

**ARMY TM 10-8470-211-10  
MARINE CORPS TM 12030A**

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**TECHNICAL MANUAL  
OPERATOR MANUAL  
FOR**

**ENHANCED COMBAT HELMET-ARMY (ECH-A)**

NSN: 8470-01-591-4449, SMALL  
NSN: 8470-01-591-4453, MEDIUM  
NSN: 8470-01-591-4458, LARGE  
NSN: 8470-01-591-4444, X-LARGE  
NSN: 8470-01-591-4471, X-X-LARGE

**ENHANCED COMBAT HELMET-MARINE CORPS (ECH-M)**

NSN: 8470-01-592-7348, X-SMALL  
NSN: 8470-01-592-6226, SMALL  
NSN: 8470-01-592-6215, MEDIUM  
NSN: 8470-01-592-6208, LARGE  
NSN: 8470-01-592-6235, X-LARGE  
NSN: 8470-01-592-6200, X-X-LARGE

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**HEADQUARTERS, DEPARTMENT OF THE ARMY**

**1 AUGUST 2015**

**PCN 184 120300 00**



## 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

Failure to observe the following warnings may result in serious injury or death to personnel.

#### WARNING

(A): 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) may be removed from the standard configuration.

#### WARNING

(MC): Always utilize the seven-pad configuration.

#### 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.

#### WARNING

The hardware for all helmets, where the chinstrap 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.

#### 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 Evaluate and Adjust Helmet Fit guidelines.

#### 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 chinstrap retention system.

#### WARNING

If you do not don and adjust the helmet properly as described in WP 0005 through 0008, the helmet may become tilted on your head and the chin cup may become uncentered.

#### WARNING

The hardware (nuts) inside the helmet must be covered by padding at all times.

**WARNING**

Always wear the helmet with the retention system properly fastened and adjusted. Failure to secure the retention system will decrease helmet stability.

**WARNING**

Replace the helmet if dents, cuts, delaminations, or ply separation exists. Failure to do so may result in reduced head protection.

**WARNING**

Replace the helmet if edge beading is missing or loose. Missing or loose edge beading may expose rough helmet edges.

**WARNING**

Replace the chinstrap retention assembly if the webbing is torn or frayed, if the buckles are broken or damaged, or if the hook and pile fasteners do not secure. Replace missing hardware and tighten loose hardware.

**WARNING**

Replace missing or damaged suspension pads or pads that are cut or excessively worn. Failure to do so will result in a helmet that may not protect the wearer. Replace pads after 6 months of regular use.

**WARNING**

Use only the hardware screws and nuts described in this manual.

**WARNING**

Ensure that the screws do not protrude through the nuts when installed.



# LIST OF EFFECTIVE PAGES

**NOTE:** Zero in "Change No." column indicates an original page or work package.

Date of issue for the original manual is:

Original 1 August 2015

**TOTAL NUMBER OF PAGES FOR FRONT AND REAR MATTER IS 20 AND TOTAL NUMBER OF WORK PACKAGES IS 38, CONSISTING OF THE FOLLOWING:**

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TECHNICAL MANUAL

OPERATOR MANUAL  
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NSN: 8470-01-592-6200, X-X-LARGE

**REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS**

You can help improve this publication. If you find any errors, or if you would like to recommend any improvements to the procedures in this publication, please let us know. Reports, as applicable by the requiring service, should be submitted as follows:

(A) Army The preferred method is to submit your DA Form 2028 (Recommended Changes to Publications and Blank Forms) through the Internet on the TACOM Unique Logistics Support Applications (TULSA) Web site. The Internet address is <https://tulsa.tacom.army.mil>. Access to all applications requires CAC authentication, and you must complete the Access Request form the first time you use it. The DA Form 2028 is located under the TULSA Applications on the left-hand navigation bar. Fill out the form and click on SUBMIT. Using this form on the TULSA Web site will enable us to respond more quickly to your comments and to better manage the DA Form 2028 program. You may also mail, e-mail, or fax your comments or DA Form 2028 directly to the U.S. Army TACOM Life Cycle Management Command. The postal mail address is U.S. Army TACOM Life Cycle Management Command, ATTN: AMSTA-LCL-MPP/ TECH PUBS, MS-727, 6501 E. 11 Mile Road, Warren, MI 48397-5000. The e-mail address is [tacomlcmc.daform2028@us.army.mil](mailto:tacomlcmc.daform2028@us.army.mil). The fax number is DSN 786-1856 or Commercial (586) 282-1856. A reply will be furnished to you.

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b. The <https://portal.logcom.usmc.mil/sites/pubs/default.aspx> URL will allow access to the Albany Publications web site (CAC required) where the form can be filled out and be submitted to the NAVMC web master.

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# HOW TO USE THIS MANUAL

## HOW TO OBTAIN TECHNICAL MANUALS

When a new system is introduced to the Army and Marine 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) or the Marine Publishing Directorate (MPD).

### 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 Enhanced Combat Helmet–Army (ECH-A) and the Enhanced Combat Helmet–Marine Corps (ECH-M). 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 as possible.

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 ECH-A and ECH-M.

**Chapter 4 – Preventive Maintenance Procedures.** Provides preventive maintenance instructions.

**Chapter 5 – Maintenance Instructions.** Contains instructions on hardware replacement, pad suspension replacement, cleaning, and PMCS.

**Chapter 6 –Supporting Information.** Contains reference information, Components of End Items (COEI)/Basic Issue Items (BI) Lists, Additional Authorization Lists, Expendable and Durable Items List, and Support Items List.

## **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 your helmet familiarize yourself with the assembly and fitting instructions and the operating instructions. Perform maintenance procedures on a regular basis. Always follow the WARNINGS and CAUTIONS.





**CHAPTER 1**  
**GENERAL INFORMATION, EQUIPMENT DESCRIPTION AND DATA**  
**AND THEORY OF OPERATION**  
**FOR**  
**ENHANCED COMBAT HELMET-ARMY (ECH-A)**  
**ENHANCED COMBAT HELMET-MARINE CORPS (ECH-M)**



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**OPERATOR  
GENERAL INFORMATION**

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**SCOPE**

This manual covers the basic fitting and use instructions for the Enhanced Combat Helmet–Army (ECH-A) and the Enhanced Combat Helmet–Marine Corps (ECH-M).

**MAINTENANCE FORMS, RECORDS, AND REPORTS**

(A) Department of the Army forms and procedures used for equipment maintenance will be those prescribed by (as applicable) DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual; DA PAM 738-751, Functional Users Manual for the Army Maintenance Management Systems - Aviation (TAMMS-A); or AR 700-138, Army Logistics Readiness and Sustainability.

(MC) Maintenance forms and records used by Marine Corps personnel are prescribed by TM 4700-15/1.

**REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)**

If your ECH-A or ECH-M needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you do not like about your equipment. Let us know why you do not like the design or performance.

All non-Aviation/Missile EIRs and PQDRs must be submitted through the Product Data Reporting and Evaluation Program (PDREP) Web site. The Web PQDR Web site is: <https://www.pdrep.csd.disa.mil/>.

For Marine Corps users: Quality deficiency reports (QDR) shall be submitted on SF 368 in accordance with MCO 4855.10. A reply will be furnished to you.

If you do not have internet access, you may submit your information using an SF 368 (Product Quality Deficiency Report). You can send your SF 368 using email, regular mail, or fax using the addresses/fax numbers specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual. We will send you a reply.

**CORROSION PREVENTION AND CONTROL (CPC)**

Corrosion Prevention and Control (CPC) of Army and Marine 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 ECH-A or ECH-M.

**PREPARATION FOR STORAGE OR SHIPMENT**

To prepare the ECH-A or ECH-M 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                          |
|-------------|--|
| Chinstrap   | Retention System, Chinstrap Retention Assembly |
| Pads        | Suspension System                              |

**LIST OF ABBREVIATIONS/ACRONYMS**

| Definition  | Abbreviation/Acronym |
|---|----------------------|
| Additional Authorization List                       | AAL                  |
| Army  | (A)                  |
| Army Regulation                                     | AR                   |
| Basic Issue Item                                    | BII                  |
| Bottle  | BT                   |
| Central Issue Facility                              | CIF                  |
| Chemical, Biological, Radiological and Nuclear      | CBRN                 |
| Commercial and Government Entity Code               | CAGEC                |
| Common Table of Allowances                          | CTA                  |
| Components of End Item                              | COEI                 |
| Corrosion Prevention Control                        | CPC                  |
| Department of the Army                              | DA                   |
| Department of the Army Pamphlet                     | DA PAM               |
| Each  | EA                   |
| Enhanced Combat Helmet-Army                         | ECH-A                |
| Enhanced Combat Helmet-Marine Corps                 | ECH-M                |
| Equipment Improvement Report                        | EIR                  |
| Field Manual  | FM                   |
| In Accordance With                                  | IAW                  |
| Joint Table of Allowances                           | JTA                  |
| (Modified) Table of Organization and Equipment      | (M)TOE               |
| Nape Protection Pad                                 | NAPP                 |
| National Stock Number                               | NSN                  |
| Night Observation Device*                           | NOD                  |
| Night Vision Device*                                | NVD                  |
| Night Vision Goggles*                               | NVG                  |
| Number  | No.                  |
| Operation Enduring Freedom (OEF) Camouflage Pattern | OCP                  |
| Package   | PG                   |
| Personnel Armor System for Ground Troops            | PASGT                |
| Preventive Maintenance Checks and Services          | PMCS                 |
| Product Quality Deficiency Report(ing)              | PQDR                 |
| Quantity  | QTY                  |
| Standard Operating Procedure                        | SOP                  |
| Tables of Distribution and Allowances               | TDA                  |
| TACOM Unique Logistics Support Application          | TULSA                |
| The Army Maintenance Management System (-Aviation)  | TAMMS (-A)           |
| Ultra-High Molecular Weight Polyethylene            | UHMWPE               |
| Ultraviolet   | UV                   |
| Unit of Issue                                       | U/I                  |
| Universal Camouflage Pattern                        | UCP                  |

\*The three acronyms, NVD, NVG, and NOD, refer to the mounting bracket assembly component, and these acronyms may be used interchangeably.

**END OF WORK PACKAGE**

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**OPERATOR  
EQUIPMENT DESCRIPTION AND DATA**

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**EQUIPMENT CHARACTERISTICS, CAPABILITIES AND FEATURES**

This work package provides equipment descriptions and data for the Enhanced Combat Helmet–Army (ECH-A) and the Enhanced Combat Helmet–Marine Corps (ECH-M).

These helmet systems provide ballistic and impact protection within the full spectrum of operational environments. These systems are compatible with the current night vision devices (NVDs), communications packages, and Chemical, Biological, Radiological and Nuclear (CBRN) defense equipment and body armor.

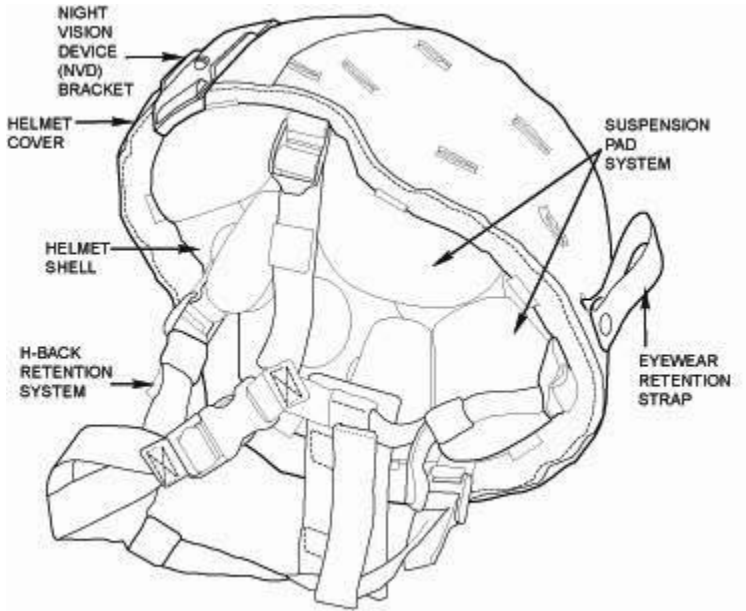
The ECH-A and ECH-M are designed to allow maximum sensory and situational awareness for the operator. The shell cut provides an unobstructed field of view and increased ambient hearing capabilities.

Each helmet system consists of a shell, a suspension system (pads), a retention system (chinstrap), and will include other accessories such as helmet cover and night vision goggle (NVG) mounting bracket. Additionally, optional ballistic nape pad and eyewear retention straps are available. The optional ballistic nape pad is available for increased stability and protection against fragments from ground-level threats.

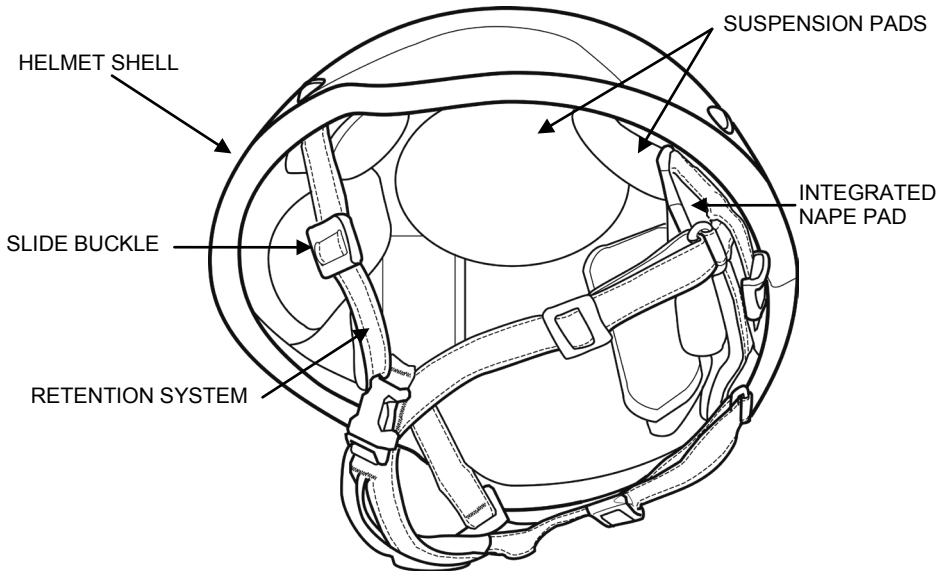
The retention systems and pad suspension system provide unsurpassed balance, stability and comfort as well as impact protection throughout all operational scenarios, including static-line airborne operations.

**LOCATION AND DESCRIPTION OF MAJOR COMPONENTS**

This section provides illustrations and descriptions of the helmets. Figure 1 shows the universal H-back chinstrap retention system used on the ECH-A. Figure 2 illustrates the ECH-A with an improved H-nape chinstrap retention system. Figure 3 shows the X-back retention system used on the ECH-M.



**Figure 1. ECH-A with Universal H-Back Chinstrap Retention System.**



**Figure 2. ECH-A with Improved H-Nape Chinstrap Retention System.**

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – CONTINUED

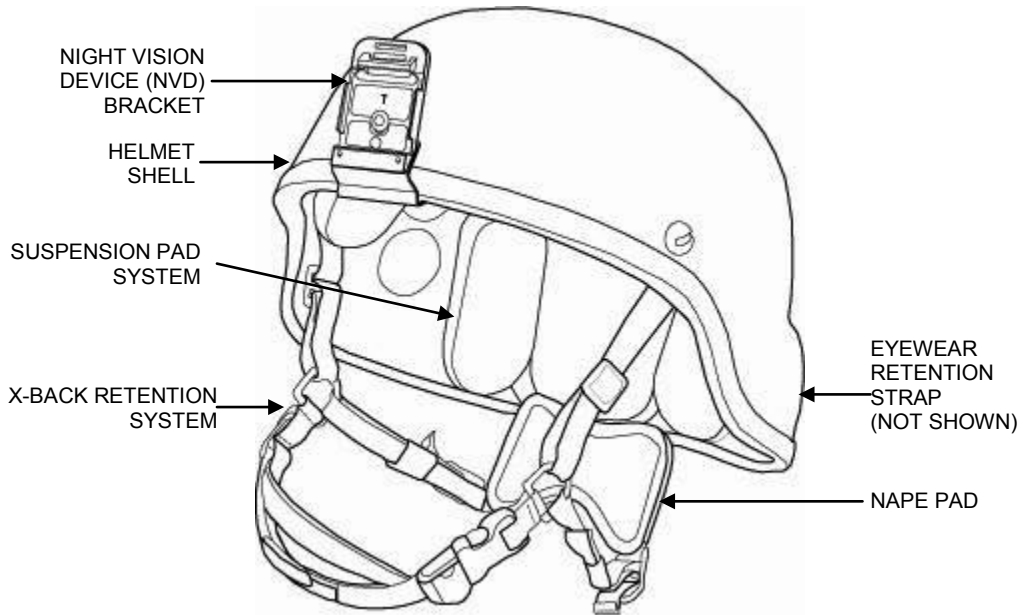


Figure 3. Major Components of X-Back Chinstrap Retention System (ECH-M).

Helmet Shell

The helmet shell includes interior hook disks on which to attach the suspension pads (shown in Figure 4). The shell also includes a hole for the Night Vision Device (NVD) Bracket and four holes to connect the chinstrap retention system and eyewear retention straps. There are currently five shell sizes for the ECH-A: small, medium, large, extra-large and extra-extra large. The ECH-M has an additional size: extra-small.

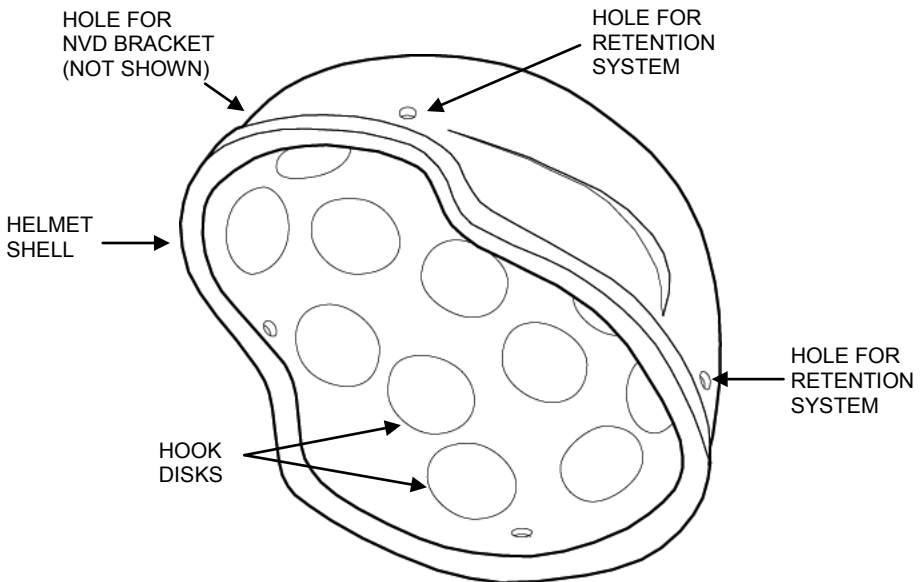
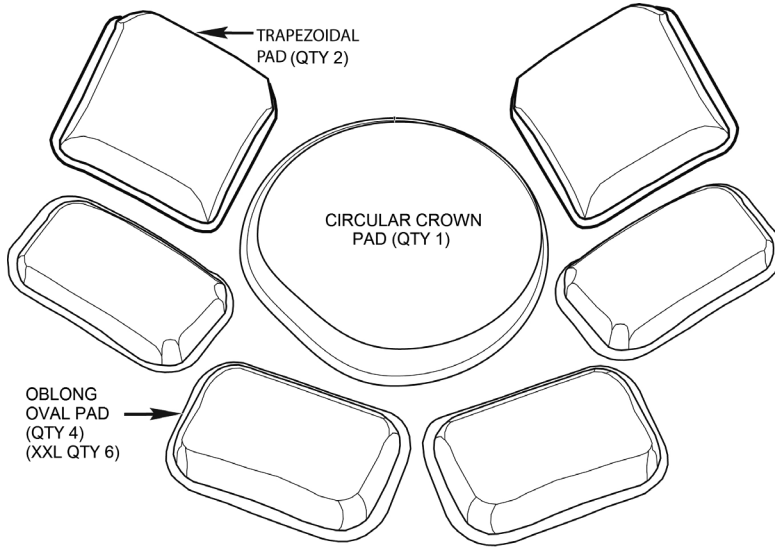


Figure 4. Helmet Shell Major Components (All Models).

## LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – CONTINUED

### Suspension Pad System

The suspension pads (Figure 5) provide impact protection and sizing adjustment ability. The pads have a loop material on one side that attaches to hook disks on the inside of the helmet shell (shown in Figure 4). The pad is labeled with identifying information (NSN, product information, etc.) on the loop material side. Pad size ¾-inch (formerly known as size 6) is the standard size. Pad size 1-inch (formerly known as size 8) may be substituted. Up to six 1-inch pads may be used in the S-XL helmets, and up to eight 1-inch pads may be used in the XXL helmets.



**Figure 5. Suspension Pad System Components (All Models).**

### Retention Systems

**H-Back Chinstrap Retention System (ECH-A).** This retention system is called “H-back” because, when viewed from the rear, it forms an “H.” The H-back chinstrap retention system employs a four-point chinstrap and consists of the components illustrated in Figure 6. In conjunction with the suspension pad system, the chinstrap retention system provides stability.

The H-back chinstrap retention system is 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 used to adjust helmet fit at the connection points. The fit is also adjustable side-to-side and along the legs of the chinstrap at the retention nape pad.

**Improved H-Nape Chinstrap Retention System (ECH-A).** The Improved H-Nape chinstrap retention system also employs a four-point chinstrap shaped like an “H,” as shown in Figure 7. However, the Improved H-Nape Chinstrap Retention System has sewn-in attachment tabs that connect directly to the helmet shell. Similarly, the nape pad is also sewn permanently into the retention system webbing. The one-piece design of this retention system improves stability.

Slide buckles along the webbing are used to adjust helmet fit. The fit is also adjustable side-to-side along the nape pad.



LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – CONTINUED

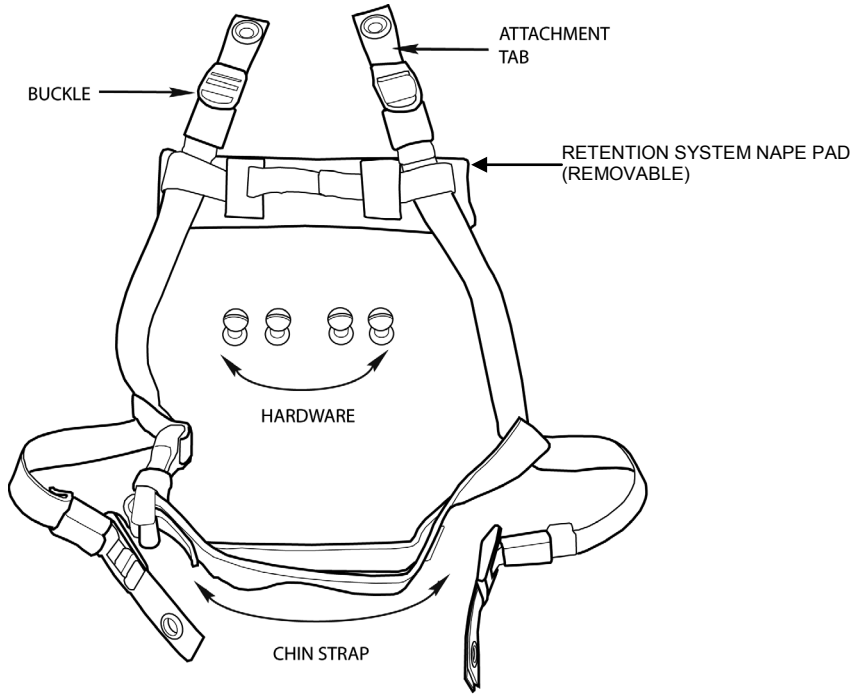


Figure 6. Universal H-Back Chinstrap Retention System Major Components.

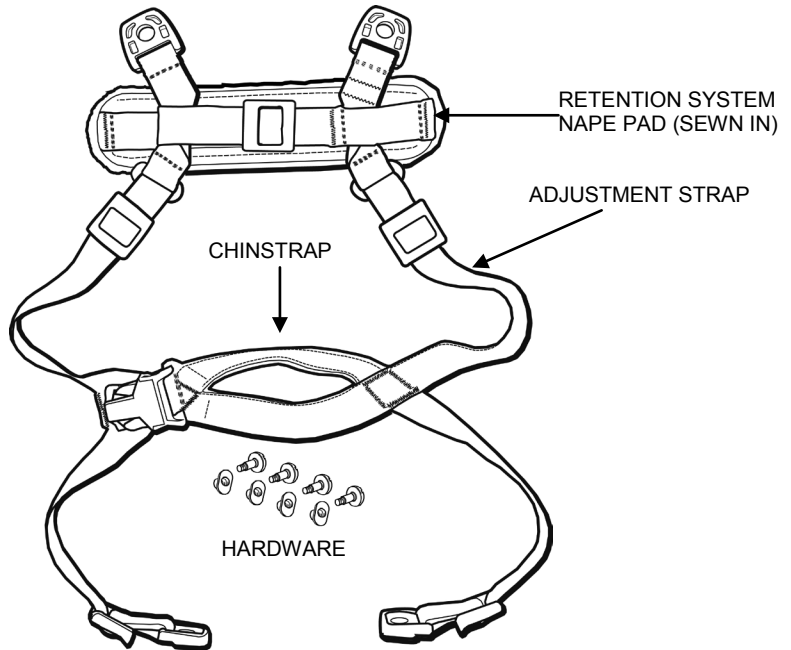
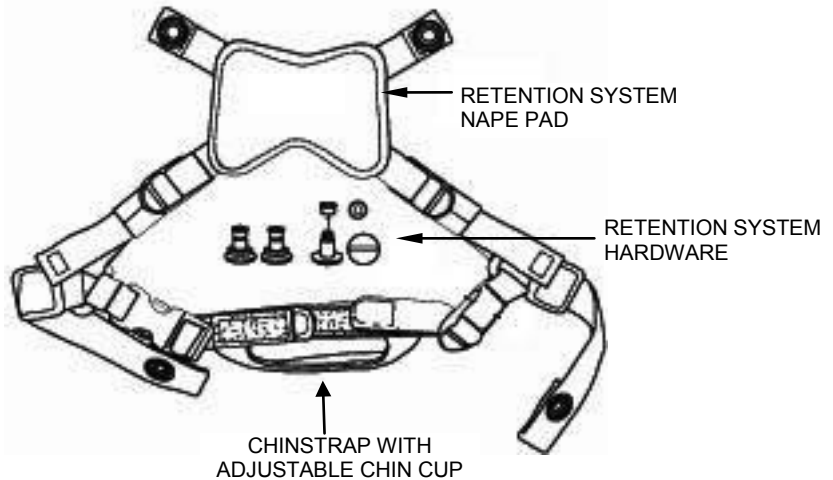


Figure 7. Improved H-Nape Chinstrap Retention Systems Major Components.

## LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – CONTINUED

**X-Back Chinstrap Retention System (ECH-M).** The X- back chinstrap retention system (shown in Figure 8) uses a four-point design, but when viewed from the rear, it forms an "X." The X- back chinstrap retention system attaches directly to the shell using a screw and nut and does not use attachments at the shell.

Adjustments for fit can be made along the two front retention straps and along the two side adjustment straps. The chinstrap is adjustable at the center section of the chinstrap, where the chin cup is located. The rear nape pad is not adjustable.

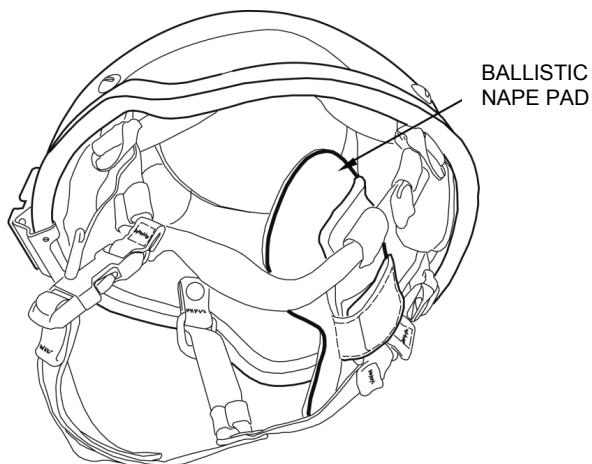


**Figure 8. X-Back Chinstrap Retention System Major Components (ECH-M).**

### Ballistic Nape Pad

The optional ballistic 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 chinstrap retention system as shown in Figures 9 -13.

**Nape Pad on Universal H-Back Retention Systems (ECH-A).** When the ballistic nape pad is used on the H-back chinstrap retention system, it replaces the retention system nape pad.



**Figure 9. Ballistic Nape Pad Location on Universal H-Back Retention System.**

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – CONTINUED

**Nape Pad on Improved H-Nape Retention Systems (ECH-A).** The retention system nape pad and the ballistic nape pad are used together on the Improved H-Nape Retention System to provide extra stability for the helmet.

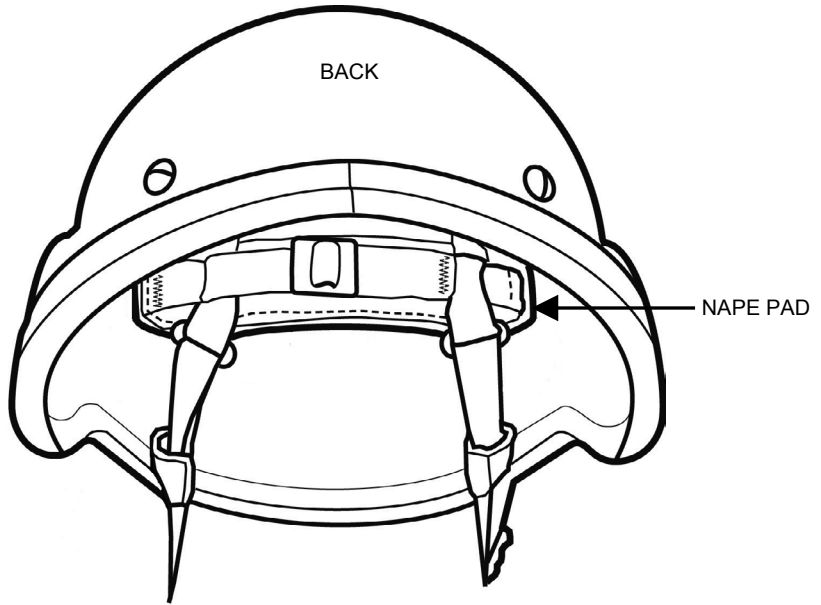


Figure 10. Nape Pad on Improved H-Nape Retention System.

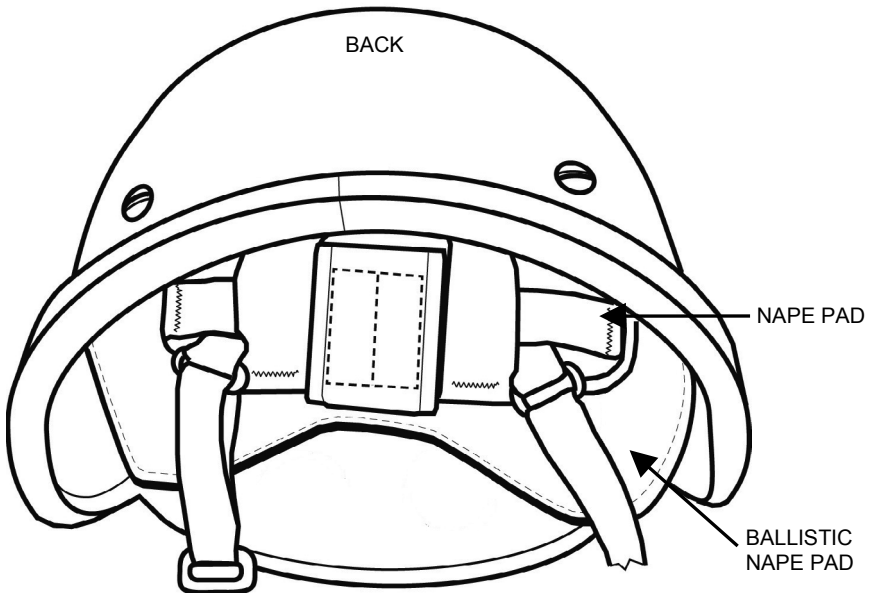
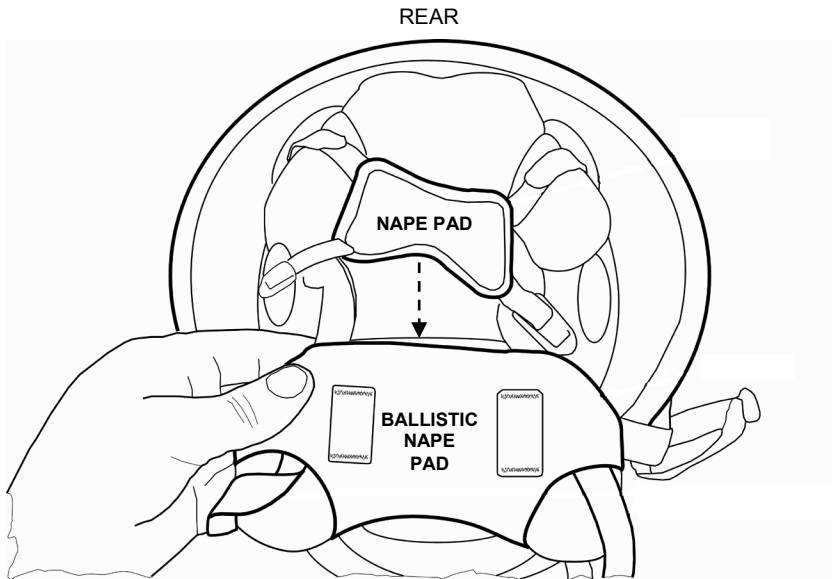


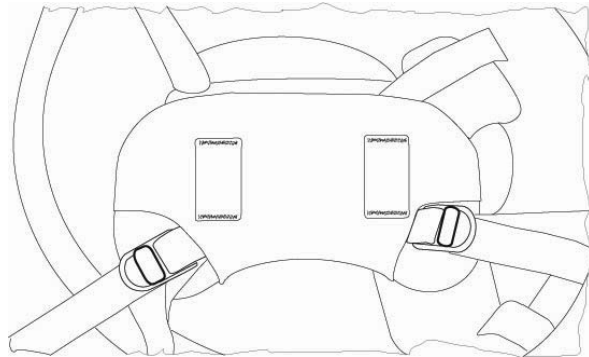
Figure 11. Nape Pad Inserted into Ballistic Nape Pad on Improved H-Nape Retention System.

**LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – CONTINUED**

**Nape Pad on X Back Retention System (ECH-M).** The nape pad on the X-Back Retention System is designed to be inserted into the ballistic nape pad, providing extra stability for the helmet.



**Figure 12. Ballistic Nape Pad Location on X-Back Retention System.**

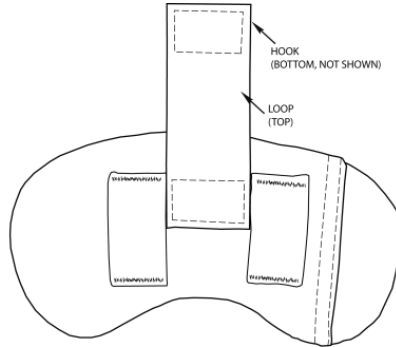


**Figure 13. Ballistic Nape Pad Installed Over Nape Pad on X-Back Retention System.**

**LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – CONTINUED**

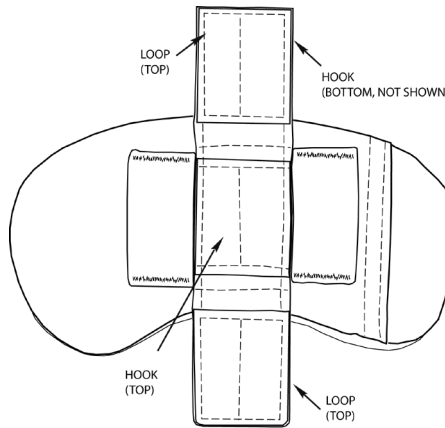
**Ballistic Nape Pad Versions.** There are currently three versions of the ballistic nape pad: the H-back ballistic nape pad, the X-back ballistic nape pad, and the universal H-back ballistic nape pad. The hook and loop tabs differ slightly as indicated in Figures 14 through 16.

The H-back model (Figure 14) of the ballistic nape pad fits ECH-A helmets with the H-back chinstrap retention system.



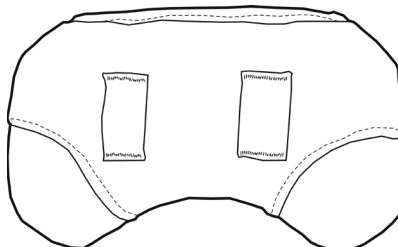
**Figure 14. Ballistic Nape Pad for the H-Back Chinstrap Retention System (ECH-A).**

The Universal model (Figure 15) of the ballistic nape pad fits all ECH-A helmets with the H-back chinstrap retention system and the improved H-Nape retention system.



**Figure 15. Ballistic Nape Pad for Universal H-Back and Improved H-Nape Retention Systems (ECH-A).**

The ballistic nape pad for ECH-M helmets with the X- back chinstrap retention system is shown in Figure 16.



**Figure 16. Ballistic Nape Pad for the X-Back Chinstrap Retention System (ECH-M).**

**LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – CONTINUED**

The ballistic nape pad is available in two sizes—small/medium/large and extra-large/extra-extra-large. The ballistic nape pad is available in three configurations—one to fit the legacy H-back chinstrap retention system, one to fit the X-back chinstrap retention system, and a third to fit both the Universal H-back and the X-back chinstrap retention systems as listed in Table 1.

**NOTE**

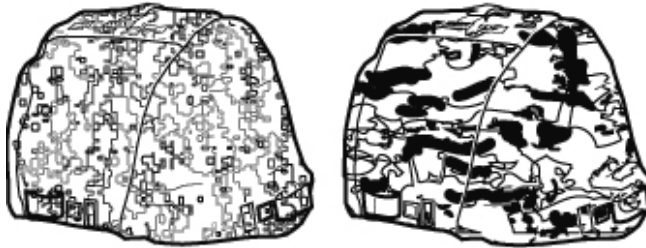
The size of the nape pad is independent of the helmet size. Use appropriate pad and adjust as needed.

**Table 1. Ballistic Nape Pads.**

| Ballistic Nape Pad NSNs | Nape Pad Size                  | Fits Chinstrap Configuration              | Pattern    |
|-------------------------|--------------------------------|---|------------|
| 8470-01-552-4607        | Small/Medium/Large             | H (legacy)                                | Camouflage |
| 8470-01-552-4610        | Extra-Large/Extra- Extra-Large | H (legacy)                                | Camouflage |
| 8470-01-552-4599        | Small/Medium/Large             | X (legacy)                                | Camouflage |
| 8470-01-552-4602        | Extra-Large/Extra- Extra-Large | X (legacy)                                | Camouflage |
| 8470-01-568-1028        | Small/Medium/Large             | Improved H-Nape, Universal H-Back, X-Back | Camouflage |
| 8470-01-568-1023        | Extra-Large/Extra- Extra-Large | Improved H-Nape, Universal H-Back, X-Back | Camouflage |
| 8470-01-584-1750        | Small/Medium/Large             | Improved H-Nape, Universal H-Back, X-Back | OCP        |
| 8470-01-584-1839        | Extra-Large/Extra- Extra-Large | Improved H-Nape, Universal H-Back, X-Back | OCP        |

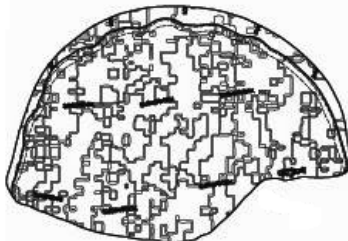
**Helmet Cover**

There are two helmet covers available for the ECH-A: a non-reversible universal camouflage pattern (UCP) and a non-reversible Operation Enduring Freedom camouflage pattern (OCP) cover.



**Figure 17. UCP and OCP Non-Reversible Helmet Covers.**

There are two covers available for the ECH-M: a reversible woodland/desert marpat helmet cover (Figure 18) and a snow marpat cover (not shown).



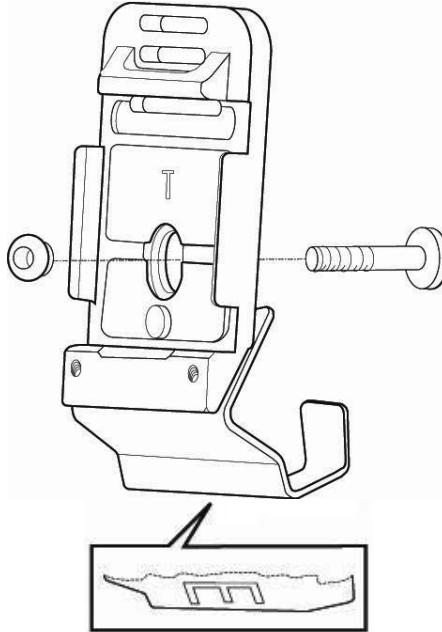
**Figure 18. ECH-M Reversible Helmet Cover.**

**LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – CONTINUED****Night Vision Device (NVD) Bracket****NOTE**

The mounting bracket for the ECH has an “E” cut out at the base of the mounting assembly.

The NVD bracket is not directly a major component of the helmets. However, it is required to be worn with the helmet by Soldiers and Marines 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.

Note that the slotted screw inserts from inside the helmet to the outside of the bracket. The self-locking nut seats on the outside of the bracket. This hardware attaches the bracket to the ECH (Figure 20).



**Figure 20. ECH NVD Bracket Assembly.**

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## DIFFERENCES BETWEEN MODELS

### Retention Systems

#### WARNING (ALL MODELS)

Although the shells may look virtually the same to the user, it is very important to distinguish between the various manufacturers and types of shells. The mounting hardware (screws) of the retention system must be the approved hardware for the specific helmet shell manufacturer to ensure ballistic integrity. Failure to use the appropriate mounting hardware, helmet, and retention system combination may result in reduced ballistic protection.

When replacing the chinstrap retention assembly, replace the mounting hardware (screws) as well. Hardware is not interchangeable. Failure to use the hardware associated with the specific retention system may result in injury or death.

**ECH-A Retention Systems.** For sustainment/ replacement, the Army has approved two retention systems to work with the ECH-A: the universal H-back retention system (including hardware) and the improved H-Nape retention system (including hardware). When SERVICING the helmet, be sure to retain and reinstall the original hardware for that retention system.

**ECH-M Retention System.** The ECH-M uses an X-back retention system. The X-back retention system is the same in all ECH-M models, but the hardware (screws) differ by size. Refer to WP 0032 for ECH-M parts information.

### Night Vision Device (NVD) Bracket

#### WARNING (ALL MODELS)

Verify that you have the correct hardware for the bracket model installed on the helmet. Failure to observe this warning may result in serious injury or death to personnel.

The NVD bracket for the ECH is distinguished from brackets for other helmets by the "E" stamped into the base of the mounting bracket assembly. On this bracket, a slotted screw inserts from the inside to the outside of the helmet and is secured by a rounded nut.

***Note that the hardware screws for the NVD brackets are not interchangeable either between helmets within the same Service or between helmets of other Services. Additionally, the hardware screws for the ECH-A NVG brackets differ in length depending on helmet size.*** Refer to WP 0033 for ECH-A parts information.



**EQUIPMENT DATA**

Tables 2 and 3 provide information pertaining to the mechanical data for the ECH-A and ECH-M.

**Table 2. Mechanical Data for the ECH-A (Maximum Values for All Models by Size).**

| Helmet Shell Size | Length* (inches) | Width* (inches) | Height* (inches) | Weight** (ounces) |
|-------------------|------------------|-----------------|------------------|-------------------|
| Small             | 10.125           | 9.5             | 6.5              | 45                |
| Medium            | 10.25            | 9.75            | 6.6              | 48                |
| Large             | 10.75            | 10.125          | 6.75             | 51                |
| X-Large           | 11.5             | 10.5            | 7.125            | 57                |
| X-X-Large         | N/A              | N/A             | N/A              | 64                |

**Table 3. Mechanical Data for the ECH-M (Maximum Values for All Models by Size).**

| Helmet Shell Size | Length* (inches) | Width* (inches) | Height* (inches) | Weight** (ounces) |
|-------------------|------------------|-----------------|------------------|-------------------|
| X-Small           | N/A              | N/A             | N/A              | 40                |
| Small             | 10.125           | 9.5             | 6.5              | 45                |
| Medium            | 10.25            | 9.75            | 6.6              | 48                |
| Large             | 10.75            | 10.125          | 6.75             | 51                |
| X-Large           | 11.5             | 10.5            | 7.125            | 57                |
| X-X-Large         | N/A              | N/A             | N/A              | 64                |

**Tables 2 and 3:**

\*Dimensions (Length, Width, and Height) are overall exterior dimensions of the shell only.

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

**END OF WORK PACKAGE**



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**OPERATOR  
THEORY OF OPERATION**

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The helmets are designed to provide the Soldier/Marine with ballistic and impact protection. They are 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 chinstrap retention system is a four-point design, attaching to the shell at four locations. In conjunction with the pad suspension system, the chinstrap retention system provides improved stability.

**END OF WORK PACKAGE**



**CHAPTER 2**  
**OPERATOR INSTRUCTIONS**  
**FOR**  
**ENHANCED COMBAT HELMET-ARMY (ECH-A)**  
**ENHANCED COMBAT HELMET-MARINE CORPS (ECH-M)**



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**OPERATOR MAINTENANCE**  
**OPERATION UNDER USUAL CONDITIONS – CONFIGURE AND ADJUST SUSPENSION PADS**

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**INITIAL SETUP:****Tools and Special Tools**

None Required

**References**

WP 0007  
 WP 0008  
 WP 0031  
 WP 0032  
 WP 0033  
 WP 0034

**Materials/Parts**

None Required

**INTRODUCTION**

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

**WARNING**

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

For training and combat missions, Soldiers are to utilize the 7-pad or 9-pad (extra-extra large) configurations only. The oblong/oval pads must be placed flush with the rim (edge) of the helmet and completely cover the hardware (Figure 5). Failure to observe this warning may result in serious injury or death to personnel.

Place the rear trapezoidal pad flush with the rim (edge) of the helmet (unless ballistic nape is installed) 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 observe this warning may result in serious injury or death to personnel.

Never remove the crown pad. Failure to observe this warning may result in serious injury or death to personnel.

The hardware (nut) inside the helmet, where the retention system attachment tabs attach to the helmet (in four places), must be covered by pads. 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.

Use only pads with authorized NSNs found in this manual. See the Additional Authorization Items List for Army in WP 0033 (Army) and WP 0034 (Marines). Failure to observe this warning may result in serious injury or death to personnel.

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 injury.

## STANDARD PAD CONFIGURATIONS

### WARNING

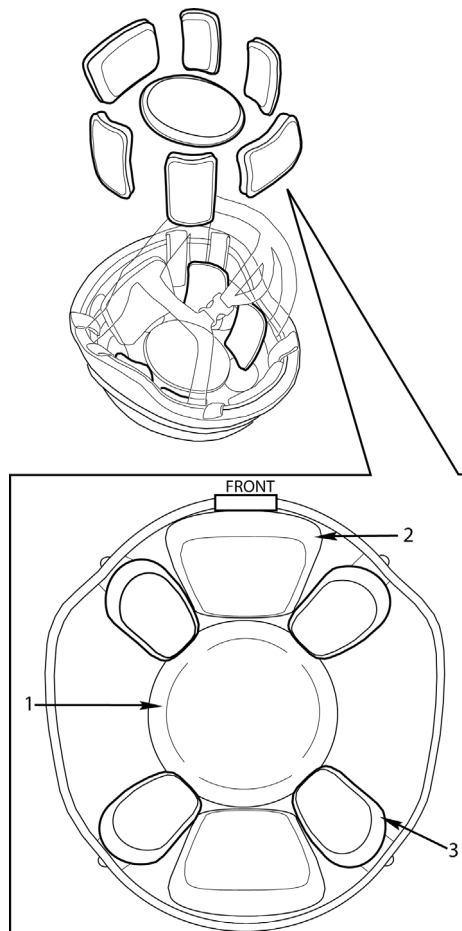
All helmet pads must be worn for training and combat missions, and for high-risk operations such as airborne operations, air assault, and rappelling/ mountaineering. Helmet pads should cover internal hardware at all times; this is mandatory when wearing the helmet in high-risk operating environments.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

### NOTE

**(MC):** Always utilize the standard pad configuration.

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

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.



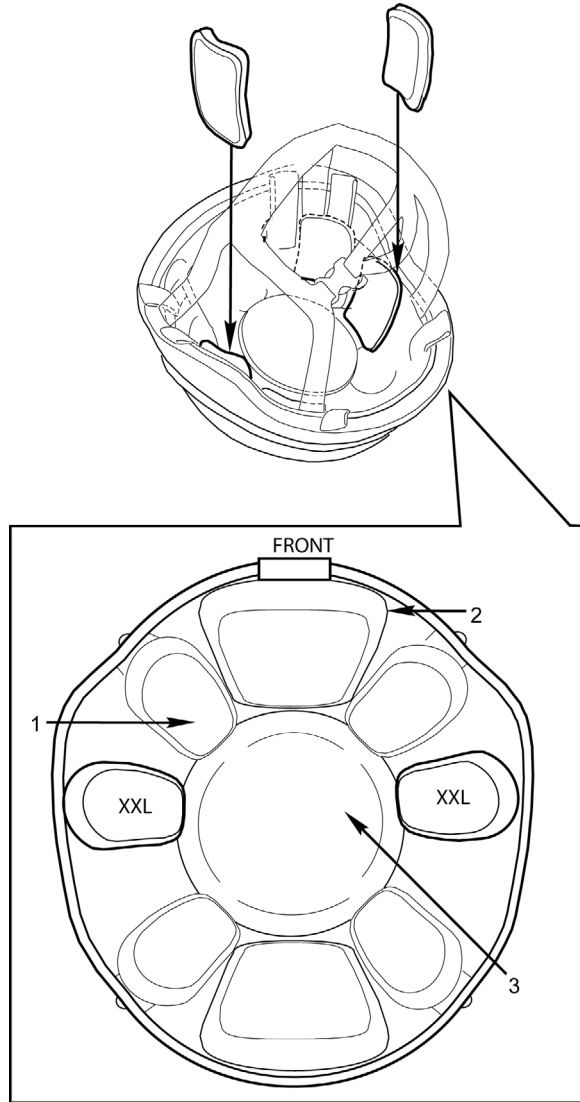
### LEGEND

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

**Figure 1. Standard Pad Configuration: Small, Medium, Large, X-Large (and X-Small, ECH-M Only).**



STANDARD PAD CONFIGURATIONS – CONTINUED



**LEGEND**

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

**Figure 2. Standard Pad Configuration: XX-Large.**

**ATTACH/ADJUST SUSPENSION PADS****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.

**NOTE**

Up to two pads (oblong/oval or trapezoidal) can be removed from the standard configuration (Figures 1 and 2) in non-risk situations (that is, 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 Figure 4) or a combination or at an angle between horizontal and vertical (diagonal).

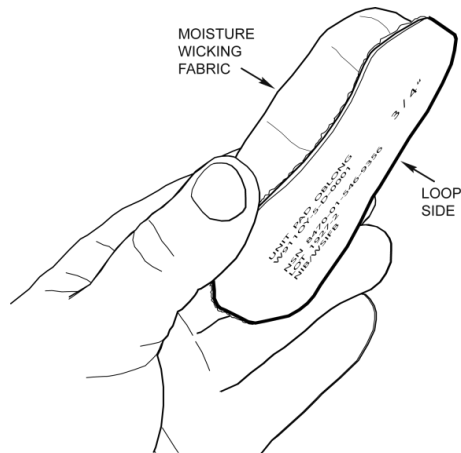
Pads should be placed towards the inside edge of the helmet but may be adjusted to provide optimum comfort and stability.

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 chinstrap retention system if necessary.

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. Refer to WP 0031 and WP 0032 for NSN information.

If you experience fit problems, tightness or looseness, or helmet profile is too high or too low, refer to Evaluate and Adjust Helmet Fit in WP 0007 (Army) and WP 0008 (Marines).

1. Attach the loop side of each helmet pad (Figure 3) to the hook disks on the inside of the helmet shell.



**Figure 3. Loop Side of Pad.**

2. Place pads in either the vertical or horizontal configuration (Figure 4) or at any angle in between, ensuring all hardware is covered and the oblong/oval pad is flush with the rim (Figure 5). The vertical configuration maximizes airflow for better temperature regulation. The horizontal configuration makes a seal around the user's head and is better suited for cold weather environments.

ATTACH/ADJUST SUSPENSION PADS – CONTINUED

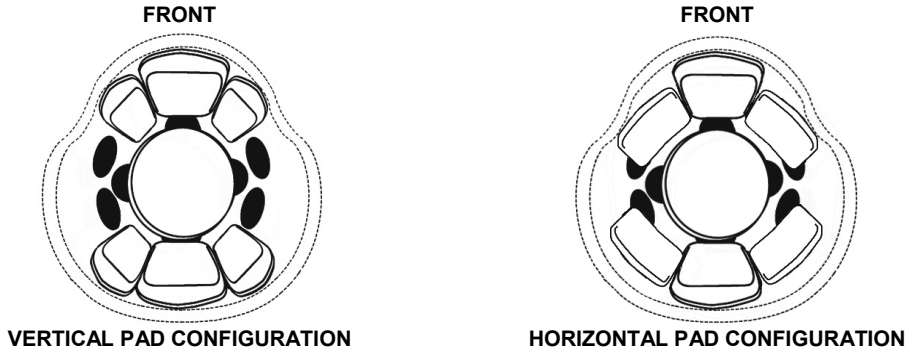
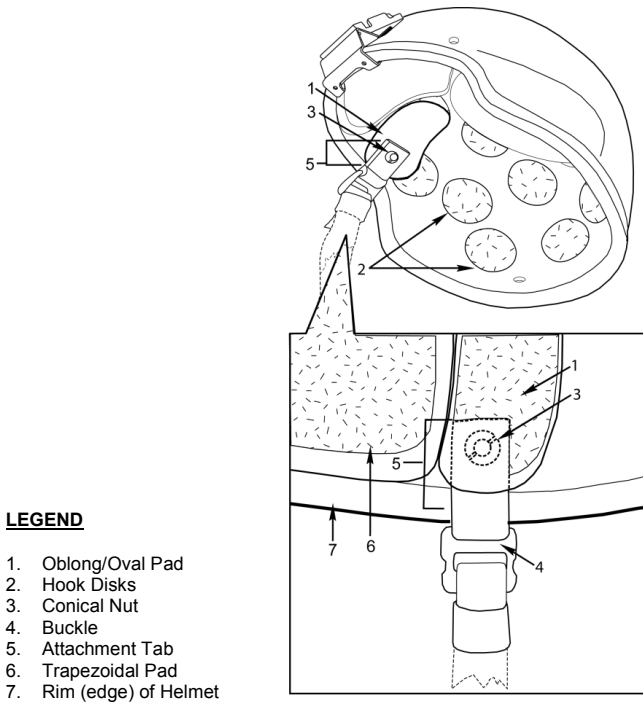


Figure 4. Vertical and Horizontal Pad Placement.

- 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, as shown in Figure 3.

NOTE

Figure 5 shows how the pads must be placed in order to correctly cover the hardware. The illustration applies regardless of which helmet or hardware is worn.



LEGEND

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

Figure 5. Pad Placement over Hardware.

END OF TASK

END OF WORK PACKAGE



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**OPERATOR MAINTENANCE**  
**OPERATION UNDER USUAL CONDITIONS – DON AND DOFF THE HELMET (ARMY ONLY)**  
**ENHANCED COMBAT HELMET – ARMY (ECH-A)**

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**INITIAL SETUP:****Tools and Special Tools**

None Required

**References**

WP 0004

WP 0007

**Materials/Parts**

None Required

**GENERAL**

This work package provides instructions for donning and doffing helmets with a Universal H-back retention system or an Improved H-Nape retention system, including adjusting the chinstrap to optimize fit and comfort.

**WARNING**

The hardware (nut) inside the helmet, where the retention system attachment tabs attach to the helmet (in four places), must be covered by pads. The oblong/oval pad must be placed flush with the rim (edge) of the helmet and completely cover the hardware. Failure to observe this precaution could result in serious injury or death.

Never remove the crown pad. Failure to observe this precaution could result in serious injury or death.

All seven pads provide maximum impact protection. Using fewer than the standard number of pads for training or combat is not authorized. The standard number of pads is seven pads for sizes S-XL, nine pads for size XXL. Alternate pad configurations may be used for non-training and non-combat missions.

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.

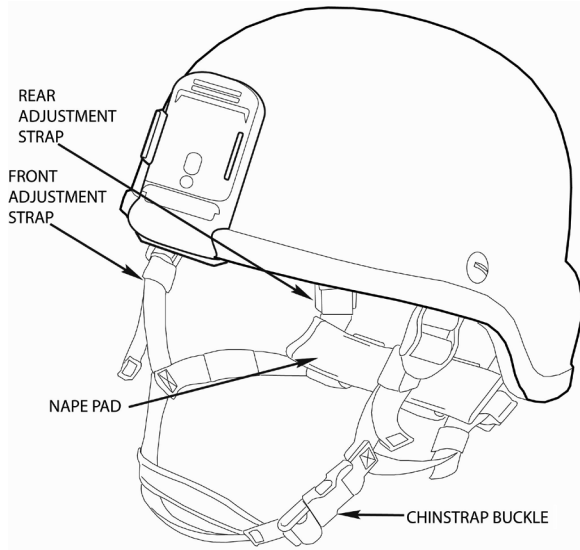
**NOTE**

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 chinstrap retention system. Failure to observe this warning may cause improper fit.

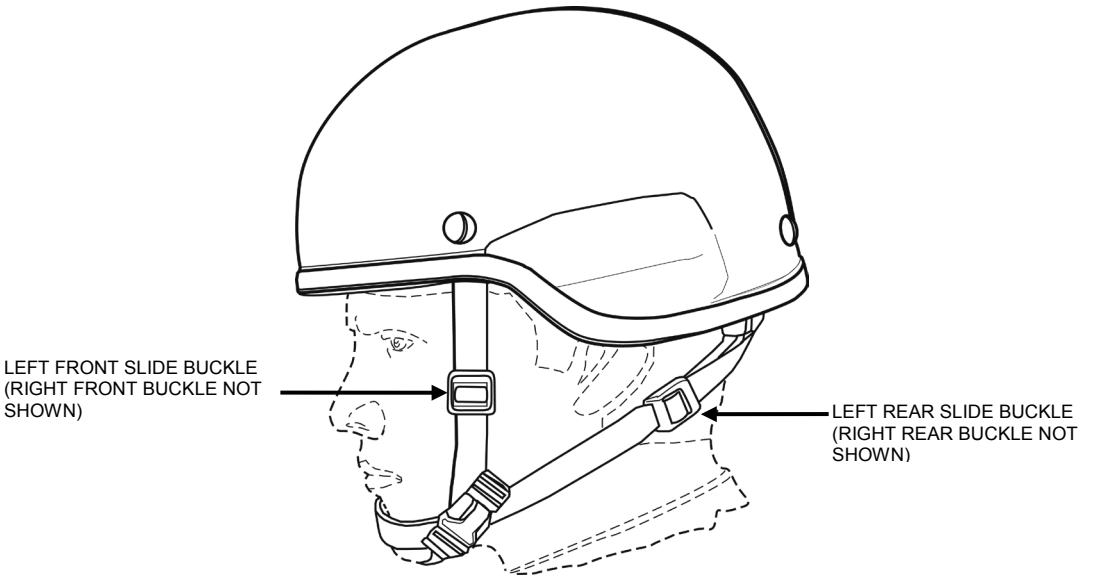
**DON (PUT ON) HELMET**

1. Prior to donning helmet, unbuckle chinstrap and loosen all adjustment straps shown in Figure 1.
2. Check the quantity and placement of suspension pads for proper configuration in accordance with (IAW) WP 0004.

**DON (PUT ON) HELMET — CONTINUED**



**Figure 1. Helmet Adjustment Locations on Universal H-Back Retention Systems.**



**Figure 2. Helmet Adjustment Locations on Improved H-Nape Retention System.**

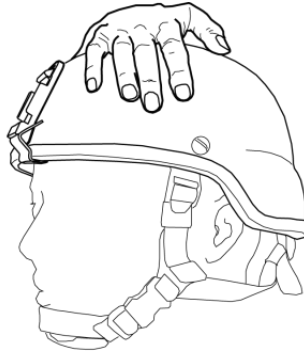
**NOTE**

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

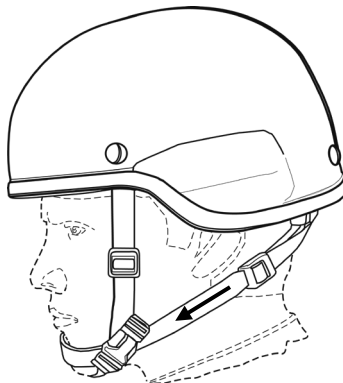
3. Don the helmet.
4. Buckle the chinstrap.

**DON (PUT ON) HELMET — CONTINUED**

5. Hold helmet in place, with one hand on top of helmet while adjusting helmet chinstrap with the other hand as shown in Figure 3.

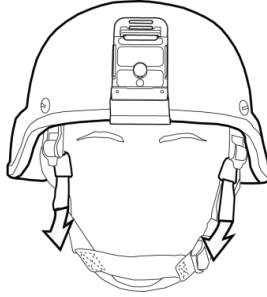
**Figure 3. Hand on Top of Helmet.**

6. For helmets with Universal H-Back retention systems, partially tighten the two rear adjustment straps by pulling them down one side at a time (Figure 4). For helmets with the Improved H-Nape retention system, partially tighten the two rear retention straps by sliding the buckles from the back toward the front, one side at a time (Figure 5).

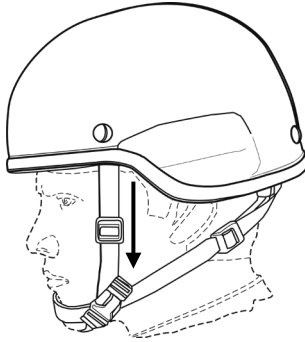
**Figure 4. Tighten Rear Adjustment Straps (Universal H-Back Retention Systems).****Figure 5. Tighten Rear Adjustment Straps (Improved H-Nape Retention Systems).**

**DON (PUT ON) HELMET — CONTINUED**

7. For helmets with Universal H-Back retention systems, partially tighten the two front adjustment straps (Figure 6) one side at a time. For helmets with the Improved H-Nape retention system, partially tighten the two front retention straps (Figure 7) one side at a time.



**Figure 6. Tighten Front Adjustment Straps (Universal H-Back Retention Systems).**



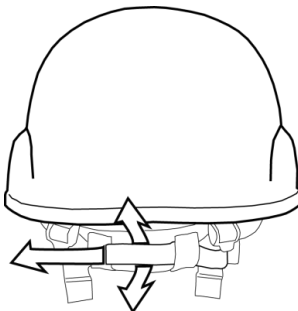
**Figure 7. Tighten Front Adjustment Straps (Improved H-Nape Retention Systems).**

8. Hold helmet in place, and fully tighten front and rear of the retention system.

**NOTE**

When adjusting the chinstraps on helmets with universal H-back retention systems, keep the nape pad away from the ladder locks (buckles) to prevent jamming.

9. Adjust the nape pad as follows:
- a. For helmets with a universal H-back retention system, slide nape pad (Figure 8) up and down along the rear legs of the chinstrap as necessary.

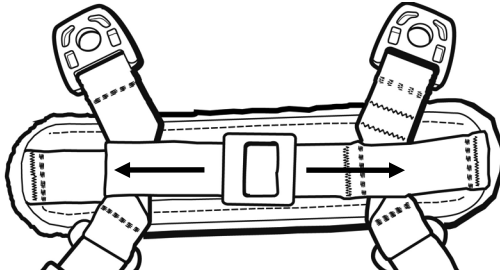


**Figure 8. Tighten/Adjust Nape Pad (Universal H-Back Retention Systems).**



**DON (PUT ON) HELMET — CONTINUED**

- b. For helmets with an improved H-nape retention system, slide the buckle on the nape pad from side to side (Figure 9).



**Figure 9. Tighten/Adjust Nape Pad (Improved H-Nape Retention Systems).**

10. Position the chinstrap according to personal comfort.
11. 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.
12. Repeat steps 2 through 11 until helmet is stable.
13. Evaluate the fit of the helmet IAW WP 0007.

**END OF TASK****DOFF (REMOVE) OR LOOSEN HELMET**

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

**END OF TASK****END OF WORK PACKAGE**



**OPERATOR MAINTENANCE**  
**OPERATION UNDER USUAL CONDITIONS—DON AND DOFF THE HELMET (MARINE CORPS ONLY)**  
**ENHANCED COMBAT HELMET—MARINE CORPS (ECH-M)**

**INITIAL SETUP:****Tools and Special Tools**

None Required

**References**

WP 0004

WP 0008

**Materials/Parts**

None Required

**GENERAL**

This work package provides instructions for donning and doffing a helmet with an X-back retention system, including adjusting the chinstrap to optimize fit and comfort.

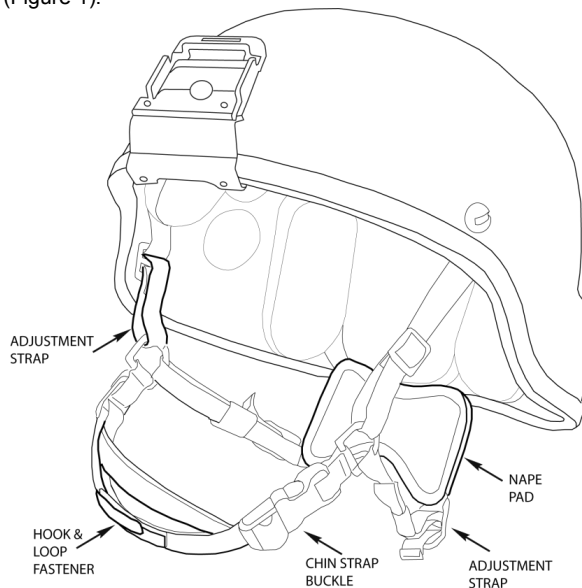
**WARNING**

The hardware (nut) inside the helmet, where the retention system webbing attaches to the helmet (in four places), must be covered by pads. The oblong/oval pad must be placed flush with the rim (edge) of the helmet and completely cover the hardware. Failure to observe this precaution could result in serious injury or death.

All seven pads provide maximum impact protection. Using fewer than the standard number of pads is not authorized. The standard number of pads is seven pads for sizes XS-XL, nine pads for size XXL. Never wear without the crown pad. Failure to observe this precaution could result in serious injury or death.

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 injury.

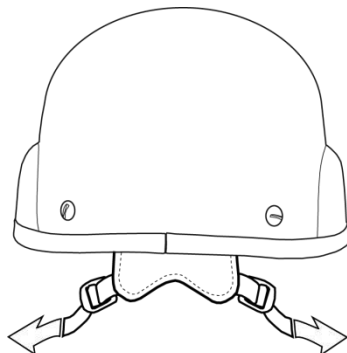
1. Ensure the suspension pads are arranged in the standard pad configuration IAW WP 0004. If other equipment is used with the helmet, such as headset, evaluate size with that equipment, if possible.
2. Don the helmet.
3. Ensure the buckle D-rings are below the earlobes. If the D-rings cover the earlobes, adjust IAW WP 0008.
4. Buckle the chinstrap (Figure 1).



**Figure 1. Helmet Adjustment Locations (X-Back Retention System).**

**DON (PUT ON) HELMET WITH THE X-BACK RETENTION SYSTEM—CONTINUED**

5. Adjust the nape strap for a snug, secure, comfortable fit at the nape (Figure 2). If you have trouble tightening the strap, remove the elastic loop.



**Figure 2. Tighten Nape Straps (X-Back Retention System).**

6. Tighten the chinstrap by pulling on the hook ends of the chinstrap until the fit is snug, secure, and comfortable.
7. Reattach the ends of the hook and loop fastener when the desired fit is attained.
8. 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. Adjust the nape strap further until the helmet is stable.
9. If the buckle D-rings cover the earlobes when the nape strap is adjusted, lower the front retention strap buckles until the buckle D-rings are below the earlobes IAW WP 0008.
10. Repeat steps 5 through 9 as necessary.
11. Recheck the helmet stability and evaluate fit IAW WP 0008.

**END OF TASK****DOFF (REMOVE) OR LOOSEN HELMET WITH X-BACK 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 chinstrap buckle inward. Once the buckle releases, remove the helmet.

**END OF TASK****END OF WORK PACKAGE**

---

**OPERATOR MAINTENANCE**  
**OPERATION UNDER USUAL CONDITIONS—EVALUATE AND ADJUST HELMET FIT (ARMY ONLY)**  
**ENHANCED COMBAT HELMET— ARMY (ECH-A)**

---

**INITIAL SETUP:****Tools and Special Tools**

Multi-tool (WP 0036, Item 1)

**Materials/Parts**

None Required

**References**

WP 0004

WP 0005

WP 0012

WP 0028

WP 0031

**WARNING**

The hardware (nut) inside the helmet, where the retention system attachment tabs attach to the helmet (in four places), must be covered by pads. The oblong/oval pad must be placed flush with the rim (edge) of the helmet and completely cover the hardware. Failure to observe this precaution could result in serious injury or death.

Never remove the crown pad. Failure to observe this precaution could result in serious injury or death.

All seven pads provide maximum impact protection. Using fewer than the standard number of pads for training or combat is not authorized. The standard number of pads is seven pads for sizes S-XL, nine pads for size XXL. Alternate pad configurations may be used for non-training and non-combat missions.

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 injury.

**NOTE**

The illustrations in this work package are generic and represent all ECH-A manufacturers' models.

When donning the helmet for the first time in a cold environment, it is necessary to wear the helmet for a few minutes or otherwise warm the pads, such as 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 re-tighten the chinstrap and the retention system.

If you experience hot spots or discomfort, try rearranging the pad system to accommodate a more comfortable fit. If discomfort persists, try substituting pairs of 1-inch oblong/oval pads or individual trapezoidal front and/or rear pads or try another helmet. To maintain stability, substitute the oblong/oval pads in pairs only.

**EVALUATE FIT**

1. Ensure the suspension pads are arranged in the standard pad configuration for the helmet size IAW WP 0004. If other equipment is to be used with the helmet, such as a headset, evaluate size with that equipment, if possible.
2. Don the helmet IAW WP 0005.

**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 (Figure 1).

While evaluating fit, be sure to have the chinstrap retention system tightened as described in WP 0005.

**EVALUATE FIT – CONTINUED**

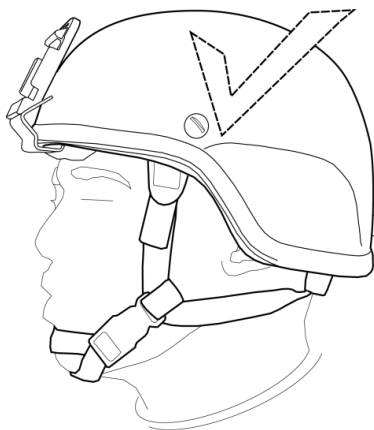
3. Evaluate the fit of the helmet as follows:

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

**NOTE**

A properly sized and fitted helmet 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.

- b. Evaluate the height of the helmet. Using your hands, determine the height of the helmet relative to the ear canal openings and the eyebrows. The front rim should be no more than  $\frac{1}{2}$  inch above the eyebrows. The bottom of the helmet should come to the top of the ear canal opening as shown in Figure 1.
- c. 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.



**Figure 1. Properly Fitted ECH-A.**

4. If adjustment is needed, proceed to the section "Adjust Fit" that follows.

**END OF TASK**

## ADJUST FIT

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

### Helmet is Too Tight

If the helmet is too tight, obtain a larger helmet.

### Helmet is Too Loose

#### NOTE

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

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 pad for wear, deterioration, and compressibility in accordance with WP 0012. If pad(s) does not return to original shape, replace in accordance with WP 0028.
2. Try on helmet.
3. If helmet is too loose, replace some or all of the  $\frac{3}{4}$ -inch oblong/oval pads (replace in pairs only) and trapezoidal pads (may be replaced individually) with 1-inch pads.
4. If the helmet is still too loose, obtain a smaller helmet.

### Helmet is Too High

1. Evaluate whether the crown pad touches the top of the head. If the crown pad does not contact the head as shown in Figure 2, the helmet is too high.
2. If the helmet is too high, check pad thickness. If pads are a size 8 (1-inch thick), try a size 6 (3/4-inch thick).

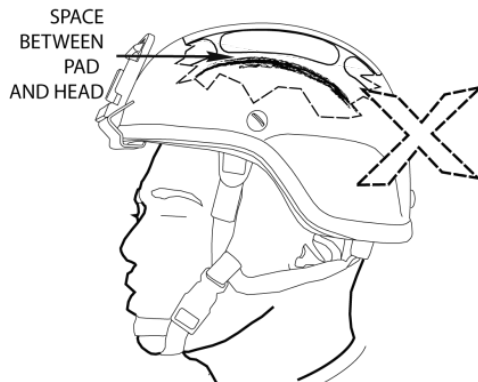
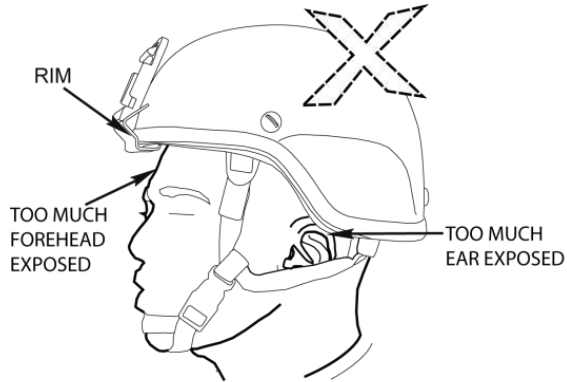


Figure 2. Helmet Too High — Crown Does Not Touch Head.

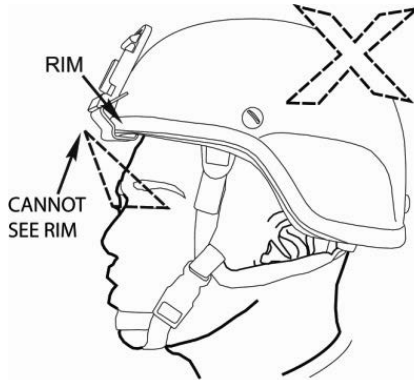
**ADJUST FIT – CONTINUED**

3. Evaluate if there is more than  $\frac{1}{2}$  inch of the forehead exposed or if too much or too little of the ear is exposed as shown in Figure 3.



**Figure 3. Helmet Too High — Too Much Exposure.**

4. Look upward by moving eyes, without moving head, and determine if the rim of the helmet is visible. If the Soldier does not see the rim as shown in Figure 4, the helmet is too high.



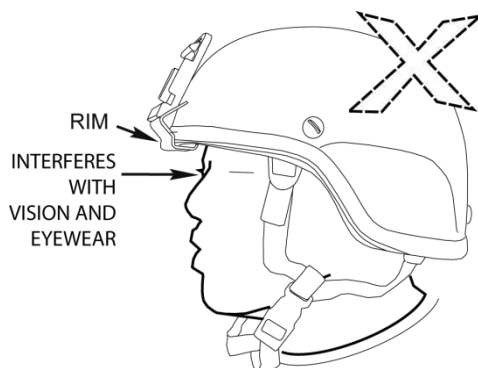
**Figure 4. Helmet Too High — User Cannot See Rim.**

5. If the helmet is too high, obtain the next larger shell size (WP 0031).



**ADJUST FIT – CONTINUED****Helmet is Too Low:**

1. Evaluate whether the helmet interferes with vision or is incompatible with eyewear as shown in Figure 5.



**Figure 5. Helmet Too Low — Interferes with Vision.**

2. Try substituting 1-inch pads for the  $\frac{3}{4}$ -inch pads if the helmet is too low or not compatible with eyewear.
  - a. The oblong/oval pads must be replaced in pairs, only, to maintain stability. Up to six 1-inch pads may be used in the S-XL helmets, and up to eight 1-inch pads may be used in the XXL helmets.
  - b. The trapezoidal front and/or rear pad may be replaced individually.
3. Try on helmet.
4. If helmet is still too low, obtain the next smaller shell size (WP 0031).

**Inspect Fit of the ECH-A**

Two quick visual evaluations can be made to check for proper fit:

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

**END OF TASK**

**END OF WORK PACKAGE**



**OPERATOR MAINTENANCE**  
**OPERATION UNDER USUAL CONDITIONS—EVALUATE AND ADJUST HELMET FIT (MARINE CORPS ONLY)**  
**ENHANCED COMBAT HELMET—MARINE CORPS (ECH-M)**

**INITIAL SETUP:****Tools and Special Tools**

Screwdriver (WP 0036, Item 2)

**References**

WP 0004

WP 0032

**Materials/Parts**

None Required

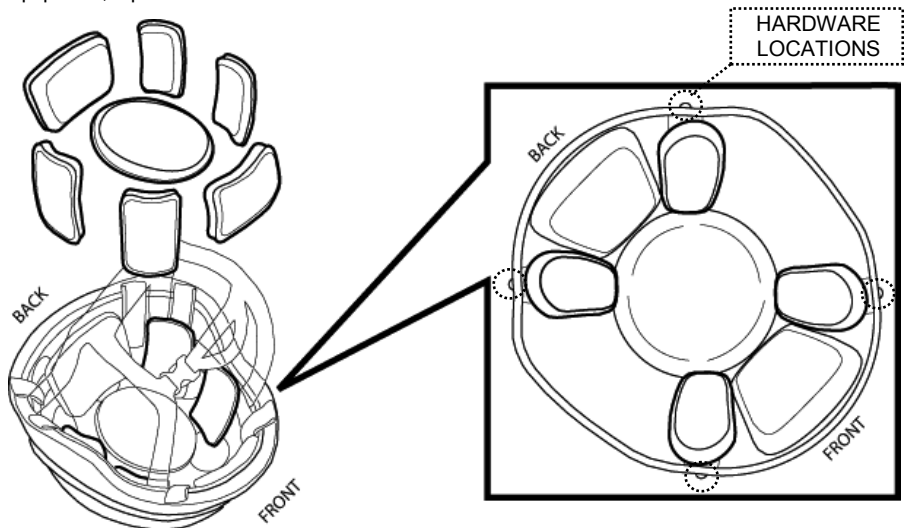
**EVALUATE AND ADJUST****WARNING**

The hardware (nut) inside the helmet, where the retention system webbing attaches to the helmet (in four places), must be covered by pads. The oblong/oval pad must be placed flush with the rim (edge) of the helmet and completely cover the hardware. Failure to observe this precaution could result in serious injury or death.

All seven pads provide maximum impact protection. Using fewer than the standard number of pads is not authorized. The standard number of pads is seven pads for sizes XS-XL, nine pads for size XXL. Never wear without the crown pad. Failure to observe this precaution could result in serious injury or death.

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 injury.

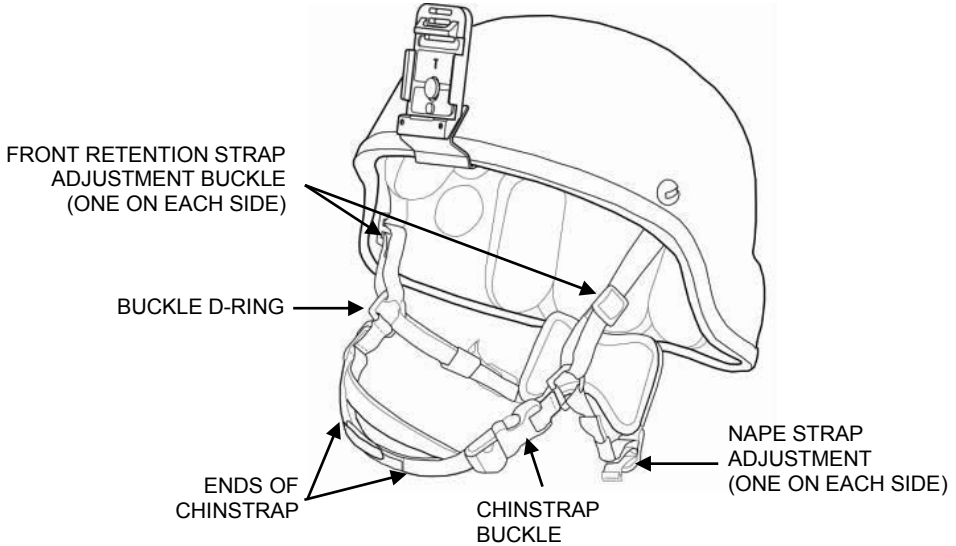
1. Ensure the suspension pads are arranged in the standard pad configuration (Figure 1) IAW WP 0004. If other equipment is to be used with the helmet, such as a headset, evaluate size with that equipment, if possible.



**Figure 1. Suspension Pad Standard Placement.**

**EVALUATE AND ADJUST — CONTINUED**

2. Adjust the retention system.
  - a. Don the helmet.

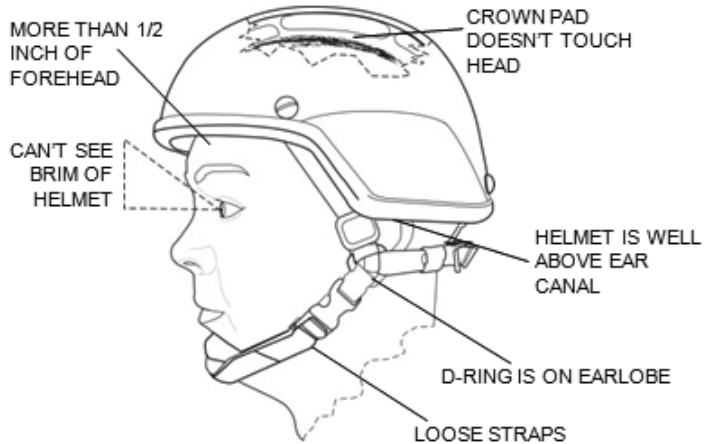


**Figure 2. Helmet Retention System Adjustment.**

- b. Ensure the buckle D-rings are below the earlobes. If the D-rings cover the earlobes, lower the front retention strap buckles until the D-rings are below the earlobes.
- c. Buckle the chinstrap.
- d. Adjust the nape strap for a snug, secure, comfortable fit at the nape.
- e. Tighten the chinstrap by pulling on the hook ends of the chinstrap until the fit is snug, secure, and comfortable. Reattach the ends of the hook and loop fastener when the desired fit is attained.
- f. 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. Adjust the nape strap further until the helmet is stable.
- g. If the buckle D-ring covers the earlobes when the nape strap is adjusted, lower the front retention strap buckles until the buckle D-ring is below the earlobes. Repeat steps d through g as necessary.
- h. Recheck the helmet stability. Straps should be snug.

**EVALUATE AND ADJUST — CONTINUED**

3. If the helmet is:
- a. Too high (Figure 3), (crown pad does not contact head; more than a ½ inch of forehead is exposed; wearer does not see the rim).
    - Check pad thickness. If pads are a size 8 (1-inch thick), try a size 6 (¾-inch thick).
    - Obtain a larger helmet.

**Figure 3. Helmet Too High.**

- b. Too tight.
  - Obtain a larger helmet.
- c. Too low (too low on brow or not compatible with eyewear, etc.).
  - Check pad thickness. If pads are a size 6 (¾-inch thick), try a size 8 (1-inch thick).
  - Obtain a smaller helmet.
- d. Too loose.
  - Obtain a smaller helmet.

**NOTE**

If the helmet shell and pads seem to be the right size, but the retention system is too large or small, you may be able to obtain a larger or smaller retention system (WP 0032).

4. Shake head rapidly from side to side to check for stability. The helmet should not rotate from side to side when head is shaken.
5. Refer to Figure 4 for a properly fitted helmet.

## EVALUATE AND ADJUST — CONTINUED

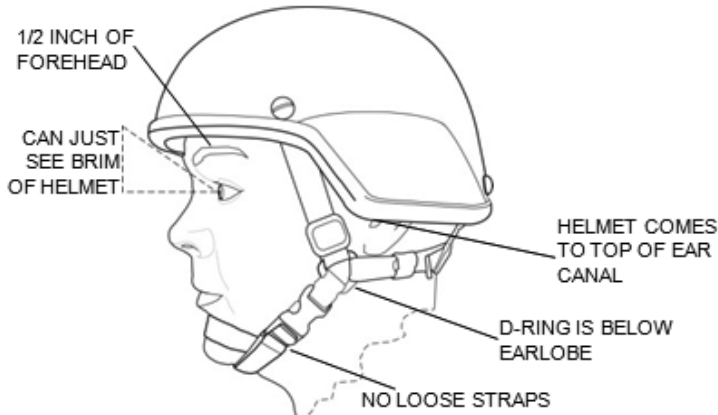


Figure 4. Properly Fitted Helmet.

6. Adjust pad configuration. For maximum stability, place pads as close as possible to the edge of the helmet.

**WARNING**

The hardware (nut) inside the helmet, where the retention system webbing attaches to the helmet (in four places), must be covered by pads. The oblong/oval pad must be placed flush with the rim (edge) of the helmet and completely cover the hardware. Failure to observe this precaution could result in serious injury or death.

All seven pads provide maximum impact protection. Using fewer than the standard number of pads is not authorized. The standard number of pads is seven pads for sizes XS-XL, nine pads for size XXL. Never remove the crown pad. Failure to observe this precaution could result in serious injury or death.

**NOTE**

When donning the helmet for the first time in a cold environment, it is necessary to wear the helmet for a few minutes or otherwise warm the pads, such as 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 re-tighten the chinstrap and the retention system.

If you experience hot spots or discomfort, try rearranging the pad system to accommodate a more comfortable fit. If discomfort persists, try another helmet size.

- a. Place pads in either the vertical or horizontal configuration (Figure 5) or at any angle in between, ensuring all hardware is covered and the oblong/oval pad is flush with the rim.

**EVALUATE AND ADJUST — CONTINUED**

- b. The vertical configuration maximizes airflow for better temperature regulation. The horizontal configuration makes a seal around the user's head and is better suited for cold weather environments.

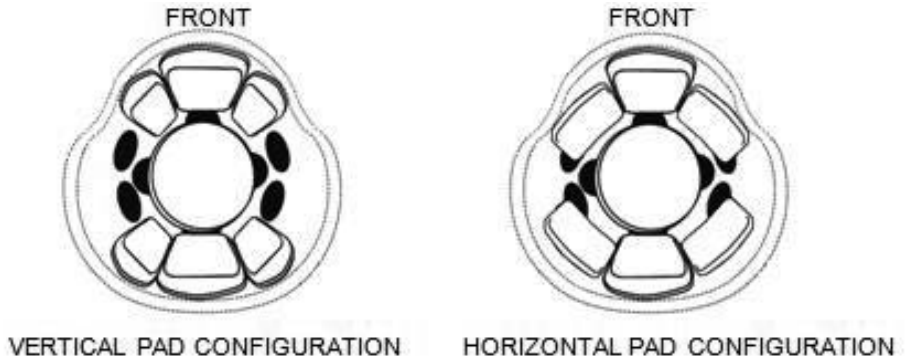


Figure 5. Vertical and Horizontal Pad Placement.

**END OF TASK**

**END OF WORK PACKAGE**





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**OPERATOR**  
**OPERATION UNDER UNUSUAL CONDITIONS**

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**INITIAL SETUP:**

**Tools and Special Tools**  
None Required

**References**  
None

**Materials/Parts**  
None Required

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**OPERATING PROCEDURES**

There are no additional procedures for operation under unusual conditions.



**CHAPTER 3**  
**TROUBLESHOOTING**  
**FOR**  
**ENHANCED COMBAT HELMET-ARMY (ECH-A)**  
**ENHANCED COMBAT HELMET-MARINE CORPS (ECH-M)**



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**OPERATOR TROUBLESHOOTING  
TROUBLESHOOTING PROCEDURES**

---

**INITIAL SETUP:****Tools and Special Tools**

None Required

**Materials/Parts**

None Required

**References**

WP 0015

WP 0016

WP 0019

WP 0020

WP 0024

WP 0025

WP 0028

WP 0029

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This work package lists troubleshooting tasks and corrective actions for each component of the ECH-A and ECH-M.

**TROUBLESHOOTING PROCEDURES****SYMPTOM**

Unable to fasten chinstrap retention assembly.

**MALFUNCTION**

Chinstrap buckle is dirty.

**CORRECTIVE ACTION**

Clean as described in WP 0015 (ECH-A) and WP 0016 (ECH-M).

**MALFUNCTION**

Chinstrap buckle is broken.

**CORRECTIVE ACTION**

ECH-A: Replace entire retention system as described in WP 0024.

ECH-M: Replace entire retention system as described in WP 0025.

**SYMPTOM**

Unable to attain or maintain helmet stability.

**MALFUNCTION**

Chinstrap webbing is torn and/or frayed.

**CORRECTIVE ACTION**

ECH-A: Replace entire retention system as described in WP 0024.

ECH-M: Replace entire retention system as described in WP 0025.

**MALFUNCTION**

Pad suspension system is worn.

**CORRECTIVE ACTION**

Replace pad suspension system as described in WP 0028.

**TROUBLESHOOTING PROCEDURES – CONTINUED****SYMPTOM**

Pads will not stay secure in shell.

**MALFUNCTION**

Damaged pads.

**CORRECTIVE ACTION**

Replace pads as described in WP 0028.

**MALFUNCTION**

Dirty pads.

**CORRECTIVE ACTION**

Clean pads as described in WP 0015 (ECH-A) and WP 0016 (ECH-M).

**MALFUNCTION**

Dirty hook disks.

**CORRECTIVE ACTION**

Clean helmet shell as described in WP 0015 (ECH-A) and WP 0016 (ECH-M).

**MALFUNCTION**

Damaged hook disks.

**CORRECTIVE ACTION**

Turn into CIF (Army) or Individual Issue Facility (Marine Corps).

**SYMPTOM**

Night Vision Goggles (NVG) bracket is unstable.

**MALFUNCTION**

Night Vision Goggles (NVG) bracket is loose.

**CORRECTIVE ACTION**

ECH-A: Tighten NVG screw.

ECH-M: Tighten NVG screw. If condition persists, replace NVG hardware as described in WP 0029 (ECH-M).

**MALFUNCTION**

Night Vision Goggles (NVG) bracket is broken.

**CORRECTIVE ACTION**

Remove and install NVG bracket as described in WP 0019 (ECH-A) and WP 0020 (ECH-M).

**END OF TASK**

**END OF WORK PACKAGE**

**CHAPTER 4**  
**PREVENTIVE MAINTENANCE INSTRUCTIONS**  
**FOR**  
**ENHANCED COMBAT HELMET-ARMY (ECH-A)**  
**ENHANCED COMBAT HELMET-MARINE CORPS (ECH-M)**





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**OPERATOR MAINTENANCE**  
**PREVENTIVE MAINTENANCE CHECKS AND SERVICES INTRODUCTION**

---

**INTRODUCTION**

Preventive Maintenance Checks and Services (PMCS) are performed to keep the ECH in good operating condition and ready for their primary mission. Operators are to perform PMCS of the helmets 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. Failure to observe these precautions could result in serious injury or death.

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 in WP 0014 lists inspections and care required to keep your ECH 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 and Marine 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  
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (ARMY ONLY)  
ENHANCED COMBAT HELMET—ARMY (ECH-A)**

**INITIAL SETUP:**

**Tools and Special Tools**

- Multi-Tool (WP 0036, Item 1)
- Screwdriver (WP 0036, Item 2)

**References**

- WP 0002
- WP 0004

**Materials/Parts**

None Required

**Table 1. Preventive Maintenance Checks and Services.**

| ITEM NO. | INTERVAL            | ITEM TO BE CHECKED OR SERVICED | PROCEDURE   | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|---------------------|--------------------------------|---|-----------------------------------|
| 1        | Before Initial Use  | Helmet Type                    | <p>Determine the helmet type. As shown in Figure 1, you can find identification information on the label or molded-in markings inside the shell.</p> <p align="center"><b>WARNING</b></p> <p>Although shells may look similar it is very important to distinguish between them. The mounting hardware (screws) of the retention system must be the approved hardware for the specific helmet shell to ensure ballistic integrity. Failure to use the appropriate mounting hardware and retention system combination may result in reduced ballistic protection.</p> <div style="text-align: center;"> <p>The diagram shows the interior of a helmet shell. A label is attached to the top, and there are markings on the shell, including an 'L' and a crosshair. A callout box points to these markings.</p> </div> <p align="center">Figure 1. Location of Label and Molded-In Markings.</p> |                                   |
| 2        | Before/After/Annual | Helmet Inventory               | <p>Perform inventory as follows:</p> <ul style="list-style-type: none"> <li>• Required; one helmet shell.</li> </ul> <div style="text-align: center;"> <p>The diagram shows the exterior of a helmet shell, highlighting the circular ventilation holes on the side.</p> </div> <p align="center">Figure 2. Helmet Shell.</p>   |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

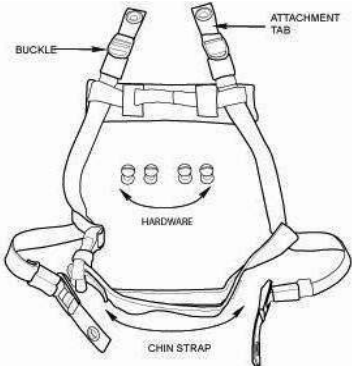
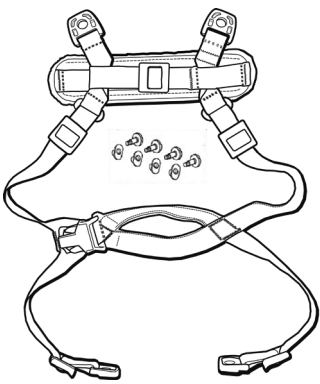
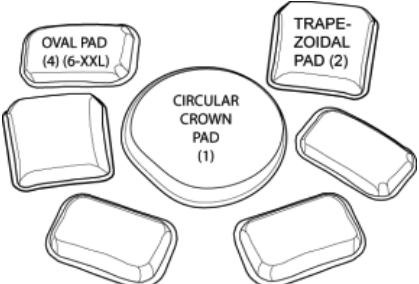
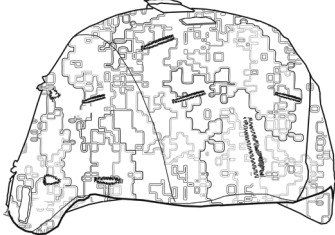
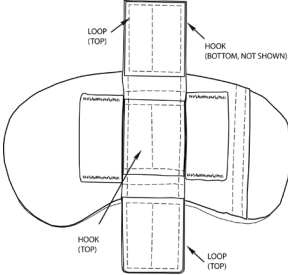
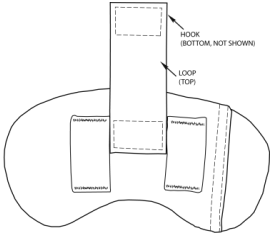
| ITEM NO. | INTERVAL            | ITEM TO BE CHECKED OR SERVICED | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|---------------------|--------------------------------|--|-----------------------------------|
| 2        | Before/After/Annual | Helmet Inventory (Continued)   | <ul style="list-style-type: none"> <li>Required; one retention system including one set of attaching hardware (four bolts and four nuts).</li> </ul>  <p>Figure 3. Universal H-Back Retention System.</p>  <p>Figure 4. Improved H-Nape Retention System.</p> <ul style="list-style-type: none"> <li>Required; one Suspension system (pads) for sizes S-XL including 4 Oval, 1 Crown, and 2 Trapezoidal pads.</li> </ul>  <p>Figure 5. Suspension System (Pads).</p> |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

| ITEM NO. | INTERVAL             | ITEM TO BE CHECKED OR SERVICED | PROCEDURE   | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------------------|--------------------------------|---|-----------------------------------|
| 2        | Before/After /Annual | Helmet Inventory – Continued   | <ul style="list-style-type: none"> <li>Required; one non-reversible camouflage helmet cover.</li> </ul>  <p>Figure 6. Non-Reversible Camouflage Helmet Cover.</p> <ul style="list-style-type: none"> <li>Optional; one Ballistic Nape Pad.</li> </ul>  <p>Figure 7. Ballistic Nape Pad for Universal H-Back and Improved H-Nape Retention Systems.</p>  <p>Figure 8. Ballistic Nape Pad for Universal Retention Systems.</p> |                                   |

**Table 1. Preventive Maintenance Checks and Services – Continued.**

| ITEM NO. | INTERVAL             | ITEM TO BE CHECKED OR SERVICED | PROCEDURE   | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------------------|--------------------------------|---|-----------------------------------|
| 2        | Before/After /Annual | Helmet Inventory – Continued   | <ul style="list-style-type: none"> <li>Optional; one NVG Bracket with hardware; one flathead screw and one threaded post.</li> </ul> <div> </div> <div> </div> <p>Figure 9. New NVG Bracket with Slotted Flathead Screw and Locking Nut.</p> <div> </div> <p>Figure 10. Additional Hardware for New NVG Bracket</p> |                                   |

**Table 1. Preventive Maintenance Checks and Services – Continued.**

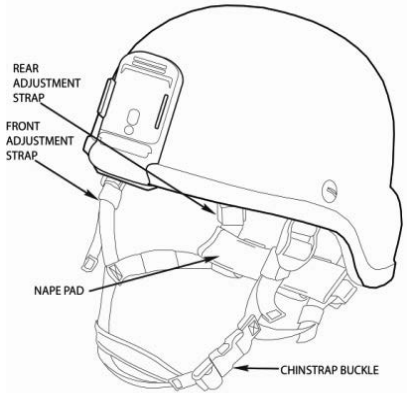
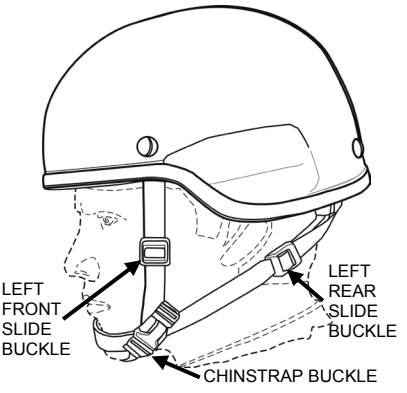
| ITEM NO.  | INTERVAL      | ITEM TO BE CHECKED OR SERVICED | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF: |
|---|---------------|--------------------------------|--|-----------------------------------|
| <b>WARNING</b>  |               |                                |  |                                   |
| <p>The hardware (nut) inside the helmet, where the retention system attachment tabs attach to the helmet (in four places), must be covered by pads. The oblong/oval pad must be placed flush with the rim (edge) of the helmet and completely cover the hardware. Failure to observe this precaution could result in serious injury or death.</p>       |               |                                |  |                                   |
| <p>Never remove the crown pad. Failure to observe this precaution could result in serious injury or death.</p>  |               |                                |  |                                   |
| <p>All seven pads provide maximum impact protection. Using fewer than the standard number of pads for training or combat is not authorized. The standard number of pads is seven pads for sizes S-XL, nine pads for size XXL. Alternate pad configurations may be used for non-training and non-combat missions. For more information, see WP 0004.</p> |               |                                |  |                                   |
| <p>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 injury.</p>   |               |                                |  |                                   |
| <p>3</p>  | <p>Before</p> | <p>Helmet Fit</p>              | <p>1. Prior to donning helmet, unbuckle chinstrap and loosen all adjustment straps, as shown in Figures 11 and 12.</p>  <p>Figure 11. Universal H-Back Retention System Adjustment Locations.</p>  <p>Figure 12. Improved H-Nape Retention System Adjustment Locations.</p> |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

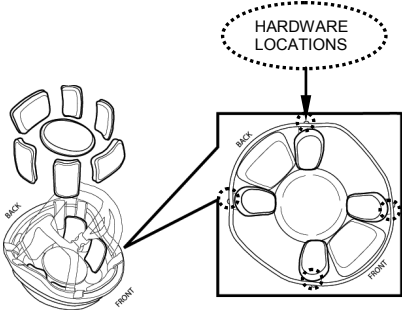
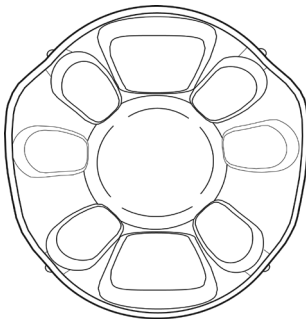
| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|--------------------------------|--|-----------------------------------|
| 3        | Before   | Helmet Fit - Continued         | <p>2. Ensure the suspension pads are arranged in the standard pad configuration for the helmet size (Figures 13 and 14). If other equipment is to be used with the helmet, such as a headset, evaluate size with that equipment, if possible.</p>  <p>Figure 13. Standard Suspension Pad Configuration for Sizes S-XL.</p>  <p>Figure 14. Standard Suspension Pad Configuration for Size XXL.</p> |                                   |



Table 1. Preventive Maintenance Checks and Services – Continued.


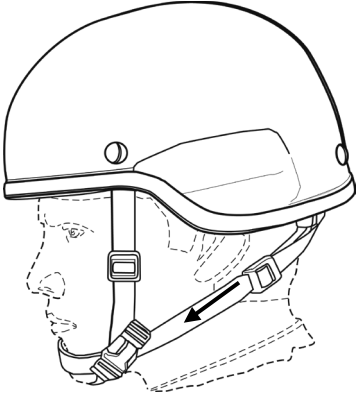
| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED | PROCEDURE   | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|--------------------------------|---|-----------------------------------|
| 3        | Before   | Helmet Fit - Continued         | <p>3. Adjust the retention system.</p> <ol style="list-style-type: none"> <li>a. Don the helmet.</li> <li>b. Buckle the chinstrap.</li> <li>c. Hold helmet in place, with one hand on top of helmet while adjusting helmet chinstrap with the other hand.</li> <li>d. Partially tighten the two rear adjustment straps one side at a time, as shown in Figures 15 and 16.</li> </ol> <div style="text-align: center;">  <p>Figure 15. Tighten Rear Adjustment Straps (Universal H-Back Retention System).</p>  <p>Figure 16. Tighten Rear Adjustment Straps (Improved H-Nape Retention System).</p> </div> |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.


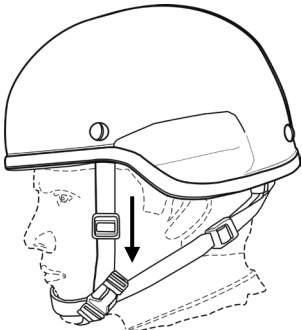

| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED | PROCEDURE   | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|--------------------------------|---|-----------------------------------|
| 3        | Before   | Helmet Fit - Continued         | <p>e. Partially tighten the two front adjustment straps one side at a time, as shown in Figures 17 and 18.</p>  <p>Figure 17. Tighten Front Adjustment Straps (Universal H-Back Retention System).</p>  <p>Figure 18. Tighten Front Adjustment Straps (Improved H-Nape Retention System).</p> <p>f. With both hands, fully tighten front and rear adjustment straps as shown in Figures 19 and 20.</p>  <p>Figure 19. Tighten Front and Rear Adjustment Straps (Universal H-Back Retention System).</p> |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

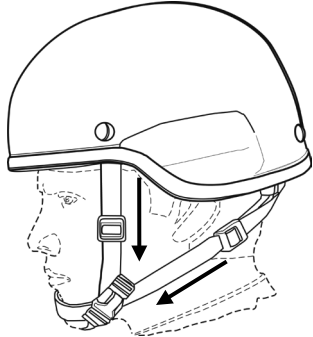

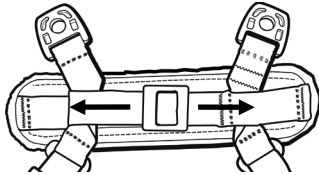
| ITEM NO.   | INTERVAL | ITEM TO BE CHECKED OR SERVICED | PROCEDURE   | EQUIPMENT NOT READY/AVAILABLE IF: |
|--|----------|--------------------------------|---|-----------------------------------|
| 3  | Before   | Helmet Fit - Continued         |  <p>Figure 20. Tighten Front and Rear Adjustment Straps (Improved H-Nape Retention System).</p>  |                                   |
| <b>NOTE</b>  |          |                                |   |                                   |
| <p>When the helmet is tightened against the nape of the neck by pulling on end of webbing (Figure 23), the nape pad adds additional stability to the helmet such as when wearing NVGs. Keep the nape pad away from the ladder locks (buckles) while adjusting the chinstrap to prevent jamming.</p> |          |                                |   |                                   |
|  |          |                                | <p>g. Adjust the nape pad as follows:</p> <ul style="list-style-type: none"> <li>• Slide nape pad (Figure 21) up and down along the rear legs of the chinstrap as necessary.</li> </ul>  <p>Figure 21. Adjust Nape Pad (Universal H-Back Retention System).</p> <ul style="list-style-type: none"> <li>• Slide buckle on nape pad (Figure 22) from side to side.</li> </ul>  <p>Figure 22. Adjust Nape Pad (Improved H-Nape Retention System).</p> |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

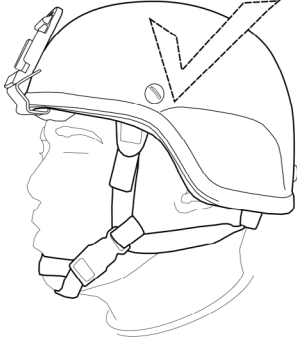
| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|--------------------------------|--|-----------------------------------|
| 3        | Before   | Helmet Fit - Continued         | <p>h. Position the chinstrap according to personal comfort.</p> <p>i. 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.</p> <p>j. Repeat steps c through i until helmet is stable.</p> <p>4. Evaluate the fit of the helmet. Figure 23 shows a properly fitted helmet.</p>  <p>Figure 23. Properly Fitted Helmet.</p> <p>a. Shake head rapidly from side to side to check for stability. Helmet should not rotate from side to side when head is shaken.</p>  |                                   |
|          |          |                                | <p><b>NOTE</b></p> <p>A properly sized and fitted helmet 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.</p> <p>b. Evaluate the height of the helmet. Using your hands, determine the height of the helmet relative to the ear canal openings and the eyebrows. The front rim should be no more than ½ inch above the eyebrows. The bottom of the helmet should come to the top of the ear canal opening as shown in Figure 23.</p> <p>c. 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.</p> |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

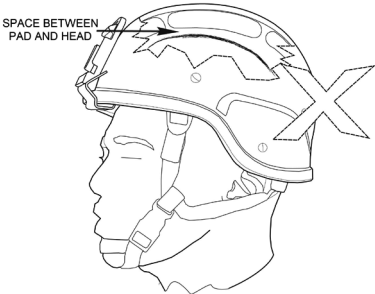
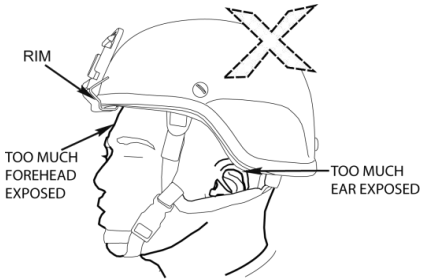
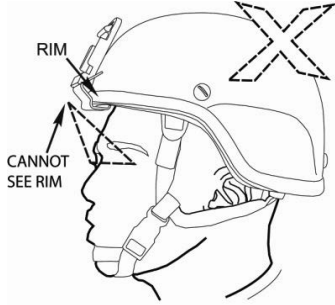
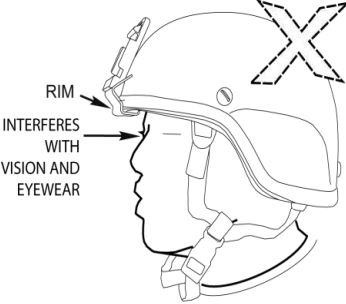
| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED | PROCEDURE   | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|--------------------------------|---|-----------------------------------|
| 3        | Before   | Helmet Fit - Continued         | <p>d. If the helmet is too high, obtain a larger helmet. As shown in Figures 24 -26, the helmet is too high if:</p> <ul style="list-style-type: none"> <li>• Crown pad doesn't contact the head.</li> <li>• More than ½ inch of forehead is exposed.</li> <li>• Wearer does not see the rim.</li> <li>• Too much or too little of the ear is covered.</li> </ul> <div style="text-align: center;">  <p>Figure 24. Helmet Too High — Crown Does Not Touch Head.</p> </div> <div style="text-align: center;">  <p>Figure 25. Helmet Too High — Too Much Exposure.</p> </div> |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|--------------------------------|--|-----------------------------------|
| 3        | Before   | Helmet Fit - Continued         |  <p>Figure 26. Helmet Too High — User Cannot See Rim.</p> <p>e. If the helmet is too low on brow (Figure 27) or not compatible with eyewear:</p> <ul style="list-style-type: none"> <li>• Try substituting 1-inch pads for the ¾-inch pads. The oblong/oval pads must be replaced in pairs, only, to maintain stability. The trapezoidal front and/or rear pad may be replaced individually. Up to six 1-inch pads may be used in the S-XL helmets, and up to eight 1-inch pads may be used in the XXL helmets.</li> <li>• Obtain a smaller helmet.</li> </ul>  <p>Figure 27. Helmet Too Low — Interferes with Vision.</p> <p>f. If the helmet is too tight, obtain a larger helmet.</p> <p>g. If the helmet is too loose, first try replacing some or all of the ¾-inch oval pads (replace in pairs only) and trapezoidal pads (may be replaced individually) with 1-inch pads. If the helmet is still too loose, obtain a smaller helmet.</p> |                                   |

**Table 1. Preventive Maintenance Checks and Services – Continued.**

| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|--------------------------------|--|-----------------------------------|
| 3        | Before   | Helmet Fit - Continued         | <p style="text-align: center;"><b>WARNING</b></p> <p>The hardware (nut) inside the helmet, where the retention system attachment tabs attach to the helmet (in four places), must be covered by pads. The oblong/oval pad must be placed flush with the rim (edge) of the helmet and completely cover the hardware. Failure to observe this precaution could result in serious injury or death.</p> <p>Never remove the crown pad. Failure to heed this warning could result in serious injury or death.</p> <p>All seven pads provide maximum impact protection. Using fewer than the standard number of pads for training or combat is not authorized. The standard number of pads is seven pads for sizes S-XL and nine pads for size XXL. Alternate pad configurations may only be used for non-training and non-combat missions.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>When donning the helmet for the first time in a cold environment, it is necessary to wear the helmet for a few minutes or otherwise warm the pads, such as 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 re-tighten the chinstrap and the retention system.</p> <p>If you experience hot spots or discomfort, try rearranging the pad system to accommodate a more comfortable fit. If discomfort persists, try substituting pairs of 1-inch oblong/oval pads or individual trapezoidal front and/or rear pads or try another helmet. To maintain stability, substitute the oblong/oval pads in pairs only.</p> <p>Up to six 1-inch pads may be substituted for the 3/4-inch pads for sizes S-XL helmets, and up to eight may be substituted in the XXL helmet</p> <p>5. Adjust pad configuration. For maximum stability, place pads as close as possible to the edge of the helmet. Up to six 1-inch pads may be substituted for the 3/4-inch pads for sizes S-XL helmets, and up to eight may be substituted in the XXL helmet.</p> <ul style="list-style-type: none"> <li>• Place pads in either the vertical (Figure 28) or horizontal configuration (Figure 29) or at any angle in between, ensuring all hardware is covered and the oblong/oval pad is flush with the rim.</li> <li>• The vertical configuration maximizes airflow for better temperature regulation.</li> <li>• The horizontal configuration makes a seal around the user's head and is better suited for cold weather environments.</li> </ul> |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

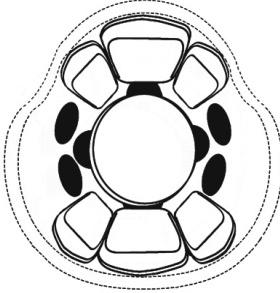
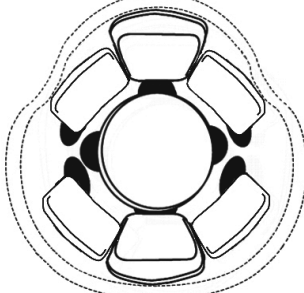
| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|--------------------------------|--|-----------------------------------|
| 3        | Before   | Helmet Fit - Continued         | <p style="text-align: center;">FRONT</p>  <p style="text-align: center;">Figure 28. Vertical Pad Placement.</p> <p style="text-align: center;">FRONT</p>  <p style="text-align: center;">Figure 29. Horizontal Pad Placement.</p> |                                   |



Table 1. Preventive Maintenance Checks and Services – Continued.

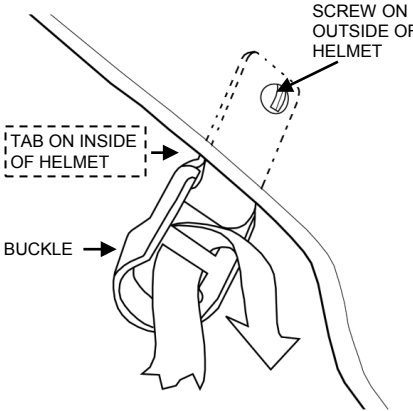
| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED | PROCEDURE   | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|--------------------------------|---|-----------------------------------|
| 4        | Before   | Helmet Cover                   | <p>Install helmet cover:</p> <ol style="list-style-type: none"> <li>1. Remove the suspension pads from the inside of the helmet, noting their positioning and arrangement.</li> <li>2. Remove NVG bracket from helmet if already installed.</li> </ol> <p style="text-align: center;"><b>WARNING</b></p> <p style="text-align: center;">Do not remove hardware from the retention system.</p> <ol style="list-style-type: none"> <li>3. Remove the retention system webbing:               <ol style="list-style-type: none"> <li>a. For universal H-back retention systems, remove webbing from elastic bands. Then unthread and remove the chinstrap retention system webbing from the four buckles on the attachment tabs (Figure 30).</li> </ol> </li> </ol> <div style="text-align: center;">  <p>The diagram illustrates the components of an H-back retention system. It shows a webbing strap with a buckle and an attachment tab. A screw is shown on the outside of the helmet, and a tab is shown on the inside. Labels include 'TAB ON INSIDE OF HELMET', 'BUCKLE', and 'SCREW ON OUTSIDE OF HELMET'.</p> </div> <p>Figure 30. H-Back Retention System Attachment Tab and Buckle.</p> |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

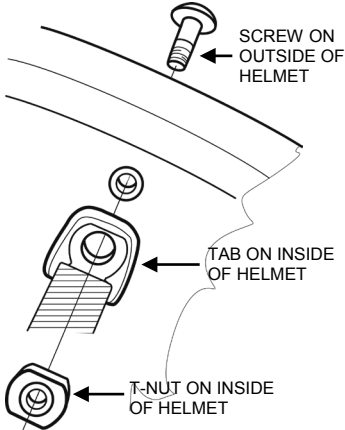
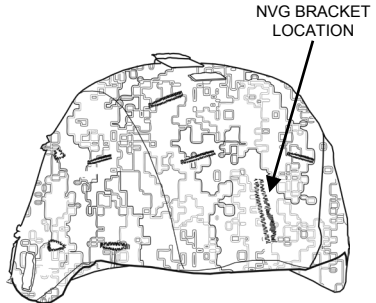
| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED            | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|---|--|-----------------------------------|
| 4        | Before   | Helmet Cover, Install for Improved H-Nape | <p>b. For improved H-nape retention systems, remove all four sets of hardware and detach the entire retention system from the helmet. Retain all four sets of hardware to reuse.</p>  <p>The diagram shows three components of the retention system: a screw, a tab, and a T-nut. The screw is labeled 'SCREW ON OUTSIDE OF HELMET'. The tab is labeled 'TAB ON INSIDE OF HELMET'. The T-nut is labeled 'T-NUT ON INSIDE OF HELMET'.</p> <p>Figure 31. Improved H-Nape Retention System Attachment Tab and Hardware</p> <p>4. Orient the helmet cover with the NVG bracket location facing the front of the helmet, as shown in Figure 32.</p>  <p>The diagram shows a helmet cover with a grid pattern. An arrow points to a specific location on the cover labeled 'NVG BRACKET LOCATION'.</p> <p>Figure 32. Non-Reversible Universal Camouflage Helmet Cover.</p> |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

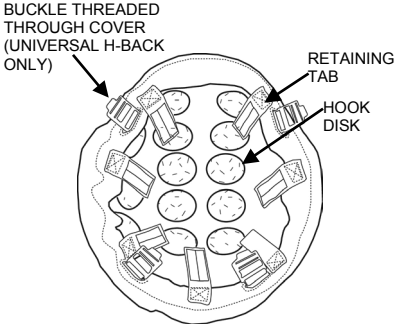
| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED | PROCEDURE   | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|--------------------------------|---|-----------------------------------|
| 4        | Before   | Helmet Cover – Continued       | <p>5. Pull the cover over the back and sides of the helmet.</p> <p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Do not overlap the tabs of the helmet cover. Doing so may cause helmet to fit improperly.</p> <p>6. Proceed as follows:</p> <ol style="list-style-type: none"> <li>a. For universal H-back systems, thread each buckle through the corresponding buttonhole in the cover (Figure 33). Go to step 7.</li> <li>b. For improved H-nape systems, go to step 7.</li> </ol> <p>7. Pull the cover retaining tabs down and attach tabs to hook disks inside helmet shell, as shown in Figure 33.</p> <div style="text-align: center;">  <p>The diagram shows a top-down view of a helmet's interior. It features a grid of circular hook disks. Buckles are shown being inserted into buttonholes on the helmet cover. Labels with arrows point to a 'BUCKLE THREADED THROUGH COVER (UNIVERSAL H-BACK ONLY)', a 'RETAINING TAB', and a 'HOOK DISK'.</p> </div> <p style="text-align: center;">Figure 33. Helmet Cover Installed.</p> <p>8. Ensure a tight smooth fit of cover by pulling the retaining tabs until tight.</p> <p>9. Position the retention system for installation by laying the helmet on its crown with the front of the helmet away from you. Drape the chinstrap retention system over the helmet with the nape-strap pad facing down on the back/rear of the helmet.</p> <p>10. Proceed as follows:</p> <ol style="list-style-type: none"> <li>a. For universal H-back systems, insert and thread the four legs of the chinstrap webbing into their corresponding buckles, as shown in Figure 34. Ensure webbing is not twisted. Slide elastic bands (if provided) over loose ends of webbing.</li> </ol> |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

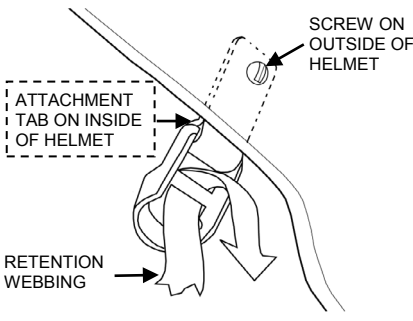
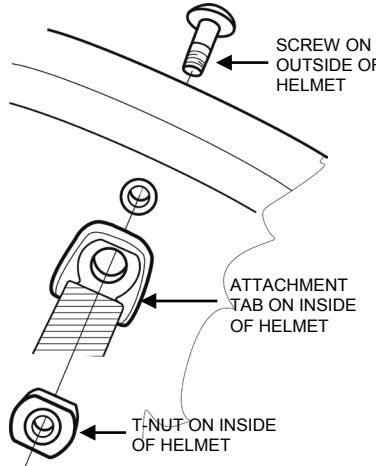
| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED         | PROCEDURE   | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|--|---|-----------------------------------|
| 4        | Before   | <p><b>Helmet Cover – Continued</b></p> |  <p>Figure 34. Universal H-Back Chinstrap Webbing and Buckles.</p> <p>b. For Improved H-Nape systems, reattach the retention system to the helmet using all four sets of hardware removed earlier. See Figure 35. Ensure webbing is not twisted.</p>  <p>Figure 35. Improved H-Nape Webbing and Attachment Hardware.</p> <p>11. If used, reinstall NVG bracket at this time (see Item 5).</p> <p>12. Reinstall the suspension pads in their original position.</p> |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

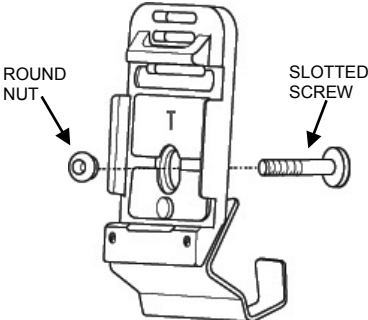
| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|--------------------------------|--|-----------------------------------|
| 5        | Before   | NVG Bracket                    | <p>Install the NVG bracket as described next.</p> <p><b>WARNING</b></p> <p>The NVG bracket must be installed and worn by all Soldiers at all times. Failure to do so may result in injury or death to personnel.</p> <p>Verify that you have the correct hardware for the bracket model installed on the helmet as shown in Item 2. Failure to observe this warning may result in serious injury or death to personnel.</p> <p>Ensure that the threads are fully engaged for the screw retaining the NVG bracket to the shell and that the screw does not extend into the space between the head and the helmet shell interior.</p> <ol style="list-style-type: none"> <li>1. Ensure that the NVG bracket assembly has all the components as shown in Figure 36.</li> </ol>  <p>The diagram shows a side view of the NVG bracket assembly. A round nut is shown on the left, and a slotted screw is shown on the right. Dotted lines indicate the alignment of the nut and screw through the bracket. The bracket itself is a complex metal piece with a hook at the bottom and a central opening for the helmet shell.</p> <p>Figure 36. ECH NVG Bracket Assembly.</p> <ol style="list-style-type: none"> <li>2. Remove front trapezoidal pad, if necessary.</li> <li>3. If there is a cover installed, loosen the hook and loop tabs, if necessary.</li> <li>4. Line up the hole on the center of the bracket, the front vertical buttonhole on the cover, and the hole on the helmet shell.</li> </ol> <p><b>NOTE</b></p> <p>It may be necessary to tap the bracket into place to properly align the helmet shell, cover, and bracket holes.</p> <ol style="list-style-type: none"> <li>5. Insert the screw through the helmet shell, cover, and bracket assembly from the inside of the helmet to the outside, as shown in Figure 36.</li> </ol> |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|--------------------------------|--|-----------------------------------|
|          |          |                                | <p>6. Using a multi-tool, slightly tighten the screw and self-locking nut or threaded post.</p> <p style="text-align: center;"><b>CAUTION</b></p> <p>Do not over tighten the self-locking nut/threaded post or the bracket may break.</p> <p>7. 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 or threaded post.</p> <p>8. Pull the helmet cover retaining tabs down and attach tabs to hook disks inside helmet shell.</p> <p>9. Ensure a tight smooth fit of cover by pulling the retaining tabs until tight.</p> <p>10. Replace the suspension pads if not installing the ballistic nape pad (Item 6).</p>  |                                   |
| 6        | Before   | Ballistic Nape Pad (Optional)  | <p>1. Prepare to install the Ballistic Nape Pad as follows:</p> <ul style="list-style-type: none"> <li>a. Obtain the proper ballistic nape pad for your helmet model in the appropriate size. For more information see WP 0002.</li> <li>b. Identify the size of the ballistic nape pad by looking on the inside of the nape pad cover pocket.</li> <li>c. Remove the trapezoidal pad from the rear of helmet shell to provide access to the retention system and set it aside.</li> <li>d. Orient the ballistic nape pad so that the camouflage side faces out and the mesh side faces to the inside of the helmet.</li> </ul> <p>2. Proceed as follows:</p> <ul style="list-style-type: none"> <li>a. For universal H-back retention systems, proceed to step 3.</li> <li>b. For improved H-nape retention systems, proceed to step 4.</li> </ul> <p>3. Universal H-Back retention systems:</p> <ul style="list-style-type: none"> <li>a. Detach the existing nape pad that comes with the retention system by unfastening the hook and loop strap that holds the nape pad to the chinstrap. Then slide the nape pad off the strap (Figure 37).</li> </ul> |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

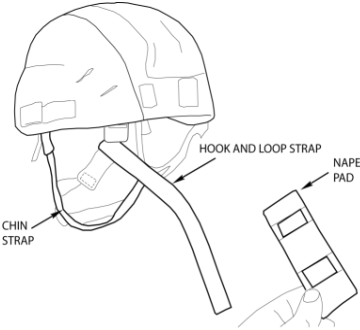
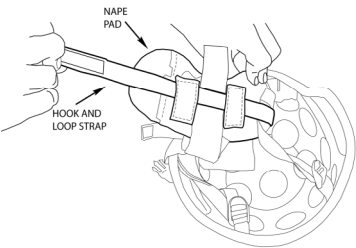
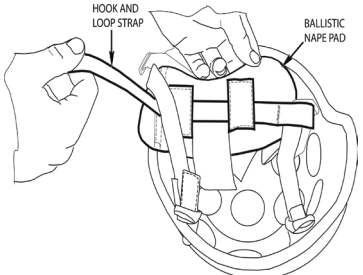
| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED                     | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|--|--|-----------------------------------|
| 6        | Before   | Ballistic Nape Pad – Universal H-Back<br>Continued |  <p>Figure 37. Removing Existing Nape Pad.</p> <ul style="list-style-type: none"> <li>b. Slide the ballistic nape pad onto the strap.</li> <li>c. Install the ballistic nape pad on the hook and loop strap as shown in Figure 38.</li> </ul>  <p>Figure 38. Ballistic Nape Pad Installed on Hook and Loop Strap.</p> <ul style="list-style-type: none"> <li>d. Thread the free end of the hook and loop strap around the retention strap webbing and back through the ballistic nape pad elastic loops as shown in Figure 39.</li> </ul>  <p>Figure 39. Attaching the Ballistic Nape Pad.</p> |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

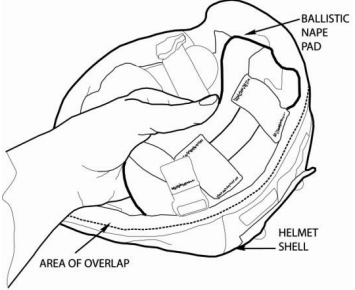
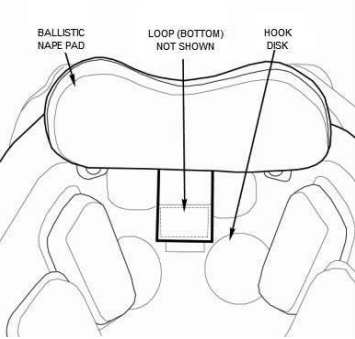
| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED                     | PROCEDURE   | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|--|---|-----------------------------------|
| 6        | Before   | Ballistic Nape Pad – Universal H-Back<br>Continued | <p>e. Slide the ballistic nape pad toward the helmet shell until shell and ballistic nape pad overlap by approximately ½ inch as shown in Figure 40.</p>  <p>Figure 40. Fitting Ballistic Nape Pad into Helmet Shell.</p> <p>f. With the ballistic nape pad overlapping the shell edge, press the loop tab against the hook disks on the inside of the shell as shown in Figure 41.</p>  <p>Figure 41. Attaching Ballistic Nape Pad to Helmet Shell.</p> <p>g. Install the rear trapezoidal pad such that it is firmly affixed to the hook disk and snug against the edge of the ballistic nape pad.</p> <p>h. Position the Ballistic Nape Pad so there is about one inch of space between it and the trapezoidal pad. Figure 42 shows the completed installation.</p> |                                   |



Table 1. Preventive Maintenance Checks and Services – Continued.

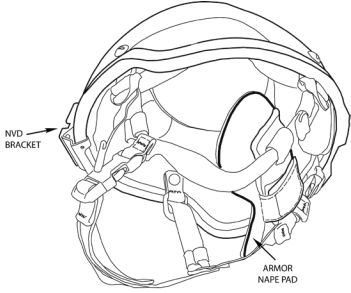
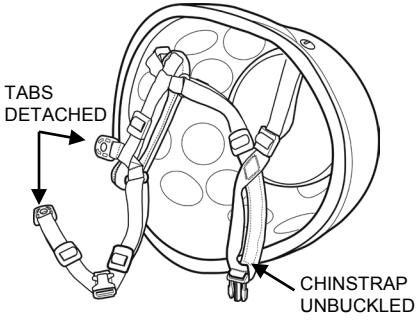
| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED   | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|--|--|-----------------------------------|
| 6        | Before   | Ballistic Nape Pad – Universal H-Back Continued<br><br>Ballistic Nape Pad –Improved H-Nape |  <p>Figure 42. Ballistic Nape on Universal H-Back Retention System.</p> <p>4. Improved H-Nape retention systems:</p> <ol style="list-style-type: none"> <li>a. Unbuckle the chinstrap. Then detach the left front and left rear attachment tabs to remove two sides of the retention system from the helmet (Figure 43). Retain the two sets of hardware.</li> </ol>  <p>Figure 43. Remove Hardware from Left Front and Left Rear Straps.</p> <p><b>NOTE</b></p> <p>The ballistic nape pad installs over the built-in nape pad.</p> <ol style="list-style-type: none"> <li>b. Thread the buckle for the left front strap through the elastic insert on the right side of the ballistic nape pad (Figure 44).</li> </ol> |                                   |

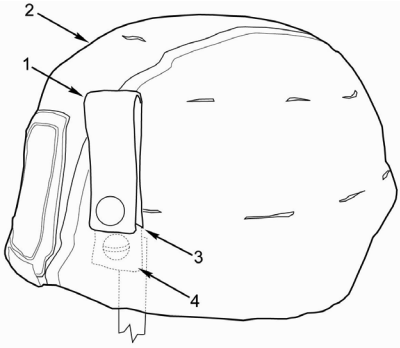
Table 1. Preventive Maintenance Checks and Services – Continued.

| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED                | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|---|--|-----------------------------------|
| 6        | Before   | Ballistic Nape Pad –Improved H-Nape Continued | <div> <p>ELASTIC INSERTS</p> <p>BUCKLE ON LEFT FRONT STRAP</p> </div> <p>Figure 44. Thread Strap Through Elastic Insert on Ballistic Nape Pad.</p> <p>c. Continue to slide the strap through the elastic insert on the left side of the ballistic nape pad (Figure 45) until the attachment tabs are centered.</p> <div> <p>LEFT REAR TAB</p> <p>RIGHT REAR TAB</p> </div> <p>Figure 45. Built-in Nape Pad Centered and Joined with Ballistic Nape Pad.</p> <p>d. Reinstall the attachment tabs to the left front and rear of the helmet, using the hardware removed earlier (Figure 46). Be sure the webbing is not twisted.</p> <div> <p>BALLISTIC NAPE</p> <p>BUILT-IN NAPE</p> </div> <p>Figure 46. Ballistic Nape Pad Installed on Improved H-Nape Retention System.</p> |                                   |

**Table 1. Preventive Maintenance Checks and Services – Continued.**

| ITEM NO.  | INTERVAL | ITEM TO BE CHECKED OR SERVICED       | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF: |
|---|----------|--------------------------------------|--|-----------------------------------|
| 7   | Before   | Optional:<br>Eyewear Retention Strap | <ol style="list-style-type: none"> <li>1. Remove suspension pads, noting how they are positioned.</li> <li>2. Remove the rear retention strap webbing from the buckle.</li> <li>3. Unfasten the helmet cover retaining tabs and pull the cover away to expose the hardware.</li> </ol>   |                                   |
| <p><b>NOTE</b></p> <p>Be sure to install an eyewear retention strap on each of the two rear screws.</p> <p>Holding the post on inside of helmet will ensure the attachment tab does not disengage while completing the remaining steps.</p> |          |                                      |  |                                   |
|   |          |                                      | <ol style="list-style-type: none"> <li>4. Remove one of the rear screws using a screwdriver or like tool and a multi-tool (if available).</li> <li>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 helmet as shown in Figure 47.</li> </ol> <div style="text-align: center;"> </div> <p><b>LEGEND:</b></p> <ol style="list-style-type: none"> <li>1. Eyewear retention strap (unsnapped)</li> <li>2. Snap socket</li> <li>3. Post</li> <li>4. Attachment tab with buckle (shown inside helmet)</li> <li>5. Hole in attachment tab</li> <li>6. Hole in helmet shell</li> <li>7. Hole in eyewear retention strap</li> <li>8. Screw</li> <li>9. Snap stud</li> </ol> <p>Figure 47. Universal Eyewear Retention Strap and Screw Assembly.</p> |                                   |

**Table 1. Preventive Maintenance Checks and Services – Continued.**

| ITEM NO.  | INTERVAL | ITEM TO BE CHECKED OR SERVICED    | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF: |
|---|----------|-----------------------------------|--|-----------------------------------|
| 7   | Before   | Eyewear Retention Strap Continued | <p>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 48.</p>  <p><b>LEGEND:</b><br/>                     1. Eyewear retention strap<br/>                     2. Helmet cover<br/>                     3. Lower-most rear buttonhole<br/>                     4. Screw (shown under cover)</p> <p>Figure 48. Helmet with Eyewear Retention Strap Installed.</p> <p>7. From inside the helmet, thread the attachment tab and buckle through the corresponding hole on helmet cover.</p> <p>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.</p> <p>9. Tuck end of eyewear retention strap into buttonhole.</p> |                                   |
| <p><b>NOTE</b></p> <p>The fabric helmet cover becomes easily tangled. Before tightening screws, ensure attachment tabs, eyewear retention straps, and screws move freely through buttonholes.</p> |          |                                   |  |                                   |
|   |          |                                   | <p>10. Using a screwdriver or like tool and a multi-tool (if available), tighten the screw.</p> <p>11. Repeat steps 4-10 for second eyewear retention strap.</p> <p>12. Install the suspensions pads that were previously removed.</p>   |                                   |

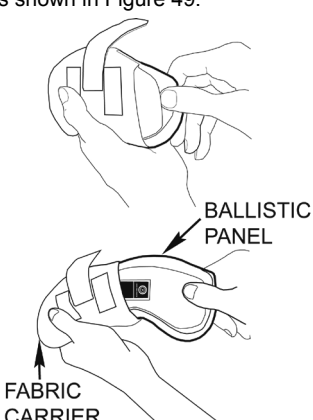
**Table 1. Preventive Maintenance Checks and Services – Continued.**

| ITEM NO.   | INTERVAL     | ITEM TO BE CHECKED OR SERVICED | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF:   |
|--|--------------|--------------------------------|--|---|
| 8  | Before/After | Helmet                         | Inspect helmet as described next.  |   |
| <p><b>WARNING</b></p> <p>If there is a mishap in which the helmet is subjected to a potentially damaging event that occurs sooner than a preventive maintenance check, inspect the helmet and the components. Failure to do so could result in serious injury or death to personnel.</p> <p>Failure to follow the inspection criteria may result in reduced head protection, injury, or death.</p> |              |                                |  |   |
|  |              | Helmet Shell                   | <ol style="list-style-type: none"> <li>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.</li> <li>2. Check for loose or damaged edging. Refer to higher level maintenance for repair. Ensure that there is no visible gap that exists between the edging and the shell.</li> </ol>   | <p>Gouges, scrapes, cracks, delamination, or other damage extends below the surface (below the paint).</p> <p>Edging is loose or damaged.</p>   |
|  |              | Chinstrap Retention Assembly   | <ol style="list-style-type: none"> <li>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 discernible cut, or loose or damaged stitching, replace entire retention system as appropriate.</li> <li>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.</li> <li>3. Check for missing, cracked, worn or damaged chinstrap buckle. If chinstrap buckle is missing, cracked, worn, or damaged, replace entire retention system.</li> <li>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.</li> <li>5. Check for missing hardware. Replace if hardware is missing.</li> </ol> | <p>Chinstrap webbing has cuts, frays, or other damage.</p> <p>Attachment tab (with buckle) is missing, cracked, worn, or damaged.</p> <p>Chinstrap buckle is missing, cracked, worn or damaged.</p> <p>Hardware is loose.</p> <p>Hardware is missing.</p> |
|  |              | Pad Suspension System          | <ol style="list-style-type: none"> <li>1. Check for cuts, tears, or other damage to outer fabric, plastic, or inner foam. If pads are torn or cut exposing the inner padding material, replace.</li> <li>2. Check pads for compressibility. Pads in service should resist compression the same as new pads when squeezed between thumb and forefinger. If pads have lost compressibility, replace.</li> </ol>  | <p>Pads are torn, cut, or otherwise damaged.</p> <p>Compressed pads do not return to original shape.</p>  |

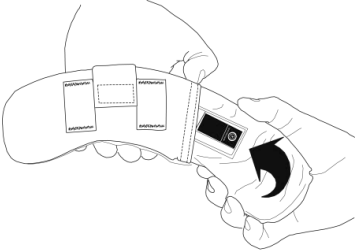
**Table 1. Preventive Maintenance Checks and Services – Continued.**

| ITEM NO. | INTERVAL               | ITEM TO BE CHECKED OR SERVICED   | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF:  |
|----------|------------------------|--|--|--|
| 8        | Before/After Continued | Helmet Cover<br><br>Eyewear Retention Straps<br><br>NVG Bracket Assembly (if issued)<br><br>Ballistic Nape Pad | <p>Check for cuts, frays, other damage to the fabric, or cut or frayed stitching. If damaged, replace.</p> <ol style="list-style-type: none"> <li>1. Check for cuts, frays, or other damage to the webbing. If webbing is damaged, replace.</li> <li>2. Check for broken snaps or studs. If snaps or studs are bent or broken, replace.</li> </ol> <ol style="list-style-type: none"> <li>1. Check for cracked bracket. If bracket is cracked, replace.</li> <li>2. Check for loose hardware. Tighten; if loosening persists replace hardware.</li> <li>3. Check for missing hardware. Replace hardware.</li> </ol> <ol style="list-style-type: none"> <li>1. Check for evidence of hit by a bullet or a fragment. If present, replace ballistic nape pad.</li> <li>2. Check for tears or damage to the sleeve. If carrier is torn or damaged, replace ballistic nape pad carrier.</li> <li>3. Check that the soft armor can be flattened after being bunched. If armor cannot be flattened after being bunched, replace nape pad insert or replace ballistic nape pad.</li> <li>4. Check that hook and loop tab securely attaches nape pad to the helmet. If hook and loop tab does not securely attach ballistic nape pad to helmet, replace carrier.</li> <li>5. Check that elastic is not torn beyond repair. If elastic is torn beyond repair, replace carrier.</li> <li>6. Check that fabric carrier can be adequately cleaned, is not discolored, and has not been saturated with gasoline, bleach, or lubricants. If fabric carrier cannot be adequately cleaned, is discolored, or has been saturated with gasoline, bleach, or lubricants, replace carrier.</li> </ol> | <p>There are cuts, frays, other damage to the fabric, or cut or frayed stitching.</p> <p>There are cuts or frays to the webbing.</p> <p>Snaps or studs are bent or broken.</p> <p>Bracket is cracked.</p> <p>Hardware is loose.</p> <p>Hardware is missing.</p> <p>There is 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>The hook and loop tab does not securely attach nape pad to the helmet.</p> <p>Elastic is torn beyond repair.</p> <p>The carrier cannot be adequately cleaned, is discolored, or has been saturated with gasoline, bleach or lubricants.</p> |

**Table 1. Preventive Maintenance Checks and Services – Continued.**

| ITEM NO. | INTERVAL         | ITEM TO BE CHECKED OR SERVICED  | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|------------------|---|--|-----------------------------------|
| 9        | Weekly/As Needed | Helmet<br><br>Retention System, Helmet Cover, Suspension Pads   | Clean your helmet weekly as described below or as needed depending on usage.<br><br>1. Clean each component with mild soap and water.<br>2. Wash by hand or machine laundry using gentle cycle and cold water.<br><br><p style="text-align: center;"><b>CAUTION</b></p> Do not machine dry. Machine drying may cause permanent damage to equipment.<br><br>3. Allow components to air dry.   |                                   |
|          |                  | <p style="text-align: center;"><b>CAUTION</b></p> Do not machine wash or dry any parts of the ballistic nape pads.<br>Do not attempt to dye item to fix discoloration.<br>Do not put ballistic panel in water. If the panel gets wet, allow to air dry away from direct heat or sunlight.<br>If panel becomes saturated with gasoline, bleach or lubricants, turn in for replacement as soon as possible.<br>Failure to follow these precautions could affect the protective qualities of the ballistic nape pad. |  |                                   |
|          |                  | Ballistic Nape Pad  | 1. Remove soft ballistic panel from outer fabric carrier through opening in carrier as shown in Figure 49.<br><br> <p style="text-align: center;">Figure 49. Removing Ballistic Panel from Fabric Carrier.</p> 2. Hand wash fabric carrier in cold or warm water, using only mild detergent or soap.<br>3. Clean ballistic panel by wiping exterior with a moistened sponge or cloth. |                                   |

**Table 1. Preventive Maintenance Checks and Services – Continued.**

| ITEM NO. | INTERVAL         | ITEM TO BE CHECKED OR SERVICED                      | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|------------------|---|--|-----------------------------------|
| 9        | Weekly/As Needed | Ballistic Nape Pad<br>Continued<br><br>Helmet Shell | <p>4. Rinse carrier in clean, warm water.</p> <p style="text-align: center;"><b>CAUTION</b></p> <p>Do not machine dry any parts of the ballistic nape pad. Failure to follow these precautions could affect the protective qualities of the nape pad.</p> <p>5. Air dry components indoors or in shade, away from heat sources.</p> <p>6. 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.</p>  <p style="text-align: center;">Figure 50. Reinserting Ballistic Panel in Fabric Carrier.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>A small brush is useful in removing dirt from the hook disks on the inside of the shell.</p> <p>1. Using a soft brush or cloth and mild soap and water, clean helmet shell.</p> <p style="text-align: center;"><b>CAUTION</b></p> <p>Do not machine dry any parts of the ballistic nape pad. Failure to follow these precautions could affect the protective qualities of the ballistic nape pad.</p> <p>2. Allow shell to air dry.</p> |                                   |

**MANDATORY REPLACEMENT PARTS**

No replacement parts are required for these PMCS procedures.

**END OF WORK PACKAGE**



**OPERATOR MAINTENANCE INSTRUCTION  
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (MARINE CORPS ONLY)  
ENHANCED COMBAT HELMET—MARINE CORPS (ECH-M)**

**INITIAL SETUP:**

**Tools and Special Tools**

- Caliper (WP 0036, Item 4)
- Ruler (WP 0036, Item 3)
- Screwdriver or Similar Tool (WP 0036, Item 2)
- Tape Measure (WP 0036, Item 5)

**Materials/Parts**

- Cloth (WP 0035, Item 3)
- Mild Soap (WP 0035, Item 4)
- Soft Brush (WP 0035, Item 6)

**Table 1. Preventive Maintenance Checks and Services.**

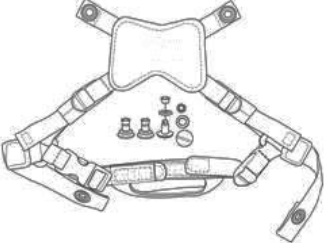

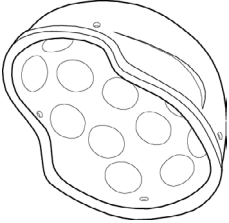
| ITEM NO. | INTERVAL           | ITEM TO BE CHECKED OR SERVICED | PROCEDURE   | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|--------------------|--------------------------------|---|-----------------------------------|
| 1        | Before Initial Use | Helmet Type                    | <p>Identify the ECH-M helmet by the X-back retention system shown in Figure 1 and by the label inside the helmet shell shown in Figure 2.</p>  <p>Figure 1. ECH-M X-Back Retention System.</p>  <p>Figure 2. ECH-M Label.</p> |                                   |
| 2        | Before             | Helmet                         | <p>Perform inventory IAW the below.</p> <ul style="list-style-type: none"> <li>• Required, one helmet shell.</li> </ul>  <p>Figure 3. Helmet Shell.</p>  |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

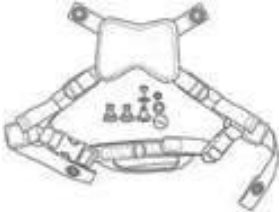

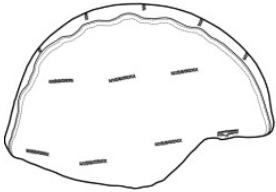
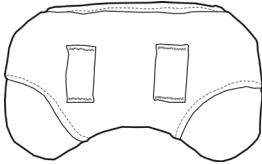
| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED | PROCEDURE   | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|--------------------------------|---|-----------------------------------|
| 2        | Before   | Helmet – Continued             | <ul style="list-style-type: none"> <li>• Required; one retention system including four sets of screws and nuts.</li> </ul>  <p style="text-align: center;">Figure 4. Retention System.</p> <ul style="list-style-type: none"> <li>• Required, one Suspension System (Pads) for sizes XS-XL including 4 Oval, 1 Crown, and 2 Trapezoidal pads;</li> </ul> <p style="text-align: center;"><b>or</b></p> <ul style="list-style-type: none"> <li>• Required; one Suspension System (Pads) for size XXL including 6 Oval, 1 Crown, and 2 Trapezoidal pads.</li> </ul>  <p style="text-align: center;">Figure 5. Retention System (Pads).</p> <ul style="list-style-type: none"> <li>• Required; one helmet cover, reversible.</li> </ul>  <p style="text-align: center;">Figure 6. Helmet Cover.</p> <ul style="list-style-type: none"> <li>• Optional; one Ballistic Nape Protection Pad (NAPP).</li> </ul>  <p style="text-align: center;">Figure 7. Ballistic Nape Protection Pad (NAPP).</p> |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

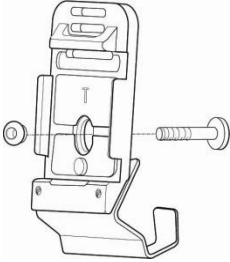
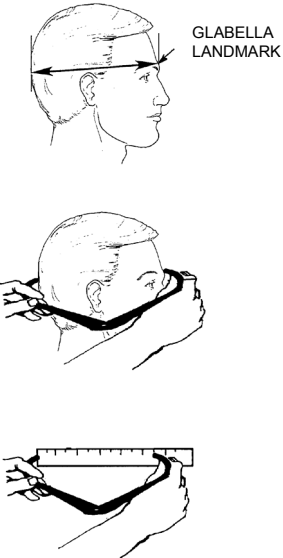


| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|--------------------------------|--|-----------------------------------|
| 2        | Before   | Helmet – Continued             | <ul style="list-style-type: none"> <li>• Required; one Night Vision Goggles (NVG) Mounting Bracket Assembly including one screw and one nut.</li> </ul>  <p>Figure 8. NVG Mounting Bracket Assembly.</p>  |                                   |
| 3        | Before   | Helmet Size                    | <p>Ensure proper helmet sizing.</p> <ol style="list-style-type: none"> <li>1. Measure the wearer's head length.               <ol style="list-style-type: none"> <li>a. Use a caliper and a ruler as shown in Figure 9 to measure the distance (to the nearest 1/16 inch) from the glabella landmark (point between the eyebrows) to the back of the head. This is the head length. Ensure that the caliper touches the skin lightly and does not indent the skin surface.</li> </ol> </li> </ol>  <p>Figure 9. Measuring Head Length.</p> <ol style="list-style-type: none"> <li>b. Record the measurement.</li> </ol> |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED | PROCEDURE   | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|--------------------------------|---|-----------------------------------|
| 3        | Before   | Helmet Size - Continued        | <p>2. Measure the wearer's head width.</p> <p>a. Use a caliper and a ruler as shown in Figure 10 to measure the maximum horizontal width (to the nearest 1/16 inch) of the head above the ears. This is the head width. Ensure that the caliper touches the skin lightly and does not indent the skin surface.</p>  <p>Figure 10. Measuring Head Width.</p> <p>b. Record the measurement.</p> <p>3. Measure the head circumference.</p> <p>a. Use a tape measure as shown in Figure 11 to measure the maximum head circumference (to the nearest 1/16 inch) of the head above the ears.</p>  <p>Figure 11. Measuring Head Circumference.</p> <p>b. Record the measurement.</p> |                                   |

**Table 1. Preventive Maintenance Checks and Services – Continued.**

| ITEM NO.    | INTERVAL                             | ITEM TO BE CHECKED OR SERVICED | PROCEDURE   | EQUIPMENT NOT READY/AVAILABLE IF: |                                      |  |  |             |            |                    |         |       |       |        |       |       |       |        |        |       |       |        |       |       |       |        |         |       |       |        |          |               |               |                |  |
|-------------|--------------------------------------|--------------------------------|---|-----------------------------------|--------------------------------------|--|--|-------------|------------|--------------------|---------|-------|-------|--------|-------|-------|-------|--------|--------|-------|-------|--------|-------|-------|-------|--------|---------|-------|-------|--------|----------|---------------|---------------|----------------|--|
| 3           | Before                               | Helmet Size – Continued        | <p>4. Compare the head length, head width, and head circumference measurements to the sizing parameters shown in Table 1.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>The use of both a balaclava and an M-40 mask adds ¼ inch to the user’s head width and 5/16 inch to the user’s head length. This may place the wearer into the next larger helmet size when the balaclava and the M-40 mask are worn. If this is the case, it is recommended that the larger size be selected.</p> <p style="text-align: center;"><b>Table 1. ECH-M Sizing Parameters.</b></p> <table border="1"> <thead> <tr> <th rowspan="2">Helmet Size</th> <th colspan="3">MEASUREMENTS – inches up to maximum*</th> </tr> <tr> <th>Head Length</th> <th>Head Width</th> <th>Head Circumference</th> </tr> </thead> <tbody> <tr> <td>X-Small</td> <td>7-1/8</td> <td>5-5/8</td> <td>20-7/8</td> </tr> <tr> <td>Small</td> <td>7-1/2</td> <td>5-7/8</td> <td>21-3/4</td> </tr> <tr> <td>Medium</td> <td>7-3/4</td> <td>6-1/8</td> <td>22-1/2</td> </tr> <tr> <td>Large</td> <td>8-1/8</td> <td>6-1/4</td> <td>23-1/4</td> </tr> <tr> <td>X-Large</td> <td>8-5/8</td> <td>6-7/8</td> <td>24-1/4</td> </tr> <tr> <td>XX-Large</td> <td>8-5/8 or more</td> <td>6-7/8 or more</td> <td>24-1/4 or more</td> </tr> </tbody> </table> <p style="text-align: center;">*All measurements are =/&lt;</p> <p>5. Of the three measurements, select the measurement that corresponds to the largest helmet size. For example, if the head length corresponds to the helmet size “Large,” and the other two measurements correspond to helmet size “Medium,” select helmet size “Large.”</p> | Helmet Size                       | MEASUREMENTS – inches up to maximum* |  |  | Head Length | Head Width | Head Circumference | X-Small | 7-1/8 | 5-5/8 | 20-7/8 | Small | 7-1/2 | 5-7/8 | 21-3/4 | Medium | 7-3/4 | 6-1/8 | 22-1/2 | Large | 8-1/8 | 6-1/4 | 23-1/4 | X-Large | 8-5/8 | 6-7/8 | 24-1/4 | XX-Large | 8-5/8 or more | 6-7/8 or more | 24-1/4 or more |  |
| Helmet Size | MEASUREMENTS – inches up to maximum* |                                |   |                                   |                                      |  |  |             |            |                    |         |       |       |        |       |       |       |        |        |       |       |        |       |       |       |        |         |       |       |        |          |               |               |                |  |
|             | Head Length                          | Head Width                     | Head Circumference  |                                   |                                      |  |  |             |            |                    |         |       |       |        |       |       |       |        |        |       |       |        |       |       |       |        |         |       |       |        |          |               |               |                |  |
| X-Small     | 7-1/8                                | 5-5/8                          | 20-7/8  |                                   |                                      |  |  |             |            |                    |         |       |       |        |       |       |       |        |        |       |       |        |       |       |       |        |         |       |       |        |          |               |               |                |  |
| Small       | 7-1/2                                | 5-7/8                          | 21-3/4  |                                   |                                      |  |  |             |            |                    |         |       |       |        |       |       |       |        |        |       |       |        |       |       |       |        |         |       |       |        |          |               |               |                |  |
| Medium      | 7-3/4                                | 6-1/8                          | 22-1/2  |                                   |                                      |  |  |             |            |                    |         |       |       |        |       |       |       |        |        |       |       |        |       |       |       |        |         |       |       |        |          |               |               |                |  |
| Large       | 8-1/8                                | 6-1/4                          | 23-1/4  |                                   |                                      |  |  |             |            |                    |         |       |       |        |       |       |       |        |        |       |       |        |       |       |       |        |         |       |       |        |          |               |               |                |  |
| X-Large     | 8-5/8                                | 6-7/8                          | 24-1/4  |                                   |                                      |  |  |             |            |                    |         |       |       |        |       |       |       |        |        |       |       |        |       |       |       |        |         |       |       |        |          |               |               |                |  |
| XX-Large    | 8-5/8 or more                        | 6-7/8 or more                  | 24-1/4 or more  |                                   |                                      |  |  |             |            |                    |         |       |       |        |       |       |       |        |        |       |       |        |       |       |       |        |         |       |       |        |          |               |               |                |  |

Table 1. Preventive Maintenance Checks and Services – Continued.

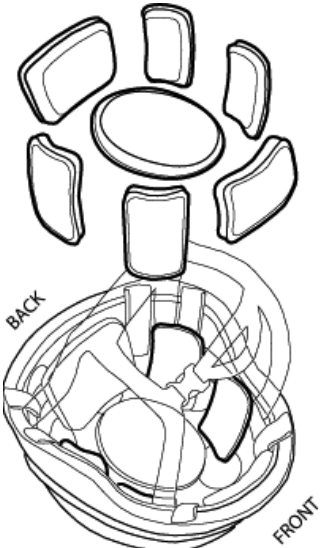
| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED | PROCEDURE   | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|--------------------------------|---|-----------------------------------|
| 4        | Before   | Helmet Fit                     | <p style="text-align: center;"><b>WARNING</b></p> <p>The hardware (nut) inside the helmet, where the retention system webbing attaches to the helmet (in four places), must be covered by pads. The oblong/oval pad must be placed flush with the rim (edge) of the helmet and completely cover the hardware. Failure to observe this precaution could result in serious injury or death.</p> <p>All seven pads provide maximum impact protection. Using fewer than the standard number of pads is not authorized. The standard number of pads is seven pads for sizes XS-XL, nine pads for size XXL. Never wear without the crown pad. Failure to observe this precaution could result in serious injury or death.</p> <p>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 injury.</p> <ol style="list-style-type: none"> <li>1. Ensure the suspension pads are arranged in the standard pad configuration (Figure 12a and b). If other equipment is to be used with the helmet, such as a headset, evaluate size with that equipment, if possible.</li> </ol>  <p style="text-align: center;">Figure 12a. Suspension Pad Standard Placement.</p> |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|--------------------------------|--|-----------------------------------|
| 4        | Before   | Helmet Fit – Continued         | <div> </div> <p>Figure 12b. Hardware Locations 1-4.</p> <p>2. Adjust the retention system.</p> <div> </div> <p><b>LEGEND:</b></p> <ul style="list-style-type: none"> <li>1. Strap adjustment (one on each side).</li> <li>2. Chinstrap buckle.</li> <li>3. Ends of chinstrap.</li> <li>4. Buckle D-ring.</li> <li>5. Front retention strap adjustment buckle (one on each side).</li> </ul> <p>Figure 13. Helmet Retention System Adjustment.</p> <ol style="list-style-type: none"> <li>a. Don the helmet.</li> <li>b. Ensure the buckle D-rings are below the earlobes. If the D-rings cover the earlobes, lower the front retention strap buckles until the D-rings are below the earlobes.</li> </ol> |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED | PROCEDURE   | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|--------------------------------|---|-----------------------------------|
| 4        | Before   | Helmet Fit – Continued         | <p>c. Buckle the chinstrap.</p> <p>d. Adjust the nape strap for a snug, secure, comfortable fit at the nape. If you have trouble tightening the strap, remove the elastic loop.</p> <p>e. Tighten the chinstrap by pulling on the hook ends of the chinstrap until the fit is snug, secure, and comfortable. Reattach the ends of the hook and loop fastener when the desired fit is attained.</p> <p>f. 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. Adjust the nape strap further until the helmet is stable.</p> <p>g. If the buckle pads cover the earlobes when the nape strap is adjusted, lower the front retention strap buckles until the buckle pads are below the earlobes. Repeat steps d through g as necessary.</p> <p>h. Recheck the helmet stability. Straps should be snug.</p> <p>3. Evaluate the fit of the helmet. If the helmet is:</p> <p>a. Too high, as shown in Figure 14 (crown pad does not contact head; more than a 1/2 inch of forehead is exposed; wearer does not see the rim).</p> <ul style="list-style-type: none"> <li>• Obtain a larger helmet.</li> </ul> <p>b. Too tight.</p> <ul style="list-style-type: none"> <li>• Obtain a larger helmet.</li> </ul> <p>c. Too low (too low on brow or not compatible with eyewear, etc.).</p> <ul style="list-style-type: none"> <li>• Obtain a smaller helmet.</li> </ul> <p>d. Too loose.</p> <ul style="list-style-type: none"> <li>• Obtain a smaller helmet or adjust the pad configuration as in step 5.</li> </ul> |                                   |



Table 1. Preventive Maintenance Checks and Services – Continued.

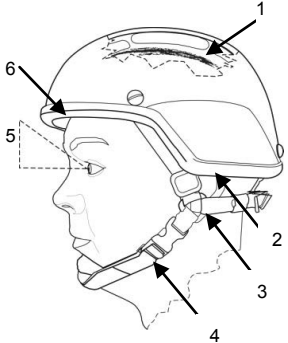
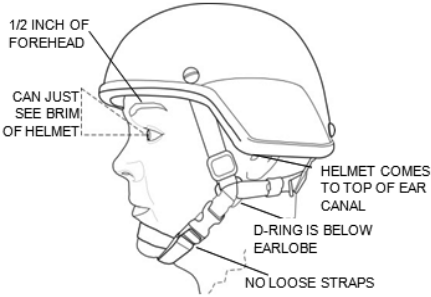
| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED | PROCEDURE   | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|--------------------------------|---|-----------------------------------|
| 4        | Before   | Helmet Fit – Continued         | <p style="text-align: center;"><b>NOTE</b></p> <p>If the helmet shell and pads seem to be the right size, but the retention system is too large or small, you may be able to obtain a larger or smaller retention system.</p>  <p><b>LEGEND:</b></p> <ol style="list-style-type: none"> <li>1. Crown Pad does not touch head.</li> <li>2. Helmet is well above ear canal.</li> <li>3. D-Ring is on earlobe.</li> <li>4. Loose Straps.</li> <li>5. Cannot see brim of helmet.</li> <li>6. More than 1/2 inch of forehead.</li> </ol> <p style="text-align: center;">Figure 14. Helmet Too High.</p> <p>4. Shake head rapidly from side to side to check for stability. The helmet should not rotate from side to side when head is shaken. See Figure 15 for proper fit.</p>  <p style="text-align: center;">Figure 15. Properly Fit Helmet.</p> |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|--------------------------------|--|-----------------------------------|
| 4        | Before   | Helmet Fit – Continued         | <p style="text-align: center;"><b>WARNING</b></p> <p>The hardware (nut) inside the helmet, where the retention system webbing attaches to the helmet (in four places), must be covered by pads. The oblong/ oval pad must be placed flush with the rim (edge) of the helmet and completely cover the hardware. Failure to observe this precaution could result in serious injury or death.</p> <p>All seven pads provide maximum impact protection. Using fewer than the standard number of pads is not authorized. The standard number of pads is seven pads for sizes XS-XL, nine pads for size XXL. Never remove the crown pad. Failure to observe this precaution could result in serious injury or death.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>When donning the helmet for the first time in a cold environment, it is necessary to wear the helmet for a few minutes or otherwise warm the pads, such as 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 re-tighten the chinstrap and the retention system.</p> <p>If you experience hot spots or discomfort, try rearranging the pad system to accommodate a more comfortable fit. If discomfort persists, try another helmet size or adjust the pad configuration.</p> <p>5. Adjust pad configuration. For maximum stability, place pads as close as possible to the edge of the helmet.</p> <ul style="list-style-type: none"> <li>• Place pads in either the vertical or horizontal configuration (Figure 16) or at any angle in between, ensuring all hardware is covered and the oblong/oval pad is flush with the rim.</li> <li>• The vertical configuration maximizes airflow for better temperature regulation.</li> <li>• The horizontal configuration makes a seal around the user's head and is better suited for cold weather environments.</li> </ul> |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

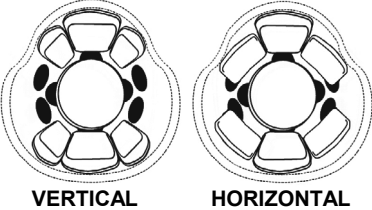
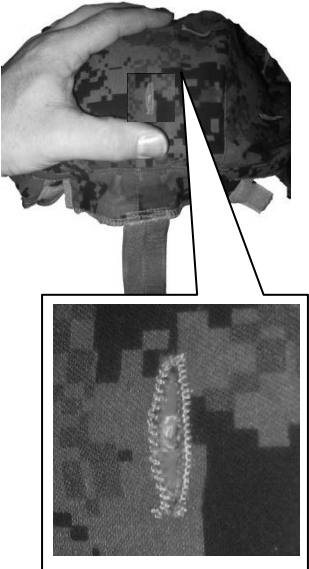
| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|--------------------------------|--|-----------------------------------|
| 4        | Before   | Helmet Fit – Continued         | <p style="text-align: center;"><b>FRONT</b></p>  <p style="text-align: center;"><b>VERTICAL      HORIZONTAL</b></p> <p style="text-align: center;">Figure 16. Vertical and Horizontal Pad Placement.</p>  |                                   |
| 5        | Before   | Helmet Cover                   | <p>Install helmet cover.</p> <ol style="list-style-type: none"> <li>1. Remove the NVG bracket from helmet.</li> <li>2. Remove the suspension pads from the inside of the helmet, noting their positioning and arrangement.</li> <li>3. Using a screwdriver or like tool, remove the retention system.</li> <li>4. Orient the cover so the desired color or pattern is on the outside.</li> <li>5. Align the vertical buttonhole of the cover over the NVG bracket hole on the front of the helmet (Figure 17).</li> </ol>  <p style="text-align: center;">Figure 17. Aligning Helmet Cover with NVG Bracket Hole.</p> <ol style="list-style-type: none"> <li>6. Pull the cover over the helmet.</li> </ol> |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

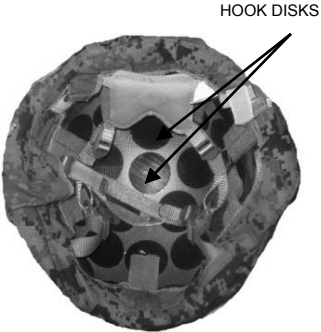

| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED | PROCEDURE   | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|--------------------------------|---|-----------------------------------|
| 5        | Before   | Helmet Cover – Continued       | <p style="text-align: center;"><b>NOTE</b></p> <p>Do not overlap the tabs of the helmet cover. Doing so may cause helmet to fit improperly.</p> <p>7. Attach the tabs on the cover to the hook disks on the inside of the helmet (Figure 18).</p> <div style="text-align: center;">  <p style="text-align: center;">HOOK DISKS</p> </div> <p>Figure 18. Attaching Helmet Cover Tabs.</p> <p>8. Reinstall NVG bracket at this time.</p> <p>9. Reinstall the suspension pads in the same position and arrangement as before. Refer to Figure 19 for installed helmet cover.</p> <div style="text-align: center;">  </div> <p>Figure 19. Installed Helmet Cover.</p> |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|--------------------------------|--|-----------------------------------|
| 6        | Before   | NVG Bracket                    | <p>Install NVG Bracket</p> <p style="text-align: center;"><b>NOTE</b></p> <p>The NVG bracket is to remain mounted while wearing the helmet.</p> <ol style="list-style-type: none"> <li>1. Remove front trapezoidal pad.</li> <li>2. Place the bracket assembly on the helmet over the helmet cover.</li> <li>3. Line up the hole on the plate, the front vertical buttonhole on the cover, and the hole on the helmet shell.</li> <li>4. Insert the screw through the bracket assembly, cover and shell from the inside of the helmet.</li> <li>5. Align flat side of the post so that the post sits flat into the recess on the bracket. You will know the post is correctly seated when you hear a click.</li> <li>6. Slightly tighten the screw and post.</li> </ol> <p style="text-align: center;"><b>CAUTION</b></p> <p>Do not over-tighten the post or the bracket may break.</p> <ol style="list-style-type: none"> <li>7. Before completely tightening the screw and post, ensure that the cleat of the bracket assembly is tight against the rim of the helmet.</li> <li>8. Push the bracket up so that the cleat is tight against the rim (edge) of the helmet while completely tightening the screw and post.</li> <li>9. Replace the front trapezoidal pad.</li> </ol> |                                   |
| 7        | Before   | Chinstrap Buckle (Optional)    | <p>Switch chinstrap buckle (optional).</p> <p>The chinstrap buckle is factory-installed on the left side (as worn) of the helmet (Figure 20). The chinstrap buckle may be switched to the right side (as worn) to accommodate left-handed shooters.</p>  |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

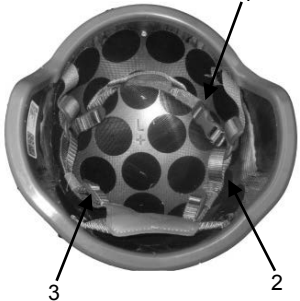
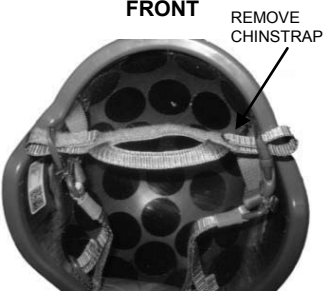
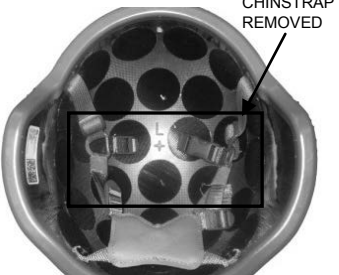
| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED          | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|---|--|-----------------------------------|
| 7        | Before   | Chinstrap Buckle (Optional) – Continued | <p style="text-align: center;"><b>FRONT</b></p>  <p style="text-align: center;"><b>LEGEND:</b></p> <ul style="list-style-type: none"> <li>1. Chinstrap buckle.</li> <li>2. Right rear retention strap.</li> <li>3. Left rear retention strap</li> </ul> <p style="text-align: center;">Figure 20. Chinstrap.</p> <p>1. Unbuckle the chinstrap, detach the ends of the chinstrap from the hook and loop fastener, and unlace the chinstrap from both the buckle and the slide adjustment (Figure 21). Set aside until later.</p> <p style="text-align: center;"><b>FRONT</b></p>   <p style="text-align: center;">Figure 21. Unlacing and Removing Chinstrap.</p> |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

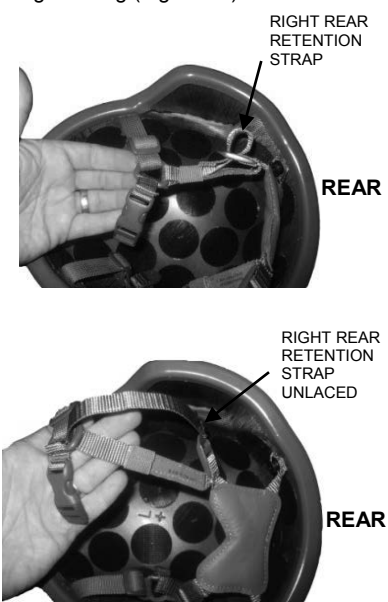
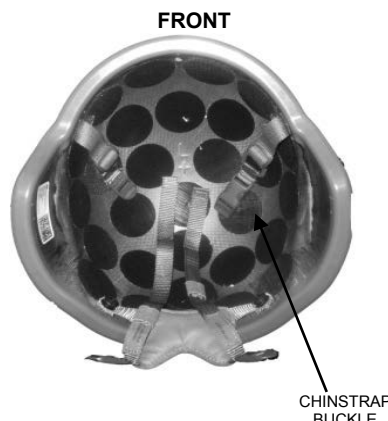
| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED          | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|---|--|-----------------------------------|
| 7        | Before   | Chinstrap Buckle (Optional) – Continued | <p>2. Unlace right rear retention strap from the right D-ring (Figure 22).</p>  <p>Figure 22. Unlacing Rear Retention Straps.</p> <p>3. Repeat for left side. The helmet should look like Figure 23.</p>  <p>Figure 23. Helmet with Rear Retention Straps Unlaced.</p> |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

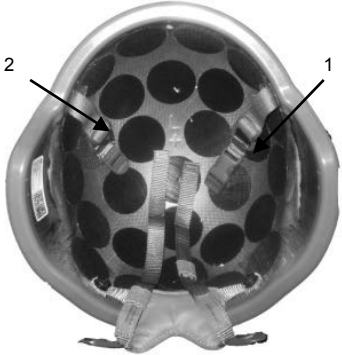
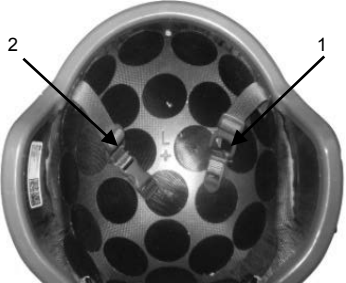
| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED          | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|---|--|-----------------------------------|
| 7        | Before   | Chinstrap Buckle (Optional) – Continued | <p style="text-align: center;"><b>NOTE</b></p> <p>The nut will also be removed from the inside of the helmet. Note how the nut is positioned in the front strap inside the helmet; you will reinstall the nut in the same manner in the next steps.</p> <ol style="list-style-type: none"> <li>4. Remove the front screws that attach the left and right front retention strap to the helmet.</li> <li>5. Switch the left and right front retention straps so that the front retention strap with the chinstrap buckle attached will be on the right and the front retention strap with the slide buckle will be on the left (Figures 24, 25).</li> </ol> <p style="text-align: center;"><b>FRONT</b></p>  <p style="text-align: center;"><b>LEGEND:</b></p> <ol style="list-style-type: none"> <li>1. Chinstrap buckle before switch.</li> <li>2. Slide buckle before switch.</li> </ol> <p style="text-align: center;">Figure 24. Hardware Locations and Front Strap Before Switch.</p> <p style="text-align: center;"><b>FRONT</b></p>  <p style="text-align: center;"><b>LEGEND:</b></p> <ol style="list-style-type: none"> <li>1. Slide buckle after switch.</li> <li>2. Chinstrap buckle after switch.</li> </ol> <p style="text-align: center;">Figure 25. Hardware Locations and Front Straps After Switch.</p> |                                   |



Table 1. Preventive Maintenance Checks and Services – Continued.

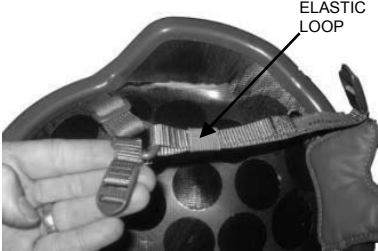
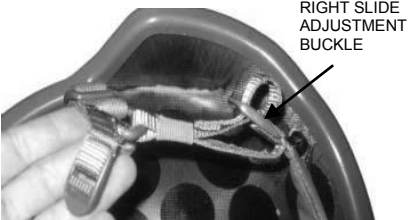
| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED          | PROCEDURE   | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|---|---|-----------------------------------|
| 7        | Before   | Chinstrap Buckle (Optional) – Continued | <p>6. Attach the front retention straps to the helmet using the hardware removed previously. Be sure to position the slot in the nut toward the inside of helmet.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>Ensure the left and right rear retention straps are properly placed on the D-rings. The rear retention straps should be placed on the D-rings so that they run to the back of the helmet.</p> <p>7. Lace the right rear retention strap through D-ring and back through the elastic loop (Figure 26).</p>  <p style="text-align: center;">Figure 26. Lacing Right Rear Retention Strap Through D-Ring.</p> <p>8. Continue lacing the right rear retention strap back through the slide adjustment buckle (Figure 27).</p>  <p style="text-align: center;">Figure 27. Lacing Right Rear Retention Strap Through Buckle.</p> <p>9. Lace the left rear retention strap through D-ring and back through the elastic loop.</p> |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

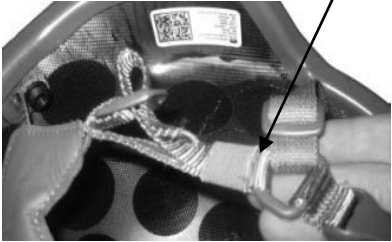
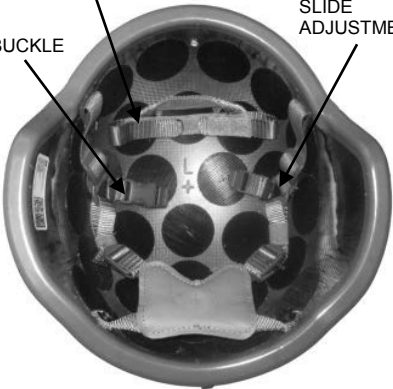
| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED          | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|---|--|-----------------------------------|
| 7        | Before   | Chinstrap Buckle (Optional) – Continued | <p>10. Continue lacing the left rear retention strap back through the slide adjustment buckle (Figure 28).</p>  <p>Figure 18. Lacing Left Rear Retention Strap.</p> <p>11. Take the unattached chinstrap and place it so the hook and loop fastener faces the rear of the helmet, as shown in Figure 29. Lace one end through the slide adjustment; lace the other end through the buckle.</p>  <p>Figure 29. Placement of Reversed Chinstrap.</p> <p>12. Reattach the ends of the chinstrap to the hook and loop fastener.</p> |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.


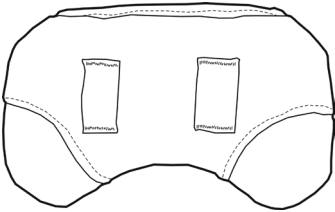
| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED          | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|---|--|-----------------------------------|
| 7        | Before   | Chinstrap Buckle (Optional) – Continued | <p>10. Ensure that the chinstrap hook and loop fastener is toward the back of the helmet (Figure 30).</p>  <p>Figure 30. Chinstrap Attached with Buckle on Other Side.</p>  |                                   |
| 8        | Before   | Ballistic Nape Protection Pad (NAPP)    | <p>Install the Ballistic Nape Protection Pad (NAPP).</p> <p><b>NOTE</b><br/>The ballistic NAPP will be installed over the nape pad on the retention system.</p>  <p>Figure 31. Ballistic Nape Protection Pad (NAPP) for ECH-M.</p> |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

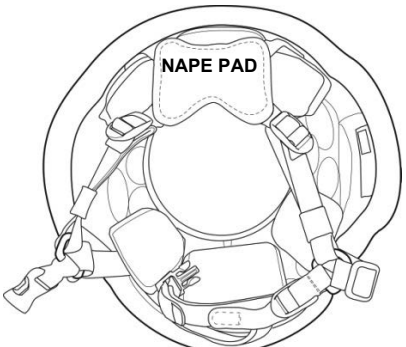
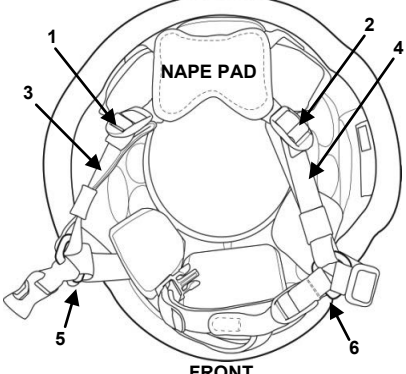
| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED                   | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|--|--|-----------------------------------|
| 8        | Before   | Ballistic Nape Protection Pad (NAPP) – Continued | <p style="text-align: center;"><b>WARNING</b></p> <p>For effective protection, ensure that there is no gap between the NAPP and the helmet.</p> <p>1. Position the helmet upside down with the back facing away from you.</p> <p style="text-align: center;"><b>REAR</b></p>  <p style="text-align: center;"><b>FRONT</b></p> <p style="text-align: center;">Figure 32. Position the Helmet.</p> <p>2. Unthread the rear retention straps at the bottom of the nape pad from the buckle pad and the slide adjustment pad.</p> <p style="text-align: center;"><b>REAR</b></p>  <p style="text-align: center;"><b>FRONT</b></p> <p><b>LEGEND:</b><br/>                     1, 2 – Unbuckle retention straps.<br/>                     3, 4 – Rear retention straps.<br/>                     5, 6 – Buckle D-rings.</p> <p style="text-align: center;">Figure 33. Unthread Retention Straps.</p> |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

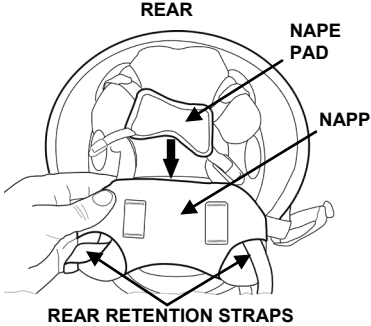
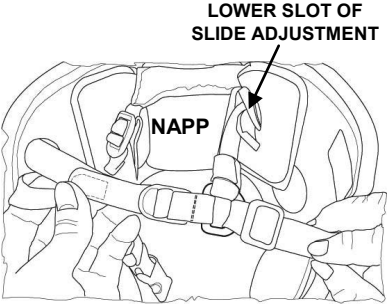
| ITEM NO. | INTERVAL | ITEM TO BE CHECKED OR SERVICED                   | PROCEDURE   | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|----------|--|---|-----------------------------------|
| 8        | Before   | Ballistic Nape Protection Pad (NAPP) – Continued | <p>3. Insert the rear retention straps through the open pocket at the top of the NAPP, then insert the nape pad into the pocket. Pull the retention straps through the bottom holes of the NAPP, then fasten the hook and loop closures at the top of the pocket to secure the nape pad within the NAPP. See Figure 34.</p>  <p>REAR</p> <p>NAPE PAD</p> <p>NAPP</p> <p>REAR RETENTION STRAPS</p> <p>Figure 34. Inserting Straps and Nape Pad into NAPP.</p> <p>4. On the right side of the helmet, reinsert the rear retention strap through the slide adjustment pad and then through the lower slot of the slide adjustment. See Figure 35. As you are doing so, be sure to slide the strap through the elastic band that is used to secure the retention system straps.</p>  <p>LOWER SLOT OF SLIDE ADJUSTMENT</p> <p>NAPP</p> <p>Figure 35. Reinsert Retention Strap Through Slide Adjustment.</p> |                                   |

Table 1. Preventive Maintenance Checks and Services – Continued.

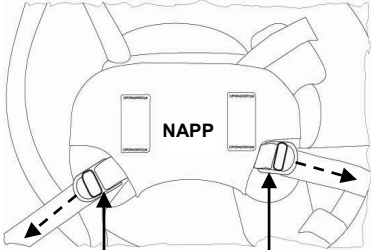
| ITEM NO. | INTERVAL         | ITEM TO BE CHECKED OR SERVICED                                   | PROCEDURE   | EQUIPMENT NOT READY/AVAILABLE IF:   |
|----------|------------------|--|---|---|
| 8        | Before           | Ballistic Nape Protection Pad (NAPP) – Continued                 | <p>5. On the left side of the helmet, reinsert the rear retention strap through the buckle pad and then through the lower slot of the slide adjustment. As you are doing so, be sure to slide the strap through the elastic band that is used to secure the retention system straps.</p> <p>6. Lace the rear retention straps back through the upper slots of the slide adjustments to complete the installation. See Figure 36. Be sure to slide the strap through the elastic band used to secure the retention system straps.</p> <p style="text-align: center;"><b>REAR</b></p>  <p style="text-align: center;">UPPER SLOT OF SLIDE ADJUSTMENT      UPPER SLOT OF SLIDE ADJUSTMENT</p> <p>Figure 36. Lace Straps Through Upper Slots of Slide Adjustments.</p> <p>7. Don the helmet and check to be sure straps are not twisted. Adjust all straps for a secure fit.</p> |   |
| 9        | Before/<br>After | <p>Helmet Inspection</p><br><p>Helmet Shell</p><br><p>Edging</p> | <p style="text-align: center;"><b>WARNING</b></p> <p>Failure to follow the inspection criteria may result in reduced head protection, injury or death.</p> <p>Inspect helmet as described below.</p> <p>Examine for dents, cuts, delamination or chipped paint.</p><br><p>Examine for missing or loose edges.</p>   | <p>Helmet shell has any dents, cuts, ply separation or chipped paint. Turn in for replacement helmet.</p><br><p>Edging is missing or loose. Turn in for replacement helmet.</p> |

Table 1. Preventive Maintenance Checks and Services – Continued.

| ITEM NO. | INTERVAL         | ITEM TO BE CHECKED OR SERVICED  | PROCEDURE  | EQUIPMENT NOT READY/AVAILABLE IF:  |
|----------|------------------|---|--|--|
| 9        | Before/<br>After | Helmet Inspection – Continued<br>Retention Assembly<br><br>Chinstrap<br><br>Pads<br><br>Hook Disks<br><br>Helmet Cover<br><br>NVG Bracket | Examine for torn/frayed webbing, broken nape strap buckles, damaged D-ring, or missing or loose attaching hardware.<br><br>Examine for broken buckles; torn, cut, or frayed webbing; or worn hook and loop fasteners.<br><br><p style="text-align: center;"><b>NOTE</b></p> Pads should be replaced after 6 months of continuous daily use.<br><br>Examine for cuts, tears or other damage to outer fabric or plastic, or if inner foam appears to have deteriorated; pads not adhering to hook disks.<br><br>Examine for loose or damaged hook disks.<br><br>Examine for cuts, tears, rips, or frays in fabric; worn hook and loop fasteners.<br><br>Examine for dents, deformation, cracks, loose or missing hardware; screw is stripped or threads are damaged. | Webbing is torn or frayed, nape strap buckles are broken, D-ring is broken, or attaching hardware is loose or missing. Replace retention assembly.<br><br>Buckles are broken; webbing is cut, torn or frayed; or hook and loop fasteners do not secure. Replace chinstrap retention assembly.<br><br>Pads are torn, cut or otherwise damaged or pads will not adhere to hook disks. Replace pads.<br><br>Hook disks are damaged such that they will not securely hold the pads in place. Turn in for replacement helmet.<br><br>Helmet cover has any cuts, tears, rips or frays or hook and loop fasteners do not secure. Replace helmet cover.<br><br>NVG bracket is damaged or screw is stripped. Replace NVG bracket. |
| 10       | Weekly/As Needed | Helmet Cleaning<br><br>Helmet Shell<br><br>Pad Suspension<br><br>Leather Components   | Clean your helmet weekly or as needed depending on usage.<br><br>Wipe exterior with damp cloth.<br><br>Hand-wash with mild soap and water. Rinse well and air-dry. (Do not machine wash or machine dry.)<br><br>Clean with soap, rinse thoroughly, wipe dry with clean cloth.  |  |

Table 1. Preventive Maintenance Checks and Services – Continued.

| ITEM NO. | INTERVAL         | ITEM TO BE CHECKED OR SERVICED  | PROCEDURE   | EQUIPMENT NOT READY/AVAILABLE IF: |
|----------|------------------|---|---|-----------------------------------|
| 10       | Weekly/As Needed | Helmet Cleaning – Continued<br><br>Retention Assembly<br><br><br>Ballistic Nape Protection Pad (NAPP)<br><br>Helmet Cover<br><br><br>Hook Disks | Wipe clean with damp cloth.<br><br><p style="text-align: center;"><b>CAUTION</b></p> Do not machine dry any parts of the NAPP. Failure to follow these precautions could affect the protective qualities of the NAPP.<br><br>Wipe clean with moistened sponge or cloth.<br><br>Machine or hand wash. Air dry.<br><br>Clean with soft bristle brush to remove dirt and debris. |                                   |

END OF WORK PACKAGE



**CHAPTER 5**  
**MAINTENANCE INSTRUCTIONS**  
**FOR**  
**ENHANCED COMBAT HELMET-ARMY (ECH-A)**  
**ENHANCED COMBAT HELMET-MARINE CORPS (ECH-M)**



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**OPERATOR MAINTENANCE  
INSPECT**

---

**INITIAL SETUP:****Tools and Special Tools**

Multi-tool, ECH-A only (WP 0036, Item 1)  
Screwdriver (WP 0036, Item 2)

**Materials/Parts**

None Required

**REFERENCES**

|         |         |
|---------|---------|
| WP 0004 | WP 0022 |
| WP 0007 | WP 0024 |
| WP 0008 | WP 0025 |
| WP 0015 | WP 0027 |
| WP 0016 | WP 0028 |
| WP 0017 | WP 0029 |
| WP 0018 | WP 0031 |
| WP 0019 | WP 0032 |
| WP 0020 |         |
| WP 0021 |         |

---

**INTRODUCTION**

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 0015 (ECH-A) and WP 0016 (ECH-M).

**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 suspension pads by pulling the individual pads off the hook disks inside the helmet shell.
2. Using a screwdriver or other appropriate tool, remove the chinstrap retention system by loosening and removing the four screws and nuts attaching the retention system to the helmet.

**NOTE**

**(A):** When you remove the chinstrap retention system the eyewear retention straps, if attached, disconnect automatically.

3. Remove the night vision goggles (NVG) bracket IAW WP 0019 and WP 0020.
4. Remove the ballistic nape pad, if installed, IAW WP 0021 and WP 0022.
5. Remove the helmet cover by disconnecting the hook and loop fasteners on the inside of the shell. Then pull the cover off the helmet.

**NOTE**

Inspect helmet shell first. If the helmet shell is damaged as described below, replace the helmet. See WP 0031 (ECH-A), and WP 0032 (ECH-M) for NSN information.

**INSPECT**

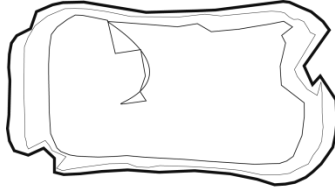
1. Conduct visual inspection of helmet shell as follows:
  - a. Inspect the edge of the helmet for damage to the rubber edging.
  - b. Look for evidence of peeling, fraying or extensive wear.
  - c. Inspect the inside and outside surfaces of the helmet for damage.
    - (1) Look for holes and evidence 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).
    - (2) Look for surface scarring or indentations. Replace the helmet if there are any surface indentations greater than 0.15 inches in depth.
  - d. If there is no evidence of helmet damage, continue to step 2.

**WARNING**

Replace all suspensions pads if Soldier/Marine receives concussion while wearing the helmet. Replacement of the pads is a precautionary measure. The helmet pads, at the time the Soldier/Marine received the concussion injury, likely provided the Soldier/Marine 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 0028.

## INSPECT- CONTINUED



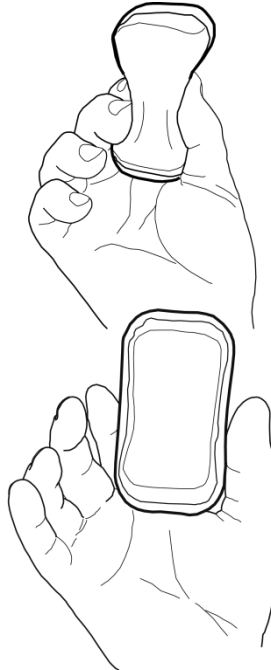
**Figure 1. Damaged Suspension Pads.**

- b. Inspect each pad for dynamic response by squeezing all pads, including the crown and trapezoidal pads, lightly between the thumb and forefinger as shown in Figure 2.

**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 0026. Failure to do so may result in serious injury or death to personnel.

- (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 0028.



**Figure 2. Squeezing Pad for Dynamic Response.**

- (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 areas appear to be permanently depressed. Replace pads exhibiting signs of breakdown or failure as described in WP 0028.
- 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.

**INSPECT – CONTINUED**

3. Visually inspect the chinstrap 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 chinstrap retention system as described in WP 0024 (ECH-A) and WP 0025 (ECH-M).
  - b. Inspect for missing, cracked, worn, or damaged hardware on buckle assembly. If the buckle assembly is damaged or broken, replace the chinstrap retention system as described in WP 0024 (ECH-A) and WP 0025 (ECH-M).
  - c. Inspect for damaged or missing hardware. If there is missing or damaged hardware on an ECH-A, replace it as described in WP 0027. If there is missing or damaged hardware on an ECH-M, replace the entire retention system as described in WP 0025.
  - d. If there is loose hardware, tighten it. There should be nothing loose at this point.
  - e. Continue to step 4 if:
    - (1) There are no cuts, frays, or other damage to the chinstrap 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 NVG bracket as follows:
  - a. Inspect for a cracked bracket. If the NVG bracket is cracked, replace it as described in WP 0019 (ECH-A) and WP 0020 (ECH-M).
  - b. Inspect for missing hardware. If the NVG bracket hardware is missing or damaged, follow these procedures:
    - For ECH-A, replace the entire bracket as described in WP 0019.
    - For ECH-M, replace the hardware as described in WP 0029.
  - c. If the NVG bracket and hardware are not missing or damaged, continue to step 5.
5. Visually inspect the ballistic nape pad, if installed, as follows:
  - a. Inspect for evidence of being hit by bullet or a fragment. If the ballistic nape pad shows evidence of being hit by a bullet or fragment, replace the ballistic nape pad as described in WP 0021 (ECH-A) and WP 0022 (ECH-M).
  - 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 (ECH-A) and WP 0022 (ECH-M).
  - c. If the ballistic nape pad shows no evidence of bullet or fragment damage and the fabric carrier is not torn or damaged continue to install the components.

**END OF TASK**

**INSTALL****WARNING**

The hardware for all helmets, where the chinstrap 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.

1. Install the ballistic nape pad as described in WP 0021 (ECH-A) and WP 0022 (ECH-M).
2. Install the helmet cover as described in WP 0017 (ECH-A) and WP 0018 (ECH-M).
3. Install the chinstrap retention system as described in WP 0024 (ECH-A) and WP 0025 (ECH-M).
4. Install the NVG bracket as described in WP 0019 (ECH-A) and WP 0020 (ECH-M).
5. Install the suspension pads as follows:
  - a. Attach the suspension pads in the standard configuration as described in WP 0004.
  - b. Adjust the fit of the helmet, if necessary, as described in WP 0007 (ECH-A) and WP 0008 (ECH-M).

**END OF TASK****END OF WORK PACKAGE**





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**OPERATOR MAINTENANCE  
CLEAN (ARMY ONLY)  
ENHANCED COMBAT HELMET—ARMY (ECH-A)**

---

**INITIAL SETUP:****Tools and Special Tools**

- Multi-Tool (WP 0036, Item 1)
- Screwdriver (WP 0036, Item 2)

**Materials/Parts**

- Cloth (WP 0035, Item 3)
  - Mild Soap (WP 0035, Item 4)
  - Soft Brush (WP 0035, Item 6)
- 

**References**

- WP 0014
- WP 0019
- WP 0021
- WP 0024

**INTRODUCTION**

This work package provides instructions for cleaning the ECH-A components, including the helmet shell, helmet cover, suspension pads, chinstrap retention system, and ballistic nape pad.

**NOTE**

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

**REMOVE**

1. Remove the suspension pads by pulling the individual pads off the hook disks inside the helmet shell.
2. Remove the night vision device (NVG) bracket by using a multi-tool to loosen and remove the screw and self-locking nut. Pull up on the bracket and remove it from the helmet. Be sure to retain hardware for re-installation.
3. Remove the cover and chinstrap retention system as described in WP 0024.

**NOTE**

The eyewear retention straps, if attached, disconnect when removing the screws and nuts attaching the chinstrap retention system to the helmet.

4. Remove the ballistic nape pad IAW WP 0021.

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

Clean your helmet weekly or as needed depending on usage.

1. Clean the chinstrap retention system, helmet cover, and suspension pads as follows:
  - a. Clean each component with mild soap and water.
  - b. Wash by hand or machine launder 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 ballistic nape pad as follows:

**CAUTION**

Do not machine wash or dry any parts of the ballistic nape pads.

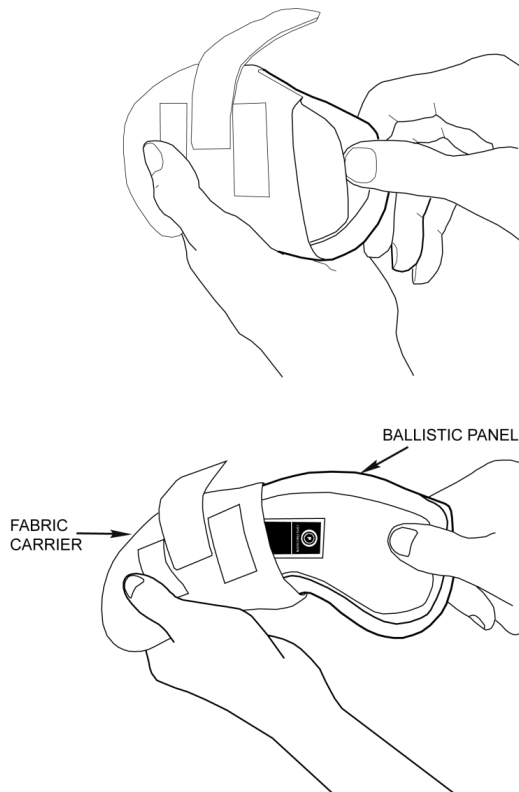
Do not attempt to dye item to fix discoloration.

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 in Figure 1.



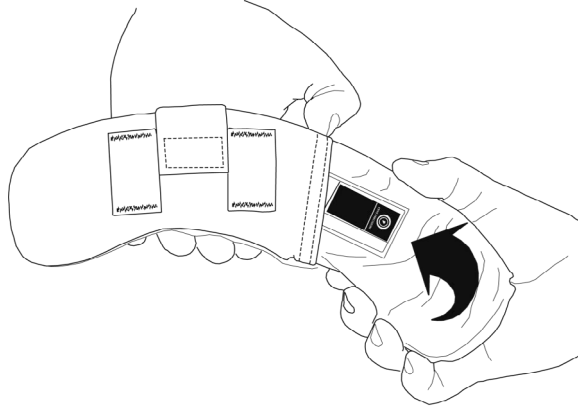
**Figure 1. Removing Ballistic Panel from Fabric Carrier.**

- 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 ballistic 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 in Figure 2.



**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.
- b. Allow shell to air dry.

**END OF TASK****INSTALL****NOTE**

Prior to reassembling the helmet components, inspect each item as described in WP 0014.

1. Install the ballistic nape pad as described in WP 0021.
2. Install the cover and retention system as described in WP 0024.
3. Install the NVG bracket as described in WP 0019.
4. Install the suspension pads in their original position.

**END OF TASK****END OF WORK PACKAGE**



---

**OPERATOR MAINTENANCE  
CLEAN (MARINE CORPS ONLY)  
ENHANCED COMBAT HELMET—MARINE CORPS (ECH-M)**

---

**INITIAL SETUP:****Tools and Special Tools**

Screwdrivers (WP 0036, Item 2)

**Materials/Parts**

Cloth (WP 0035, Item 3)

Mild Soap (WP 0035, Item 4)

Soft Brush (WP 0035 , Item 6)

**References**

WP 0018

WP 0020

WP 0022

WP 0025

---

**INTRODUCTION**

This work package provides instructions for cleaning the ECH-M components, including the helmet shell, helmet cover, suspension pads, retention system, hook disks, and optional ballistic nape pad.

**NOTE**

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

**REMOVE**

1. Remove the night vision goggles (NVG) hardware and bracket as follows:
  - a. Remove the screw and threaded post from the bracket.
  - b. Pull up on the bracket and remove it from the helmet.
2. Remove the suspension pads from the inside of the helmet, noting their positioning and arrangement.
3. Remove the helmet cover.
4. Remove the chinstrap retention system using two screwdrivers by loosening and removing the four screws and nuts attaching the retention system to the helmet.

**END OF TASK**

**CLEAN ECH-M**

1. Clean your helmet IAW Table 1 weekly or as needed depending on usage.

**Table. 1. ECH-M Helmet Cleaning.**

| <b>COMPONENT</b>                     | <b>PROCEDURE</b>   |
|--------------------------------------|--|
| Helmet Shell                         | Wipe exterior with damp cloth.   |
| Pad Suspension                       | Hand-wash with mild soap and water. Rinse well and air-dry. (Do not machine wash or machine dry.)  |
| Retention Assembly                   | Wipe clean with damp cloth.  |
| Ballistic Nape Protection Pad (NAPP) | <p style="text-align: center;"><b><u>CAUTION</u></b></p> <p>Do not machine dry any parts of the NAPP. Failure to follow these precautions could affect the protective qualities of the NAPP.</p> <p>Wipe clean with moistened sponge or cloth.</p> |
| Helmet Cover                         | Machine or hand wash. Air dry.   |
| Hook Disks                           | Clean with soft bristle brush to remove dirt and debris.   |

**END OF TASK****INSTALL**

1. Install the chinstrap retention system as described in WP 0025.
2. Install the helmet cover as described in WP 0018.
3. Install the suspension pads as follows:
  - a. Attach the suspension pads as described in WP 0004.
  - b. Adjust the fit of the helmet, if necessary, as described in WP 0008.
4. Install the ballistic nape pad as described in WP 0022.
5. Install the NVG bracket as described in WP 0020.

**END OF TASK****END OF WORK PACKAGE**

**OPERATOR MAINTENANCE  
INSTALL HELMET COVER (ARMY ONLY)  
ENHANCED COMBAT HELMET-ARMY (ECH-A)**

**INITIAL SETUP:****Tools and Special Tools**

Multi-tool (WP 0036, Item 1)  
Screwdriver (WP 0036, Item 2)

**References**

WP 0019

**Materials/Parts**

None Required

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

**NOTE**

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

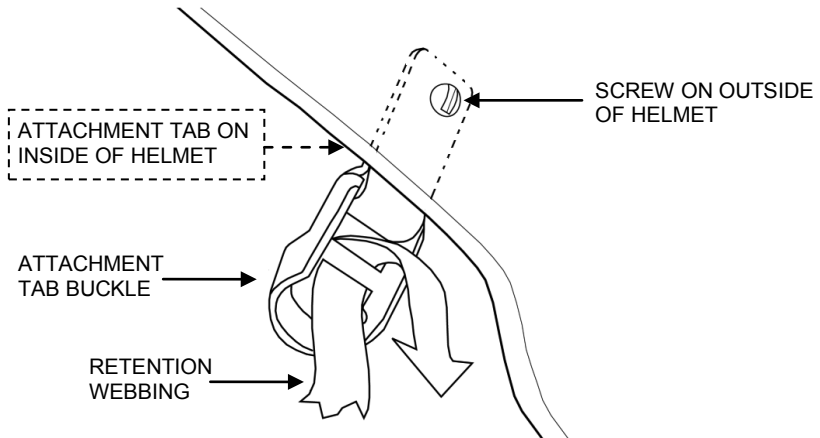
**REMOVE**

1. Remove the suspension pads from the inside of the helmet, noting their positioning and arrangement.
2. Remove the NVG bracket from helmet if already installed. Refer to WP 0019.
3. Remove the chinstrap retention system webbing as follows:

**WARNING**

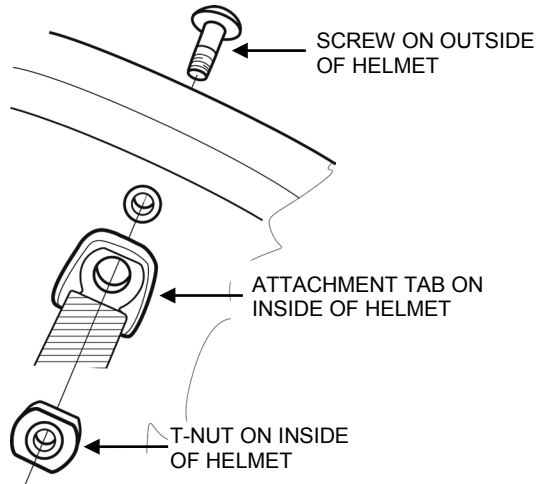
For H-back retention systems, do not remove the attachment tabs and hardware from the retention system.

- a. For helmets with H-back retention systems, remove loose ends of retention system webbing from elastic bands. Then unthread and remove the chinstrap retention system webbing from the four buckles on the attachment tabs, as shown in Figure 1.



**Figure 1. H-Back Retention System Attachment Tab and Buckle.**

- b. For helmets with improved H-nape retention systems, detach the entire retention system by removing all four sets of the retention system hardware from the helmet shell (Figure 2). Be sure to retain hardware to reuse.

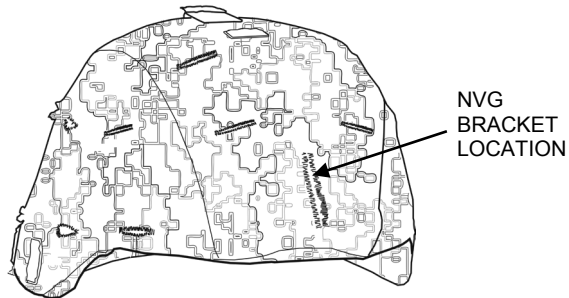
**REMOVE – CONTINUED**

**Figure 2. Improved H-Nape Retention System Attachment Tab and Hardware.**

4. Disconnect the hook and loop fasteners attaching the helmet cover to the helmet shell.
5. Pull the old cover from the helmet.

**END OF TASK****INSTALL**

1. Orient the replacement helmet cover with the NVG bracket location facing the front of the helmet, as shown in Figure 3.



**Figure 3. Outside of Helmet Cover.**

2. Pull the cover over the back and sides of the helmet.

**NOTE**

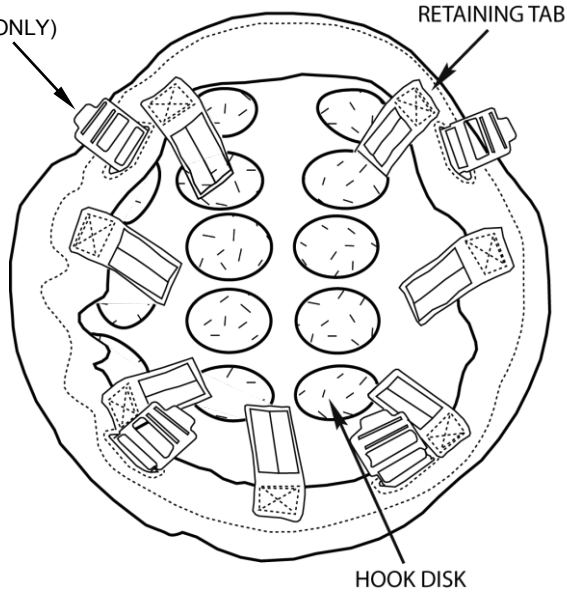
Do not overlap the tabs of the helmet cover. Doing so may cause helmet to fit improperly.

3. Proceed as follows:
  - a. For H-back retention systems, thread each buckle through the corresponding buttonhole in the cover (Figure 4). Then pull the cover retaining tabs down and attach tabs to hook disks inside helmet shell (Figure 4).
  - b. For improved H-nape retention systems, pull the cover retaining tabs down and attach tabs to hook disks inside helmet shell (Figure 4).



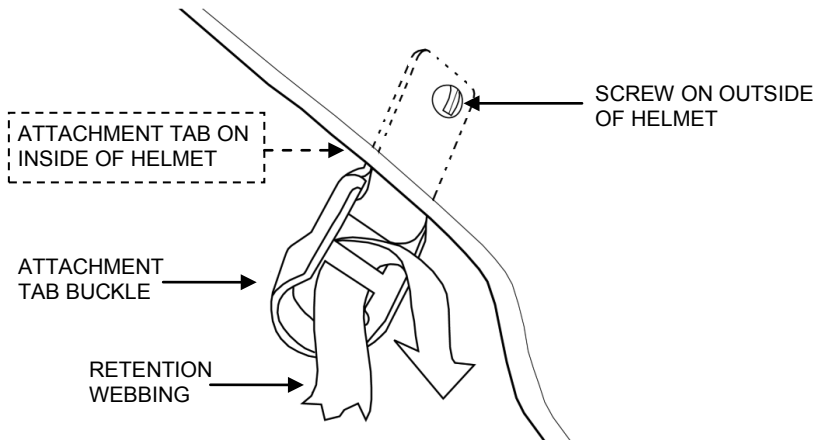
**INSTALL – CONTINUED**

BUCKLES THREADED THROUGH COVER (H-BACK SYSTEMS ONLY)



**Figure 4. Helmet Cover Installed**

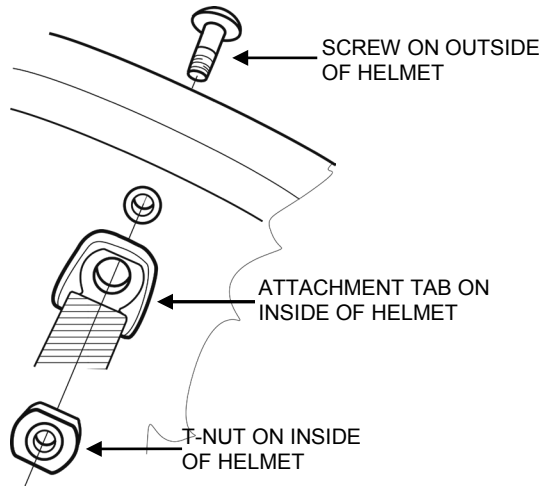
4. Ensure a tight smooth fit of cover by pulling the retaining tabs until tight.
5. Prepare to install chinstrap retention system webbing by laying the helmet on its crown with the front of the helmet away from you.
6. Drape the chinstrap retention system over the helmet with the nape-strap pad facing down on the back/rear of the helmet.
7. Proceed as follows:
  - a. For H-back retention systems, insert and thread the four legs of the chinstrap webbing into their corresponding buckles, as shown in Figure 5. Ensure webbing is not twisted. Slide elastic bands over loose ends of webbing.



**Figure 5. H-Back Retention System Attachment Tab and Buckle.**

**INSTALL – CONTINUED**

- b. For improved H-nape retention systems, attach the retention assembly to the helmet using the hardware you removed earlier (Figure 6). Ensure webbing is not twisted.



**Figure 6. Improved H-Nape Retention System.**

8. Reinstall the NVG bracket in accordance with (IAW) WP 0019.
9. Reinstall the suspension pads in their original position to complete the installation.

**END OF TASK**

**END OF WORK PACKAGE**

---

**OPERATOR MAINTENANCE**  
**INSTALL HELMET COVER (MARINE CORPS ONLY)**  
**ENHANCED COMBAT HELMET—MARINE CORPS (ECH-M)**

---

**INITIAL SETUP:****Tools and Special Tools**

Screwdriver (WP 0036, Item 2)

**References**

WP 0020

WP 0025

**Materials/Parts**

None Required

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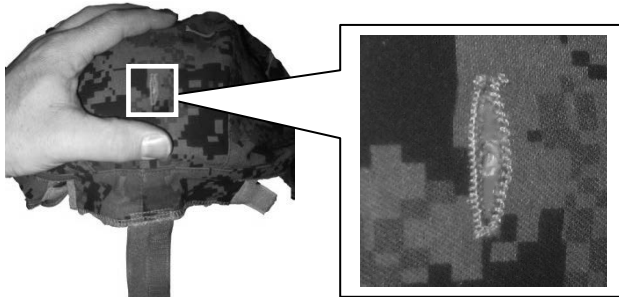
This work package provides instructions for removing and installing a helmet cover on the ECH-M.

**REMOVE**

1. Remove the NVG bracket from helmet.
2. Remove the suspension pads from the inside of the helmet, noting their positioning and arrangement.
3. Using a screwdriver or like tool, remove the retention system.
4. Disconnect the hook and loop fasteners attaching the helmet cover to the helmet shell.
5. Pull the old cover from the helmet.

**END OF TASK****INSTALL**

1. Orient the cover so the desired color or pattern is on the outside.
2. Align the vertical button hole of the cover over the NVG bracket hole on the front of the helmet (Figure 1).



**Figure 1. Aligning Helmet Cover with NVG Bracket Hole.**

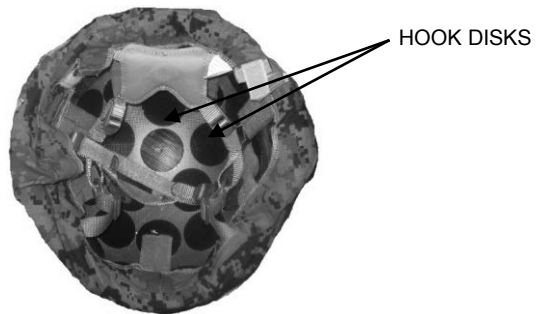
3. Pull the cover over the helmet.

**NOTE**

Do not overlap the tabs of the helmet cover. Doing so may cause helmet to not fit properly.

**INSTALL—CONTINUED**

4. Attach the tabs on the cover to the hook disks on the helmet (Figure 2).



**Figure 2. Attaching Helmet Cover Tabs.**

5. Reinstall the retention system IAW WP 0025.
6. Reinstall NVG bracket at this time IAW WP 0020.
7. Reinstall the suspension pads in the same position and arrangement as before.

**END OF TASK**

**END OF WORK PACKAGE**

---

**OPERATOR MAINTENANCE**  
**INSTALL NIGHT VISION GOGGLES (NVG) BRACKET (ARMY ONLY)**  
**ENHANCED COMBAT HELMET—ARMY (ECH-A)**

---

**INITIAL SETUP:****Tools and Special Tools**

Multi-Tool (WP 0036, Item 1)  
Screwdriver (WP 0036, Item 2)

**References**

WP 0033

**Materials/Parts**

None Required

---

**INTRODUCTION**

This work package provides instructions for removing and installing the ECH-A night vision goggles (NVG) bracket assembly.

**REMOVE****WARNING**

The NVG 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.

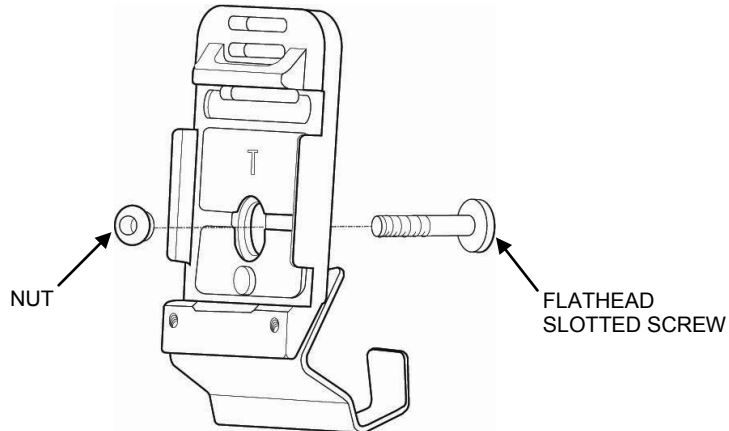
1. If an NVG bracket is already installed and needs to be replaced, remove the existing bracket as follows:
  - a. Remove front trapezoidal pad.
  - b. Remove NVG bracket hardware. Use a multi-tool to loosen and remove the screw and self-locking nut.
2. Pull up on the bracket and remove it from the helmet.

**END OF TASK**

**INSTALL****WARNING**

Hardware for the ECH-A NVG bracket and other NVG brackets is not interchangeable. Verify that you have the correct hardware for the bracket model installed on the helmet. Failure to observe this warning may result in serious injury or death to personnel.

1. Ensure that the ECH-A NVG bracket assembly has all the components shown in Figure 1. See WP 0033, Additional Authorization List, for NSN.



**Figure 1. ECH-A NVG Bracket Assembly.**

2. Remove trapezoidal pad, if necessary.
3. If there is a cover installed, loosen the hook and loop tabs, if necessary.
4. Line up the hole on the center of the bracket, the front vertical buttonhole on the 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 holes.

5. Insert the screw through the bracket assembly, cover, and helmet shell.
6. Using a multi-tool, slightly tighten the screw and self-locking nut.

**CAUTION**

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

7. Push the bracket up so that the cleat is tight against the rim (edge) of the helmet while completely tightening the corresponding screw and self-locking nut or threaded post.
8. Pull the helmet cover retaining tabs down and attach tabs to hook disks inside helmet shell.
9. Ensure a tight smooth fit of cover by pulling the retaining tabs until tight.
10. Replace trapezoidal pad.

**END OF TASK****END OF WORK PACKAGE**

---

**OPERATOR MAINTENANCE**  
**INSTALL NIGHT VISION GOGGLES (NVG) BRACKET (MARINE CORPS ONLY)**  
**ENHANCED COMBAT HELMET—MARINE CORPS (ECH-M)**

---

**INITIAL SETUP:****Tools and Special Tools**

Screwdriver (WP 0036, Item 2)

**Materials/Parts**

None Required

---

This work package provides instructions for installing the NVG bracket on the ECH-M.

**NOTE**

The NVG bracket is to remain mounted while wearing the helmet.

**INSTALL**

1. Remove the front trapezoidal pad.
2. Place the bracket assembly on the helmet over the helmet cover.
3. Line up the hole on the plate, the front vertical buttonhole on the cover, and the hole on the helmet shell.
4. Insert the screw through the bracket assembly, cover, and shell from the inside of the helmet.
5. Align flat side of the post so that the post sits flat into the recess on the bracket. You will know the post is correctly seated when you hear a click.
6. Slightly tighten the screw and post.

**CAUTION**

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

7. Before completely tightening the screw and post, ensure that the cleat of the bracket assembly is tight against the rim of the helmet.
8. Push the bracket up so that the cleat is tight against the rim (edge) of the helmet while completely tightening the screw and post.
9. Replace the front trapezoidal pad.

**END OF TASK****END OF WORK PACKAGE**





**OPERATOR MAINTENANCE  
INSTALL BALLISTIC NAPE PAD (ARMY ONLY)  
ENHANCED COMBAT HELMET – ARMY (ECH-A)**

**INITIAL SETUP:****Tools and Special Tools**

None Required

**References**

WP 0002

**Materials/Parts**

None Required

**INTRODUCTION**

This work package describes how to prepare and install a ballistic nape pad on these retention systems:

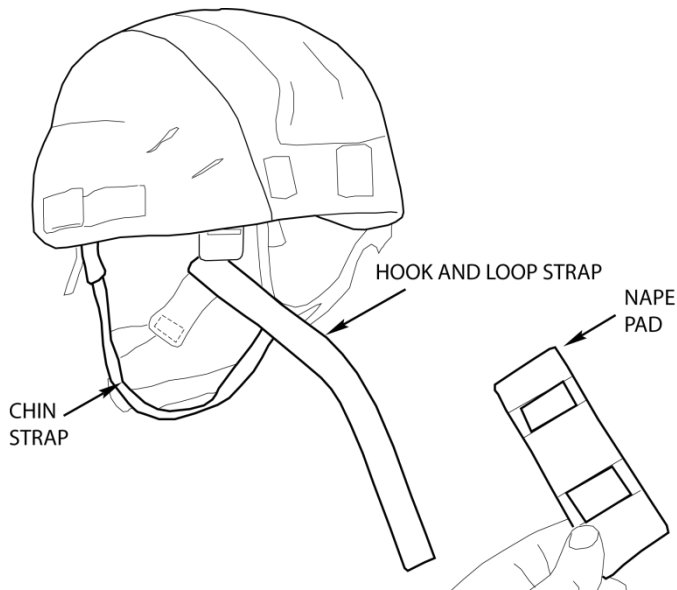
- H-back and universal H-back retention systems
- Improved H-nape retention systems

**PREPARE FOR INSTALLATION (ALL RETENTION SYSTEMS)**

1. Prepare to install the ballistic nape pad as follows:
  - a. Obtain the proper ballistic nape pad for your helmet model in the appropriate size. For more information see WP 0002.
  - b. Identify the size of the ballistic nape pad by looking on the inside of the nape pad cover pocket.
  - c. Remove the trapezoidal pad from the rear of helmet shell to provide access to the retention system and set it aside.
  - d. Orient the ballistic nape pad so that the camouflage side faces out and the mesh side faces to the inside of the helmet.
2. Proceed to the installation instructions for the type of retention system used on your helmet.

**INSTALL (H-BACK AND UNIVERSAL H-BACK RETENTION SYSTEMS)**

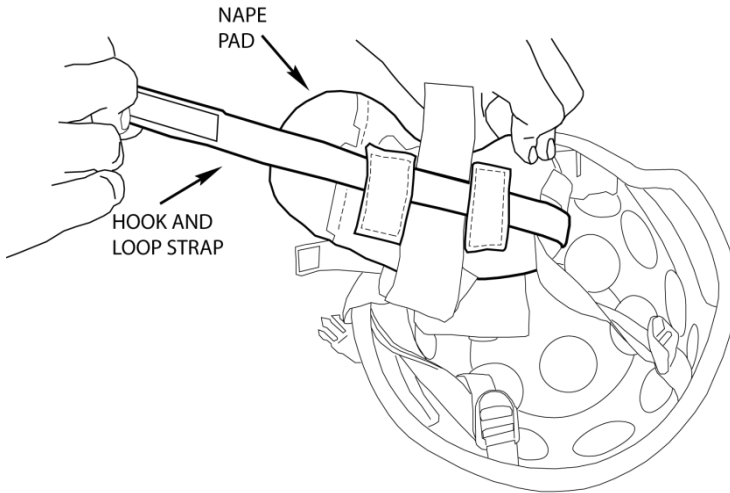
1. Detach the existing nape pad that comes with the retention system by unfastening the hook and loop strap that holds the nape pad to the chinstrap as shown in Figure 1.



**Figure 1. Remove Existing Nape Pad.**

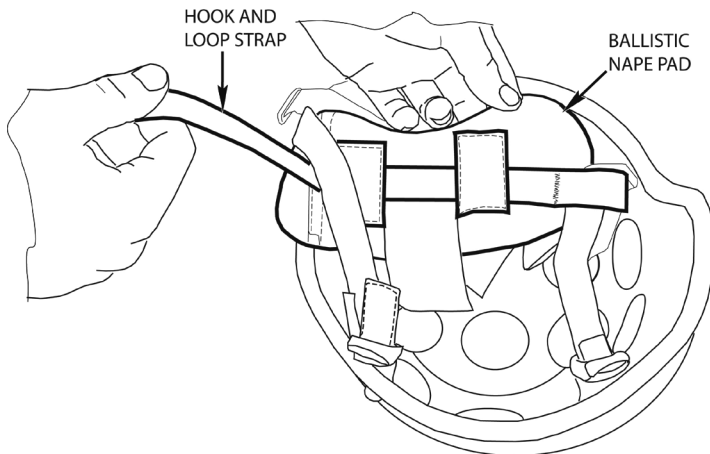
**INSTALL (H-BACK AND UNIVERSAL H-BACK RETENTION SYSTEMS) – CONTINUED**

2. Slide the nape pad off the strap.
3. Remove the trapezoidal pad from the rear of helmet shell to provide access to the chinstrap retention system and set it aside.
4. Slide the ballistic nape pad onto the strap.
5. Install the ballistic nape pad on the hook and loop strap as shown in Figure 2.



**Figure 2. Ballistic Nape Pad Installed on Hook and Loop Strap.**

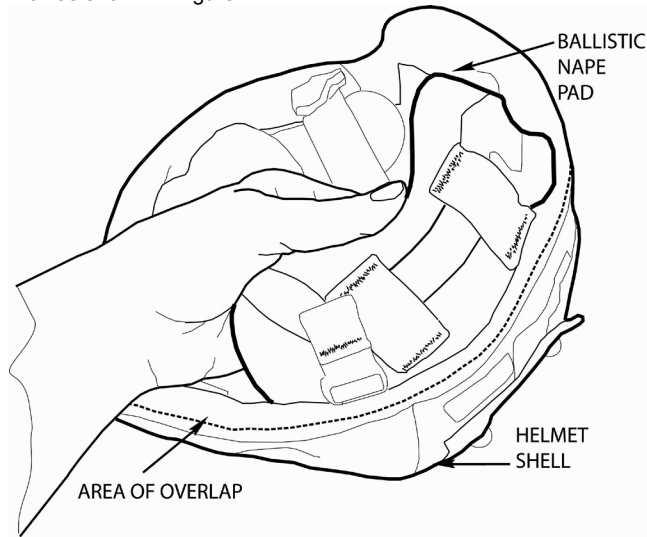
6. Thread the free end of the hook and loop strap around the retention strap webbing and back through the ballistic nape pad elastic loops as shown in Figure 3.



**Figure 3. Attach the Ballistic Nape Pad.**

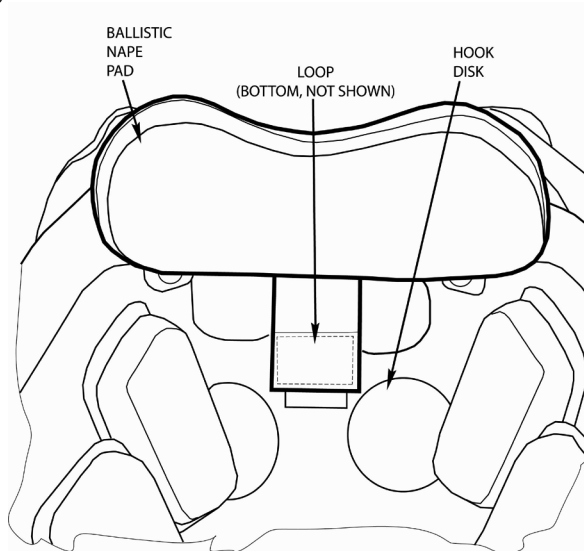
**INSTALL (H-BACK AND UNIVERSAL H-BACK RETENTION SYSTEMS) – CONTINUED**

7. Slide the ballistic nape pad toward the helmet shell until shell and ballistic nape pad overlap by approximately  $\frac{1}{2}$  inch as shown in Figure 4.



**Figure 4. Fit Ballistic Nape Pad into Helmet Shell.**

8. With the ballistic nape pad overlapping shell edge, press the loop tab against the hook disks on the inside of the shell (Figure 5).

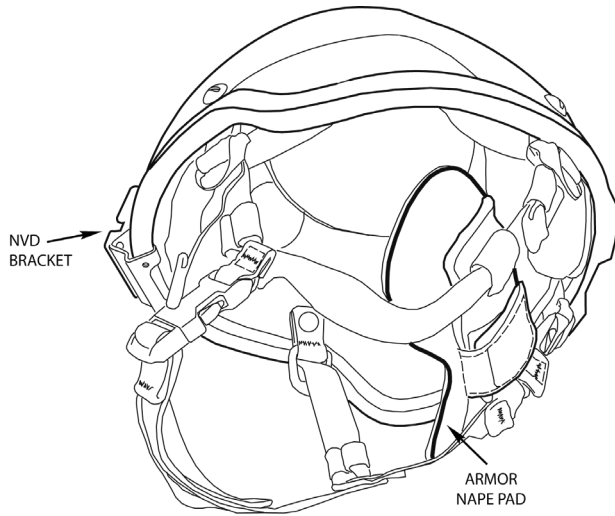


**Figure 5. Attach Ballistic Nape Pad to Helmet Shell.**

9. Install the rear trapezoidal pad such that it is firmly affixed to the hook disk and snug against the edge of the ballistic nape pad.

**INSTALL (H-BACK AND UNIVERSAL H-BACK RETENTION SYSTEMS) – CONTINUED**

- Position the Ballistic Nape Pad so there is about one inch of space between it and the trapezoidal pad. Figure 6 shows the completed installation.



**Figure 6. Ballistic Nape Pad Installed on H-Back Retention System.**

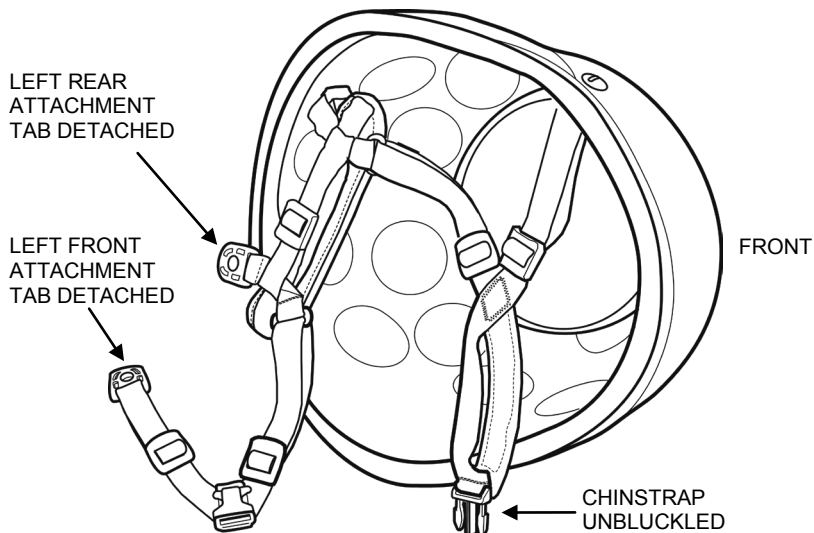
**END OF TASK**

**INSTALL (IMPROVED H-NAPE RETENTION SYSTEM)**

**NOTE**

On helmets using the improved H-nape retention system, the ballistic nape pad installs over the built-in nape pad.

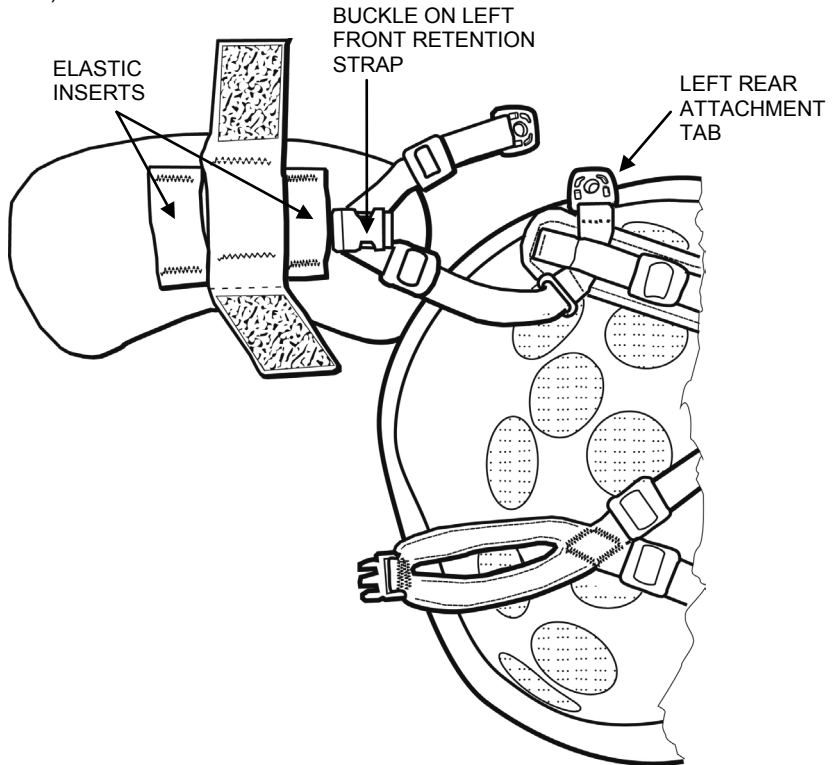
- Unbuckle the chinstrap. Then detach screws from the left front and left rear attachment tabs to remove two sides of the retention system from the helmet (Figure 7). Retain the two sets of hardware.



**Figure 7. Remove Hardware from Left Front and Left Rear Straps.**

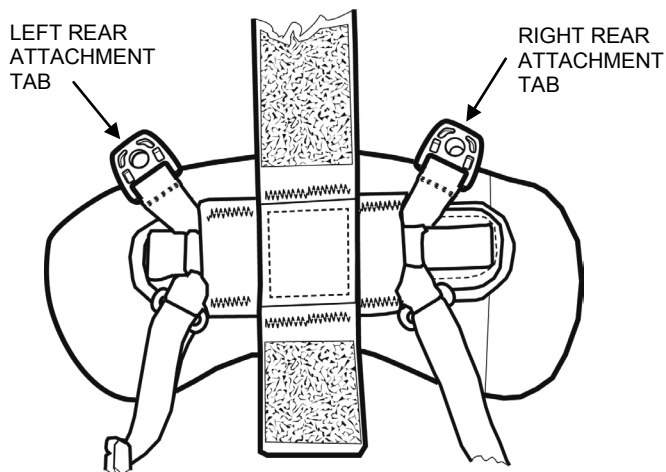
**INSTALL (IMPROVED H-NAPE RETENTION SYSTEM) – CONTINUED**

2. Thread the buckle on the left front retention strap through the elastic insert on the right side of the ballistic nape pad (Figure 8).



**Figure 8. Thread Strap Through Elastic Insert on Ballistic Nape Pad.**

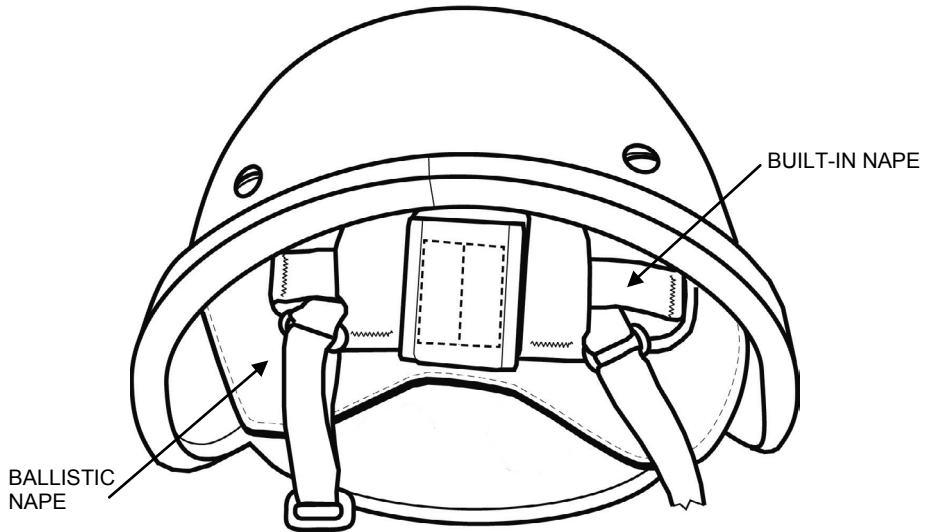
3. Continue to slide the strap through the elastic insert on the left side of the ballistic nape pad (Figure 9) until the attachment tabs are centered.



**Figure 9. Built-in Nape Pad Centered and Joined with Ballistic Nape Pad.**

**INSTALL (IMPROVED H-NAPE RETENTION SYSTEM) – CONTINUED**

4. Reinstall the attachment tabs to the left front and rear of the helmet, using the hardware removed earlier (Figure 10). Be sure the webbing is not twisted



**Figure 10. Ballistic Nape Pad Installed on Improved H-Nape Retention System.**

**END OF TASK**

**END OF WORK PACKAGE**

**OPERATOR MAINTENANCE**  
**INSTALL BALLISTIC NAPE PAD (MARINE CORPS ONLY)**  
**ENHANCED COMBAT HELMET—MARINE CORPS (ECH-M)**

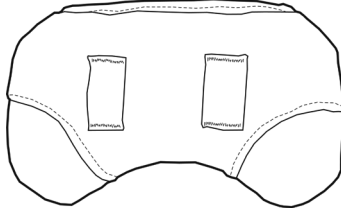
**INITIAL SETUP:**

**Tools and Special Tools**  
None Required

**References**  
WP 0008

**Materials/Parts**  
None Required

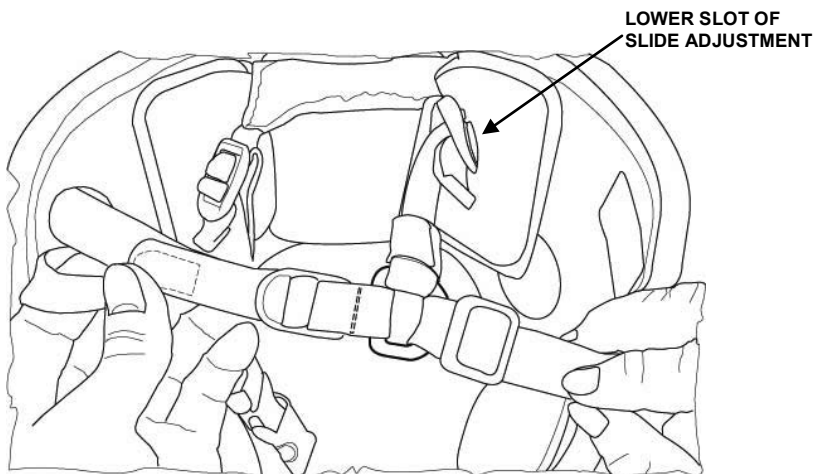
The USMC Ballistic Nape Protection Pad (NAPP) as shown in Figure 1 installs over the nape pad of the chinstrap retention system.



**Figure 1. Ballistic Nape Protection Pad (NAPP) for ECH-M.**

**REMOVE BALLISTIC NAPP**

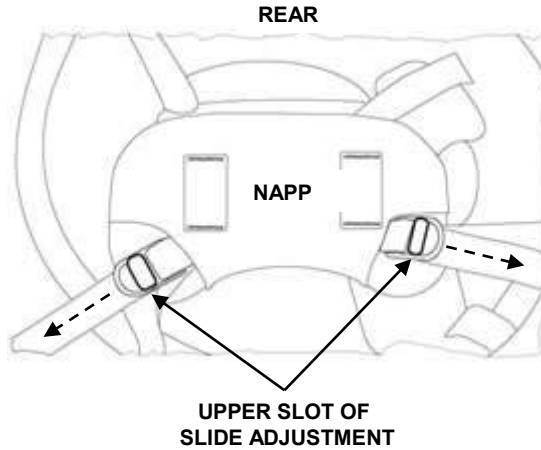
1. Unthread webbing from elastic bands.
2. Unthread webbing from the slide adjustments.
3. Unthread webbing from the D-rings on both sides.
4. Detach USMC ballistic NAPP from hook and loop.
5. Remove the USMC ballistic NAPP.
6. On the right side of the helmet, reinsert the rear retention strap through the slide adjustment pad and then through the lower slot of the slide adjustment (Figure 2). As you are doing so, be sure to slide the strap through the elastic band that's used to secure the retention system straps.



**Figure 2. Reinsert Retention Strap Through Slide Adjustment.**

**REMOVE BALLISTIC NAPP —CONTINUED**

7. On the left side of the helmet, reinsert the rear retention strap through the buckle D-ring and then through the lower slot of the slide adjustment. As you're doing so, be sure to slide the strap through the elastic band that's used to secure the retention system straps.
8. Lace the rear retention straps back through the upper slots of the slide adjustments to complete the installation (Figure 3). Be sure to slide the strap through the elastic band that's used to secure the retention system straps.



**Figure 3. Lace Straps Through Upper Slots of Slide Adjustments.**

**END OF TASK****INSTALL BALLISTIC NAPP****WARNING**

For effective protection, ensure that there is no gap between the NAPP and the helmet.

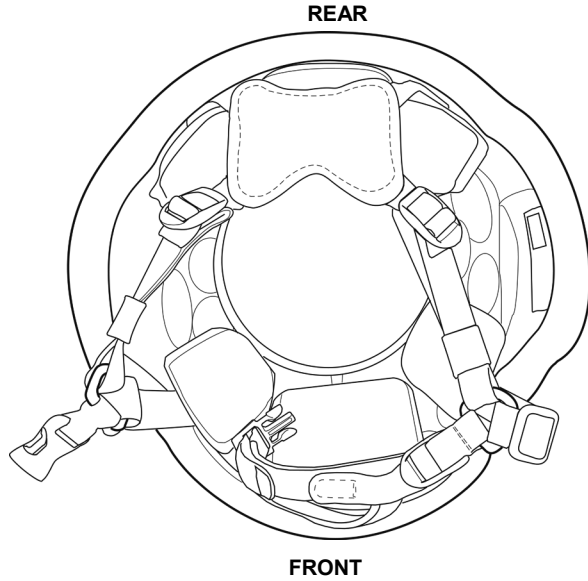
**NOTE**

The ballistic NAPP is installed over the nape pad on the retention system.



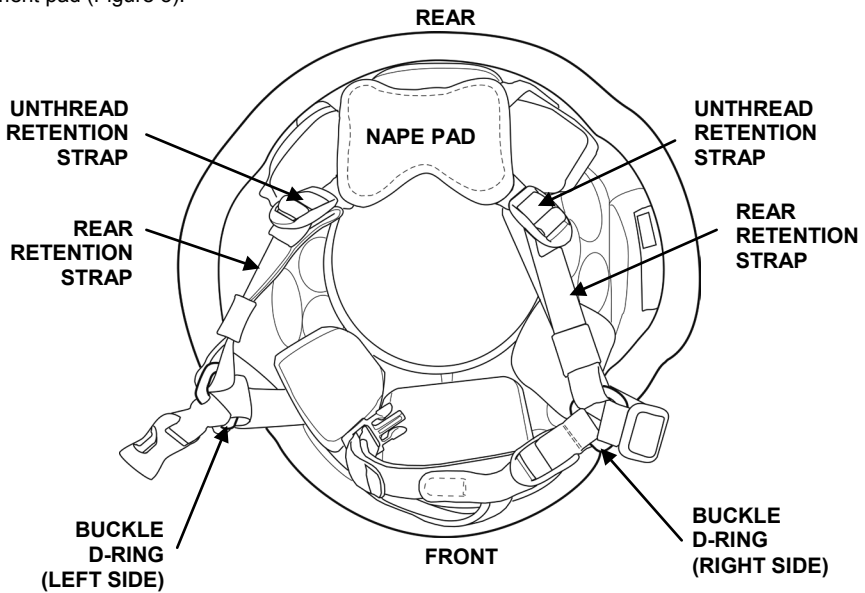
**INSTALL BALLISTIC NAPP —CONTINUED**

1. Position the helmet upside down with the back facing away from you, as shown in Figure 4.



**Figure 4. Position the Helmet.**

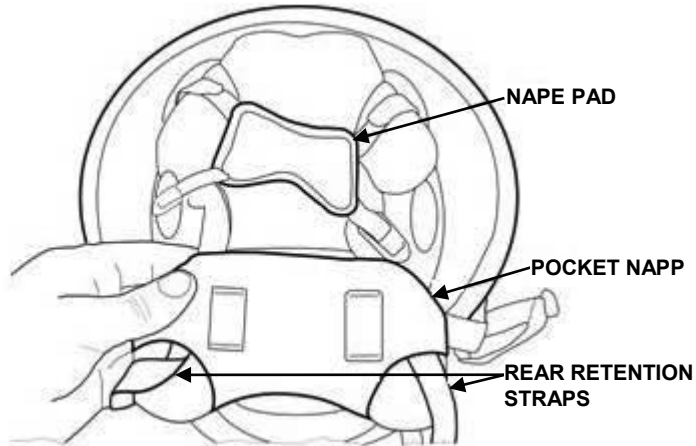
2. Unthread the rear retention straps at the bottom of the nape pad from the buckle D-ring and the slide adjustment pad (Figure 5).



**Figure 5. Unthread Retention Straps.**

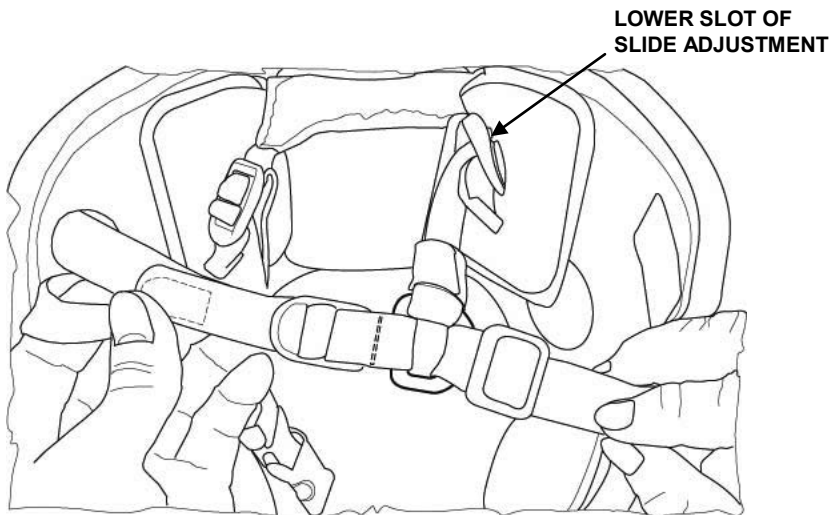
**INSTALL BALLISTIC NAPP —CONTINUED**

3. Insert the rear retention straps through the open pocket at the top of the NAPP, and then insert the nape pad into the pocket.
4. Pull the retention straps through the bottom holes of the NAPP, then fasten the hook and loop closures at the top of the pocket to secure the nape pad within the NAPP (Figure 6).



**Figure 6. Insert Straps and Nape Pad into NAPP.**

5. On the right side of the helmet, reinsert the rear retention strap through the slide adjustment pad and then through the lower slot of the slide adjustment (Figure 7). As you are doing so, be sure to slide the strap through the elastic band that is used to secure the retention system straps.

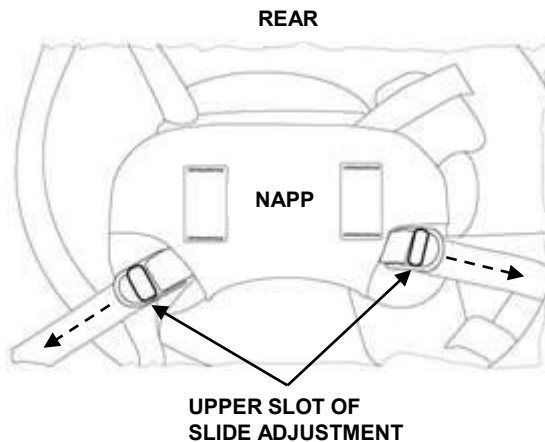


**Figure 7. Reinsert Retention Strap Through Slide Adjustment.**

6. On the left side of the helmet, reinsert the rear retention strap through the buckle D-ring and then through the lower slot of the slide adjustment. As you are doing so, be sure to slide the strap through the elastic band that is used to secure the retention system straps.

**INSTALL BALLISTIC NAPP —CONTINUED**

7. Lace the rear retention straps back through the upper slots of the slide adjustments to complete the installation (Figure 8). Be sure to slide the strap through the elastic band that is used to secure the retention system straps.



**Figure 8. Lace Straps Through Upper Slots of Slide Adjustments.**

8. Don the helmet and check to be sure straps are not twisted.
9. Adjust all straps for a secure fit IAW WP 0008.

**END OF TASK**

**END OF WORK PACKAGE**



---

**OPERATOR MAINTENANCE  
REPLACE ATTACHMENT TABS (ARMY ONLY)  
ENHANCED COMBAT HELMET—ARMY (ECH-A)**

---

**INITIAL SETUP:****Tools and Special Tools**

- Multi-tool (WP 0036, Item 1)
- Screwdriver (WP 0036, Item 2)

**Materials/Parts**

- None Required

**References**

- WP 0002
  - WP 0004
  - WP 0024
  - WP 0031
  - WP 0033
- 

This work package provides instructions for replacing the attachment tabs (with buckle) of the H-back universal chinstrap retention system. The tabs attach the retention system to the helmet.

**REPLACE**

1. Remove suspension pads as necessary to access hardware inside helmet, using a standard flathead screwdriver.
2. Unfasten the helmet cover retaining tabs to expose the two rear screws, and remove the cover.
3. Identify which chinstrap retention system is installed.

**NOTE**

Chinstrap retention system hardware is not interchangeable. If the chinstrap retention system needs to be replaced for any of the legacy H-back products, replace the entire chinstrap retention system assembly with a new universal H-back chinstrap retention system (WP 0024) assembly. This assembly includes the corresponding universal H-back chinstrap retention system and hardware.

- If the helmet has a legacy H-back chinstrap retention system, replace the entire retention system. See WP 0031 (ECH-A) for NSN information.
- If the helmet has a universal H-back chinstrap retention system, go to step 4.

**NOTE**

The attachment tabs disengage from the helmet.

4. To remove the retention system:
  - a. Remove webbing from elastic bands.
  - b. Unthread and remove the chinstrap webbing from the four buckles on the attachment tabs.
  - c. Using a screwdriver, remove the four screws securing the attachment tabs to the helmet.

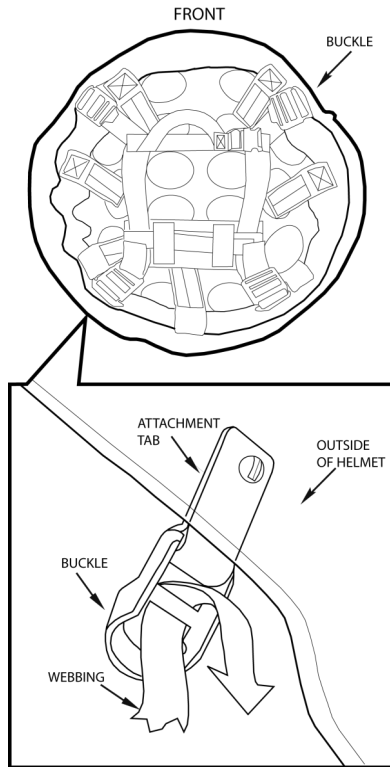
**END OF TASK****INSTALL**

1. Obtain a new set of attachment tabs. See WP 0033 for NSN information.
2. From inside the helmet, thread the attachment tab and buckle through the corresponding hole on helmet cover.
3. Insert the post from the inside of the helmet through the corresponding hole on the helmet cover, the attachment tab and the shell.
4. Align the post and screw as necessary.

**INSTALL – CONTINUED****NOTE**

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

5. Using a screwdriver, tighten the screw.
6. Repeat steps 2 through 6 for the other attachment tabs.
7. Install previously removed chinstrap as follows:
  - a. Lay the helmet on its crown with the front of the helmet away from you.
  - b. Drape the replacement chinstrap 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 chinstrap into their corresponding buckles as shown in Figure 1.
  - d. Ensure webbing is not twisted. For illustration of the entire assembled helmet with chinstrap retention and hardware, see WP 0002.
  - e. Slide elastic band over loose ends of webbing.
8. Install the suspension pads previously removed as described in WP 0004.



**Figure 1. Universal Chinstrap Installation.**

**END OF TASK**

**END OF WORK PACKAGE**

---

**OPERATOR MAINTENANCE  
REPLACE RETENTION SYSTEM (ARMY ONLY)  
ENHANCED COMBAT HELMET – ARMY (ECH-A)**

---

**INITIAL SETUP:****Tools and Special Tools**

Multi-tool (WP 0036, Item 1)  
Screwdriver (WP 0036, Item 2)

**References**

WP 0019  
WP 0021

**Materials/Parts**

None Required

---

**INTRODUCTION**

This work package provides instructions for replacing the entire retention system assembly on an ECH-A. For sustainment/ replacement, the Army has approved two retention systems to work with the ECH-A: the universal H-back retention system and the improved H-nape retention system.

**WARNING**

When replacing the chinstrap retention assembly, replace all corresponding hardware as well. Hardware is not interchangeable. Failure to use the hardware associated with the specific retention system may result in injury or death.

**NOTE**

A multi-tool is used in the following procedures to replace ECH hardware. However, if available, a standard flathead screwdriver may also be used.

**REMOVE THE RETENTION SYSTEM ASSEMBLY**

1. Remove the suspension pads from the inside of the helmet, noting their positioning and arrangement.
2. Remove NVG bracket from helmet if already installed.
3. If installed, remove the cover.

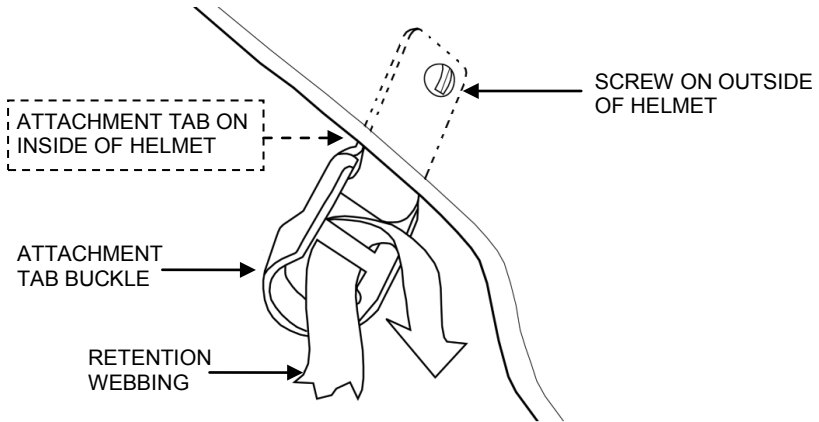
**WARNING**

When replacing the chinstrap retention assembly, replace all corresponding hardware as well. Hardware is not interchangeable. Failure to use the hardware associated with the specific retention system may result in injury or death.

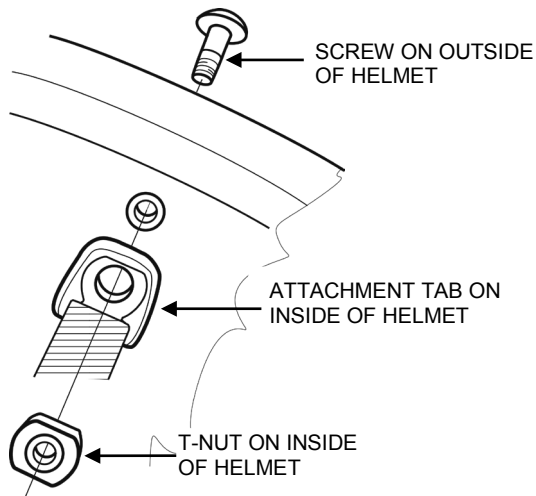
**NOTE**

For legacy H-back-retention systems, be sure to remove the entire retention system assembly including the attachment tabs by unscrewing the hardware at the point where the attachment tabs join the helmet shell.

4. Remove the entire chinstrap retention system. Refer to Figures 1 and 2 for hardware specifics.



**Figure 1. H-Back Retention System Attachment Tab and Hardware.**



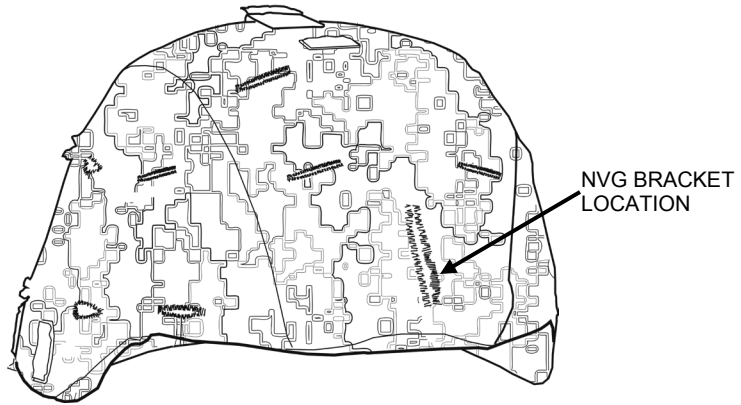
**Figure 2. Improved H-Nape Retention System Attachment Tab and Hardware.**

**END OF TASK**



## INSTALL CHINSTRAP RETENTION SYSTEM

1. Orient the helmet cover with the NVG bracket location facing the front of the helmet (Figure 3).



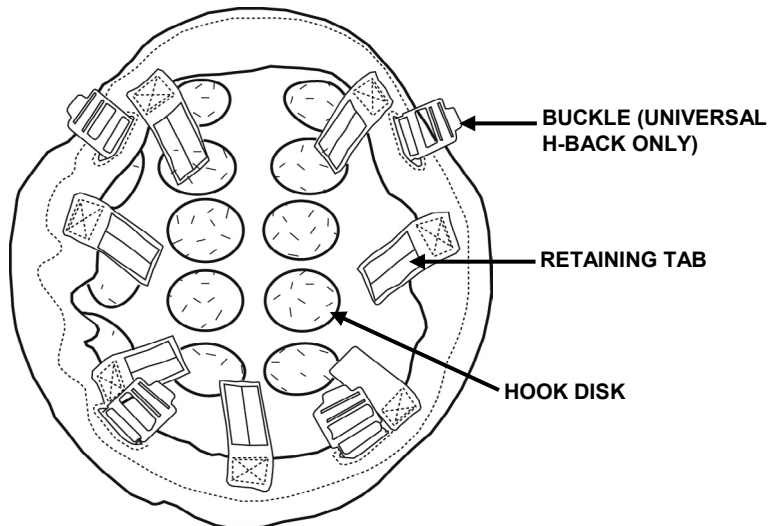
**Figure 3. Non-Reversible Universal Camouflage Helmet Cover.**

2. Pull the cover over the back and sides of the helmet.

### NOTE

Do not overlap the tabs of the helmet cover. Doing so may cause helmet to fit improperly.

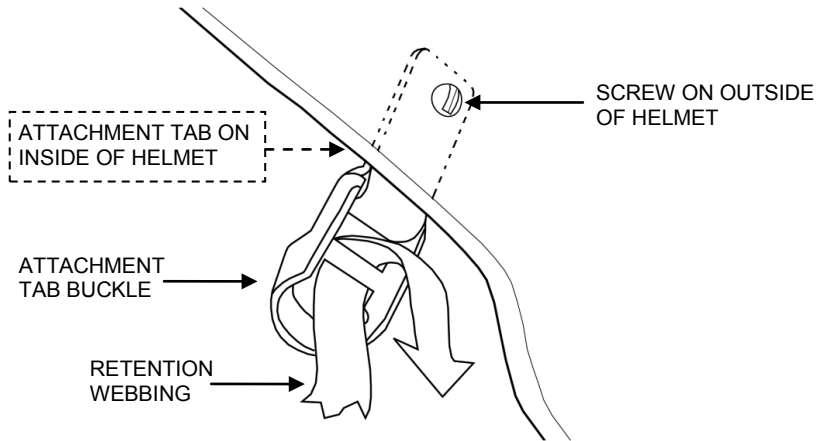
3. Pull the cover retaining tabs down and attach tabs to hook disks inside helmet shell, as shown in Figure 4.



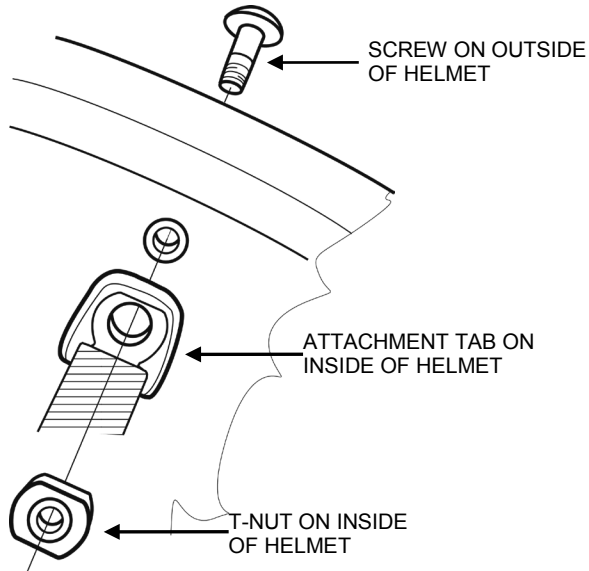
**Figure 4. Helmet Cover Installed.**

**INSTALL CHINSTRAP RETENTION ASSEMBLY – CONTINUED**

4. Ensure a tight smooth fit of cover by pulling the retaining tabs until tight.
5. Position the retention system for installation by laying the helmet on its crown with the front of the helmet away from you.
6. Drape the chinstrap retention system over the helmet with the nape-strap pad facing down on the back/rear of the helmet.
7. If a ballistic nape pad is to be worn, install it at this time (WP 0021).
8. Attach the replacement retention assembly to the helmet using the hardware provided (Figures 5 and 6). If the helmet has elastic bands along the webbing, slide the bands over the loose ends of webbing to secure.



**Figure 5. H-Back Retention System Breakout.**

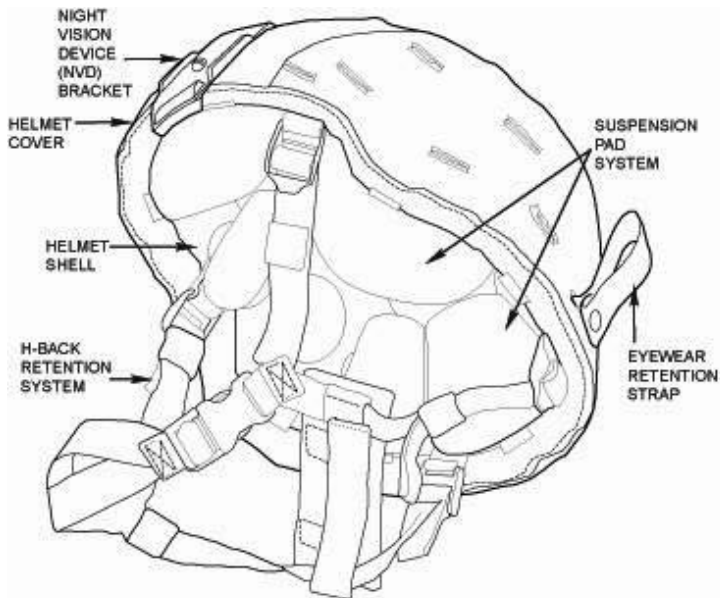


**Figure 6. Improved H-Nape Retention System.**

**INSTALL CHINSTRAP RETENTION ASSEMBLY – CONTINUED**

9. Ensure webbing is not twisted.
10. Reinstall the NVG bracket in accordance with (IAW) WP 0019.
11. Reinstall the suspension pads in their original position to complete the installation.

Figure 7 and Figure 8 show an ECH with a fully installed universal H-back retention system and improved H-nape system.



**Figure 7. Helmet with Universal H-Back Chinstrap Retention System Installed.**

## INSTALL CHINSTRAP RETENTION ASSEMBLY – CONTINUED

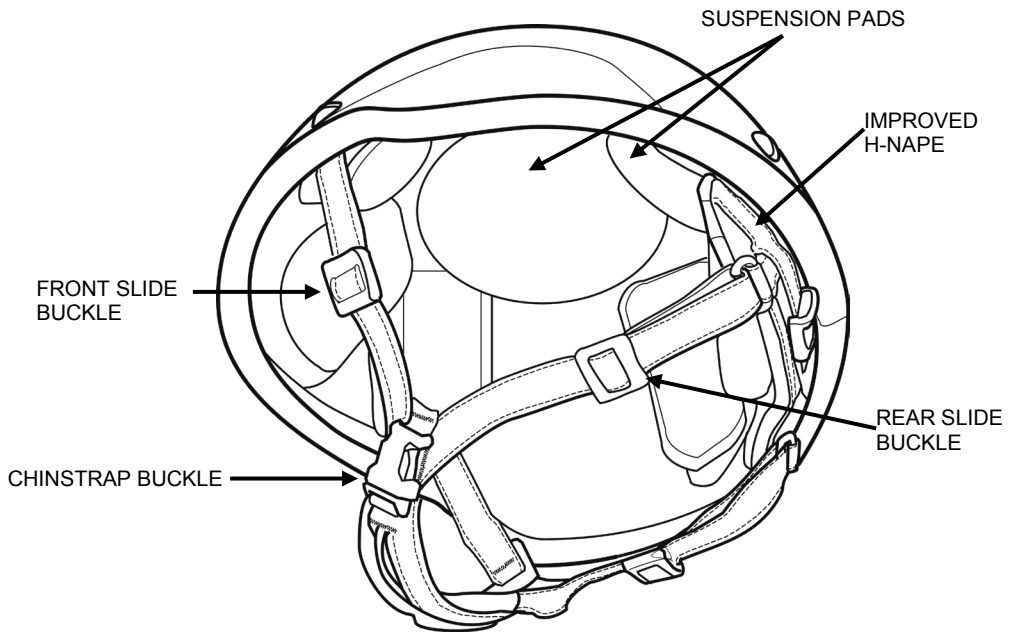


Figure 8. Helmet with Improved H-Nape Retention System Installed.

END OF TASK

END OF WORK PACKAGE

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**OPERATOR MAINTENANCE**  
**REPAIR CHINSTRAP OR REPLACE CHINSTRAP RETENTION SYSTEM (MARINE CORPS ONLY)**  
**ENHANCED COMBAT HELMET—MARINE CORPS (ECH-M)**

---

**INITIAL SETUP:****Tools and Special Tools**

Screwdriver (WP 0036, Item 2)

**References**

WP 0002

WP 0004

WP 0022

**Materials/Parts**

None Required

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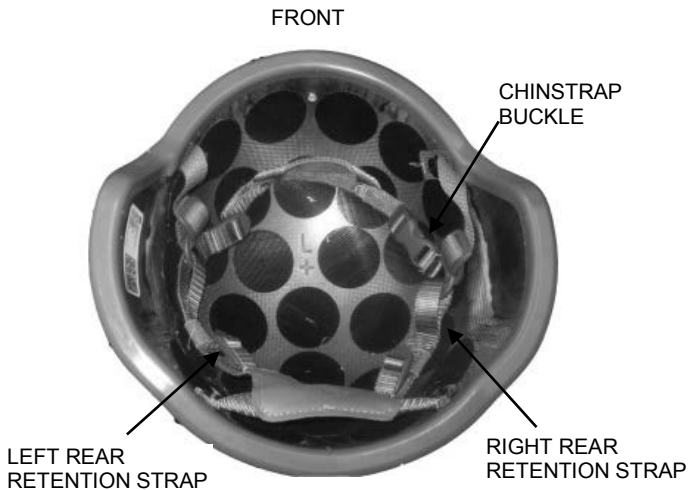
This work package provides instructions for switching the chinstrap buckle or replacing the entire chinstrap retention system.

**NOTE**

Use a standard flathead screwdriver to replace hardware for the ECH-M.

**REPAIR****Switch Chinstrap Buckle (Optional)**

1. The chinstrap buckle is factory-installed on the left side (as worn) of the helmet (Figure 1). The chinstrap buckle may be switched to the right side (as worn) to accommodate left-handed shooters.

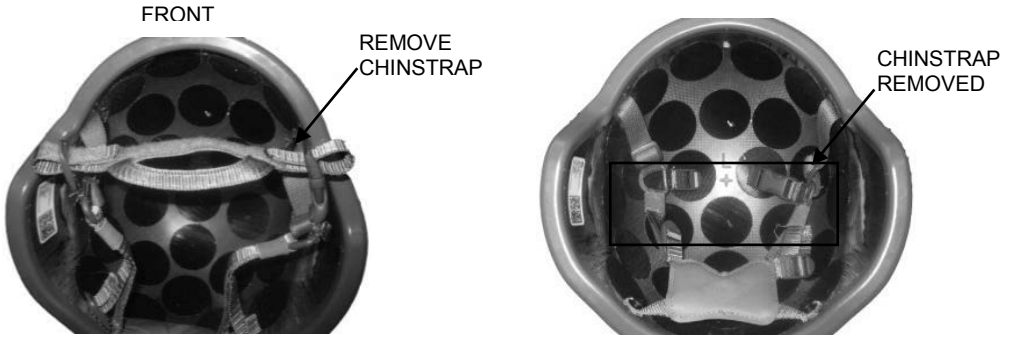


**Figure 1. Chinstrap.**

**REPAIR—CONTINUED**

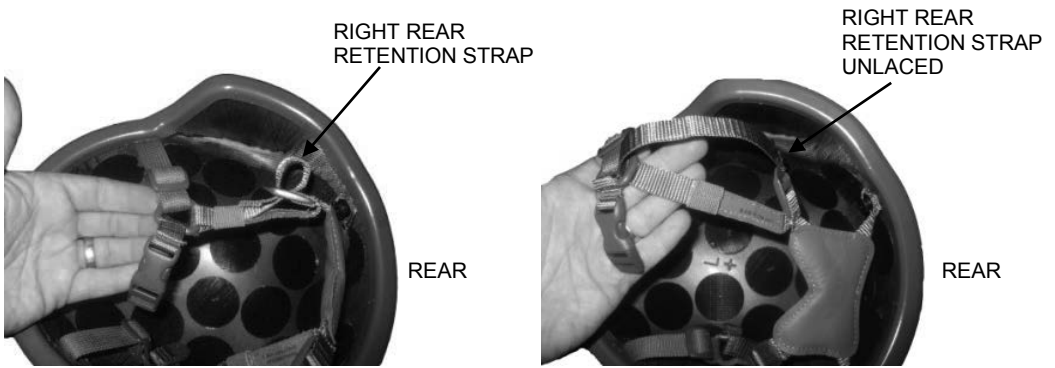
**Switch Chinstrap Buckle (Optional)—Continued**

- Unbuckle the chinstrap, detach the ends of the chinstrap from the hook and loop fastener, and unlace the chinstrap from both the buckle and the slide adjustment (Figure 2). Set aside until later.



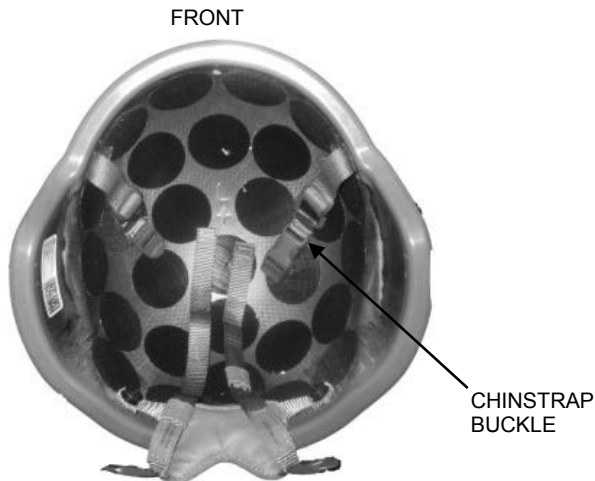
**Figure 2. Unlacing and Removing Chinstrap.**

- Unlace right rear retention strap from the right D-ring (Figure 3).



**Figure 3. Unlacing Rear Retention Straps.**

- Repeat for left side. The helmet should look like Figure 4.

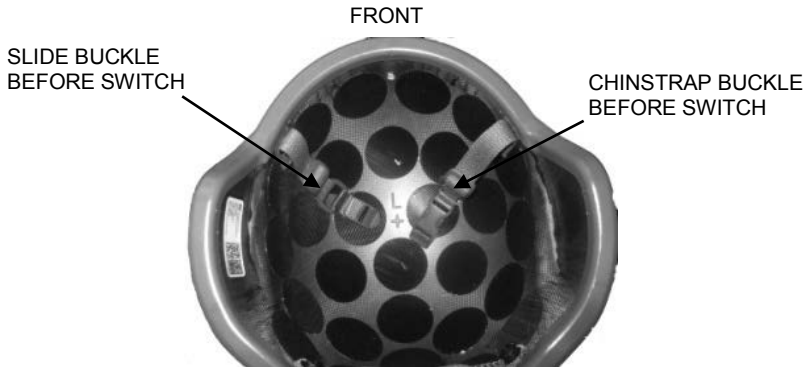


**Figure 4. Helmet with Rear Retention Straps Unlaced.**

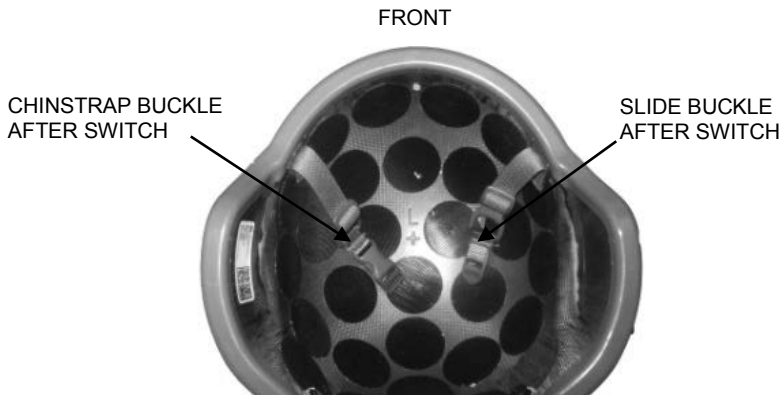
**REPAIR—CONTINUED****Switch Chinstrap Buckle (Optional)—Continued****NOTE**

The nut will also be removed from the inside of the helmet. Note how the nut is positioned in the front strap inside the helmet; you will reinstall the nut in the same manner in the next step.

5. Remove the front screws that attach the left and right front retention strap to the helmet.
6. Switch the left and right front retention straps so that the front retention strap with the chinstrap buckle attached will be on the right and the front retention strap with the slide buckle will be on the left (Figures 5-6).



**Figure 5. Hardware Locations and Front Strap Before Switch.**



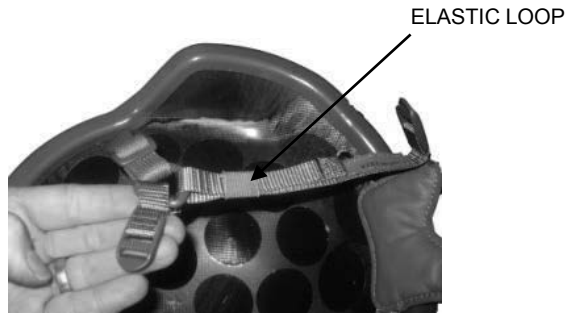
**Figure 6. Hardware Locations and Front Strap After Switch.**

7. Attach the front retention straps to the helmet using the hardware removed previously. Be sure to position the slot in the nut toward the inside of the helmet.

**REPAIR—CONTINUED****Switch Chinstrap Buckle (Optional)—Continued****NOTE**

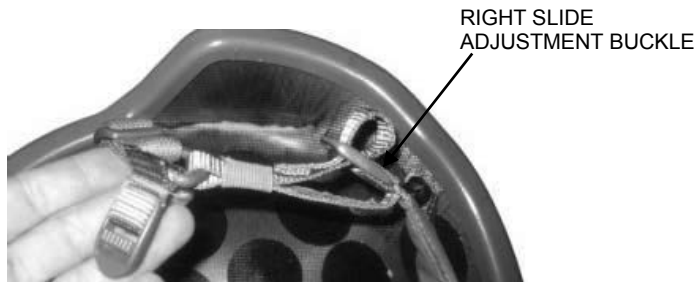
Ensure the left and right rear retention straps are properly placed on the D-rings. The rear retention straps should be placed on the D-rings so that they run to the back of the helmet.

8. Lace the right rear retention strap through D-ring and back through the elastic loop (Figure 7).



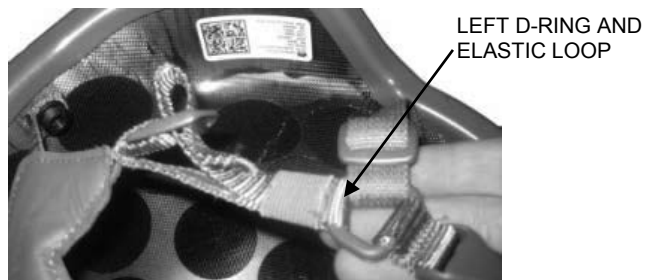
**Figure 7. Lacing Right Rear Retention Strap Through D-Ring.**

9. Continue lacing the right rear retention strap back through the slide adjustment buckle (Figure 8).



**Figure 8. Lacing Right Rear Retention Strap Through Buckle.**

10. Lace the left rear retention strap through D-ring and back through the elastic loop.
11. Continue lacing the left rear retention strap back through the slide adjustment buckle (Figure 9).

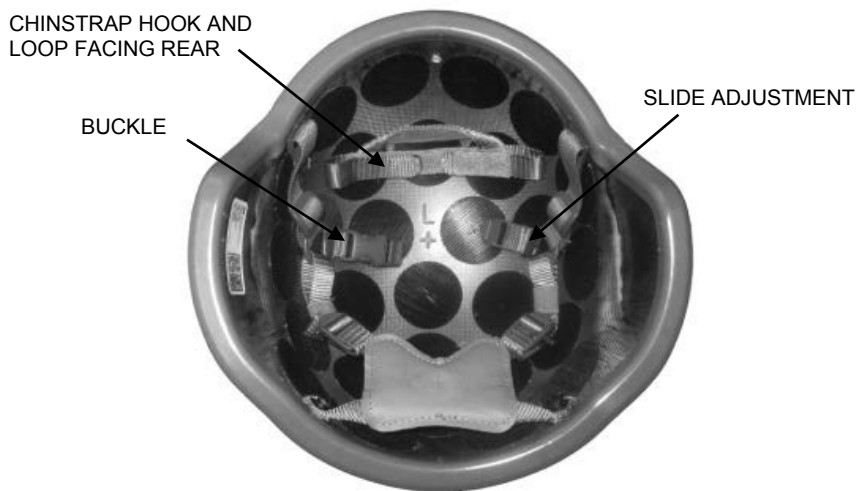


**Figure 9. Lacing Left Rear Retention Strap.**



**REPAIR—CONTINUED****Switch Chinstrap Buckle (Optional)—Continued**

12. Take the unattached chinstrap and place it so the hook and loop fastener faces the rear of the helmet (Figure 10). Lace one end through the slide adjustment; lace the other end through the buckle.



**Figure 10. Placement of Reversed Chinstrap.**

13. Reattach the ends of the chinstrap to the hook and loop fastener.
14. Ensure that the chinstrap hook and loop fastener is toward the back of the helmet (Figure 11).

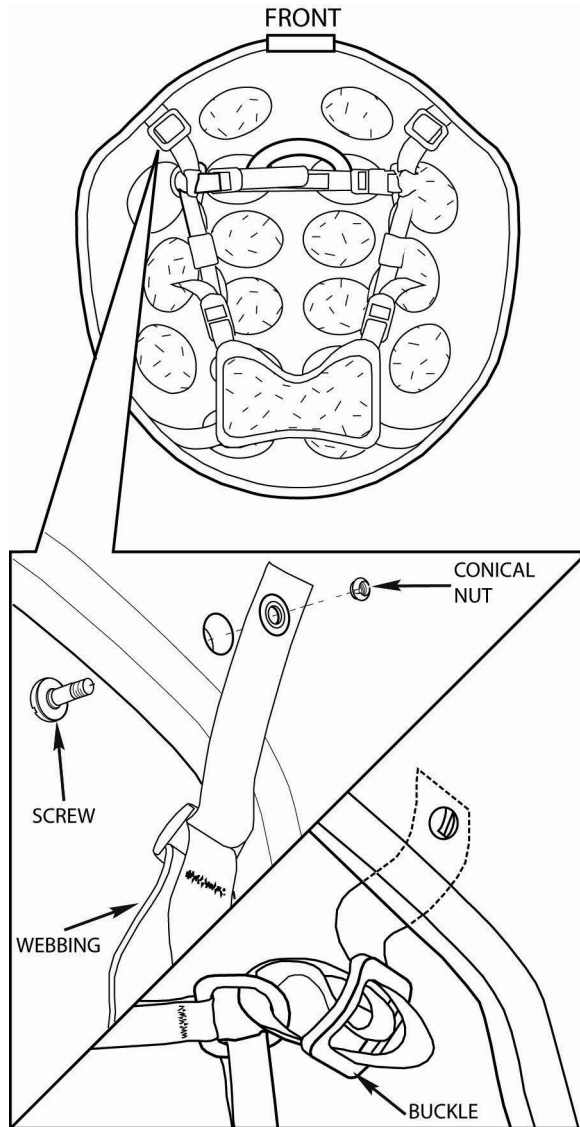


**Figure 11. Chinstrap Attached with Buckle on Other Side.**

**END OF TASK**

**REPLACE THE RETENTION SYSTEM**

1. Remove suspension pads as necessary to access hardware in rear of helmet.
2. Remove the entire chinstrap retention system from the helmet by using a screwdriver to unscrew the applicable hardware as shown in Figure 12.



**Figure 12. ECH-M Retention System and Hardware**

3. Replace retention system as follows:
  - a. Lay the helmet on its crown with the front of the helmet away from you (chinstrap buckle is located on right side of helmet).
  - b. Drape the replacement chinstrap retention system over the helmet with the nape-strap pad facing down on the back/rear of the helmet.

---

**REPLACE THE RETENTION SYSTEM —CONTINUED**

- c. Attach the new retention system to the helmet using the new hardware as shown in Figure 12 with two screwdrivers.
4. Remove and install the ballistic nape pad from the old chinstrap onto the new chinstrap, if necessary, as described in WP 0022.

**NOTE**

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

5. Ensure webbing is not twisted.
6. Install the suspension pads that were previously removed. If necessary, review WP 0004 for proper configuration.

**END OF TASK****END OF WORK PACKAGE**



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**OPERATOR MAINTENANCE**  
**INSTALL EYEWEAR RETENTION STRAP (ARMY ONLY)**  
**ENHANCED COMBAT HELMET—ARMY (ECH-A)**

---

**INITIAL SETUP:****Tools and Special Tools**

- Multi-tool (WP 0036, Item 1)
- Screwdriver (WP 0036, Item 2)

**Materials/Parts**

None Required

**References**

- WP 0002
- WP 0024
- WP 0031
- WP 0033

---

**REMOVE**

1. Remove suspension pads as necessary to access hardware in rear of helmet, noting how they are positioned.
2. If necessary, unfasten the cover retaining tabs to expose the two rear screws.
3. Identify which chinstrap retention assembly is installed as described in WP 0002.
4. If there is a universal H-back chinstrap retention assembly installed, continue to step 6.
5. If there is a legacy H-back chinstrap retention assembly installed:
  - a. Obtain a new universal H-back chinstrap retention system and hardware. See WP 0031 (ECH-A) for NSN information.
  - b. Using a screwdriver, remove the old chinstrap retention system.
  - c. Install the front portion (front two screws) of the new universal H-back chinstrap retention system as described in WP 0024.
  - d. Continue to the Install procedure.
6. For helmets with an existing universal H-back chinstrap retention system and existing eyewear retention straps installed, remove eyewear straps as follows:
  - a. Using a screwdriver, remove the screws on the rear of the helmet that attach the eyewear retention straps and the chinstrap retention system to the helmet. The eyewear retention strap and the rear portion of the chinstrap retention system disengage.
  - b. Continue to the Install procedure.
7. If there are no existing eyewear retention straps installed, proceed as follows:
  - a. Obtain a pair of eyewear retention straps. See WP 0033 (ECH-A) for NSN information.
  - b. Continue to the Install procedure.

**END OF TASK**

**INSTALL**

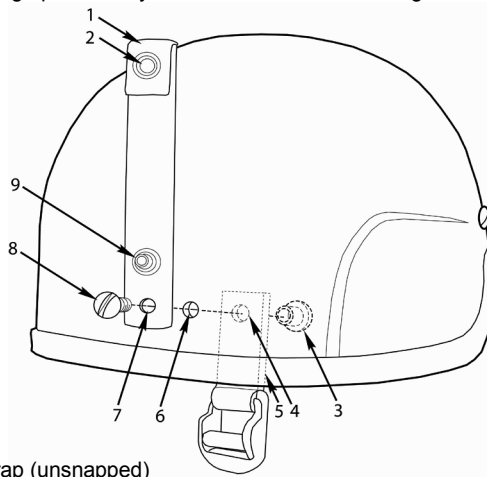
1. Remove the suspension pads.
2. Remove the rear retention strap webbing from the buckle.
3. Unfasten the helmet cover retaining tabs and pull the cover away to expose the hardware.

**NOTE**

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

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

4. Remove one of the rear screws using a screwdriver or like tool and a multi-tool (if available).
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 helmet as shown in Figure 1.

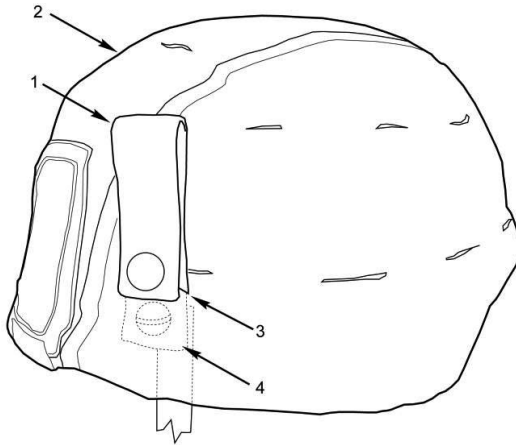
**LEGEND**

1. Eyewear retention strap (unsnapped)
2. Snap socket
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

**Figure 1. Universal Eyewear Retention Strap and Screw Assembly.**

**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.

**LEGEND**

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

**Figure 2. Helmet with Eyewear Retention Strap Installed.**

7. From inside the helmet, thread the attachment tab and buckle through the corresponding hole on helmet cover.
8. Align the post and screw as necessary.
9. 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.
10. Tuck end of eyewear retention strap into buttonhole.

**NOTE**

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

11. Using a screwdriver or like tool and a multi-tool (if available), tighten the screw.
12. Repeat steps 4-11 for the other strap.
13. Install the suspensions pads that were previously removed.

**END OF TASK**

**END OF WORK PACKAGE**





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**OPERATOR MAINTENANCE**  
**REPLACE CHINSTRAP RETENTION SYSTEM HARDWARE (ARMY ONLY)**  
**ENHANCED COMBAT HELMET—ARMY (ECH-A)**

---

**INITIAL SETUP:****Tools and Special Tools**

Screwdriver (WP 0036, Item 2)

**Materials/Parts**

None Required

**References**

WP 0004

WP 0024

WP 0026

WP 0033

---

**REPLACE**

This work package provides instructions for removing and replacing the ECH-A hardware.

**WARNING**

The hardware for chinstrap retention systems is not interchangeable. If chinstrap retention system hardware needs to be replaced for any of the legacy H-back products, replace the entire chinstrap retention system assembly with a new universal H-back chinstrap retention system or improved H-nape retention system (WP 0024). The new retention system assembly includes the chinstrap and corresponding hardware.

**NOTE**

If any component of a chinstrap assembly needs to be replaced, replace the entire chinstrap retention system assembly with a new universal H-back chinstrap retention system or improved H-nape retention system (WP 0024). The new retention system assembly includes the chinstrap and corresponding hardware.

The only authorized hardware used with the ECH-A is obtained with the NSN listed in WP 0033 (ECH-A). All other hardware and chinstraps are no longer supported.

**Remove and Install Chinstrap Retention System Hardware**

1. Remove the hardware as follows:

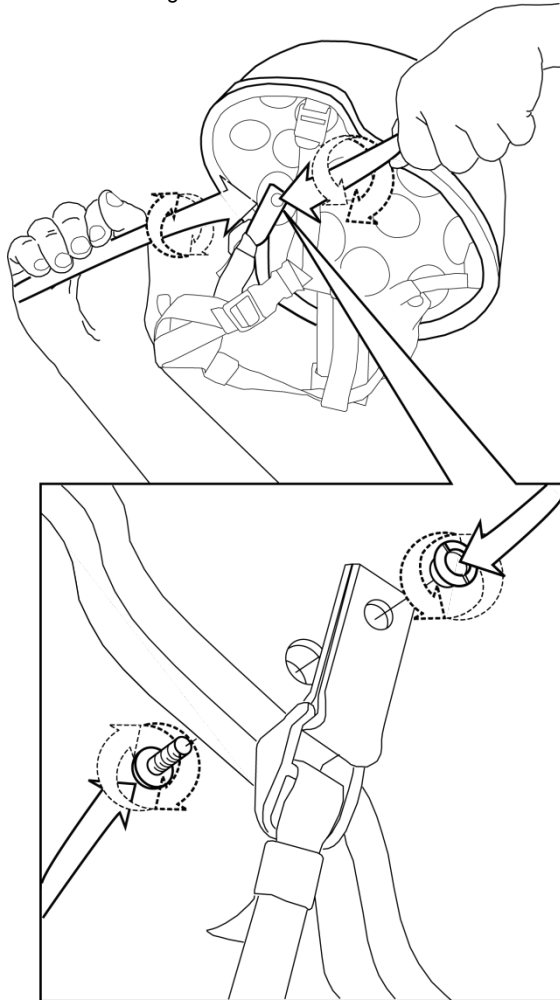
- a. Remove the suspension pads as necessary to access hardware and chinstrap retention system.
- b. Disconnect the hook and loop fasteners attaching the helmet cover to the shell.
- c. Using screwdrivers if available, remove the hardware (screws and nuts). The chinstrap retention system and eyewear retention tabs (if installed) disengage.

2. Install the hardware as follows:

- a. Insert new hardware (four sets) through the attachment tabs of the chinstrap retention system, and the eye wear retention tabs (if applicable), as described in WP 0026.

**REPLACE – CONTINUED**

- b. Tighten the screws as shown in Figure 1.



**Figure 1. Hardware Installation on Universal H-Back Retention System.**

- c. Turn the screws another 1/3 turn to achieve proper assembly.
- d. Inspect the screws to ensure tightness. Tighten as necessary.
- e. If loosening persists, refer to higher level maintenance to obtain sealing compound (thread-locking compound).

**NOTE**

Use the sealing compound as directed on the container.

- f. Install suspension pads in the proper configuration as described in WP 0004 and adjust as necessary.

**END OF TASK**

**END OF WORK PACKAGE**

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**OPERATOR MAINTENANCE**  
**REPLACE SUSPENSION PADS**

---

**INITIAL SETUP:**

**Tools and Special Tools**  
None Required

**References**  
WP 0004

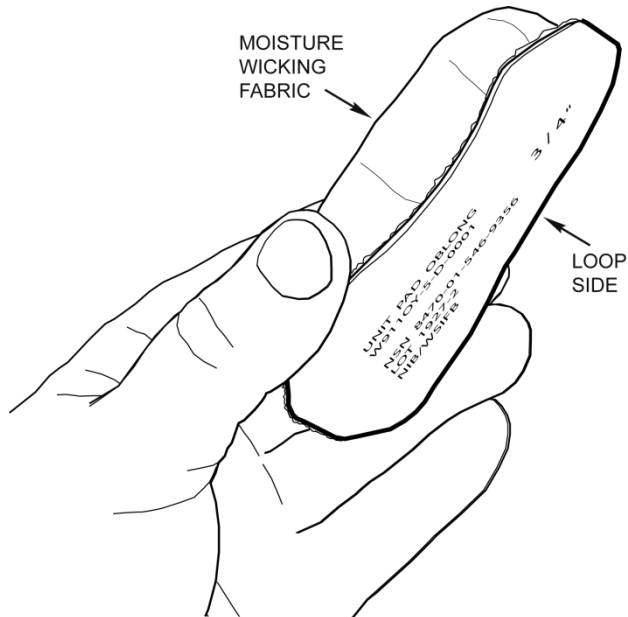
**Materials/Parts**  
None Required

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This work package provides information on replacing the suspension pads.

**REPLACE SUSPENSION PADS****NOTE**

One side of the pads is 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 is covered by moisture-wicking fabric which does not adhere to helmet hook disks.



**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 0004 for configuration and adjustment details.

**END OF TASK**

**END OF WORK PACKAGE**



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**OPERATOR MAINTENANCE**  
**REPLACE NIGHT VISION GOGGLES (NVG) BRACKET HARDWARE (MARINE CORPS ONLY)**  
**ENHANCED COMBAT HELMET—MARINE CORPS (ECH-M)**

---

**INITIAL SETUP:****Tools and Special Tools**

Screwdriver (WP 0036, Item 2)

**REFERENCES**

WP 0020

WP 0032

**Materials/Parts**

None Required

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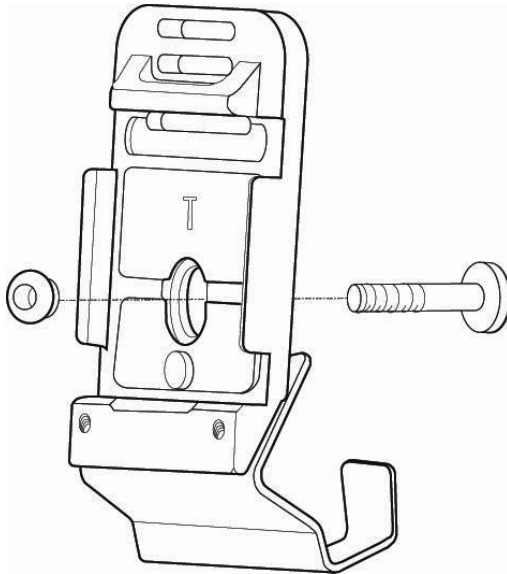
**REPLACE**

This work package provides instructions for replacing the Night Vision Goggles (NVG) bracket hardware.

**NOTE**

The NVG bracket is to remain mounted while wearing the helmet.

1. Remove the bracket and existing hardware (Figure 1) from the helmet using a screwdriver to loosen and remove the screw and nut.



**Figure 1. NVG Mounting Bracket Assembly.**

2. Install the new bracket hardware IAW WP 0020. See WP 0032 for NSN information.

**END OF TASK****END OF WORK PACKAGE.**



**CHAPTER 6**  
**SUPPORTING INFORMATION**  
**FOR**  
**ENHANCED COMBAT HELMET-ARMY (ECH-A)**  
**ENHANCED COMBAT HELMET-MARINE CORPS (ECH-M)**





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**OPERATOR  
REFERENCES**

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**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                             |
| NAVMC Form 10772 | Recommended Changes to Publications/Logistics-Maintenance Data Coding Sheet |
| SF 368           | Product Quality Deficiency Report   |

**ORDERS**

MCO 4855.10                      Product Quality Deficiency Report (PQDR)

**PAMPHLETS**

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

**END OF WORK PACKAGE**



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**OPERATOR**  
**COMPONENTS OF END ITEM (COEI) AND BASIC ISSUE ITEMS (BII) LISTS (ARMY ONLY)**  
**ENHANCED COMBAT HELMET-ARMY (ECH-A)**

---

## **INTRODUCTION**

### **Scope**

This work package lists COEI and BII for the ECH-A 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 ECH-A. 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 ECH-A in operation, operate it, and to do emergency repairs. Although shipped separately packaged, BII must be with the ECH-A 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.

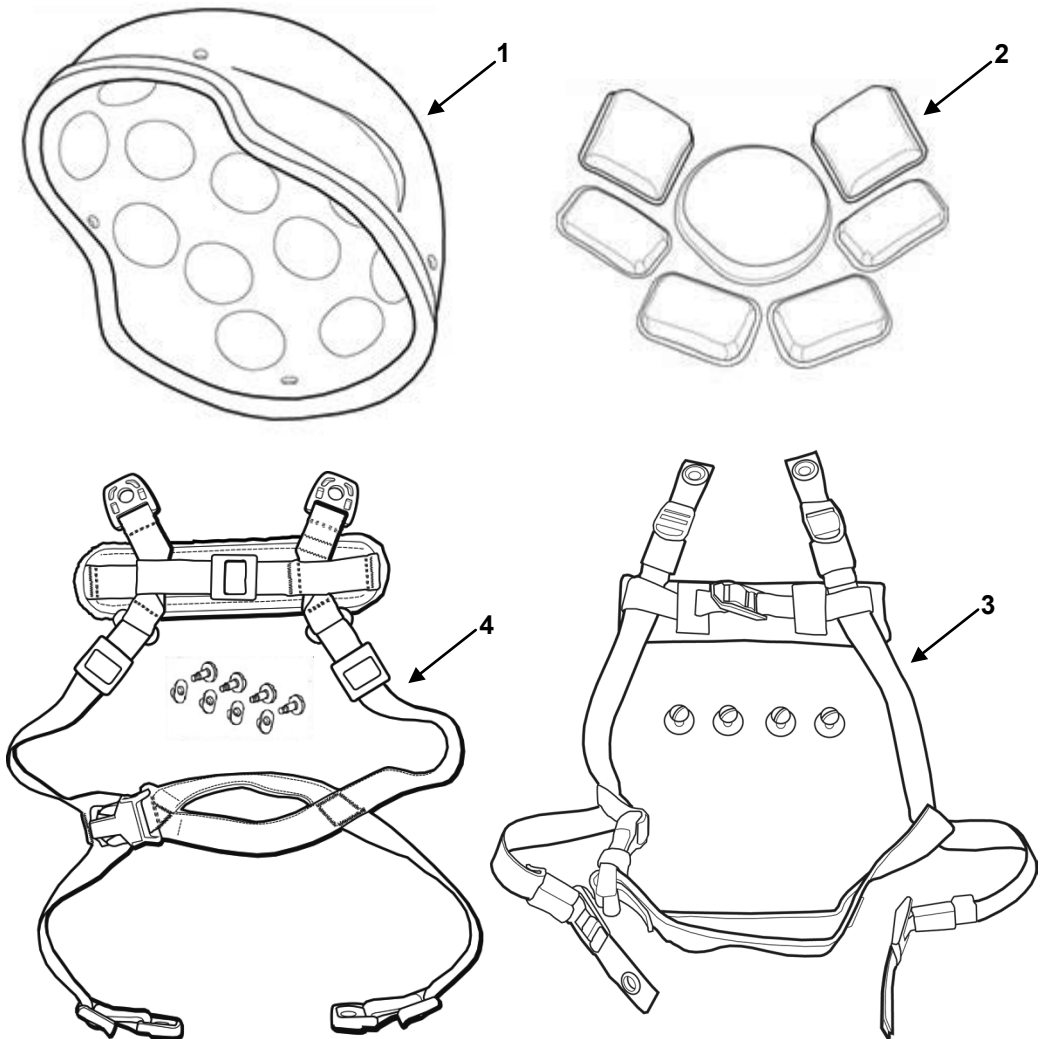


Figure 1. ECH-A Components of End Item (COEI) List.

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

| (1)<br>Illus<br>Number | (2)<br>National Stock<br>Number (NSN) | (3)<br>Description, Part Number/(CAGEC)   | (4)<br>Usable<br>On Code | (5)<br>U/I | (6)<br>Qty<br>Rqr |
|------------------------|---------------------------------------|---|--------------------------|------------|-------------------|
| 1                      | 8470-01-591-4449                      | HELMET, ENHANCED COMBAT W/ONE NVG HOLE, Tan, size 3/4-inch thick pads, Small 600-04 (81337)   |                          | each       | 1                 |
| 1                      | 8470-01-591-4453                      | HELMET, ENHANCED COMBAT W/ONE NVG HOLE, Tan, size 3/4-inch pads, Medium 600-04 (81337)  |                          | each       | 1                 |
| 1                      | 8470-01-591-4458                      | HELMET, ENHANCED COMBAT W/ONE NVG HOLE, Tan, size 3/4-inch pads, Large 600-04 (81337)   |                          | each       | 1                 |
| 1                      | 8470-01-591-4444                      | HELMET, ENHANCED COMBAT W/ONE NVG HOLE, Tan, size 3/4-inch pads, X-Large 600-04 (81337)   |                          | each       | 1                 |
| 1                      | 8470-01-591-4471                      | HELMET, ENHANCED COMBAT W/ONE NVG HOLE, Tan, size 3/4-inch pads, X-X-Large 600-04 (81337)   |                          | each       | 1                 |
| 2                      | 8470-01-546-9420                      | PAD SET, SUSPENSION, ECH-A, set of size 6 pads (3/4") 8470-01-F01-0477 (81337)  |                          | set        | 1                 |
| 3                      | 8470-01-530-0868                      | STRAP ASSEMBLY, CHIN, Foliage green CO/PD 05-04 (81337)   |                          | each       | 1                 |
| 4                      | 8470-01-599-3960                      | RETENTION SYSTEM, IMPROVED H NAPE, ECH, Tan, with 4 Ballistic Screws and T-Nuts, black, Size X-Small, 8470-00-NIB-0032 (81337)                    |                          | each       | 1                 |
| 4                      | 8470-01-599-3210                      | RETENTION SYSTEM, IMPROVED H NAPE, ECH, Tan, with 4 Ballistic Screws and T-Nuts, black, Sizes Small/Medium/Large/XLarge, 8470-00-NIB-0033 (81337) |                          | each       | 1                 |

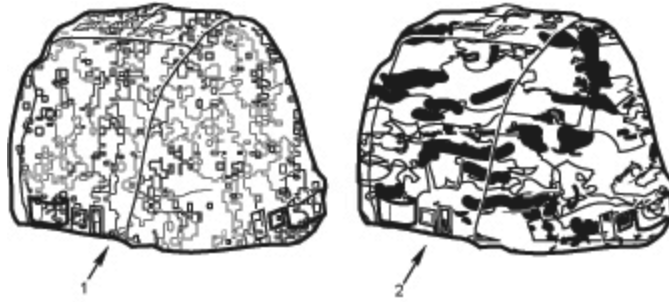


Figure 2. ECH-A Basic Issue Items (BI) List.

Table 2. ECH-A Basic Issue Items (BI) List.

| (1)<br>Illus<br>Number | (2)<br>National Stock<br>Number (NSN) | (3)<br>Description, Part Number/(CAGEC)  | (4)<br>Usable<br>On Code | (5)<br>U/I | (6)<br>Qty<br>Rq'r |
|------------------------|---------------------------------------|--|--------------------------|------------|--------------------|
| 1                      | 8415-01-591-5907                      | COVER, ENHANCED HELMET, UNIVERSAL CAMOUFLAGE PATTERN, Non-reversible, without communication flap, size S/M 552-04-SMALL/MEDIUM (81337)                   |                          | each       | 1                  |
| 1                      | 8415-01-591-5918                      | COVER, ENHANCED HELMET, UNIVERSAL CAMOUFLAGE PATTERN, Non-reversible, without communication flap, size L/XL 552-04-LARGE/XLARGE (81337)                  |                          | each       | 1                  |
| 1                      | 8415-01-591-5946                      | COVER, ENHANCED HELMET, UNIVERSAL CAMOUFLAGE PATTERN, Non-reversible, without communication flap, universal pattern, size XXL 552-04-XXLARGE (81337)     |                          | each       | 1                  |
| 2                      | 8415-01-591-5926                      | COVER, ENHANCED HELMET, OPERATION ENDURING FREEDOM CAMOUFLAGE PATTERN (OCP) Non-reversible, without communication flap, size S/M, MIL-DTL-32200 (58536)  |                          | each       | 1                  |
| 2                      | 8415-01-591-5934                      | COVER, ENHANCED HELMET, OPERATION ENDURING FREEDOM CAMOUFLAGE PATTERN (OCP) Non-reversible, without communication flap, size L/XL, MIL-DTL-32200 (81349) |                          | each       | 1                  |
| 2                      | 8415-01-591-5933                      | COVER, ENHANCED HELMET, OPERATION ENDURING FREEDOM CAMOUFLAGE PATTERN (OCP) Non-reversible, without communication flap, size XXL, MIL-DTL-32200 (58536)  |                          | each       | 1                  |

END OF WORK PACKAGE

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**OPERATOR**  
**COMPONENTS OF END ITEM (COEI) AND BASIC ISSUE ITEMS (BII) LISTS (MARINE CORPS ONLY)**  
**ENHANCED COMBAT HELMET- MARINE CORPS (ECH-M)**

---

## **INTRODUCTION**

### **Scope**

This work package lists COEI and BII for the ECH-M 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 ECH-M. 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 ECH-M in operation, operate it, and to do emergency repairs. Although shipped separately packaged, BII must be with the ECH-M 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.

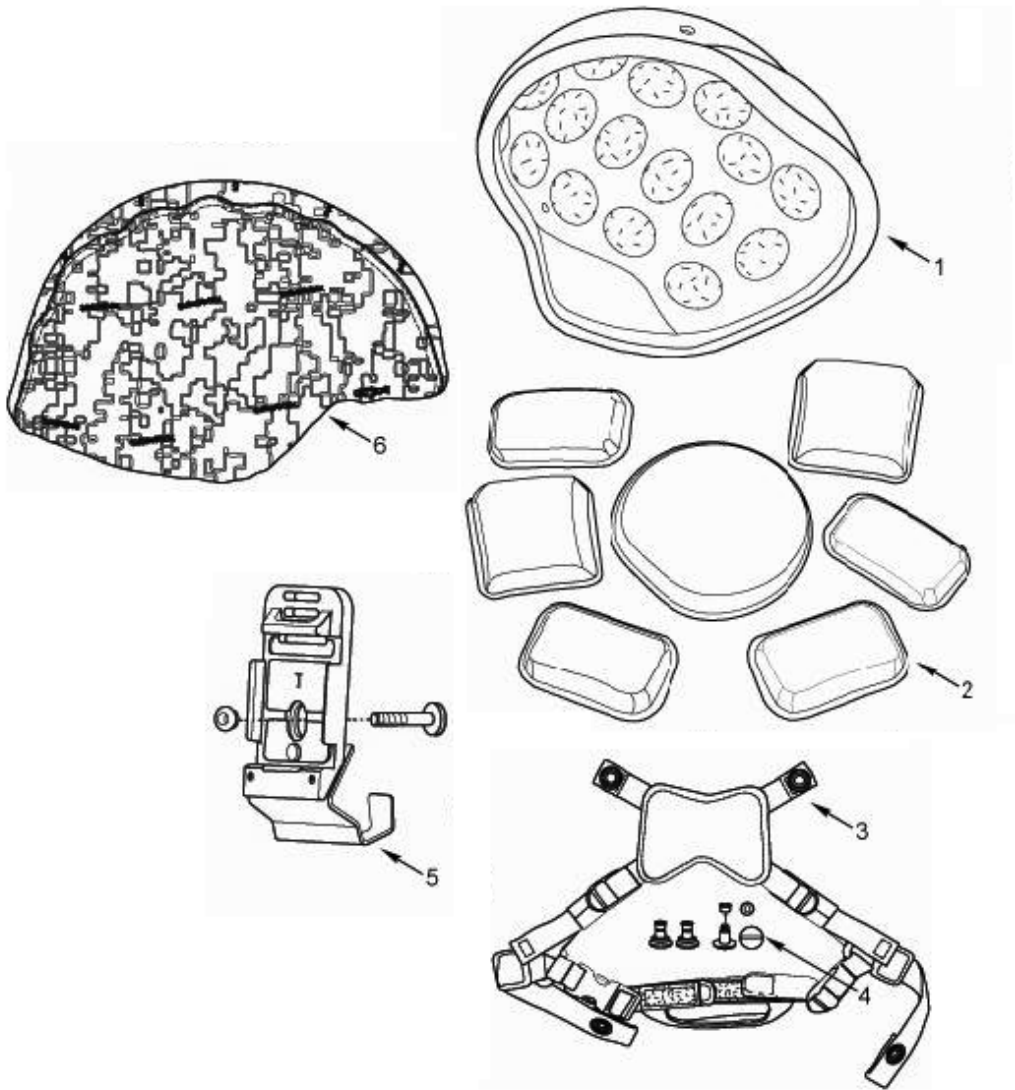


Figure 1. ECH-M Components of End Item (COEI) List.



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

| (1)<br>Illus<br>Number | (2)<br>National Stock<br>Number (NSN) | (3)<br>Description, Part Number/(CAGEC)                                     | (4)<br>Usable<br>on Code | (5)<br>U/I | (6)<br>Qty<br>Rqr |
|------------------------|---------------------------------------|---|--------------------------|------------|-------------------|
| 1                      | 8470-01-592-7348                      | HELMET, X-Small   |                          | EA         | 1                 |
| 1                      | 8470-01-592-6226                      | HELMET, Small   |                          | EA         | 1                 |
| 1                      | 8470-01-592-6215                      | HELMET, Medium  |                          | EA         | 1                 |
| 1                      | 8470-01-592-6208                      | HELMET, Large   |                          | EA         | 1                 |
| 1                      | 8470-01-592-6235                      | HELMET, X-Large   |                          | EA         | 1                 |
| 1                      | 8470-01-592-6200                      | HELMET, XX-Large  |                          | EA         | 1                 |
| 2                      | 8470-01-546-9420                      | PAD SET, SUSPENSION: c/o  |                          | EA         | 1                 |
| 3                      | 8470-01-599-0785                      | RETENTION ASSEMBLY, X-BACK,<br>COYOTE BROWN, X-Small<br>(PN A13209-1)       |                          | EA         | 1                 |
| 3                      | 8470-01-599-0786                      | RETENTION ASSEMBLY, X-BACK,<br>COYOTE BROWN, Small/Medium<br>(PN A13209-2)  |                          | EA         | 1                 |
| 3                      | 8470-01-599-0787                      | RETENTION ASSEMBLY, X-BACK,<br>COYOTE BROWN, Large/X-Large<br>(PN A13209-3) |                          | EA         | 1                 |
| 3                      | 8470-01-599-0788                      | RETENTION ASSEMBLY, X-BACK,<br>COYOTE BROWN, X-X-Large<br>(PN A13209-4)     |                          | EA         | 1                 |
| 4                      |                                       | HARDWARE, ATTACHING, BOLT,<br>Small/Medium/Large (PN 10010614)              |                          | PG         | 1                 |
| 4                      |                                       | HARDWARE, ATTACHING, BOLT,<br>X-Large (PN 10010615)                         |                          | PG         | 1                 |
| 4                      |                                       | HARDWARE, ATTACHING, C-NUT,<br>Small/Medium/Large (PN 10010616)             |                          | PG         | 1                 |
| 4                      |                                       | HARDWARE, ATTACHING, C-NUT,<br>X-Large (PN 10010616)                        |                          | PG         | 1                 |
| 5                      |                                       | BRACKET ASSEMBLY, HELMET, NVG<br>(PN A1-39076D)                             |                          | EA         | 1                 |
| 6                      | 8415-01-582-9684                      | COVER, WOODLAND/DESERT<br>MARPAT, REVERSIBLE, X-Small                       |                          | EA         | 1                 |
| 6                      | 8415-01-582-9759                      | COVER, WOODLAND/DESERT<br>MARPAT, REVERSIBLE, Small                         |                          | EA         | 1                 |
| 6                      | 8415-01-582-9674                      | COVER, WOODLAND/DESERT<br>MARPAT, REVERSIBLE, Medium                        |                          | EA         | 1                 |
| 6                      | 8415-01-582-9431                      | COVER, WOODLAND/DESERT<br>MARPAT, REVERSIBLE, Large                         |                          | EA         | 1                 |
| 6                      | 8415-01-582-9681                      | COVER, WOODLAND/DESERT<br>MARPAT, REVERSIBLE, X-Large                       |                          | EA         | 1                 |
| 6                      | 8415-01-582-8729                      | COVER, WOODLAND/DESERT<br>MARPAT, REVERSIBLE, X-X-Large                     |                          | EA         | 1                 |

Table 2. ECH-M Basic Issue Items (BI) List.

| (1)<br>Illus<br>Number | (2)<br>National Stock<br>Number (NSN) | (3)<br>Description, Part Number/(CAGEC) | (4)<br>Usable<br>on Code | (5)<br>U/I | (6)<br>Qty<br>Rqr |
|------------------------|---------------------------------------|---|--------------------------|------------|-------------------|
| N/A                    | N/A                                   | NONE                                    | N/A                      | N/A        | N/A               |

END OF WORK PACKAGE

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**OPERATOR**  
**ADDITIONAL AUTHORIZATION LIST (AAL) (ARMY ONLY)**  
**ENHANCED COMBAT HELMET—ARMY (ECH-A)**

---

## **INTRODUCTION**

### **Scope**

This work package lists additional items you are authorized for the support of the ECH-A.

### **General**

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

### **Explanation of Columns in the AAL**

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

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

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

Column (4) U/I. Unit of Issue (U/I) indicates the physical measurement or count of the item as issued per the National Stock Number shown in column (1).

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

Table 1. Additional Authorization List – ECH-A.

| (1)<br>National Stock<br>Number (NSN) | (2)<br>Description, Part Number/(CAGEC)   | (3)<br>Usable<br>on Code | (4)<br>U/I | (5)<br>Qty<br>Recm |
|---------------------------------------|---|--------------------------|------------|--------------------|
| 8470-01-531-3897                      | ATTACHMENT TAB REPLACEMENT<br>GL PD 07-19 (81337)   |                          | box        |                    |
| 8415-01-524-5842                      | BAND, HELMET, CAMOUFLAGE, Foliage green<br>MIL-B-1851 (81349)   |                          | each       | 1                  |
| 8415-01-495-6714                      | BAND, HELMET, CAMOUFLAGE, Tan<br>MIL-B-1851 (81349)   |                          | each       | 1                  |
| 8470-01-F01-1680                      | BRACKET, LEVER, NVD (ECH)   |                          | each       | 1                  |
| 8470-01-599-3949                      | HARDWARE, IMPROVED H NAPE RETENTION<br>SYSTEM, ECH, Black, with 4 ballistic screws and T-<br>nuts, 8470-00-0032-A (81337) |                          | pg         | 1                  |
| 8470-01-552-4607                      | PAD, NAPE, BALLISTIC, H-back, S/M/L ECH-A<br>ARM-NP1-24-000 (377Q0)   |                          | each       | 1                  |
| 8470-01-552-4610                      | PAD, NAPE, BALLISTIC, H-back, XL/XXL, ECH-A<br>ARM-NP2-24-000 (377Q0)   |                          | each       | 1                  |
| 8470-01-568-1028                      | PAD, NAPE, BALLISTIC, Universal, Camouflage,<br>S/M/L ARM-NP5-24-000 (377Q0)  |                          | each       | 1                  |
| 8470-01-568-1023                      | PAD, NAPE, BALLISTIC, Universal, Camouflage,<br>XL/XXL ARM-NP6-24-000 (377Q0)   |                          | each       | 1                  |
| 8470-01-584-1750                      | PAD, NAPE, BALLISTIC, Universal, Multi-cam, S/M/L<br>ARM NP7 24-000 (377Q0)   |                          | each       | 1                  |
| 8470-01-584-1839                      | PAD, NAPE, BALLISTIC, Universal, Multi-cam,<br>XL/XXL ARM NP7 24-000 (377Q0)  |                          | each       | 1                  |
| 8415-01-521-8802                      | STRAP, EYEWEAR RETENTION, Foliage green<br>MIL-DTL-32134 (81337)  |                          | pair       | 1                  |
| 8415-01-521-8801                      | STRAP, EYEWEAR RETENTION, Tan<br>MIL-DTL-32134 (81337)  |                          | pair       | 1                  |

END OF WORK PACKAGE

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**OPERATOR  
ADDITIONAL AUTHORIZATION LIST (MARINE CORPS ONLY)  
ENHANCED COMBAT HELMET—MARINE CORPS (ECH-M)**

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**INTRODUCTION****Scope**

This work package lists additional items you are authorized for the support of the ECH-M.

**General**

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

**Explanation of Columns in the AAL**

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

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

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

Column (4) U/I. Unit of Issue (U/I) indicates the physical measurement or count of the item as issued per the National Stock Number shown in column (1).

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

Table 1. ECH-M Additional Authorization List.

| (1)<br>National Stock<br>Number (NSN) | (2)<br>Description, Part Number/(CAGEC)                             | (3)<br>Usable<br>on Code | (4)<br>U/I | (5)<br>Qty<br>Recm |
|---------------------------------------|---|--------------------------|------------|--------------------|
| 8415-01-582-9799                      | COVER, MARPAT, SNOW, X-Small  |                          | EA         |                    |
| 8415-01-582-9809                      | COVER, MARPAT, SNOW, Small  |                          | EA         |                    |
| 8415-01-582-9827                      | COVER, MARPAT, SNOW, Medium   |                          | EA         |                    |
| 8415-01-582-0167                      | COVER, MARPAT, SNOW, Large  |                          | EA         |                    |
| 8415-01-582-9681                      | COVER, MARPAT, SNOW, X-Large  |                          | EA         |                    |
| 8415-01-582-9838                      | COVER, MARPAT, SNOW, XX-Large                                       |                          | EA         |                    |
| 8470-01-546-9415                      | PAD, HELMET, CROWN  |                          | EA         |                    |
| 8470-01-546-9356                      | PAD, HELMET, OBLONG   |                          | EA         |                    |
| 8470-01-546-9407                      | PAD, HELMET, TRAPEZOIDAL, size 6<br>(3/4 inch thick) 253-03 (81337) |                          | EA         |                    |
| 8415-01-552-4599                      | PAD, NAPE, BALLISTIC, Small/Medium/Large                            |                          | EA         |                    |
| 8415-01-552-4602                      | PAD, NAPE, BALLISTIC, Extra-Large/Extra-Extra-<br>Large             |                          | EA         |                    |

END OF WORK PACKAGE

**OPERATOR  
EXPENDABLE AND DURABLE ITEMS LIST**

**INTRODUCTION****Scope**

This work package lists expendable and durable items needed to operate and maintain the Enhanced Combat Helmet–Army (ECH-A) and the Enhanced Combat Helmet–Marines (ECH-M). 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)<br>Item<br>No. | (2)<br>Level | (3)<br>National Stock<br>Number (NSN) | (4)<br>Item Name, Description, Part Number/(CAGEC)             | (5)<br>U/I |
|--------------------|--------------|---------------------------------------|--|------------|
| 1                  | C            | 8040-01-388-0735                      | ADHESIVE, adhesive for edging 40640(05972)                     | BT         |
| 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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**OPERATOR  
SUPPORT ITEMS**

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**INTRODUCTION**

This work package lists items you will need to operate and maintain the Enhanced Combat Helmet–Army (ECH-A) and the Enhanced Combat Helmet–Marines (ECH-M). This list is for information purposes only and is not authority to requisition replacements.

**Table 1. Support Items List.**

| (1)<br>Item No. | (2)<br>Description, Part Number/(CAGEC)                     | (3)<br>U/I | (4)<br>National Stock Number (NSN) |
|-----------------|---|------------|------------------------------------|
| 1               | MULTI-TOOL, Folding, Pocket (ECH-A only)<br>68010201K/OCAD1 | EA         | 5110-01-474-0894                   |
| 2               | SCREWDRIVER, Flat Tip<br>30839 (08292)                      | EA         | 5120-01-430-8104                   |
| 3               | RULER<br>A-A-563/58536                                      | EA         | 7510-00-935-1005                   |
| 4               | CALIPER<br>452-12/73792                                     | EA         | 5210-01-434-9493                   |
| 5               | TAPE, Measuring, Fabric<br>14-108/53440                     | EA         | 8315-00-782-3520                   |

**END OF WORK PACKAGE**



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**OPERATOR  
RECORD OF HIT  
ECHANCED COMBAT HELMET-ARMY (ECH-A)**

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**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 **Enhanced Combat Helmet (ECH-A)**:  
\_\_\_\_\_  
\_\_\_\_\_

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

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

Description of Injury: \_\_\_\_\_  
\_\_\_\_\_

**OPERATOR RECORD OF HIT ON ECH-A — Continued**

ARMY: 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](mailto:PEOSoldierWebmaster@conus.army.mil)  
[PEOSoldierPAO@conus.army.mil](mailto:PEOSoldierPAO@conus.army.mil)

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

**END OF WORK PACKAGE**

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**OPERATOR  
RECORD OF HIT  
ENCHANCED COMBAT HELMET-MARINE CORPS (ECH-M)**

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**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 **Enhanced Combat Helmet (ECH-M)**:  
\_\_\_\_\_

\_\_\_\_\_

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

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

Description of Injury: \_\_\_\_\_

\_\_\_\_\_

**OPERATOR RECORD OF HIT ON ECH-M — Continued**

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

Postal Address:

Program Manager  
Infantry Combat Equipment  
MARCORSYSCOM  
2200 Lester Street  
Quantico, VA 22134-5050

Electronic Mail Address:

Mail to: [pmice@usmc.mil](mailto:pmice@usmc.mil)

Call the MARCORSYSCOM Corporate Communications, Public Affairs Office at (703) 432-3948.

**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.





|   |           |           |            |   |           |  |   |
|---|-----------|-----------|------------|---|-----------|--|---|
| <b>RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS</b><br>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).   | <b>DATE</b><br>21 October 2003                                    |
| <b>TO:</b> (Forward to proponent of publication or form) (Include ZIP Code)<br><br>US ARMY TACOM LIFE CYCLE MANAGEMENT COMMAND<br>ATTN: AMSTA-LCL-MPP/TECHPUBS<br>MS 727, 6501 E. 11 Mile Road<br>Warren, MI 48397-5000 |           |           |            |   |           | <b>FROM:</b> (Activity and location) (Include ZIP Code)<br><br>PFC JANE DOE<br>Co A 3 <sup>RD</sup> Engineer Br.<br>Ft Leonard Wood, MO 63108  |   |
| <b>PART I – ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS</b>   |           |           |            |   |           |  |   |
| PUBLICATION/FORM NUMBER<br>TM 10-1670-296-20&P  |           |           |            |   |           | DATE<br>30 October 2002  | TITLE<br>Unit Manual for Ancillary Equipment for Air Drop Systems |
| ITEM NO.  | PAGE NO.  | PARAGRAPH | LINE NO. * | FIGURE NO.  | TABLE NO. | <b>RECOMMENDED CHANGES AND REASON</b><br><i>(Provide exact wording of recommended changes, if possible).</i>   |   |
|   | 0036 00-2 |           |            |   | 1         | <i>In Table 1, Sewing Machine Code Symbols, the second sewing machine code symbol should be MDZZ not MD22.</i><br><br><i>Change the manual to show Sewing Machine, Industrial: Zig-Zag; 308 stitch; medium-duty; NSN 3530-01-181-1421 as a MDZZ code symbol.</i> |   |
| <i>*Reference to line numbers within the paragraph or subparagraph.</i>   |           |           |            |   |           |  |   |
| TYPED NAME, GRADE OR TITLE<br><br>Jane Doe, PFC   |           |           |            | TELEPHONE EXCHANGE/<br>AUTOVON, PLUS EXTENSION<br><br>(508)233-4141<br>DSN 256-4141 |           | SIGNATURE<br><br>Jane Doe Jane Doe   |   |

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| <b>TO:</b> (Forward to proponent of publication or form)<br>(Include ZIP Code)<br><br>US ARMY TACOM LIFE CYCLE MANAGEMENT<br>COMMAND<br>ATTN: AMSTA-LCL-MPP/TECHPUBS<br>MS 727, 6501 E. 11 Mile Road<br>Warren, MI 48397-5000 | <b>FROM:</b> (Activity and location)<br>(Include ZIP Code)<br><br>PFC JANE DOE<br>Co A 3 <sup>RD</sup> Engineer Br.<br>Ft Leonard Wood, MO 63108 | <b>DATE</b><br><br>21 October 2003 |
|---|--|------------------------------------|

**PART II – REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS**

|   |                         |   |
|---|-------------------------|---|
| PUBLICATION NUMBER<br>TM 10-1670-296-20&P | DATE<br>30 October 2002 | TITLE<br>Unit Manual for Ancillary<br>Equipment for Air Drop<br>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 D-Ring. In the Repair Part List key for Figure 4, item 16 is called a Snap Hook. 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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| <b>RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS</b><br>For use of this form, see AR 25-30; the proponent agency is ODISC4.   |          |            |               |            |   | Use Part II ( <i>reverse</i> ) for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM). | DATE      |
|---|----------|------------|---------------|------------|---|--|-----------|
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| <b>PART I – ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS</b>   |          |            |               |            |   |  |           |
| PUBLICATION/FORM NUMBER<br>TM 10-8470-211-10  |          |            |               |            | DATE<br>1 August 2015                         | TITLE<br>Operator Manual for Enhanced Combat Helmet–Army (ECH-A) and Enhanced Combat Helmet–Marine Corps (ECH-M)           |           |
| ITEM NO.  | PAGE NO. | PARA-GRAPH | LINE NO.<br>* | FIGURE NO. | TABLE NO.                                     | RECOMMENDED CHANGES AND REASON<br><i>(Provide exact wording of recommended changes, if possible).</i>                      |           |
|   |          |            |               |            |   |  |           |
| <i>*Reference to line numbers within the paragraph or subparagraph.</i>   |          |            |               |            |   |  |           |
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**PART II – REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS**

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| PUBLICATION NUMBER<br>TM 10-8470-211-10 | DATE<br>1 August 2015 | TITLE<br>Operator Manual for Enhanced Combat Helmet–<br>Army (ECH-A) and Enhanced Combat Helmet–<br>Marine Corps (ECH-M) |
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| PAGE NO. | COLM NO. | LINE NO. | NATIONAL STOCK NUMBER | REFERENCE NO. | FIGURE NO. | ITEM NO. | TOTAL NO. OF MAJOR ITEMS SUPPORTED | RECOMMENDED ACTION |
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**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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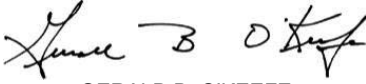
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*Chief of Staff*

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