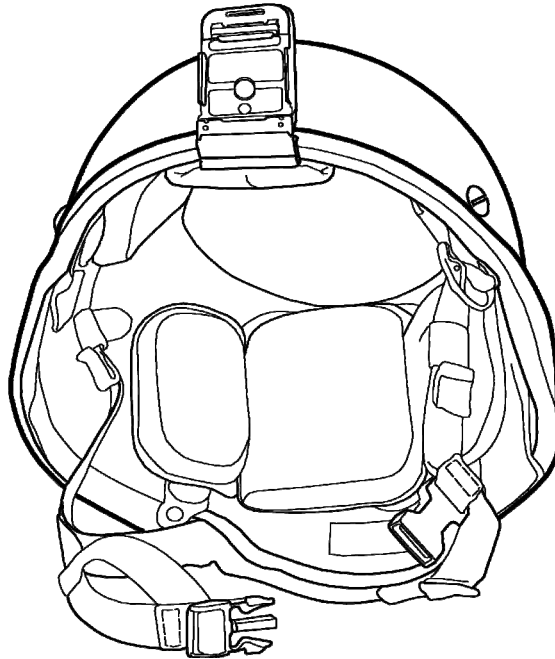


***TM 10-8470-204-10**

TECHNICAL MANUAL OPERATOR'S MANUAL FOR

**ADVANCED COMBAT HELMET (ACH)
NSN: 8470-01-529-6302, SMALL
NSN: 8470-01-529-6329, MEDIUM
NSN: 8470-01-529-6344, LARGE
NSN: 8470-01-529-6365, X-LARGE
NSN: 8470-01-558-8622, XX-LARGE**



* TM 10-8470-204-10, dated 17 May 2010, supersedes TM 10-8470-204-10 dated 14 March 2008, including all changes.

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

HEADQUARTERS, DEPARTMENT OF THE ARMY

17 MAY 2010

WARNING SUMMARY

This warning summary contains general safety warnings and hazardous materials warnings that must be understood and applied during operation and maintenance of this equipment. Failure to observe these precautions could result in serious injury or death to personnel. For first aid treatments, refer to FM 4-25.11.

EXPLANATION OF SAFETY WARNING ICONS



PARACHUTIST FALLING - Parachutist falling shows that severe injury or death could result by not adhering to warning.

GENERAL SAFETY WARNINGS

WARNING

All helmets manufactured by Armorsource and Rabintex must be turned in for direct exchange through the supporting central issue facility (CIF). There is evidence that Armorsource and Rabintex ACHes were produced using unauthorized manufacturing practices, defective materials and improper quality procedures which could potentially reduce ballistic and fragmentation protection. These helmets are no longer authorized for use and failure to follow this warning may cause serious injury or death to personnel.

WARNING

All helmet pads must be worn during training and combat missions. For non-training and non-combat missions (for example, parades, ceremonies, etc.) up to two pads (oblong/oval or trapezoidal) can be removed from the standard configuration. Failure to observe this warning may result in serious injury or death to personnel.

WARNING

The rear trapezoidal pad must be placed flush with the rim (edge) of the helmet for airborne operations. If you experience helmet rotation during airborne operations, the rear trapezoidal pad can be placed so that it extends ½ inch beyond the rim of the helmet. Placement of the rear trapezoidal pad flush or beyond the rim (edge) of the helmet prevents the hard shell from hitting your neck. Failure to warn this may could result in serious injury or death to personnel.

WARNING

The hardware for the ACH helmets, where the chin strap retention system webbing attaches to the helmet shell, must be covered by padding during airborne and other high risk operations such as air assault and rappelling/mountaineering. The oblong/oval pads must be placed flush with the rim (edge) of the helmet and completely cover the hardware. Failure to observe this warning may result in serious injury or death to personnel because a hard-point could contact the Soldier's head.

WARNING

Your helmet must fit properly in order to adequately protect you. If you experience fit problems, excessive tightness or looseness, or helmet profile is too high or too low, refer to Evaluating and Adjusting Helmet Fit (WP 0007) guidelines. Failure to observe this warning may result in serious injury or death to personnel.

WARNING

When donning the helmet for the first time in a cold environment, wear the helmet for a few minutes or warm the pads, for example by placing in pockets, so that the pads will conform to the shape of your head. As the pads warm up and conform to the shape of your head, it may be necessary to retighten the chin strap retention system. Failure to observe this warning may cause improper fit and result in serious injury or death to personnel.

WARNING

If you do not don and adjust the helmet properly as described in WP 0006, the helmet may become tilted on your head and the chin cup may become uncentered. Failure to observe this warning may result in serious injury or death to personnel.

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LIST OF EFFECTIVE PAGES/WORK PACKAGES

NOTE: This manual supersedes TM 10-8470-204-10 dated 14 March 2008. Zero in "Change No." column indicates an original page or work package.

Date of issue for the original manual is:

Original 17 MAY 2010

TOTAL NUMBER OF PAGES FOR FRONT AND REAR MATTER IS 26 AND TOTAL NUMBER OF WORK PACKAGES IS 28, CONSISTING OF THE FOLLOWING:

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Front Cover	0	WP 0014 (6 pgs)	0
Warning	0	Chp 4 title page	0
i-vi	0	WP 0015 (6 pgs)	0
Chp 1 title page	0	WP 0016 (8 pgs)	0
WP 0001 (2 pgs)	0	WP 0017 (4 pgs)	0
WP 0002 (14 pgs)	0	WP 0018 (8 pgs)	0
WP 0003 (2 pgs)	0	WP 0019 (4 pgs)	0
Chp 2 title page	0	WP 0020 (2 pgs)	0
WP 0004 (4 pgs)	0	WP 0021 (2 pgs)	0
WP 0005 (4 pgs)	0	WP 0022 (4 pgs)	0
WP 0006 (6 pgs)	0	Chp 5 title page	0
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WP 0008 (2 pgs)	0	WP 0024 (6 pgs)	0
WP 0009 (2 pgs)	0	WP 0025 (2 pgs)	0
WP 0010 (2 pgs)	0	WP 0026 (2 pgs)	0
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WP 0012 (6 pgs)	0	WP 0028 (2 pgs)	0
WP 0013 (6 pgs)	0	Back Cover	0
Chp 3 title page	0		

TECHNICAL MANUAL

**OPERATOR'S MANUAL
FOR**

ADVANCED COMBAT HELMET (ACH)

NSN: 8470-01-529-6302, SMALL

NSN: 8470-01-529-6329, MEDIUM

NSN: 8470-01-529-6344, LARGE

NSN: 8470-01-529-6365, X-LARGE

NSN: 8470-01-558-8622, XX-LARGE

**REPORTING ERRORS AND RECOMMENDING
IMPROVEMENTS**

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms), located in the back of this manual directly to: TACOM Life Cycle Management Command, ATTN: AMSTA-LCL-MPP/TECH PUBS, 1 Rock Island Arsenal, Rock Island, IL 61299-7630. You may also send in your recommended changes via electronic mail or by fax. Our fax number is DSN 793-0726 and Commercial (309) 782-0726. Our e-mail address is TACOMLCMC.DAForm2028@us.army.mil. A reply will be furnished to you.

* TM 10-8470-204-10, dated 17 May 2010, supersedes
TM 10-8470-204-10 dated 14 March 2008, including all changes.

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HOW TO USE THIS MANUAL

HOW TO OBTAIN TECHNICAL MANUALS

When a new system is introduced to the Army inventory, it is the responsibility of the receiving units to notify and inform the Unit Publications Clerk that a Technical Manual is available for the new system. Throughout the life cycle of the new system, the Distribution Center DOL-W will also provide updates and changes to the Technical Manual.

To receive new Technical Manuals or change packages to existing Technical Manuals (TM) for fielded equipment, provide the Unit Publications Clerk the full Technical Manual number, title, date of publication, and number of copies required. The Unit Publications Clerk will justify the request through the Unit Publications Officer. When the request is approved, the Unit Publications Clerk will use DA Form 12-R to order the series of Technical Manuals from the Army Publishing Directorate (APD).

Instructions for Unit Publications Clerk

Obtain DA Form 12-R and request a publications account from the APD Web site at <http://www.apd.army.mil>. Once on the Website, click on the "Orders/Subscriptions/Reports" tab. From the dropdown menu, select "Establish an Account," then select "Tutorial" and follow the instructions in the tutorial presentation.

Complete information for obtaining Army publications can be found in DA PAM 25-33.

OVERVIEW

This manual contains operating instructions and maintenance procedures for the Advanced Combat Helmet (ACH). Primary chapters appear in upper case/capital letters; work packages are presented in numeric sequence, e.g., 0001, 0002; paragraphs within a work package are not numbered and are presented in a titled format. For a first level paragraph, titles are in all upper case/capital letters, e.g. Manual Organization and Page Numbering System. The location of additional material that must be referenced is clearly marked. Illustrations supporting maintenance procedures/text are located underneath, or as close to their referenced paragraph.

This manual is divided into the following major sections:

Front Matter. Front matter consists of front cover, warning summary, title block, table of contents, and a how to use this manual page.

Chapter 1 - General Information, Equipment Description, and Theory of Operation. Contains descriptions, equipment data, and theory of operation information.

Chapter 2 - Operator Instructions. Contains sizing information, donning information, and operating instructions in both usual and unusual conditions.

Chapter 3 - Troubleshooting Procedures. Contains troubleshooting procedures for the ACH.

Chapter 4 - Maintenance Instructions. Contains instructions on hardware replacement, pad suspension replacement, cleaning the ACH, and PMCS.

Chapter 5 - Supporting Information. Contains reference information, Components of End Items (COEI)/Basic Issue Items (BI) Lists, Associated and Repair Items List, Expendable and Durable Items List and Additional Information for the ACH.

NAVIGATION

This TM is in work package format. All of the work packages contained within the TM are listed in the table of contents in the order they appear by chapters. The work package sequence number (e.g. WP 0001) is listed for each work package in the table of contents. The work package sequence number is at the top of each page of the work package and is also a part of the page number for each work package (e.g., 0001-1). The page numbers appear at the bottom of each page.

OPERATION AND MAINTENANCE

Before you use the Advanced Combat Helmet (ACH) familiarize yourself with the assembly and fitting instructions and the operating instructions (Chapter 2). Perform maintenance procedures (Chapter 4) on a regular basis. Always follow the WARNINGS and CAUTIONS.

CHAPTER 1
GENERAL INFORMATION, EQUIPMENT DESCRIPTION AND
THEORY OF OPERATION
FOR
ADVANCED COMBAT HELMET (ACH)

**ADVANCED COMBAT HELMET
GENERAL INFORMATION**

SCOPE

This manual covers the basic fitting and use instructions for the Advanced Combat Helmet (ACH), hereafter referred to as the ACH or the helmet.

MAINTENANCE FORMS, RECORDS, AND REPORTS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your ACH needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. If you have Internet access, the easiest and fastest way to report problems or suggestions is to go to: <https://aeps.ria.army.mil/aepspublic.cfm> (scroll down and choose the "Submit Quality Deficiency Report" bar). The Internet form lets you choose to submit an Equipment Improvement Recommendation (EIR), a Product Quality Deficiency Report (PQDR) or a Warranty Claim Action (WCA). You may also submit your information using an SF 368 (Product Quality Deficiency Report). You can send your SF 368 via e-mail, regular mail, or facsimile using the addresses/facsimile numbers specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual.

CORROSION PREVENTION AND CONTROL (CPC)

Corrosion Prevention and Control (CPC) of Army materiel is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items.

Corrosion specifically occurs with metals. An electrochemical process causes the degradation of metals. It is commonly caused by exposure to moisture, acids, bases, or salts. An example is the rusting of iron. Corrosion damage in metals can be seen, depending on the metal, as tarnishing, pitting, fogging, surface residue, and/or cracking. Plastics, composites, and rubbers can also degrade. Degradation is caused by thermal (heat), oxidation (oxygen), solvation (solvents), or photolytic (light, typically UV) processes.

The most common exposures are excessive heat or light. Damage from these processes will appear as cracking, softening, swelling, and/or breaking. SF Form 368, Product Quality Deficiency Report, should be submitted to the address specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual.

DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

Not Applicable to the ACH.

PREPARATION FOR STORAGE OR SHIPMENT

To prepare the ACH for shipment or storage, tag it and place it in its original container or a suitable box.

NOMENCLATURE CROSS REFERENCE LIST

Common Name	Official Nomenclature
Attachment Tab with Buckle	Attachment Tab
Attachment Tab with Ladderlock	Attachment Tab

LIST OF ABBREVIATIONS/ACRONYMS

Definition	Abbreviation/Acronym
Advanced Combat Helmet	ACH
Basic Issue Items	BII
Commercial and Government Entity Code	CAGEC
Chemical, Biological, Radiological and Nuclear Components of End Item	CBRN COEI
Corrosion Prevention Control	CPC
Equipment Improvement Report	EIR
(Modified) Table of Organization and Equipment	(M)TOE
National Stock Numbers	NSN
Night Vision Devices	NVD
Preventive Maintenance Checks and Services	PMCS

END OF WORK PACKAGE

**ADVANCED COMBAT HELMET
EQUIPMENT DESCRIPTION AND DATA**

EQUIPMENT CHARACTERISTICS, CAPABILITIES AND FEATURES

This work package provides descriptions and data pertaining to the MSA, Gentex, Rabintex (also known as Armorsource and Unicor), and SDS (also known as BAE) Advanced Combat Helmets. The Universal helmet and chin strap retention systems referenced in this manual are the SDS/BAE helmet and H-Style Chin Strap Retention Systems.

The ACH is a helmet system that provides ballistic and impact protection. This system is compatible with the current night vision devices (NVDs), communications packages, and Chemical, Biological, Radiological and Nuclear (CBRN) defense equipment and body armor.

The ACH provides ballistic protection within the full spectrum of operational environments.

The ACH allows maximum sensory and situational awareness for the operator. This includes an unobstructed field of view and increased ambient hearing capabilities.

The ACH's chin strap retention systems and pad suspension system provide unsurpassed balance, stability and comfort. The systems provide for proper size, fit and ventilation. An armor nape pad that adds stability and provides protection against fragments from ground-level threats is also available.

The ACH's suspension pad system provides impact protection throughout all operational scenarios, including static-line airborne operations.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

Following are two illustrations of the ACH. Figure 1 shows the ACH with the H-Style Chin Strap Retention System, its major components and their locations. Figure 2 shows the ACH with the X-Style Chin Strap Retention System, its major components and their locations.

Following these illustrations are descriptions of the major components, as well as illustrations of these components and their subcomponents.

MSA, SDS, Rabintex and Gentex Helmets with H-Style Retention System

The MSA, SDS, Rabintex, and Gentex helmets with H-style retention system consist of the major components illustrated in Figure 1 below:

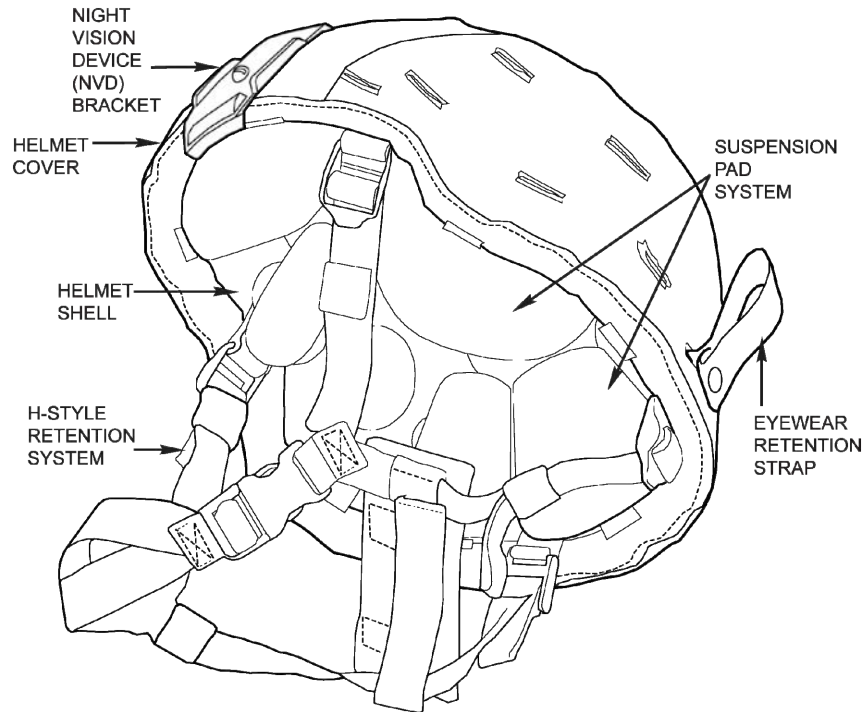


Figure 1. Major Components with the H-Style Chin Strap Retention System.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – CONTINUED

Gentex Helmet with X-Style Retention System

The Gentex Advanced Combat Helmet with the X-style retention system consists of the major components illustrated in Figure 2 below:

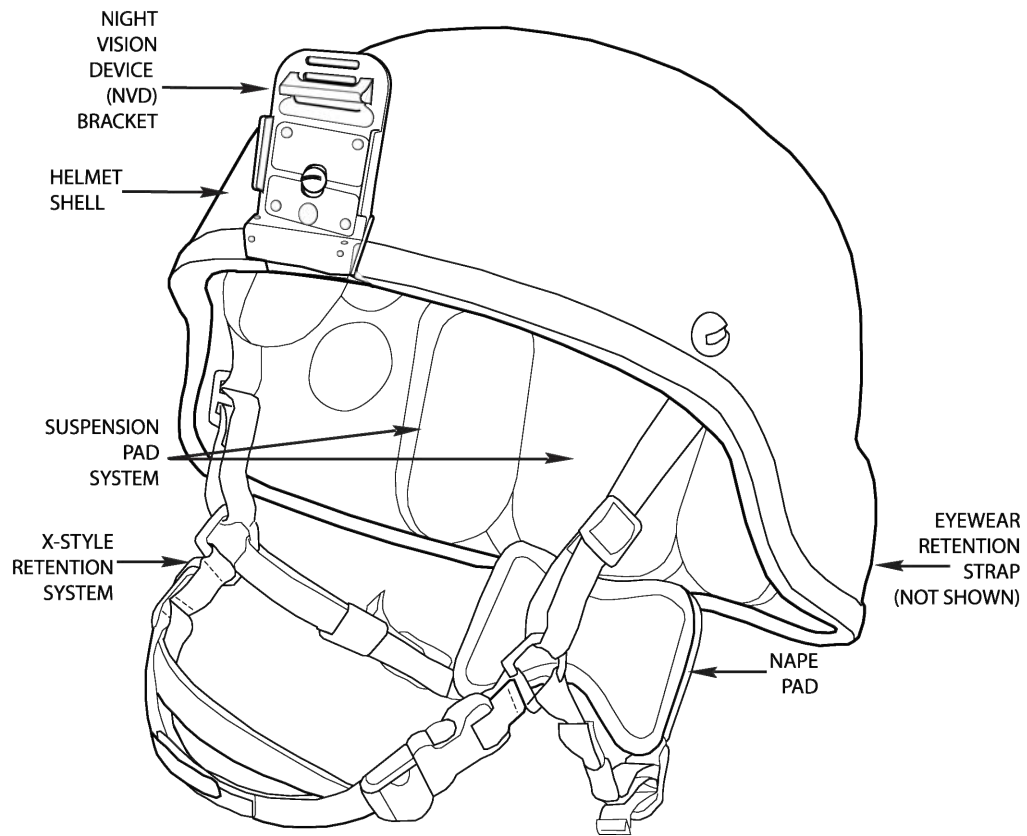


Figure 2. Major Components with the X-Style Chin Strap Retention System.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – CONTINUED

Helmet Shell. The helmet shell includes interior hook disks on which to attach the suspension pads shown in Figure 4. It also includes a hole for the Night Vision Device (NVD) Bracket (shown in Figure 3) and four holes to connect the chin strap retention system and eyewear retention straps. There are currently five shell sizes: small, medium, large, extra-large and extra-extra large.

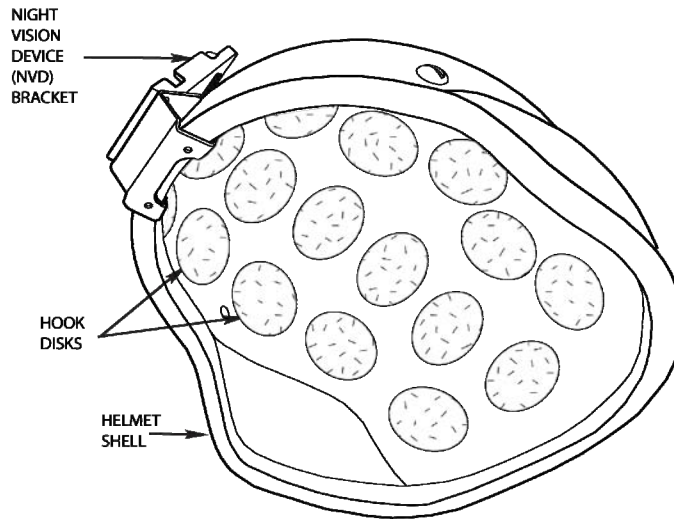


Figure 3. Helmet Shell Major Components (All Models).

Suspension Pad System

The suspension pads (Figure 4) provide impact protection and sizing adjustment ability. The pads have a loop material on one side that connects to hook disks on the inside of the helmet shell shown in Figure 3 above. The loop material side is noted by the production information printed on that side. Pad size ¾-inch (formerly known as size 6) is standard size. Pad size 1-inch (formerly known as size 8) has been discontinued. The Armor Nape Pad (also shown below) which, when attached to the suspension system rests at the base of the neck.

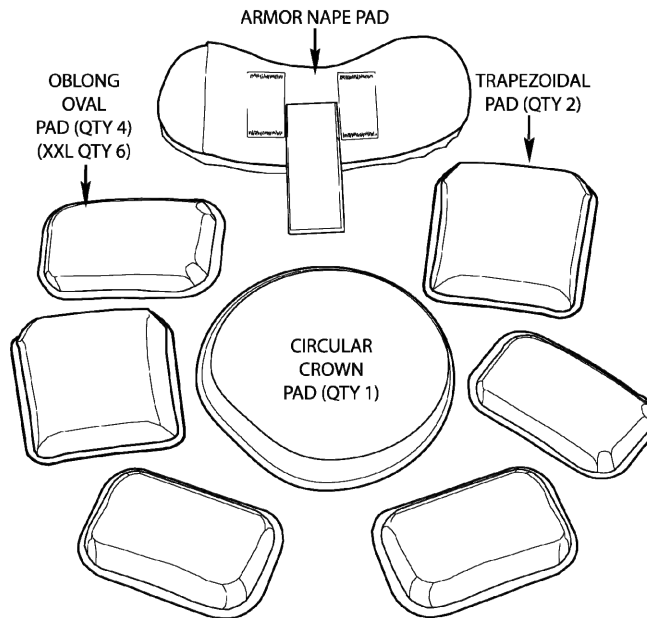


Figure 4. Suspension Pad System Components.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – CONTINUED

H-Style Chin Strap Retention System. The retention system is composed of three basic elements: 1) a "V" shaped right side element 2) a "V" shaped left side element, and 3) a foam nape pad joining the two side elements.

The H-Style Chin Strap Retention System employs a four-point chin strap and consists of the following components illustrated in Figure 5. In conjunction with the suspension pad system, the chin strap retention system provides improved stability.

The MSA, SDS, Rabintex, and Gentex H-Style Chin Strap Retention Systems are connected to the helmet with four attachment tabs and sets of hardware. Buckles (or ladderlocks) are sewn into the attachment tabs. The webbing of the retention system is threaded through the buckles to connect it to the helmet. The webbing is also used to adjust helmet fit at the connection points. The fit is also adjustable side-to-side and along the legs of the chin strap at the nape pad. These retention systems are called "H-style" because, when viewed from the rear, they form an "H".

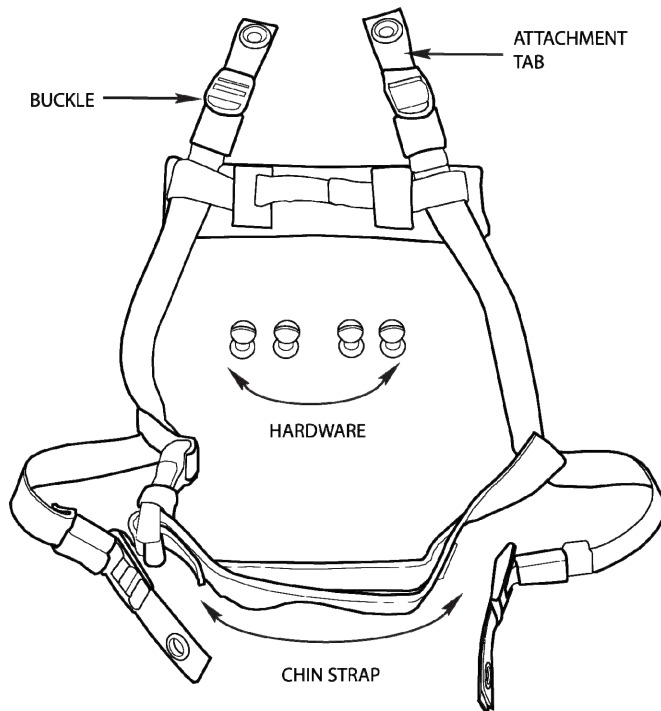


Figure 5. H-Style Chin Strap Retention System Major Components.

X-Style Chin Strap Retention System. The Gentex X-Style Chin Strap Retention System (not shown) uses a similar four-point design. However, the Gentex X-Style Chin Strap Retention System attaches directly to the shell using a screw and nut and does not use ladderlocks at the shell. The adjustment point is elsewhere in the chin strap. The rear nape pad is not adjustable; however, the chin strap is adjustable at the center section of the chin strap, where the chin cup is located. This retention system is called "X-style" because, when viewed from the rear, it forms an "X".

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – CONTINUED

Helmet Cover. There are currently three covers available for the ACH: a non-reversible universal camouflage (shown in Figure 6), a non-reversible multi-cam cover (not shown) and a non-reversible white (arctic) cover (not shown).

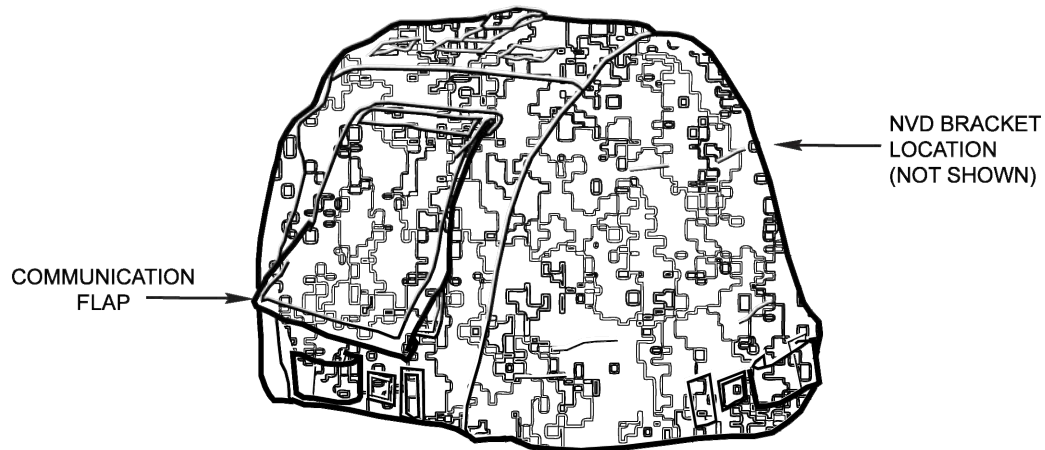


Figure 6. Non-Reversible Camouflage Helmet Cover.

These helmet covers have a communication flap used to store cables from the headset that is sometimes used with the helmet.

The flap can also be used to secure goggle straps if no eyewear retention straps are available by lifting the flap, placing the goggle strap under it and resealing the flap by pressing the hook and loop fasteners together.

Eyewear Retention Strap. The eyewear retention straps (shown below), which permit certain eyewear to attach to the helmet, connect in the back as previously shown in Figure 1.

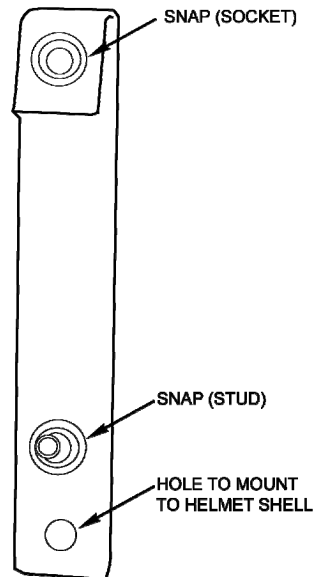


Figure 7. Eyewear Retention Strap (All Models).

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – CONTINUED

Armor Nape Pad. The Armor Nape Pad is located at the base of the neck. It is designed to protect against ground-level threats and provide protection against fragments, while adding stability to the helmet. It attaches to the chin strap retention system as shown in Figures 8 and 9.

It is available in two sizes small/medium and large/extra-large. The Armor Nape Pad is available in three configurations—one to fit the legacy H-Style Chin Strap Retention System, one to fit the X-Style Chin Strap Retention System, and a third to fit both the Universal H-Style and X-Style Chin Strap Retention Systems as presented in Table 1.

NOTE

The size of the nape pad is independent of the helmet size. Use appropriate pad and adjust as needed.

Table 1. Armor Nape Pads.

Armor Nape Pad NSNs	Nape Pad Size	Fits Chin Strap Configuration	Pattern
8415-01-552-4607	Small/Medium	H (legacy)	Camouflage
8415-01-552-4610	Large/Extra-Large	H (legacy)	Camouflage
8415-01-552-4599	Small/Medium	X (legacy)	Camouflage
8415-01-552-4602	Large/Extra-Large	X (legacy)	Camouflage
8470-01-568-1028	Small/Medium	Universal, H-Style, X-Style	Camouflage
8470-01-568-1023	Large/Extra-Large	Universal, H-Style, X-Style	Camouflage
8470-01-584-1750	Small/Medium	Universal, H-Style, X-Style	Multi-cam
8470-01-584-1839	Large/Extra-Large	Universal, H-Style, X-Style	Multi-cam

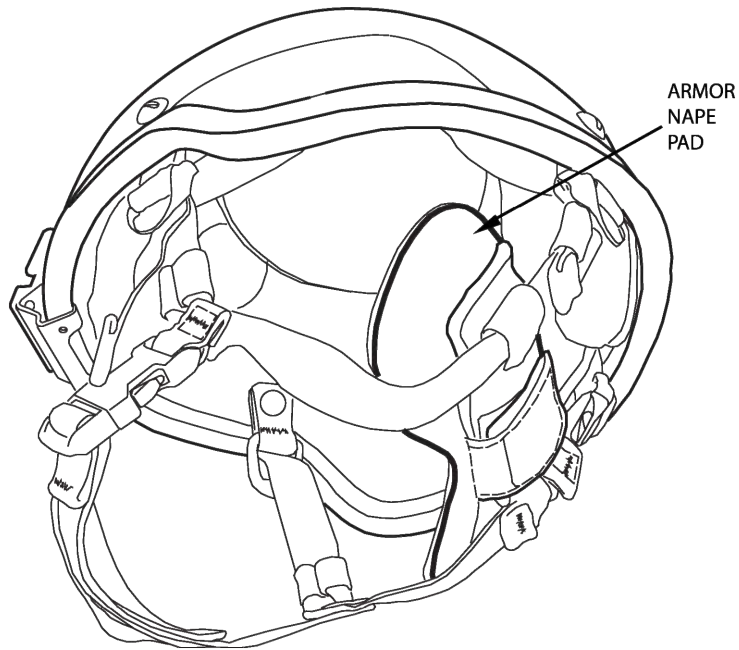


Figure 8. Armor Nape Pad Location on X-Style Retention System.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – CONTINUED

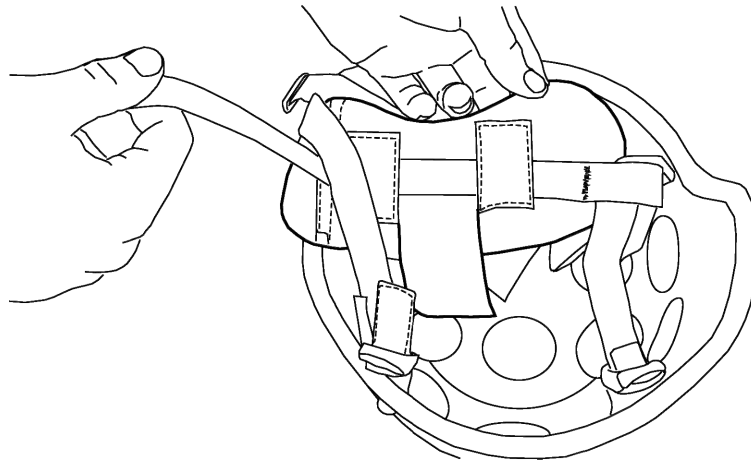


Figure 9. Armor Nape Pad Location on H-Style Retention System.

Night Vision Device (NVD) Bracket

The NVD bracket is not directly a major component of the ACH. However, it is required to be worn with the helmet by Soldiers in areas with a possibility of hostile fire because it adds additional ballistic protection. The NVD bracket permits attachment of certain night vision devices to the helmet.

The NVD bracket is currently available in two versions: an “old” version which is black and a “new” version which is beige/tan. They are referred to as the “Old NVD Bracket” and the “New NVD Bracket” throughout this manual in order to differentiate them.

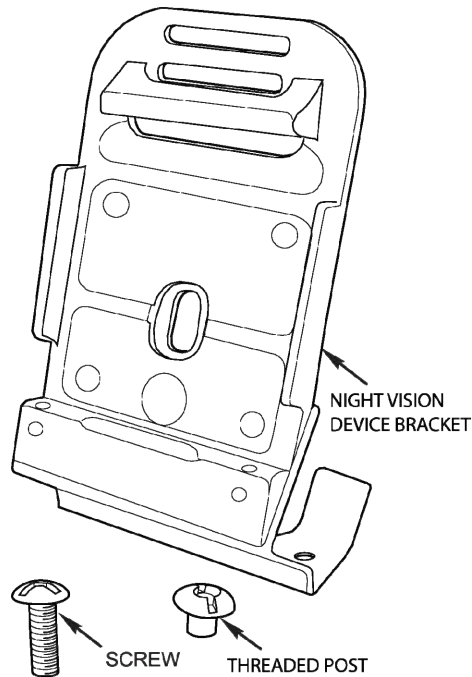


Figure 10. Old NVD Bracket.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – CONTINUED

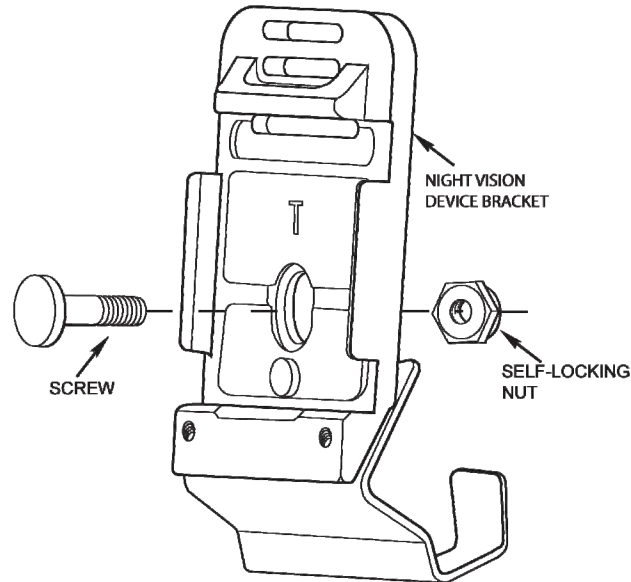


Figure 11. New NVD Bracket.

DIFFERENCES BETWEEN MODELS

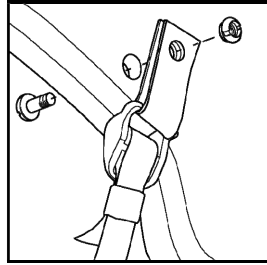
There are presently four suppliers of the ACH: MSA, SDS (also known as BAE), Gentex, and Rabintex (also known as Armorsource and Unicor) as designated by the manufacturer's label inside the helmet. The helmets are similar and all employ a four-point chin strap retention system design (Figure 1). Gentex, however, has two different designs for its chin strap retention system and hardware, the earlier version (X-style, Figure 8) and the later version (H-style, Figure 9).

The primary difference between the MSA, SDS, Gentex (with H-style retention strap), and Rabintex designs is the hardware used to connect the chin strap retention system to the helmet as illustrated in Figure 12. The straps of the retention system on the MSA, SDS, Rabintex, and later Gentex version (H-style) are all identical.

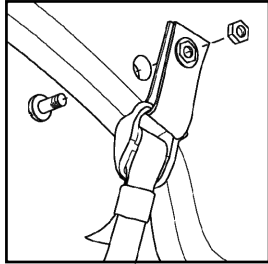
There are currently three versions of the Armor Nape Pad. They are: the H-style Armor Nape Pad, the X-Style Armor Nape Pad and the Universal H-Style Armor Nape Pad. The primary difference between them is: the H-style model fits helmets with the H-Style Chin Strap Retention System, the X-style model fits helmets with the X-Style Chin Strap Retention System and the Universal model fits all chin strap retention systems. In addition, the hook and loop tabs differ slightly as indicated in Figures 13 through 15.

DIFFERENCES BETWEEN MODELS – CONTINUED

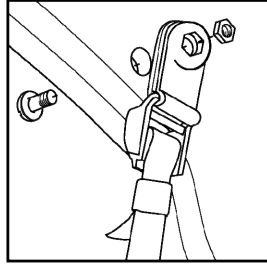
Retention System Hardware. Following are illustrations of the various retention system hardware and their appropriate connections.



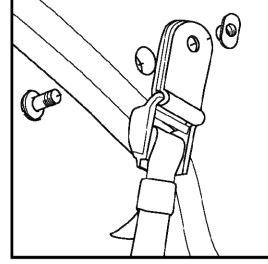
SDS/UNIVERSAL



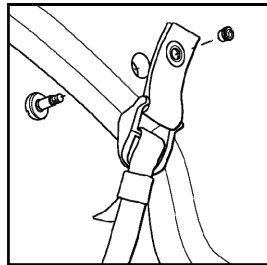
MSA EARLY



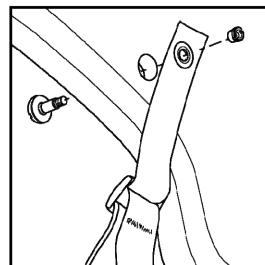
MSA LATER



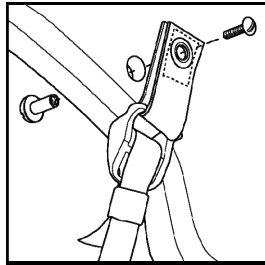
MSA CURRENT



GENTEX H-STYLE



GENTEX X-STYLE



RABINTEX

Figure 12. Retention System Hardware Breakouts.

DIFFERENCES BETWEEN MODELS – CONTINUED

Chin Strap Retention System. There are two basic styles of retention systems: “H”-style and “X” style.

The MSA, SDS, Rabintex, and Gentex H-Style Chin Strap Retention Systems are connected to the helmet with four attachment tabs and sets of hardware (as previously shown in Figure 12). Buckles (or ladderlocks) are built into the attachment tabs. Webbing on the retention system is woven into the buckles completing the connection. The webbing is used to adjust helmet fit at the connection points. The fit is also adjustable side-to-side and along the legs of the chin strap at the nape pad.

The Gentex X-Style Chin Strap Retention System uses a similar four-point design to the H-style. However, the Gentex X-Style Chin Strap Retention System attaches directly to the shell using a screw and nut and does not require the use of ladderlocks at the shell. The adjustment point is elsewhere in the chin strap. Unlike on the H-style, the rear nape pad is not adjustable; however, the chin strap is adjustable at the center section of the chin strap, where the chin cup is located.

Night Vision Device (NVD) Bracket. The NVD bracket is currently available in two versions: an “old” version and a “new” version. They are referred to as the “Old NVD Bracket” and the “New NVD Bracket” in order to differentiate them.

The primary differences between the two are the size of the slot in the bracket, the hardware and the color.

The old version of the bracket uses a flathead screw and post as shown in Figure 10 and requires a flathead screwdriver for attachment to the helmet. It is black in color. The slot through which the screw and post are accepted is .17 inches.

The new version of the bracket uses a flat screw without a slot and a self-locking nut, as shown in Figure 11, and requires a 3/8-inch wrench to properly tighten the bracket to the helmet. This bracket is beige/tan. The slot through which the screw and self-locking nut are accepted is slightly larger (.25 inches) than the old version.

Armor Nape Pads. Following are illustrations of the three Armor Nape Pad models:

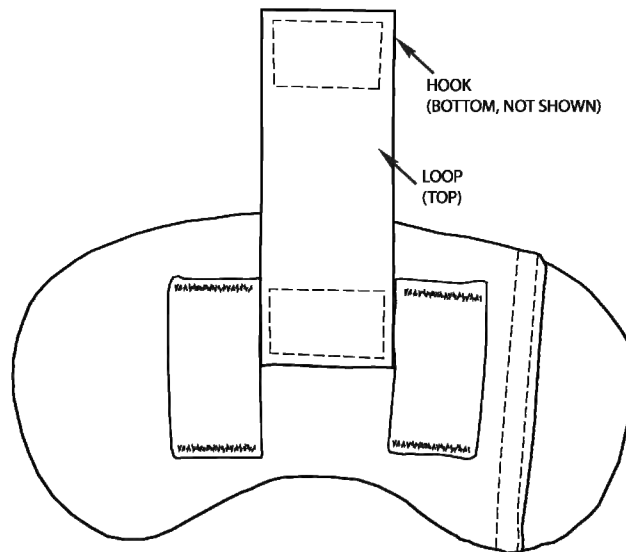


Figure 13. H-Style Armor Nape Pad.

DIFFERENCES BETWEEN MODELS – CONTINUED

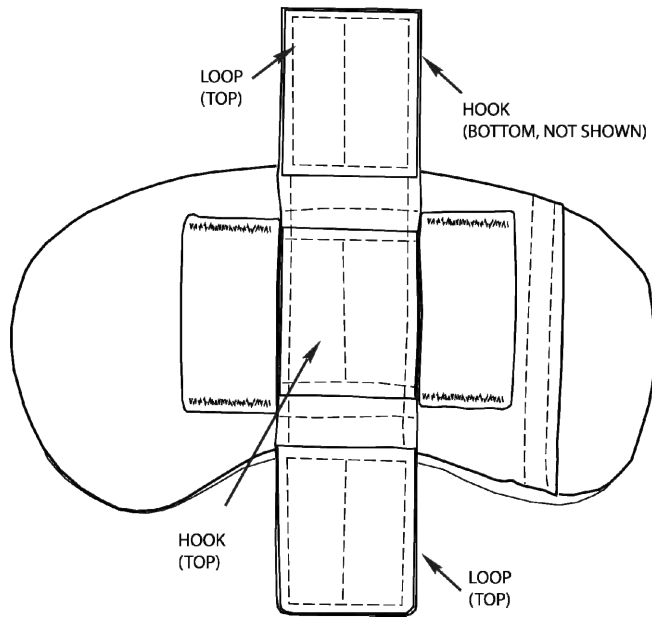


Figure 14. Universal H-Style Armor Nape Pad.

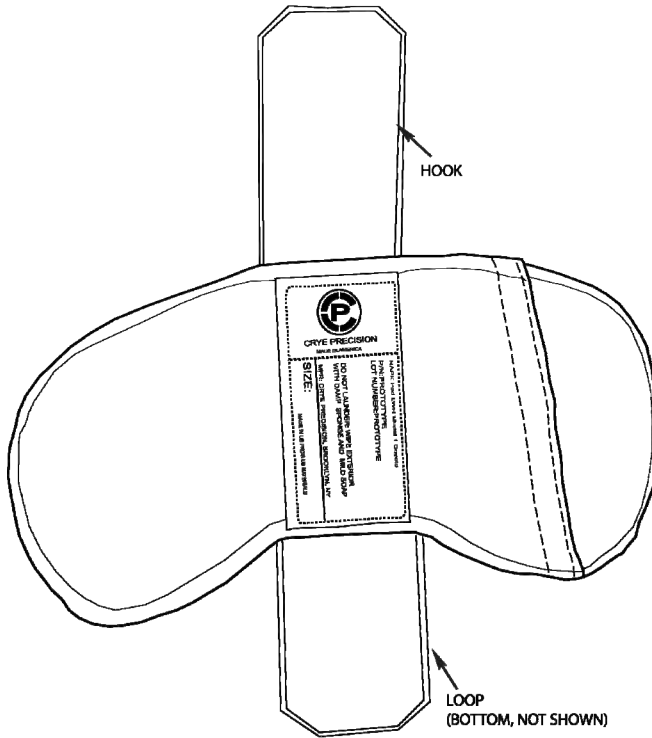


Figure 15. X-Style Armor Nape Pad.

EQUIPMENT DATA

The following table provides information pertaining to the mechanical data for the ACH. It pertains to all manufacturers' models.

Table 2. Mechanical Data for the ACH (Maximum Values for All Models by Size).

Helmet Shell Size	Length* (inches)	Width* (inches)	Height* (inches)	Weight** (ounces)
Small	9.7	9.1	7.0	47
Medium	10.3	9.3	7.0	49
Large	10.5	9.5	7.0	53
X-large	11.0	10.1	7.0	62
X-X-Large	11.7	10.7	7.0	64

*Dimensions (Length, Width, and Height) are overall exterior dimensions.

**Weight includes shell, retention system, and suspension system only; it does not include cover or eyewear retention system.

END OF WORK PACKAGE

**ADVANCED COMBAT HELMET
THEORY OF OPERATION**

The ACH is designed to provide the Soldier with ballistic and impact protection. It is compatible with night vision, communications and Chemical, Biological, Radiological and Nuclear (CBRN) equipment.

The edge cut of the shell has been reduced when compared to the Ground Troops and Parachutists (PASGT) helmet. This design enables better situational awareness through improved field of vision and hearing.

The shell provides ballistic protection. The pads act as a suspension system; they also enable the wearer to adjust the helmet's fit. In conjunction with the shell, the suspension pad system provides impact protection.

The chin strap retention system is a four point design, attaching to the shell at four locations. In conjunction with the pad suspension system, the chin strap retention system provides improved stability.

END OF WORK PACKAGE

CHAPTER 2
OPERATOR INSTRUCTIONS
FOR
ADVANCED COMBAT HELMET (ACH)

**OPERATION UNDER USUAL CONDITIONS
ADVANCED COMBAT HELMET
PAD CONFIGURATION**

INITIAL SETUP:**Tools and Special Tools**

None Required

References

WP 0007

Materials/Parts

None Required

PAD CONFIGURATIONS

This work package provides instructions for different pad configurations.

WARNING

Soldier must use all pads (7 for S - XL and 9 for XXL) for training and combat missions. Pads must also cover all hardware for training, combat missions, airborne and other high-risk operations such as assault and rappelling/ mountaineering. Failure to observe this warning may result in serious injury or death to personnel.

NOTE

This section pertains to all models of the ACH. Size 8 pads are no longer available. If your size 8 pads become unserviceable, obtain size 6 pads and refer to WP 0007 for information on how to properly evaluate and adjust the fit of the helmet.

PAD CONFIGURATIONS – CONTINUED**Standard Pad Configurations**

All pads are worn when first trying on the helmet for sizing and fitting, for training and combat missions, and for airborne and other high-risk operations as shown in Figures 1 and 2 below.

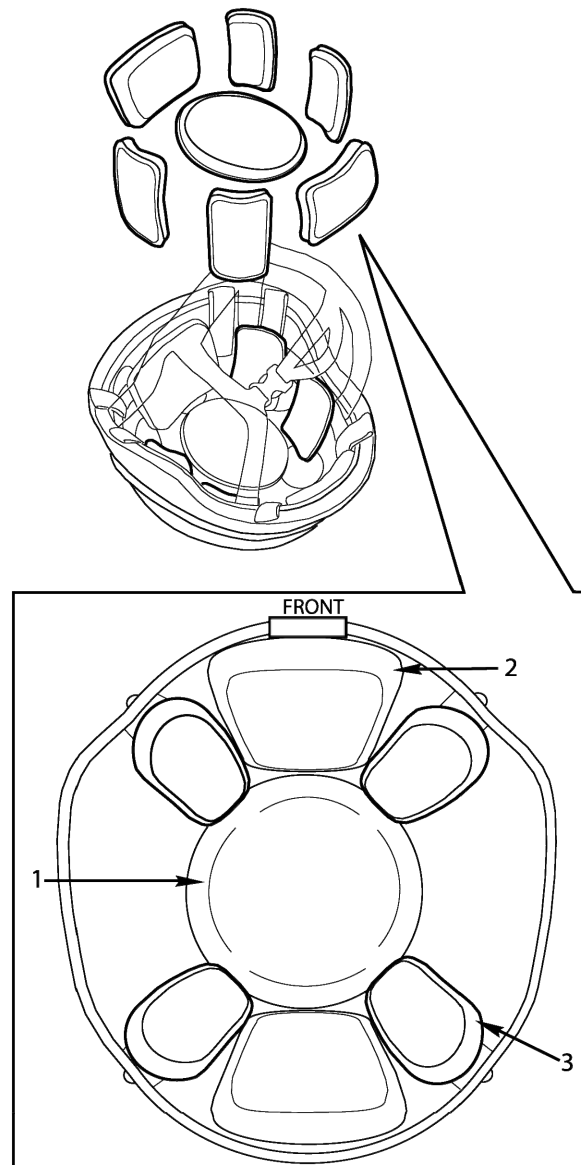


Figure 1. Standard Pad Configuration (Small, Medium, Large, X-Large).

LEGEND

1. Circular crown pad (Qty 1)
2. Trapezoidal pad (Qty 2)
3. Oblong/Oval pad (Qty 4)

PAD CONFIGURATIONS – CONTINUED

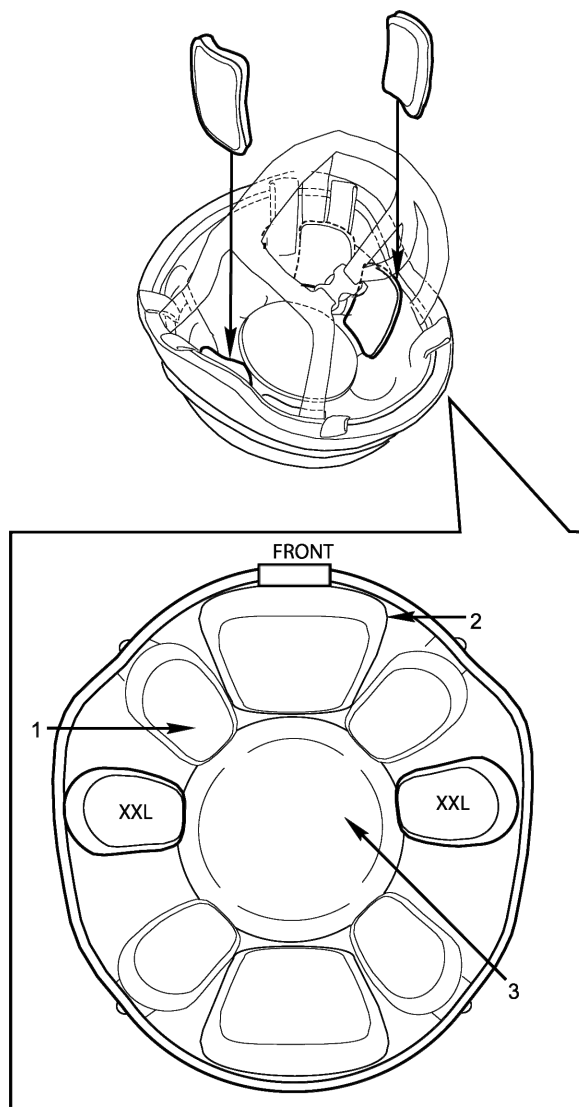


Figure 2. Standard Pad Configuration (XX-Large).

LEGEND

- 1. Oblong/Oval pad (Qty 6)
- 2. Trapezoidal pad (Qty 2)
- 3. Circular crown pad (Qty 1)

PAD CONFIGURATIONS – CONTINUED**Alternate Pad Configurations****WARNING**

All helmet pads must be worn for training and combat missions, and for high-risk operations such as airborne operations, air assault, and rappelling/ mountaineering. Helmet pads should cover internal hardware at all times, and is mandatory when wearing the helmet in high-risk operating environments. Failure to observe this warning may result in serious injury or death.

Reduced (alternate) pad configurations are allowed only for non-training and non-combat missions to obtain a better fit or more comfort.

Up to two pads (oblong/oval or trapezoidal) can be removed from the standard configuration (Figures 1 and 2) in non-risk situations (i.e. non-training and non-combat missions) such as parades or ceremonies. The circular crown pad must always remain in the helmet.

Pads can be placed in vertical or horizontal directions (as shown in illustrations) or a combination or at an angle between horizontal and vertical (diagonal).

Pads should be placed towards the inside edge of the helmet but may be adjusted to provide optimum comfort and stability.

END OF WORK PACKAGE

**OPERATION UNDER USUAL CONDITIONS
ADVANCED COMBAT HELMET
SUSPENSION PADS
ADJUST**

INITIAL SETUP:**Tools and Special Tools**

None Required

References

WP 0004

WP 0007

Materials/Parts

None Required

WP 0024

WP 0026

This work package provides information about adjusting the pad suspension system. The suspension system is fully adjustable. The system has the following requirements and restrictions:

WARNING

For training and combat missions, Soldiers are to utilize the 7-pad or 9-pad (extra-extra large) configurations only. For non-training and non-combat missions (for example, parades, ceremonies, etc.) a maximum two-pad reduction is authorized. Failure to observe this warning may result in serious injury or death to personnel.

WARNING

Use only pads with authorized NSNs found in this manual. See the Associated and Repair Items List (WP 0026). Failure to observe this warning may result in serious injury or death to personnel.

NOTE

If you experience fit problems, tightness or looseness, or helmet profile is too high or too low, refer to Evaluating and Adjusting Helmet Fit (WP 0007)

When donning the helmet for the first time in a cold environment, it may be necessary to wear the helmet for a few minutes or to warm the pads by placing in pockets, so that the pads will conform to the shape of your head. As the pads warm up and conform to the shape of your head, retighten the chin strap retention system if necessary.

To maximize ventilation, the maximum pad reduction (two) is authorized in non-training and non-combat missions (for example, parades, ceremonies, etc).

If you experience hot spots or discomfort, rearrange the suspension pads to accommodate a more comfortable fit. If discomfort persists, select a larger or smaller helmet size. See WP 0024 for NSN information.

The direction of the oblong/oval pads may be changed to maximize comfort. The oblong/oval pads may be routed vertically from bolt to crown. This configuration maximizes airflow for better temperature regulation.

The oblong/oval pads may also be routed horizontally to make a seal around the user's head. This configuration is better suited for cold weather environments (WP 0004).

WARNING

The hardware for the ACH helmets, where the chin strap retention system webbing attaches to the helmet shell, must be covered by padding during airborne and other high risk operations, such as air assault and rappelling/mountaineering. The oblong/oval pads must be placed flush with the rim (edge) of the helmet and completely cover the hardware (Figure 2). Failure to observe this warning may result in serious injury or death to personnel because a hard-point could contact the Soldier's head.

All helmet pads must be worn during airborne operations and high-risk operations such as air assault and rappelling/mountaineering. Failure to observe this warning may result in serious injury or death. The use of all seven pads (nine pads for extra-extra large helmets) provides maximum impact protection.

Place the rear trapezoidal pad flush with the rim (edge) of the helmet for airborne operations. If you experience helmet rotation during airborne operations, the rear trapezoidal pad can be placed so that it extends ½ inch beyond the rim of the helmet. Placement of the rear trapezoidal pad flush or beyond the rim (edge) of the helmet prevents the hard shell from hitting your neck.

WARNING

The hardware for the ACH helmets, where the chin strap retention system webbing attaches to the helmet shell, must be covered for all training and combat missions. Failure to observe this warning may result in serious injury or death to personnel because a hard-point could contact the Soldier's head.

ATTACH/ADJUST HELMET PADS

1. Attach the loop side of each helmet pad to the hook disks (Figure 2, Item 2) on the inside of the helmet shell.

WARNING

Do not attach the moisture-wicking side of the pads to the hook disks; the pads will not adhere properly. Failure to observe this warning may result in serious injury or death to personnel.

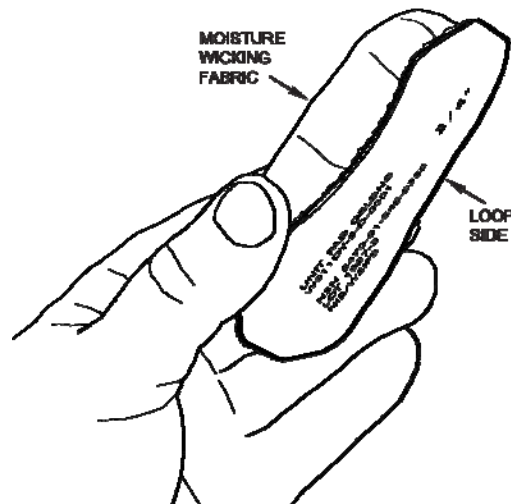


Figure 1. Loop Side of Pad.

ATTACH/ADJUST HELMET PADS – CONTINUED

- Place the oblong/oval pads (Figure , Item 1) flush with the rim (edge) (Figure , Item 7) of the helmet while still completely covering the hardware as shown in Figure 2.

NOTE

The following illustration of the helmet with a Universal H-Style Chin Strap Retention System and hardware is an example of how the hardware must be placed in order to correctly cover the hardware. The illustration applies regardless of which helmet or hardware is worn. Adjust pads as necessary.

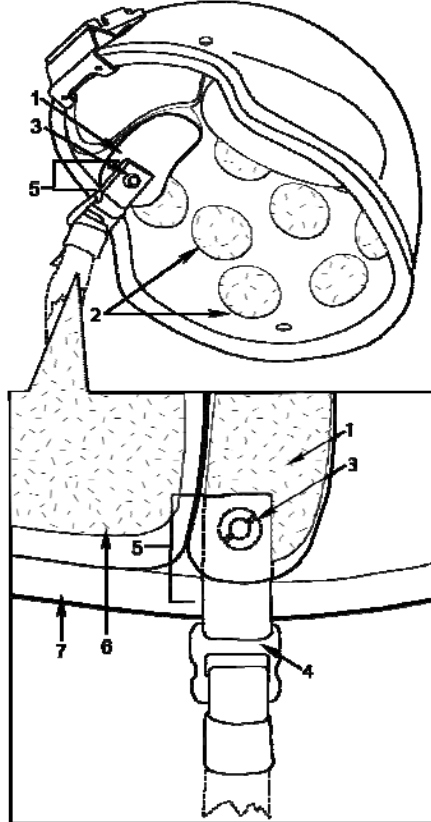


Figure 2. Pad Placement Over Hardware.

LEGEND

- Oblong/Oval Pad
- Hook Disks
- Conical Nut
- Buckle
- Attachment Tab
- Trapezoidal Pad
- Rim (edge) of Helmet

- To adjust the suspension pads pull the individual pads off the inner helmet hook disks.
- Reattach pads as necessary for fit and comfort while keeping hardware covered.

END OF TASK

END OF WORK PACKAGE

**OPERATION UNDER USUAL CONDITIONS
ADVANCED COMBAT HELMET
DON AND DOFF THE HELMET**

INITIAL SETUP:

Tools and Special Tools
None Required

Materials/Parts
None Required

References
WP 0004
WP 0006
WP 0007

OPERATING PROCEDURES

This work package provides instructions for donning and doffing the helmet, including adjusting the chin strap to optimize fit and comfort.

WARNING

Ensure that all helmet adjustment mechanisms are properly adjusted for a snug, secure fit at all times when the helmet is worn. Failure to do so may result in an unstable helmet that reduces protection to the Soldier.

NOTE

This section pertains to the MSA, SDS, and Gentex H-style Chin Strap Retention Systems.

Don (Put on) Helmets with H-Style Chin Strap Retention Systems

1. Check the quantity and placement of pads for proper configuration as described in WP 0004.
2. Prior to donning helmet, ensure chin strap is unbuckled and loosen all adjustment straps shown in Figure 1.

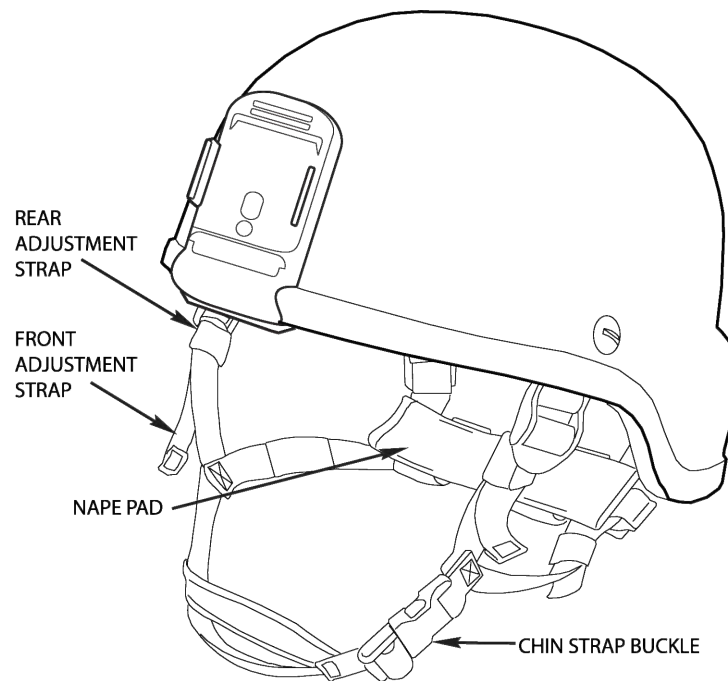


Figure 1. Helmet Adjustment Locations (All H-Style Retention Systems).

OPERATING PROCEDURES – CONTINUED**NOTE**

If the helmet becomes uncomfortable and tilted on the head and/or the chin cup becomes un-centered, it is a good indication the helmet is unstable.

3. Place helmet on head.
4. Buckle chin strap.
5. Hold helmet in place, with one hand on top of helmet while adjusting helmet chin strap with the other hand as shown in Figure 2.

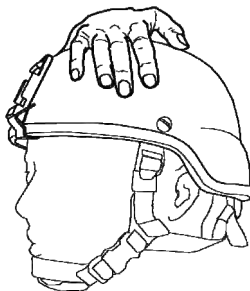


Figure 2. Hand on Top of Helmet.

- a. Partially tighten the two rear adjustment straps (see Figure 3) one side at a time.

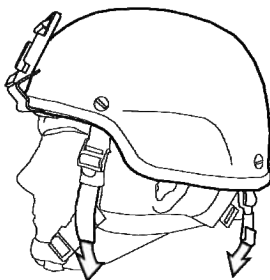


Figure 3. Tighten Rear Adjustment Straps (All H-Style Retention Systems).

- b. Partially tighten the two front adjustment straps (see Figure 4) one side at a time.

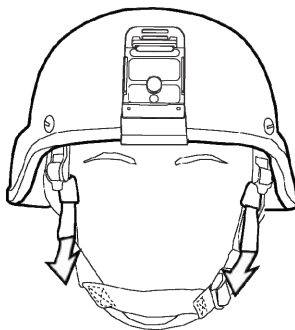


Figure 4. Tighten Front Adjustment Straps (All H-Style Retention Systems).

OPERATING PROCEDURES – CONTINUED

6. With both hands, fully tighten front and rear adjustment straps as shown in Figure 5.



Figure 5. Tighten Front and Rear Adjustment Straps (All H-Style Retention Systems).

7. Slide nape pad (Figure 6) up and down along the rear legs of the chin strap as necessary.
8. Position the chin strap according to personal comfort.

NOTE

When the helmet is tightened (Figure 6) against the nape of the neck by pulling on end of webbing, the nape pad adds additional stability to the helmet such as when wearing NVDs. Keep the nape pad away from the ladder locks (buckles) while adjusting the chin strap to prevent jamming.

9. Check the helmet stability by attempting to rock the helmet back and forth on the head. If the helmet rocks back and forth, it is not stable.
10. Repeat steps 2 through 9 until helmet is stable.

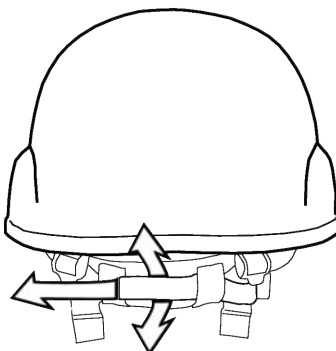


Figure 6. Tighten/Adjust Nape Pad (All Versions).

Don (Put on) Helmets with the X-Style Retention System

1. Check the quantity and placement of pads for proper configuration as described in WP 0004.
2. Position helmet on head and buckle the chin strap shown Figure 7.
3. Hold helmet in place, with one hand on top of helmet while adjusting helmet chin strap with the other hand.

OPERATING PROCEDURES – CONTINUED

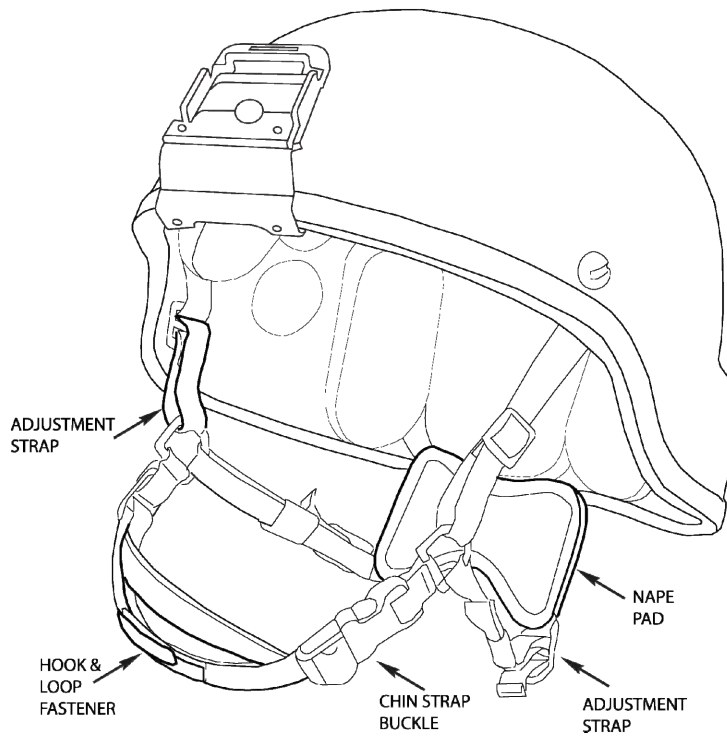


Figure 7. Helmet Adjustment Locations (X-Style Retention System).

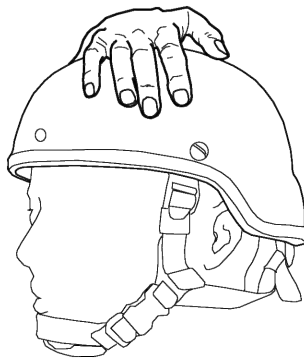


Figure 8. Hand on Top of Helmet (X-Style Retention System).

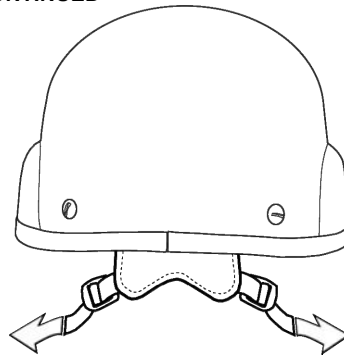
OPERATING PROCEDURES – CONTINUED

Figure 9. Tighten Nape Straps (X-Style Retention System).

4. Tighten the nape strap for a snug, secure, comfortable fit as indicated in Figure 9.
5. Tighten the chin cup chin strap by:
 - a. loosening the hook and loop fasteners shown in Figure 7 and
 - b. pulling on the ends until the fit is snug, secure and comfortable.
6. Reattach the ends to the loop fastener when the desired fit is attained.
7. Check the helmet stability by attempting to rock the helmet back and forth on the head.
8. If the helmet rocks back and forth, it is not stable. Adjust further until the helmet is stable.

END OF TASK**LOOSEN OR REMOVE THE HELMET (H-STYLE RETENTION SYSTEMS)**

1. To loosen the chin strap, push up on the ladderlock/buckle.
2. To remove the helmet, press the sides of the center section of the chin strap buckle on the chin strap retention system inward. Once the buckle releases, remove the helmet.

END OF TASK**LOOSEN OR REMOVE THE HELMET (X-STYLE RETENTION SYSTEM)**

1. To loosen the helmet, unhook the hook and loop fasteners and push up on buckles.
2. To remove the helmet, press the sides of the center section on the chin strap buckle inward. Once the buckle releases, remove the helmet.

END OF TASK**END OF WORK PACKAGE**

**OPERATION UNDER USUAL CONDITIONS
ADVANCED COMBAT HELMET
HELMET FIT
EVALUATE AND ADJUST**

INITIAL SETUP:**Tools and Special Tools**

None Required

Materials/Parts

None Required

References

WP 0004

WP 0005

WP 0006

WP 0011

WP 0021

WP 0024

WARNING

For training and combat missions, utilize the 7-pad or 9-pad (XXL) configuration only. For non-training and non-combat missions (for example, parades, ceremonies, etc.) the 5- and 6-pad or 7- and 8-pad (XXL) configurations are authorized. Failure to observe this warning may result in serious injury or death to personnel.

NOTE

The illustrations in this work package are generic and represent all ACH manufacturers' models.

EVALUATE FIT

1. After assembling the helmet using the standard pad configuration with size 6 pads ($\frac{3}{4}$ -inch thick) (see WP 0004), try on and evaluate the fit of helmet.

NOTE

Proper fit is achieved when the helmet does not sit too high (crown pad does not contact head or too much of forehead is exposed) or too low (too low on brow or not compatible with eyewear, etc.) and is not too tight or too loose as illustrated in Figure 1.

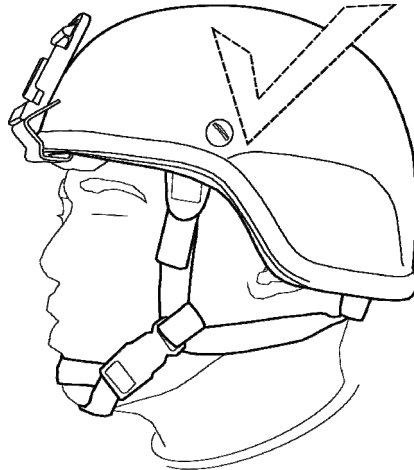


Figure 1. A Properly Fitted ACH.

EVALUATE FIT – CONTINUED

2. Shake head rapidly from side to side to check for stability. Helmet should not rotate from side to side when head is shaken.

NOTE

While evaluating fit, be sure to have the chin strap retention system tightened as described in WP 0006.

3. The ACH should fit so the front rim is no more than ½ inch above the eyebrows. Using your hand, evaluate the distance from the rim to the eyebrows.

NOTE

A properly sized and fitted ACH sits level on the Soldier's head (side to side), with the lower edge of the front rim being level to the ground or slightly inclined with respect to the ground.

NOTE

Fit all ACHs with the thinner size 6 crown pad (¾ inch thick) in the top of the helmet.

4. While looking upward by moving only the eyes, test for proper fit by observing that the edge of the rim is just in view. The crown pad should be felt touching the top of the head.

NOTE

Soldiers who required a smaller size were previously accommodated by using a medium helmet with size 8 pads. These Soldiers should now use a small-size ACH with size 6 pads.

5. Perform a quick evaluation of the height of the ACH. Using your hands, determine the height of the ACH relative to the ear canal openings.

NOTE

The bottom of the ACH should come to the top of the ear canal opening as shown in Figure 1.

6. If adjustment is needed, proceed to Adjust Fit below.

END OF TASK**ADJUST FIT**

If evaluation indicates the helmet is too tight, the helmet is too loose, the helmet is too high, or the crown pad does not touch the head, make adjustments as described below.

Helmet is Too Tight

1. Remove the helmet.
2. Rearrange the oblong/oval pads in an alternate direction, horizontal, vertical, or diagonal.
3. Try on helmet.
4. If rearranging the pads does not alleviate the tightness, rearrange the oblong/oval pads in the area you felt tightness to create more room.
5. If the helmet is still too tight, try the next larger shell size (WP 0024).

END OF TASK

ADJUST FIT – CONTINUED**Helmet is Too Loose****NOTE**

If helmet slides on the head while shaking the head side to side, helmet is too loose.

NOTE

Over time, the suspension pads may compress. Therefore, the pads and retention system may need to be adjusted, as described in WP 0005 to compensate for the compression and excess room in the helmet.

1. Inspect each ACH pad for wear and deterioration in accordance with WP 0011. If pad(s) does not return to original shape, replace in accordance with WP 0021.
2. Try on helmet.
3. If helmet is still loose, tighten the chin strap retention system as necessary.
4. If helmet is still loose, remove helmet.
5. Rearrange the oblong/oval pads in an alternate direction, horizontal, vertical, or diagonal, in order to take up extra space.
6. If the helmet is still too loose, try the next smaller shell size (WP 0024).

END OF TASK

ADJUST FIT – CONTINUED**Helmet is Too High****NOTE**

It is extremely important that the helmet not be sized and fitted to sit too high on the head.

1. Perform a quick evaluation of the height of the ACH. Using your hands, determine the height of the ACH relative to the ear canal openings.

NOTE

Proper fit is achieved when the portion of ear at or above ear canal is covered as previously shown in Figure 1.

NOTE

The ACH should fit so that the front rim of helmet (Figure 2) is not more than $\frac{1}{2}$ inch above the eyebrows.

NOTE

The helmet is too high if there is too much forehead exposed or too much ear exposed as shown in Figure 2.

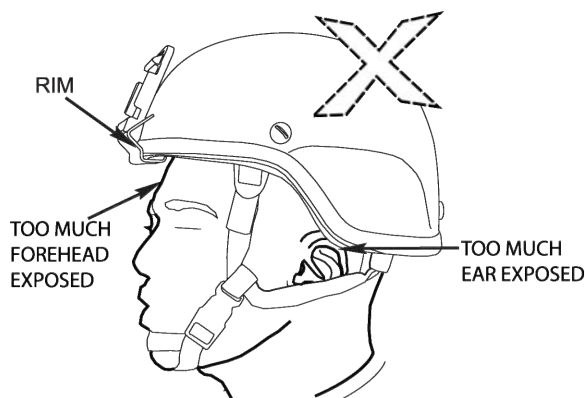


Figure 2. Helmet Too High (Too Much Exposure).

2. If the helmet is too high, remove the helmet.
3. Rearrange the oblong/oval pads in an alternate direction, horizontal, vertical, or diagonal in order to move helmet down on the head.
4. Try on helmet.
5. Look upward by moving eyes, without moving head (Figure 3).
6. Determine if the rim of the helmet is visible.

ADJUST FIT – CONTINUED**NOTE**

If Soldier cannot see the rim of the helmet, then the helmet is too high.

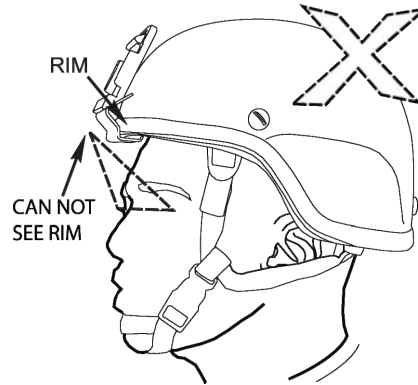


Figure 3. Helmet Too High (Looking Past Rim).

7. If helmet is still too high, try the next larger shell size (WP 0024).

END OF TASK**Crown Pad Does Not Touch Head**

1. Evaluate whether the crown pad touches the top of the head as shown in Figure 4.

NOTE

If the crown pad does not touch head as shown in Figure 4, (the pad cannot be felt) the helmet is too high.

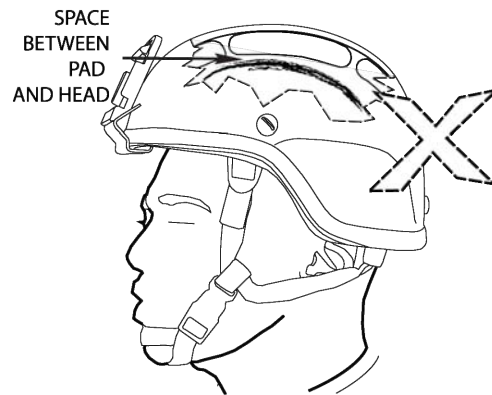


Figure 4. Helmet Too High (Crown Pad Not Touching Head).

2. If the crown pad does not touch the top of the head, remove the helmet.
3. Rearrange the oblong/oval pads in an alternate direction, horizontal, vertical, or diagonal in order to move helmet down on the head.
4. Try on helmet.

ADJUST FIT – CONTINUED

5. Determine if the crown pad touches the top of the head.
6. If the crown pad does not touch the top of the head, try the next larger shell size (WP 0024).

END OF TASK**Helmet is Too Low:**

1. Evaluate whether the helmet is too low.
2. Use your hands to determine whether it is too low on the brow as shown in Figure 5.

NOTE

Helmet is too low if it is too low on brow, is not compatible with eyewear, or has other similar compatibility issues.

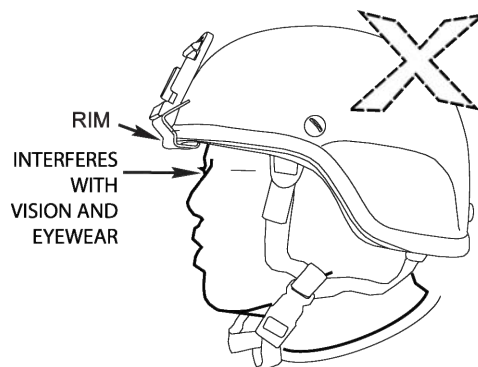


Figure 5. Helmet Too Low (Interferes with Vision).

3. Try on any eyewear to determine whether the helmet is not compatible with them or has similar compatibility issues.
4. If the helmet is too low, remove helmet.
5. Rearrange the oblong/oval pads in an alternate direction, horizontal, vertical, or diagonal in order to move helmet up on the head and/or to remove any eyewear incompatibilities.
6. Try on helmet.
7. If the problem persists, try the next smaller shell size (WP 0024).

END OF TASK

ADJUST FIT – CONTINUED**Inspect and Adjust Fit of the ACH**

Some quick visual evaluations can be made to check for proper fit in addition to information found in previous sections. They are as follows:

NOTE

The assistance of a second person or a mirror, if available, is helpful for this step.

1. Front look check – Ensure the helmet is level side to side.
2. Side look check – Ensure the helmet is level front-to-back. Look at the part of helmet by the ear.

END OF TASK**END OF WORK PACKAGE**

**OPERATION UNDER UNUSUAL CONDITIONS
ADVANCED COMBAT HELMET**

INITIAL SETUP:**Tools and Special Tools**

None Required

References

None

Materials/PartsNone Required

OPERATING PROCEDURES

There are no additional procedures for operation under unusual conditions.

CHAPTER 3
TROUBLESHOOTING PROCEDURES
FOR
ADVANCED COMBAT HELMET (ACH)

**ADVANCED COMBAT HELMET
TROUBLESHOOTING PROCEDURES**

This work package lists troubleshooting tasks and corrective actions for each component of the ACH.

TROUBLESHOOTING PROCEDURES**SYMPTOM**

Unable to fasten chin strap retention system.

MALFUNCTION

Chin strap buckle is dirty.

CORRECTIVE ACTION

Clean as described in WP 0013.

MALFUNCTION

Chin strap buckle is broken.

CORRECTIVE ACTION

If H-Style chin strap retention system, replace chin-strap only as described in WP 0018.
Otherwise, replace entire retention system as described in WP 0018.

SYMPTOM

Unable to attain or maintain helmet stability.

MALFUNCTION

Chin strap webbing is torn and/or frayed.

CORRECTIVE ACTION

If H-Style chin strap retention system, replace chin-strap only as described in WP 0018.
Otherwise, replace entire retention system as described in WP 0018.

SYMPTOM

Unable to attain or maintain helmet stability.

MALFUNCTION

Pad suspension system is worn.

CORRECTIVE ACTION

Replace pad suspension system as described in WP 0021.

SYMPTOM

Pads will not stay secure in shell.

MALFUNCTION

Damaged pads.

CORRECTIVE ACTION

Replace pads as described in WP 0021.

MALFUNCTION

Dirty pads.

CORRECTIVE ACTION

Clean pads as described in WP 0013.

MALFUNCTION

Dirty hook disks.

CORRECTIVE ACTION

Clean helmet shell as described in WP 0013.

TROUBLESHOOTING PROCEDURES – CONTINUED**MALFUNCTION**

Damaged hook disks.

CORRECTIVE ACTION

Replace helmet (WP 0024).

SYMPTOM

Night Vision Goggles (NVG) are unstable.

MALFUNCTION

Night Vision Device (NVD) bracket is loose.

CORRECTIVE ACTION

Tighten NVD screw. If condition persists, replace NVD hardware (WP 0022).

MALFUNCTION

Night Vision Device (NVD) bracket is broken.

CORRECTIVE ACTION

Remove and Install NVD as described in WP 0015. See WP 0026 for NSN information.

END OF TASK

END OF WORK PACKAGE

CHAPTER 4
MAINTENANCE INSTRUCTIONS
FOR
ADVANCED COMBAT HELMET (ACH)

**OPERATOR MAINTENANCE INSTRUCTION
ADVANCED COMBAT HELMET
PREVENTIVE MAINTENANCE CHECKS AND SERVICES INTRODUCTION**

INTRODUCTION

Preventive Maintenance Checks and Services (PMCS) are performed to keep the ACH in good operating condition and ready for its primary mission. Operators are to perform PMCS of the ACH before, during, and after use, as well as annually. PMCS is performed according to the table provided.

Pay attention to **WARNING** statements. A **WARNING** indicates that someone could be hurt or killed.

Be sure to perform scheduled PMCS. Always perform PMCS in the same order so it becomes habit. With practice, you will quickly recognize problems with the equipment. Use DA Form 2404, Equipment Inspection and Maintenance Worksheet, to record any discovered faults. Do not record faults that you fix!

PMCS PROCEDURES

Table 1 (WP 0011) lists inspections and care required to keep your equipment in good operating condition.

Explanation of Table 1 Columns

Item No. Indicates the reference number. When completing DA Form 2404, Equipment Inspection and Maintenance Worksheet, include the item number for the item to check/service indicating a fault. Item numbers appear in the order you must perform the checks/services listed.

Interval. Indicates when you must perform the procedure in the procedure column.

Before - perform before equipment use

During - perform during equipment use

After - perform after equipment use

Annually - perform following every year of equipment use.

Item to be Checked or Serviced. Indicates the item to be checked or serviced.

Procedure. Indicates the procedure you must perform on the item listed in Item to Check/Service column. Items that cannot be repaired must be replaced. Perform procedures at the time specified in the Interval column.

Equipment Not Ready/Available If. Indicates faults that will prevent your equipment from performing its primary mission. If you perform procedures listed in Procedure column which show faults listed in this column, do not operate the equipment. Follow standard procedures for maintaining the equipment or reporting equipment failure.

CORROSION PREVENTION AND CONTROL (CPC)

Corrosion Prevention and Control (CPC) of Army materiel is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items.

Corrosion specifically occurs with metals. An electrochemical process causes the degradation of metals. It is commonly caused by exposure to moisture, acids, bases, or salts. An example is the rusting of iron. Corrosion damage in metals can be seen, depending on the metal, as tarnishing, pitting, fogging, surface residue, and/or cracking. Plastics, composites, and rubbers can also degrade. Degradation is caused by thermal (heat), oxidation (oxygen), solvation (solvents), or photolytic (light, typically UV) processes.

The most common exposures are excessive heat or light. Damage from these processes will appear as cracking, softening, swelling, and/or breaking. SF Form 368, Product Quality Deficiency Report, should be submitted to the address specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual.

**OPERATOR MAINTENANCE INSTRUCTION
ADVANCED COMBAT HELMET
PREVENTIVE MAINTENANCE CHECKS AND SERVICES**

Table 1. Preventive Maintenance Checks and Services.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF
1	Before/After/ Annual	Chin Strap Retention System	<ol style="list-style-type: none"> 1. Check for cuts, frays or other damage or loose or damaged stitching in the webbing. If webbing is frayed more than ½ inch or has a discernable cut, or loose or damaged stitching, replace chin strap or entire retention system as appropriate (WP 0018). 2. Check for missing, cracked, worn, or damaged attachment tab (with buckle). If attachment tab (with buckle) is missing, cracked, worn or damaged, replace attachment tab with buckle (WP 0017). 3. Check for missing, cracked, worn or damaged chin strap buckle. If chin strap buckle is missing, cracked, worn or damaged, replace chin strap or entire retention system as appropriate (WP 0018). 4. Check for loose hardware. If hardware is loose, tighten hardware. If loosening persists, refer to higher level maintenance to obtain sealing (thread-locking) compound as described in WP 0020. 5. Check for missing hardware. Replace if hardware is missing (WP 0020). 	<p>Chin strap webbing has cuts, frays, or other damage.</p> <p>Attachment tab (with buckle) is missing, cracked, worn, or damaged.</p> <p>Chin strap buckle is missing, cracked, worn or damaged.</p> <p>Hardware is loose.</p> <p>Hardware is missing.</p>
2	Before/After/ Annual	Pad Suspension System	<ol style="list-style-type: none"> 1. Check for cuts, tears or other damage to outer fabric or inner foam. If pads are torn or cut exposing the inner padding material, replace (WP 0021). 2. Check pads for compressibility. Pads in service should resist compression the same as new pads when squeezed between forefingers. If pads have lost compressibility, replace (WP 0021). 	<p>Pads torn, cut, or otherwise damaged.</p> <p>Compressed pads do not return to original shape.</p>
3	Before/After/ Annual	Shell	<ol style="list-style-type: none"> 1. Check for gouges, scrapes, cracks, delamination or other damage to shell. If gouges, scrapes, or damage extends below the surface (below the paint), refer to higher level maintenance for repair. 2. Check for loose or damaged edging. Refer to higher level maintenance for repair. 	<p>Gouges, scrapes, cracks, delamination or other damage extends below the surface (below the paint).</p> <p>Edging is loose or damaged.</p>
4	Before/After/ Annual	Cover	Check for cuts, frays or other damage to the fabric or cut or frayed stitching. If damaged, replace (WP 0014).	Cuts, frays, or other damage to the fabric or cut or frayed stitching.

Table 1. Preventive Maintenance Checks and Services – Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF
5	Before/After/Annual	Eyewear Retention Straps	<ol style="list-style-type: none"> 1. Check for cuts, frays or other damage to the webbing. If webbing is damaged, replace (WP 0019). 2. Check for broken snaps or studs. If snaps or studs are bent or broken, replace (WP 0019). 	<p>Cuts, frays, to the webbing.</p> <p>Snaps or studs are bent or broken.</p>
6	Before/After/Annual	NVD Bracket Assembly	<ol style="list-style-type: none"> 1. Check for cracked bracket. If bracket is cracked, replace (WP 0015) 2. Check for loose hardware. Tighten; if loosening persists replace hardware (WP 0022). 3. Check for missing hardware. Replace hardware (WP 0022). 	<p>Bracket is cracked.</p> <p>Hardware is loose.</p> <p>Hardware is missing.</p>
7	Before/After/Annual	Armor Nape Pad	<ol style="list-style-type: none"> 1. Check for evidence of hit by a bullet or a fragment. If present, replace Armor Nape Pad (WP 0016). 2. Check for tears or damage to the carrier. If carrier is torn or damaged, replace Armor Nape Pad (WP 0016). 3. Check that the soft armor can be flattened after being bunched. If armor can be flattened after being bunched, replace Armor Nape Pad (WP 0016). 4. Check that hook and loop tab securely attaches nape pad to the helmet. If hook and loop tab does not securely attach Armor Nape Pad to helmet, replace (WP 0016). 5. Check that elastic is not torn beyond repair. If elastic is torn beyond repair, replace (WP 0016). 6. Check that fabric carrier can be adequately cleaned, is not discolored, and has not been saturated with gasoline, bleach, or lubricants. <p>If fabric carrier cannot be adequately cleaned, is discolored, or has been saturated with gasoline, bleach, or lubricants, replace (WP 0016).</p>	<p>Evidence of hit by a bullet or fragment.</p> <p>Carrier is torn or damaged.</p> <p>Soft armor is bunched and cannot be flattened.</p> <p>Hook and loop tab does not securely attach nape pad to the helmet.</p> <p>Elastic is torn beyond repair.</p> <p>Carrier cannot be adequately cleaned, is discolored, or has been saturated with gasoline, bleach, or lubricants.</p>
8	During	Chin Strap Retention System, Hardware, Pad Suspension System, Shell	<p style="text-align: center;">WARNING</p> <p>If there is a mishap in which the helmet is subjected to a potentially damaging event that occurs sooner than the annual preventive maintenance checks, inspect the helmet as described in WP 0012. Failure to do so could result in serious injury or death to personnel.</p>	

**OPERATOR MAINTENANCE
ADVANCED COMBAT HELMET
INSPECT**

INITIAL SETUP:**Tools and Special Tools**

3/8-inch wrench (WP 0027, Item 1)
Screwdriver (WP 0027, Item 2)

Materials/Parts

None Required

REFERENCES

WP 0004	WP 0018
WP 0005	WP 0019
WP 0013	WP 0020
WP 0014	WP 0021
WP 0015	WP 0022
WP 0016	WP 0024
	WP 0026

This work package provides inspection and part replacement criteria that are required following any mishap subjecting the helmet to potentially damaging events. This procedure is also required during the cleaning process described in WP 0013.

WARNING

Failure to perform inspections at required frequencies and replace parts as required may result in serious injury or death to personnel.

NOTE

Potentially damaging events include but are not limited to: 1) helmet strikes by projectiles or fragments, 2) helmet exposure to a blast resultant from an explosion and 3) vehicular mishaps such as rollovers or accidents.

REMOVE

1. Remove the Night Vision Device (NVD) bracket as follows:
 - a. Identify which NVD bracket is on helmet.
 - b. Remove the NVD bracket hardware. Either:
 - (1) use a screwdriver to loosen and remove the screw and threaded post, or
 - (2) use a 3/8 inch wrench to loosen and remove the screw and self-locking nut.
 - c. Pull up on the bracket and remove it from the helmet.
2. Using a screwdriver or other appropriate tool, remove the chin strap retention system by loosening and removing the four screws and nuts attaching the retention system to the helmet.
3. Remove the Armor Nape Pad as follows:
 - a. Disconnect the hook and loop fasteners attaching the Armor Nape Pad to the chin strap retention system.
 - b. Remove the Armor Nape Pad from the chin strap retention system.

REMOVE – CONTINUED**NOTE**

The eyewear retention straps disconnect when removing the screws and nuts attaching the chin strap retention system to the helmet.

4. Remove the suspension pads by pulling the individual pads off the hook disks inside the helmet shell.
5. Remove the helmet cover as follows:
 - a. Disconnect the hook and loop fasteners.
 - b. Pull the cover off the helmet.

NOTE

Inspect helmet shell first. If the helmet shell is damaged as described below, replace the ACH. See WP 0021 for NSN information.

INSPECT

1. Conduct visual inspection of helmet shell as follows:
 - a. Inspect the edge of the helmet for damage to the rubber edging.
 - b. Look for evidence of peeling, fraying or extensive wear.
 - c. Inspect the inside and outside surfaces of the helmet for damage.
 - (1) Look for holes and evidence of delamination (separation of helmet layers). Replace the helmet if the shell has a hole through its surface or delamination extends below the surface of the helmet (below the paint). See WP 0024 for NSN information.
 - (2) Look for surface scarring or indentations greater than 0.15 inches in depth (the distance from the edge of a dime to the bottom of the torch centered on the reverse face). Replace the helmet if there are any surface indentations greater than 0.15 inches in depth. See WP 0024 for NSN information.
 - d. If there is no evidence of helmet damage, continue to step 2.

WARNING

Replace all suspension pads if Soldier receives concussion while wearing ACH. Replacement of the pads is a precautionary measure. The pads in the ACH, at the time the Soldier received the concussion injury, likely provided the Soldier the designed level of protection. However, the pads may have sustained performance degrading damage during the event that caused the concussion. Failure to replace suspension pads may result in serious injury or death to personnel.

2. Conduct inspection of each suspension pad as follows:
 - a. Inspect visually for rips, tears or cuts. If any of the pads have evident physical damage (cuts, rips, holes, burns) as shown in Figure 1, they are defective and should be replaced as described in WP 0021. See WP 0026 for NSN information.

INSPECT – CONTINUED

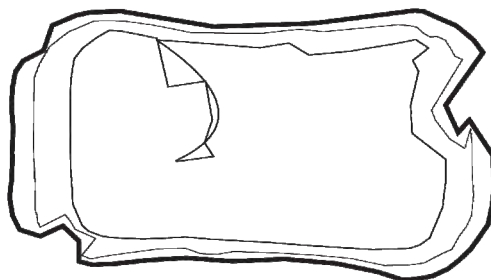


Figure 1. Damaged Suspension Pads.

WARNING

If any of the pads show a noticeable delay in returning to its original shape following compression between the thumb and forefinger or if it has other evident physical damage (cuts, rips, holes, burns) it is defective and should be replaced as described in WP 0021. Failure to do so may result in serious injury or death to personnel.

- b. Inspect each pad for dynamic response by squeezing each pad lightly between the thumb and forefinger as shown in Figure 2.
 - (1) Observe whether the pad instantly returns to its original shape upon release. If any of the pads show a noticeable delay in returning to its original shape following compression between the thumb and forefinger, replace them as described in WP 0021. See WP 0026 for NSN information.

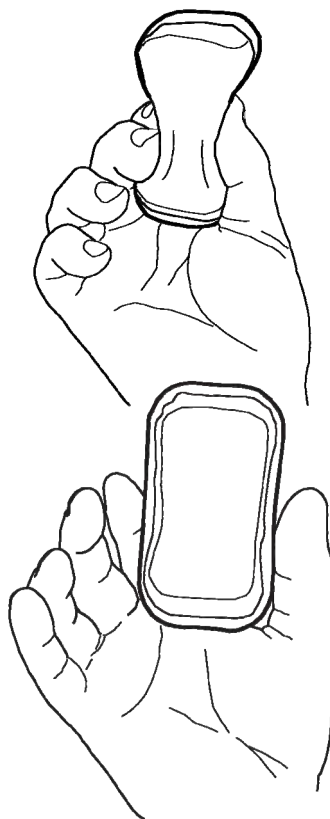


Figure 2. Squeezing Pad for Dynamic Response.

INSPECT – CONTINUED

- (2) Observe whether pads exhibit indications of material breakdown or failure. Some indicators of material breakdown or failure are that they release just during or after compression; they feel stiffer than usual; they sound or feel crinkly during or after compression; or they exhibit areas to be permanently depressed. Replace pads exhibiting signs of breakdown or failure as described in WP 0021. See WP 0024 for NSN information.
 - c. If there is no evidence of material breakdown or failure and there have been no head injuries diagnosed as a concussion, continue to step 3.
3. Visually inspect the chin strap retention system as follows:
 - a. Inspect the retention system for cuts, frays, other damage, and loose or damaged stitching in the webbing. If the webbing is frayed more than ½ inch or has a discernable cut, or loose or damaged stitching, replace the chin strap retention system as described in WP 0018.
 - b. Inspect for missing, cracked, worn, or damaged hardware or buckle assembly. If the buckle assembly is damaged or broken, replace the chin strap retention system as described in WP 0018.
 - c. Inspect for loose, damaged, or missing hardware. If there is loose hardware, tighten it. If there is missing or damaged hardware, replace it as described in WP 0020.
 - d. Continue to step 4 if:
 - (1) There are no cuts, frays, or other damage to the chin strap retention system stitching or webbing.
 - (2) There is no missing, cracked, worn or damaged hardware.
 - (3) The buckle assembly is not missing or damaged.
4. Visually inspect the NVD bracket as follows:
 - a. Inspect for a cracked bracket. If the NVD bracket is cracked, replace it as described in WP 0015.
 - b. Inspect for missing hardware. If the NVD bracket hardware is missing or damaged, replace it as described in WP 0022.
 - c. If the NVD bracket and hardware are not missing or damaged, continue to step 5.
5. Visually inspect the Armor Nape Pad as follows:
 - a. Inspect for evidence of being hit by bullet or a fragment. If the Armor Nape Pad shows evidence of being hit by a bullet or fragment, replace the Armor Nape Pad as described in WP 0016.
 - b. Inspect for tears or damage to the fabric carrier. If the fabric carrier is torn or damaged, replace it as described in WP 0021.
 - c. If the Armor Nape Pad shows no evidence of bullet or fragment damage and the fabric carrier is not torn or damaged continue install the components.

END OF TASK

INSTALL

1. Install the helmet cover as described in WP 0014.
2. Install the suspension pads as follows:
 - a. Attach the suspension pads as described in WP 0021.
 - b. Adjust the suspension pads as described in WP 0005.
3. Install the eyewear retention straps as described in WP 0019.
4. Install the Armor Nape Pad as described in WP 0016.
5. Install the chin strap retention system as described in WP 0018.
6. Install the NVD bracket as described in WP 0015.

END OF TASK**END OF WORK PACKAGE**

**OPERATOR MAINTENANCE
ADVANCED COMBAT HELMET
SERVICE**

INITIAL SETUP:**Tools and Special Tools**

3/8-inch wrench (WP 0027, Item 1)
Screwdriver (WP 0027, Item 2)

Materials/Parts

Cloth (WP 0025, Item 3)
Mild Soap (WP 0025, Item 4)
Soft Brush (WP 0025, Item 6)

References

WP 0005
WP 0012
WP 0014
WP 0015
WP 0016
WP 0018
WP 0019
WP 0021

SERVICE

This work package provides instructions for cleaning the ACH components, including the helmet shell, helmet cover, suspension pads, chin strap retention system, and Armor Nape Pad.

NOTE

Remove helmet components as necessary prior to cleaning. Install components upon completion of cleaning procedure.

REMOVE

1. Remove the Night Vision Device (NVD) bracket as follows:
 - a. Identify which NVD bracket is on helmet.
 - b. Remove the NVD bracket hardware. Either:
 - (1) use a screwdriver to loosen and remove the screw and threaded post, or
 - (2) use a 3/8-inch wrench to loosen and remove the screw and self-locking nut.
 - c. Pull up on the bracket and remove it from the helmet.
2. Using a screwdriver or other appropriate tool, remove the chin strap retention system by loosening and removing the four screws and nuts attaching the retention system to the helmet.
3. Remove the Armor Nape Pad as follows:
 - a. Disconnect the hook and loop fasteners attaching the Armor Nape Pad to the chin strap retention system.
 - b. Remove the Armor Nape Pad from the chin strap retention system.

NOTE

The eyewear retention straps disconnect when removing the screws and nuts attaching the chin strap retention system to the helmet.

4. Remove the suspension pads by pulling the individual pads off the hook disks inside the helmet shell.

REMOVE – CONTINUED

5. Remove the helmet cover as follows:
 - a. Disconnect the hook and loop fasteners.
 - b. Pull the cover off the helmet.

END OF TASK**CLEAN****NOTE**

Keeping the hook and loop fasteners clean will help to maintain their ability to stick together.

1. Clean the chin strap retention system, helmet cover, and suspension pads as follows:
 - a. Clean each component with mild soap and water.
 - b. Wash by hand or machine laundry using gentle cycle and cold water.

CAUTION

Do not machine dry. Machine drying may cause permanent damage to equipment.

- c. Allow components to air dry.

CLEAN – CONTINUED

2. Clean the Armor Nape Pad as follows:

CAUTION

Do not machine wash or dry any parts of the Armor Nape Pads. Do not attempt to dye item to fix discoloration. Do not put ballistic panel in water. If the panel gets wet, allow to air dry away from direct heat or sunlight. If panel becomes saturated with gasoline, bleach or lubricants, turn in for replacement as soon as possible. Failure to follow these precautions could affect the protective qualities of the nape pad.

- a. Remove soft ballistic panel from outer fabric carrier through opening in carrier as shown.

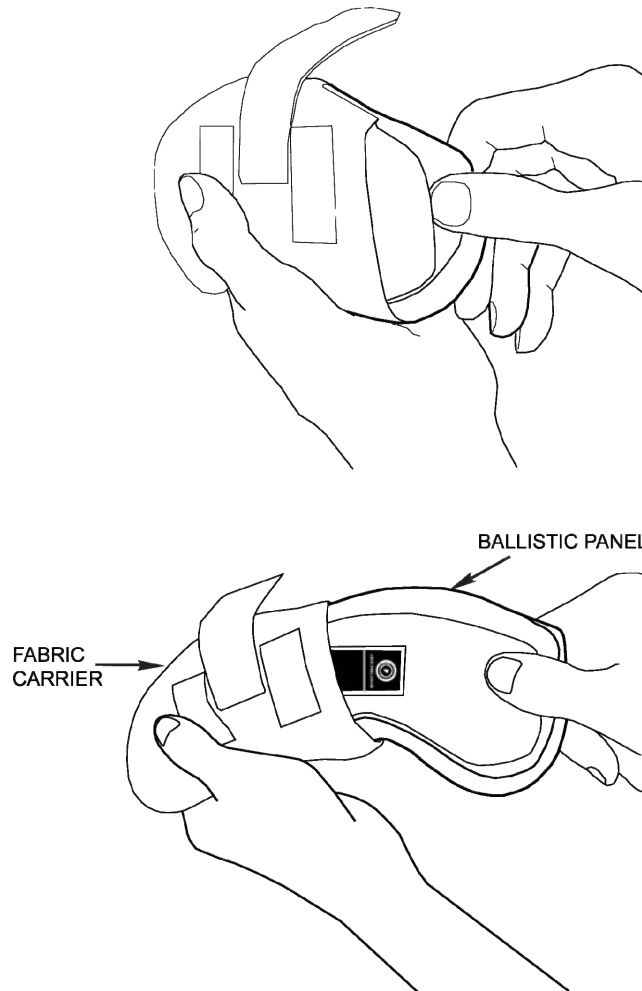


Figure 1. Removing Ballistic Panel from Fabric Carrier.

- b. Hand wash fabric carrier in cold or warm water, using only mild detergent or soap.
- c. Clean ballistic panel by wiping exterior with a moistened sponge or cloth.
- d. Rinse carrier in clean, warm water.

CLEAN – CONTINUED**CAUTION**

Do not machine dry any parts of the Armor Nape Pad. Failure to follow these precautions could affect the protective qualities of the nape pad.

- e. Air dry components indoors or in shade, away from heat sources.
- f. Once clean and dry, re-insert ballistic panel into carrier through opening in carrier, ensuring that the label on the ballistic panel faces toward wearer as shown.

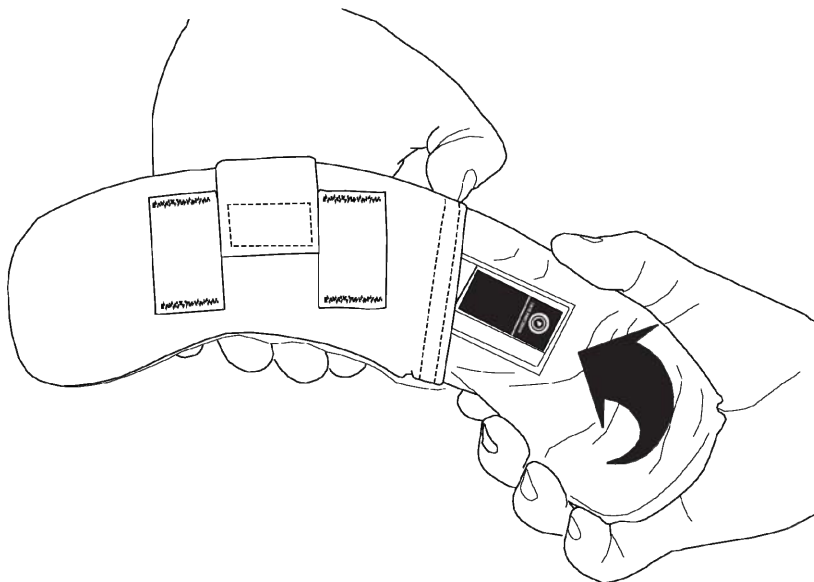


Figure 2. Reinserting Ballistic Panel in Fabric Carrier.

3. Clean the helmet shell as follows:

NOTE

A small brush is useful in removing dirt from the hook disks on the inside of the shell.

- a. Using a soft brush or cloth and mild soap and water, clean helmet shell.

CAUTION

Do not machine dry any parts of the Armor Nape Pad. Failure to follow these precautions could affect the protective qualities of the Armor Nape Pad.

- b. Allow shell to air dry.

END OF TASK

NOTE

Prior to reassembling the helmet components, inspect each item as described in WP 0012.

INSTALL

1. Install the helmet cover as described in WP 0014.
2. Install the suspension pads as follows:
 - a. Attach the suspension pads as described in WP 0021.
 - b. Adjust the suspension pads as described in WP 0005.
3. Install the eyewear retention straps as described in WP 0019.
4. Install the Armor Nape Pad as described in WP 0016.
5. Install the chin strap retention system as described in WP 0018.
6. Install the NVD bracket as described in WP 0015.

END OF TASK**END OF WORK PACKAGE**

**OPERATOR MAINTENANCE
ADVANCED COMBAT HELMET
HELMET COVER
REMOVE, INSTALL**

INITIAL SETUP:**Tools and Special Tools**

3/8 inch wrench (WP 0027, Item 1)
Screwdriver (WP 0027, Item 2)

Materials/Parts

None Required

References

WP 0002
WP 0004
WP 0005
WP 0015
WP 0016
WP 0018
WP 0024

This work package provides instructions for removing and installing a helmet cover on the ACH.

NOTE

This work package shows images of the camouflage helmet cover. The procedures are the same for the arctic white helmet cover (not shown).

REMOVE

1. Remove the NVD bracket as follows:
 - a. Identify which NVD bracket is on helmet.
 - b. Remove NVD bracket hardware. Either:
 - (1) use a screwdriver to loosen and remove the screw and threaded post, or
 - (2) use a 3/8 inch wrench to loosen and remove the screw and self-locking nut.
 - c. Pull up on the bracket and remove it from the helmet.
2. Remove the suspension pads from the inside of the helmet shell.
3. If you have an H-Style Chin Strap Retention System:

NOTE

Do not remove hardware.

- a. Unthread and remove the chin strap webbing (see WP 0018).
 - b. Continue to step 5.
4. If you have an X-Style Chin Strap Retention System:
 - a. Using a coin, or a screw driver if available, remove the Gentex X-Style Chin Strap Retention System. See WP 0018 for further information, if necessary.
 - b. Continue to step 5.
 5. Disconnect the hook and loop fasteners attaching the helmet cover to the helmet shell.
 6. Pull the old cover from the helmet.

END OF TASK

INSTALL

NOTE

Align helmet cover with communication flap facing the rear of the helmet.

1. Orient the replacement helmet cover so the communication flap is opposite the NVD bracket location.

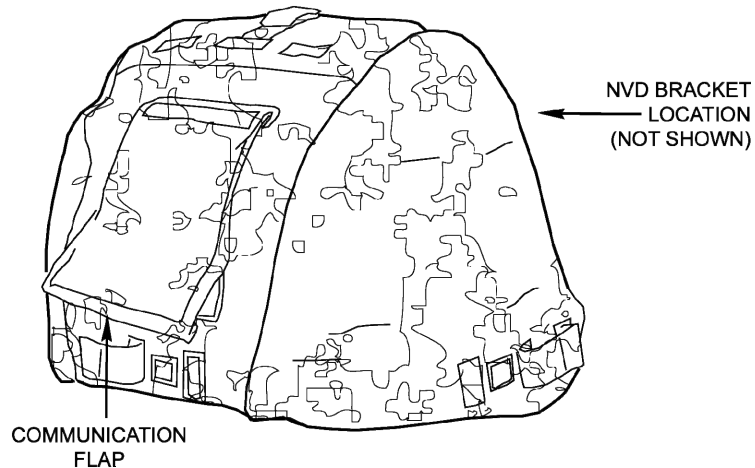


Figure 1. Non-Reversible Universal Camouflage Helmet Cover – Outside.

2. Pull the cover over the back and sides of the helmet shell.
3. Thread each buckle through the corresponding buttonhole in the cover.

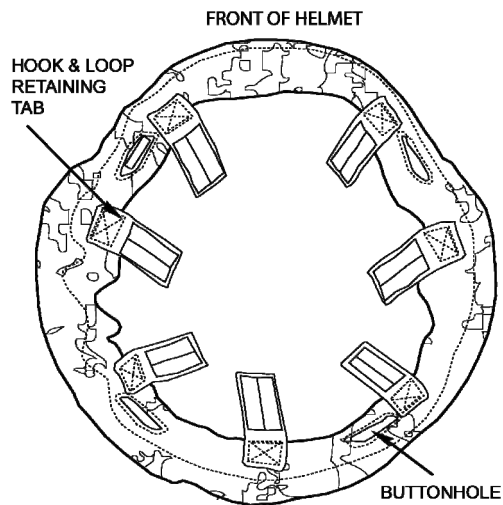


Figure 2. Non-Reversible Universal Camouflage Helmet Cover – Inside.

INSTALL – CONTINUED

4. Pull the cover retaining tabs down and attach tabs to hook disks inside helmet shell.
5. Ensure a tight smooth fit of cover by pulling the retaining tabs until tight.

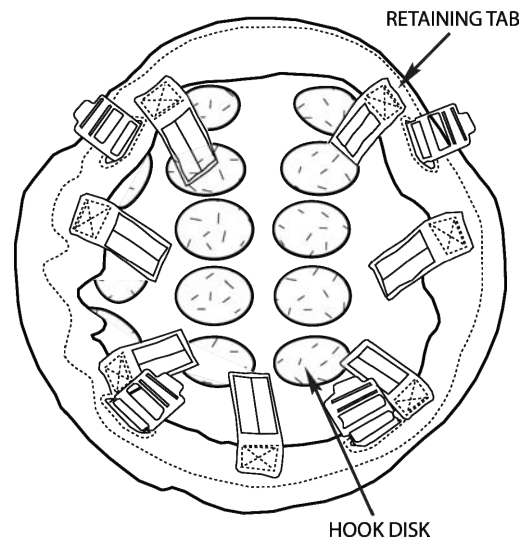


Figure 3. Helmet Cover Installed (All Versions).

6. If you removed an H-Style Chin Strap, install chin strap retention system webbing as follows:
 - a. Lay the helmet on its crown with the front of the helmet away from you.
 - b. Drape the replacement chin strap retention system over the helmet with the nape-strap pad facing down on the back/rear of the helmet.

INSTALL – CONTINUED

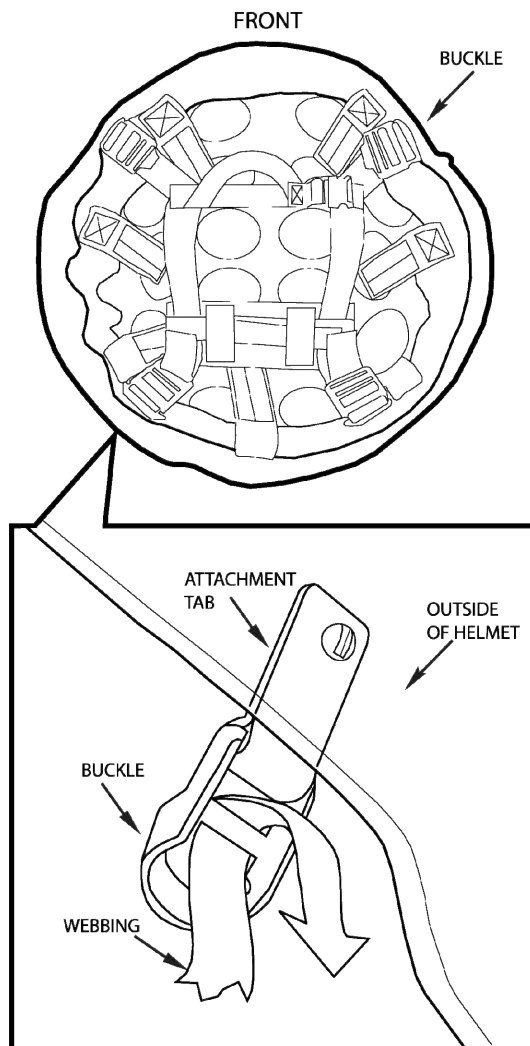


Figure 4. Universal Chin Strap Replacement.

- c. Insert and thread the four legs of the chin strap webbing into their corresponding buckles as shown in Figure 4.

NOTE

For an illustration of the entire assembled helmet with chin strap retention and hardware, see WP 0002.

- d. Ensure webbing is not twisted.
- e. Slide elastic band over loose ends of webbing.
- f. Continue to step 8.

INSTALL – CONTINUED

7. If you removed an X-Style Chin Strap Retention System:
 - a. Replace it with a Universal H-Style Chin Strap Retention System in accordance with WP 0018. See WP 0024 for appropriate NSN.
 - b. If there was an Armor Nape Pad installed on the X-Style Chin Strap Retention System, replace it with a corresponding Universal H-Style Armor Nape Pad as described in WP 0015. See WP 0024 for NSN information.
8. Install NVD Bracket in accordance with WP 0015.
9. Install suspension pads into helmet shell in accordance with WP 0004.
10. Adjust suspension pads as necessary in accordance with WP 0005.

END OF TASK**END OF WORK PACKAGE**

**OPERATOR MAINTENANCE
ADVANCED COMBAT HELMET
NIGHT VISION DEVICE (NVD) BRACKET
REPAIR**

INITIAL SETUP:**Tools and Special Tools**

Screwdriver (WP 0027, Item 2)
3/8-inch wrench (WP 0027, Item 1)

References

WP 0014
WP 0026

Materials/Parts

None Required

REPAIR**Remove and Install**

This work package provides instructions for removing and installing the Old and New Night Vision Device (NVD) brackets on the ACH.

WARNING

The NVD bracket must be installed and worn by all Soldiers deployed in an area with a possibility of hostile fire. Failure to do so may result in injury or death to personnel.

CAUTION

The hardware for the Old NVD Bracket and the New NVD Bracket are not interchangeable. Verify you have the correct hardware for the bracket model.

NOTE

One way to differentiate the Old NVD Bracket and the New NVD Bracket is by its color. The Old NVD Bracket is black. The New NVD Bracket is beige/tan. The other difference is the slot which seats the screw. The Old NVD Bracket slot is .17 inches. The New NVD Bracket slot is .25 inches.

Old NVD Bracket

1. If an NVD bracket is already installed and needs to be replaced, remove the existing bracket as follows:
 - a. Identify which NVD bracket is on helmet.
 - b. Remove NVD bracket hardware. Either:
 - (1) use a screwdriver to loosen and remove the screw and threaded post, or
 - (2) use a 3/8-inch wrench to loosen and remove the screw and self-locking nut.
2. Pull up on the bracket and remove it from the helmet.

REPAIR – CONTINUED

NOTE

The screw for the Old NVD Bracket has a round head with a slot on the top. It attaches using a threaded post which also has a slot on the top. The slot in the Old NVD Bracket for the screw and post to pass through is .17 inches.

3. Make sure the Old NVD Bracket assembly kit has all the components: the Old NVD Bracket, corresponding screw, and threaded post. See WP 0026, Associated and Repair Items List, for appropriate NSN.

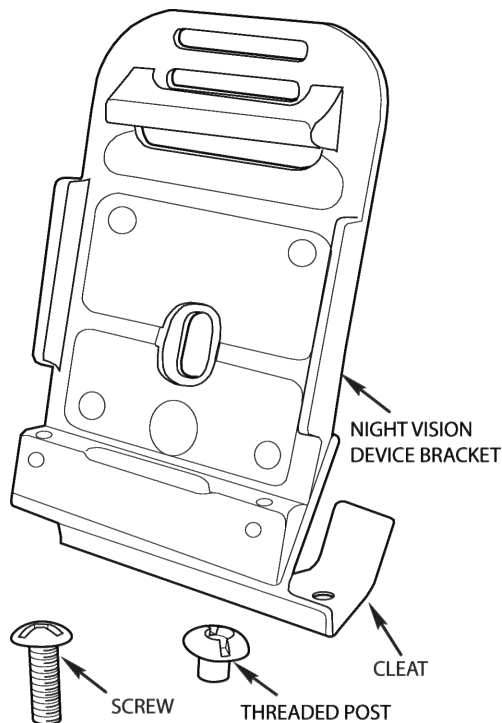


Figure 1. Old NVD Bracket Components.

4. If it is not already, install the helmet cover on your helmet (see WP 0014).
5. If there is already a cover installed, loosen the hook and loop tabs on the helmet cover, if necessary.
6. Install replacement Old NVD Bracket as follows:
 - a. Place the Old NVD Bracket on the helmet over the helmet cover.
 - b. Line up the hole on the plate, the front buttonhole on the cover and the hole on the helmet shell as shown in Figure 2.

REPAIR – CONTINUED

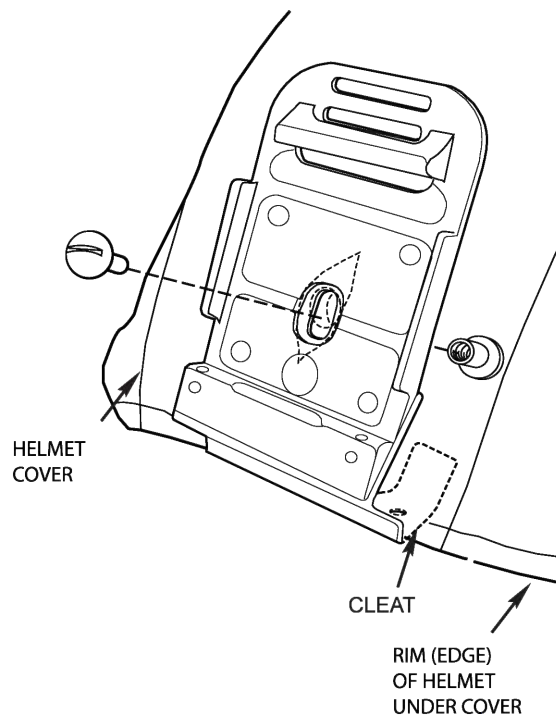


Figure 2. Old NVD Bracket Installation.

NOTE

It may be necessary to tap the bracket into place to properly align the helmet shell, cover and bracket holes.

- c. Insert the screw through the bracket assembly, cover, and shell from the outside of the helmet.
- d. Insert the threaded post from inside the helmet.
- e. Using a screwdriver, slightly tighten the screw and threaded post as shown in Figure 2.

CAUTION

Do not over tighten the screw or the bracket may break.

NOTE

It may be helpful to have another person assist with this step.

- f. Before completely tightening the screw, ensure that the cleat of the bracket is tight against the rim of the helmet as shown in Figure 2.
 - g. Push the bracket up so that the bracket is tight against the rim (edge) of the helmet while completely tightening the screw and post.
7. Pull the helmet cover retaining tabs down and attach tabs to hook disks inside helmet shell.
 8. Ensure a tight smooth fit of cover by pulling the retaining tabs until tight.

END OF TASK

REPAIR – CONTINUED**New NVD Bracket**

1. If necessary, remove existing NVD bracket as follows:
 - a. Identify which NVD bracket is on helmet.
 - b. Remove NVD bracket hardware. Either:
 - (1) use a screwdriver to loosen and remove the screw and threaded post, or
 - (2) use a 3/8-inch wrench to loosen and remove the screw and self-locking nut.
2. Pull up on the bracket and remove it from the helmet.

NOTE

The screw for the New NVD Bracket has a flat head. It attaches using a self-locking nut with a plastic insert. The slot in the New NVD Bracket for the screw and nut to pass through is .25 inches.

3. Make sure the New NVD bracket assembly kit has all the components: New NVD Bracket, corresponding screw, and self-locking nut. See WP 0026, Associated and Repair Items List, for appropriate NSN.

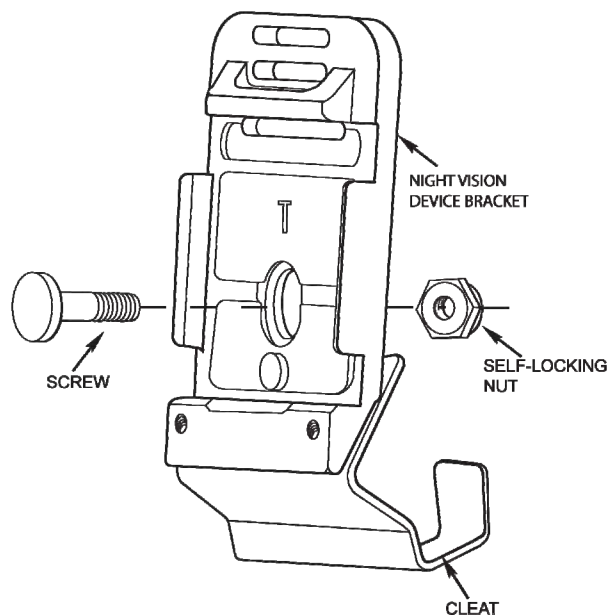


Figure 3. New NVD Bracket Assembly.

4. If it is not already, install the helmet cover on your helmet (see WP 0014).
5. If there is already a cover installed, loosen the hook and loop tabs on the helmet cover, if necessary.
6. Install replacement New NVD Bracket as follows:
 - a. Place the bracket assembly on the helmet over the helmet cover.
 - b. Line up the hole on the plate, the front buttonhole on the cover and the hole on the helmet shell.

REPAIR – CONTINUED**NOTE**

It may be necessary to tap the bracket into place to properly align the helmet shell, cover and bracket holes.

- c. Insert the screw through the bracket assembly, cover and shell from the outside of the helmet.
- d. Insert the threaded post from inside the helmet.
- e. Using a 3/8-inch wrench, slightly tighten the screw and self-locking nut.

CAUTION

Do not over tighten the self-locking nut or the bracket may break.

NOTE

It may be helpful to have another person assist with this step.

- f. Before completely tightening the screw and self-locking nut, ensure that the cleat of the bracket assembly is tight against the rim of the helmet.
 - g. Push the bracket up so that the cleat is tight against the rim (edge) of the helmet while completely tightening the screw and self-locking nut.
7. Pull the helmet cover retaining tabs down and attach tabs to hook disks inside helmet shell.
 8. Ensure a tight smooth fit of cover by pulling the retaining tabs until tight.

END OF TASK**END OF WORK PACKAGE**

**OPERATOR MAINTENANCE
ADVANCED COMBAT HELMET
ARMOR NAPE PAD
REMOVE, INSTALL**

INITIAL SETUP:

Tools and Special Tools
None Required

References
WP 0002
WP 0024

Materials/Parts
None Required

This work package provides instructions for installing the Armor Nape Pad.

REMOVE**NOTE**

The removal steps apply to the H-Style Armor Nape Pad, the Universal H-Style Armor Nape Pad and the X-Style Armor Nape Pad.

1. Remove the existing nape pad that comes with the retention system by unfastening the hook and loop strap that holds the nape pad to the chin strap as shown in Figure 1.

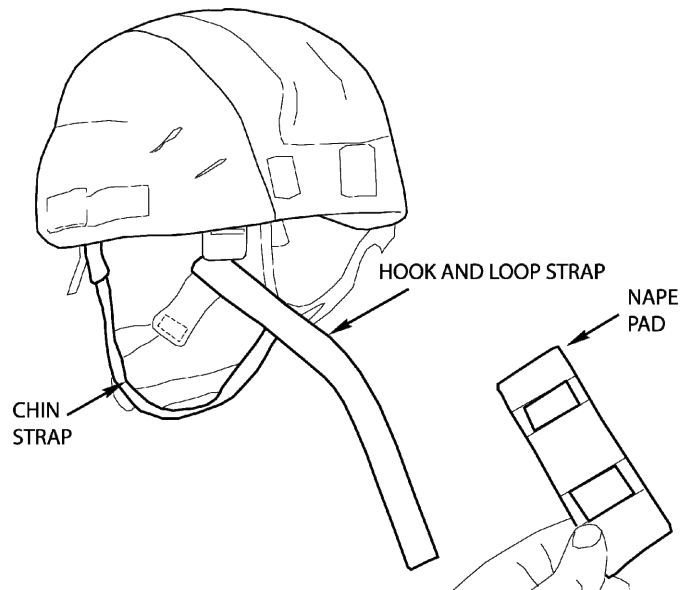


Figure 1. Removing Existing Nape Pad.

2. Remove the trapezoidal pad from the rear of helmet shell to provide access to the chin strap retention system and set it aside.

END OF TASK

INSTALL THE UNIVERSAL H-STYLE CHIN STRAP RETENTION SYSTEM**NOTE**

This procedure applies to both the H-Style Armor Nape Pad and the Universal H-Style Armor Nape Pad though the images may vary slightly. See WP 0002 for illustrations of the H-Style Armor Nape Pad and the Universal H-Style Armor Nape Pad.

1. Obtain the proper Armor Nape Pad model. See WP 0024 for NSN information.
2. Move the elastic bands that are used to secure loose ends of the chin strap toward the front of the ACH as shown in Figure 2.

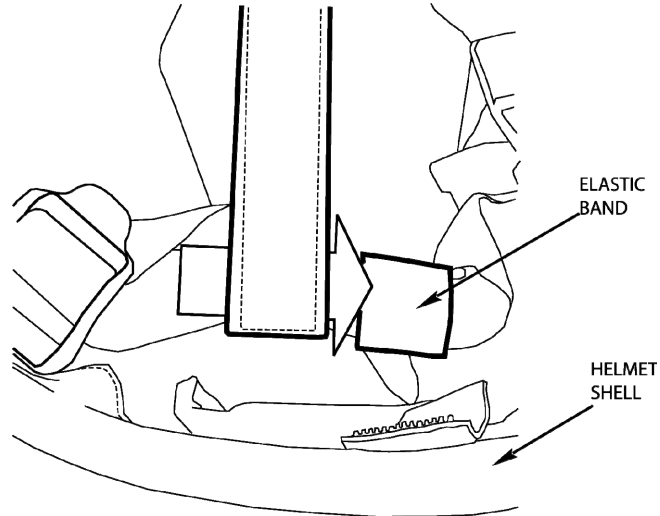


Figure 2. Sliding Elastic Bands.

3. Orient the Armor Nape Pad so that the camouflage side faces out and the mesh side faces the wearer.
4. Install the Armor Nape Pad on the hook and loop strap as shown in Figure 3.

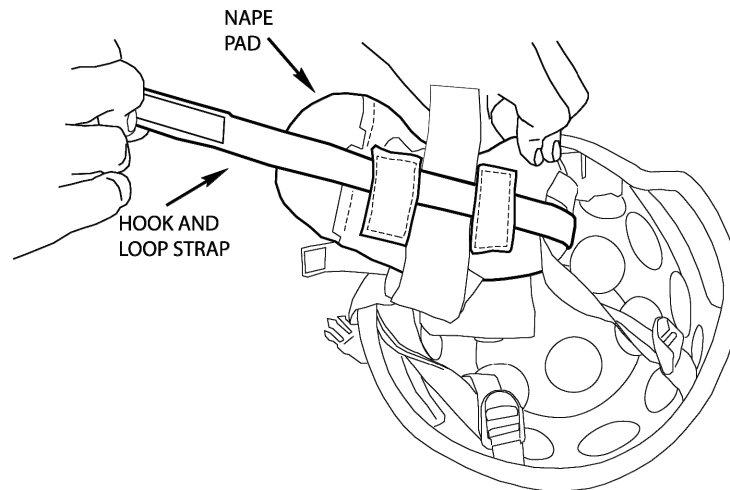


Figure 3. Armor Nape Pad Installed on Hook and Loop Strap.

INSTALL THE UNIVERSAL H-STYLE CHIN STRAP RETENTION SYSTEM – CONTINUED

5. Thread the free end of the hook and loop strap around the chinstrap webbing and back through the Armor Nape Pad elastic loops as shown in Figure 4.

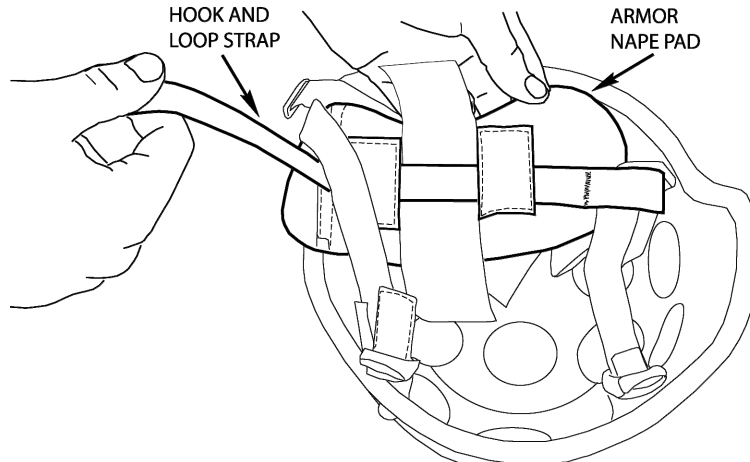


Figure 4. Attaching the Armor Nape Pad.

6. Slide the Armor Nape Pad toward the helmet shell until shell and armor nape pad overlap by approximately $\frac{1}{2}$ inch as shown in Figure 5.

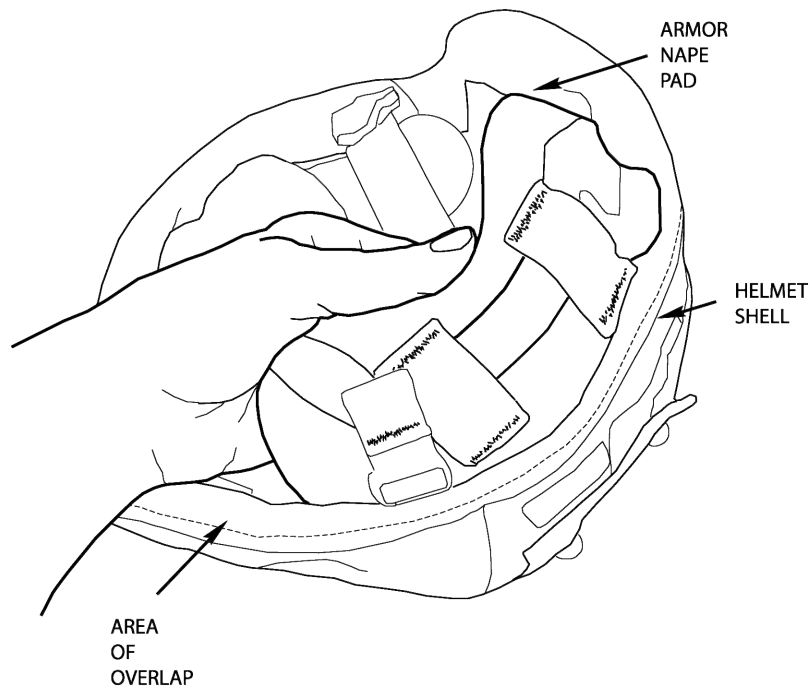


Figure 5. Fitting Armor Nape Pad into Helmet Shell.

INSTALL THE UNIVERSAL H-STYLE CHIN STRAP RETENTION SYSTEM – CONTINUED

7. With the Armor Nape Pad overlapping shell edge, press the loop tab against the hook disks on the inside of the shell.

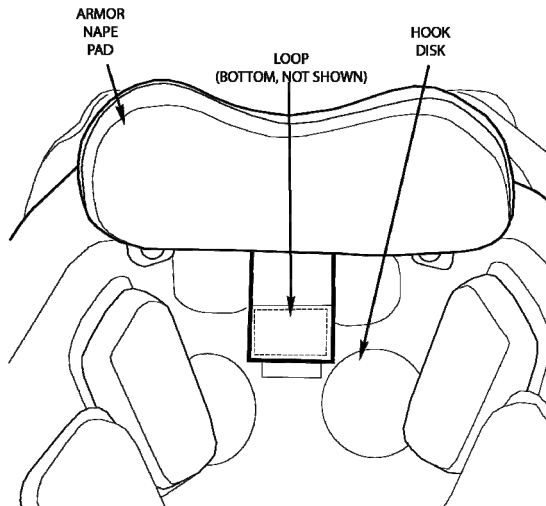


Figure 6. Attaching Armor Nape Pad to Helmet Shell.

8. Install the rear trapezoidal pad shown in Figure 7.

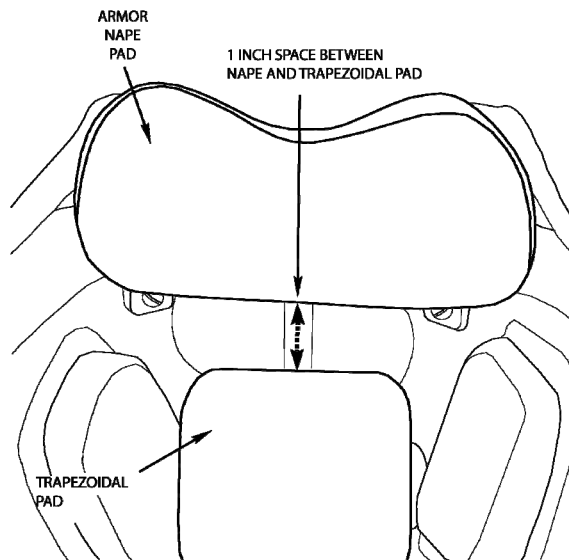


Figure 7. Armor Nape Pad Installed.

INSTALL THE UNIVERSAL H-STYLE CHIN STRAP RETENTION SYSTEM – CONTINUED

9. Position the Armor Nape Pad so that there is about 1 inch of space between the Armor Nape Pad and the rear trapezoidal pad. This will allow the Armor Nape Pad to retract into the helmet shell when the neck is arched back.
10. Try on helmet.
11. Adjust this space to fit your specific needs.

END OF TASK**INSTALL THE X-STYLE CHIN STRAP RETENTION SYSTEM**

1. Check helmet to determine it has an X-Style Chin Strap Retention System. Refer to Figure 8.
2. Obtain the proper Armor Nape Pad. See WP 0024 for NSN information.

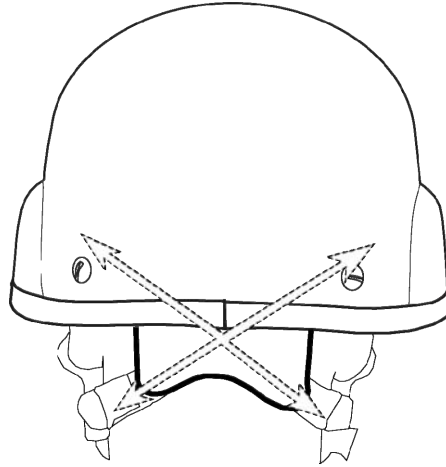


Figure 8. Armor Nape Pad on X-Style Chin Strap Retention System.

NOTE

The loop tab (the softer tab) is attached to the bottom edge of the Armor Nape Pad.

3. Open the hook and loop tabs on the Armor Nape Pad as shown in Figure 9.

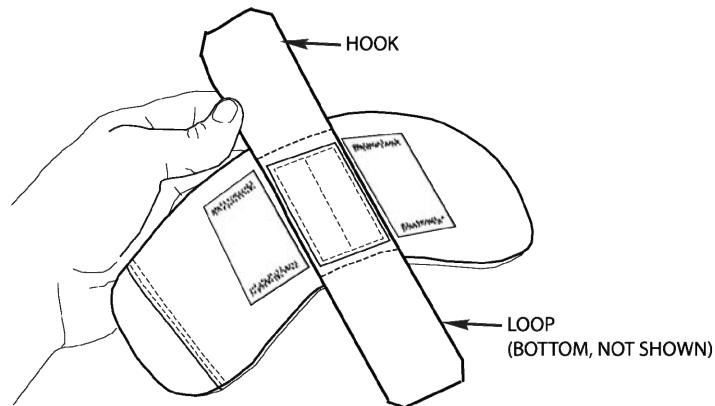


Figure 9. Hook and Loop Tab on X-Style Armor Nape Pad – Opened.

INSTALL THE X-STYLE CHIN STRAP RETENTION SYSTEM – CONTINUED

4. Position label side of the Armor Nape Pad against inside surface of the chin strap.
5. Wrap hook and loop tabs around the x-strap to secure the Armor Nape Pad in place (Figure 10).

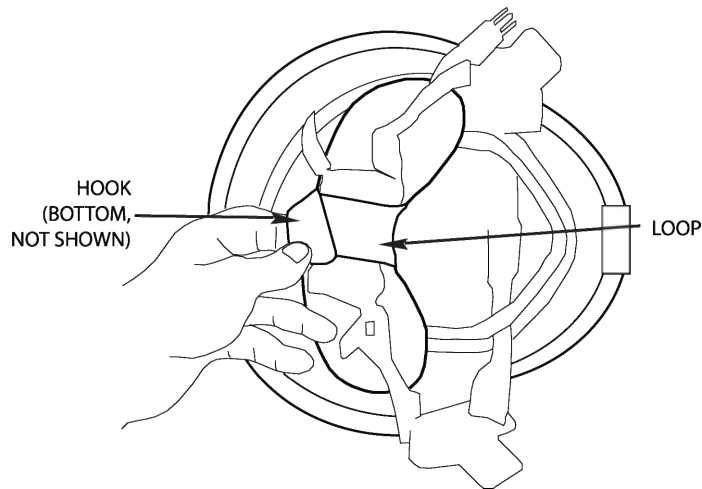


Figure 10. Hook and Loop Strap Secured to Chin Strap.

6. Re-install the rear trapezoidal pad.
7. With hook and loop tabs tightly wrapped around the x-strap, ensure Armor Nape Pad is oriented correctly (Figures 11 and 12).

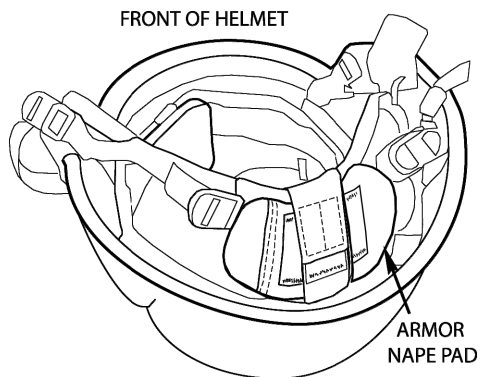


Figure 11. Armor Nape Pad Properly Installed (Bottom View).

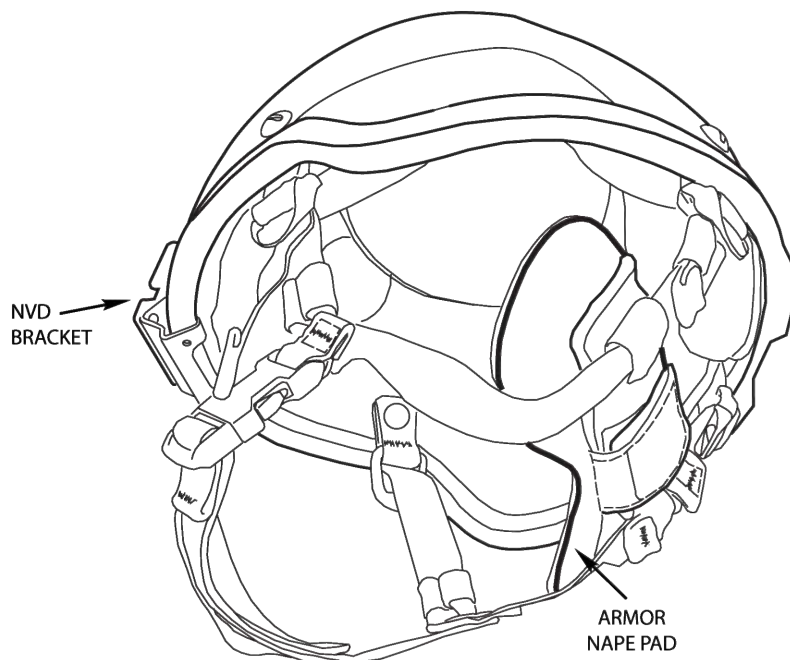
INSTALL THE X-STYLE CHIN STRAP RETENTION SYSTEM – CONTINUED

Figure 12. Armor Nape Pad Properly Installed (Rear View).

8. Try on helmet.

NOTE

If discomfort is experienced when arching neck back with armor nape pad installed, reposition rear trapezoidal pad as necessary to allow the armor nape pad to slide under the helmet.

END OF TASK

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ADVANCED COMBAT HELMET
ATTACHMENT TABS
REPLACE**

INITIAL SETUP:**Tools and Special Tools**

Screwdriver (WP 0027, Item 2)

Materials/Parts

None Required

References

WP 0002

WP 0015

WP 0018

WP 0023

This work package provides instructions for replacing the attachment tabs (with buckle) of the H-Style Universal Chin Strap Retention System. The tabs attach the chin strap to the helmet.

NOTE

A coin is used in the following procedures. However, if available, a standard flathead screwdriver may also be used.

REPLACE

1. Remove suspension pads as necessary to access hardware inside helmet.
2. If necessary, unfasten the cover retaining tabs to expose the two rear screws.
3. Identify which chin strap retention system is installed.

NOTE

Chin strap retention system hardware is not interchangeable. If the chin strap retention system needs to be replaced for any of the legacy H-style or the X-style products, replace the entire chin strap retention system assembly with a new Universal H-Style Chin Strap Retention System (WP 0018) assembly. This assembly includes the corresponding Universal H-Style Chin Strap Retention System and hardware (WP 0024).

- a. If there is a legacy H-Style or X-Style Chin Strap Retention System:
 - (1) Obtain a new Universal H-Style Chin Strap Retention System including hardware. See WP 0023 for NSN information.
 - (2) Using a coin, or a screwdriver if available, remove the chin strap retention system.
 - (3) Install a new Universal H-Style Chin Strap Retention System as described in WP 0015.
- b. If there is an Universal H-Style Chin Strap Retention System, remove the chin strap as follows:
 - (1) Remove webbing from elastic bands.
 - (2) Unthread and remove the chin strap webbing from the four buckles on the attachment tabs.
 - (3) Using a coin, or a screwdriver if available, remove the four screws securing the attachment tabs to the helmet.

NOTE

The attachment tabs and eyewear retention straps (if installed) disengage from the helmet.

END OF TASK

INSTALL

1. Obtain a new pair of attachment tabs (see WP 0023WP 0023 for NSN information).
2. If there is an eyewear retention strap,
 - a. From the outside of the helmet, place the strap over the shaft of the screw with the snap socket and stud facing up and away from the helmet as shown in Figure 1Figure .

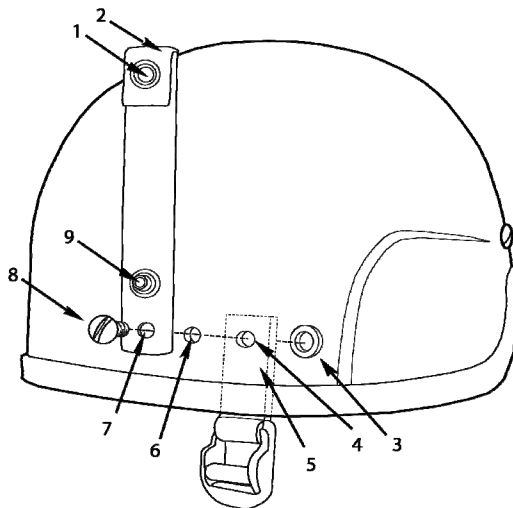


Figure 1. Universal Strap/Tab and Screw Assemblies.

LEGEND

1. Snap socket
2. Eyewear retention strap
3. Post
4. Attachment tab with buckle (shown inside helmet)
5. Hole in attachment tab
6. Hole in helmet shell
7. Hole in eyewear retention strap
8. Screw
9. Snap stud

INSTALL – CONTINUED

- b. Insert the screw, with the eyewear retention strap attached, into the hole in helmet and through the corresponding buttonhole in the helmet cover as shown in Figure 2.

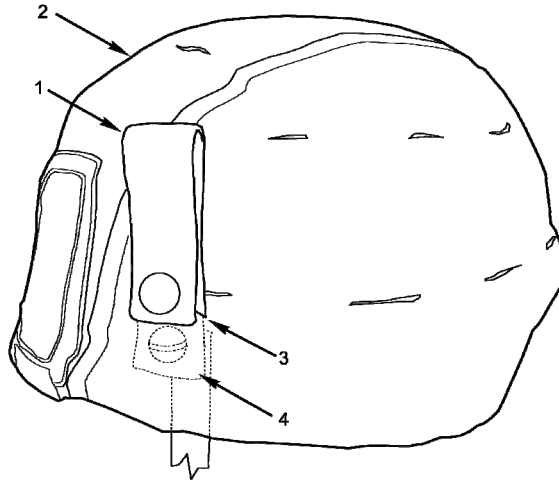


Figure 2. Helmet with Eyewear Retention Strap Installed (All Versions).

LEGEND

1. Eyewear retention strap
2. Helmet cover
3. Lower most rear buttonhole
4. Screw (shown under cover)

3. From inside the helmet, thread the attachment tab and buckle through the corresponding hole on helmet cover.
4. Insert the post from the inside of the helmet through the corresponding hole on the helmet cover, the attachment tab and the shell.
5. Align the post and screw as necessary.

NOTE

The fabric helmet cover becomes easily tangled. Before tightening screws, ensure attachment tabs, eyewear retention straps, and screws move freely through buttonholes.

6. Using a coin or a screwdriver, if available, tighten the screw.
7. Repeat steps 2 through 7 for the other attachment tabs.
8. Install previously removed chin strap as follows:
 - a. Lay the helmet on its crown with the front of the helmet away from you.
 - b. Drape the replacement chin strap over the helmet with the nape-strap pad facing down on the back/rear of the helmet.
 - c. Insert and thread the four legs of the chin strap into their corresponding buckles as shown in Figure 3. For illustration of the entire assembled helmet with chin strap retention and hardware, see WP 0002. Ensure webbing is not twisted.

INSTALL – CONTINUED

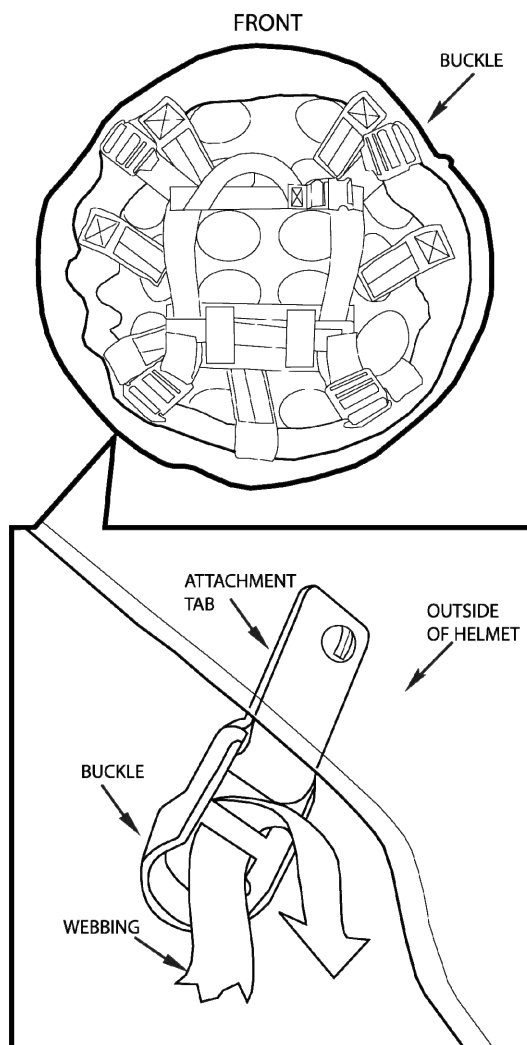


Figure 3. Universal Chin Strap Installation.

- d. Slide elastic band over loose ends of webbing.
9. Install the suspensions pads previously removed. If necessary, review WP 0018 for proper installation.

END OF TASK

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ADVANCED COMBAT HELMET
CHIN STRAP OR CHIN STRAP RETENTION SYSTEM
REPLACE**

INITIAL SETUP:**Tools and Special Tools**

Screwdriver (WP 0027, Item 2)

Materials/Parts

None Required

References

WP 0002

WP 0016

WP 0021

WP 0026

This work package provides instructions for replacing the chin strap only or the entire chin strap retention system.

NOTE

The H-Style Universal Retention System fits all helmets and is used to replace all of the legacy manufacturers' retention systems.

When replacing the retention system with a different manufacturer (e.g. replacing the Rabintex retention system with the Universal H-Style Chin Strap Retention System), replace all corresponding hardware as well. See WP 0002 and WP 0026. Hardware is not interchangeable.

A coin is used in the following procedures to replace ACH hardware. However, if available, a standard flathead screwdriver may also be used.

Any of the H-style chin straps may be replaced independently of the entire retention system with the universal chin strap (see WP 0026). The X-style cannot; the entire retention system and its hardware must be replaced with the Universal H-style Chin Strap Retention System.

REPLACE THE CHIN STRAP (UNIVERSAL H-STYLE)

1. Remove suspension pads as necessary to access hardware in rear of helmet.
2. Remove chin strap as follows:
 - a. Remove webbing from elastic bands.
 - b. Unthread and remove the chin strap retention system webbing from the four buckles on the attachment tabs.
3. Remove and install the Armor Nape Pad from the old chin strap onto the new chin strap, if necessary, as described in WP 0016.
4. Install replacement chin strap as follows:
 - a. Lay the helmet on its crown with the front of the helmet away from you.
 - b. Drape the replacement chin strap over the helmet with the nape pad facing down on the back/rear of the helmet.

REPLACE THE CHIN STRAP (UNIVERSAL H-STYLE) – CONTINUED

- c. Insert and thread the four legs of the chin strap into their corresponding buckles as shown in Figure 1. For illustration of the entire assembled helmet with chin strap retention and hardware, see WP 0002. Ensure webbing is not twisted.

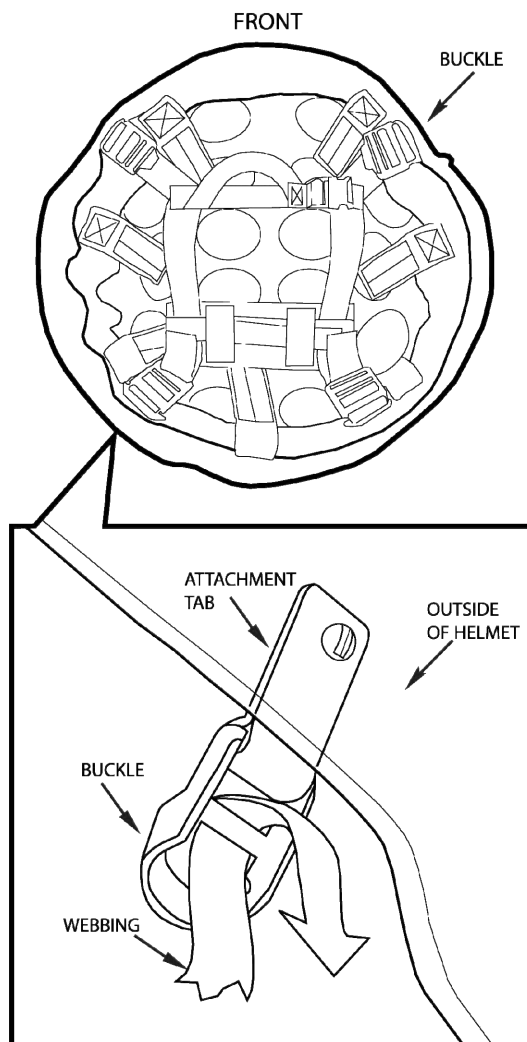


Figure 1. Universal Chin Strap-Only Replacement.

- d. Slide elastic band over loose ends of webbing.
5. Install the suspensions pads that were previously removed. If necessary, review WP 0021 for proper installation.

END OF TASK

REPLACE THE CHIN STRAP RETENTION SYSTEM

1. Remove suspension pads as necessary to access hardware in rear of helmet.
2. Remove the entire chin strap retention system from the helmet by using a coin to unscrew the applicable hardware as shown in Figures 2 through 6.

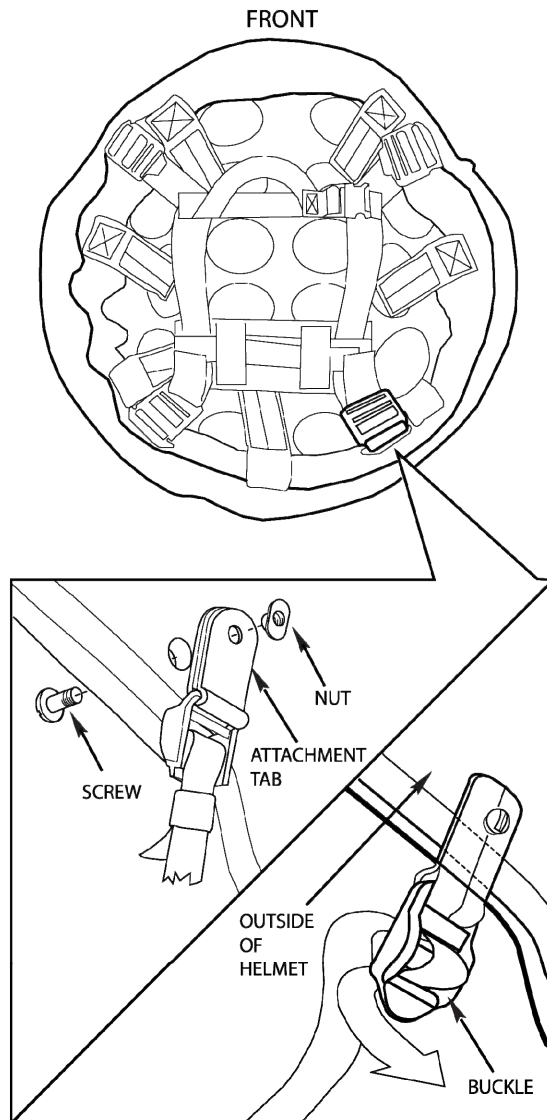


Figure 2. MSA Retention System Breakout.

REPLACE THE CHIN STRAP RETENTION SYSTEM – CONTINUED

FRONT

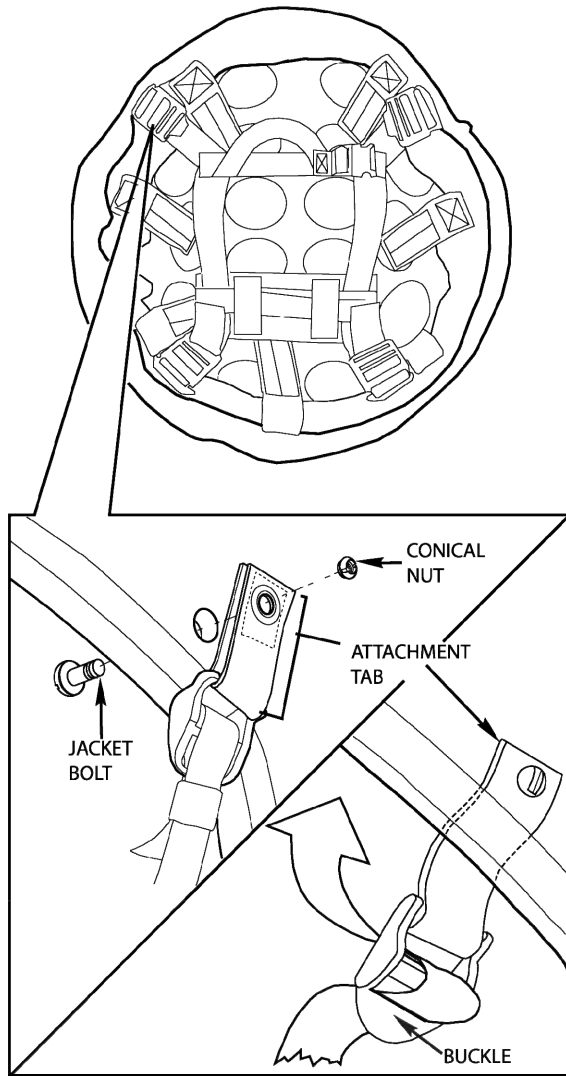


Figure 3. SDS/Universal Retention System Breakout.

REPLACE THE CHIN STRAP RETENTION SYSTEM – CONTINUED

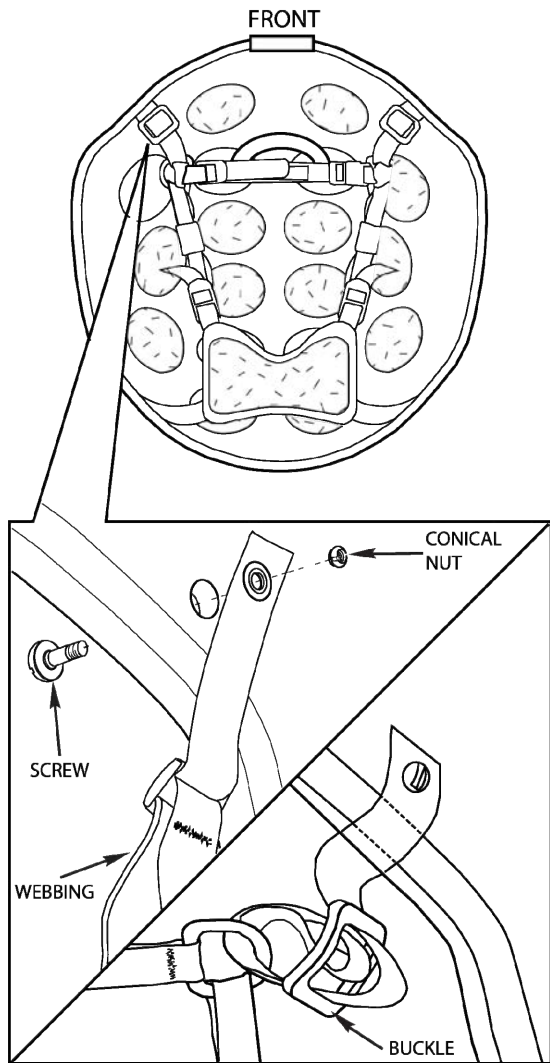


Figure 4. Gentex with X-Style Retention System Breakout.

REPLACE THE CHIN STRAP RETENTION SYSTEM – CONTINUED

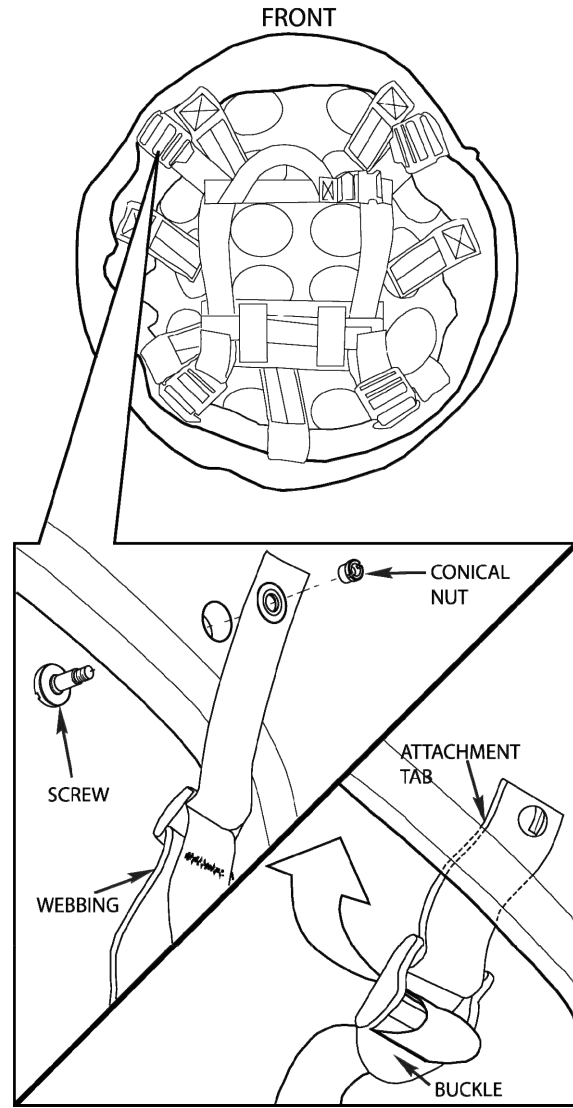


Figure 5. Gentex with H-Style Retention System Breakout.

REPLACE THE CHIN STRAP RETENTION SYSTEM – CONTINUED

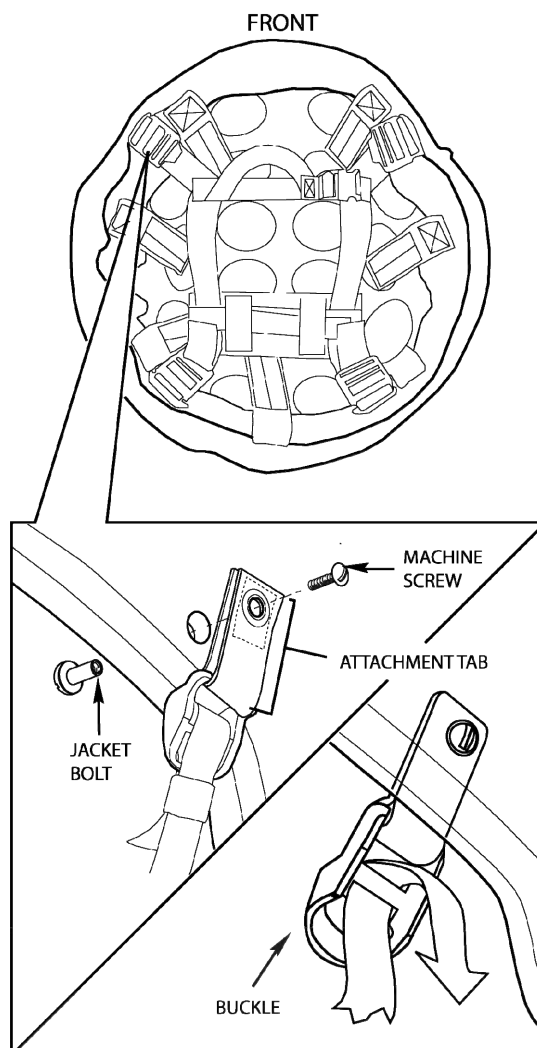


Figure 6. Rabintex Retention System Breakout.

3. Replace retention system as follows:
 - a. Lay the helmet on its crown with the front of the helmet away from you (chin strap buckle is located on right side of helmet).
 - b. Drape the replacement chin strap retention system over the helmet with the nape-strap pad facing down on the back/rear of the helmet.
 - c. If necessary, remove the nape-strap pad and replace it with the Armor Nape Pad as described in WP 0016.
 - d. Attach the new Universal H-Style Chin Strap Retention System to the helmet using the new hardware as shown in Figure 3.
 - e. Slide elastic band over loose ends of webbing.

REPLACE THE CHIN STRAP RETENTION SYSTEM – CONTINUED

4. Remove and install the Armor Nape Pad from the old chin strap onto the new chin strap, if necessary, as described in WP 0016.

NOTE

For illustration of entire assembled helmet with chin strap retention system and hardware, see WP 0002.

5. Ensure webbing is not twisted.
6. Install the suspensions pads that were previously removed. If necessary, review WP 0021 for proper installation.

END OF TASK**END OF WORK PACKAGE**

**OPERATOR MAINTENANCE
ADVANCED COMBAT HELMET
EYEWEAR RETENTION STRAP
REMOVE, INSTALL**

INITIAL SETUP:**Tools and Special Tools**

Screwdriver (WP 0027, Item 2)

Materials/Parts

None Required

References

WP 0018

WP 0021

WP 0026

REMOVE**NOTE**

A coin is used in the following procedures. However, if available, a standard flathead screwdriver may also be used.

1. Remove suspension pads as necessary to access hardware in rear of helmet.
2. If necessary, unfasten the cover retaining tabs to expose the two rear screws.
3. Identify which chin strap retention system is installed.
4. If there is a Universal H-Style Chin Strap Retention System, continue to step 6.
5. If there is a legacy H-Style or X-Style Chin Strap Retention System:
 - a. Obtain a new Universal H-Style Chin Strap Retention System and hardware. See WP 0026 for NSN information.
 - b. Using a coin, or a screwdriver if available, remove the old chin strap retention system.
 - c. Install the front portion (front two screws) of the new Universal H-Style Chin Strap Retention System as described in WP 0018.
 - d. Continue to step 6.
6. For helmets with an existing Universal H-Style Chin Strap Retention System and existing eyewear retention straps installed, remove eyewear straps as follows:
 - a. Using a coin, or a screwdriver if available, remove the screws on the rear of the helmet that attach the eyewear retention straps and the chin strap retention system to the helmet. The eyewear retention strap and the rear portion of the chin strap retention system disengage.
 - b. Continue to step 4 of the Install procedure.
7. If there are no existing eyewear retention straps installed, proceed to step 3 of the install procedure.

END OF TASK

INSTALL

1. Obtain a pair of eyewear retention straps (see WP 0026).
2. If necessary, unfasten the cover retaining tabs to expose the two rear screws.

NOTE

Be sure to install an eye wear retention strap on each of the two rear screws.

NOTE

Holding the post on inside of helmet will ensure the attachment tab does not disengage while completing remaining steps.

3. If necessary, remove suspension pads to access hardware in rear of helmet.
4. Remove one of the rear screws.
5. From the outside of the helmet, place an eyewear retention strap over the shaft of the screw with the snap socket and stud facing up and away from the helmet as shown in Figure 1.

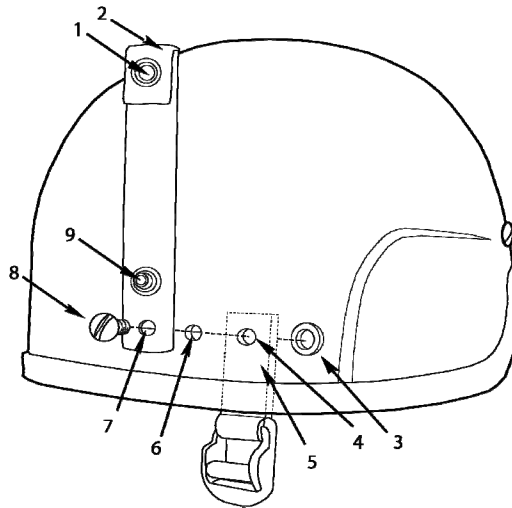


Figure 1. Universal Eyewear Retention Strap and Screw Assembly.

LEGEND

1. Snap socket
2. Eyewear retention strap
3. Post
4. Attachment tab with buckle (shown inside helmet)
5. Hole in attachment tab
6. Hole in helmet shell
7. Hole in eyewear retention strap
8. Screw
9. Snap stud

INSTALL – CONTINUED

6. Insert the screw, with the eyewear retention strap attached, into the hole in helmet through the corresponding buttonhole in the helmet cover as shown in Figure 2.

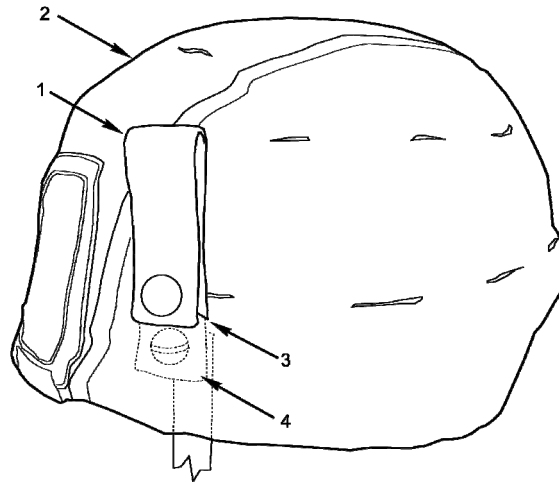


Figure 2. Helmet with Eyewear Retention Strap Installed (All Versions).

LEGEND

1. Eyewear retention strap
 2. Helmet cover
 3. Lower most rear buttonhole
 4. Screw (shown under cover)
7. From inside the helmet, thread the attachment tab and buckle through the corresponding hole on helmet cover.
 8. Insert the post from the inside of the helmet through the corresponding hole on the helmet cover, the attachment tab and the shell until it reaches the screw.
 9. Tuck end of eyewear retention strap into button hole.
 10. Align the post and screw as necessary.

NOTE

The fabric helmet cover becomes easily tangled. Before tightening screws, ensure attachment tabs, eyewear retention straps, and screws move freely through button holes.

11. Using a coin or a screwdriver, if available, tighten the screw.
12. Repeat steps 3 through 9 for the other eyewear retention strap.
13. Install the suspensions pads that were previously removed. If necessary, review WP 0021 for proper installation.

END OF TASK

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ADVANCED COMBAT HELMET
CHIN STRAP RETENTION SYSTEM HARDWARE
REPLACE**

INITIAL SETUP:**Tools and Special Tools**

Screwdriver (WP 0027, Item 2)

Materials/Parts

None Required

References

WP 0004

WP 0005

WP 0018

WP 0019

WP 0024

WP 0025

WP 0026

REPLACE

This work package provides instructions for removing and replacing the ACH hardware.

NOTE

In the following procedures, a coin is used to replace the ACH hardware. However, if available, a standard flathead screwdriver may also be used.

If any component of an X-style chin strap assembly needs to be replaced, replace the entire chin strap retention system assembly with a new Universal, H-Style Chin Strap Retention System (WP 0018). This assembly includes the corresponding Universal H-Style Chin Strap Retention System and corresponding hardware (WP 0024).

Chin strap retention system hardware is not interchangeable. If chin strap retention system hardware needs to be replaced for any of the legacy H-style or the X-style products, replace the entire chin strap retention system assembly with a new Universal H-Style Chin Strap Retention System (WP 0018). This assembly includes the corresponding Universal H-Style Chin Strap Retention System and hardware (WP 0024).

The only authorized hardware used with the ACH is obtained with the NSN listed in WP 0026. All other hardware and chin straps are no longer supported.

Remove and Install Chin Strap Retention System Hardware

1. Remove the hardware as follows:
 - a. Remove the suspension pads as necessary to access hardware and chin strap retention system.
 - b. Using coins, or screwdrivers if available, remove the hardware.
 - c. The chin strap retention system and eye wear retention tabs (if applicable) disengage.
2. Install the hardware as follows:
 - a. Insert new hardware (four sets) through the helmet cover, the attachment tabs of the chin strap retention system, and the eye wear retention tabs (if applicable) as described in WP 0019.
 - b. Tighten the screws as shown in Figure 1.
 - c. Turn the screws another 1/3 turn to achieve proper assembly.
 - d. Install suspension pads as described in WP 0004.
 - e. Adjust pads, as necessary, as described in WP 0005.

REPLACE – CONTINUED

- f. Inspect the screws to ensure tightness. Tighten as necessary.
- g. If loosening persists, refer to higher level maintenance to obtain sealing compound (thread-locking compound) (WP 0025).

NOTE

Use the sealing compound as directed on the container.

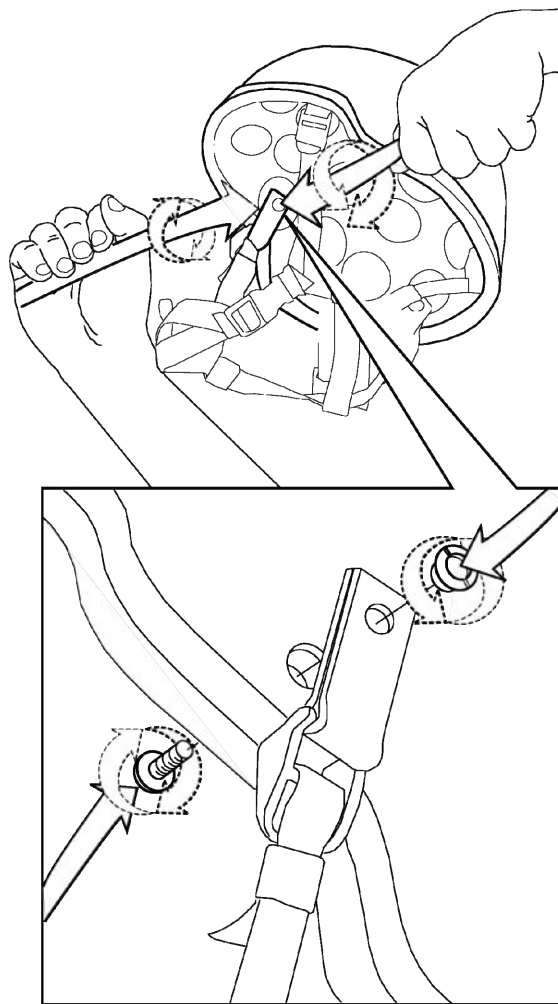


Figure 1. Hardware Installation.

END OF TASK

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ADVANCED COMBAT HELMET
SUSPENSION PADS
REPLACE**

INITIAL SETUP:

Tools and Special Tools
None Required

References
WP 0005
WP 0006

Materials/Parts
None Required

This work package provides information on replacing the suspension pads.

REPLACE SUSPENSION PADS**NOTE**

One side of the pads are covered with a loop material shown below in Figure 1. The loop side of the pad has production information on it. Attach only the loop side to the hook disks on the inside of the helmet; otherwise, the pads will not adhere to the helmet. The other side of the pads are covered by moisture-wicking fabric which does not adhere to anything.

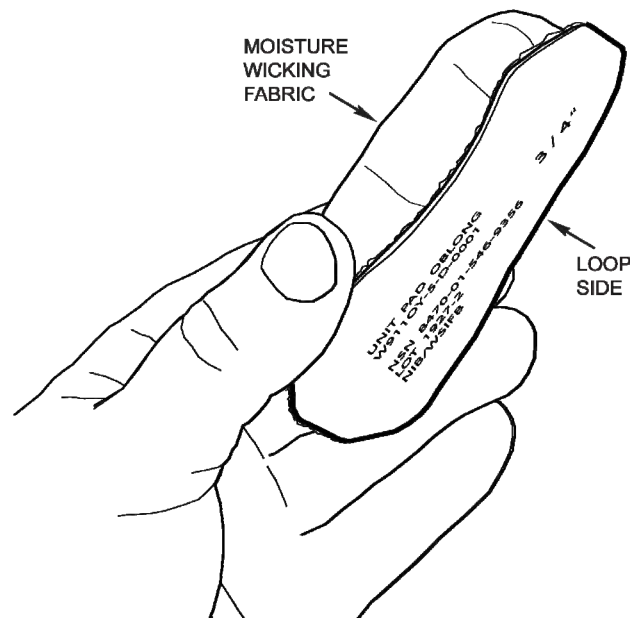


Figure 1. Oval/Oblong Retention Pad.

1. To replace the pad suspension, pull the individual pads off the inner helmet hook disks.
2. Reattach the pads as needed. See WP 0005 and WP 0006 for configuration and pad adjustment details.

END OF TASK

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ADVANCED COMBAT HELMET
NIGHT VISION DEVICE (NVD) BRACKET HARDWARE
REPAIR**

INITIAL SETUP:**Tools and Special Tools**

Screwdriver (WP 0027, Item 2)
3/8-inch wrench (WP 0027, Item 1)

References

WP 0014
WP 0026

Materials/Parts

None Required

REPAIR

This work package provides instructions for replacing the Night Vision Device (NVD) bracket hardware.

WARNING

The NVD bracket must be installed and worn by all Soldiers deployed in an area with a possibility of hostile fire. Failure to do so may result in injury or death to personnel.

CAUTION

The hardware for the Old NVD bracket and the New NVD bracket are not interchangeable. Verify you have the correct hardware for the bracket model installed on the helmet.

Remove

1. Identify which bracket is on the helmet.

NOTE

The screw for the New NVD Bracket has a flat head and nut with a plastic insert as opposed to the round head screw and threaded post of the Old NVD Bracket hardware. The slot on the New NVD Bracket is slightly larger than that on the Old NVD Bracket to accommodate the new hardware.

NOTE

The Old NVD Bracket is black. The New NVD Bracket is beige/tan.

2. Remove existing hardware. Either:
 - a. use a screwdriver to loosen and remove the screw and threaded post, or
 - b. use a 3/8-inch wrench to loosen and remove the screw and self-locking nut.

REPAIR – CONTINUED**Install**

1. Loosen the hook and loop tabs on the helmet cover, if necessary.
2. Obtain either the machine screw and threaded post for the Old NVD Bracket (Figure 1) or the screw and self-locking nut for the New NVD Bracket (Figure 2). See WP 0026, Associated and Repair Items List, for appropriate NSNs.

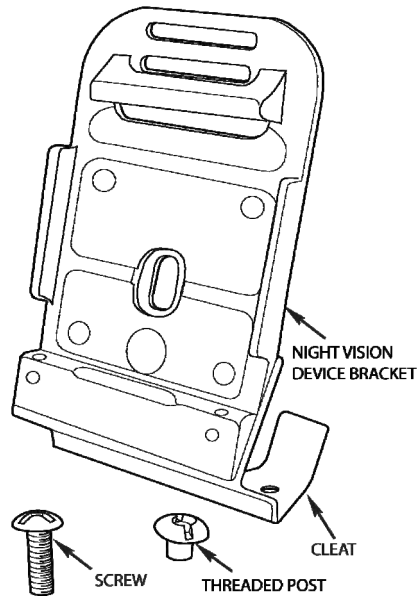


Figure 1. Old NVD Bracket and Hardware.

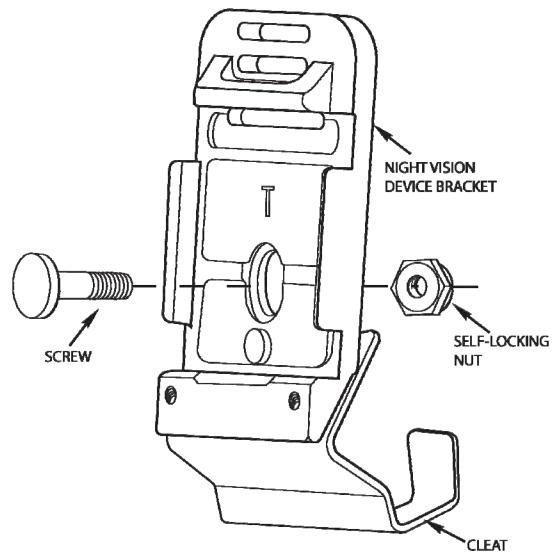


Figure 2. New NVD Bracket Assembly and Hardware.

3. If the NVD bracket came off while removing the hardware, place the NVD bracket on the helmet over the helmet cover.

REPAIR – CONTINUED

4. Line up the slot on the plate, the front buttonhole on the helmet cover and the hole on the helmet shell.

NOTE

It may be necessary to tap the bracket into place to properly align the helmet shell, cover, and bracket slot.

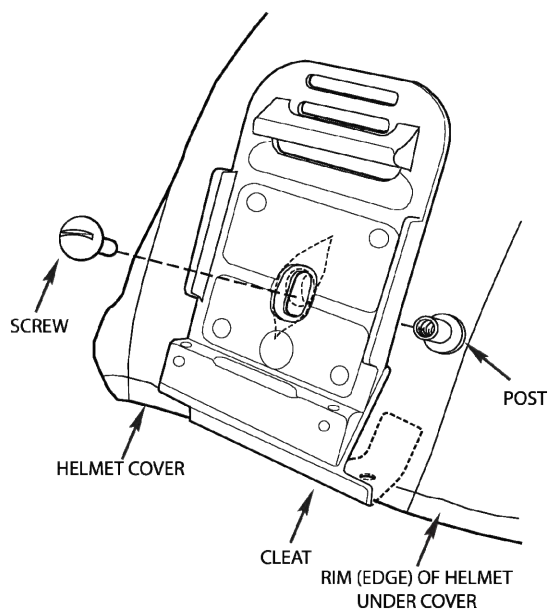


Figure 3. Old NVD Bracket Installation.

5. Insert the screw for the appropriate NVD bracket model through the bracket, helmet cover, and shell from the outside of the helmet.
6. Insert the threaded post (Old NVD Bracket) or self-locking nut (New NVD Bracket) from inside the helmet.
7. Slightly tighten the screw and threaded post (Old NVD Bracket) with a screwdriver or the screw and the self-locking nut (New NVD Bracket) with a 3/8-inch wrench.

CAUTION

Do not over tighten the screw because the bracket may break.

8. Before completely tightening the screw, ensure that the cleat on the front of the bracket is tight against the rim of the helmet.

NOTE

It may be helpful to have another person assist with these steps.

9. Push the bracket up so that it is tight against the rim (edge) of the helmet while tightening the screw and post (Old NVD Bracket) or screw and self-locking nut (New NVD Bracket).

END OF TASK**END OF WORK PACKAGE**

CHAPTER 5
SUPPORTING INFORMATION
FOR
ADVANCED COMBAT HELMET (ACH)

**ADVANCED COMBAT HELMET
SUPPORTING INFORMATION
REFERENCES**

SCOPE

This work package lists related field manuals, forms, technical manuals, and miscellaneous publications.

FIELD MANUALS

FM 4-25.11 First Aid

FORMS

DA Form 2028 Recommended Changes to Publications and Blank Forms
DA Form 2404 Equipment Inspection and Maintenance Worksheet
DA Form 12-R Request for Establishment of Publishing Account
SF 368 Product Quality Deficiency Report

PAMPHLETS

DA PAM 25-33P User's Guide for Army Publications and Forms
DA PAM 750-8 The Army Maintenance Management System (TAMMS) Users Manual

END OF WORK PACKAGE

**ADVANCED COMBAT HELMET
SUPPORTING INFORMATION
COMPONENTS OF END ITEMS (COEI) AND BASIC ISSUE ITEMS
(BII) LISTS**

INTRODUCTION

Scope

This work package lists COEI and BII for the ACH to help you inventory items for safe and efficient operation of the equipment.

General

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

Components of End Item (COEI). This list is for informational purposes only and is not authority to requisition replacements. These items are part of the ACH. 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 find and identify the items.

Basic Issue Items (BII). These essential items are required to place the ACH in operation, operate it, and to do emergency repairs. Although shipped separately packaged, BII must be with the ACH during operation and when it is transferred between property accounts. Listing these items is your authority to request/requisition them for replacement based on authorization of the end item by the TOE/MTOE. Illustrations are furnished to help you find and identify the items.

Explanation of Columns in the COEI List and BII List

Column (1) Illus Number. Identifies the number of the item illustrated.

Column (2) National Stock Number (NSN). 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 part number and the Commercial and Government Entity Code (CAGEC) (in parentheses) and the part number.

Column (4) Usable On Code. When applicable, provides a code if the item is not the same for different models of equipment.

Column (5) Unit of Issue (U/I). Indicates the physical measurement or count of the item, as issued, per the National Stock Number shown in column (2).

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

0024-2

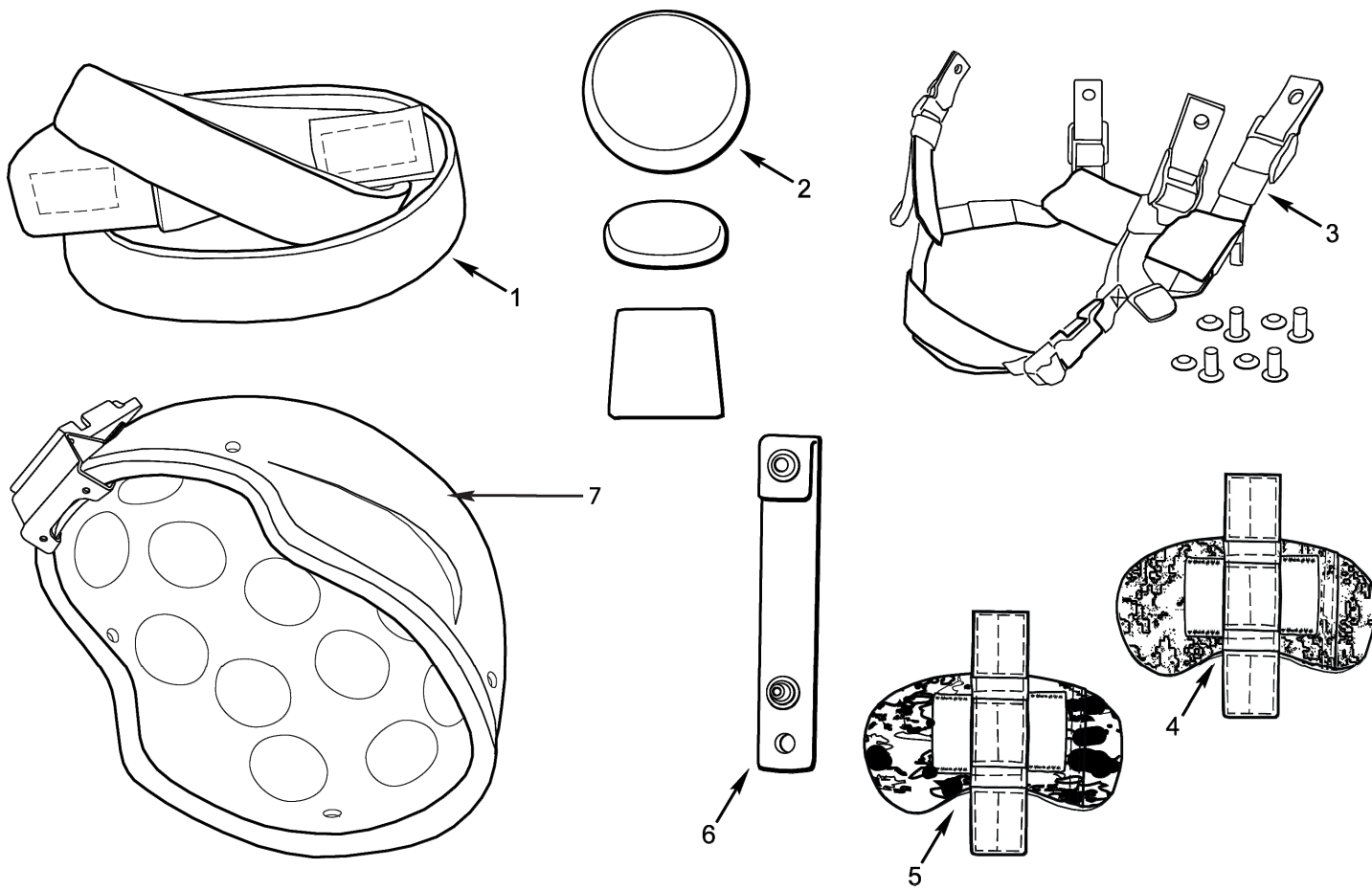


Figure 1. Components of End Item List (COEI).

Table 1. Components of End Item List (COEI).

(1) Illus Number	(2) National Stock Number (NSN)	(3) Description, Part Number/(CAGEC)	(4) Usable on Code	(5) U/I	(6) Qty Rqr
1	8415-01-524-5842	BAND, HELMET, CAMOUFLAGE, Foliage green MIL-B-1851 (81349)		ea	1
1	8415-01-495-6714	BAND, HELMET, CAMOUFLAGE, Tan MIL-B-1851 (81349)		ea	1
2	8470-01-543-9420	PAD SET, SUSPENSION, ACH, set of size 6 pads (3/4") 8470-01-F01-0477 (81337)		se	1
3	8470-01-530-0868	STRAP ASSEMBLY, CHIN, Foliage green CO/PD 05-04 (81337)		ea	1
4	8415-01-552-4599	PAD, NAPE, ARMOR, X-style, S/M ACH ARM-NP3-24-000 (377Q0)		ea	1
4	8415-01-552-4602	PAD, NAPE, ARMOR, X-style, L/XL ACH ARM-NP4-24-000 (377Q0)		ea	1
4	8415-01-552-4607	PAD, NAPE, ARMOR, H-style, S/M ACH ARM-NP1-24-000 (377Q0)		ea	1
4	8415-01-552-4610	PAD, NAPE, ARMOR, H-style, L/XL ACH ARM-NP2-24-000 (377Q0)		ea	1
4	8470-01-568-1028	PAD, NAPE, ARMOR, Universal, Camouflage, S/M ARM-NP5-24-000 (377Q0)		ea	1
4	8470-01-568-1023	PAD, NAPE, ARMOR, Universal, Camouflage, LG/XL ARM-NP6-24-000 (377Q0)		ea	1
5	8470-01-584-1750	PAD, NAPE, ARMOR, Universal, Multi-cam, S/M ARM NP7 24-000 (377Q0)		ea	1
5	8470-01-584-1839	PAD, NAPE, ARMOR, Universal, Multi-cam, LG/XL ARM NP7 24-000 (377Q0)		ea	1
5	8415-01-521-8802	STRAP, EYEWEAR RETENTION, Foliage green MIL-DTL-32134 (81337)		pr	1
6	8415-01-521-8801	STRAP, EYEWEAR RETENTION, Tan MIL-DTL-32134 (81337)		pr	1
7	8470-01-523-0068	HELMET, ADVANCED COMBAT SHELL W/ONE NVG HOLE, Foliage Green, Small 600-04 (81337)		ea	1

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Table 1. Components of End Item List (COEI) - Continued

(1) Illus Number	(2) National Stock Number (NSN)	(3) Description, Part Number/(CAGEC)	(4) Usable on Code	(5) U/I	(6) Qty Rqr
7	8470-01-523-0070	HELMET, ADVANCED COMBAT SHELL W/ONE NVG HOLE, Foliage Green, Medium 600-04 (81337)		ea	1
7	8470-01-523-0071	HELMET, ADVANCED COMBAT SHELL W/ONE NVG HOLE, Foliage Green Large 600-04 (81337)		ea	1
7	8470-01-523-0075	HELMET, ADVANCED COMBAT SHELL W/ONE NVG HOLE, Foliage Green, X-Large 600-04 (81337)	N/A	ea	1
7	8470-01-558-8622	HELMET, ADVANCED COMBAT SHELL W/ONE NVG HOLE, Foliage Green, X-X-Large 600-04 (81337)	N/A	ea	1

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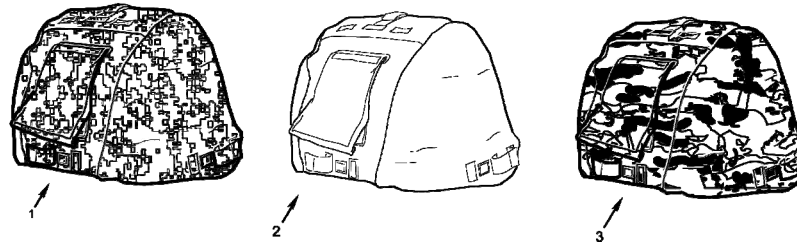


Figure 2. Basic Issue Items List (BII).

Table 2. Basic Issue Items List (BII).

(1) Illus Number	(2) National Stock Number	(3) Description, Part Number/(CAGEC)	(4) Usable on Code	(5) U/I	(6) Qty Rqr
1	8415-01-521-8806	COVER, HELMET, UNIVERSAL CAMOUFLAGE PATTERN, Non-reversible, with communication flap, universal pattern, size S/M 552-04-SMALL/MEDIUM (81337)		ea	1
1	8415-01-521-8808	COVER, HELMET, UNIVERSAL CAMOUFLAGE PATTERN, Non-reversible, with communication flap, universal pattern, size L/XL 552-04-LARGE/XLARGE (81337)		ea	1
1	8415-01-559-0105	COVER, HELMET, UNIVERSAL CAMOUFLAGE PATTERN, Non-reversible, with communication flap, universal pattern, size XXL 552-04-XXLARGE (81337)		ea	1
2	8415-01-515-4286	COVER, HELMET, Non-reversible, white, with communication flap, size S/M, 85-04 (81337)		ea	1
2	8415-01-515-4288	COVER, HELMET, Non-reversible, white, with communication flap, size L/XL, 85-04 (81337)		ea	1
3	8415-01-580-0064	COVER, HELMET, UNIVERSAL MULTI-CAM PATTERN Non-reversible, with communication flap, size S/M, MIL-DTL-32200 (58536)		ea	1
3	8415-01-580-0038	COVER, HELMET, UNIVERSAL MULTI-CAM PATTERN Non-reversible, with communication flap, size L/XL, MIL-DTL-32200 (81349)		ea	1
3	8415-01-580-0074	COVER, HELMET, UNIVERSAL MULTI-CAM PATTERN Non-reversible, with communication flap, size XXL, MIL-DTL-32200 (58536)		ea	1

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**ADVANCED COMBAT HELMET
SUPPORTING INFORMATION
EXPENDABLE AND DURABLE ITEMS LISTS**

INTRODUCTION

Scope

This work package lists expendable and durable items needed to operate and maintain the Advanced Combat Helmet. This list is for informational purposes only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/Durable Items (Except Medical, Class V Repair Parts, and Heraldic Items), CTA 50-909, Field and Garrison Furnishings and Equipment or CTA 8-100, Army Medical Department Expendable/ Durable Items.

Explanation of Columns in the Expendable/Durable Items List

Column (1) Item No. This number is assigned to the entry in the list and is referenced in the narrative instructions to identify the item (e.g., "Use brake fluid (item 5, WP 0098)).

Column (2) Level. This column identifies the lowest level of maintenance that requires the listed item (C = Crew).

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

Column (4) Item Name, Description, Part Number/(CAGEC). This column provides the other information you need to identify the item. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

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

Table 1. Expendable and Durable Items List.

(1) Item No.	(2) Level	(3) National Stock Number (NSN)	(4) Item Name, Description, Part Number/(CAGEC)	(5) U/I
1	C	8040-01-388-0735	ADHESIVE, adhesive for edging 40640(05972)	CO
2	C	6850-01-228-7266	CLEANING COMPOUND, SOLVENT, clean up for adhesive 76820(05972)	BT
3	C		Cloth	EA
4	C		Mild Soap	EA
5	C	8030-01-104-5392	SEALING COMPOUND, thread locking compound 24221(05972)	BX
6	C		Soft Brush	EA

END OF WORK PACKAGE

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**ADVANCED COMBAT HELMET
ASSOCIATED AND REPAIR ITEMS LIST**

This work package lists the associated and repair items you will need to operate and maintain the Advanced Combat Helmet (ACH). This list is for informational purposes only and is not authority to requisition replacements.

Table 1. Associated and Repair Items List.

(1) Item No.	(2) Description, Part Number/(CAGEC)	(3) U/I	(4) National Stock Number
1	ATTACHMENT TAB REPLACEMENT GL PD 07-19 (81337)	bx	8470-01-531-3897
2	BRACKET, LEVER, NVD front bracket assembly A3297307 (80063)	ea	5340-01-509-1467
3	CHIN STRAP ONLY, ADVANCED COMBAT HELMET, Foliage green, 2418 (3T951)	ea	8470-01-531-3351
4	HELMET, ADVANCED COMBAT, Foliage green with one NVD mounting hole, size small shell, size 6 pads (3/4" thick) 268-05 268-05 (81337)	ea	8470-01-529-6302
5	HELMET, ADVANCED COMBAT, Foliage green with one NVD mounting hole, size medium shell, size 6 pads (3/4" thick) 268-05 (81337)	ea	8470-01-529-6329
6	HELMET, ADVANCED COMBAT, Foliage green with one NVD mounting hole, size large shell, size 6 pads (3/4" thick) 268-05 (81337)	ea	8470-01-529-6344
7	HELMET, ADVANCED COMBAT, Foliage green with one NVD mounting hole, size x-large shell, size 6 pads (3/4" thick) 268-05 (81337)	ea	8470-01-529-6365
8	HELMET, ADVANCED COMBAT, Foliage green with one NVD mounting hole, size x-x-large shell, size 6 pads (3/4" thick) 268-05 (81337)	ea	8470-01-558-8622
9	KIT, SCREW SET, For attaching retention system, 4 mounting posts, 4 mounting screws, 4 attachment tabs GL PD 07-19 (81337)	se	8470-01-533-1011
10	NUT, SELF-LOCKING, HEXAGON, For mounting NEW NVD BRACKET, LEVER on ACH 90101A225 (39428)	pg	5310-01-466-1914
11	PAD, HELMET, ADVANCED COMBAT, circular crown pad, size 6 (3/4" thick) 252-03 (81337)	ea	8470-01-546-9415
12	PAD, HELMET, ADVANCED COMBAT, oblong/oval pad, size 6 (3/4" thick) 251-03 (81337)	ea	8470-01-546-9356
13	PAD, HELMET, ADVANCED COMBAT, trapezoidal pad, size 6 253-03 (81337)	ea	8470-01-546-9407

Table 1. Associated and Repair Items List – Continued.

14	PAD SET, SUSPENSION, ACH, set of size 6 pads (3/4" thick) 8470-01-F01-0477 (81337)	se	8470-01-546-9420
15	POST, HELMET, For mounting OLD NVD BRACKET, LEVER on ACH 8-2-647 (81337)	bx	8470-01-144-5367
16	POST, HELMET, Mounting post for STRAP ASSEMBLY, CHIN GL PD 07-19 (81337)	bx	8470-01-531-4284
17	SCREW, HELMET, For mounting Chin Strap GL PD 07-19 (81337)	bx	8470-01-531-4268
18	SCREW, MACHINE, For mounting NEW NVD BRACKET, LEVER on ACH A3297315 (80063)	ea	5305-01-577-7740
19	SCREW, MACHINE, For mounting OLD NVD BRACKET, LEVER on ACH MS51957-44B (96906)	hd	5305-00-433-3741
20	SCREW MACHINE, on ACH for empty NVD BRACKET HOLE ON ACH HELMET SHELL MS51957-43B (96906)	ea	5305-00-182-9265
21	STRAP, EYEWEAR RETENTION, Foliage green MIL-DTL-32134 (81337)	pr	8415-01-521-8802
22	STRAP, EYEWEAR RETENTION, Tan MIL-DTL-32134 (81337)	pr	8415-01-521-8801

END OF WORK PACKAGE

**ADVANCED COMBAT HELMET
ADDITIONAL INFORMATION**

This work package lists items you will need to operate and maintain the Advanced Combat Helmet (ACH). This list is for information purposes only and is not authority to requisition replacements.

Table 1. Additional Items List.

(1) Item No.	(2) Description, Part Number/(CAGEC)	(3) U/I	(4) National Stock Number (NSN)
1	3/8-inch Wrench B107-100 (05047)	ea	5120-00-228-9504
2	Screwdriver, Flat Tip 30839 (08292)	ea	5120-01-430-8104

END OF WORK PACKAGE

OPERATOR RECORD OF HIT

Name: _____

Rank: _____

Unit: _____

Phone: _____ E-Mail: _____

HELMET Size: _____ Date of Issue: __/__/__

Duty Being Performed When Hit: _____

Hit Caused by (circle): Fragmentation (Mine, Grenade, Booby Trap Artillery, Other)

Date of Hit: __/__/__

Estimated range from point of detonation: _____

Location of Hit(s) on Advanced Combat Helmet:

Continued to Perform Mission (circle one)?: Yes No

Was Personal Injury Sustained (circle one)?: Yes No

Description of Injury: _____

OPERATOR RECORD OF HIT — Continued

Mail Record of Hit to postal address or responses to electronic mail address:

Postal Address:

Project Manager
Soldier Protection & Individual Equipment
SFAE-SDR-SPIE
10170 Beach Road, Bldg 325
Fort Belvoir, VA 22060-5862

Electronic Mail Address:

Mail to: PEOSoldierWebmaster@conus.army.mil
PEOSoldierPAO@conus.army.mil

Call the Public Affairs Office at (703) 704-2802.

END OF WORK PACKAGE

These are the instructions for sending an electronic 2028

The following format must be used if submitting an electronic 2028.
The subject line must be exactly the same and all fields must be included;
however, only the following fields are mandatory: 1, 3, 4, 5, 6, 7, 8, 9, 10,
13, 15, 16, 17, and 27.

From: "Whomever" <whomever@avma27.army.mil>

To: TACOMLCMC.DAForm2028@us.army.mil

Subject: DA Form 2028

1. **From:** Joe Smith
2. **Unit:** home
3. **Address:** 4300 Park
4. **City:** Hometown
5. **St:** MO
6. **Zip:** 77777
7. **Date Sent:** 19--OCT--93
8. **Pub no:** 55--2840--229--23
9. **Pub Title:** TM
10. **Publication Date:** 04--JUL--85
11. **Change Number:** 7
12. **Submitter Rank:** MSG
13. **Submitter FName:** Joe
14. **Submitter MName:** T
15. **Submitter LName:** Smith
16. **Submitter Phone:** 123--123--1234
17. **Problem:** 1
18. **Page:** 2
19. **Paragraph:** 3
20. **Line:** 4
21. **NSN:** 5
22. **Reference:** 6
23. **Figure:** 7
24. **Table:** 8
25. **Item:** 9
26. **Total:** 123
27. **Text:**
This is the text for the problem below line 27.

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS For use of this form, see AR 25-30; the proponent agency is ODISC4.					Use Part II (reverse) for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).	DATE 21 October 2003
TO: (Forward to proponent of publication or form) (Include ZIP Code) US ARMY TACOM LIFE CYCLE MANAGEMENT COMMAND ATTN: AMSTA-LC-SECT 15 KANSAS ST NATICK, MA 01760-5052					FROM: (Activity and location) (Include ZIP Code) PFC JANE DOE Co A 3 RD Engineer Br. Ft Leonard Wood, MO 63108	
PART I - ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS						
PUBLICATION/FORM NUMBER TM 10-1670-296-23&P				DATE 30 October 2002	TITLE Unit Manual for Ancillary Equipment for Low Velocity Air Drop Systems	
ITEM NO.	PAGE NO.	PARA-GRAPH	LINE NO. *	FIGURE NO.	TABLE NO.	RECOMMENDED CHANGES AND REASON (Provide exact wording of recommended changes, if possible).
	0036 00-2				1	<p>In Table 1, Sewing Machine Code Symbols, the second sewing machine code symbol should be MDZZ not MD22</p> <p>Change the manual to show Sewing Machine, Industrial: Zig-Zag; 308 stitch; medium-duty; NSN 3530-01-181-1421 as a MDZZ code symbol.</p>
<i>*Reference to line numbers within the paragraph or subparagraph.</i>						
TYPED NAME, GRADE OR TITLE Jane Doe, PFC				TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION (508) 233-4141 DSN 256-4141		SIGNATURE Jane Doe <i>Jane Doe</i>

DA FORM 2028, FEB 74

REPLACES DA FORM 2028, 1 DEC 68, WHICH WILL BE USED.

USAPPC V3.00

TO: (Forward direct to addressee listed in publication) US ARMY TACOM LIFE CYCLE MANAGEMENT COMMAND ATTN: AMSTA-LC-SECT 15 KANSAS ST NATICK, MA 01760-5052				FROM: (Activity and location) (Include ZIP Code) PFC JANE DOE Co A 3 RD Engineer Br. Ft Leonard Wood, MO 63108			DATE 21 October 2003	
PART II – REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS								
PUBLICATION NUMBER TM 10-1670-296-23&P				DATE 30 October 2002		TITLE Unit Manual for Ancillary Equipment for Low Velocity Air Drop Systems		
PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION
0066 00-					4			<i>Callout 16 in figure 4 is pointed to a <u>D-Ring</u>. In the Repair Part List key for Figure 4, item 16 is called a <u>Snap Hook</u>. Please correct one or the other.</i>
PART III – REMARKS (Any general remarks or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)								
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PUBLICATION/FORM NUMBER TM 10-8470-204-10					DATE 17 May 2010	TITLE Operator's Manual for Advanced Combat Helmet (ACH)	
ITEM NO.	PAGE NO.	PARA-GRAPH	LINE NO. *	FIGURE NO.	TABLE NO.	RECOMMENDED CHANGES AND REASON (Provide exact wording of recommended changes, if possible).	
<i>*Reference to line numbers within the paragraph or subparagraph.</i>							
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By Order of the Secretary of the Army:

GEORGE W. CASEY, JR.
General, United States Army
Chief of Staff

Official:



Administrative Assistant to the
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1013701

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