PVS-14

Night Vision Monocular

OPERATION AND MAINTENANCE MANUAL

Important Export Restrictions! Commodities, products, technologies and services of this manual are controlled by the U.S. Department of State Office of Defense Trade Controls, in accordance with International Traffic in Arms (ITAR), Title 22, Code of Federal Regulations Part 120-130 and/or by the Export Administration Regulations (EAR) of U.S. Department of Commerce. At any time when a license or a written approval of the U.S. Government is applicable to it, it is illegal and strictly forbidden to export, intend to export, transfer in any other manner whatsoever, sell any hardware or technical data, provide any associated service to any non-U.S. resident, beyond or within the United States territory, until the valid license or written approval has been issued by the Departments of the U.S. Government having jurisdiction. Additionally U.S. law prohibits the sale, transfer, or export of items to certain restricted parties, destinations, and embargoed countries, as identified on lists maintained by the U.S. Department of State, the U.S. Department of Commerce, and the U.S. Department of Treasury. It is the responsibility of the Customer to be aware of these lists. The sale, transfer, transportation, or shipment outside of the U.S. of any product prohibited or restricted for export without complying with U.S. export control laws and regulations, including proper export licensing, documentation or authorization, is unlawful and may result in civil and/or criminal penalties and/or constitute a federal crime. Diversion contrary to U.S. law is strictly prohibited.

SAFETY SUMMARY

Before operating this product, carefully read and study this Operation and Maintenance Manual.

The PVS-14 is a precision electron-optical instrument, and requires careful handling. To avoid damage to the equipment or physical harm to the user when operating the PVS-14, follow all WARNINGS, CAUTIONS, and NOTES.

Below you will find definitions of the following alerts that appear throughout this Manual:

WARNING — Identifies a clear danger to the person operating the equipment.

CAUTION – Identifies risk of damage to the equipment.

NOTE – Highlights essential procedures, conditions, statements, and important instructional information for the user.

⚠ WARNING:

This product contains natural rubber latex which may cause allergic reactions! The FDA has reported an increase in the number of deaths that are associated with an apparent sensitivity to natural latex proteins. If you are allergic to latex, it is a good idea to learn which products contain it and strictly avoid exposure to those products.

⚠ WARNINGS:

Toxic Material

The image intensifier's phosphor screen contains toxic materials.

• If the image intensifier breaks, be **extremely** careful to avoid inhaling the phosphor screen material. Do not allow the material to come in contact with the mouth or open wounds on the skin.

• If the phosphor screen material comes in contact with 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**.

⚠ WARNINGS:

• The monocular will not turn off automatically when flipped up. The monocular needs to be turned off with the power switch.

• The compass illuminator is visible to other people using night vision devices.

• Do not use contaminated eyecups or eyeguards. If contaminated, they must be replaced.

• When installing the headmount over the protective mask, be careful not to break the protective mask's seal around your face.

The information provided in this manual is for familiarization purposes only. The contents may undergo further changes with no commitment by Armasight© to notify customers of any updates.

Armasight© assumes no responsibility for any misprints or other errors that this manual may contain.

CAUTION:

• The PVS-14 is a precision optical instrument and must be handled carefully at all times to prevent damage.

• To prevent damage, be especially careful when leaving the helmet mount in the flipped up position or removing the helmet mount from the helmet.

• Do not scratch the external lens surfaces or touch them with your fingers.

• Do not wipe the demisting shield with lens paper while it is damp, or using wet lens paper, as this can damage the coating.

• To protect the image intensifier, keep the lens cap securely fitted over the objective lens when the monocular is not in use or when it is being operated in daylight conditions.

• Light from the IR illuminator is invisible to the unaided eye. **However, it can be detected by other night vision devices.**

• If you use the rubber eyecups for a long period of time, you may suffer skin inflammation. If you develop any symptoms, consult a doctor immediately.

NOTES:

To avoid physical injury and damage to the equipment, carefully read and understand the following safety precautions.

• The equipment requires some ambient light (moonlight, starlight, etc.) to operate.

• Performance of the device in nighttime conditions depends on the level of ambient light in the environment. Please remember the following:

— The level of ambient light is reduced by the presence of clouds, shade, or objects that block natural light (trees, buildings, etc.).

— The equipment is less effective when operated in shadows and other darkened areas.

— The equipment is less effective when operated in rain, fog, sleet, snow, dust or smoke.

— The equipment will not "see" through dense smoke.

• At operating temperatures below -20°C (-4°F), the use of an alkaline battery is not recommended, as the battery life will be severely reduced. Under said conditions, lithium-iron disulfide 1.5V AA batteries or their equivalent should be used.

• The IR illuminator is intended for increased illumination, as needed, when viewing at a close distance of up to 3m.

• For the purpose of returning defective components, retain all packaging materials.

LIST OF CONTENTS

LIST OF FIGURES

HOW TO USE THIS MANUAL

USAGE

You must familiarize yourself with the entire manual before operating the equipment. Before performing any kind of maintenance on your device, read the section on maintenance in its entirety. Follow all WARNINGS, CAUTIONS, and NOTES.

MANUAL OVERVIEW

This manual contains sections on Operating and Maintaining the PVS-14 Night Vision Monocular.
The Components of End Items (COEI) and Basic Issue Items (BII) Lists can be found in Appendix A.
The Additional Authorization List (AAL) can be found in Appendix B.
The Expendable and Durable Items List can be found in Appendix C.
The Product Warranty Registration Card can be found in Appendix D.

1

INTRODUCTION

1.1 GENERAL INFORMATION

1.1.1 TYPE OF MANUAL

Operation and Maintenance

1.1.2 MODEL NUMBER AND EQUIPMENT NAME

PVS-14 Multi-Use Night Vision Monocular

1.1.3 PURPOSE OF EQUIPMENT

To provide the operator with the ability to observe at night under moonlight and starlight conditions.

The PVS-14 can be used as a handheld, head-mounted, helmet-mounted or weapon-mounted device to allow walking, weapon firing, short-range surveillance, map reading, vehicle maintenance, and administration of first aid.

1.1.4 REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS

User recommendations for improvements to the device are encouraged.

Mail your comments to Armasight Inc., 815 Dubuque Avenue, South San Francisco, CA 94080, USA.

Or, send an email to *info@armasight.com*.

1.2 WARRANTY INFORMATION AND REGISTRATION

1.2.1 WARRANTY INFORMATION

This product is guaranteed to be free from manufacturing defects in material and workmanship under normal use for a period of two (2) years from the date of purchase. In the event that a defect covered by the below warranty occurs during the applicable period stated above, Armasight, at its discretion, will either repair or replace the product; such action on the part of Armasight shall be the full extent of Armasight's liability, and the Customer's sole and exclusive reparation. This warranty does not cover a product if it has (a) been used in ways other than its normal and customary manner; (b) subjected to misuse; (c) subjected to alterations, modifications or repairs by the Customer or by any party other than Armasight without prior written consent of Armasight; (d) special order or "close-out" merchandise or merchandise sold "as-is" by either Armasight or the Armasight dealer; or (e) merchandise that has been discontinued by the manufacturer and either parts or replacement units are not available due to reasons beyond the control of Armasight. Armasight shall not be responsible for any defects or damage that in Armasight's view are a result from the mishandling, abuse, misuse, improper storage or improper operation of the device, including use in conjunction with equipment that is electrically or mechanically incompatible with, or of inferior quality to, the product, as well as failure to maintain the environmental conditions specified by the manufacturer. CUSTOMER IS HEREBY NOTIFIED THAT OPERATION OF THE EQUIPMENT DURING DAYLIGHT HOURS OR UNDER ANY EXCESSIVE LIGHT CONDITIONS MAY PERMANENTLY DAMAGE THE INTERNAL COMPONENTS OF THE UNIT AND SAID DAMAGE WILL NOT BE COVERED UNDER THIS WARRANTY. This warranty is extended only to the original purchaser. Any breach of this warranty shall be enforced unless the Customer notifies Armasight at the address noted below within the applicable warranty period.

The Customer understands and agrees that except for the foregoing warranty, no other warranties written or oral, statutory, expressed or implied, including any implied warranty of merchantability or fitness for a particular purpose, shall apply to the product. All such implied warranties are hereby and expressly disclaimed.

1.2.2 LIMITATION OF LIABILITY

Armasight will not be liable for any claims, actions, suits, proceedings, costs, expenses, damages or liabilities arising out of the use of this product. Operation and use of the product are the sole responsibility of the Customer. Armasight's sole undertaking is limited to providing the products and services outlined herein in accordance with the terms and conditions of this Agreement. The provision of products sold and services performed by Armasight to the Customer shall not be interpreted, construed, or regarded, either expressly or implied, as being for the benefit of or creating any obligation toward any third party of legal entity outside Armasight and the Customer; Armasight's obligations under this Agreement extend solely to the Customer. Armasight's liability hereunder for damages, regardless of the form or action, shall not exceed the fees or other charges paid to Armasight by the Customer or Customer's dealer. Armasight shall not, in any event, be liable for special, indirect, incidental, or consequential damages, including, but not limited to, lost income, lost revenue, or lost profit, whether such damages were foreseeable or not at the time of purchase, and whether or not such damages arise out of a breach of warranty, a breach of agreement, negligence, strict liability or any other theory of liability.

1.2.3 PRODUCT WARRANTY REGISTRATION

In order to validate the warranty on your product, Armasight must receive a completed Product Warranty Registration Card for each unit, or the Customer can complete a warranty registration on our website, at www.armasight.com. Please complete the included form (Appendix D) and immediately mail it to our Service Center:

Armasight Inc.
815 Dubuque Avenue
South San Francisco
CA 94080
United States of America.

1.2.4 OBTAINING WARRANTY SERVICE

To obtain warranty service on your unit, the End-user (Customer) must notify the Armasight service department via email. Send any requests to service@armasight.com to receive a Return Merchandise Authorization number (RMA). When returning any device, please take in the product to your retailer, or send the product, postage paid and with a copy of your sales receipt, to Armasight Corporation's service center at the address listed above. All merchandise must be fully insured with the correct postage; Armasight will not be responsible for improper postage or merchandise that becomes lost or damaged during shipment. When sending product back, please clearly write the RMA# on the outside of the shipping box. Please include a letter that indicates your RMA#, the Customer's Name, a Return Address, reason for the return, Contact information (valid telephone numbers and/or an e-mail address), and proof of purchase that will help us to establish the valid start date of the warranty. Product merchandise returns that do not have an RMA# listed may be refused, or a significant delay in processing may occur. Estimated Warranty service time is 10-20 business days. The End-user/ Customer is responsible for postage to Armasight for warranty service. Armasight will cover return postage/ shipping after warranty repair to the End-user/ Customer only if the product is covered by the aforementioned warranty. Armasight will return the product after warranty service by domestic UPS Ground service and/ or domestic mail. Should any other requested, required or international shipping methods be necessary, the postage/ shipping fee will be the responsibility of the End-user/ Customer.

1.3 CROSS REFERENCES

COMMON NAME	OFFICIAL NAME
Allen Wrench	Socket Head Screw Key
Battery Compartment	Battery Box Cover
Shipping Case	Textile Bag
Cotton Swab	Disposable Applicator
Neoprene Jack Plug	Plug Assembly
O-Ring	Gasket
Safety Screw	Electrical Dial-Knob Lock
Pattern Generator	Optical Instrument Reticle
Lens Covers	Exit Port Covers
Paddle Switch	Remote Cable Switch
Batteries	AA
Technical Manual	Operator and Field Maintenance Manual
Tape Fastener Loop	Fastener, Loop Tape
Tape Fastener Hook	Fastener, Hook Tape

1.4 LIST OF ABBREVIATIONS

AAL	Additional Authorization List
BII	Basic Issue Items
CAGEC	Commercial and Government Entity Code
cm	Centimeters
COEI	Components of End Item
CPC	Corrosion Prevention and Control-
CTA	Common Table of Allowances-
DA	Department of the Army
EIC	End Item Code
EIR	Equipment Improvement Recommendation
FM	Field Manual
Hrs	Hours
IR	Infrared
JTA	Joint Table of Allowances
lbs	Pounds
LED	Light Emitting Diode
MUNVM	Multi-Use Night Vision Monocular
NVMPS	Night Vision Multi-Purpose System
MTOE	Modified Table of Organization and Equipment-
N/A	Not Applicable
NBC	Nuclear, Biological, and Chemical
NSN	National Stock Number
Pam	Pamphlet
PASGT	Personal Armor System Ground Troops
PMCS	Preventive Maintenance Checks and Services
Qty	Quantity
Recm	Recommended
Rqr	Required
SF	Standard Form
TDA	Table of Distribution and Allowances-
TM	Technical Manual
TOE	Table of Organization and Equipment-
U/M	Unit of Measure
Vdc	Volts, direct current

1.5 GLOSSARY

BLACK SPOTS. Cosmetic blemishes in the image intensifier of the PVS-14, or dirt or debris between the lenses.

BRIGHT SPOTS. Defects that can appear in the image area of the PVS-14. This condition is caused by a flaw in the film on the microchannel plate. A bright spot is a small, non-uniform, bright area that may flicker or appear constant. Bright spots are cosmetic blemishes that are signal-induced, and usually disappear when all light is blocked out.

BROWPADS. Three hook-and-pile browpads are provided to adjust the headmount to fit different head sizes. The thin browpad (for larger heads) comes attached to the headmount and the thick, or medium (for smaller heads) browpads are stored in the carrying case.

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. In the worst cases of Chicken Wire, these lines will form hexagonal or square, wave-shaped lines.

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.

DARK-ADAPTED. When the user's eyes have adjusted to the monocular's output under low light conditions.

DIOPTER. A unit of measure used to define eye correction. Adjustments to the diopter adjustment will provide a clearer image for each eye.

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

EMISSION POINT. A steady or fluctuating pinpoint of bright light in the image area and does not go away when all light is blocked from the objective lens of the monocular. The position of an emission point within the image area of the monocular does not move. An emission point should not be confused with a point light source in the distance.

FIXED-PATTERN NOISE. A cosmetic blemish in the image area characterized by a faint, hexagonal (honeycomb) pattern throughout the viewing area. It most often occurs in excessive light conditions or when viewing very bright lights. Fixed-pattern noise is inherent in the structure of the fiber optics and can be seen in every image intensifier if the level of light is high enough.

FLASHING. A defect in the image area of the monocular. The image appears to flicker or flash.

FLICKERING. See "flashing."

GAIN. The number of times a night vision device amplifies light input.

IMAGE INTENSIFIER. An electro-optical device that detects and amplifies ambient light to produce a visual image.

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.

INTERMITTENT OPERATION. A defect in the image area of the monocular. See "flashing."

IR SOURCE. Ann IR Light Emitting Diode (LED). When turned on, the IR source provides additional illumination to enhance existing light conditions, and should be used only for performing nearby tasks.

MICROCHANNEL PLATE. A current-multiplying optical disk that intensifies the electron image produced by the photocathode.

PHOTOCATHODE. The input optic of an image intensifier that absorbs light energy and releases electrical energy in the form of an electron image.

SCINTILLATION. A faint, random, sparkling effect throughout the image area. Scintillation is a normal characteristic of the image intensifier and should not be confused with emission points. Scintillation is more pronounced under low light conditions. Also called "video noise."

SHADING. The viewed image should be a full circle. If shading is present, you will not see a fully circular image. Shading is indicative of a dying photocathode and is caused by a defective vacuum seal of the image intensifier. Shading is very dark and you cannot see an image through it.

2

DESCRIPTION AND DATA

2.1 EQUIPMENT DESCRIPTION

2.2.1. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

The PVS-14 is a hand-held, head-mounted, helmet mounted, or weapon-mounted night vision system that enables walking, weapon firing, short-range surveillance, map reading, vehicle maintenance, and administration of first aid in both moonlight and starlight conditions. Each unit allows for vertical adjustment (by using the head strap), fore-and-aft adjustment, objective lens focus and eyepiece focus. The monocular is also equipped with an IR source and a low battery indicator. The PVS-14 model is equipped with a manual gain control.

2.2.2. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

The NVMPS includes the items shown in Figures 2-1 and 2-2. The major components are the monocular, headmount, helmet mount, carrying case, and the shipping and storage case.

a. Monocular

The monocular (see Figure 2-4) consists of various components such as an objective lens, an image intensifier (not shown), an eyepiece lens and a battery cap.

The monocular also uses the accessories listed below (Figure 2-1 and Figure 2-2):

b. Demist Shield

The demist shield is used to prevent the eyepiece lenses from becoming fogged.

c. Sacrificial Window

A replaceable sacrificial window is supplied to protect the objective lens during operation in adverse conditions.

d. Tethering Cord

The tethering cord enables the user to attach the compass or 3X magnifier to a button hole or belt loop to guard against dropping or losing these items.

e. Headmount

The headmount secures the monocular to the operator's head for night viewing and provides freehand support for use with a weapon, protective mask, or for other purposes in which freehand operation is required. It is adjustable and cushioned. The thin browpad should be used for larger heads, and comes attached to the headmount; the thick and medium browpads should be used for smaller heads, and are stored in the carrying case.

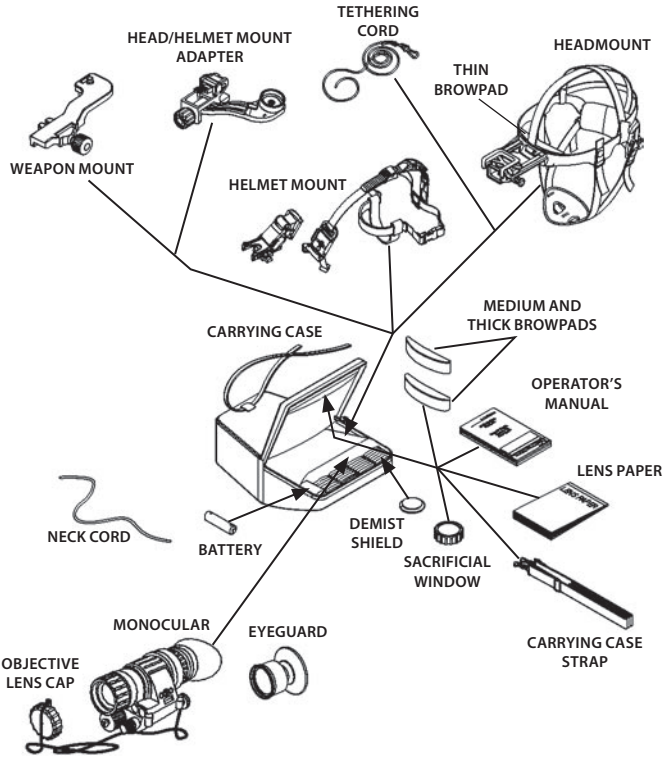

Figure 2-1. Components of PVS-14

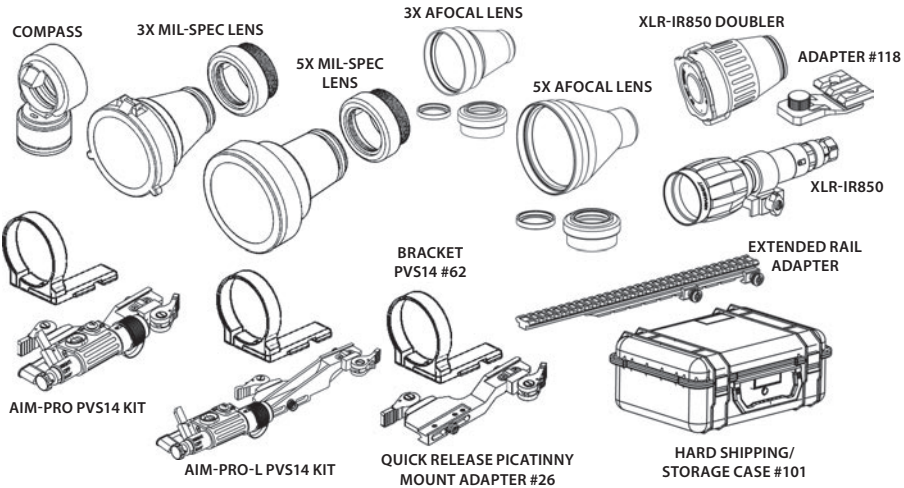

Figure 2-2. Optional Equipment

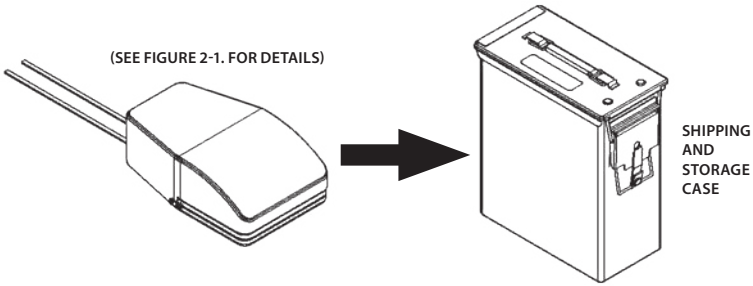

Figure 2-3. Shipping and storage cases for PVS-14

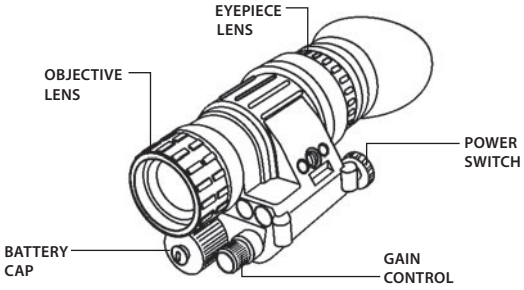

Figure 2-4. Multi-Use Night Vision Monocular

f. PASGT Helmet Mount (Part# ANHM000006)

The PASGT helmet mount secures the monocular to the Personal Armor System Ground Troops (PASGT) helmet, allowing freehand support for use with a weapon, protective mask and/ or other purposes in which freehand operation is required.

g. MICH Helmet Mount (Part# ANHM000005)

The MICH helmet mount secures the monocular to the MICH helmet, allowing freehand support for use with a weapon, protective mask and/ or other purposes in which freehand operation is required.

h. Headmount/Helmet Mount Adapter

The headmount/ helmet mount adapter is attached to the monocular to allow use with the headmount or helmet mount. It allows mounting in front of the left or right eye.

i. Weapon Mount (Part# ANAM000007)

The weapon mount adapts the monocular to the receiver rail as configured for the modular weapon system kit.

j. Carrying Case

The carrying case (Figure 2-3) is provided for transportation and protection of the monocular, headmount, battery and accessories. Two slide keepers are provided for belt attachment; three D-rings are provided for shoulder and leg strap attachment. A carrying case strap is also provided, and can be attached to the two D-rings on the back of the carrying case.

k. Shipping and Storage Case

The NVMPS is supplied in a shipping and storage case (Figure 2-3).

l. Compass

The compass enables the operator to see azimuth readings in the monocular.

m. 3X Afocal Mil-Spec Lens (Part# ANAF3X0003)

The 3X magnifier is a lens assembly which can be added to the monocular to extend the operator's observation ranges.

n. 5X Afocal Mil-Spec Lens (Part# ANAF5X0001)

The 5X magnifier is a lens assembly which can be added to the monocular to extend the operator's observation ranges.

o. 3X Afocal Lens with Adapter (Part# ANAF3X000P)

The 3X magnifier is a lens assembly which can be added to the monocular to extend the operator's observation ranges.

p. 5X Afocal Lens with Adapter (Part# ANAF5X000P)

The 5X magnifier is a lens assembly which can be added to the monocular to extend the operator's observation ranges.

q. ARFS3 (Part# ANAMRF0003)

Advanced Range Finding Stadia for 3x A-Focal Lens

r. ARFS5 (Part# ANAMRF0005)

Advanced Range Finding Stadia for 5x A-Focal Lens

s. AIM-PRO PVS14 Kit (Part# ANKI000P32)

AIM-PRO Advanced Aiming Mount allows the user to quickly convert the PVS-14 into a weapon sight. The kit incuded the AIM-PRO and bracket for installing PVS-14 onto the AIM.

t. AIM-PRO-L PVS14 Kit (Part# ANKI000P49)

AIM-PRO-L Advanced Aiming Mount allows the user to quickly convert the PVS-14 with 3x lens into a weapon sight. The kit incuded the AIM-PRO-L and bracket for installing PVS-14 onto the AIM.

u. Quick Release Picatinny Mount Adapter #26 (Part# ANAM000004)

Small arms adapter that allows the PVS-14 to be mounted on a weapon using Picatinny Mil-1913 rail.

v. Bracket PVS14 #62 (Part# ANKI000046)

Allows the PVS-14 to be mounted on the Quick Release Picatinny Mount Adapter.

w. XLR-IR850 Detachable X-Long Range Infrared Illuminator w/ Picatinny Adapter, Rechargeable Battery, and Charger (Part# ANKIXLR118)

A detachable LED extra long-range infrared illuminator with wideangle adjustable beam. Comes fully assembled with a dedicated mount in order to be installed on a Picatinny/Weaver rail. Picatinny/Weaver Adapter #118 is included.

x. XLR-IR850 A-Focal Doubler (Part# ANAF18XXLR)

Doubles the distance of XLR-IR850 IR beam

y.Extended Rail Adapter #85 (Part# ANAM000045)

Dovetail Weaver Picatinny Rail Adapter Extends 7.5 " to 11.5" Tactical Scope Mount.

z. Hard Shipping/ Storage Case #101 (Part# ANHC000001)

A protective case used for the shipping/ storage of the NYX-14 and its accessories.

2.2.3. EQUIPMENT DATA

The following tables provide information pertaining to the operational, electrical, mechanical, optical, and environmental characteristics of the monocular.

TABLE 2-1. OPERATOR ADJUSTMENT LIMITS

ITEM	LIMITS
Diopter Focus	-6 to +4 diopters
Objective Focus	25 cm (9.8 in) to infinity

TABLE 2-2. ELECTRICAL DATA

ITEM	DATA
Power Source	Battery (1.5 Vdc max ea.)
Battery Requirements	One AA Alkaline or one AA 1.5 Vdc Lithium L91

TABLE 2-3. MECHANICAL DATA

ITEM	CHARACTERISTICS
Shipping and Storage Case	Size: Approx. 356 x 241 x 203 mm (14 x 9.5 x 8 in) Weight: 1.09 kg (2.4 lbs.)
Carrying Case	Size: Approx. 352 x 240 x 200 mm (14 x 9.5 x 8 in)
Monocular (see Note)	Weight: 0.35 kg (12.4 oz)

NOTE:
The weight of the monocular does not include accessories.

TABLE 2-4. OPTICAL DATA

ITEM	DATA
Magnification	1.0X (3X with 3X magnifier)
Field-of-View	40° (13° with 3X magnifier)
Diopter Focus	+2 to -6 diopters
Objective Focus	25 cm (9.8 in) to infinity

TABLE 2-5. ENVIRONMENTAL DATA

ITEM	DATA
Monocular Operating Temperature	-51°C to +49°C
Monocular Storage Temperature	-51°C to +85°C
Illumination Required	Overcast starlight to moonlight

2.3 PRINCIPLES OF OPERATION

2.3.1. MECHANICAL FUNCTIONS

The mechanical functions used to operate the NVMPS adjust to accommodate physical differences of individual operators. These functions include the power switch, eye relief adjustment, diopter adjustment, gain control, and objective focus. The mechanical controls are identified in Figure 2-4.

2.3.2 OPTICAL FUNCTIONS

The optical functions include an objective lens, image intensifier, and eyepiece lens (Figure 2-5). The objective lens collects light reflected from the environment. The image is inverted and focused on the image intensifier. The image intensifier converts the captured light into a visible image, re-inverting it so that it can be viewed through the eyepiece lens.

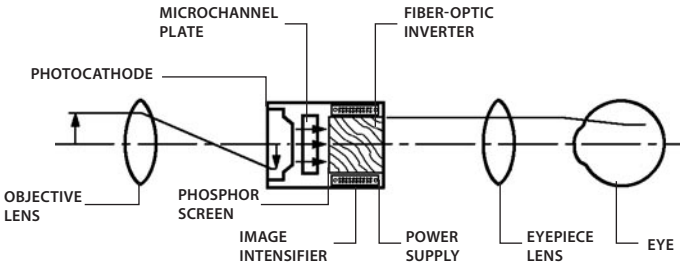

Figure 2-5. Optical Function Diagram

2.3.3. ELECTRONIC CIRCUIT FUNCTION

The electronic circuit regulates the direct current voltage from the battery to the image intensifier and IR source as required. It also monitors the output voltage of the battery and turns on a low-battery indicator when the available battery voltage is 1.9 – 2.1 Vdc.

a. Power Source

The electronic circuit is powered by one battery.

b. High Light Cut-Off

The monocular will automatically turn off after 70 ±30 seconds of operation in daylight or other brightly lit environments. Individual bright lights (headlights, flashlights, or other concentrated light sources) will not actuate the high light detector located on the front of the monocular. To turn the monocular back ON, turn the power switch to RESET/ OFF, and then to ON again.

3

OPERATING INSTRUCTIONS

3.1 DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS

NOTE:

The PVS-14 is a precision electro-optical instrument, and must be handled carefully. If the equipment fails to operate, refer to the Troubleshooting Procedures in Chapter 4.

3.1.1. OPERATOR CONTROLS AND INDICATORS

The PVS-14 is designed to adjust for different users and corrects for most differences in eyesight. The controls and indicators for the PVS-14 are shown in Figure 3-1, and are described in Table 3-1.

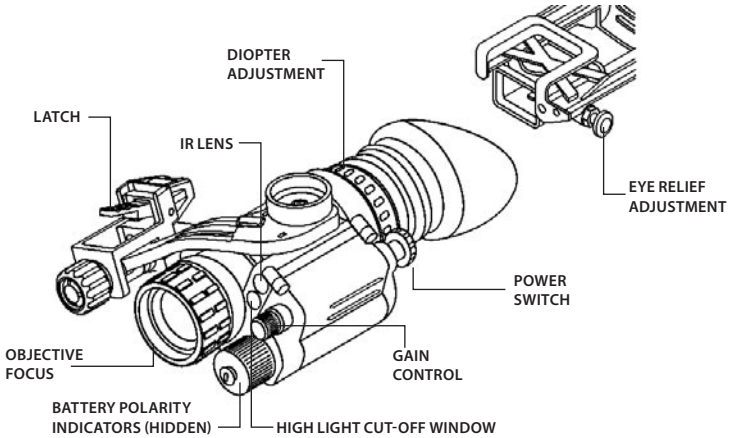

Figure 3-1. Monocular Controls and Indicators

NOTE:
Indicators showing that the battery is low and that the IR is active are both visible in the eyepiece lens.

TABLE 3-1. MONOCULAR CONTROLS AND INDICATORS

CONTROLS AND INDICATORS	FUNCTIONS	
Power Switch	Controls the monocular and IR source, ON or OFF.	
	RESET/ OFF	Same as system OFF. Also resets monocular after high light cut-off.
	ON	Monocular activated.
	IR/ PULL	Turn the knob clockwise to momentarily activate the IR source. For continuous operation of the IR, pull and turn the knob clockwise from the ON position.

CAUTION:
Do not use excessive force when operating the power switch.

Low Battery Indicator	The low battery indicator will blink on and off when there are less than 30 minutes of battery life remaining. It is visible through the eyepiece, just outside the intensified field-of-view.
IR Source On Indicator	The IR Source On indicator will blink when the IR is activated. It is visible through the eyepiece just outside the intensified field-of-view.
Gain Control	Adjusts the system gain from a minimum value of approximately 25 to a maximum value greater than 3,000.
Objective Focus	Focuses objective lens. Adjusts for sharpest image of viewed object.
Diopter Adjustment	Focuses eyepiece lens for use without a need for glasses. Adjusts for sharpest image of intensifier screen.
Eye Relief Adjustment	Adjusts the distance between your eye and the monocular.
Latch	Latch used for separation of monocular from head-mount/ helmet mount adapter.
Battery Polarity Indicators	This feature, molded into the battery housing, shows the proper orientation of the battery. Some versions have a bubble molded into the top of the battery house that indicates polarity.

3.2 PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

3.2.1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES

a. General

To verify that the PVS-14 is mission-ready, perform the preventive maintenance procedures in accordance with Table 2.2 prior to each mission. Preventive maintenance procedures include inspection, cleaning, and performance of the checkout procedures.

b. Warnings and Cautions

Always observe the WARNINGS and CAUTIONS appearing in the table. Warnings and cautions appear before any applicable procedures. You must observe the warnings and cautions to prevent serious injury to yourself and others, and to prevent damage to the equipment.

c. Explanation of Table Entries

(1) Item Number Column. Numbers in this column are for reference. When completing the Equipment Inspection and Maintenance Worksheet, include the item number for the check/ service indicating a defect. Item numbers also appear in the order in which checks and services should be performed.

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

(3) Location, Check/ Service Column. This column provides the location and the item to be checked or serviced. The item location is underlined.

(4) Procedure Column. This column describes the procedure you must do to check or service the item listed in the Check/ Service column, in order to determine if the equipment is ready for operation. You must do the procedure at the time stated in the interval column.

(5) Not Fully Mission Capable If… Column. Information in this column tells you which defects prevent the equipment from being mission-capable. If you perform check and service procedures that indicate defects listed in this column, do not operate the equipment. Follow standard operating procedures for maintaining the equipment or reporting equipment failure.

NOTE:

Damaged accessory items (sacrificial window, demist shield, compass) do not cause the fully assembled equipment to be "not fully mission capable." However, the damaged component should be replaced as soon as possible to restore full capability to the system.

d. Other Table Entries

Be sure to observe all special information and notes that appear in any tables.

TABLE 3-1. PREVENTIVE MAINTENANCE PROCEDURES

ITEM NO.	INTERVAL	LOCATION, CHECK/SERVICE	PROCEDURE	NOT FULLY MISSION CAPABLE IF...
1	Before		Open carrying case and inventory the items.	
			MONOCULAR	
2	Before/ After	Optical Surfaces	Inspect all lenses (objective, eyepiece, IR lens and high light cut-off window) for dirt, fingerprint residue, chips, or cracks. If necessary, clean and dry lenses with water and lens tissue.	Chips or heavy scratches that hinder vision with monocular turned ON; cracks are present.
3	Before/ After	Battery Cap Housing	Inspect external surfaces for cracks or damage. Scratches, cracks, and gouges are OK if operation is not affected.	Cracks or damage in the battery housing.
			Inspect battery compartment. Verify that the battery cap is present. Remove battery cap and inspect for moisture, cracks, and corroded or defective spring contacts. Verify that the o-ring present in the cap.	Cap is missing, contacts damaged or corroded, o-ring is missing.
			Remove battery and turn the power switch from RESET/ OFF to ON to IR/ PULL. Each position should have a definite stopping point. Inspect for broken or missing knob.	Power switch has no definite stopping points; knob is broken or missing.
			Install battery per paragraph 2.6 and check IR source functions (as well as momentary IR source, if so equipped) by following the operating instructions in paragraph 3.22.	IR source does not work.
			Check the high light cut-off with daylight or bright room light (not fluorescent light) by placing the lens cap on the objective lens. Turn monocular ON and observe that the system cuts OFF within 70 ±30 seconds.	If damaged, please contact Customer Support.
			Turn the device OFF and then ON to reenergize it.	
			NOTE: If the monocular fails this highlight cut-off test, it does not cause the end item to be nonmission capable. However, it should be sent to higher level of maintenance as soon as possible.	
			Check gain control for free movement and operation per paragraph 3.2.5.	Knob does not move freely, or does not vary the gain.

TABLE 3-1. CONTINUED

ITEM NO.	INTERVAL	LOCATION, CHECK/SERVICE	PROCEDURE	NOT FULLY MISSION CAPABLE IF...
4	Before/ After	Monocular	Inspect for cracks or damage. Scratches, cracks, chips and gouges are OK if operation is not affected.	Cracks or damage in the monocular.
5	Before/ After	Eyepiece Lens	Rotate diopter adjustment to make sure the eyepiece lens moves freely and is not loose. Range is approximately ½ turn.	Binding does not move freely or is too loose.
6	Before/ After	Eyecup	Inspect for dirt, dust, cracked or torn eyecup. Inspect for bent, broken, or improperly fitting eyepiece lens. If necessary, clean with water.	Chips and cracks are permitted on the eyecup retaining rings as long as they do not interfere with installation of eyecup.
7	Before/ After	Eyeguard	Inspect for dirt, dust, cracked or torn eyeguard. Inspect for bent, broken, or improperly fitting eyeguard. If necessary, clean with water.	Chips and cracks are permitted on the eyeguard retaining rings as long as they do not interfere with installation of the eyeguard.
8	Before/ After	Objective Lens	Rotate focus ring to ensure free movement (range is approximately 1/3 turn). Check objective lens for chips, cracks and dents.	Focus ring is binding or stuck.
			Check the infinity focus locking ring for tightness. Check for cracks.	Chips, cracks, or dents prevent full field-of-view or the ability to focus. Cracked or loose.
9	Before/ After	Neck Cord and Objective Lens Cap	Inspect for cracked, torn, or missing objective lens cap. Inspect neck cord for cut, damaged, or loose ends.	Damaged.
			Re-tie ends if necessary.	
10	Before/ After	Viewed Image	**NOTE:** Operator may use the TS-4348/ UV to check resolution (paragraph 3.2.2).	
			Refer to paragraph 2.2.3 to inspect for operational defects.	Flickering, flashing, edge glow, or shading is observed.
11	Before/ After	Headmount Straps/Pads	**NOTE:** If any of the following items are damaged it does not cause the entire end item to be "not fully mission capable". However, the damaged item should be replaced as soon as practical to restore full capability of the system.	
			Inspect for cuts, tears, fraying, holes, cracks, or defective fasteners.	Damage causes straps or pads to be unusable.

TABLE 3-1. CONTINUED

ITEM NO.	INTERVAL	LOCATION, CHECK/SERVICE	PROCEDURE	NOT FULLY MISSION CAPABLE IF...
12	Before/ After	Socket	Inspect for dirt, dust, or corrosion. Insert monocular latch into socket to verify secure attachment of monocular to headmount. If necessary, clean socket with water.	Damaged, latch won't lock or is too loose.
13	Before/ After	Eye Relief Adjustment	Press the eye relief adjustment and check for free motion. Inspect for damage.	Binding, damaged or non-operational slide mechanism.
			HELMET MOUNT	
14	Before/ After	Straps	Inspect for cuts, tears, fraying, holes, cracks, or defective fasteners.	Damage causes straps to be unserviceable.
15	Before/ After	Socket	Inspect for dirt, dust, or corrosion. Insert monocular latch into socket to verify secure attachment of monocular to helmet mount. If necessary, clean socket with water.	Damaged, latch won't lock or is too loose.
16	Before/ After	Fore-and-Aft Adjustment	Press the two side buttons on plastic mount or depress side lever on metal mount and check for free motion. Inspect for damage.	Binding, damaged or non-operational slide mechanism.
			MOUNTING ADAPTERS	
17	Before/ After	Headmount/ Helmet Mount Adapter	Inspect for dirt, dust or corrosion. Insert into headmount or helmet mount socket to verify secure attachment.	Damaged, will not latch securely.
18	Before/ After	Weapon Mount	Inspect for dust, dirt or corrosion.	Damaged, will not mount to monocular or will not mount to rail.
			ACCESSORIES	
19	Before/ After		**CAUTION:** The coating on the demist shield can be damaged if cleaned while wet or if cleaned with wet lens paper. Clean only when the demist shield is dry and only with dry paper.	
			Inspect for dirt, dust, scratches or damage. If necessary, clean when shield is dry (use dry lens tissue only).	Damage or scratches hinder vision when the monocular is turned on.
20	Before/ After	Sacrificial Window	Inspect for dirt, dust, scratches or damage. If necessary, clean per paragraph 4.2.	Damage or scratches hinder vision when the monocular is turned on.

TABLE 3-1. CONTINUED

ITEM NO.	INTERVAL	LOCATION, CHECK/SERVICE	PROCEDURE	NOT FULLY MISSION CAPABLE IF...
21	Before/ After	Compass	Inspect for dirt, dust, scratches, or damage. If necessary, clean with water and dry with lens tissue. Install compass and turn on monocular. When the illumination button is depressed, compass should be visible.	Damaged; compass is not visible.
22	Before/ After	Magnifier	Inspect optical surface for dirt, dust, scratches or cracks.	Damage; scratches hinder vision.
			CARRYING CASE	
23	Before/ After	Case	Remove all items and shake out loose dirt or foreign material. Inspect for tears, cuts, excess wear, or damage to mounting clips.	
24	Before/ After	Shoulder Strap	Inspect for cuts, tears, or excess wear or damaged clips.	

3.2.2. RESOLUTION CHECK USING THE TS-4348/ UV TEST SET

NOTE:

The TS-4348/ UV Test Set can be used by the operator to check the resolution of a monocular at any time.

NOTE:

The TS-4348/ UV Test Set can be used by Direct Support/Intermediate Level to perform the resolution testing 180 Day Service. If a system fails it must be tested on the TS-3895A/UV Test Set.

NOTE:

Verify the resolution of the monocular using the TS-4348/ UV Test Set at every opportunity. The resolution cannot be accurately measured without the test set.

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

a. Setup

Before using the TS-4348/ UV Test Set, familiarize yourself with its operation and specific warnings and cautions.

NOTE:

• The resolution 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:

- When viewing through the TS-4348/ UV Test Set on the "high light" level, expect cosmetic blemishes, such as chicken wire, black spots, and fixed-pattern noise, to stand out. This is acceptable.
- Returns of the PVS-14 for cosmetic defects must be based on an outdoor evaluation, not the TS-4348/ UV Test Set.

b. Low Light and High Light Resolution Test Procedure

Test the monocular for low light and high light resolution performance by performing the following steps.

(1) Set the HIGH/ LOW switch on the test set to LOW.

(2) Turn off the room light and let your eyes adjust to the dark.

(3) Turn on the test set by setting the "II/ OFF/ III" switch to "III."

(4) Turn on the monocular and insert it into the test port on the test set.

(5) Look through the monocular and view the projected pattern (see Figure 3-2). If necessary, focus the eyepiece lens and then the objective lens to obtain the sharpest image.

(6) To pass the test, the PVS-14 monocular must be able to resolve Group 2, Element 2, under low light conditions. If the PVS-14 does not pass the test, please contact Customer Support, as you will need to return the device for repair. The operator must document resolution failures on the maintenance record.

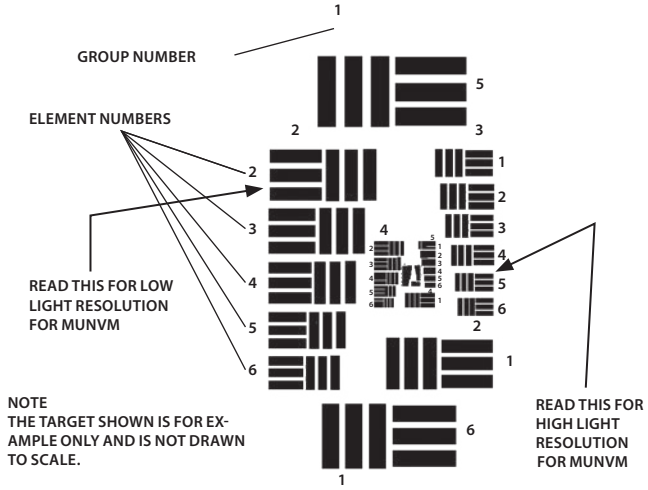

Figure 3-2. TS-4348/UV Test Set Pattern

NOTE:

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

(7) Flip the HIGH/ LOW switch to HIGH.

(8) Look through the monocular and view the projected pattern (see Figure 3-2). If necessary, refocus the objective lens and then the eyepiece lens to obtain the sharpest image.

(9) To pass the test, the PVS-14 must be able to resolve Group 3, Element 5, under high light conditions. If the monocular does not pass the test, please contact Customer Support, as you will need to return the device for repair.

NOTE:

When using the TS-4348/ UV Test Set, you are not viewing the entire image intensifier. Therefore, operational and cosmetic inspections must be done without the test set as specified in paragraph 3.2.3.

(10) Check for flashing, flickering, and other unstable behavior or operational defects (paragraph 3.2.3) in the image intensifier. To view the image intensifier under low light conditions, flip the HIGH/ LOW switch to LOW and allow your eyes to become accustomed to the dark. If any unacceptable conditions are noted, contact Customer Support

3.2.3. INSPECTION CRITERIA FOR PROPER IMAGE INTENSIFIER OPERATION

a. General

As directed in the Preventive Maintenance Checks and Services table, image intensifier operation must be checked before each mission. This section provides information for the operator concerning what to look for, how to look for it, and how to determine if the PVS-14 should be returned to the manufacturer.

CAUTION:

Perform the following inspection in the dark.

TTo perform this inspection, attach the monocular to the headmount as described in paragraph 3.3.7, and turn the device ON. Look through the monocular and observe the image.

There are two groups of "defects" you may encounter – operational defects and cosmetic blemishes. Operational defects are a definite reason for returning the PVS-14. Cosmetic blemishes are not necessarily a cause for rejection unless they become severe enough to interfere with the device's operational ability. The return of any PVS-14 for cosmetic defects must be based on an outdoor evaluation and not the TS-4348/ UV Test Set.

b. Operational Defects

These defects relate to the reliability of the image intensifier and are an indication of instability. If identified, they are an immediate cause for rejecting the PVS-14. They include shading, edge glow, flashing, flickering, and intermittent operation.

(1) Shading. If shading is present, you will not see a fully circular image (see Figure 3-3). Shading is very dark and you cannot see an image through it. Shading always begins on the edge and migrates inward eventually across the entire image area. Shading is a high contrast area with a distinct line of demarcation. Return the PVS-14 to the maintainer.

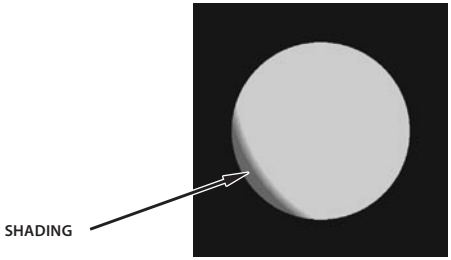

Figure 3-3. Shading

NOTE:

Always verify that shading is not the result of improper eye-relief adjustment (refer to paragraph 3.4.2).

(2) Edge Glow. Edge glow is a bright area (sometimes sparkling) in the outer portion of the viewing area (see Figure 3-4).

To check for edge glow, 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 appear. If edge glow occurs, you will need to return the PVS-14 to the manufacturer.

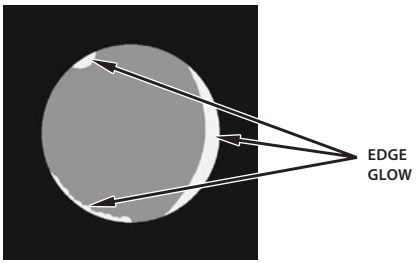

Figure 3-4. Edge Glow

(3) 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 cap or weak battery. If weak or loose batteries are not the issue, you will need to return the PVS-14 to the manufacturer.

c. Cosmetic Blemishes

These are usually the result of manufacturing imperfections that do not affect intensifier reliability, and are not normally a cause for returning an PVS-14. However, some types of blemishes can get worse over time and interfere with the user's ability to perform the mission. If you believe a blemish is cause for returning the device, record the specific nature of the problem on the maintenance forms and identify the position of the blemish by using the clock method and approximate distance from the center (e.g., 5 o'clock toward the outside, 2:30 near the center, or 1:00 midway). The following are cosmetic blemishes:

(1) Bright Spots. A bright spot is a small, non-uniform, bright area that may flicker or appear constant (Figure 3-5). Not all bright spots make the PVS-14 returnable. Cup your hand over the objective lens to block out all light. If the bright spot remains, you will need to return the PVS-14 to the manufacturer. Bright spots typically disappear when all light is blocked out. Verify that any bright spots are not simply a bright area in the scene you are viewing. Bright spots are acceptable if they do not interfere with the operator's ability to view the image or to perform the mission.

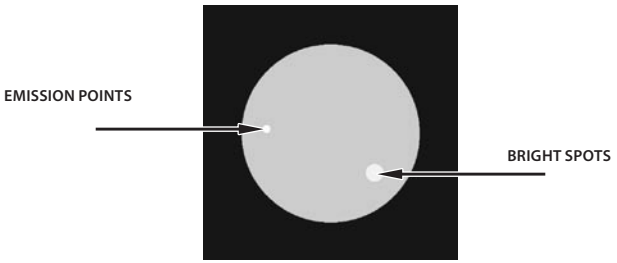

Figure 3-5. Bright Spots and Emission Points

(2) Emission Points. A steady or fluctuating pinpoint of bright light in image area that does not go away when all light is blocked from the objective lens of the monocular (Figure 3-5). The position of an emission point within the image area does not move.

Not all emission points make the PVS-14 returnable. Verify that any emission points are not simply a point light source in the distance of the scene you are viewing. Emission points are acceptable if they do not interfere with the operator's ability to view the image or to perform the mission.

(3) Black Spots. 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 view the image. No action is required if this condition is present, unless the spots interfere with the operator's ability to view the image or to perform the mission.

(4) Fixed-Pattern Noise. This is usually a cosmetic blemish characterized by a faint hexagonal (honeycomb) pattern throughout the viewing area. This most often occurs when operating in highly lit environments or when viewing very bright lights (see Figure 3-6). This pattern can be seen in every image intensifier if the level of light is high enough. This condition is acceptable as long as the pattern does not interfere with the operator's ability to view the image or to perform the mission.

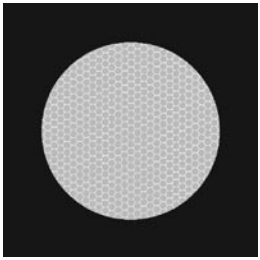

Figure 3-6. Fixed-Pattern Noise

(5) Chicken Wire. An irregular pattern of dark thin lines in the field-of-view either throughout the image or in parts of the image area (see Figure 3-7). In the worst cases, these lines will form hexagonal or square, wave-shaped lines. No action is required if this condition is present, unless it interferes with the operator's ability to view the image or to perform the mission.

Figure 3-7. Chicken Wire

3.3 ASSEMBLY AND PREPARATION FOR USE

3.3.1. UNPACKING

The following steps must be taken prior to each mission in which the PVS-14 is used.

CAUTION:

Relieve air pressure from inside the shipping and storage case by compressing opposite sides of the case before releasing the latches.

(1) Release the latch securing the top of the shipping and storage case and open it.

(2) Verify that all items were shipped (see Figure 2-1).

(3) Open the carrying case (Figure 2-3), remove PVS-14, and inventory the items.

(4) Inspect the monocular for obvious evidence of damage to optical surfaces, body, eyecup, eyeguard, power switch, battery cap, etc. Ensure that all optical surfaces are clean and ready for use. If necessary, clean with dry lens paper.

3.3.2. INSTALLATION OF THE BATTERY

CAUTION:

To protect the image intensifier, keep the objective lens cap securely fitted over the lens when the monocular is not in use or when it is being operated in daylight conditions.

The PVS-14 operates with one AA battery. The battery is not supplied with the PVS-14 and must be obtained separately.

At operating temperatures below -20°C (-4°F), Alkaline batteries are not recommended, as the battery life will be severely reduced. Lithium-iron disulfide L91 1.5V AA batteries should be used in conditions below -20°C (-4°F).

TABLE 3-2. ESTIMATED BATTERY LIFE

BATTERY TYPE	TEMPERATURE	NEGLIGIBLE IR SOURCE USAGE	IR SOURCE USAGE 10% OF THE TIME
AA Alkaline	21°C (70°F)	60 Hrs	55 Hrs
AA Lithium L91	21°C (70°F)	70 Hrs	65 Hrs
AA Alkaline	-20°C (-4°F)	12 Hrs	10 Hrs
AA Lithium L91	-20°C (-4°F)	60 Hrs	55 Hrs

CAUTION:

Verify that the device is OFF before installing the battery.

Install the AA battery into PVS14 as follows.

(1) Unscrew the battery cap.

(2) Align the polarity markings on the battery with those etched onto the battery compartment.

(3) Replace the battery cap and tighten it.

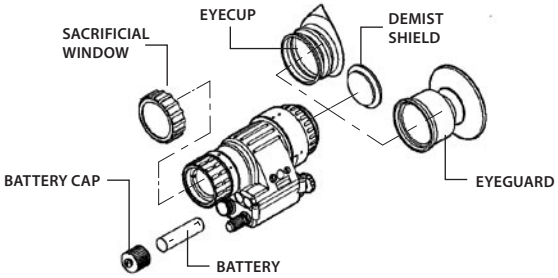

Figure 3-8. Battery, Eyecup and Eyeguard Installation

3.3.3. INSTALLATION OF THE EYECUP OR EYEGUARD

Perform the following procedure to install eyecup or eyeguard onto the monocular. Refer to Figure 3-8.

(1) Carefully press the eyecup or eyeguard over the end of the eyepiece lens.

(2) Rotate the eyecup or eyeguard into proper viewing position. Adjust for the best fit. The eyecup must seal around your eye, preventing the green glow from leaking out.

3.3.4. INSTALLATION OF THE DEMIST SHIELD

Perform the following to install the demist shield on the eyepiece lens. Refer to Figure 3-8.

CAUTION:

If the demist shield needs to be cleaned, refer to paragraph 4.3.1 for instructions. Do not attempt to clean the demist shield while it is wet, or using wet lens paper; doing so will damage the coating.

NOTE:

If inclement operating conditions are expected, (e.g. significant temperature changes, high humidity, etc.), install the demist shield prior to the mission in order to reduce lens fogging.

(1) Carefully remove the eyecup or eyeguard.

(2) Carefully press the demist shield onto the eyepiece. Be careful not to smudge the eyepiece lens or demist shield with your fingers or hands.

(3) Replace the eyecup or eyeguard (see paragraph 3.3.3).

3.3.5. INSTALLATION OF THE SACRIFICIAL WINDOW

Perform the following to install the sacrificial window. Refer to Figure 3-8.

CAUTION:

If adverse operating conditions (e.g., large amounts of dust or sand) are expected, attach the sacrificial window prior to the mission to protect the objective lens from scratches or other damage.

(1) If the objective lens cap is in place, remove it.

(2) Carefully push the sacrificial window onto the objective lens until it stops. Turn the sacrificial window clockwise until it snaps into place.

3.3.6. INSTALLATION AND ADJUSTMENT OF THE HEADMOUNT

Perform the following to install the headmount.

NOTE:

Do not put the headmount on with the monocular attached.

(1) Before putting the headmount on, loosen the four ends of the chinstrap (approximately two inches from the sliding bar buckles; see Figure 3-9).

(2) Snap the front and rear clasps (Figure 3-9) into place.

NOTE:

If the headmount is too loose, remove the attached thin browpad (Figure 4-3) and replace it with either the medium or thick browpad (these are stored in the carrying case). Refer to paragraph 4.3.2 for removal and replacement of the browpads.

(3) Using both hands, grab the neck pad (Figure 3-9) and pull the harness over your head, sliding the neck pad down over the back of your neck.

(4) Holding the chin cup in position, adjust both sides of the chinstrap until you feel it lightly press against your chin. DO NOT TIGHTEN.

(5) Maintain the position of the chin cup and remove any slack from the chinstrap. DO NOT TIGHTEN.

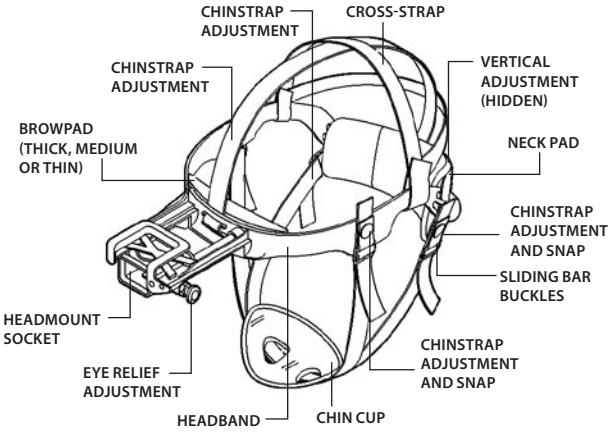

Figure 3-9. PVS-14 Headmount Adjustments

(6) Ensure that the cross-strap is not twisted. Remove any slack by adjusting the vertical adjustment of the neck pad.

(7) Adjust the chinstrap and vertical adjustment until the chin cup and headband are in a comfortable but firm position.

NOTE:

After installing the monocular, minor strap adjustments may be necessary to achieve maximum comfort.

(8) Install the headmount/ helmet mount adapter (refer to paragraph 3.3.7).

(9) Refer to paragraph 3.4.2 for operating procedures.

3.3.7. INSTALLATION OF THE HEADMOUNT/ HELMET MOUNT ADAPTER

To install the headmount/ helmet mount adapter (Figure 2-1) into the monocular, align the thumbscrew to the hole and tighten it as shown in Figure 3-10. An alignment boss on the headmount/ helmet mount adapter fits into a groove on the monocular. Ensure that the boss on the adapter fits into the groove on the monocular.

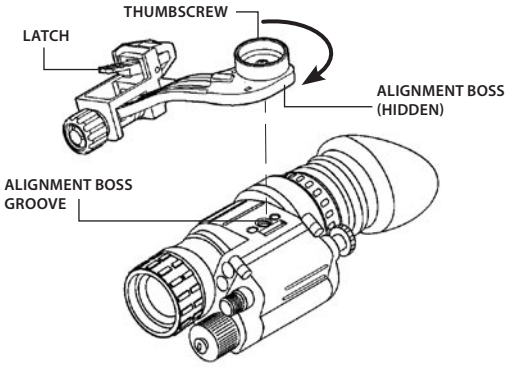

Figure 3-10. Headmount/Helmet Mount Adapter Installation

3.3.8. INSTALLATION OF THE HELMET MOUNT TO A HELMET

((1) Remove the helmet mount from the carrying case. Refer to Figure 3-11 for helmet mount features.

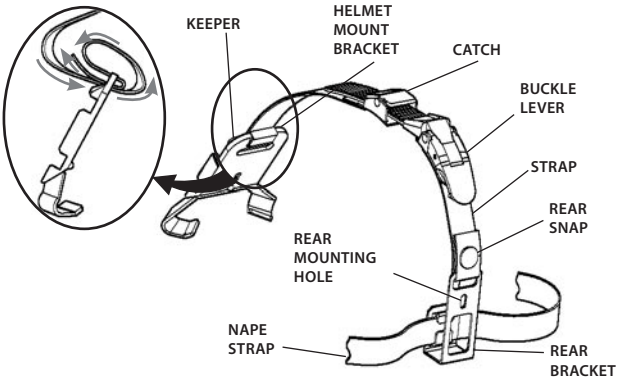

Figure 3-11. Installation of Helmet Mount

(2) Press the release (Figure 3-12) to remove the mount from the helmet mount bracket.

(3) Verify that the strap is laced onto the helmet mount bracket, as shown in Figure 3-12.

(4) With the catch pushed forward (see Figure 3-12), place the strap over the top of the helmet center (see Figure 3-13).

(5) Hook the rear bracket (see Figure 3-12) on the center of the back of the helmet. Lay the strap, now hooked to the helmet mount bracket, over the top of the helmet.

(6) Hook the helmet mount bracket to the center of the front lip of the helmet and hold it in place (see Figure 3-13).

(7) With the buckle lever open, use the catch to remove the slack in the strap. Close the buckle lever.

(8) Disengage the neck strap latch on the left side of neck strap.

(9) Put the helmet on. Do not fasten the helmet chinstrap.

(10) Hold the neck strap where the strap meets the latch. Tighten the strap until it fits securely, then install and tighten the helmet chinstrap. The brow of the helmet should be parallel to the ground, and the helmet should be stable on the head.

(11) Insert the top edge of the mount under the keeper on the helmet mount bracket and rotate it downward until the latch engages (see Figure 3-13). To release the mount from the helmet bracket, press the release and pull it forward and down.

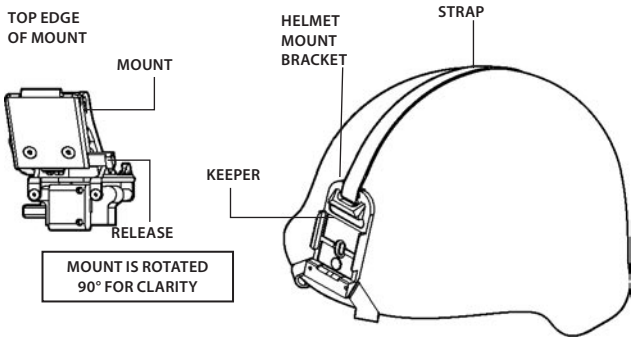

Figure 3-12. Helmet Mount

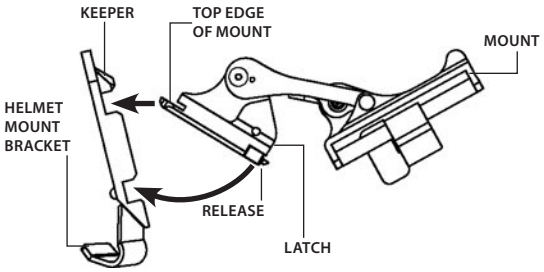

Figure 3-13. Reassembly of Helmet Mount

3.3.9. INSTALLATION OF TGE HEADMOUNT WITH A PROTECTIVE MASK

Perform the following to put the headmount on with a protective mask.

(1) Place the protective mask on your head per the instructions provided with the protective mask.

WARNING:

When installing the headmount over the protective mask, be careful that you do not break the mask's seal around your face.

(2) Install the headmount per the instructions in paragraph 3.3.6.

NOTE:

It may be necessary to remove the browpad (Figure 3-9) when wearing the headmount over a protective mask.

3.3.10. INSTALLATION OF THE WEAPON MOUNT

Perform the following to install the weapon mount.

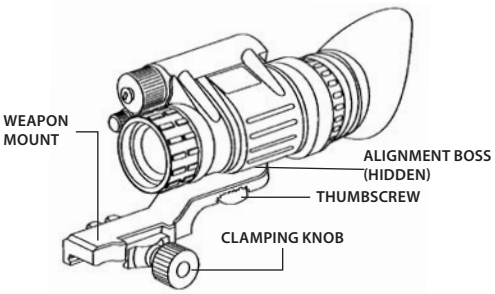

Figure 3-14. Weapon Mount Usage

CAUTION:

The PVS-14 is not a weapon sight. However, it can be used in conjunction with a collimated dot sight or laser aiming device.

NOTE:

Armasight recommends replacing the eyecup with an eyeguard if mounting the device on a weapon.

(1) Adjust the monocular and weapon mount as shown in Figure 3-14. Be sure to align the alignment boss on the weapon mount with the alignment groove in the monocular.

(2) Screw in the thumbscrew to secure the monocular to the weapon mount.

(3) Loosen the clamping knob on the weapon mount. Position the weapon mount, now secured with the monocular, onto the weapon's mounting rail. Tighten it by turning the clamping knob.

NOTE:

There is a ratchet in the weapon mount that prevents over-tightening of the clamp. Turn it until the knob clicks

(4) Check the position of the monocular by holding the weapon in your normal firing position. Adjust the fore/aft position of the monocular as necessary by loosening the clamping knob and repositioning the weapon mount on the weapon's mounting rail.

3.3.11 MOUNTING AN IR ILLUMINATOR

To mount an IR illuminator to the PVS-14, use the Extended rail adapter. Perform the following steps:

(1) To install the Picatinny/Weaver Adapter #118 into the monocular, align the thumbscrew of adapter to the hole and tighten it as shown in Figure 3-16. An alignment boss on the adapter fits into a groove on the monocular. Ensure that the boss on the adapter fits into the groove on the monocular.

(2) Loosen the IR illuminator fixing screw.

(3) Mount the IR illuminator on the rail of adapter and tighten the fixing screw.

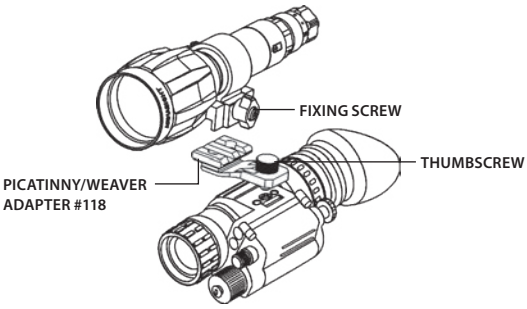

Figure 3-15. MOUNTING AN IR ILLUMINATOR

3.3.12. INSTALLATION OF THE COMPASS

CAUTION:

• Use of the compass with the plastic headmount or the plastic helmet mount will result in inaccurate compass readings. The magnet cannot be removed from these mounts.

• The magnet must be removed from the ruggedized metal helmet mount before installation of the compass. Failure to do so will result in inaccurate compass readings.

• If the magnet is not removed, contact Customer Support for instructions on returning the ruggedized metal helmet mount for magnet removal. See Figure 3-16 for the location of the magnet.

(1) If the sacrificial window or objective lens cap is in place, remove it.

(2) Turn the monocular on.

(3) While looking through the monocular, rotate the objective lens focus completely counterclockwise.

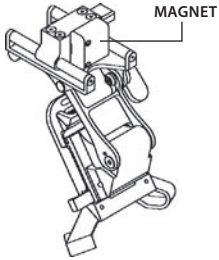

Figure 3-16. Locating the Magnet

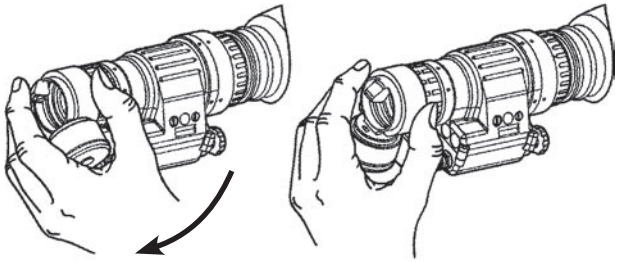

Figure 3-17. Compass Installation

NOTE:
The o-ring must be correctly placed in the compass in order for the compass to fit properly.

(4) Press the compass onto the objective lens at an angle using your left hand. Slowly turn the compass counterclockwise until it is in the vertical position, with the compass illumination button pointing down (see Figure 3-17).

(5) Ensure that the compass fits tightly to the objective lens.

(6) Refer to paragraph 3.4.6 for compass operation.

3.3.13. INSTALLATION OF THE MAGNIFIER

The 3X or 5X magnifier can be threaded directly into the objective lens. It can also be threaded into the focus ring adapter and slipped on over the end of the objective lens.

Figures 3-18 and 3-19 illustrate these installation procedures.

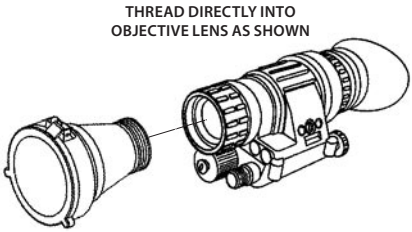

Figure 3-18. 3X Magnifier Installation

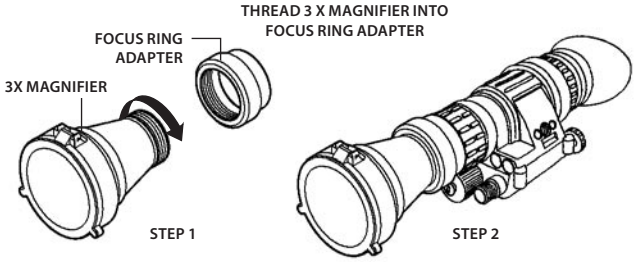

Figure 3-19. 3X Magnifier Installation with Focus Ring Adapter

3.3.14. MOUNTING PVS-14 TO A WEAPON WITH A QUICK-RELEASE PICATINNY MOUNT ADAPTER

The PVS-14 is mounted to a weapon with a Quick-Release Picatinny Mount adapter (QRM) using the optional bracket.

Mount the PVS-14 to the QRM as follows:

(1) Loosen the bracket clamp screw (A, Figure 3-20).

(2) Put the bracket clamp (B) onto infinity focusing stop ring (D) of the PVS-14 objective lens.

(3) Fix the PVS-14 in the bracket clamp (B) tightening the screw (A).

(4) To unlock the clamping device (located on top of the QRM), see Figure 3-21. While pushing the lever holder (C, Figure 3-21) down, turn the lever (B, Figure 3-21) towards the arrow (forward).

(5) Install the PVS-14 on the mount so that the stop (A, Figure 3-21) is inserted into the transverse slot of the monocular rail.

(6) Secure the PVS-14 to the mount by turning the lever (B) to the locked position, as shown in Figure 3-21.

(7) Verify that the clamping device is firmly secured to the PVS-14. If necessary, adjust the clamping device by rotation the nut (D).

PVS-14 installed on the QRM is shown in Figure 3-22.

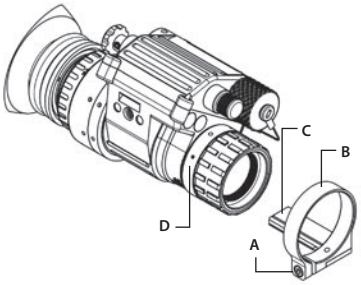

Figure 3-20. Mounting Optional Bracket to the PVS-14

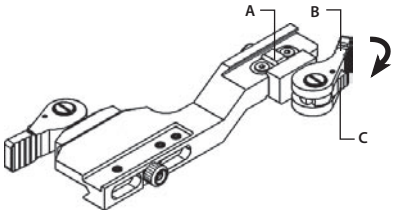

Figure 3-21. Clamping Device on the Mount Top

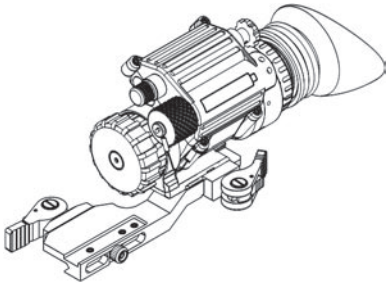

Figure 3-22. QRM Assembled with PVS-14

(8) Unlock the clamping device (E) on the weapon mount. Position the weapon mount, now secured with the monocular, onto the weapon's mounting rail. Secure the weapon mount by turning the lever (B) to the locked position.

(9) Verify that the clamping device is firmly secured to the PVS-14. If necessary, adjust the clamping device by rotation the nut (D).

(9) Check the position of the monocular by holding the weapon in your normal firing position. Adjust the fore/aft position of the monocular as necessary by unlocking the clamping device (E) and repositioning the weapon mount on the weapon's mounting rail.

3.3.15. MOUNTING PVS-14 TO A WEAPON WITH AN AIM-PRO ADVANCED AIMING MOUNT

The PVS-14 is mounted to the AIM -PRO using the bracket from the AIM PVS14 Kit.

The PVS-14 with 3x afocal lens is mounted to the AIM-PRO-L using the bracket from the AIM-PRO-L PVS14 Kit.

The clamping system of the AIM is the same as is seen on the QRM. To mount the PVS-14 to a weapon with an AIM, see Part 3.3.14 of this Manual. This section details mounting instructions and procedures for the QRM.

PVS-14 installed on the AIM is shown in Figure 3-23.

For more information on the use of an AIM, see the AIM Operation Manual.

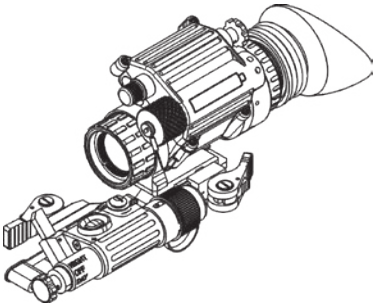

Figure 3-23. AIM-PRO Assembled with PVS-14

3.4 OPERATING PROCEDURES

This section contains operating procedures for using the PVS-14 as hand-held, head-mounted, helmet-mounted or weapon-mounted monocular. Before operating the monocular, verify that all steps in section 3.3.3, Assembly and Preparation for Use, have been read and performed.

3.4.1. HAND-HELD OPERATION

Only operate the monocular in dark environments; if it is necessary to operate the device in daylight, use the objective lens cap to cover the objective lens.

NOTE:

When using the monocular without a mounting device, make sure to place the neck cord around your neck.

(1) Ensure that the battery are installed per paragraph 3.3.2.

(2) Turn the power switch to ON.

NOTE:

The sharpest image will be observed only when the objective lens and eyepiece lens are properly focused.

(3) Rotate the diopter adjustment for the clearest view of the image intensifier screen.

(4) Focus the objective lens while observing an object until the sharpest image is obtained.

3.4.2. HEAD MOUNTED OPERATION

Perform the following procedures for head mounted operation.

CAUTION:

Only operate the monocular in dark environments; if it is necessary to operate the device in daylight, use the objective lens cap to cover the objective lens.

(1) Verify that the batteries are installed per paragraph 3.3.2.

(2) Put the headmount on per the instructions in paragraph 3.3.6.

NOTE:

Before attaching the monocular, depress the eye relief adjustment and slide the headmount socket all the way forward; this will make it easier to align the monocular, eyecup, and eyepiece lens to the eye.

(3) Align the headmount/ helmet mount adapter's latch to the headmount socket (Figure 3-20). Hold the latch lever down while installing the monocular into the headmount socket.

Release the latch when the monocular is fully engaged in the socket.

(4) To set your eye relief, press down on the eye relief adjustment (Figure 3-20). Move the monocular back towards your non-dominant eye until the eyecup is comfortably sealed around the eye.

(5) Turn the monocular ON.

(6) Readjust the vertical adjustment (Figure 3-9) of the headmount until the monocular is properly aligned with your eye.

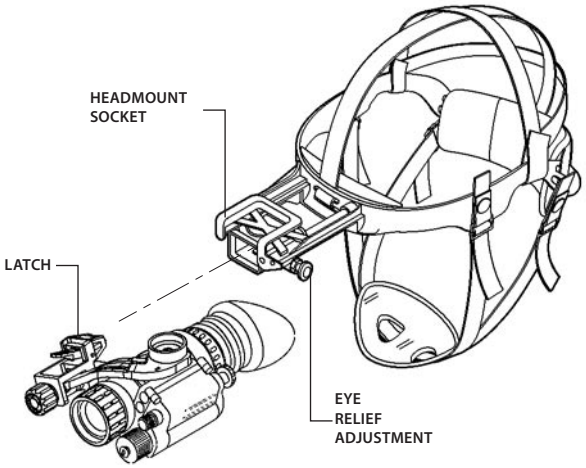

Figure 3-24. Headmount/Helmet Mount Adapter Operation

NOTE:

The sharpest image will be visible only when the objective lens and eyepiece lens are properly focused

(7) Rotate the diopter adjustment for the clearest view of the image intensifier screen.

NOTE:

Any readjustment for eye relief requires readjustment of the diopter.

(8) To adjust the eye relief distance, press down on the eye relief adjustment. Slide the monocular either forward or backward to obtain a full view of the image. Reset the diopter adjustment for the best image.

(9) While observing an object, adjust the objective lens focus (Figure 3-1) until the image becomes sharp and clear.

3.4.3. HELMET-MOUNTED OPERATION

CAUTION:

Take precaution when using/ handling the helmet mount. Most damage occurs when the helmet mount has been left on the helmet when it is not being used. Observe the following precautions to protect the helmet mount.

CAUTION:

• To prevent damage, do not use excessive force when changing the up/ down position of the PVS-14.

• Do not drop or throw the helmet with the helmet mount attached to it.

• If the monocular is flipped up, do not flick the monocular down by shaking the helmet. This places significant stress on the helmet mount.

• All Other Services – Return the helmet and the helmet mount to unit maintenance to have the bracket directly mounted via the helmet screws.

NOTE:

The headmount/ helmet mount adapter allows the PVS-14 to be rotated from the left to the right eye or vice versa. The PVS-14 can be flipped up with the headmount/ helmet mount adapter positioned over either eye

NOTE:

The helmet mount allows the user to position the PVS-14 in two ways: flipped up or flipped down. When flipped down, the device is directly in front of the eyes. When flipped up, the unit remains out of the line of sight. Both positions have a positive stopping point to indicate that the device is positioned correctly.

Perform the following for helmet-mounted operation.

(1) Verify that the batteries are installed per paragraph 3.3.2.

(2) Put the helmet mount on per the instructions in paragraph 3.3.8.

(3) Place the monocular in the socket of the helmet mount.

Set your eye relief by depressing the side buttons (or, if using a metal mount, the side lever) (see Figure 3-25) and carefully move the monocular fore or aft until the eyecup comfortably seals around the eye. Readjust the helmet straps as required for vertical adjustment.

(4) Turn to the device ON. Adjust the tilt using the tilt adjustment lock knob, or tilt adjustment lever on the metal mount (Figure 3-25), until you obtain a comfortable viewing angle.

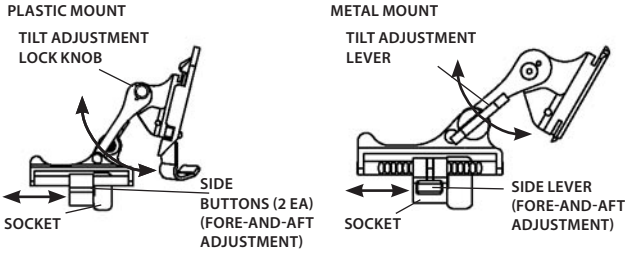

Figure 3-25. Tilt and Flip-up Assembly Mechanisms

NOTE:

The sharpest image will be visible only when the objective lens and eyepiece lens are properly focused.

(5) Rotate the diopter adjustment for the clearest view of the image intensifier screen.

NOTE:

Any readjustment for eye relief requires readjustment of the diopter.

(6) Adjust the eye relief distance by depressing the side buttons (Figure 3-25) (or, if using a metal mount, the side lever) and sliding the monocular back and forth until you obtain a full view of the image. Reset the diopter adjustment for the best image.

(7) While observing an object, adjust the objective lens focus (Figure 3-1) until the image becomes sharp and clear.

(8) To flip it up, grasp the helmet tilt and flip-up assembly and rotate upward and rearward until the latch is firmly engaged.

WARNING:

The monocular will not automatically turn off when flipped up. The monocular must be turned off using the power switch.

(9) To flip the device down, grasp the helmet tilt and flip-up assembly and rotate downward and forward until the latch is firmly engaged.

(10) Turn the device ON to resume viewing.

3.4.4. WEAPON-MOUNTED OPERATION

NOTE:

The PVS-14 can be used in conjunction with a collimated dot aiming device mounted on the forward mounting rail. The brightness control for the aiming device should be set at or near its minimum setting.

Perform the following procedures for weapon-mounted operation:

(1) Verify that the batteries are installed per paragraph 3.3.2.

(2) Attach the weapon mount to the monocular per paragraph 3.3.10, steps 1 and 2.

(3) Mount the monocular, with the adapter, to the M16/ M4 receiver rail, per paragraph 3.3.10, steps 3 and 4.

(4) Rotate the diopter adjustment for the clearest view of the image intensifier screen.

(5) While observing an object, adjust the objective lens focus (Figure 3-1) until the image becomes sharp and clear.

3.4.5. IR SOURCE OPERATIONS

WARNING:

The IR source is invisible to the naked eye, and is intended for use in extremely dark conditions. **However, this light can be detected by other night vision devices.**

NOTE:

The built-in IR source is intended for viewing at close distances (up to 3 meters) when additional illumination is needed.

(1) Pull the power switch knob out and rotate it clockwise to the IR position. With the monocular held to the eye, verify that a red light appears in the eyepiece. This indicates that the IR source is operating.

(2) For momentary IR operation, turn the power switch clockwise (without pulling) past the ON position. Observe that a red light appears in the eyepiece.

3.4.6. OPERATION WITH A COMPASS

WARNING:

The compass illuminator can be seen by others using night vision devices.

CAUTION:

You will get inaccurate readings, when using the compass on any head or helmet mount with the magnet still installed. Only the magnet on the metal mount can be removed without causing damage to the equipment (see paragraph 3.3.11).

NOTE:

• The compass reading is magnetic North, not true North.

• The compass reading is within 2° of correct absolute magnetic bearing. Compass readings with the mounted monocular (head mount or helmet mount) can be up to 15° of correct absolute magnetic bearing. This occurs mostly in the East (90°) to West (270°) and less in the North (360°) to South (180°) reading. If the compass is inadvertently magnetized, this could cause an additional 15° error.

• The objective lens focus can be fine-tuned after installation, but in order to obtain an accurate reading, the compass must be vertical. (The compass image must be level.)

(1) Install per paragraph 3.3.11.

(2) To view a distant object more clearly, adjust the objective lens focus by gripping the compass and turning it clockwise.

NOTE:

• Increase brightness slowly. Excessive brightness may burn a temporary image into the image intensifier. Do not increase brightness any more than is necessary to clearly read the compass heading.

• The monocular must be focused at or near infinity for proper compass operation.

Figure 3-26. View Through Installed Compass

(3) To view the compass through the monocular, grip the compass with your index finger on top and your thumb on the illumination button on the bottom. Press the button slowly with your thumb until the proper brightness is obtained. The image should appear as shown in Figure 3-26.

(4) The compass readings should change when you move your head from side to side. Rotate or tap the compass slightly to ensure that the compass is operating correctly. Hold the monocular in a level position to assure free rotation of the compass scale.

(5) The tick mark closest to the center of the lighted display is the compass bearing. The tick marks are in degrees, with longer tick marks every five degrees and bearing labels every 10 degrees.

3.4.7. OPERATION WITH A MAGNIFIER

(1) Install per paragraph 3.3.12.

NOTE:

To allow focusing, the mated magnifier and objective lens will turn as a unit.

(2) While observing an object, grab the magnifier and adjust the focus until the image becomes sharp and clear.

3.4.8. OPERATION WITH A GAIN CONTROL

Turn the gain control (Figure 3-27) to balance the illumination input to the eye.

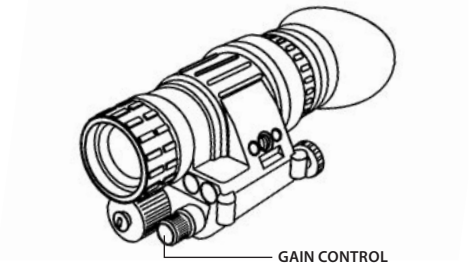

Figure 3-27. Gain Control

3.4.9. PREPARATION FOR STORAGE

(1) Perform the following to shut down the monocular.

(a) Turn the monocular OFF.

(b) Remove the monocular from the headmount, helmet mount or weapon, and remove the weapon mount from the monocular.

WARNING:

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 when inserted into the device.

(2) Packaging After Use.

(a) Remove the battery cap and battery.

(b) Inspect the battery housing for corrosion or moisture. Clean and dry if necessary.

(c) Replace the battery cap.

(d) If installed, remove the demist shield or sacrificial window. Replace the objective lens cap.

NOTE:

• Prior to placing the PVS-14 into the carrying case, verify that the PVS-14 and the case are both free of dirt, dust, and moisture.

• The monocular and helmet mount should not be left on the helmet when the helmet is removed.

(e) Refer to Figure 2-1 for proper placement of the demist shield, battery, carrying case strap, lens paper, sacrificial window, manual, browpads, headmount, helmet mount, headmount/ helmet mount adapter and weapon mount.

(f) Place the monocular into the shallow pocket of the carrying case.

(g) Place the carrying case into the shipping and storage case; close and latch the case (Figure 2-3).

(h) Return the case to the storage area.

3.5 OPERATION UNDER UNUSUAL CONDITIONS

3.5.1. OPERATION IN DUSTY OR SANDY AREAS

CAUTION:

Operation in dusty or sandy areas can gouge and scratch the optical elements, and damage the mechanical components. unless the below precautions are observed.

(1) Verify that the sacrificial window is in place.

(2) Avoid pointing the monocular into the wind unless it is absolutely necessary.

(3) Keep the carrying case closed unless removing or replacing items.

(4) Ensure that all dust and sand is removed from the PVS-14 and carrying case after operation.

3.5.2. OPERATION IN RAINY OR HUMID CONDITIONS

CAUTION:

Operation in rainy or humid conditions can cause corrosion and deterioration of the PVS-14, unless the below precautions are observed.

(1) Install the demist shield (paragraph 3.3.4).

(2) Keep the carrying case and the shipping and storage case closed unless removing or replacing items.

(3) Dry the monocular, mounts, and accessories after exposure to rain or high humidity, and always before storage. This will prevent mildew from forming in the case.

(4) Do not store the monocular in a wet carrying case or in a wet shipping and storage case.

3.5.3. OPERATION IN SALT WATER AREAS

After exposure to salt water, clean the PVS-14 (paragraph 4.3.1).

3.5.4. OPERATION IN NUCLEAR, BIOLOGICAL AND CHEMICAL ENVIRONMENTS

WARNING:

Never reuse an eyecup or eyeguard that has been contaminated by hazardous materials or environments. Contaminated eyecups and eyeguards must be replaced.

(1) Decontamination – Always wear a protective mask when decontaminating the PVS-14.

(2) Hardness – Do not use the DS-2 to decontaminate the PVS-14. To decontaminate the device, use 5% sodium hypochlorite and rinse with hot (158°F) soapy water.

4

MAINTENANCE PROCEDURES AND TROUBLESHOOTING

4.1 LUBRICATION INSTRUCTIONS

No lubrication is required.

4.2 TROUBLESHOOTING PROCEDURES

4.2.1. TROUBLESHOOTING

Table 4.1 lists common malfunctions that may occur with the equipment. Perform the tests, inspections and corrective actions in the order they appear in the table.

This table does not list all of the malfunctions that may occur with your device, nor does it include all tests, inspections, or corrective actions that may be necessary to identify and fix defects. If you experience an equipment malfunction that is not listed, or suggested corrective actions do not correct the fault, please contact Customer Support.

TABLE 4-1. OPERATOR'S TROUBLESHOOTING

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
1. Monocular fails to activate.	Visual.	Turn the power switch to RESET/ OFF, and then turn it ON.
	Check for defective, missing or improperly installed battery.	Replace battery or install it correctly.
2. IR source fails to activate.	In a dark location with system turned on, activate IR source.	If IR source still fails to activate, please contact Customer Support.
	Visually check IR source operation; scene should brighten.	
3. IR source indicator fails to activate.	Visual.	Please contact Customer Support.
4. Poor image quality.	Check objective lens or eyepiece lens focus.	Refocus.
	Check for fogging or dirt on objective lens or eyepiece lens.	Clean lens surfaces per paragraph 4.2.

TABLE 4-1. CONTINUED

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
5. Light visible around eyecup.	Check eye relief distance. Check eyecup for resiliency.	Readjust for proper eye relief distance. If eyecup is defective, please contact Customer Support.
6. Diopter adjustment cannot be made.	Check to see if the diopter adjustment is bent or broken.	If damaged, please contact Customer Support.
7. Battery cap difficult to open.	Visually inspect for the presence of an o-ring. Check for damaged battery cap.	If o-ring is missing, please contact Customer Support. If damaged, please contact Customer Support.
8. Head straps cannot be tightened.	Check for defective buckles, fasteners or straps.	If damaged, please contact Customer Support.
9. Headmount or helmet mount socket and headmount/ helmet mount adapter latch does not catch.	Check socket or latch for dirt. Check socket or latch for damage.	Clean socket and latch. If damaged, please contact Customer Support.
10. Helmet mount will not tighten to helmet.	Inspect mounting hardware for damage.	If damaged, please contact Customer Support.
11. Helmet mount is damaged.	Visual.	Please contact Customer Support.
12. Compass will not stay on the goggles.	Visual.	Please contact Customer Support.
13. Compass display is not clear.	Visual	Make sure the monocular is focused for infinity. If it is focused but the compass display is still not clear, please contact Customer Support.
14. Monocular does not cut off when exposed to high light.	Visual. Perform the following test under daylight or bright room light (not fluorescent light). Place the objective lens cap on the objective lens. Turn monocular ON and observe that it cuts off within 70 ±30 seconds after energized. Turn monocular OFF and then ON to reenergize monocular.	If damaged, please contact Customer Support.

4.3 OPERATOR'S MAINTENANCE PROCEDURES

4.3.1. CLEANING THE PVS-14

CAUTION:

- The monocular is a precision electro-optical instrument and must be handled carefully.
- Do not scratch the external lens surfaces or touch them with your fingers.
- Wiping the demist shield with lens paper while wet or with wet lens paper can damage the coating.

If necessary, clean the monocular with water and dry it thoroughly. Clean the lenses with lens paper (and, if necessary, water, **with the exception of the demist shield**).

4.3.2. HEADMOUNT MAINTENANCE

a. Browpad Replacement

Replace the browpad when cracked, torn, or contaminated. Perform the following to remove and replace the browpad.

(1) Firmly grasp the headmount and remove the old browpad.

(2) Gently press on the new browpad. Gently smooth out any wrinkles in the new browpad.

b. Neck Pad Reinstallation

During operation of the PVS-14, it is possible for the neck pad to become separated from its position on the headband. Perform the following to reinstall the neck pad.

(1) Lift the upper headband strap retention tab (see Figure 4-1), allowing space for the neck pad strap to be inserted underneath.

(2) Slip the neck pad strap all the way under the upper strap retention tab; pull the lower part of the neck pad strap under the lower strap retention tab.

(3) If necessary, repeat steps 1 and 2 for the other side of the headband and neckband.

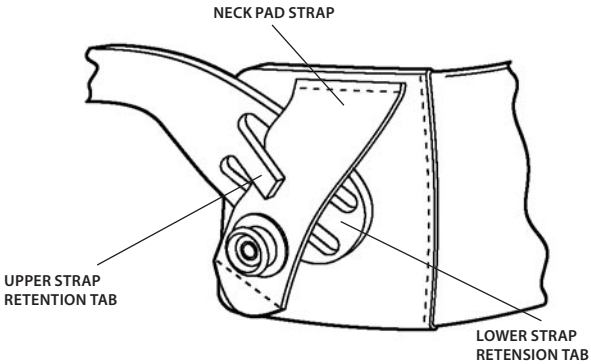

Figure 4-1. Reinstalling the Neck Pad

c. Lacing the Sliding Bar Buckles

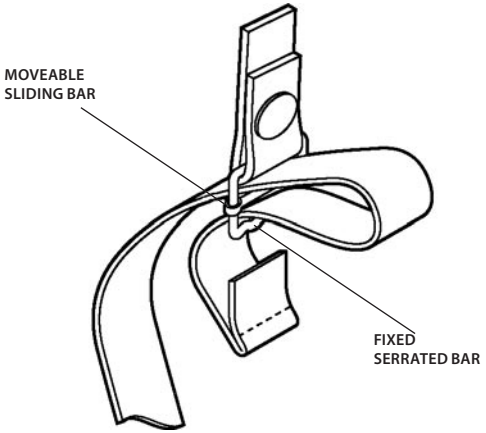

Figure 4-2. Threading the Sliding Bar Buckles

When putting on and adjusting the headmount, it is possible for the strap to slip out of the slide fastener. Perform the following to adjust the strap and sliding bar buckle.

(1) Thread the strap from the inside of the buckle over the moveable sliding bar (see Figure 4-2.). Thread the strap back through the buckle; this time, thread it under the moveable sliding bar and over the serrated part of the buckle.

(2) Pull the strap through the buckle and tighten.

(3) Repeat steps 1 and 2 for other straps and buckles that have come undone.

4.3.3. NECK CORD MAINTENANCE

The neck cord (Figure 2-1) may be broken, frayed, or the ends may come untied.

If loose, re-tie the ends of the cord. If broken or severely frayed, install a new cord as follows:

(1) From the rear, insert the ends of the cord through the holes in the monocular.

(2) Thread the end of the right cord through the hole in the objective lens cap.

(3) Tie a knot at each end of the cord.

4.4 SERVICE/PACKING AND UNPACKING

4.4.1 RETURN INSTRUCTIONS

For service, repair or replacements, please email *service@armasight.com*.

To assist the Service Representative (SR) in determining if the item is repairable, please provide the following information:

(1) Serial Number of the defective item.

(2) Thorough description of the malfunction, defect or damage.

(3) An explanation of how the malfunction, defect or damage occurred, if known.

If the SR determines that the item is under warranty or should be returned for repair, a Return Material Authorization number (RMA#) will be provided. RMA can be obtained via e-mail to *service@armasight.com* or via phone by calling Armasight Customer Service at (888)959-2259 Ext. 2 or via fax (888)959-2260.

When returning the PVS-14 for service or repair, the following should be done to prevent any additional damage:

(1) Verify that the device is free of all contaminants, such as dirt or other foreign material.

(2) Remove the battery.

(3) Place the cap over the lens.

(4) Place the PVS-14 into a hard shipping/ storage case or soft carrying case (if available). If the hard shipping/ storage case is not available, you will need to individually package each unit being returned in a suitable container.

Place the PVS-14, as well as a copy of the test report or detailed description of the failure, in a suitable packing/ shipping container. Mark the package with the RMA#. Ship the items using the fastest, most easily traceable, prepaid method to Armasight Inc., 815 Dubuque Avenue, South San Francisco, CA 94080, USA.

APPENDIX

A. COMPONENTS OF END ITEM (COEI) AND BASIC ISSUE ITEMS (BII) LISTS

A1. SCOPE

To help you inventory components and to promote safe and efficient operation of the equipment, this appendix lists COEI and BII for the PVS-14.

A2. GENERAL

The COEI and BII information is divided into the following lists:

Components of End Item (COEI). This list is for information purposes only, and is not a basis for requesting returns or replacements. These items are part of the PVS-14. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Items of COEI are removed and separately packaged for transportation or shipment only when necessary. Illustrations are furnished to help you locate and identify the items.

Basic Issue Items (BII). These essential items are required to prepare the PVS-14 for operation, properly operate the device, and perform any necessary emergency repairs. Although shipped separately, BII must be used with the

PVS-14 during operation and when it is transferred between property accounts. Listing these items is a basis for requesting replacement items, based on authorization of the end item by the TOE/ MTOE. Illustrations are provided to help you identify the items.

A3. EXPLANATION OF COLUMNS IN THE COEI LIST AND BII LIST

Column (1), *Illus. Number.* Gives you the number of the item illustrated.

Column (2), *National Stock Number.* Identifies the stock number of the item to be used for requisitioning purposes.

Column (3), *Description CAGEC and Part Number.* Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The stowage location of COEI and BII is also included in this column. The last line below the description is the CAGEC (commercial and Government entity code) (in parenthesis) and the part number.

Column (4), *Usable on Code.* When applicable, gives you a code if the item you need is not the same for different models of equipment.

Column (5), *U/M (Unit of Measure).* Indicates how the item is issued for the National Stock Number shown in column (2).

Column (6), *Qty Rqr.* Indicates the quantity required.

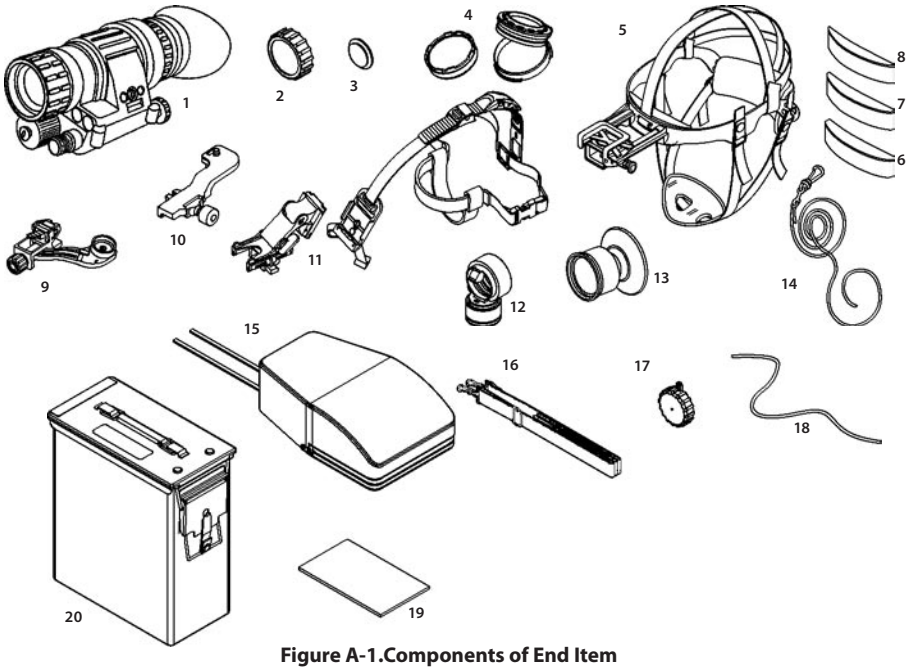

Figure A-1.Components of End Item

TABLE A-1. COMPONENTS OF END ITEM

(1) ILLUS. NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC, AND PART NUMBER	(4) USABLE ON CODE	(5) U/M	(6) QTY RQR
1		MONOCULAR ASSEMBLY(80063) A3256340		EA	1
2	5855-01-246-8271	WINDOW, SACRIFICIAL(80063) A3144264		EA	1
3	5855-01-444-1230	LENS, INFRARED RECEIVER(80063) A3256353		EA	1
4	5855-01-379-1410	FILTER, INFRARED LIGHT(54490) 5009737		EA	1
5	5855-01-246-8266	HEADSET ASSEMBLY(80063) A3144268		EA	1
6	5855-01-297-7847	BROWPAD ASSY, THICK(80063) A3144436		EA	1
7	5855-01-355-8600	BROWPAD ASSY, MEDIUM(80063) A3144435		EA	1
8	5855-01-355-8599	BROWPAD ASSY, THIN(80063) A3144280		EA	1
9	5965-01-444-1216	ADAPTER, HEADSET(80063) A3256347	ANAM000019	EA	1
10	5340-01-446-8588	BRACKET, MOUNTING(80063) A3256348	ANAM000007	EA	1
11	5855-01-457-2953 5855-01-441-0401	MOUNT, VIEWER(80063) A3256368or MOUNT, VIEWER(80063) A3260927	ANHM000005	EA	1
12	5855-01-381-6052	COMPASS ASSEMBLY(80063) A3187430	ANKI000009	EA	1
13	6650-01-444-1229	EYEGUARD, OPTICAL INSTRUMENT(80063) A3256345	ANEC000004	EA	1
14	5340-01-451-7737	CLIP, RETAINING(80063) A3260933		EA	1
15	5855-01-398-4284	CASE, INFRARED EQUIPMENT(80063) A3187392	AGHC000003	EA	1
16	5340-01-250-2431	STRAPPING(80063) A3144267		EA	1
17	5340-01-397-6608	CAP, PROTECTIVE, DUST(80063) A3144318		EA	1
18	4020-01-446-8097	CORD, FIBROUS(80063) A3144306		EA	1
19		OPERATOR'S MANUALTM 11-5855-306-10		EA	1
20		CASE, SHIPPING & STORAGE(80063) A3264350	AGHC000001	EA	1

B. ADDITIONAL AUTHORIZATION LIST (AAL)

B1. SCOPE

This appendix lists additional items you are authorized to use to supplement the PVS-14.

B2. GENERAL

This list identifies items that do not have to accompany the PVS-14 and that do not have to be returned with it. These items are all authorized for your use by CTA, MTOE, TDA, or JTA.

B3. EXPLANATION OF COLUMNS IN THE AAL

Column (1), ***National Stock Number.*** Identifies the stock number of the item to be used for requisitioning purposes.

Column (2), ***Description, Commercial and Government Entity Code (CAGEC), and Part Number (P/N).*** Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The last line below the description is the CAGEC (in parentheses) and the part number.

Column (3), ***Usable On Code.*** When applicable, gives you a code if the item you need is not the same for different models of equipment.

Column (4), ***U/M (Unit of Measure).*** Indicates how the item is issued for the National Stock Number shown in column (1).

Column (5), ***Qty Recm.*** Indicates the quantity recommended.

TABLE B-1. ADDITIONAL AUTHORIZATION LIST

(1) NATIONAL STOCK NUMBER	(2) DESCRIPTION, CAGEC, AND PART NUMBER	(3) USABLE ON CODE	(4) U/M	(5) QTY RECM
6135-00-985-7845	BATTERY, NONRECHARGEABLE (AA), 1.5 Vdc (80058) BA-3058/U		EA	2
6135-01-333-6101	BATTERY, NONRECHARGEABLE (AA) (83740) L91, 1.5 Vdc		EA	2
6625-01-323-9584	TEST SET, ELEC. SYS. TS-4348/UV (80063) A3139775		EA	1
5855-01-423-0817	MAGNIFIER LENS ASSEMBLY (80063) A3256391		EA	1

C. EXPENDABLE AND DURABLE ITEMS LIST

C1. SCOPE

This appendix lists expendable and durable items that you will need in order to operate and maintain the PVS-14. This list is for information only and is not basis for requesting returns.

C2. EXPLANATION OF COLUMNS IN THE EXPENDABLE/DURABLE ITEMS LIST

Column (1) - *Item Number*. This number is assigned to the entry in the list and is referenced in the narrative instructions to identify the item.

Column (2) - *Level*. This column includes the lowest level of maintenance that requires the listed item (C = Operator/Crew).

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

Column (4) - *Item Name, Description, Commercial and Government Entity Code (CAGEC), and Part Number (P/N)*. This column provides the other information you need to identify the item.

Column (5) - *Unit of Measure (U/M)*. These codes show the physical measurement or count of an item, such as gallon, dozen, gross, etc.

TABLE C-1. EXPENDABLE AND DURABLE ITEMS LIST

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) ITEM NAME, DESCRIPTION, CAGE, PART NUMBER	(5) U/M
1	C	6640-01-459-4239	PAPER, LENS (81348) A-A-50177, TYPE I, CLASS 5	PK

D. PRODUCT WARRANTY REGISTRATION CARD

In order to validate the warranty on your product, Armasight must receive a completed Product Warranty Registration Card for each unit, or the user must complete warranty registration on our website (www.armasight.com). Please complete the included form and immediately mail it to our Service Center: Armasight Inc., 815 Dubuque Avenue, South San Francisco, CA 94080, USA

ARMASIGHT PRODUCT WARRANTY REGISTRATION CARD

PRODUCT INFORMATION

Product Name _____ Purchased From _____

Purchase Date _____ Product Serial # _____

CUSTOMER INFORMATION

Name _____

Address _____

City _____ Country _____ Zip _____

Day Phone # _____ Home Phone # _____

E-mail address _____

Customer Signature Required

ALPHABETICAL INDEX

Armasight Inc.

815 Dubuque Avenue,
South San Francisco,
CA 94080, USA

Phone: (888)959-2259
Fax: (888)959-2260
Intl Phone/Fax: (650)492-7755

info@armasight.com

⚠ WARNING!

This product contains natural rubber latex which may cause allergic reactions! The FDA has noted an increase in the number of reported deaths that are associated with an apparent sensitivity to natural latex proteins. If you are allergic to latex, it is a good idea to learn which products contain it and strictly avoid exposure to those products.

www.armasight.com