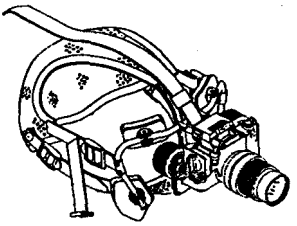
TM 11-5855-262-10-1

TO 12S10-2PVS7-1

OPERATOR'S MANUAL



NIGHT VISION GOGGLE

AN/PVS-7A

(NSN 5855-01-228-0939)

EIC: IPT

DEPARTMENTS OF THE ARMY AND THE AIR FORCE

15 MARCH 1993

NBC
NUCLEAR, BIOLOGICAL, OR CHEMICAL
HANDLE CAREFULLY

WARNING

After Nuclear, Biological, or. Chemical (NBC) exposure, the Night Vision Goggle AN/PVS-7A must be handled with extreme caution. Unprotected personnel may experience injury or death if residual toxic agents or radioactive agents are present. If the Goggle is exposed to chemical or biological agents, servicing personnel must wear a protective mask, hood, protective overgarment, and chemical-protective gloves and boots.

WARNING

- **The Image Intensifier contains toxic material. If an assembly becomes broken, be extremely careful to avoid inhalation of the phosphor screen material and do not allow it to come in contact with your mouth or open skin wounds.**

- **If the phosphor screen material contacts your skin, wash it off immediately with soap and water.**

- **If you inhale/swallow any phosphor screen material, drink a lot of water, induce vomiting, and seek medical attention as soon as possible.**

For Artificial Respiration and First Aid, See FM 21-11,*FirstAid for Soldiers.*

WARNING

To avoid physical and equipment damage read and understand the following safety steps.

a. The equipment requires some night light (moonlight, starlight) to operate. The level of performance depends upon the level of light.

b. Night light is reduced by passing cloud cover or while operating under trees, in building shadows, etc.

c. The equipment is less effective viewing into shadows and other darkened areas.

d. The equipment is less effective through rain, fog, sleet, or snow.

e. Adjust vehicular speed to prevent over-driving field of view when conditions of possible reduction or loss of vision exist.

WARNING

This equipment does not operate through smoke, dense fog, and heavy rain.

WARNING

Alkaline Battery BA-3058/U

DO NOT dispose of in fire. DO NOT short circuit or otherwise tamper with battery. Return batteries to Property Disposal Officer for disposal in accordance with DLSC Handbook 41601. Handle batteries in accordance with TB 43-0134 Battery Disposition/Disposal Handbook.

WARNING

Lithium Battery BA-5567/U

Battery BA-5567/U contains Sulfur Dioxide Gas under pressure.

- **DO NOT heat, puncture, disassemble, short circuit, attempt to recharge, or otherwise tamper with batteries.**
- **Turn off equipment if battery compartment becomes hot. Wait until batteries have cooled before removing them.**
- **Batteries have a safety vent to prevent explosion. When they are venting gas, you will smell gas, your eyes may become irritated, or you may hear the sound of gas escaping. When safety vents have operated, batteries must still be handled with care. See TB 43-0130 Instructions for the Safe Handling and Identification of U.S. Army Communications-Electronics Command**

Managed Lithium Sulfur Dioxide Batteries for additional information on Lithium batteries.

WARNING

Do not use mercury or rechargeable NiCad batteries. Using these batteries could result in a system failure, or personnel injury.

Do not carry batteries in pockets containing metal objects such as coins, keys, etc. Metal objects can cause the batteries to short circuit and become very hot. In the case of BA-5567 lithium batteries, a short circuit could cause them to explode.

WARNING

The infrared (IR) Illuminator provides light for viewing in low ambient light conditions. The light from the illuminator can be detected by other night vision devices.

*TM 11-5855-262-10-1

TECHNICAL MANUAL
NO. 11-5855-262-10-1
TECHNICAL ORDER
NO. 12S10-2PVS7-1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 15 March 1993

OPERATOR'S MANUAL
NIGHT VISION GOGGLE, AN/PVS-7A
(NSN 5855-01-228-0939)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms), direct to: Commander, U.S. Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-LC-LM-LT, Fort Monmouth, NJ 07703-5007 or send your AFTO-22 to: Commander, Warner-Robins Air Logistics Center/LZDT, 226 Cochran St., Robins AFB, GA 31098-1622. In either case, a reply will be furnished direct to you.

* This manual supersedes TM 11-5855-262-10-1, dated 15 June 1987.

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HOW TO USE THIS MANUAL

This manual is designed to help you. operate the Night Vision Goggle (NVG), AN/PVS-7A

- **General Overview**

  Maintenance of the NVG is limited to procedures that do not require it to operate as part of a specific system. Warning and Caution pages are located in front of this manual, and are also called out just before the step or procedure it applies to. You should learn all Warnings and Cautions before operating this equipment.

- **Manual Overview**

  The table of contents includes the paragraph number, paragraph title, and page number for each chapter. An index provides additional references to the subject contents.

- **Special Feature**

  A locator is provided on the right-hand border of the front cover. This gives the location of the information most frequently used. To find the topic Equipment Description, open the manual to the correct page by using the black tab on the side of the manual that lines up with the topic Equipment Description.

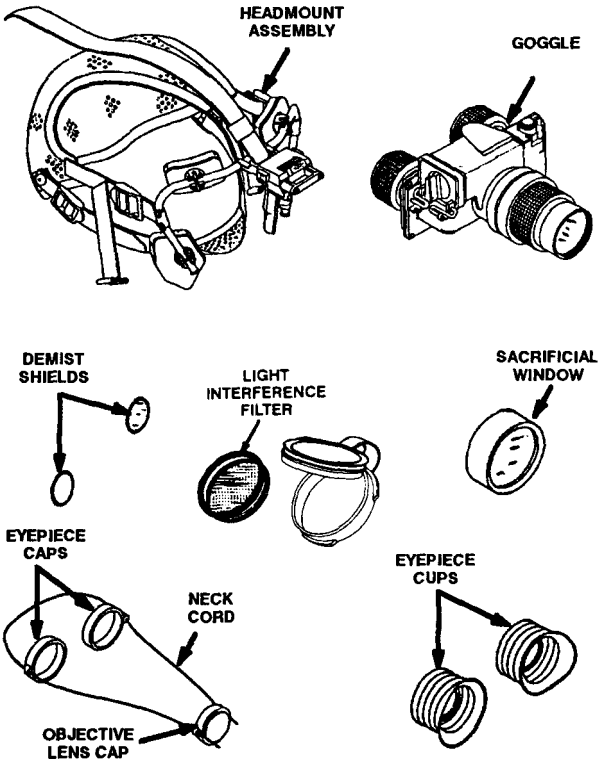


Figure 1-1. AN/PVS-7A Night Vision Goggle.

CHAPTER 1
INTRODUCTION

Section I. General Information

1-1 SCOPE

a. Type of Manual: Operator's,

b. Model Number and Equipment Name AN/PVS-7A, Night Vision Goggle.

c. Purpose of Equipment The Night Vision Goggle, AN/PVS-7A (see Figure 1-1) provides improved night vision using available light from the night sky. The goggle enables the user to perform normal tasks such as reading, walking, driving on the ground, or surveillance during times of darkness. Throughout this manual the AN/PVS-7A, Night Vision Goggle will be referred to as the NVG.

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 and RECORDS

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, The Army Maintenance Management System; or AR 700-138, Army Logistics Readiness and Sustainability. Air Force personnel will use AFR 66-1 for maintenance reporting and TO-00-35D54 for unsatisfactory equipment reporting.

b. Report of Packing and Handling Deficiencies. Fill out and forward SF 364, Report of Discrepancy (ROD) as prescribed in AR 735-11-2/DLAR 4140.55/NAVMATINST 435573B/AFR 400-54/MCO4430.3H.

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

1-4 REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your equipment needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about the design. Put it on an SF 368 (Product Quality Deficiency Report). Mail it to Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-PA-ED-PH, Fort Monmouth, New Jersey 07703-5023, We'll send you a reply.

1-5 ADMINISTRATIVE STORAGE

Administrative storage of equipment issued to and used by Army activities will have preventive maintenance performed in accordance with PMCS table (Page 2-14) before storing. Army materiel administrative storage requirements and procedures can be found in TM 470-90-1 "Administrative Storage

of Equipment" and AR 740-3 "Care of Supplies in Storage (COSIS)". When removing equipment from administrative storage the PMCS should be performed to assure operational readiness.

1-6 DESTRUCTION of ARMY MATERIEL TO PREVENT ENEMY USE

To keep the enemy from getting useful information, the NVG should be completely destroyed, if possible, in accordance with TM 750-244-2, Procedures for Destruction of Electronics Materiel to Prevent Enemy Use.

1-7 WARRANTY

The AN/PVS-7A is warranted by the manufacturer. The date on which the warranty expires is indicated on a warranty sticker on the NVG. Report all defects in material or workmanship in accordance with DA PAM 738-750 and and warranty information card included with NVG.

1-8 LIST OF ABBREVIATIONS

AN/PVS-7A	Night Vision Goggle
AAL	Additional Authorization List
BII	Basic Issue Items
CAGE	Commerical and Government Entity
COEI	Components of End Items
IR	Infrared
LIF	Light Interference Filter
NVG	Night Vision Goggle
vdc	Voltage, Direct current

1-9 GLOSSARY

BLACK SPOTS. These are cosmetic blemishes in the image intensifier or dirt or debris between the lenses.

BRIGHT SPOTS. These are defects in the image area caused by a flaw in the film on the microchannel plate. A bright spot is a small, nonuniform bright area that may flicker or appear constant.

CAUTION. A caution calls out conditions, practices or procedures which must be observed to avoid damage to equipment, destruction of equipment or long-term health hazard.

DARK (OR DARK AREA). A place in which there is very little light. It does not mean *total* darkness. Generally, this means conditions similar to a quarter-moon or starlit night.

DIOPTER. A unit of measure used to define eye correction. Adjustments to the eyepiece focus ring will provide a clearer image in each eye. It is determined as a unit of refractive power of a lens.

EDGE GLOW. This is a defect in the image intensifier. Edge glow is a bright area (sometimes sparkling) in the outer portion of the viewing area.

REAR COVER ASSEMBLY Consist of two eyepiece lens, a pinion gear, and eyepiece focus rings. It is attached to the rear of the wired housing assembly.

IMAGE INTENSIFIER. An electro-optical device inside the objective lens assembly that detects and amplifies ambient light to produce a visual image. It consists of a photocathode, microchannel plate, phosphor screen optic, and an integral power supply.

INFINITY FOCUS. Adjustment of the objective lens so that a distant object, such as a star or the point light on a distant tower, forms the sharpest image.

LIGHT INTERFERENCE FILTER. This is a laser-protection filter for the goggle, Use of this filter will result in a slight reduction in system gain.

OBJECTIVE LENS ASSEMBLY This consists of an objective lens cell and an objective focus ring. It attaches to the front of the wired housing assembly and adjusts for variations in distance to the viewed area or object.

SHADING. This is a defect in the image intensifier produced when the photocathode in the image intensifier is slowly dying. The viewed image should be portray a perfect circle when adjusted correctly.

WARNING. A warning calls out conditions, practices or procedures which must be observed to prevent personal injury or loss of life.

Section II. Equipment Description

1-10 EQUIPMENT CHARACTERISTICS, CAPABILITIES, and FEATURES

The AN/PVS-7A NVG has an eye relief adjustment that permits the eyepiece lenses to be moved in or out of the carriage to a position approximately one inch (2.54 cm) from the operator's eyes. The focus adjustments are made for the sharpest picture.

The NVG can be quickly removed from the headmount assembly with automatic shut-off during times when lights or flares are used. It can be detached from the headmount assembly and used as a hand-held viewer. In the ease of extreme darkness, as in a covered area, the goggle has an infrared feature (IR Illuminator) that allows viewing up to two meters. A built-in indicator lets the operator know when the IR Illuminator is in use.

The head strap attaches to the headmount assembly. The head strap is slightly elastic and should be adjusted for a comfortable and secure fit. The strap ends are inserted through the slots in the strap buckle and pulled until adjusted to the operator.

Accessories with the NVG are: demist shields which enhance operation in humid or cold environments, a sacrificial window which provides protection for the objective lens in dusty and sandy areas, a Light Interference Filter (LIF) which provides laser protection for the goggle, and objective and eyepiece lens caps which provide protection for the lenses while the goggle is stored.

1-11 LOCATION AND DESCRIPTION of MAJOR COMPONENTS

1-11.1 AN/PVS-7A Goggle. Figure 1-2 illustrates the items which comprise the AN/PVS-7A goggle. Description of the major items are as follows.

1-11.2 Goggle Assembly. The goggle assembly is a light-weight image intensifying device, that is capable of being used as a hand-held or headmounted system.

1-11.3 Headmount Assembly. The adjustable cushioned headmount assembly secures the goggle to the operator's head for night viewing providing freehand support for use with a weapon, protective mask or other purposes.

1-11.4 Sacrificial Window. A replaceable sacrificial window is supplied to protect the objective lens during operation in adverse conditions.

1-11.5 Demist Shields. The two demisting shields are used to prevent the eyepiece ienses from becoming fogged.

1-11.6 Upper, Lower Cushions. Four ciip on cushions are provided to adjust the headmount to fit different head and face sizes.

1-11.7 Eyepiece Cups. Eyepiece cups are provided so that the green giow emitted by the NVG cannot been detected by others.

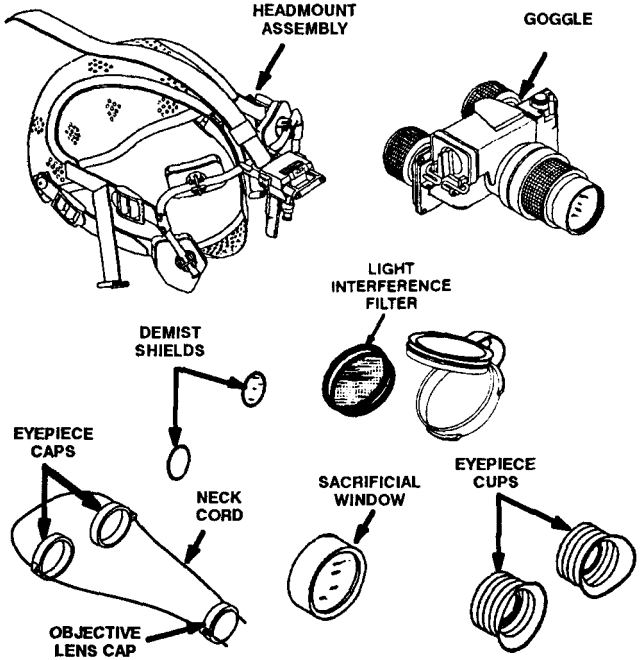


Figure 1-2. Location of Major Night Vision Goggle Components. (Sheet 1 of 2)

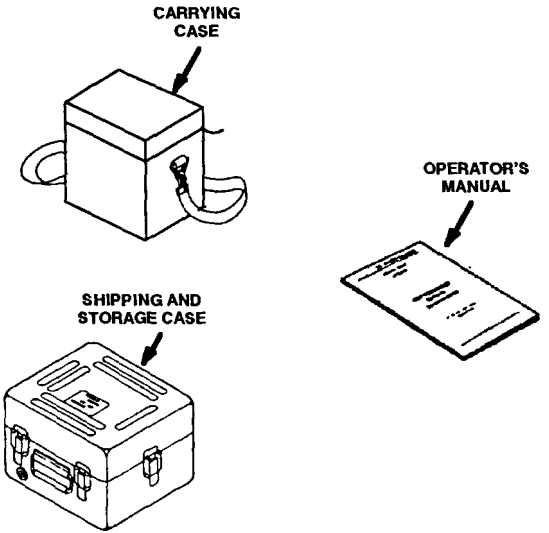


Figure 1-2. Location of Major Night Vision Goggle Components. (Sheet 2 of 2)

1-11.8 Light Interference Filter (LIF). This is a laser-protection filter for the goggle. Use of this filter will result in a slight reduction in system gain.

1-11.9 Neck Cord, Objective, and Eyepiece Lens Caps. The neck cord is provided to prevent damage to the system. If the NVG is dropped the neck cord will prevent it from falling. Lens caps are provided to protect the objective and eyepiece lens when not in use.

1-11.10 Shipping-and-Storage Case. The shipping-and-storage case is a two-piece molded container fastened together by a hinge and two latches, A handle is provided for carrying. The interior includes polyethylene foam cushioning for the support of the cloth carrying case which contains the goggle, headmount, and accessories. A pressure-relief valve is provided to release pressure built up within the case.

1-11.11 Carrying Case. The canvas carrying case is provided for transportation and protection of the NVG, headmount assembly, batteries and accessories. The case contains two slide keepers for belt attachment and three D-rings for shoulder and leg strap attachment.

1-11.12 Operator's Manual. The Operator's manual provides operation and installation instructions for the AN/PVS-7A goggle.

1-12 EQUIPMENT DATA

Technical Data

Voltage Range	2.65 to 3.00 vdc
Magnification	1X (Unity)
Input Illumination	Cloudy starlight to bright moonlight
Batteries	Alkaline (“AA”) (BA-3056/U) Two each or Lithium (BA-5567/U) One each
Battery Lifetime Expectancy	AA Alkaline (BA-3058/U) - 30 hours (two batteries) at 70°F Lithium (BA-5567/U) - 30 hours (one battery) at 70°F
Weight	680 grams max./1.5 pounds
Operating Temperature Range	(-51 degrees C to +49 degrees C) (-59 degrees F to +120 degrees F)
Storage Temperature Range	(-51 degrees C to +71 degrees C) (-60 degrees F to +160 degrees F)

Section III. Principles of Operation

1-13 THEORY OF OPERATION

The AN/PVS-7A NVG is an electro-optical device with a single objective lens and two eyepieces with a unity (1X) magnification. The goggle receives available light at the objective lens and focuses it onto the photocathode element of the image intensifier. The photocathode converts the light energy into an electron beam. The image intensifier amplifies the electron beam and projects it onto the phosphor screen. The phosphor screen reconverts the electron beam to visible light which is directed through a collimating lens and a pair of relay lenses to each eyepiece lens. Diopter adjustment focuses the image for the operator's eye. The image intensifier is kept in a nitrogen atmosphere to reduce moisture. Periodic purging ensures that moisture is held to a minimal level.

CHAPTER 2
OPERATING INSTRUCTIONS

Section I. Description and Use of Operator's Controls and Indicators

2-1 ROTARY SWITCH

The rotary switch, shown in Figure 2-1, provides operator control of the system. With the goggle on the headmount assembly, the operator pulls the knob from the OFF position to the forward ON position. To use the IR Illuminator, the operator must depress the button located on the top of the switch knob and pull the knob to the forward IR ON position. A red LED will light up in the viewing area of the left eyepiece to indicate that the IR Illuminator is on.

To use the goggle as a hand-held unit, while removed from the headmount assembly, the rotary switch must be pushed to the rear ON position. To use the IR illuminator in the hand-held mode the operator must depress the button located on top of the switch knob and push the rotary switch to the rear IR ON position. Depress the button on top of the switch knob to move the switch to either of the IR ON positions.

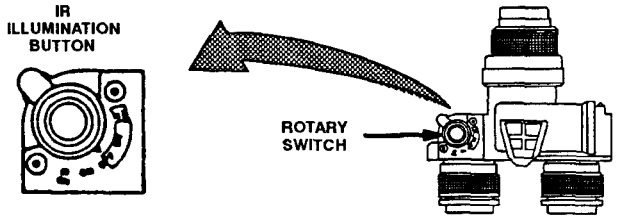
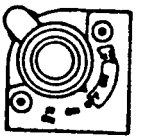


Figure 2-1. Rotary Switch.

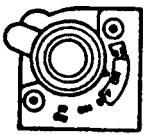
The switch positions are:

OFF = Goggle off, IR Illuminator off. Rotary switch aligns with knurled corner of goggle. See Figure 2–3.

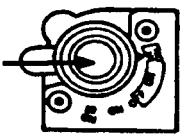


ON HEADMOUNT

ON = Goggle on, IR Illuminator off.

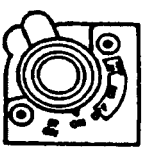


IR ON = Goggle and IR Illuminator on. Depress button before turning switch.



HAND-HELD

ON = Goggle on, IR Illuminator off.



IR ON = Goggle on, IR Illuminator on. Depress button before turning switch.

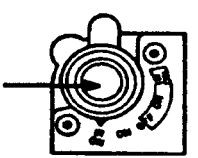


Figure 2-2. Switch Positions.

2-2 IR ILLUMINATOR

WARNING

The IR Illuminator cannot be seen by the naked eye. The infrared (IR) Illuminator can be seen by other night vision devices. Exercise care when using the IR Illuminator.

The IR Illuminator shown in Figure 2-3, is an infrared diode that is used to illuminate an area not more than 2 meters in front of the goggle.

When the IR Illuminator is turned on, a red indicator light will be seen in the left eyepiece.

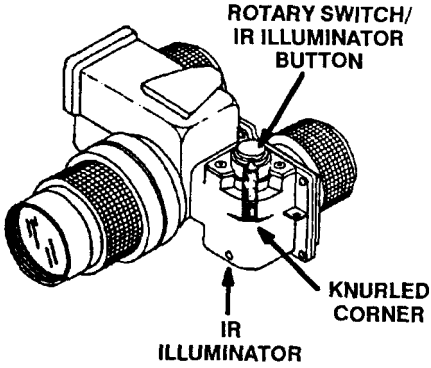


Figure 2-3. IR Illuminator.

2-3 FOCUS RING

The Objective Focus Ring adjusts the objective lens focus from 25cm to infinity. Each eyepiece has a focus ring that permits the operator to adjust the individual eyepiece lens. See Figure 2-4 for location of focus rings.

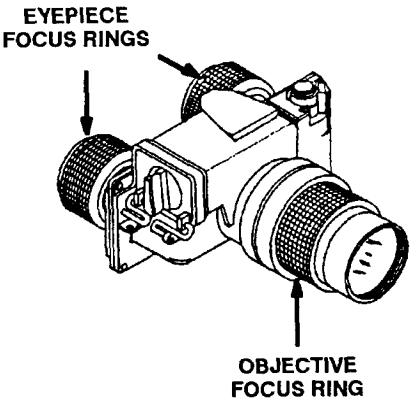


Figure 2-4. Focus Rings.

2-4 EYE SPAN ADJUSTMENT

The distance between the eyepieces can be adjusted to fit the individual operator. The adjustment is made by moving the eyepieces apart or closer together until a single, clear, circular field of view is obtained. See Figure 2-5.

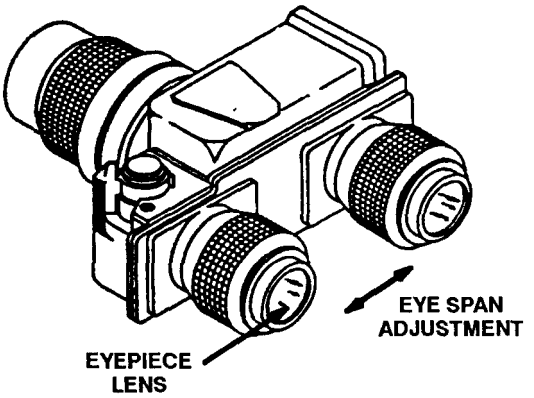


Figure 2-5. Eye Span Adjustment.

2-5 EYE RELIEF ADJUSTMENT

The distance from the operator's eye should be adjusted approximately one inch (2.5cm) from the eyes without losing field of view. This permits the operator to wear a protective mask or military style eyeglasses while using the goggle. See Figure 2-6.

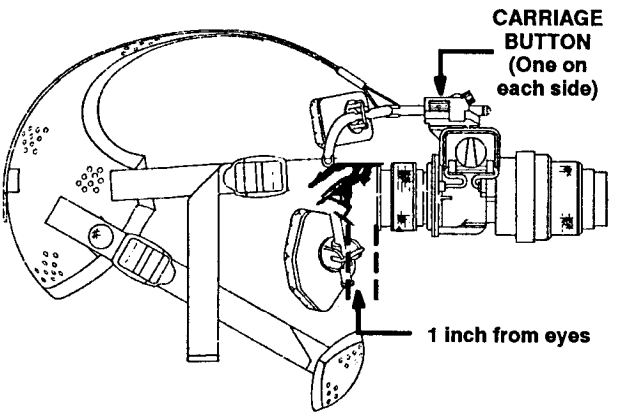


Figure 2-6. Eye Relief Adjustment.

2-6 QUICK RELEASE FEATURE and AUTOMATIC SHUT-OFF

The goggle mounts to the carriage assembly by inserting the slide into the carriage and pressing firmly until a click is heard. The goggle is released from the carriage, by pressing the button on top of the carriage and pulling the goggle away from the face. If the goggle is removed from the headmount assembly while turned on, the automatic shut-off feature will turn off the goggle. The rotary switch must be reset to the OFF position before the goggle can be used again.

2 - 7 DEMIST SHIELDS

CAUTION

If demist shields need to be cleaned, make sure the shields are dry and use dry lens paper. If demist shields are wiped while wet or with wet lens paper, you will damage the coating.

NOTE

Handle the demist shields by the edge only

Demist shields, shown in Figure 2-7, are provided to prevent the eyepiece lenses from fogging over when the unit is cold or being used in humid conditions. The demist shields snap into the eyepiece lenses.

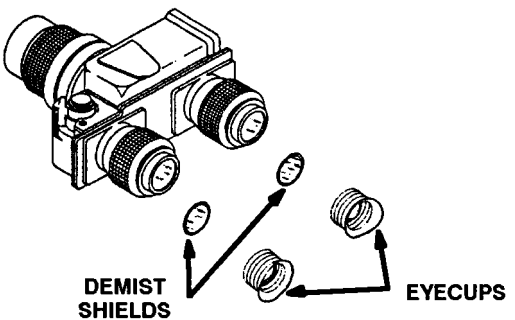


Figure 2-7. Demist Shields.

2-8 SACRIFICIAL WINDOW

The sacrificial window, shown in Figure 2-8, is provided to protect the objective lens from scratches and pitting caused by blowing dirt and sand. The sacrificial window is pressed on over the objective lens.

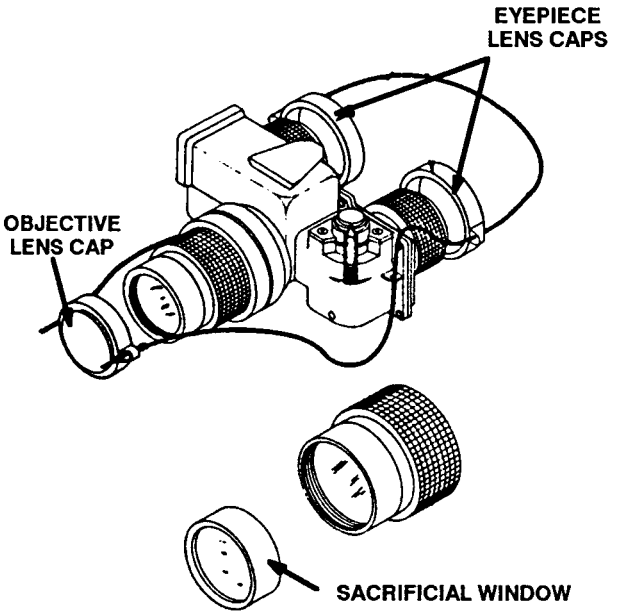


Figure 2-8. Sacrificial Window.

2-9 HEADSTRAP ADJUSTMENTS

The head strap is adjusted by pulling the loose ends of the straps until a comfortable and secure fit is achieved. See Figure 2-9.

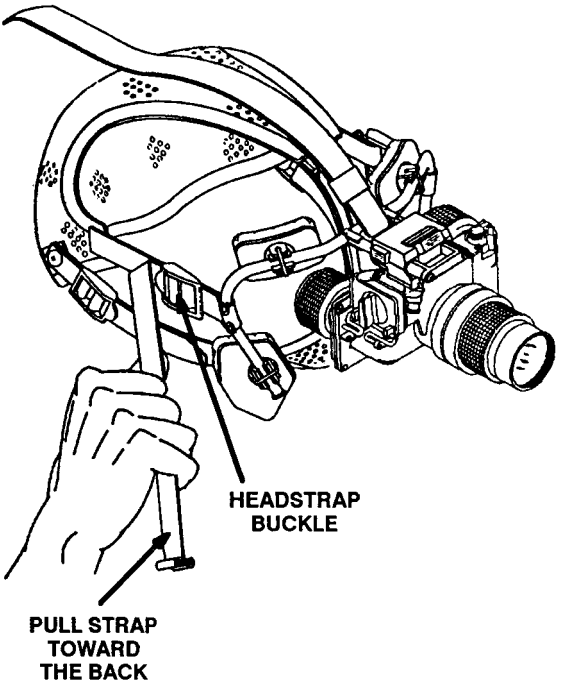


Figure 2-9. Head Strap Adjustment.

2-10 BATTERY COMPARTMENT

The battery compartment, shown in Figure 2-10, is capable of accepting two “AA” batteries, or one of the standard military Lithium batteries. Turning the locking tab of the compartment quarter turn counterclockwise will open the compartment hatch. The hatch also has a seal to make the battery compartment waterproof.

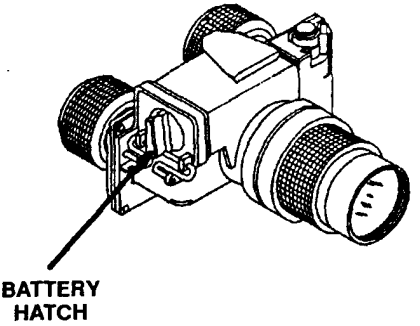


Figure 2-10. Battery Compartment.

Section II. Preventive Maintenance Checks and Services (PMCS)

2-11 INTRODUCTION TO PMCS TABLE

a. General. The Preventive Maintenance Checks and Services (PMCS), Table 2-1, list the inspections and care of your equipment required to keep it in good operating condition and ready for its primary mission.

b. Warnings and Cautions. Always observe the WARNINGS and CAUTIONS appearing in your PMCS table. WARNINGS and CAUTIONS appear before applicable procedures. You must observe these WARNINGS and CAUTIONS to prevent serious injury to yourself and others or preventy our equipment from being damaged.

c. Explanation of Table Entries.

(1) Item Number Column. Numbers in this column are for reference. When completing DA Form 2404 (Equipment Inspection and Maintenance Worksheet), include the item number for the check/service indicating a fault. Item numbers also appear in the order that you must do the checks and services.

(2) Interval Column. This column tells you when you must do the procedure in the procedure column. BEFORE (B) procedures must be done before you operate or use the equipment for its intended mission. DURING (D) procedures must be done during the time you are operating or using the equipment for its intended mission. AFTER (A) procedures must be done immediately after you have operated or used the equipment.

(3) Item to Check/Service and Procedure Column. This column provides the location and the item to be checked or serviced. The location of the item is underlined. This column also gives the procedure you must do to check or service the item listed in the Check/Service column to know if the equipment is ready or available for its intended mission or for operation. You must do the procedure at the stated interval column.

(4) Not Fully Mission Capable If: Column. Information in this column tells you what faults will keep your equipment from being capable of performing its primary mission, If you perform check and service procedures that show faults listed in this column, do not operate the equipment, Follow standard operating procedures for maintaining the equipment or reporting equipment failures.

NOTE

It is mandatory that the NVG be Resolution Tested every 180 days.

It is mandatory that the NVG be purged every 180 days.

Table 2–1. Preventive Maintenance Checks and Services (PMCS) for the AN/PVS–7A

Item No.	Interval B	Interval D	Interval A	Item to Check/Service and Procedure	Not Fully Mission Capable if:
1	●		●	***Objective and Eyepiece Lens*** — Inspect each lens for dirt, dust, fingerprints, chips, or cracks. If necessary, clean and dry lenses. Inspect lens for moisture.	Lenses are chipped, cracked, broken or cannot read resolution target on TS–4348/UV. Moisture in lens.
2	●		●	***Exterior Surfaces*** — Inspect for cracks, cuts, dents, or other damage.	Damage to exterior surfaces.
3	●			***Eye Span Adjustment*** — Check that eyepiece lenses can be moved together and apart easily. **CAUTION** *Be sure battery(ies) is removed before performing items 4 and 5.*	Eyepiece lens will not move easily or cannot be adjusted.

Table 2–1. Preventive Maintenance Checks and Services (PMCS) for the AN/PVS–7A (continued)

Item No.	Interval B	Interval D	Interval A	Item to Check/Service and Procedure	Not Fully Mission Capable if:
4	●		●	***Battery Hatch and Compartment*** — Inspect hatch and compartment for damage to seal and for corroded contacts.	Battery Hatch and/or contacts are damaged or broken. Hatch seal is damaged.
5	●			***Switch*** — Check that the Switch moves through all five positions. **CAUTION** *Items 6, 7, and 8 should be performed in a darkroom environment.*	Switch will not move through all or any position.
6	●			***Quick Release/Automatic Shut-Off*** — Check that goggle can be installed and removed from headmount assembly. Activated NVG must turn off when removed from headmount.	Cannot be installed or released easily or quickly or does not shut off when removed from headmount.

Table 2-1. Preventive Maintenance Checks and Services (PMCS) for the AN/PVS-7A (continued)

Item No.	Interval B	Interval D	Interval A	Item to Check/Service and Procedure	Not Fully Mission Capable if:
7	●		●	***Focus Adjust*** — Check that all focus rings turn easily and can achieve full range of focus adjustment.	Goggle cannot be focused.
8				**Image Intensifier** — Refer to paragraph 2-12 for optional check.	Reference pattern cannot be resolved or cannot resolve outside scene.
9	●		●	**IR LED** — Check that the LED illuminates and that the switch will not rotate to the IR position without depressing.	Switch rotates without depressing knob.

2-12 OPTIONAL CHECK USING THE TS-4348/UV

The following procedures are designed to check the performance of the image intensifier.

2-12.1 SETUP

Before using the TS-4348/UV Test Set, refer to TM 11-5855-299-12&P to set up and familiarize yourself with its operation and the warnings and cautions associated with that test equipment.

2-12.2 LOW-LIGHT AND HIGH-LIGHT RESOLUTION

Test the goggle for low-light and high-light resolution performance according to the following steps.

NOTE

This test must be performed in a darkened area. Your eyes must be dark-adapted to perform this test.

Review the following test procedure before entering the dark area.

Expect cosmetic blemishes, such as chicken wire, black spots, and fixed-pattern noise, to stand out while viewing through the TS-4348/UV test set when it is on the high-light level. This is acceptable.

a. Place the HIGH/LOW switch on the test set to the LOW position.

b. Install the LIF per paragraph 2-17, step c.

c. Insert goggle into the test port on the test set and turn on the goggle.

d. Turn *on* the test set. Push toggle switch to the position for AN/PVS-7A goggle.

e. Turn *off* the room light and let your eyes adjust to the dark

f. Look through the goggle and view the projected pattern (see Figure 2-11). If necessary, focus the objective lens and then the eyepieces to obtain the sharpest image.

g. The AN/PVS-7A goggle must be able to resolve Group 2, Element 2, under low-light conditions to pass the test. If the goggle do not pass the test, return it to maintenance for repair.

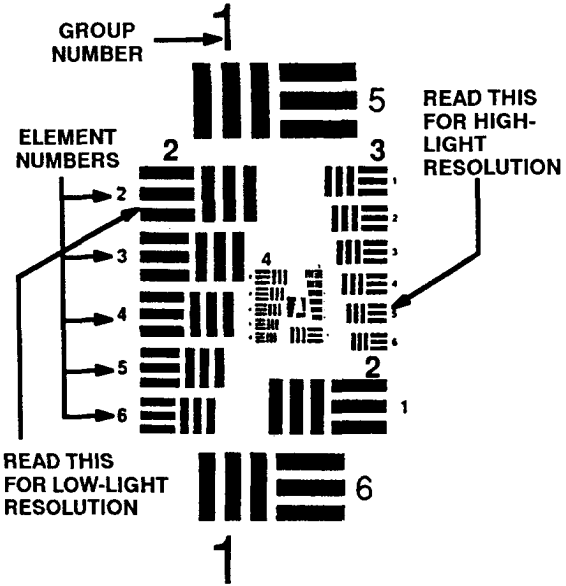
NOTE

For a pattern to be resolvable, three vertical bars and three horizontal bars must be visible.

h. Flip the HIGH/LOW switch to the HIGH position.

i. Again, look through the goggle and viewthe projected pattern (see Figure 2-11). If necessary, refocus the objective lens and then the eyepiece to obtain the sharpest image.

j. The AN/PVS-7A must be able to resolve Group 3, Element 5, under high-light conditions to pass the test. If the goggle does not pass the test, send it to a higher level of maintenance for repair.



NOTE: The target shown is for example only and is not drawn to scale.

Figure 2-11. TS-4348/UV Test Set Pattern.

k. Look for flashing, flickering, or other nonstable behavior of the image intensifier. Also check the image intensifier for other unacceptable characteristics (such as shading and edge glow) described in paragraph 2-13. To check the image intensifier

under low light conditions, flip the HIGH/LOW switch to the LOW position and allow your eyes to be accustomed to the dark. If any unacceptable conditions are noted, return the goggle to maintenance.

2-13 INSPECTION CRITERIA FOR PROPER IMAGE INTENSIFIER OPERATION

This section provides information for the operator concerning what to look for, how to look for it, and how to determine if the goggle should be returned to the maintenance personnel. All-unacceptable conditions should be recorded on the appropriate maintenance forms so that maintenance personnel can take corrective action. While formal determination of a defective image intensifier is made by Direct Support maintenance personnel, the operator is the ultimate person responsible for determining whether the image intensifier operation interferes with his ability to perform his mission. If maintenance personnel determine that the image intensifier performance meets the specification and the operator still finds the performance interferes with his ability to perform the mission, he must record the problem on the appropriate maintenance forms when returning the goggle to maintenance personnel.

To prevent damaging the image intensifier perform the following inspection in the dark.

To perform this inspection, attach the goggle to the headmount as described in paragraph 2-14, step f, and turn the rotary switch to the ON position. Look through the goggle and view the image.

a. Shading. When properly adjusted, the goggle should present a full circle. If shading is present, you will not see a fully circular image (see Figure 2-12). Shading always begins on the edge and move inward. ***Do not*** use if shading is present. Replace the goggle.

NOTE

Make sure the shading is not the result of improper interpupillary adjustment, vertical adjustment, or improper seating of objective in the test set port.

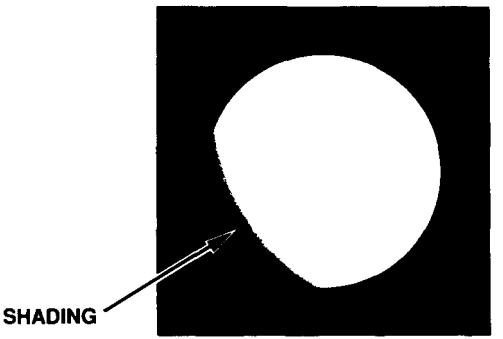


Figure 2-12. Shading.

b. Edge Glow. Edge glow is a bright area (sometime sparkling) in the outer portion of the viewing area (see Figure 2-13). To check for edge glow the operator can block out all light by cupping a hand over the objective lens. If the image intensifier

is displaying edge glow, the bright area will still show up. ***Do not*** use if edge glow is present. Return the goggle to maintenance.

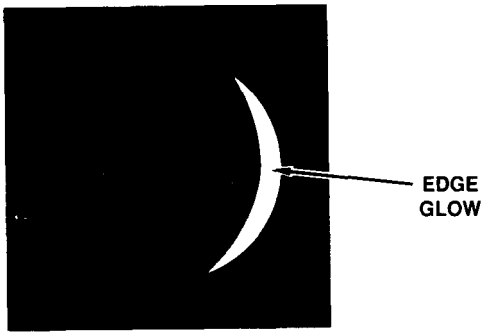


Figure 2-13. Edge Glow.

c. Bright Spots. These are cosmetics defects in the image intensifier. A bright spot is a small, nonuniform, bright area that may flicker or appear constant (Figure 2-14). Not all bright spots make the goggle unacceptable. Cup your hand over the objective lens to block out all light. If the bright spot remains, it is an emission point. Bright spots usually go away when the light is blocked out and are cosmetic defects. Bright spots are acceptable if they do not interfere with the ability to perform the mission. If bright spots do interfere, return the goggle to maintenance for evaluation.

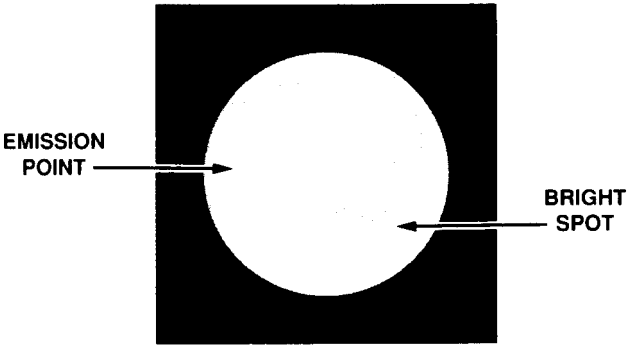


Figure 2-14. Bright Spots and Emission Points.

d. Emission Points. A steady or fluctuating pinpoint of light in the image area that does not go away when all light is blocked from the objective lens (see Figure 2-14). The position of an emission point within the image area doss not move. Not all emission points make the goggle unacceptable. Emission points are acceptable if they do not interfere with the ability to perform the mission. If emission points do interfere, return the goggle to maintenance for further evaluation.

NOTE

Do not use a TS-4348/UV to evaluate bright spots or emission points. Make sure any bright spots or emission points are not simply a bright area orpoint light source in the outdoor scene you are viewing.

e. Flashing, Flickering, or Intermittent Operation. The image may appear to flicker or flash. If there is more than one flicker, check for a loose battery hatch, or weak batteries. If the problem cannot be corrected, ***do not*** use the goggle; return the goggle to maintenance.

f. Black Spot. These are cosmetic blemishes in the image intensifier or dirt or debris between the lenses. Black spots are acceptable as long as they do not interfere with the operator's ability to perform the mission.

g. Fixed-Pattern Noise (Honeycomb). This is usually a cosmetic blemish characterized by a faint hexagonal pattern (see Figure 2-15) throughout the viewing area that most often occurs at high-light levels or when viewing very bright lights. This pattern can be seen in every image intensifier if the light level is high enough. This condition is acceptable as long as you can resolve the resolution targets at the low-and high-light levels.

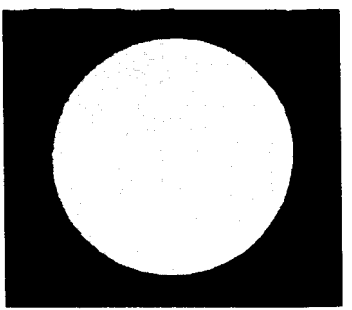


Figure 2-15. Fixed-Pattern Noise.

h. Chicken Wire. An irregular pattern of dark thin lines in the field of view either throughout the image area or in parts of the image area (see Figure 2-16). Under the worst case condition, these lines will form hexagonal or square-wave shaped lines. Chicken wire is acceptable as long as it does not interfere with the operator's ability to perform the mission.

Figure 2-16. Chicken Wire.

Section III. Operation Under Usual Conditions

2-14 ASSEMBLY AND PREPARATION FOR USE

a. Remove the goggle from the carrying case.

WARNING

Do not use mercury or rechargeable NiCad batteries. Using these batteries could result in personal injury or system failure.

CAUTION

Be sure the rotary switch is in the OFF position before installing battery.

b. Install battery.

(1) AA Alkaline Batteries: Open the battery compartment hatch by turning the locking tab a quarter turn counterclockwise. Insert two AA batteries into the holder, one positive end and one negative end first, as shown in Figure 2-17. Close hatch and secure by turning the locking tab a quarter turn clockwise.

(2) Lithium Battery: Open the battery compartment hatch by turning the locking tab a quarter turn counterclockwise. Insert Lithium battery with the button (negative end) up into the holder as shown in Figure 2-17. Close the hatch and secure by turning the locking tab a quarter turn clockwise.

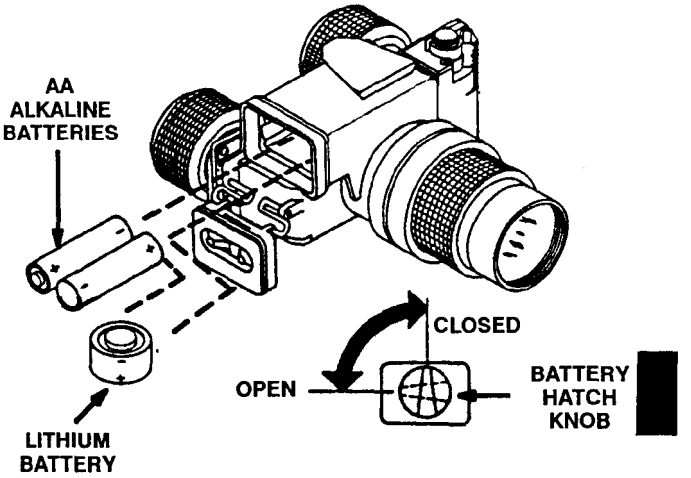


Figure 2-17. AA Alkaline and Lithium Battery Installation.

c. Install rubber eye cups. Install rubber eyecups, by removing eyepiece lens cap, then slightly stretching the eyecup over the eyepiece retainer. The lobe should be positioned to the outside of the eye.

d. Remove the headmount assembly and headstrap from the carrying case. Install headstrap on headmount assembly by looping the strap around headmount assembly tube and fasten together. Press the side buttons on the carriage and pull it to the extreme forward position. Place headmount assembly

against your face and adjust the cushions to a comfortable position. Hold the carriage with one hand, and with the other hand, pull the headstrap over your head. Adjust the straps for a comfortable and secure fit.

CAUTION

To prevent damage, destruction, or loss of the goggle, the neck cord must be worn.

e. Remove the objective lens cap and pull the neck cord so that the lens cap is pulled tight under the goggle. Place the neck cord around your neck. (See Figure 2-18)

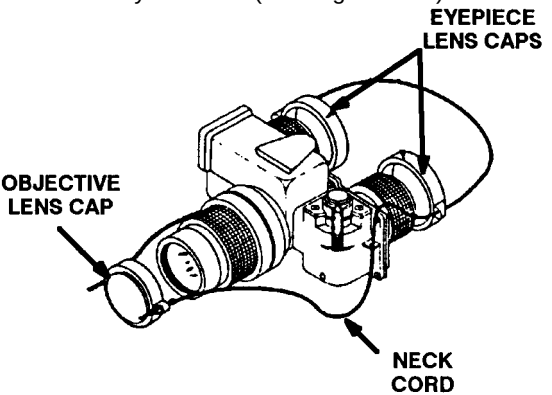


Figure 2-18. Neck Cord, Eyepiece and Objective Lens Caps.

f. Insert the goggle into the headmount assembly, using the index finger as a guide line up the slides and push with firm pressure until you hear a click (see Figure 2-19). Pull slightly against the goggle to make sure it is attached.

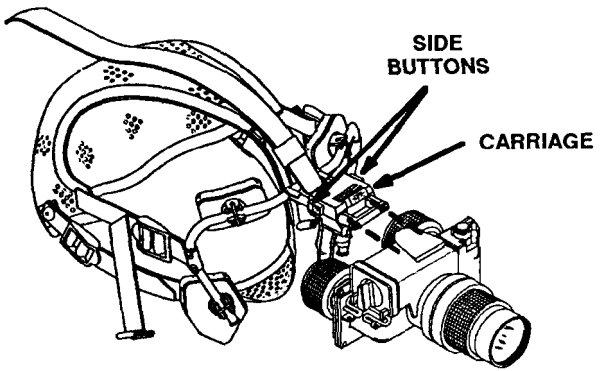


Figure 2-19. Headmount Assembly/Goggle Mounting.

2-15 OPERATING PROCEDURES

2-15.1 HEADMOUNTED PROCEDURES

WARNING

The IR source is a light that is invisible to *the unaided eye for use during conditions of extreme darkness.*

However, the light can be detected by the enemy using night vision devices. The purpose of the IR source is for viewing at close distances up to 2 meters. Also be aware that the green glow emitted from operating goggle can be seen with the naked eye. Be sure the eyecups block any stray light.

Operate the goggle under nighttime conditions only. Using the goggle during the day, in a brightly lit room, or staring at a bright light source, even at night, can permanently damage the image intensifier.

a. With NVG attached to the headmount assembly, turn the goggle ON by pulling the switch knob away from the objective lens to the forward ON position.

b. Adjust eye relief and eye span distance for the most comfortable use of the goggle.

c. Turn the eyepiece focus rings on each eyepiece lens for the sharpest view.

d. Adjust the objective focus ring for the sharpest view.

e. Repeat procedures c and d until best focus is achieved.

2-15.2 OPERATING THE IR ILLUMINATOR WHILE HEADMOUNTED

WARNING

The IR Illuminator is an active device and can be seen by other night vision devices. Exercise extreme caution when using the IR Illuminator.

To use the IR Illuminator, depress the button on top of the switch knob, pull the switch knob away from the objective lens to the forward IR ON position. Objects within 2 meters to your front should become brighter, and a red indicator light will be seen in the left eyepiece.

2-15.3 OPERATING AS A HAND-HELD VIEWER

WARNING

The IR source is a light that is invisible to the unaided eye for use during conditions of extreme darkness. However, the light can be detected by the enemy using night vision devices. The purpose of the IR source is for viewing at close distances up to 2 meters. Also be aware that the green glow emitted from operating goggle can be seen with the naked eye. Be sure the eyecups block any stray light.

CAUTION

Operate the goggle under nighttime conditions only. Using the goggle during the day, in a brightly lit

room, or staring at a bright light source, even at night, can permanently damage the image intensifier.

If the goggle is to be used as a hand-held viewer remove the headmount assembly and follow the steps below:

a. Remove the objective lens cap and pull the neck cord to bring the lens cap up tight under the goggle. Place the neck cord around your neck.

b. Push the rotary switch one position toward the objective lens to the “rear ON” (off the headmount assembly) position.

2-15.4 IR ILLUMINATOR WHILE HAND-HELD

WARNING

The IR Illuminator is an active device and can be seen by other night vision devices. Exercise extreme caution when using the IR Illuminator.

a. To use the IR Illuminator while the goggle is hand-held, depress the button on top of the switch and push the knob toward the objective lens to the “rear IR ON’.

b. Observe that objects to the front become brighter and the red indicator light is visible in the left eyepiece.

2-16 SHUT-DOWN PROCEDURES

a. Turn the switch knob to the OFF position. Switch knob shall be aligned with knurled corner of the goggle.

b. Remove the goggle from the headmount assembly by depressing the release button on the carriage and pulling the goggle away from your face. Allow goggle to hang by the neck cord around the neck.

c. Remove the headmount assembly and head strap.

d. Remove the battery from the battery compartment and close the hatch.

e. Remove eyecups, demist shields and sacrificial window, if applicable.

f. Remove goggle from around the neck. Replace eyepiece and objective lens caps.

g. Ensure goggle is clean and dry before placing into carrying case.

h. Replace all equipment in the carrying case as shown in Figure 2-20.

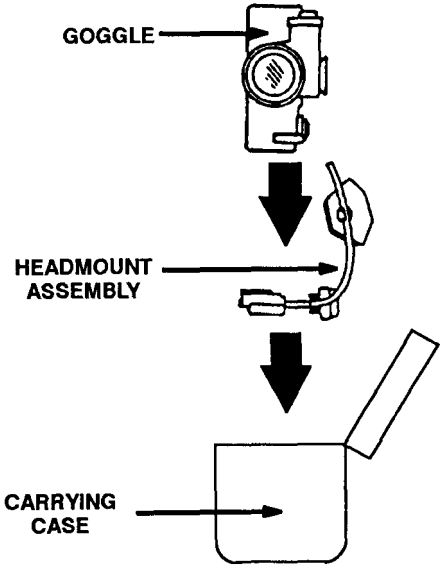


Figure 2-20. AN/PVS-7A Storage in Carrying Case.

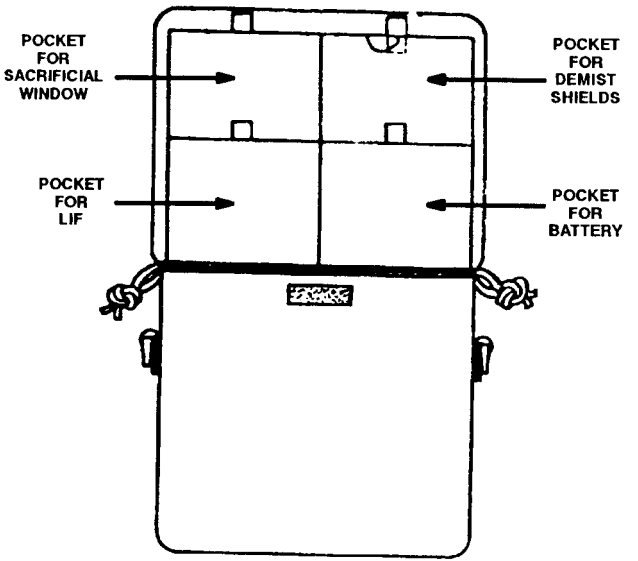


Figure 2-21. Accessories Storage in Carrying Case.

Section IV. Operation Under Unusual Conditions

2-17 UNUSUAL ENVIRONMENT/WEATHER

WARNING

The NVG is less effective through rain, fog, sleet, or snow.

WARNING

This equipment does not operate through smoke, dense fog, and heavy rain.

CAUTION

If demisting shields need to be cleaned, make sure the shields are dry and use dry lens paper. If demist shields are wiped while wet or with wet lens paper, you will damage the coating.

NOTE

If operating the NVG in a humid environment, it may be necessary to purge the NVG more frequently.

a. If the eyepiece lenses become fogged during use due to humid, rainy (misty), or cold conditions, clean the lenses and install demist shields.

The demist shields are installed by:

(1) Turning the eyepiece focus rings counterclockwise, and pressing the demist shields until firmly seated in the rear of the eyepiece lens. It may be necessary to remove the eyecups prior to installing the demist shields.

(2) Reinstall goggle on headmount assembly (if required) and refocus eyepiece and objective lenses for the sharpest view.

b. If operating the goggle in a dusty or sandy environment, install the sacrificial window over the objective lens. This will protect the glass lens from being scratched or pitted.

c. The LIF is to be installed at the commander's discretion when operating in a laser threat environment. Perform the following procedure for installing the LIF to the objective lens assembly.

(1) Remove the container (Figure 2-22) from the carrying case.

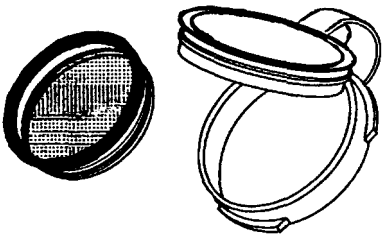


Figure 2-22. Light Interference Filter and Storage Container.

Be careful not to touch the glass surfaces. If you get fingerprints or contamination on the glass surfaces, use lens paper to clean the LIF. If moisture is needed, use your breath to mist the surface of the glass.

(2) If the lens cap or sacrificial window is on the objective lens of the goggle, remove it.

(3) Carefully open the container and remove the LIF.

(4) Hold the LIF by the notched end and thread it clockwise, into the end of the objective lens.

Do not *overtighten the LIF into the objective lens.*

(5) Tighten the LIF hand tight (see Figure 2-23).

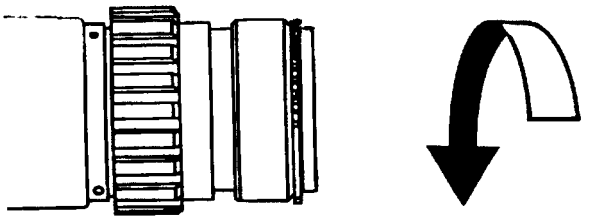


Figure 2-23. Tightening the LIF.

(6) Place the empty filter container back into the carrying case.

(7) To remove the LIF, turn the LIF counterclockwise. Return the LIF to its container and place the container back into the carrying case.

CHAPTER 3
MAINTENANCE INSTRUCTIONS

Section I. Lubrication Instructions

3-1 GENERAL

No lubrication is required.

Section II. Troubleshooting Procedures

3-2 GENERAL

Operate the goggle under night time conditions only. Using the goggle during the day, in a brightly lit room, or staring at a bright light source, even at night, can permanently damage the image intensifier.

Table 3-1 lists common malfunctions that you may find with your equipment. Perform the tests, inspections, and corrective actions in the order they appear in the table.

This table cannot list all the malfunctions that may occur, all the tests and inspections needed to find the fault, or all the corrective actions needed to correct the fault. If the equipment malfunction is not listed or actions listed do not correct the fault, return to maintenance for repair.

Table 3–1. Operator's Troubleshooting

Malfunction	Probable Cause	Corrective Action
1. Goggle fails to activate.	a. Batteries defective, missing or improperly installed. b. Defective goggle.	a. Replace batteries or install correctly. b. Refer to higher level of maintenance.
2. IR indicator fails to activate.	Defective goggle.	Refer to higher level of maintenance.
3. Poor image quality.	a. Objective lens or eyepieces not focused correctly. b. Fogging or dirt on lens. c. Defective goggle. d. Moisture in lens.	a. Refocus. b. Clean lens surfaces. c. Refer to higher level of maintenance. d. Refer to higher level of maintenance.
4. Fails TS–4348 Resolution Test.	a. Eyes not dark-adapted. b. Objective lens or eyepieces not focused correctly. c. Fogging or dirt on lens. d. Weak batteries.	a. Allow eyes to become dark-adapted. b. Refocus. c. Clean lens surfaces. d. Replace batteries.

Table 3–1. Operator's Troubleshooting (continued)

Malfunction	Probable Cause	Corrective Action
	e. High/Low switch incorrectly positioned. f. Defective goggle.	e. Set High/Low switch to proper position. f. Refer to higher level of maintenance.
5. Light visible around eyecup.	a. Eye relief distance not adjusted properly. b. Eyecup has lost resiliency.	a. Re-adjust eye relief distance. b. Refer to higher level of maintenance.
6. Diopter adjustment cannot be made.	Diopter adjustment ring bent or broken.	Refer to higher level of maintenance.
7. Eyespan adjustment cannot be made (left and right eye).	Defective rear cover assembly.	Refer to higher level of maintenance.

Table 3–1. Operator's Troubleshooting (continued)

Malfunction	Probable Cause	Corrective Action
8. Battery hatch knob difficult to turn.	Damaged battery hatch knob.	Refer to higher level of maintenance.
9. Headstraps cannot be tightened.	Defective buckles, fasteners or straps.	Refer to higher level of maintenance.
10. Headmount carriage and goggle do not catch.	a. Carriage dirty. b. Carriage damaged.	a. Clean carriage latch. b. Refer to higher level of maintenance.

3-3 BATTERY REPLACEMENT

WARNING

Do not use mercury or rechargeable NiCad batteries. Using these batteries could result in a system failure, or personnel injury.

CAUTION

Be sure the rotary *switch is in the OFF position before replacing the battery. Rotary switch shall align with knurled corner of goggle.*

a. AA batteries

(1) Open the battery compartment hatch by turning the locking tab quarter turn counterclockwise, Remove the two used batteries. (Batteries must be disposed in accordance with DLSC Handbook 41601 and TB 43-0134 Battery Disposition/ Disposal Handbook).

(2) Insert two known good AA batteries (item 2, Section II, Appendix D) into the holder, one positive end and one negative end first, as shown in Figure 3-1.

(3) Close the hatch and secure by turning the locking tab a quarter turn clockwise.

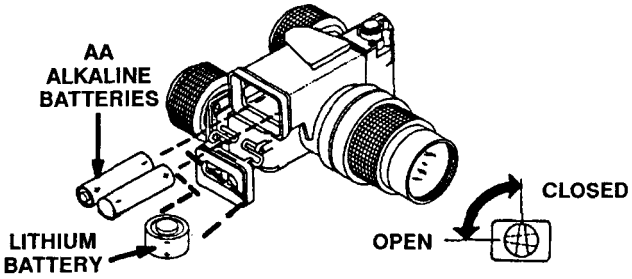


Figure 3-1. Battery Replacement.

b. Lithium battery:

(1) Open the battery hatch by turning the locking tab quarter turn counterclockwise, Remove the old battery. (Lithium batteries must be handled in accordance with TB 43-0130 Instructions For The Safe Handling and Identification of U.S. Army Communications-Electronics Command Managed Lithium Sulfur Dioxide Batteries and TB 43-0134 Battery Disposition/Disposal Handbook).

(2) Insert one known good battery (item 1, Section II, Appendix D) with the button (negative end) up, into the holder as shown in Figure 3-1.

(3) Close the hatch and secure by turning the locking tab a quarter turn clockwise.

3-4 NECK CORD REPLACEMENT

a. Removal:

(1) Untie one end knot at the objective lens cap. See Figure 3-2.

(2) Pull cord through tabs on lens caps and goggle.

b. Replacement:

(1) Tie a knot in one end of the neck cord.

(2) Insert un-knotted end through the tab on the objective lens cap, tab on goggle (insert from bottom to top), tabs on both eyepiece lens caps, second tab on goggle (insert top to bottom), and the second tab on objective lens cap.

(3) Knot the other end of the cord and pull neck cord tight to seat objective lens cap underneath goggle.

(4) Install lens caps over lenses.

3-5 CLEANING OF OPTICAL SURFACES

To prevent damage to your equipment, use only lens tissue or clean cotton cloth when cleaning lenses.

a. Objective Lens, Eyepiece Lens, and Sacrificial Window. Remove all loose dirt from the objective and eyepiece lens, and sacrificial window. Dampen a folded lens tissue or clean cotton cloth with clean water. Wipe the lens with a single pass over the lens. Refold the tissue or cloth to expose a clean area. Repeat this procedure until lens is clean.

If demist shields need to be cleaned, make sure the shields are dry and use dry lens paper. If demist shields are *wiped while* wet or *with wet lens paper, you will damage the coating.*

b. Demist Shield Cleaning. Allow demist shields to air dry if wet. Remove all loose dirt from the demist shield. Using a dry lens paper wipe the lens with a single pass over the shield.

c. Light Interference Filter (LIF). Clean with clean water and lens tissue, using a circular motion starting in the center. Dry with clean cotton cloth.

3-6 EXTERIOR CLEANING

Wipe exterior surfaces with a clean dry lint-free cloth to remove dust, dirt, or sand. If necessary, dampen the cloth with clean water and detergent solution to remove dirt and grease.

3-6.1 CLEANING AFTER USE IN NBC ENVIRONMENTS.

WARNING

After Nuclear, Biological, or Chemical (NBC) exposure, the Night Vision Goggle AN/PVS-7A must be handled with extreme caution. Unprotected personnel may experience injury or death if residual toxic agents or radioactive agents are present. If the Goggle is exposed to chemical or biological agents, servicing personnel must wear a protective mask, hood, protective overgarment, and chemical-protective gloves and boots.

CAUTION

DS-2 will damage the NVG's plastic casing. Use a 5% solution of sodium hypochlorite to decontaminated the NVG.

NOTE

Remove all NVG assessories prior to cleaning.

Decontamination. Wear protective mask during decontamination process of the AN/PVS-7A. To decontaminate use 5% sodium hypochlorite and rinse with hot (150°) soapy water.

3-6.2 CLEANING AFTER USE IN SALTWATER ENVIRONMENT.

Wipe exterior surfaces with a clean dry lint-free cloth to remove dust, dirt, or sand. If necessary, dampen the cloth with clean water and detergent solution to remove dirt, grease, or salt residue.

APPENDIX A
REFERENCES

A-1 SCOPE

This appendix lists all forms, field manuals, and technical publications referenced in this manual.

A-2 FORMS

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

Transportation Discrepancy Report (TDR) . . . . . SF 361

Product Quality Deficiency Report . . . . . SF 368

Recommended Changes to Equipment Technical Publications . . . . . DA Form 2028-2

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

A-3 FIELD MANUALS

First Aid for Soldiers FM21-11

A-4 TECHNICAL MANUALS

Administrative Storage of Equipment . . . . . TM 740-90-1

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

Test Set, Electronic Systems, TS-4348/UV . . . . . TM 11-5855-299-12&P

A-5 MISCELLANEOUS PUBLICATIONS

Care of Supplies in Storage . . . . AR 740-3

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

DLSC Handbook 41601

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

Instructions For The Safe Handling and Identification of US. Army Communications-Electronics Command Managed Lithium Sulfur Dioxide Batteries . . . . . TB 43-0130

Battery Disposition/Disposal Handbook . . . . . TB 43-0134

APPENDIX B
COMPONENTS OF END ITEM (COEI) AND BASIC ISSUE ITEMS (BII)

Section I. Introduction

B-1 SCOPE

This appendix lists components of end item and basic issue items for your AN/PVS-7A to help you inventory items required for safe and efficient operation of the equipment.

B-2 GENERAL

The Components of End Items (COEI) and Basic Issue Items (BII) lists are divided into the following sections:

a. Section II Components of End Items. This listing is for informational 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. These are the minimum essential items required to place the AN/PVS-7A in operation, to operate it, and to perform emergency repairs. Although

shipped separately packaged, Basic Issue Items must be with the AN/PVS-7A during operation and whenever it is transferred between property accounts. The illustrations will assist you with hard to identify items. This manual is your authority to request/requisition replacement BII, based on TOE/MTOE authorization of the end item.

B-3 EXPLANATION OF COLUMNS

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

a. Column (1), Illustration Number. This column is divided as follows:

(1) Figure number. Indicates the number of the Figure in which the item is shown.

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

b. Column (2), National Stock Number. Identifies the National Stock Number (NSN) assigned to the item and will be used for requisitioning purposes.

c. Column (3), Description and Usable On Code. Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The last line below the description is the part number and the Commercial and Government Entity code (CAGE) (in parenthesis). If the item you need is not the same for different models of equipment, a

Usable On Code will appear on the right side of the description column on the same line as the part number.

d. Column (4), Unit of Issue (U/I). Indicates how the item is issued for the National Stock Number shown in column (2).

e. Column (5), Quantity Required. Indicates the quantity of the item authorized to be with/on the equipment.

Section II. Components of End Item

1		2	3		4	5
Illustrations		National Stock Number	Description/ Part Number (CAGE)	Usable On Code	U/I	Qty Rqd
Figure No.	Item No.					
B-1	1	5855-01-246-6804	HEADMOUNTED ASSEMBLY A3140690 (80063)		EA	1
B-1	2	5855-01-246-6820	GOGGLE ASSEMBLY A3140760 (80063)		EA	1
B-1	3	5855-01-246-6802	CASE, SHIPPING AND STORAGE A3140670 (80063)		EA	1
B-1	4	5855-01-246-6801	CASE, CARRYING A3140660 (80063)		EA	1

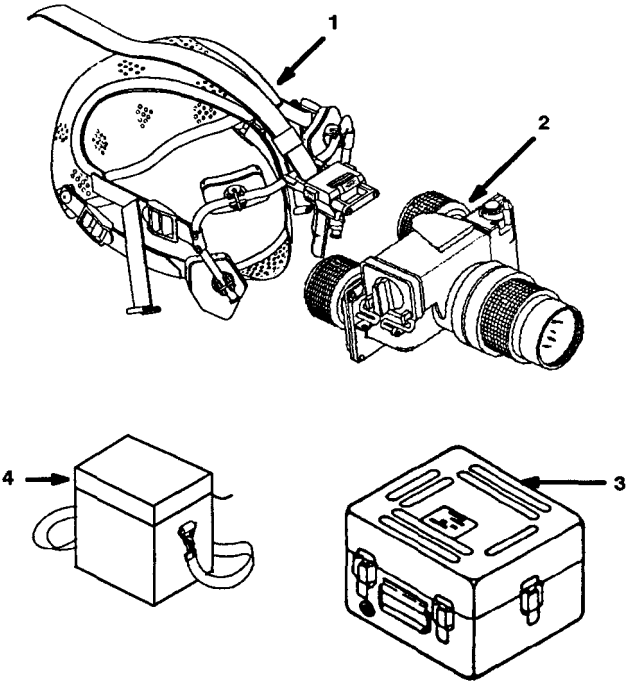


Figure B-1. Components of End Items.
(Sheet 1 of 2)

Section II. Components of End Item (continued)

1		2	3		4	5
Illustrations		National Stock Number	Description/ Part Number (CAGE)	Usable On Code	U/I	Qty Rqd
Figure No.	Item No.					
B-2	5	5855-01-250-2348	WINDOW, SACRIFICIAL A3140650 (80063)		EA	2
B-2	6	5955-01-250-2349	DEMIST SHIELD A3140653 (80063)		PR	1
B-2	7	6650-01-321-2905	FILTER, LIGHT INTERFERENCE MX11391/PVS-7 (80058)		EA	1
B-2	8	5855-01-250-2420	CAP, LENS, OBJECTIVE A3140633 (80063)		EA	1
B-2	9	4020-01-292-1281	CORD, NECK A3140631 (80063)		EA	1

Section II. Components of End Item (continued)

1		2	3		4	5
Illustrations		National Stock Number	Description/ Part Number (CAGE)	Usable On Code	U/I	Qty Rqd
Figure No.	Item No.					
B–2	10	5855–01–250–2421	CAP, LENS, EYEPIECE A3140765 (80063)		EA	2
B–2	11	5955–01–250–2356	CUP, EYEPIECE A3140632 (80063)		EA	2

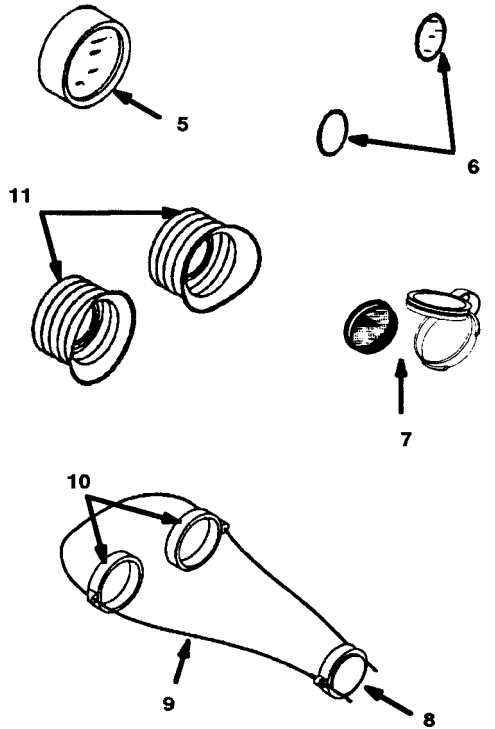


Figure B-2. Component of End Items.
(Sheet 2 of 2)

APPENDIX C
ADDITIONAL AUTHORIZATION LIST (AAL)

Section I. Introduction

C-1 SCOPE

This appendix lists additional items you are authorized for support of the AN/PVS-7A.

C-2 GENERAL

This list identifies items that do not have to accompany the AN/PVS-7A and that do not have to be turned in with it. These items are all authorized to you by CTA, MTOE, TDA, or JTA.

C-3 EXPLANATION OF LISTINGS

National Stock Numbers (NSN), descriptions, and quantities are provided to help you identify and request the additional items you require to support this equipment.

Section II. Additional Authorization List (AAL)

1 National Stock Number	2 Description/ Part Number (CAGE)	3 Usable On Code	4 U/I	5 Qty Rqd
6135-01-090-5365	BATTERY, PRIMARY BA-5567/U (80058)		EA	1
6135-00-935-2587	BATTERY, PRIMARY BA-3058/U (80058)		EA	2
6625-01-323-9584	TEST SET, ELEC. SYS., TS-4348/UV		EA	

APPENDIX D
EXPENDABLE AND DURABLE ITEMS LIST

Section I. Introduction

D-1 SCOPE

This appendix lists expendable and durable items that you need to operate and maintain the AN/PVS-7A. This listing is for information only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/Durabie Items (except medical, class V repair parts, and heraldic items).

D-2 EXPLANATION OF COLUMNS

a. Column (1). item Number. This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the item (e.g. “Use lens paper, item 1, Appendix D”).

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

c. Column (3). National Stock Number. This is the National Stock Number (NSN) assigned to the item which you can use to requisition it.

d. Column (4). item name, description, part number and Commercial and Government Entity Code (CAGE), This provides the other information you need to identify the item.

e. Column (5). Unit of Measure (U/M). This code shows the physical measurement or count of an item, such as gallon, dozen, gross, etc.

Section II. Expendable and Durable Items List

1	2	3	4	5
Item Number	Level	National Stock Number	Description/ Part Number (CAGE)	U/M
1	C	6640-00-240-5851	PAPER, LENS NNN-P-40 (80058)	PK
2	C	7920-00-823-9773	TOWEL, SHOP	PK
3	C	7930-00-926-5280	DETERGENT, GENERAL PURPOSE, SPRAY NON-AMMONIA	EA

E

F

G, H

I, J, K

L

M

N

O

P

Q, R

S

T

U,V

W,X,Y,Z

By Order of the Secretary of the Army:

GORDON R. SULLIVAN
General, United States Army
Chief of Staff

Official:

Milton H. Hamilton

MILTON H. HAMILTON
Adminitrative Assistant to the Secretary of the Arrny

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THE METRIC SYSTEM AND EQUIVALENTS

'NEAR MEASURE

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

'VEIGHTS

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

LIQUID MEASURE

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

SQUARE MEASURE

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

CUBIC MEASURE

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

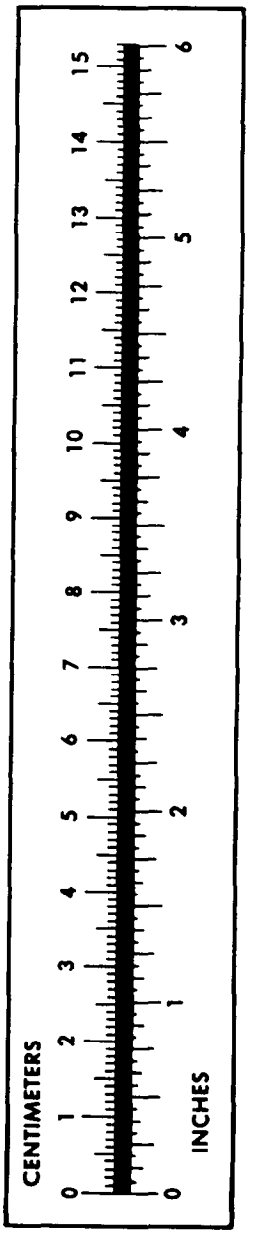
TEMPERATURE

5/9(°F - 32) = °C
212° Fahrenheit is evuivalent to 100° Celsius
90° Fahrenheit is equivalent to 32.2° Celsius
32° Fahrenheit is equivalent to 0° Celsius
9/5C° + 32 =°F

APPROXIMATE CONVERSION FACTORS

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

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



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