Set listed in paragraph 2-4., then follow preparation for operation instructions in paragraph 2-5. to ensure that the Radiac Set is operational.

CAUTION

The lithium battery must be removed from the Radiac Set prior to storage or shipment since prolonged storage with the lithium battery installed may damage the equipment.

b. Remove the lithium battery from the battery and connector case in accordance with paragraph 3-4.

c. Install the reader, battery and connector case, cover plate assembly and removal strap, vehicle cable, battery cable, and power supply cable in the carrying case in accordance with paragraph 2-6b.

4-13. PREPARATION FOR SHIPMENT.

Perform the following steps prior to shipping the Radiac Set AN/PDR-75:

a. Remove the lithium battery from the connector case in accordance with paragraph 3-4.

b. Install the reader, battery and connector case, cover plate assembly and strap, vehicle cable, battery cable, and power supply cable in the carrying case in accordance with paragraph 2-6b.

PART EIGHT
CHAPTER 4
ORGANIZATIONAL MAINTENANCE (A3250780)

Section I. REPAIR PARTS, SPECIAL TOOLS, AND TMDE (A3250780)

4-1.1 COMMON TOOLS AND EQUIPMENT.

Authorized common tools and equipment are listed in the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

4-2.1 SPECIAL TOOLS AND TMDE

Special tools and TMDE are listed in Appendix B in this manual, and in TM 11-6665-236-40P.

4-3.1 REPAIR PARTS.

Repair parts are listed and illustrated in TM 11-6665-236-20P covering organizational maintenance for this equipment.

Section II. SERVICE UPON RECEIPT (A3250780)

4-4.1 GENERAL

There are no special unpacking requirements for the Radiac Set AN/PDR-75.

4-5.1 CHECKING UNPACKED EQUIPMENT.

Follow preparation for use instructions in paragraph 2-5.1 prior to using the Radiac Set AN/PDR-75. Check unpacked equipment in accordance with the routine checks in paragraph 2-4.1.

4-6.1 SITE AND SHELTER REQUIREMENTS.

The Radiac Set AN/PDR-75 must be operated in an environment conforming to the requirements for temperature and humidity as outlined in paragraph 1-13.1. The radiac set requires readjustment during use whenever the ambient temperature changes more than 5°F (2.8°C). Optimum results will be achieved when the radiac set is operated in an environment in which the temperature can be expected to remain relatively stable.

NOTE

The radiac set should not be operated in close proximity to high power transmitters or incorrect readings may result.

Section III. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) (A3250780)

There is no PMCS scheduled for the Radiac Set AN/PDR-75 at the organizational level. To ensure that the radiac set is always ready for operation, it is inspected systematically so that defects may be discovered and corrected before they result in serious damage or failure. Perform routine checks (refer to paragraph 2-4.1 when possible during organizational maintenance procedures and correct defects as necessary. Record all deficiencies and corrective actions taken on DA Form 2404.

Section IV. ORGANIZATIONAL TROUBLESHOOTING PROCEDURES (A3250780)

4-7.1 GENERAL

Table 4-1.1 lists common malfunctions which may occur during operation or maintenance of the Radiac Set AN/PDR-75. Perform the tests or inspections and corrective actions in the order listed.

The following troubleshooting table cannot list all possible malfunctions, tests or inspections, or corrective actions. If a malfunction is not listed or cannot be corrected by performing the tests or inspections and corrective actions provided, notify your supervisor.

After performing CORRECTIVE ACTION, ensure that the MALFUNCTION has been eliminated.

4-8.1 TROUBLESHOOTING

Table 4-1.1 Troubleshooting

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
1. DIGITAL PANEL METER DOES NOT LIGHT WHEN DEPRESS FOR READING SWITCH IS DEPRESSED
Step 1. Check that power supply is 21 to 30 V dc. Replace or repair power supply.
NOTE If fuses blow persistently, notify general support maintenance.
Step 2. Check continuity of fuses FS1 and FS2 in accordance with paragraph 4-9.1. Replace fuses FS1 or FS2, as necessary, in accordance with paragraph 4-9.1.
step 3. Check continuity of vehicle cable, battery cable, or power supply cable as necessary, in accordance with paragraph 4-9.1. Replace vehicle cable, battery cable. or power supply cable as necessary, in accordance with paragraph 4-9.1.
Step 4. If failure persists, notify general support maintenance.
2. DIGITAL PANEL METER READING IS NOT BETWEEN 200 AND 330 WHEN SELECTOR SWITCH IS SET TO SUPPLY POSITION.
Step 1. Check that power supply is 21 to 30 V dc Replace or repair power supply
Step 2. If failure persists, notify general support maintenance.

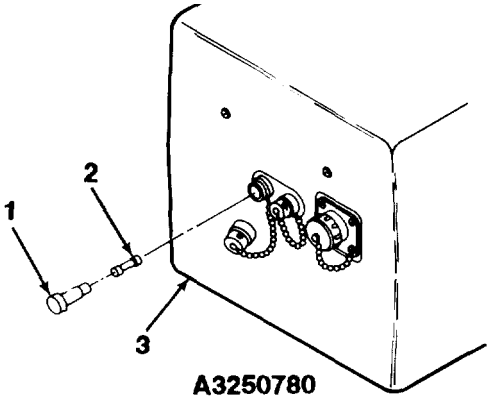
Section V. ORGANIZATIONAL MAINTENANCE PROCEDURES (A3250780)

4-9.1 REPAIR OF RADIAC SET.

a. **General.** Repair of the Radiac Set AN/PDR-75 at the organizational level is indicated by the above paragraph and page listing and the maintenance allocation chart in Appendix B.

b. **Fuses.** Repair fuses FS1 and FS2 as follows:

1. Remove fuse cap (1) and fuse (2) from the reader (3).



2. Using multimeter AN/PSM-45 or equivalent, check continuity of fuses FS1 and FS2.

3. Replace fuses FS1 and FS2 as necessary (See Appendix E).

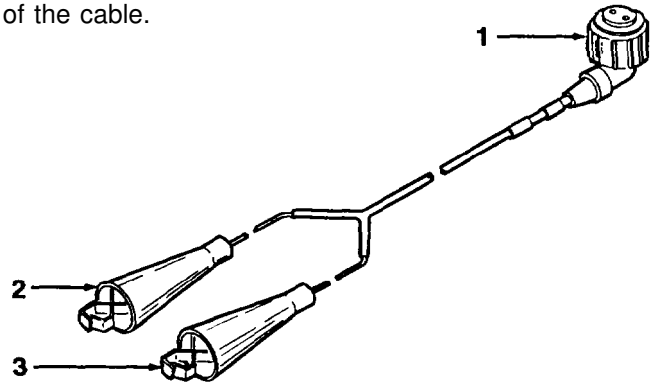
4. Replace fuse cap if damaged.

5, With fuse (2) installed in fuse cap (1), install the fuse and cap assembly in the reader (3).

c. Vehicle Cable. Repair the vehicle cable as follows:

1. Disconnect the vehicle cable from the reader and vehicle power source.

2. Using multimeter AN/PSM-45 or equivalent, check for continuity between pin A of the PLA plug connector (1) and the red shrouded clip (2) at the other end of the cable.



3. Using multimeter AN/PSM-45 or equivalent, check for continuity between pin B of the PLA plug connector (1) and the black shrouded clip (3) at the other end of the cable.

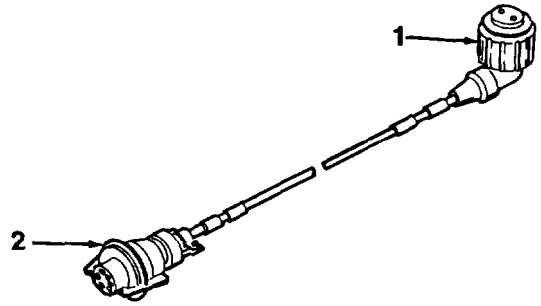
4. Using multimeter AN/PSM-45 or equivalent, check that no continuity exists between red shrouded clip (2) and black shrouded clip (3).

5. Replace the vehicle cable if continuity was not indicated in steps 2 or 3, above, or if continuity was detected in step 4.

d. Battery Cable. Repair the battery cable as follows:

1. Disconnect the battery cable from the reader and the lithium battery.

2. Using multimeter AN/PSM-45 or equivalent, check for continuity between pin A of the PLA plug connector (1) and pin 4 of the 24 V DC SUPPLY connector (2) at the other end of the cable.



3. Using multimeter AN/PSM-45 or equivalent, check for continuity between pin B of the PLA plug connector (1) and pin 2 of the 24 V DC SUPPLY connector (2) at the other end of the cable.

4. Using multimeter AN/PSM-45 or equivalent, check for continuity between pins 1 and 5 of the 24 V DC SUPPLY connector (2).

5. Replace the battery cable if continuity was not indicated in steps 2, 3, or 4 above.

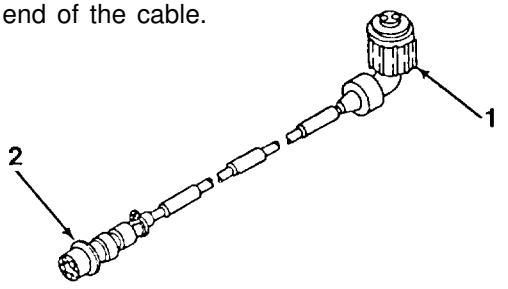
6. Using multimeter AN/PSM-45 or equivalent, check that no continuity exists between pins 2 and 4 of the 24 V DC SUPPLY connector (2).

7. Replace the battery cable if continuity was indicated in step 6, above.

e. **Power Supply Cable.** Repair the power supply cable as follows:

1. Disconnect the power supply cable from the reader and the chemical agent automatic alarm (M10A1) power supply.

2. Using multimeter AN/PSM-45 or equivalent, check for continuity between pin A of the PLA plug connector (1) and pin B of the power supply connector (2) at the end of the cable.



3. Using multimeter AN/PSM-45 or equivalent, check for continuity between pin B of the PL4 plug connector (1) and pin E of the power supply connector (2) at the other end of the cable.

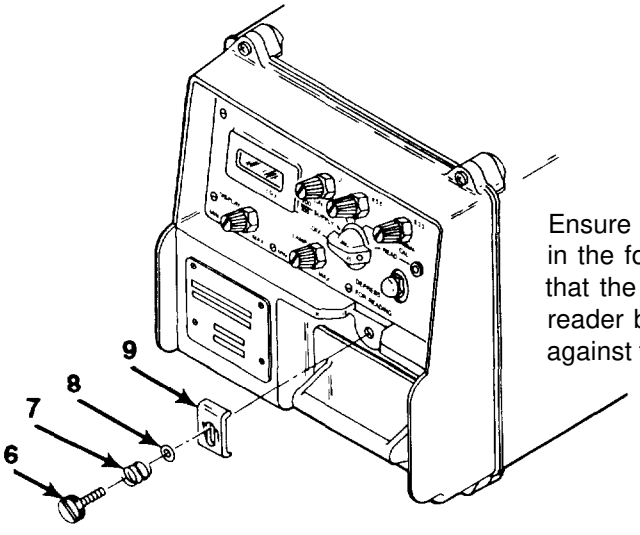
4. Replace the power supply cable if continuity was not indicated in step 2 or 3, above.

5. Using multimeter AN/PSM-45 or equivalent, check that no continuity exists between pins B and E of the power supply connector (2).

6. Replace the power supply cable if continuity was indicated in step 5, above.

f. **Drawer Block and Screw Replacement.**

1. Remove screw (6), spring (7), washer (8), and block (9) from reader.



NOTE

Ensure that the block (9) installed in the following step is installed so that the larger end rests against the reader body and the smaller end rests against the drawer cover.

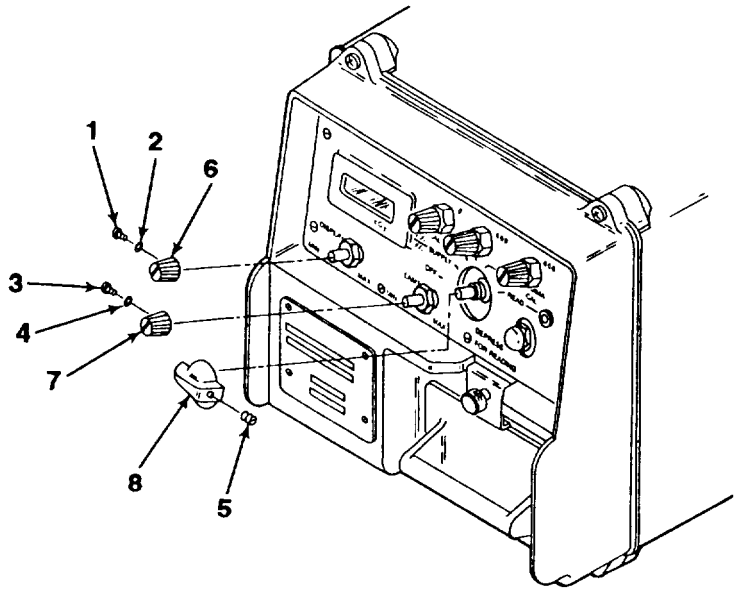
2. Stack new block (9), washer (8), and spring (7) onto new screw (6) and install all four components in the reader as a unit.

g. **Front Panel Knob Replacement.**

NOTE

There is no washer associated with the selector switch knob.

1. Remove setscrew (1, 3, or 5) and washer (2 or 4) from appropriate knob (6, 7, or 8).



2. Pull knob (6, 7, or 8) off of front panel.

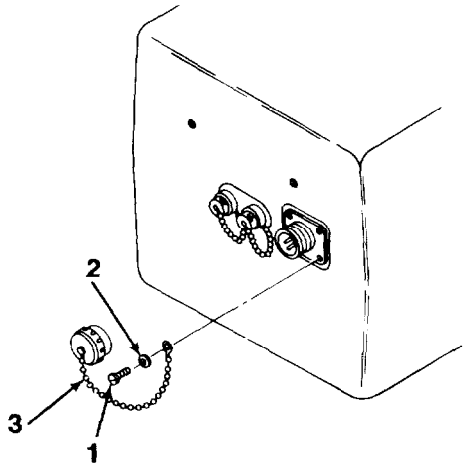
NOTE

Ensure that replacement selector switch knob DISPLAY control knob, and LAMP control knob are oriented properly on their respective shafts before performing step 3.

3. Install replacement knob (6, 7, or 8) using washer (2 or 4) and setscrew (1, 3, and 5) as applicable. Tighten setscrew.

h. **Plug PLA Cap Replacement.**

1. Remove screw (1) and washer (2) attaching cap chain (3) to reader.



2. Attach new cap chain (3) to reader using screw (1) and washer (2).

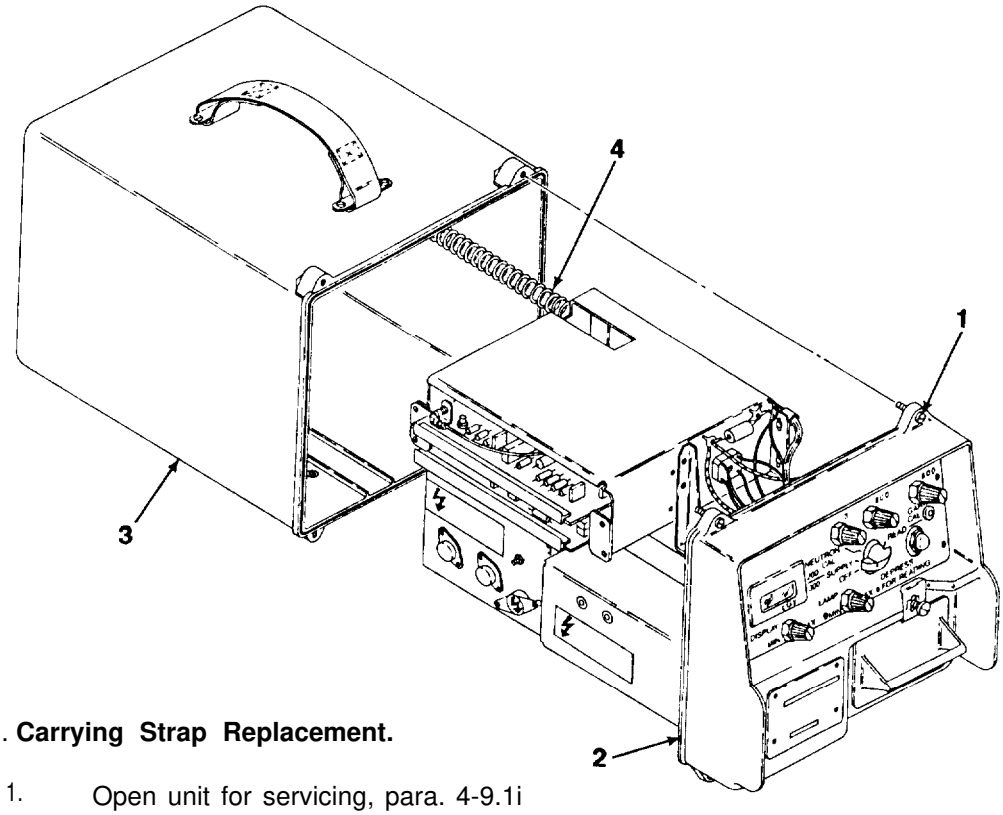
i. **Opening unit for servicing.**

WARNING

Turn power off and remove reader from its metal case, when internal electronic components are exposed for repair or calibration during maintenance procedures, wait at least 1 minute before touching reader. This procedure is required to ensure that the high voltage capacitor within the flash unit has time to discharge. Failure to do so may result in death or serious injury.

1. Place reader on a clean work surface in its normal operating position. Ensure that the selector switch is set to OFF and that reader is disconnected from 21 to 30 V dc power supply.

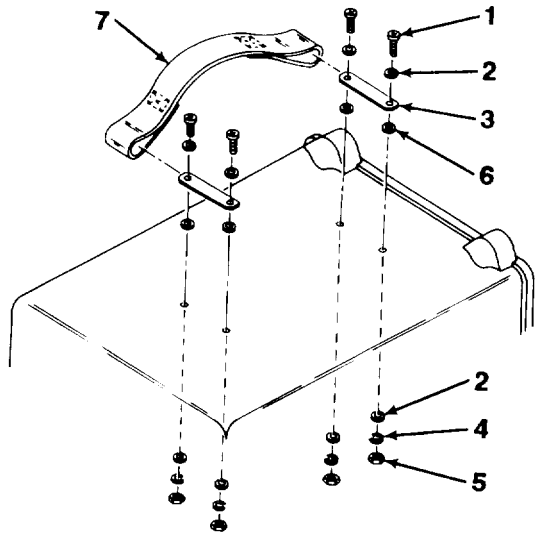
2. Open unit by loosening 4 captive screws (1) that secure chassis assembly (2) to housing (3). Slide chassis assembly out of housing, completely, without overstressing coil cord (4).



j. **Carrying Strap Replacement.**

1. Open unit for servicing, para. 4-9.1i

2. Remove four screws (1), flat washers (2), metal lock washers (4), hex nuts (5) flat plastic washers (6) holding two bars (3) in place.



3. Slide bars (3) out of old carrying strap (7).

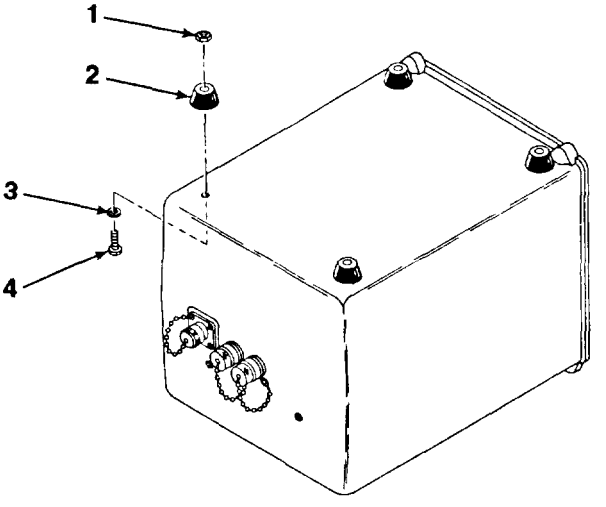
4. Slide bars (3) into replacement carrying strap (7) and attach handle to reader using four screws (1) flat washers (2), metal lock washers (4) hex nuts (5) and flat plastic washers (6).

5. Close unit after servicing, para. 4-9.11.

k. **Rubber Foot Replacement.**

1. Open unit for servicing, para. 4-9.1i.

2. Remove screw (4) and plastic flat washer (3), hex nut (1) and rubber foot (2) from bottom of reader.

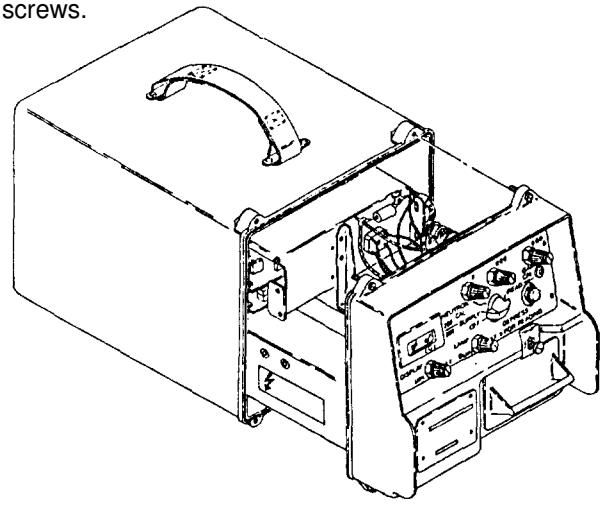


3. Replace foot by installing screw, (4), using plastic flat washer (3), from inside of reader, into new rubber foot (2), and hex nut (1).

4. Close unit after servicing, para. 4-9.11.

l. **Closing unit after servicing.**

1. Carefully set reader upright, slide into housing, and tighten 4 captive screws.



4-10.1 CLEANING.

Refer to paragraph 3-3.1 for instructions on cleaning the Radiac Set AN/PDR-75.

4-11.1 PAINTING.

NOTE

Do not paint undamaged surface areas or parts of the reader such as knobs or digital panel meter (DPM) display glass that were not painted to begin with.

Painting of the Radiac Set AN/PDR-75 at the organizational level is limited to touch-up painting of the reader. Inspect painted surfaces of the reader for damage and clean damaged surfaces in accordance with cleaning instructions in paragraph 3-3.1 Prepare damaged reader surfaces for painting by lightly sanding these areas with sandpaper (item 8, Appendix E). Apply two light coats of paint (item 7, Appendix E), allowing the paint to dry between coats. Refer to TB 43-0118, Field Instructions for Painting and Preserving Electronics Command Equipment.

Section VI. PREPARATION FOR STORAGE OR SHIPMENT (A3250780)

4-12.1 PREPARATION FOR STORAGE. (A3250780)

Perform the following steps prior to storing the Radiac Set AN/PDR-75.

a. Perform the routing checks of the radiac set listed in paragraph 2-4.1, then follow preparation for operation instructions in paragraph 2-5.1 to ensure that the radiac set is operational.

CAUTION

The lithium battery must be removed from the radiac set prior to storage or shipment since prolonged storage with the lithium battery installed may damage the equipment.

b. Remove the lithium battery from the carrying case in accordance with paragraph 3-4.1.

c. Install the reader, carrying case base, vehicle cable, battery cable, and power supply cable in the carrying case in accordance with paragraph 2-6.1 b.

4-13.1 PREPARATION FOR SHIPMENT.

Perform the following steps prior to shipping the Radiac Set AN/PDR-75:

a. Remove the lithium battery from the carrying case in accordance with paragraph 3-4.1.

b. Install the reader, carrying case base, vehicle cable, battery cable, and power supply cable in the carrying case in accordance with paragraph 2-6.1.b

PART NINE

APPENDIX A

REFERENCES

A-1 . SCOPE

This appendix lists all forms and publications referenced in this manual.

A-2. FORMS

Recommended Changes to Publications and Blank Forms . . . . . DA Form 2028

Equipment Inspection and Maintenance Worksheet . . . . . DA Form 2404

Discrepancy in Shipment Report (DISREP) . . . . . SF 361

Report of Discrepancy (ROD) . . . . . SF 364

Quality Deficiency Report . . . . . SF 368

A-3. FIELD MANUALS

First Aid for Solders . . . . . FM 21-11

A-4. MILITARY STANDARDS

Abbreviations for Use on Drawings, Specifications, Standards and in Technical Documents MIL-STD-12

A-5. MISCELLANEOUS PUBLICATIONS

Expendable/Durable Items (Except: Medical, Class V Repair Parts and Heraldic sterns . . . . . CTA 50-970

Consolidated Index of Army Publications and Blank Forms . . . . . DA Pam 25-30

The Army Maintenance Management System (TAMMS) . . . . . DA Pam 738-750

A-6. TECHNICAL BULLETINS

Field Instructions for Painting and Preserving Electronics Command Equipment Including Camouflage Pattern Painting of Electrical Equipment Shelters . . . . . TB 43-0118

A-7. TECHNICAL MANUALS

Calibration Procedure for Radiac Set AN/PDR-75 . . . . . TB 9-6665-286-35

Operator's and Organizational Maintenance Manual, Including Repair Parts and Special Tools List for M8A1 Automatic Chemical Agent Alarm (NSN 6665-01-105-5623) and Auxiliary Equipment M10 Power Supply (NSN 6665-00-859-2225): M10A1 Power Supply (NSN 6665-00-093-2739); M228 High Profile Mounting Kit (NSN 6665-00-859-2212) and Ml 82 Low Profile Mounting Kit (NSN 6665-00-110-9492) . . . . . ., TM 3-6665 -312-12 & P

APPENDIX A (CONT.)

Organizational Maintenance Repair Parts and Special Tools List for Radiac Set AN/PDR-75 . . . . . TM 11-6665-236-20P

General Support Maintenance Repair Parts and Special Tools for Radiac Set AN/PDR-75 . . . . . TM 11-6665-236-40P

General Support Maintenance Manual for Radiac Set AN/PDR-75 . . . . TM 11-6665-236-40

Operator's, Organizational, Direct Support, and General Support Maintenance Manual for Multimeter AN/PSM-45 (6625-01-139-2515) . . . . . TM 11-6665-3052-14

Procedures for Destruction of Electronics Materiel to Prevent Enemy Use (Electronics Command) . . . . TM 750-244-2

PART TEN
APPENDIX B
MAINTENANCE Allocation CHART

Section I. INTRODUCTION

B-1. GENERAL.

a. This section provides a general explanation of all maintenance and repair functions authorized at various maintenance categories.

b. The Maintenance Allocation Chart (MAC) in Section II designates overall responsibility for the performance of maintenance functions on the identified end item or component. The implementation of the maintenance functions upon the end item or component will be consistent with the assigned maintenance function.

c. Section III lists the special tools and test equipment required for each maintenance function as referenced from Section II.

d. Section IV contains supplemental instructions and explanatory notes for a particular maintenance function as referenced from Section II.

B-2. MAINTENANCE FUNCTION.

Maintenance functions will be limited to and defined as follows:

a. **Inspect.** To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination.

b. **Test.** To verify serviceability by measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. **Service.** Operations required periodically to keep an item in proper operating condition, i.e., to clean (includes decontaminate, when required) to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, hydraulic fluids, compressed air supplies or gases.

d. **Adjust.** To maintain within prescribed limits, by bringing into proper or exact position, or by setting the operating characteristics to specified parameters.

e. **Align.** To adjust specified variable elements of an item to bring about optimum or desired performance.

f. **Calibrate.** To determine and cause corrections to be made or to be adjusted on instruments or test, measuring, and diagnostic equipments used in precision measurement. Consists of comparisons 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.

g. **Install.** The act of emplacing, seating, or fixing into position an item, part, or module (component or assembly) in a manner to allow the proper functioning of an equipment or system.

h. **Replace.** The act of substituting a serviceable like type part, subassembly or module (component or assembly) for an unserviceable counterpart.

i. **Repair.** The application of maintenance services[1] or other maintenance actions[2] to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly) end item or system.

j. **Overhaul.** That maintenance effort (service/action) necessary to restore an item to a completely serviceable/operational condition as prescribed by maintenance standards in appropriate technical publications (i.e., DMWR). Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

k. **Rebuild.** Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of material maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours/miles, etc.) considered in classifying Army equipment/components.

B-3. EXPLANATION OF COLUMNS IN THE MAC, SECTION II.

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

b. **Column 2, Component/Assembly.** Column 2 contains the names of components, assemblies, subassemblies, and modules on which maintenance is authorized.

c. **Column 3, Maintenance Function.** Column 3 lists functions to be performed on the item listed in Column 2. (For detailed explanation of these functions, see paragraph B-2).

d. **Column 4, Maintenance Category.** Column 4 specifies, by the listing of a work time figure in the appropriate subcolumns, the lowest level category of maintenance authorized to perform the function listed in Column 3. This figure represents the active time required to perform that maintenance function at the indicated category of maintenance. If the number or complexity of the tasks within the listed maintenance function vary at different maintenance categories, appropriate work time figures will be shown for each category. The work time figure represents the average time in hours required to restore an item (assembly, subassembly, component, module, end item, or system) to a serviceable condition under typical field operating conditions. This includes preparation time, troubleshooting time, and quality assurance/quality control time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the maintenance allocation chart. The symbol designations for the various categories are as follows:

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[1]Services - inspect, test, service, adjust, align, calibrate, or replace.

[2]Actions - welding, grinding, riveting, straightening, facing, remachining, or resurfacing.

C - Operator or crew
O - Unit maintenance
F - Direct support maintenance
H - General support maintenance
D - Depot maintenance

e. **Column 5, Tools and Test Equipment.** Column 5 specifies, by code, those common tool sets (not individual tools) and special tools, TMDE, and support equipment required to perform the designated function. The code in this column is keyed to the tool and test equipment list in Section III.

f. **Column 6, Remarks.** Column 6 contains, when applicable, a code, which is keyed to the remarks contained in Section IV.

B-4. EXPLANATION OF COLUMNS IN TOOL AND TEST EQUIPMENT REQUIREMENTS, SECTION III.

a. **Column 1, Tool or Test Equipment Reference Code.** The tool and test equipment reference code correlates with a code used in the MAC, Section II, Column 5.

b. **Column 2, Maintenance Category.** The lowest level category of maintenance authorized to use the tool or test equipment.

c. **Column 3, Nomenclature.** Name or identification of the tool or test equipment.

d. **Column 4, National/Nato Stock Number.** The national stock number of the tool or test equipment.

e. **Column 5, Tool Number.** The manufacturer's part number.

B-5. EXPLANATION OF COLUMNS IN REMARKS, SECTION IV.

a. **Column 1, Reference Code.** The code listed in Column 6, Section II.

b. **Column 2, Remarks.** This column lists information pertinent to the maintenance function being performed as indicated in the MAC, Section II.

Section II. MAINTENANCE ALLOCATION CHART (C5085500 and A3250780)

FOR
RADIAC SET AN/PDR-75

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIPMENT	(6) REMARKS
			UNIT		INTERMEDIATE		DEPOT		
			C	O	F	H	D		
00	RADIAC SET AN/PDR-75	INSPECT	0.1						A
		REPLACE		0.1					
		REPAIR		0.2				1	B
01	RADIAC COMPUTER INDICATOR CP-696/PDR-75	INSPECT	0.1						A
		TEST		0.2				3	C
		TEST				0.5		2,4-8	D
		SERVICE	0.2						E
		SERVICE		0.2					F
		ADJUST	0.2						G
		CALIBRATE				0.8		2,4-8	H
		REPAIR		0.2				1	B
		REPAIR				0.8		2	I
0101	DRAWER ASSEMBLY	INSPECT	0.2						A
		TEST				0.3		4,5,6	J
		ADJUST				0.3		2,4,9	K
		REPLACE				0.5		2,9	
		REPAIR				0.4		2	L
0102	FRONT PANEL WIRING ASSEMBLY	INSPECT				0.6			A
		TEST				1.0		6	M
		REPLACE				1.3		2	
		REPAIR				0.6		2	
010201	FRONT PANEL ASSEMBLY	INSPECT				0.4			A
		TEST				1.0		6,8	N
		REPAIR				0.6		2	O
		REPAIR		0.2				1	B
010202	MOUNTING CASE ASSEMBLY	INSPECT				0.2			A
		REPAIR				0.8		2	P

Section III. TOOL AND TEST EQUIPMENT REQUIREMENTS (C5085500 and A3250780)

FOR RADIAC SET AN/PDR-75

(1) REFERENCE CODE	(2) MAINTENANCE LEVEL	(3) NOMENCLATURE	(4) NATIONAL/NATO STOCK NUMBER	(5) TOOL NUMBER
1	O	TOOL KIT TK-101/G	5180-00-064-5178	
2	H	TOOL KIT TK-105/G	5180-00-610-8177	
3	O	MULTIMETER, AN/PSM-45	6625-01-139-2512	
4	H	MAINTENANCE KIT MK-2512/PDR-75	6665-01-212-0353	
5	H	POWER SUPPLY, PP-3940A/G	6130-00-460-2148	
6	H	DIGITAL MULTIMETER AN/USM-486	6625-01-145-2430	
7	H	TEMPERATURE PROBE	6625-01-085-1580	
8	H	OSCILLOSCOPE AN/USM-488	6625-01-187-7847	
9	H	METRIC HEX KEY SET	5120-01-046-5079	

Section IV. REMARKS
(C5085500 and A3250780)

RADIAC SET AN/PDR-75

REFERENCE CODE	REMARKS
A	VISUAL INSPECTION ONLY.
B	REPAIR AT UNIT LEVEL BY REPLACEMENT OF KNOBS, FUSES, CABLES, PLUG ASSY, (PLA) CAP, CARRYING STRAP ASSY, READER FEET, AND DRAWER TRANSIT LOCK AND SCREW.
C	TEST AT UNIT LEVEL BY PERFORMING CONTINUITY TEST OF CABLES AND FUSES AND INPUT VOLTAGES.
D	TEST AT GS LEVEL BY PERFORMING NEUTRON CALIBRATION MOUNT TEST, INSULATION TEST, BONDING TEST AND EARTH CONTINUITY TEST. THE FOLLOWING COMPONENTS ARE ALSO TESTED: EHT POWER SUPPLY, FLASH UNIT, AMPLIFIER CCA, POWER SUPPLY, CONTROL CCA, MOUNTING CASE ASSY. COMPONENTS (RECTIFIERS, CAPACITORS, AND CONNECTORS), PLA, PLB, PHOTOCELL ASSY AND FUSE HOLDERS.
E	SERVICE AT OPERATOR LEVEL BY REPLACEMENT OF LITHIUM BATTERY.
F	SERVICE AT UNIT LEVEL BY TOUCHUP PAINTING.
G	ADJUSTMENTS AT CREW/OPERATOR LEVEL ARE FRONT PANEL NEUTRON AND GAMMA CALIBRATION.
H	ADJUSTMENTS AT GS LEVEL ARE GAMMA INTERNAL STANDARD, NEUTRON CHANNEL, GAMMA CHANNEL AND -12V ADJUST.
I	REPAIR AT GS LEVEL INCLUDES REPLACEMENT OF THE EHT POWER SUPPLY, FLASH UNIT, PHOTOCELL ASSY, FLASH FILTER ASSY, AMPLIFIER CCA, POWER SUPPLY AND CONTROL CCA, PLUG PLA, PLUG PLB, DRAWER BEARINGS AND FUSE HOLDERS.
J	TEST AT GS LEVEL INCLUDES RETRACTILE CABLE AND CONTACT SPRING PWB/CONNECTOR ASSY AND DRAWER LAMP.
K	ADJUSTMENTS AT GS LEVEL ARE DOSIMETER CONTACTS, DRAWER RUNNERS, STOP AND CAMS.
L	REPAIR AT GS LEVEL INCLUDES REPLACEMENT OF DRAWER LAMP, GAMMA INTERNAL STANDARD, DRAWER RUNNERS, RETRACTILE CABLE AND CONTACT SPRING PWB/CONNECTOR ASSY, DRAWER COVER, DOSIMETER LOCATING PLATE ASSY, AND LIGHT CONTROL FILM ASSEMBLY.
M	TEST AT GS LEVEL INCLUDES WIRING, CABLEFORMS, DIGITAL PANEL METER (DPM), POTENTIOMETERS, RHEOSTATS, DEPRESS FOR READING SWITCH, FUNCTION SELECTOR SWITCH, NEUTRON CALIBRATION BRACKET AND READ LED.
N	TEST AT GS LEVEL INCLUDES DIGITAL PANEL METER (DPM) POTENTIOMETERS, RHEOSTATS, DEPRESS FOR READING SWITCH, NEUTRON CALIBRATION BRACKET AND READ LED.
O	REPAIR AT GS LEVEL BY REPLACEMENT OF DIGITAL PANEL METER (DPM), POTENTIOMETERS, RHEOSTATS, DEPRESS FOR READING SWITCH, FUNCTION SELECTION SWITCH, NEUTRON CALIBRATION BRACKET, FRONT PANEL COVER PLATE AND LIGHT CONTROL ASSEMBLY PANEL.
P	REPAIR AT GS LEVEL BY REPLACEMENT OF COMPONENTS ON MOUNTING CASE ASSY (RECTIFIER, SOLDER TAGS AND CAPACITORS).

PART ELEVEN

APPENDIX C

COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LISTS (C5085500 and A3250780)

Section I. INTRODUCTION

C-1. SCOPE.

This appendix lists components of end item and basic issue items for the AN/PDR-75 Radiac Set to help you inventory items required for safe and efficient operation.

C-2. GENERAL.

The Components of End Item and Basic Issue Items Lists are divided into the following sections:

a. **section II, Components of End Item.** This listing is for information purposes only, and is not authority to requisition replacements. These items are part of the end item, but are removed and separately packaged for transportation or shipment. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Illustrations are furnished to assist you in identifying the items.

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

C-3. EXPLANATION OF COLUMNS.

The following provides an explanation of columns found in the tabular listings

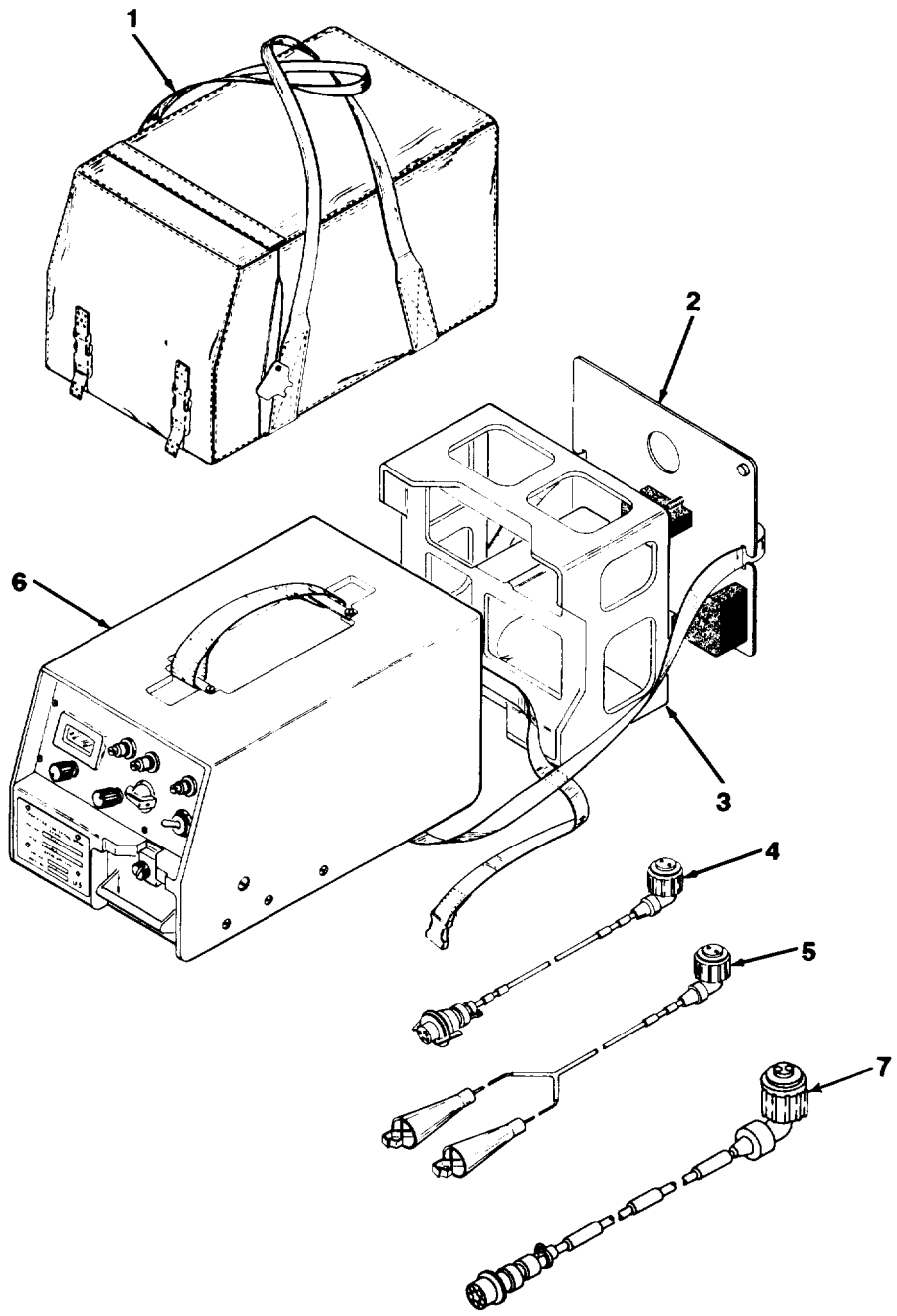
a. **Column (1) - Illustration Number (Illus Number).** This column indicates the number used to identify the item in the illustration.

b. **Column (2) - National Stock Number.** Indicates the National Stock Number assigned to the item and will be used for requisitioning purposes.

c. **Column (3) - Description.** Indicates the Federal item name and, if required, a minimum description to identify and locate the item. The last line for each item indicates the CAGE (in parentheses) followed by the part number.

d. **Column (4) - Unit of Measure (U/M).** Indicates the measure used in performing the actual operation/maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in, pr).

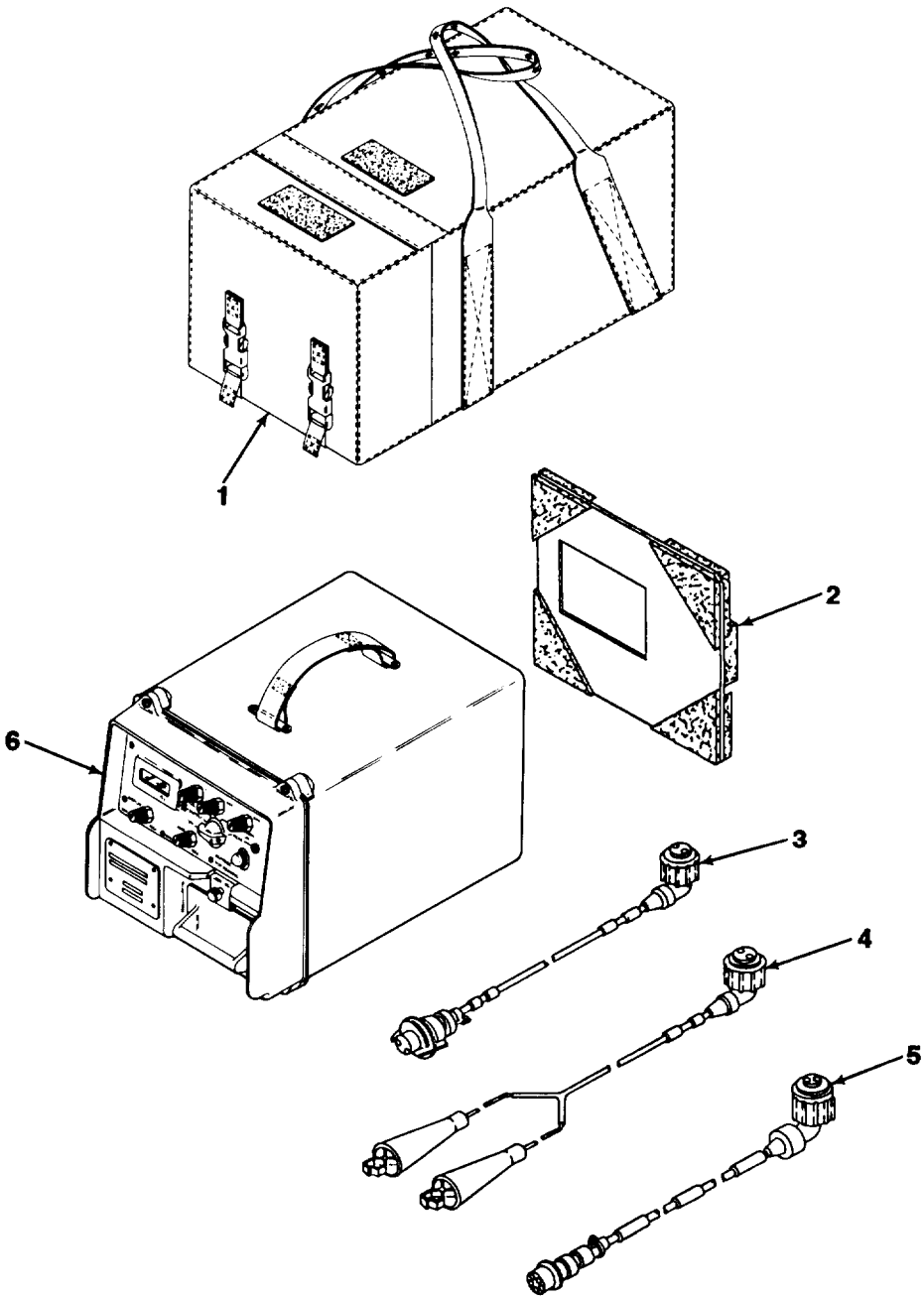
e. **Column (5) - Quantity required (Qty rqd).** Indicates the quantity of the item authorized to be used with/on the equipment.



AN/PDR-75, P/N C5085500 VERSION

Section II. COMPONENTS OF END ITEM (C5085500)

(1) Illus Number	(2) National Stock Number	(3) Description CAGE and Part Number	(4) U/M	(5) Qty rqd
1	6665-01-212-0352	Carrying Case (57946) C5085373	EA	1
2	N/A	Cover Plate Assembly (57946) C5085582	EA	1
3	NYA	Battery and Connector Case (57946) C5085583	EA	1
4	5995-01-214-8811	Battery Cable (57946) C5085549	EA	1
5	5995-01-216-1862	Vehicle Cable (57946) C5085550	EA	1
6	(order NHA)	Computer Indicator CP696/PDR-75 (57946) C5085357	EA	1
7	5995-01-274-4990	Power Supply Cable (57946) C5085551	EA	1



AN/PDR-75, P/N A3250780 VERSION

PART TWELVE

Section II. COMPONENTS OF END ITEM (A3250780)

(1) Illus Number	(2) National Stock Number	(3) Description CAGE and Part Number	(4) U/M	(5) Qty rqd
1	NYA	Carrying Case Assy. (06642) A3209749	EA	1
2	NYA	Carrying Case Base (06642) A3209751	EA	1
3	5995-01-214-8811	Battery Cable (57946) C5085549	EA	1
4	5995-01-216-1862	Vehicle Cable (57946) C5085550	EA	1
5	5995-01-274-4990	Power Supply Cable (57946) C5085551	EA	1
6	(order NHA)	Computer Indicator CP696/PDR-75 (06642) A3197293	EA	1

PART THIRTEEN

APPENDIX D

ADDITIONAL AUTHORIZATION LIST

Section I. INTRODUCTION

D-1. SCOPE.

This appendix lists additional items authorized to you for the support of the Radiac Set AN/PDR-75.

D-2. GENERAL.

This list identifies items that do not have to accompany the Radiac Set AN/PDR-75 and that do not have to be turned in with it. These items are all authorized to you by CTA, MTOE, TDA, or JTA.

D-3. EXPLANATION OF LISTING.

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

(1) NATIONAL STOCK NUMBER	(2) DESCRIPTION CAGE & PART NUMBER	(3) U/M	(4) QTY AUTH
5130-00-596-8404	ELECTRICAL VIBRATION ETCHER	EA	1
6665-01-043-2191	DETECTOR, RADIAC DT-236/PDR-75	EA	1

PART FOURTEEN

APPENDIX E

EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

Section I. INTRODUCTION

E-1. SCOPE.

This appendix lists expendable/durable supplies and materials you will need to operate and maintain the Radiac Set AN/PDR-75. These items are authorized to you by CTA 50-970, Expendable Items (Except Medical, Class V, Repair Parts, and Heraldic Items).

E-2. EXPLANATION OF COLUMNS.

a. **Column 2 - Item Number.** This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the material.

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

C - Operator/Crew
O - Unit Maintenance
H - General Support Maintenance
D - Depot

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

d. **Column 4 - Description.** indites the Federal item name and, if required, a description to identify the item. The last line for each item indicates the Commercial and Government Entity Code (CAGE) in parentheses followed by the part number.

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

Section II. EXPENDABLE SUPPLIES AND MATERIALS LIST

(1)	(2)	(3)	(4)	(5)
ITEM NUMBER	LEVEL	NATIONAL STOCK NUMBER	DESCRIPTION	U/M
1	C, H	6135-01-036-3495	BATTERY, LITHIUM BA-5590/U	EA
2	H	6135-01-063-1978	BATTERY, 9 V BA-3090/U	EA
3	H		COATING, CONFORMAL	PT
4	O		GLUE	OZ
5	H		GREASE, SILICONE	OZ
6	O		PADDING, FOAM	SH
7	O		PAINT, INFRARED ABSORBING	QT
8	O		SANDPAPER	SH
9	O		THINNER, PAINT	QT
10	O,C	6810-00-753-4993	ISOPROPYL ALCOHOL	QT
11	H		WIRE, JUMPER	EA
* 12	O	5920-01-031-9903	FUSE, CARTRIDGE L54-2A	EA
** 13	O	5920-00-491-2795	FUSE, CARTRIDGE F03A250V2A	EA

* Used on AN/PDR-75, P/N C5085500 Version
** Used on AN/PDR-75, P/N A3250780 Version

NOTE

The National Stock Numbers that are missing from this list have been requested and will be added by a change to the fist upon receipt.

PART FIFTEEN

SUBJECT INDEX

SUBJECT INDEX (CONTINUED)

SUBJECT INDEX (CONTINUED)

Subject **Page**

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R

S

T

SUBJECT INDEX (CONTINUED)

By Order of the Secretary of the Army:

DENNIS J. REIMER
General, United States Army
Chief of Staff

Official:

JOEL B. HUDSON
Acting Administrative Assistant to the
Secretary of the Army

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*U.S. G.P.O.:1995-386-731:20001

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS

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SOMETHING WRONG WITH THIS PUBLICATION

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)
Commander
Stateside Army Depot
ATTN: AMSTA-US
Stateside, N.J. 07703-5007

DATE SENT: 10 July 1975

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 11-5840-340-12	23 Jan 74	Radar Set AN/PRC-76

BE EXACT PIN-POINT WHERE IT IS				IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:
PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO	
2-25	2-28			Recommend that the installation antenna alignment procedure be changed throughout to specify a 2^0 IFF antenna lag rather than 1^0. REASON: Experience has shown that with only a 1^0 lag, the antenna servo system is too sensitive to wind gusting in excess of 25 knots, and has a tendency to rapidly accelerate and decelerate as it hunts, causing strain to the drive train. Hunting is minimized by adjusting the lag to 2^0 without degradation of operation.
3-10	3-3		3-1	Item 5, Function column. Change "2 dB" to "3 dB". REASON: The adjustment procedure for the TRANS POWER FAULT indicator calls for a 3 dB (500 watts) adjustment to light the TRANS POWER FAULT indicator.
5-6	5-8			Add new step f.1 to read, "Replace cover plate removed in step f above." REASON: To replace the cover plate.
		FO-3		Zone C 3. On J1-2, change "+24 VDC" to "+5 VDC". REASON: This is the output line of the 5 VDC power supply. +24 VDC is the input voltage.

SAMPLE

PRINTED NAME, GRADE OR TITLE AND TELEPHONE NUMBER	SIGN HERE
SSG I. M. DeSpiritof 999-1776	

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PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO	

PRINTED NAME, GRADE OR TITLE AND TELEPHONE NUMBER	SIGN HERE

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UNITED STATES NUCLEAR REGULATORY COMMISSION
Washington, D.C. 20555

NOTICE TO EMPLOYEES

STANDARDS FOR PROTECTION AGAINST RADIATION (PART 20); NOTICES, INSTRUCTIONS AND REPORTS TO WORKERS; INSPECTIONS (PART 19): EMPLOYEE PROTECTION

WHAT IS THE NUCLEAR REGULATORY COMMISSION?

The Nuclear Regulatory Commission is an independent Federal regulatory agency responsible for licensing and inspecting nuclear power plants and other commercial uses of radioactive materials.

WHAT DOES THE NRC DO?

The NRC's primary responsibility is to ensure that workers and the public are protected from unnecessary or excessive exposure to radiation and that nuclear facilities including power plants are constructed to high quality standards and operated in a safe manner. The NRC does this by establishing requirements in Title 10 of the Code of Federal Regulations (10 CFR) and in licenses issued to nuclear users.

WHAT RESPONSIBILITY DOES MY EMPLOYER HAVE?

Any company that conducts activities licensed by the NRC must comply with the NRC's requirements. If a company violates NRC requirements, it can be fined or have its license modified, suspended or revoked.

Your employer must tell you which NRC radiation requirements apply to your work and must post NRC Notices of Violation involving radiological working conditions.

WHAT IS MY RESPONSIBILITY?

For your own protection and the protection of your co-workers, you should know how NRC requirements relate to your work and should obey them. If you observe violations of the requirements, you should report them.

HOW DO I REPORT VIOLATIONS?

If you believe that violations of NRC rules or of the terms of the license have occurred, you should report them immediately to your supervisor. If you believe that adequate corrective action is not being taken, you may report this to an NRC inspector or the nearest NRC Regional Office.

WHAT IF I WORK IN A RADIATION AREA?

If you work with radioactive materials or in a radiation (controlled) area, the amount of radiation exposure that you may legally receive is limited by NRC Regulations. The limits on your exposure are contained in sections 20.101, 20.103, and 20.104 of Title 10 of the Code of Federal Regulations (10 CFR 20). While those are the maximum allowable limits, your employer should also keep your radiation exposure as far below those limits as is "reasonably achievable."

MAY I GET A RECORD OF MY RADIATION EXPOSURE?

Yes. Your employer is required to tell you, in writing, if you receive any radiation exposure above the limits set in the NRC regulations or your employer's license. In addition, if your job involves radiation, you may request from your employer a record of your annual radiation exposures and a written report of your total exposure when you leave your job.

HOW ARE VIOLATIONS OF NRC REQUIREMENTS IDENTIFIED?

NRC conducts regular inspections at licensed facilities to assure compliance with NRC requirements. In addition, your employer and site contractors conduct their own inspections to assure compliance. All inspectors are protected by Federal law. Interference with them may result in criminal prosecution for a Federal offense.

MAY I TALK WITH AN NRC INSPECTOR?

Yes. Your employer may not prevent you from talking with an NRC inspector and you may talk privately with an inspector and request that your identity remain confidential.

MAY I REQUEST AN INSPECTION?

If you believe that your employer has not corrected violations involving radiological working conditions, you may request an inspection. Your request should be addressed to the nearest NRC Regional Office and must describe the alleged violation in detail. It must be signed by you or your representative.

HOW DO I CONTACT THE NRC?

Notify an NRC inspector on-site or call the nearest NRC Regional office collect. NRC inspectors want to talk to you if you are worried about radiation safety or other aspects of licensed activities, such as the quality of construction or operations at your plant.

CAN I BE FIRED FOR TALKING TO THE NRC?

No. Federal law prohibits an employer from firing or otherwise discriminating against a worker for bringing safety concerns to the attention of the NRC. You may not be fired or discriminated against because you:

- ask the NRC to enforce its rules against your employer;
- testify in an NRC proceeding;
- provide information or are about to provide information to the NRC about violations of requirements;
- are about to ask for or testify, help, or take part in an NRC proceeding.

WHAT FORMS OF DISCRIMINATION ARE PROHIBITED?

No employer may fire you or discriminate against you with respect to pay, benefits, or working conditions because you help the NRC.

HOW AM I PROTECTED FROM DISCRIMINATION?

If you believe that you have been discriminated against for bringing safety concerns to the NRC, you may file a complaint with the U.S. Department of Labor. Your complaint must describe the firing or discrimination and must be filed within 30 days of the occurrence.

Send complaints to:

Office of the Administrator
Wage and Hour Division
Employment Standards Administration
U.S. Department of Labor
Room 53502
200 Constitution Avenue, N.W.
Washington, D.C. 20210

or any local office of the Department of Labor, Wage and Hour Division. Check your telephone directory under U.S. Government listings.

WHAT CAN THE LABOR DEPARTMENT DO?

The Department of Labor will notify the employer that a complaint has been filed and will investigate the case.

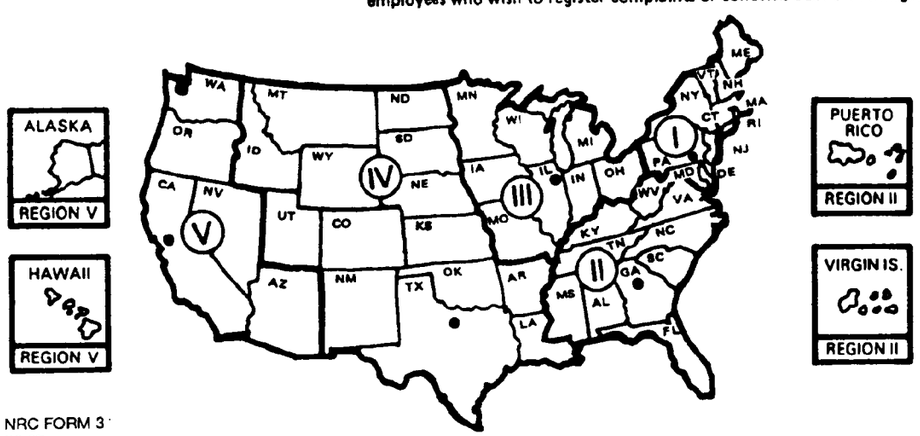
If the Department of Labor finds that your employer has unlawfully discriminated against you, it may order you to be reinstated, receive back pay, or be compensated for any injury suffered as a result of the discrimination.

WHAT WILL THE NRC DO?

The NRC may assist the Department of Labor in its investigation. NRC may conduct its own investigation where necessary to determine whether unlawful discrimination has prevented the free flow of information to the Commission. Also, if the NRC or Department of Labor finds that unlawful discrimination has occurred, the NRC may issue a Notice of Violation to your employer, impose a fine, or suspend, modify, or revoke your employer's NRC license.

UNITED STATES NUCLEAR REGULATORY COMMISSION REGIONAL OFFICE LOCATIONS

A representative of the Nuclear Regulatory Commission can be contacted at the following addresses and telephone numbers. The Regional Office will accept collect telephone calls from employees who wish to register complaints or concerns about radiological working conditions or other matters regarding compliance with Commission rules and regulations.



Regional Offices

REGION	ADDRESS	TELEPHONE
I	U.S. Nuclear Regulatory Commission Region I 475 Allendale Road King of Prussia, PA 19406	(215) 337–5000
II	U.S. Nuclear Regulatory Commission Region II 101 Marietta St., N.W. Atlanta, GA 30323	(404) 331–4503
III	U.S. Nuclear Regulatory Commission Region III 799 Roosevelt Road Glen Ellyn, IL 60137	(708) 790–5500
IV	U.S. Nuclear Regulatory Commission Region IV 611 Ryan Plaza Drive, Suite 1000 Arlington, TX 76011	(817) 860–8100
V	U.S. Nuclear Regulatory Commission Region V 1450 Maria Lane, Suite 210 Walnut Creek, CA 94596	(415) 943–3700

NRC FORM 3
(10–89)

GPO 909-709