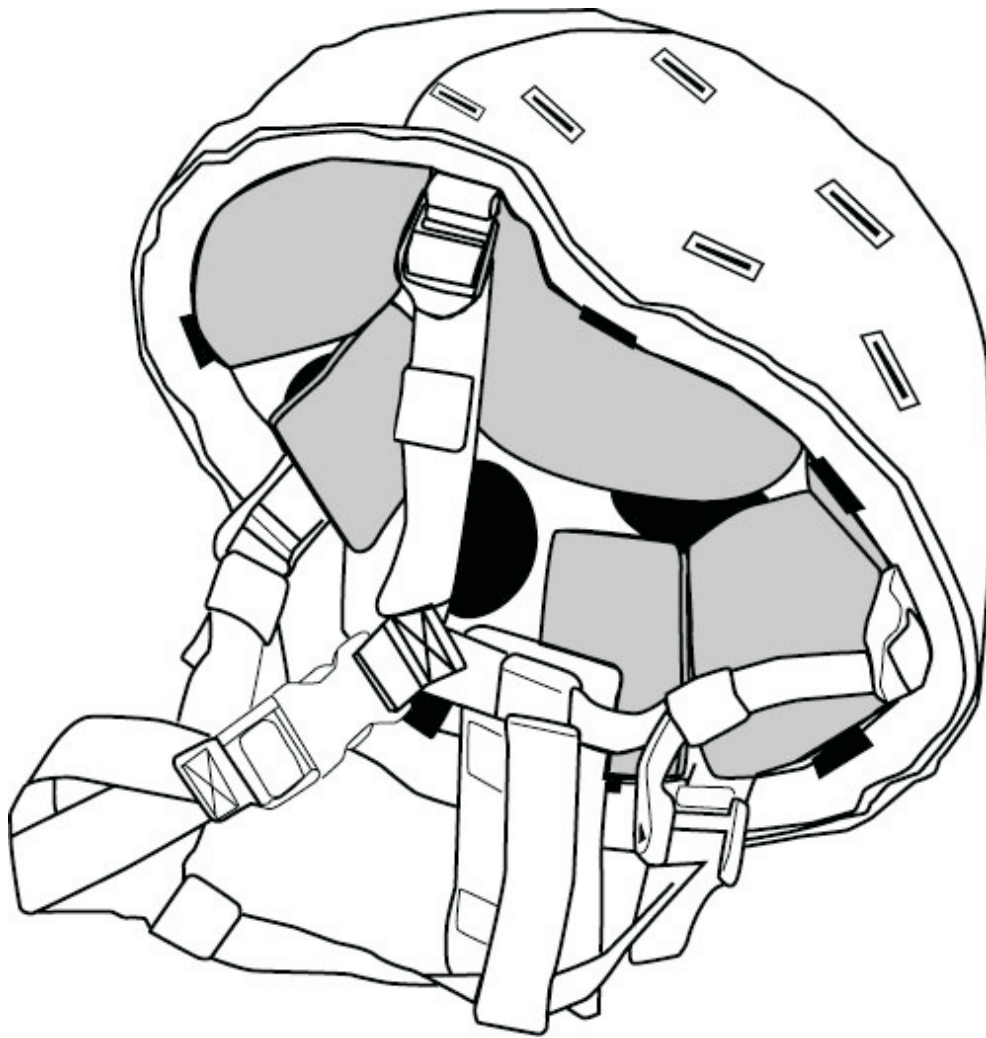


TECHNICAL MANUAL
OPERATOR'S MANUAL FOR
ADVANCED COMBAT HELMET (ACH)



2007 Gentex Corporation

TP0271 REV. 2

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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.**

WARNING

For first aid treatments, refer to FM 4-25.11.

WARNING

For airborne and other high risk operations such as air assault and rappelling/mountaineering, all seven ACH pads must be worn at all times. Failure to observe this precaution could result in serious injury or death.

WARNING

The hardware (nut) inside the ACH—where the chinstrap retention system webbing attaches to the ACH shell in four places—must be covered by padding during airborne and other high risk operations such as air assault and rappelling/mountaineering. The pads must be placed flush with the rim (edge) of the ACH and completely cover the hardware. Failure to observe this precaution could result in serious injury or death.

 **WARNING**

If you experience fit problems, tightness/looseness, or ACH profile is too high or too low, refer to Sizing and Fitting Troubleshooting guidelines. Failure to observe this precaution could result in serious injury or death.

 **WARNING**

If no NVG Front Bracket is used—and the ACH has a hole for the front bracket—plug the hole with the 8-32 x 3/8 long screw and post. See Chapter 4, Associated and Repair Items List, for the appropriate part number.

 **WARNING**

The rear pads must be placed flush with the rim (edge) of the ACH for airborne operations. If you experience ACH rotation during airborne operations, the rear pads can be placed so that they extend 1/2" beyond the rim of the ACH. Placement of the rear pads flush or beyond the rim (edge) of the ACH prevents the hard shell from hitting your neck. (See Pad Placement over Hardware (Front) and Pad Placement over Hardware (Rear) illustrations.)

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HOW TO USE THIS MANUAL

OVERVIEW

This manual contains operating instructions and maintenance procedures for the Advanced Combat Helmet (ACH).

This manual is divided into the following major sections:

Front Cover. Provides information about the equipment covered by the TM.

Warning Summary. Provides a summary of all warnings that apply throughout the manual.

Table of Contents. Lists chapters and page numbers in order of appearance.

Chapter 1, Description and Theory of Operation. Provides descriptions, equipment data, and theory of operation information.

Chapter 2, Operator Instructions. Provides sizing information, donning information, and operating instructions.

Chapter 3, Maintenance Procedures. Provides cleaning and repair instructions and maintenance procedures.

Chapter 4, Supporting Information. Provides reference information, Components of End Item (COEI)/Basic Issue Items (BII) Lists, Associated and Repair Items List, and Expendable and Durable Items List.

ADVANCED COMBAT HELMET GENERAL INFORMATION

SCOPE

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

LIST OF ABBREVIATIONS/ACRONYMS

Components of End Item (COEI)
Basic Issue Items (BII)
Advanced Combat Helmet (ACH)
Night Vision Goggle (NVG)
Nuclear, Biological, and Chemical (NBC)

END OF SECTION

CHAPTER 1
DESCRIPTION AND THEORY OF OPERATION
FOR ACH

ACH

EQUIPMENT DESCRIPTION AND DATA

EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

The ACH is a system that provides ballistic and impact protection. This system is compatible with the current night vision goggles (NVGs), communications packages, and nuclear, biological, and chemical (NBC) defense equipment and body armor.

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

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

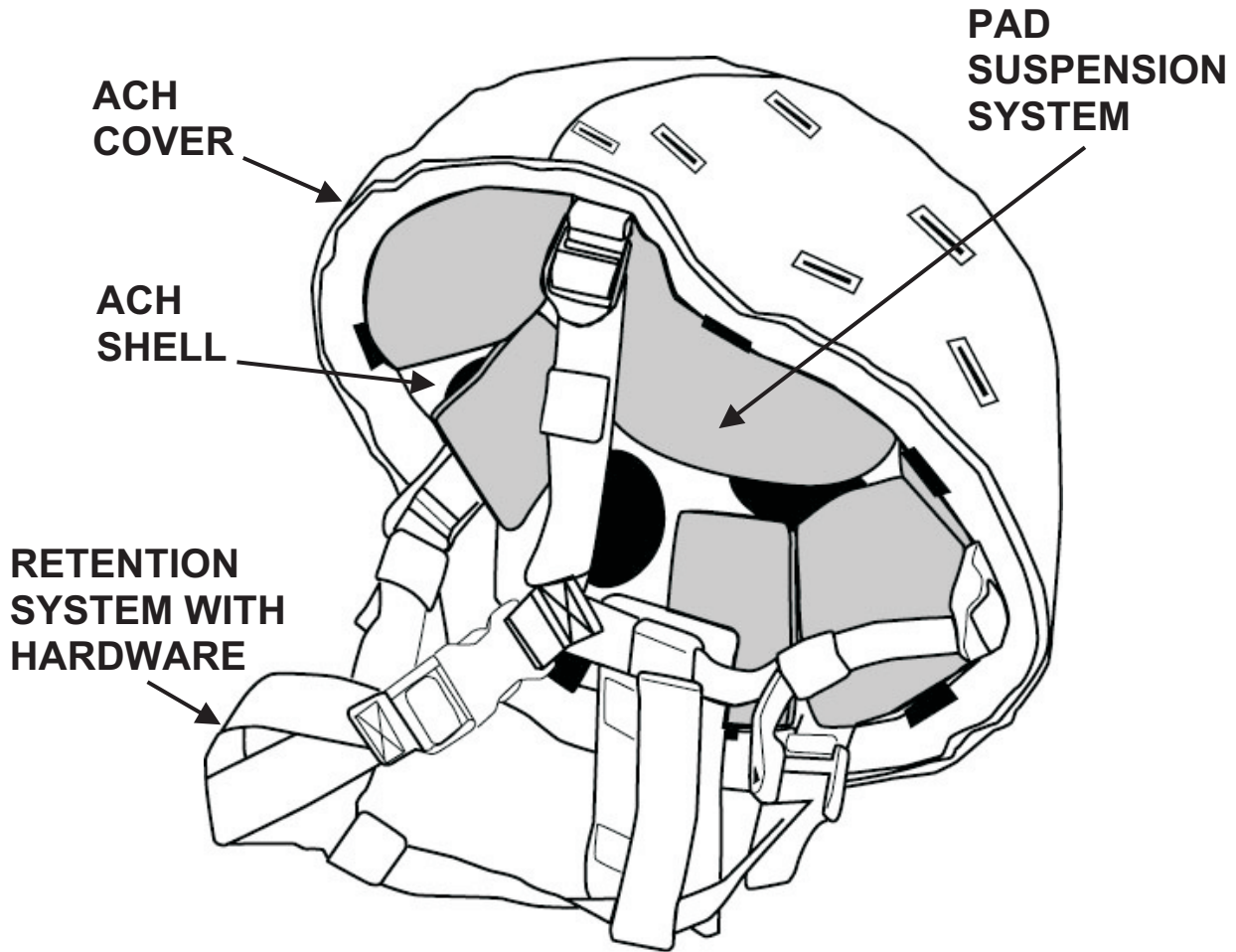
The ACH's chinstrap retention system and pad suspension system provide unsurpassed balance, stability, and comfort. These systems provide for proper size, fit, and ventilation.

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

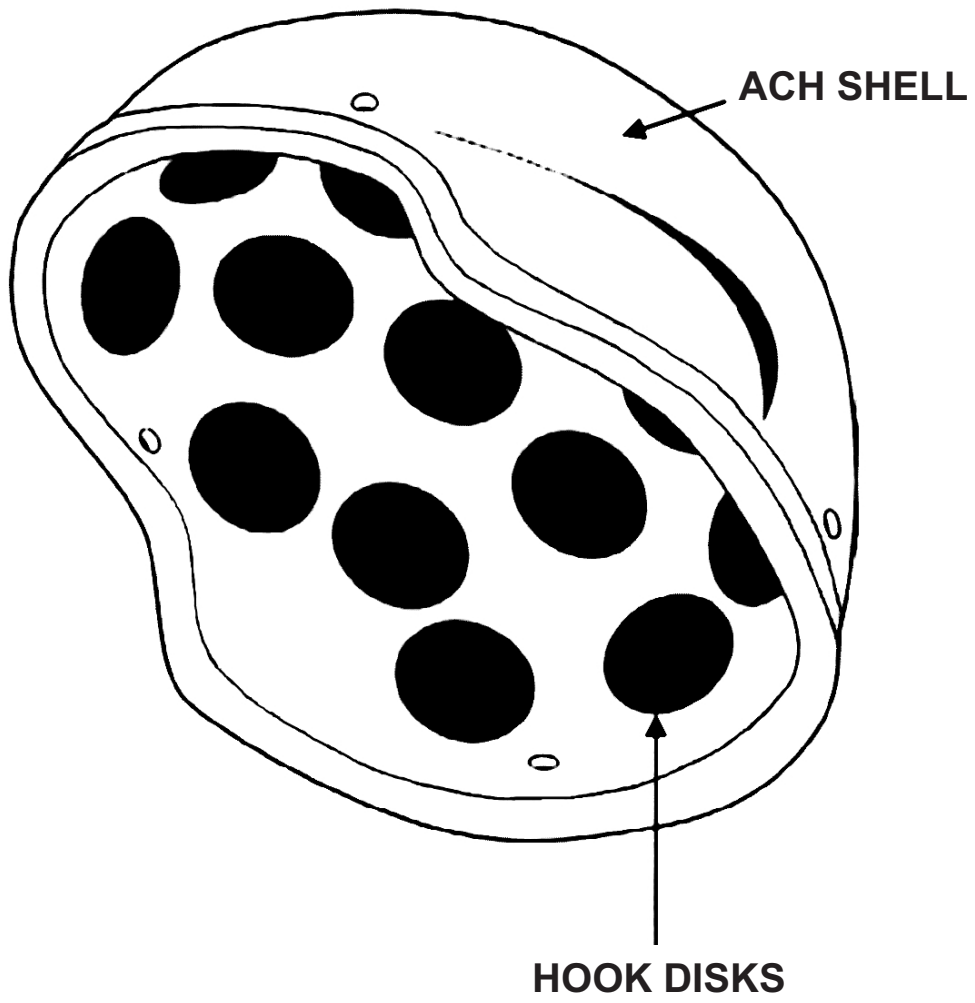
DESCRIPTION OF MAJOR COMPONENTS

The ACH is made up of the following major components, which are illustrated below:

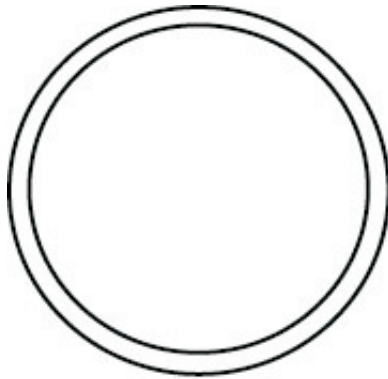
- ACH shell
- pad suspension system
- retention system with hardware
- ACH cover
- eyewear retention strap (not shown)



Major Components



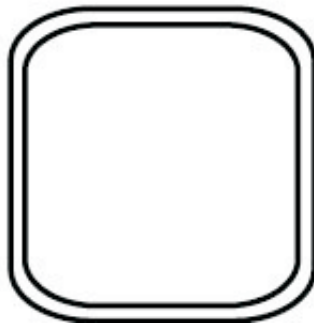
ACH Shell



**CIRCULAR CROWN PAD
(QTY 1 IN ACH)**

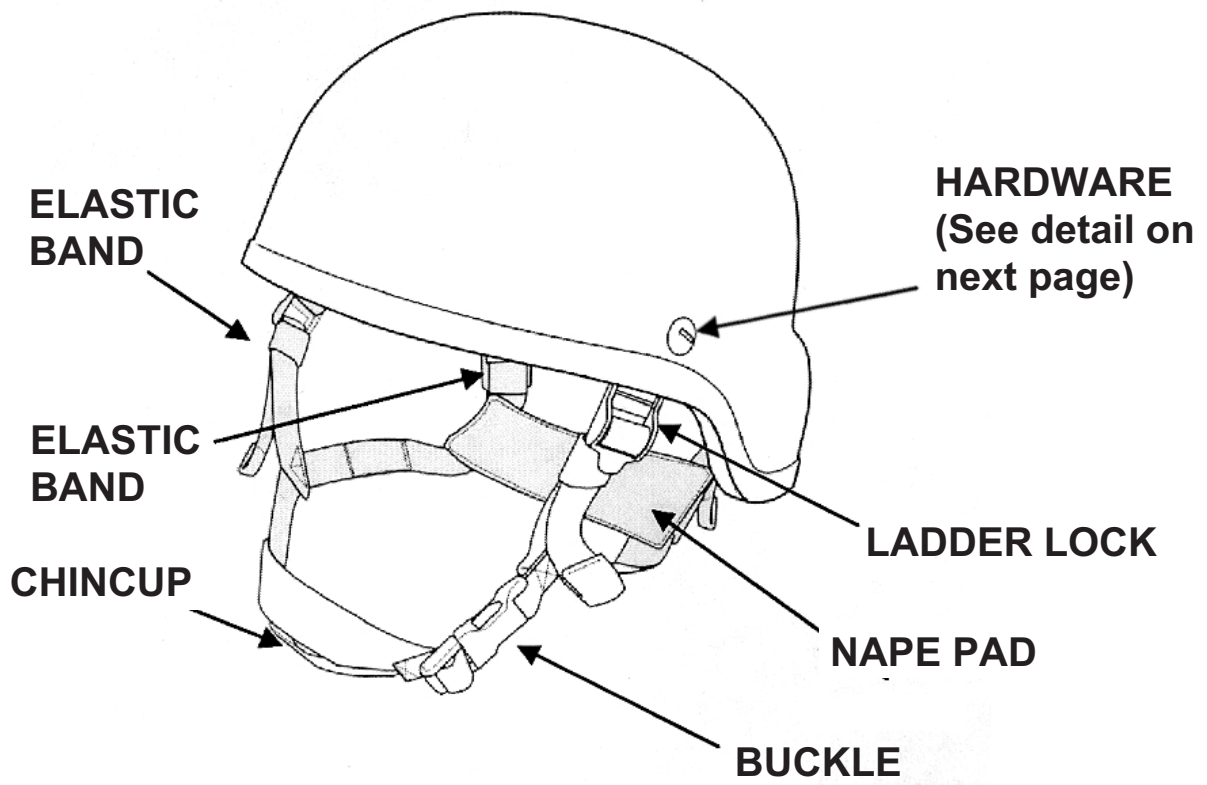


**OBLONG/OVAL PAD
(QTY 4 IN ACH)**

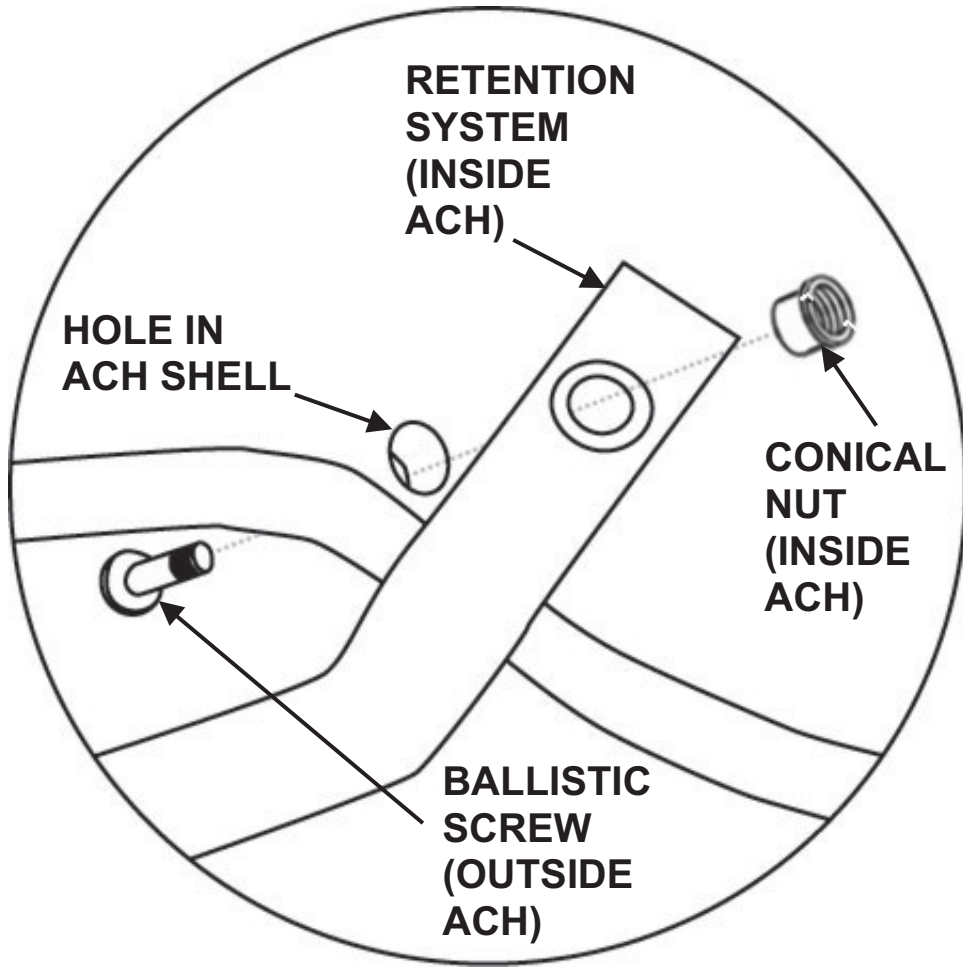


**TRAPEZOIDAL PAD
(QTY 2 IN ACH)**

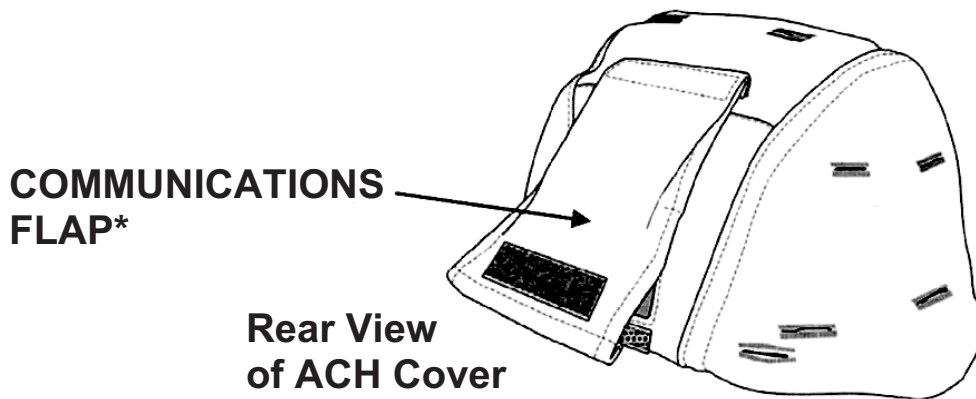
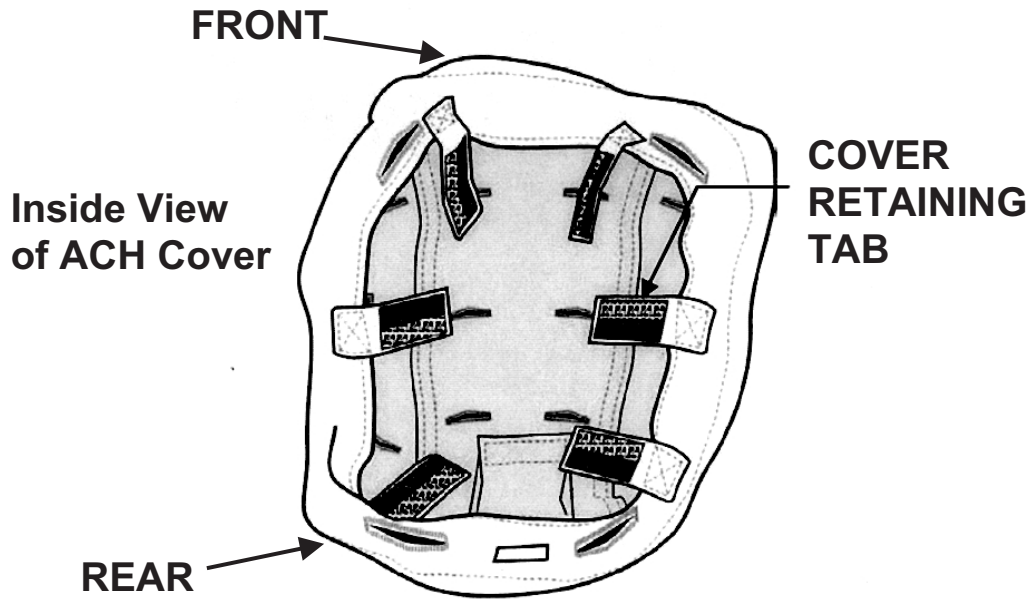
Pad Suspension System



Retention System



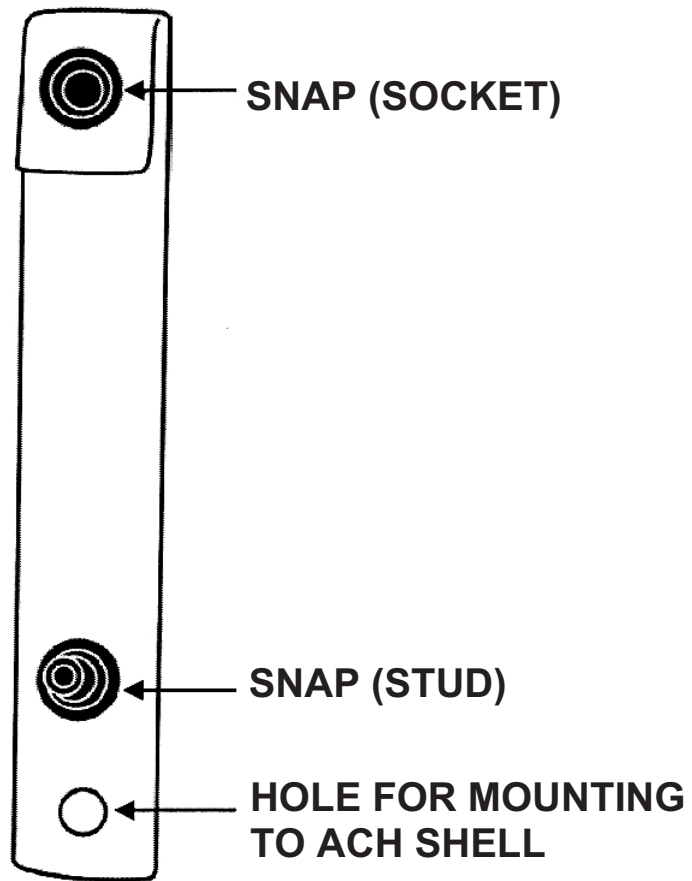
Hardware



* The communications flap is used to store cables from the headset microphone that is sometimes used with the ACH.

The flap can also be used to secure goggle straps if no eyewear retention straps are available. Lift the flap and place the goggle strap under the flap. Re-secure the flap by pressing the hook and loop together.

ACH Cover



Eyewear Retention Strap

END OF SECTION

ACH

THEORY OF OPERATION

This section discusses theory of operation and protective qualities of the ACH.

This ACH is designed to provide the soldier with ballistic and impact protection. It is compatible with night vision, communications, and nuclear, biological and chemical (NBC) equipment. The small ACH (without the cover) weighs under 3 pounds, the medium weighs 3 pounds, the large weighs 3.3 pounds, and the X-large weighs 3.8 pounds.

The edge cut of the shell has been reduced when compared to the Helmet, Ground Troops and Parachutists. This enables better situational awareness through improved field of vision and hearing.

The shell provides ballistic protection. The pads act as a suspension system providing sizing and fitting. In conjunction with the shell, the pad suspension system provides impact protection. In conjunction with the chinstrap retention system, the pad suspension system provides stability.

The chinstrap retention system is a four-point design, attaching to the shell at four locations. In conjunction with the pad suspension system, the retention system with the H-shaped nape pad provides improved stability.

END OF SECTION

CHAPTER 2
OPERATOR INSTRUCTIONS
FOR ACH

SIZING AND FITTING INSTRUCTIONS

This section provides instructions for choosing the proper size ACH.

ACH Shell Sizing

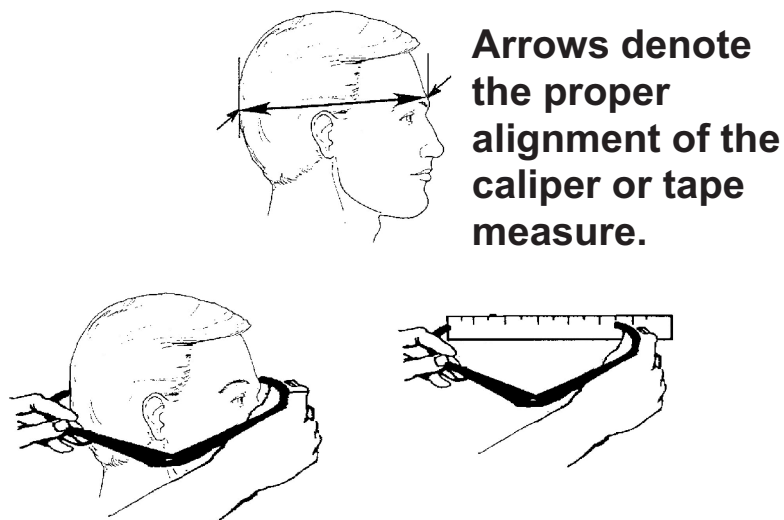
Head Measuring Procedure

Use tape measure and caliper to make the following measurements.

See Chapter 4, Expendable and Durable Items List, for appropriate NSNs.

Step 1. Soldier *must* be seated in upright position.

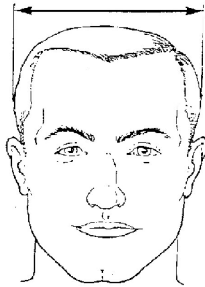
Step 2. Measure head length. Measurement is best made with a caliper and a ruler. If caliper is not available, an approximate measurement can be made using a tape measure aligned with the front and back of head as shown. Record the size measured.



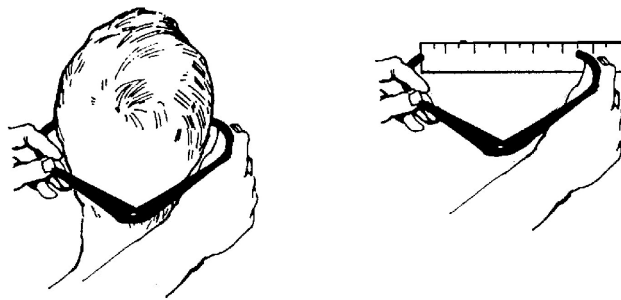
Measuring Head Length

Step 3. Measure head width. Measurement is best made with a caliper and a ruler. If no caliper is available, an approximate measurement can be made using a tape measure aligned with each side of head as shown. Record the size measured.

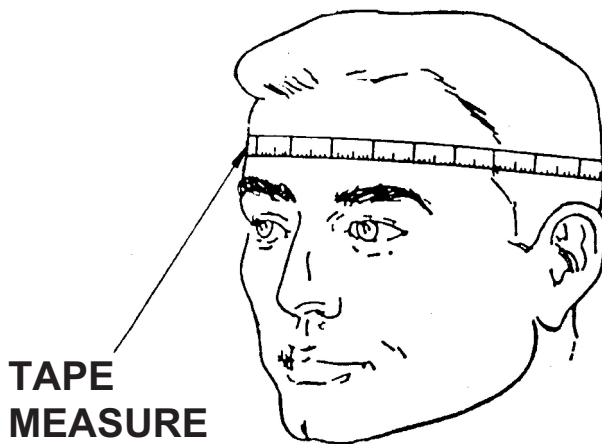
Step 4. Measure head circumference. Record the size measured.



Arrows denote the proper alignment of the caliper or tape measure.



Measuring Head Width



Soldier sits erect with head level. Measure circumference by passing tape measure just above the eyebrow and above both ears. The tape measure must be pulled tight.

Measuring Head Circumference

Step 5. Using the chart below, select the ACH size on the basis of the largest of the three measurements. If a measurement falls on the dividing line between the two sizes, select the larger size. This is the proper shell size for the soldier measured.

NOTE

If any measurement falls on the dividing line between sizes, select the larger size.

Table 1. Head/Shell Sizing

ACH SIZE	Head Length	Head Width	Head Circumference
Small	Up to 7 ¼ inches (184 mm)	Up to 6 ½ inches (162 mm)	Up to 21 ¼ inches (538 mm)
Medium	From 7 ¼ inches (184 mm) up to 7 ¾ inches (198 mm)	Up to 6 ½ inches (162 mm)	From 21 ¼ inches (538 mm) up to 22 ½ inches (573 mm)
Large	From 7 ¾ inches (198 mm) up to 8 ¼ inches (210 mm)	Up to 6 ½ inches (162 mm)	From 22 ½ inches (573 mm) up to 23 ½ inches (597 mm)
X-large	8 ¼ inches (210 mm) and over	6 ½ inches (162 mm) and over	23 ½ inches (597 mm) and over

END OF SECTION

ACH Pad Sizing

The sizes of the pads are as follows:

¾" thick (also referred to as size 6)

1" thick (also referred to as size 8)

To select pad size:

1. Assemble the ACH in standard pad configuration (see Pad Configuration in Chapter 2). **If other equipment is to be used with the ACH, such as headset/microphone, evaluate size with that equipment (if possible).**
2. Try on the ACH and evaluate fit. Proper fit is achieved when the ACH 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 (see Sizing and Fitting Troubleshooting in Chapter 2). Shake head rapidly from side to side to check for stability. The ACH should not rotate from side to side when head is shaken. While evaluating fit, be sure to have the chinstrap retention system cinched down.

END OF SECTION

PAD CONFIGURATIONS

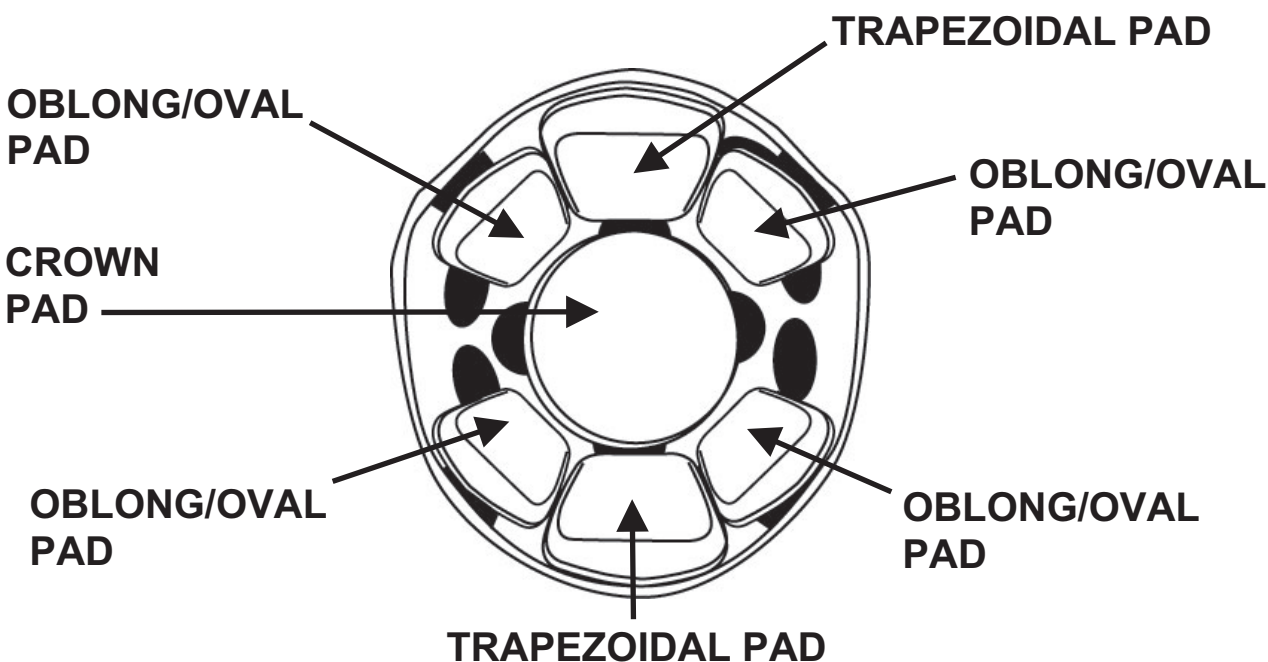
This section provides instructions for different pad configurations.

Standard Pad Configuration

! WARNING

For airborne and other high risk operations such as air assault and rappelling/mountaineering, all seven pads must be worn at all times. Failure to observe this precaution could result in serious injury or death.

Below is the standard pad configuration, with the pads placed vertically. The pads may also be placed in other directions as described on the next page. (See Configuration for Airborne Operations in Chapter 2 for additional information on pad placement.)

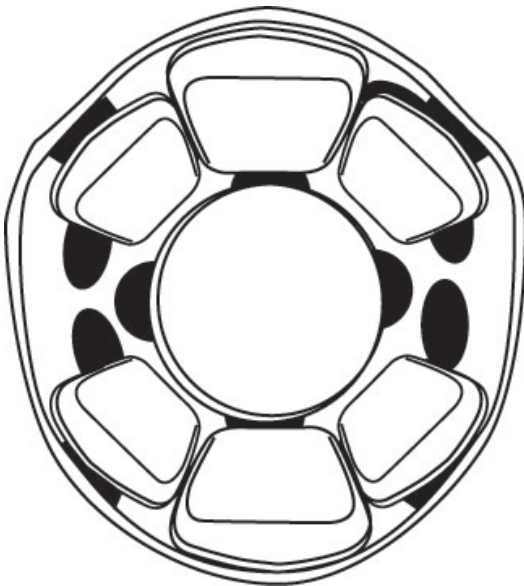


Standard Pad Configuration

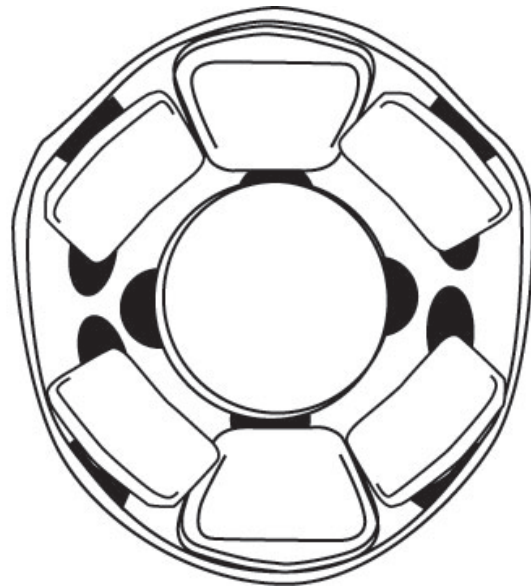
Pads can be placed in vertical or horizontal directions (as shown below) or a combination or at an angle between horizontal and vertical (diagonal).

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.

It is best to cover hardware with pads in all situations. However, hardware **MUST** be covered with pads in high-risk situations.



**PADS PLACED
VERTICALLY**



**PADS PLACED
HORIZONTALLY**

Vertical and Horizontal Pad Placement

Alternate Pad Configurations

WARNING

The ACH was impact-qualified using the standard pad configuration. This pad configuration provides the required impact protection at all required impact sites.

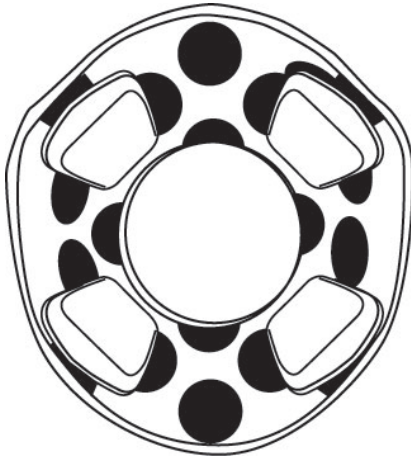
Alternate pad configurations may not provide optimal protection at all required impact sites.

Alternate pad configurations are allowed to obtain a better fit or more comfort.

- Pads can be placed in vertical or horizontal directions (as shown in illustrations) or a combination or at an angle between horizontal and vertical (diagonal).
- Up to two pads (front or peripheral) can be removed in non-risk situations. The circular crown pad must always remain in the ACH.
- Pads should be placed around the inside of the ACH to provide optimum comfort and stability.
- It is best to cover hardware with pads in all situations. However, hardware **MUST** be covered with pads in high-risk situations.

The following illustrations show alternate configurations. For reasons of clarity only, each of the illustrations shows pads in either horizontal or vertical positions but not in diagonal positions. However, the pads can be placed diagonally, at any angle.

The five-pad configuration is useful in hot climates.



**PADS PLACED
VERTICALLY**



**PADS PLACED
HORIZONTALLY**

Five-Pad Configuration

The six-pad configuration is useful for wearers who have long heads or when protective masks are worn.



**PADS PLACED
VERTICALLY**



**PADS PLACED
HORIZONTALLY**

Six-Pad Configuration

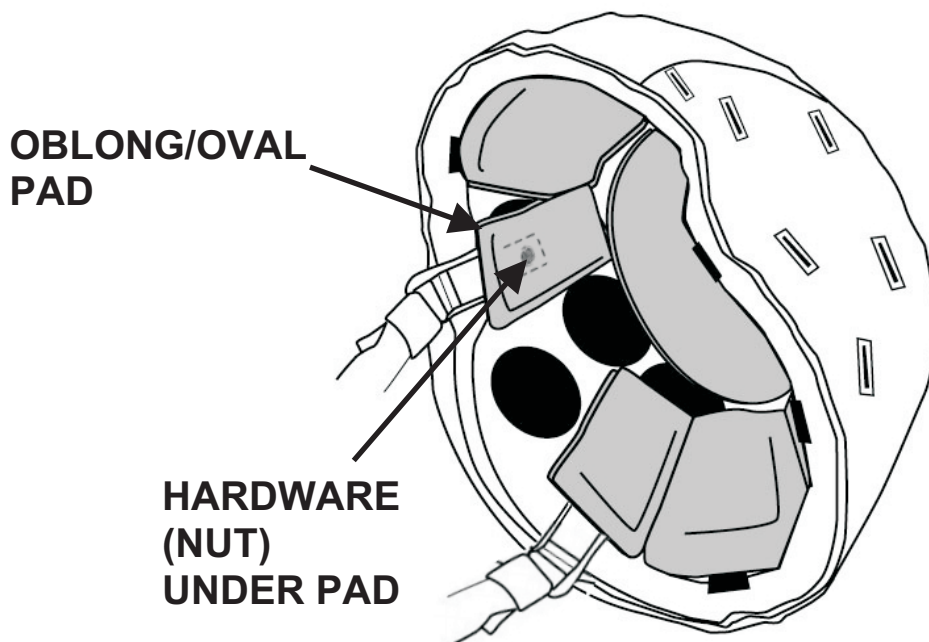
END OF SECTION

PAD SUSPENSION ADJUSTMENT

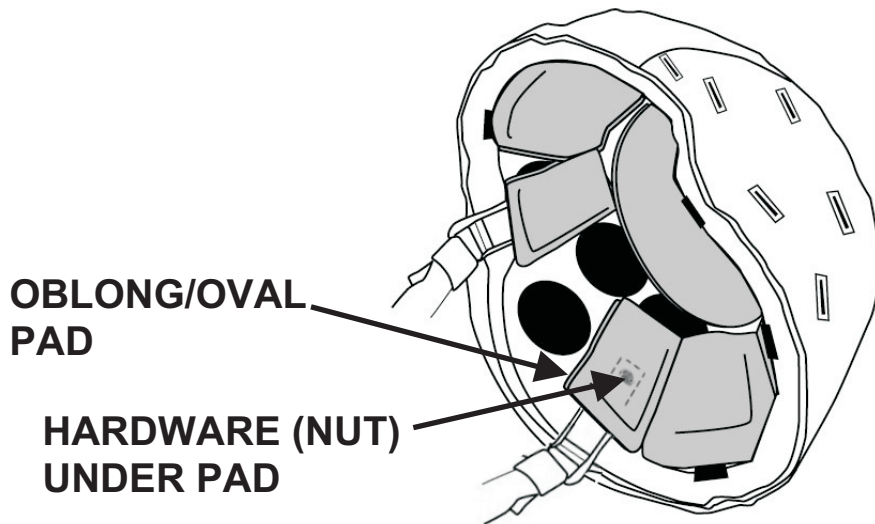
This section provides information about the adjusting the pad suspension system. This unique suspension system is fully adjustable. The system has the following requirements and restrictions:

! WARNING

The hardware (nut) inside the ACH—where the retention system webbing attaches to the ACH shell (in **four** places)—must be covered by padding during airborne and other high-risk operations such as air assault and rappelling/mountaineering. The oblong/oval pad must be placed flush with the rim (edge) of the ACH and completely cover the hardware—See illustrations Pad Placement Over Front Hardware and Pad Placement Over Rear Hardware. Failure to observe this precaution could result in serious injury or death.



Pad Placement Over Front Hardware (Two Places)



Pad Placement Over Rear Hardware (Two Places)

! WARNING

For airborne and other high risk operations such as air assault and rappelling/mountaineering, all seven pads must be worn at all times. Failure to observe this precaution could result in serious injury or death.

! WARNING

If you experience fit problems, tightness/looseness, or ACH profile is too high or too low, refer to Sizing and Fitting Troubleshooting guidelines.

NOTE

When donning the ACH for the first time in a cold environment, it is necessary to wear the ACH 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 retention system.

NOTE

If you experience hot spots or discomfort, try rearranging the pad system to accommodate a more comfortable fit. If discomfort persists, try another shell size. (See Sizing and Fitting Instructions or Sizing and Fitting Troubleshooting, Chapter 2.)

END OF SECTION

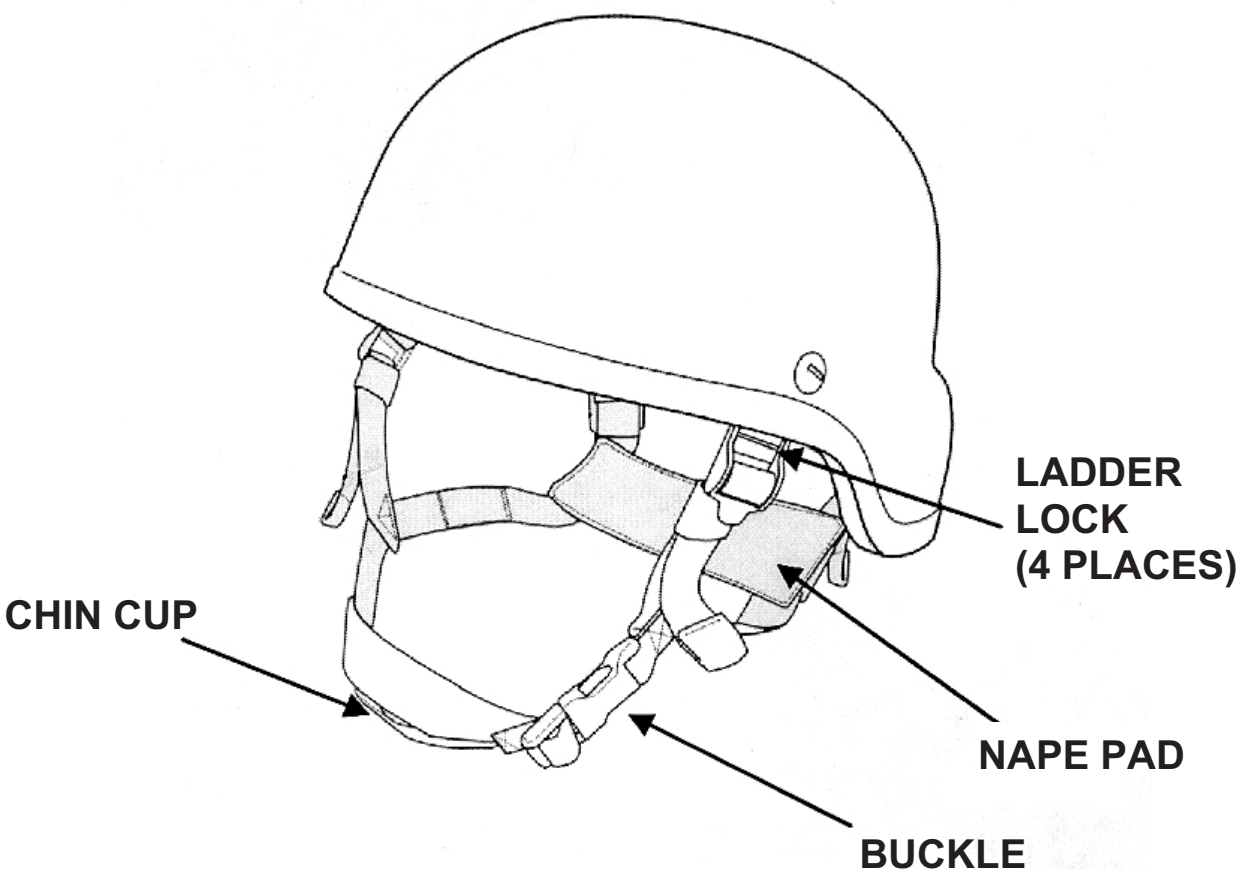
DONNING AND REMOVING THE ACH

This section provides instructions for donning and removing the ACH, including adjusting the chinstrap to optimize fit and comfort.

Donning: To don (put on) the ACH:

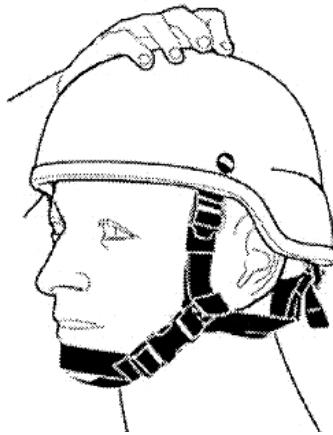
Step 1. Check number and placement of pads— (see pad illustrations in Chapter 2).

Step 2. Prior to donning ACH, loosen all adjustment straps (ends of chin cup, two ladder-locks in front, two ladder-locks in back, and the nape pad). Unbuckle chinstrap buckle.



ACH Adjustment Points

Step 3. Position ACH on head and buckle chinstrap. Hold ACH in place with one hand on top of ACH for initial adjustment.

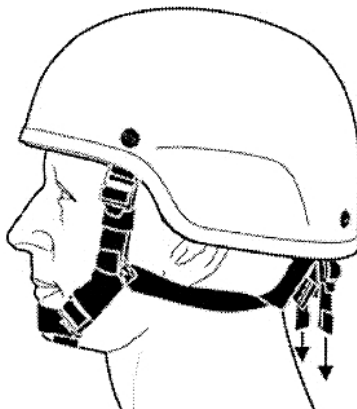


Positioning ACH on Head

NOTE

If you pull too tightly on any strap during Steps 4 and 5—or if you don't position ACH on head and hold in place with one hand on top of ACH for initial adjustment as instructed in Step 3—the ACH may become uncomfortable and tilted on your head and chin cup may become un-centered.

Step 4. Partially tighten the two back adjustment straps (one side at a time).



Tightening Back Adjustment Straps

Step 5. Partially tighten the two front straps (one side at a time) by moving the slides up.



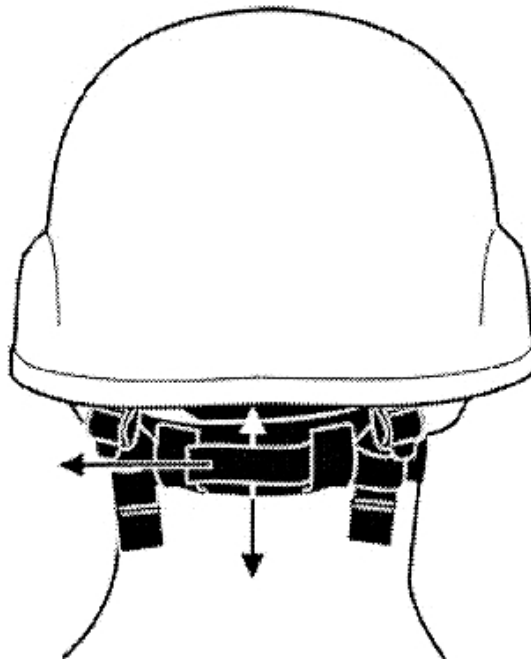
Tightening Front Straps

Step 6. With both hands, fully tighten the front and back adjustment straps.



Tightening Front and Back Straps

Step 7. The nape pad can be slid up and down along the rear legs of the chinstrap. It can be positioned according to personal comfort. When tightened (see figure below) against the nape by pulling on end of webbing, the nape pad adds additional stability to the ACH such as when wearing NVGs. Keep the nape pad away from the ladder-locks while adjusting the chinstrap to prevent jamming.



Releasing Buckle

Removing: To remove the ACH:

To remove the ACH, unbuckle the chinstrap buckle. Once the buckle releases, remove the ACH.

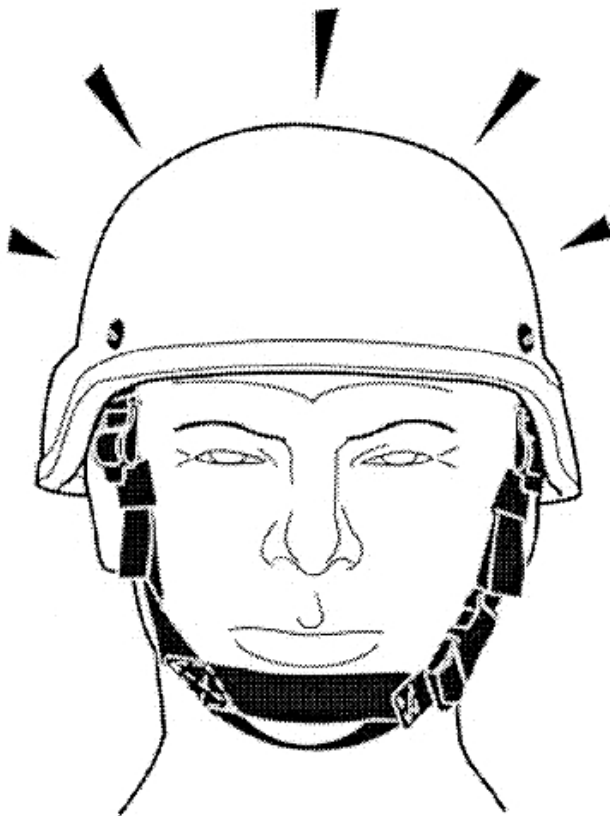
END OF SECTION

SIZING AND FITTING TROUBLESHOOTING

This section provides sizing and fitting troubleshooting techniques.

1. If ACH is **too tight**:

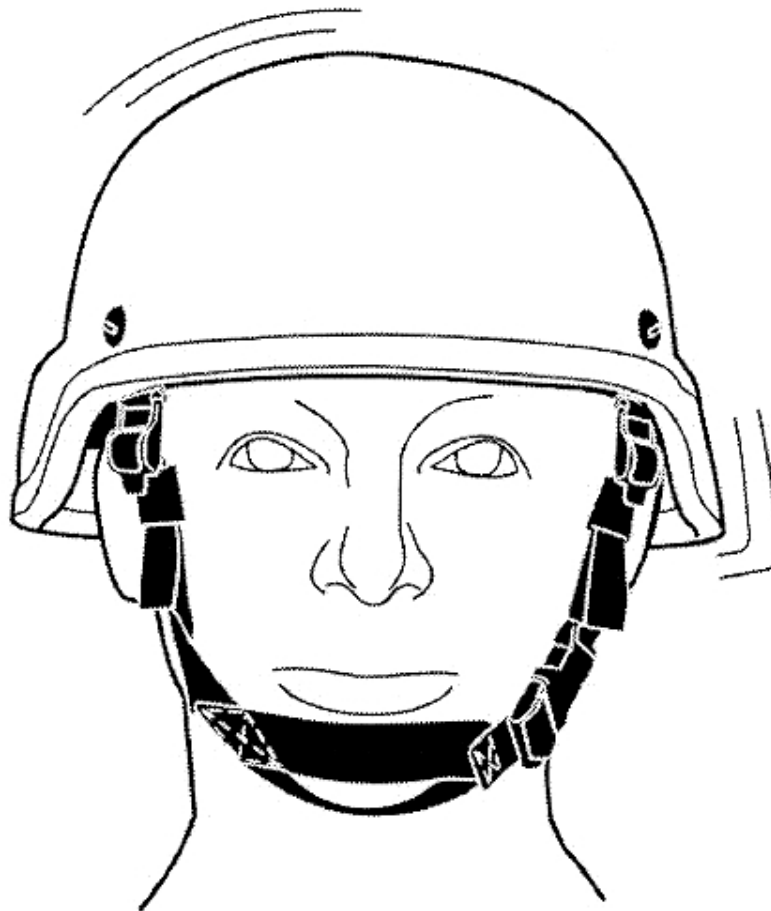
- Try arranging side pads in a horizontal configuration or diagonal direction (see pad configuration illustrations in Chapter 2).
- If rearranging the pads does not alleviate the tightness, try the next larger shell size.



ACH Too Tight

2. If **too loose** (Shake head from side to side while eyes are closed. If ACH slides on head, it is too loose.)

- Try a thicker pad set.
- Select the next smaller shell size.



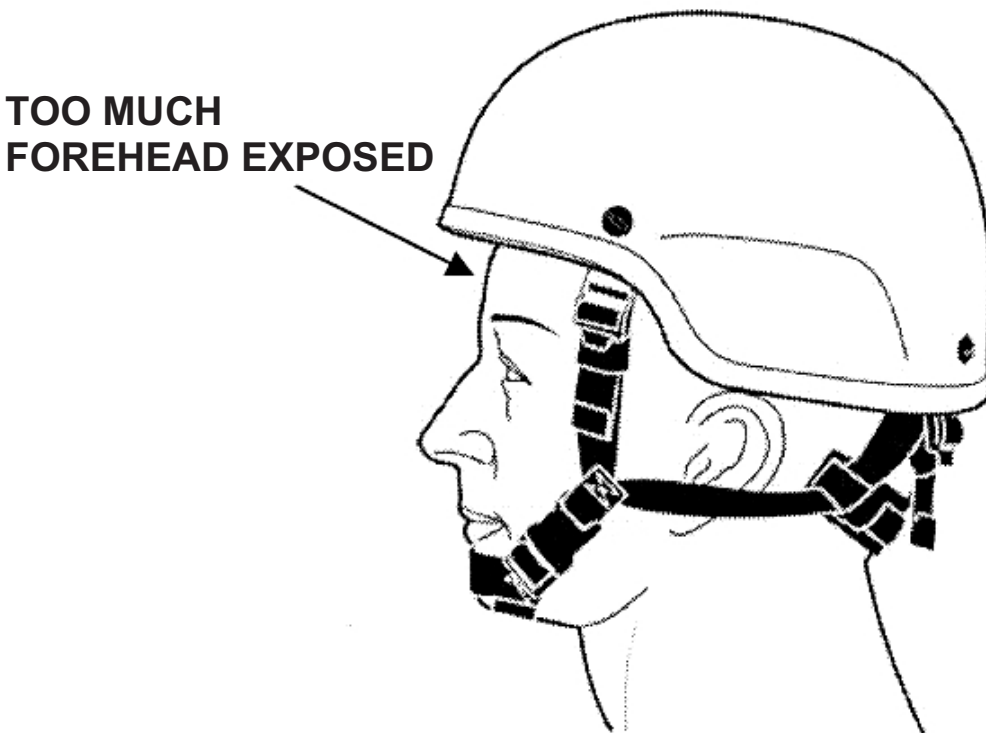
ACH Too Loose

3. If **too high**: (i.e., too much forehead exposed, crown does not touch top of head, or wearer does not see edge of rim):

- Try rearranging pads (horizontal or diagonal—see pad configuration illustrations in Chapter 2.)
- Try a larger shell size.

It is extremely important that the ACH not be sized and fitted to sit too high on the head. Here are some things to look for:

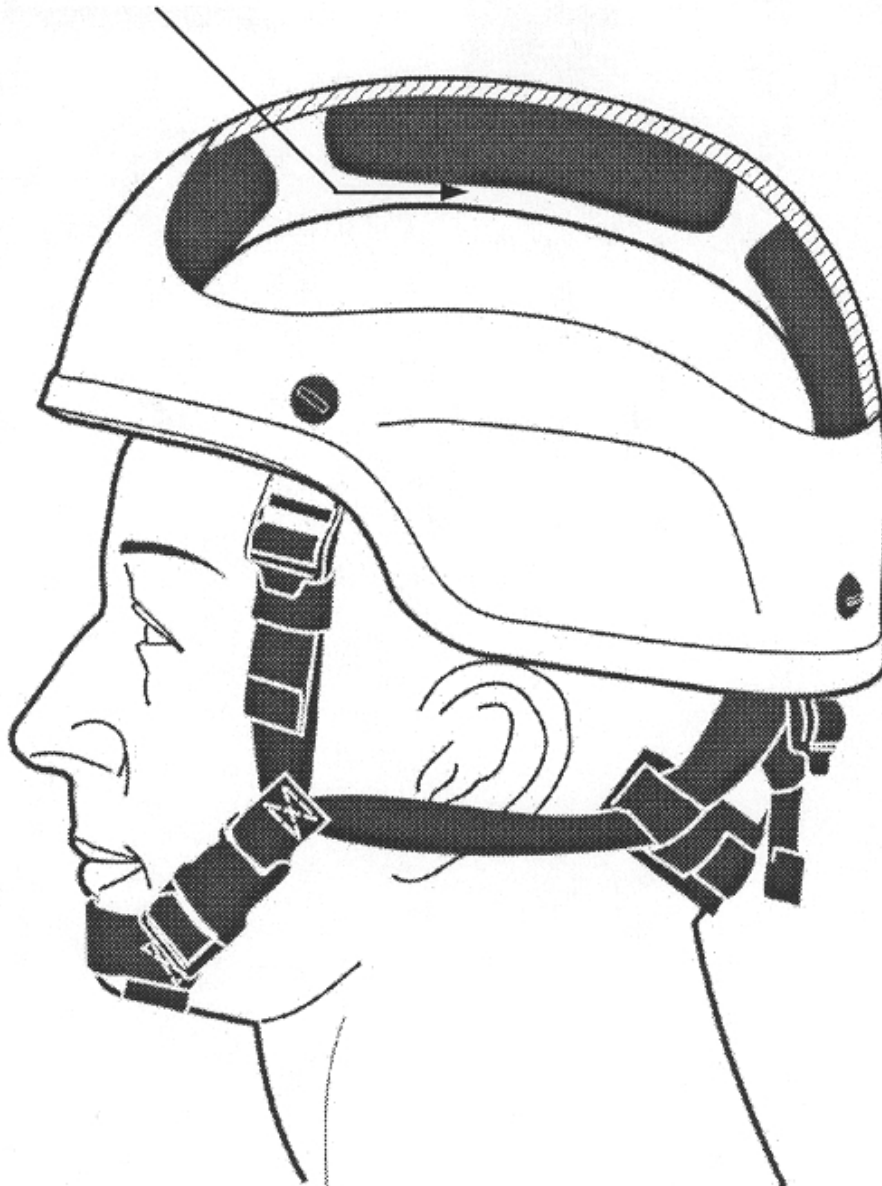
If too much of forehead is exposed (approximately more than ½-inch above eyebrow), then the ACH is too high.



ACH Too High (Too Much Forehead Exposed)

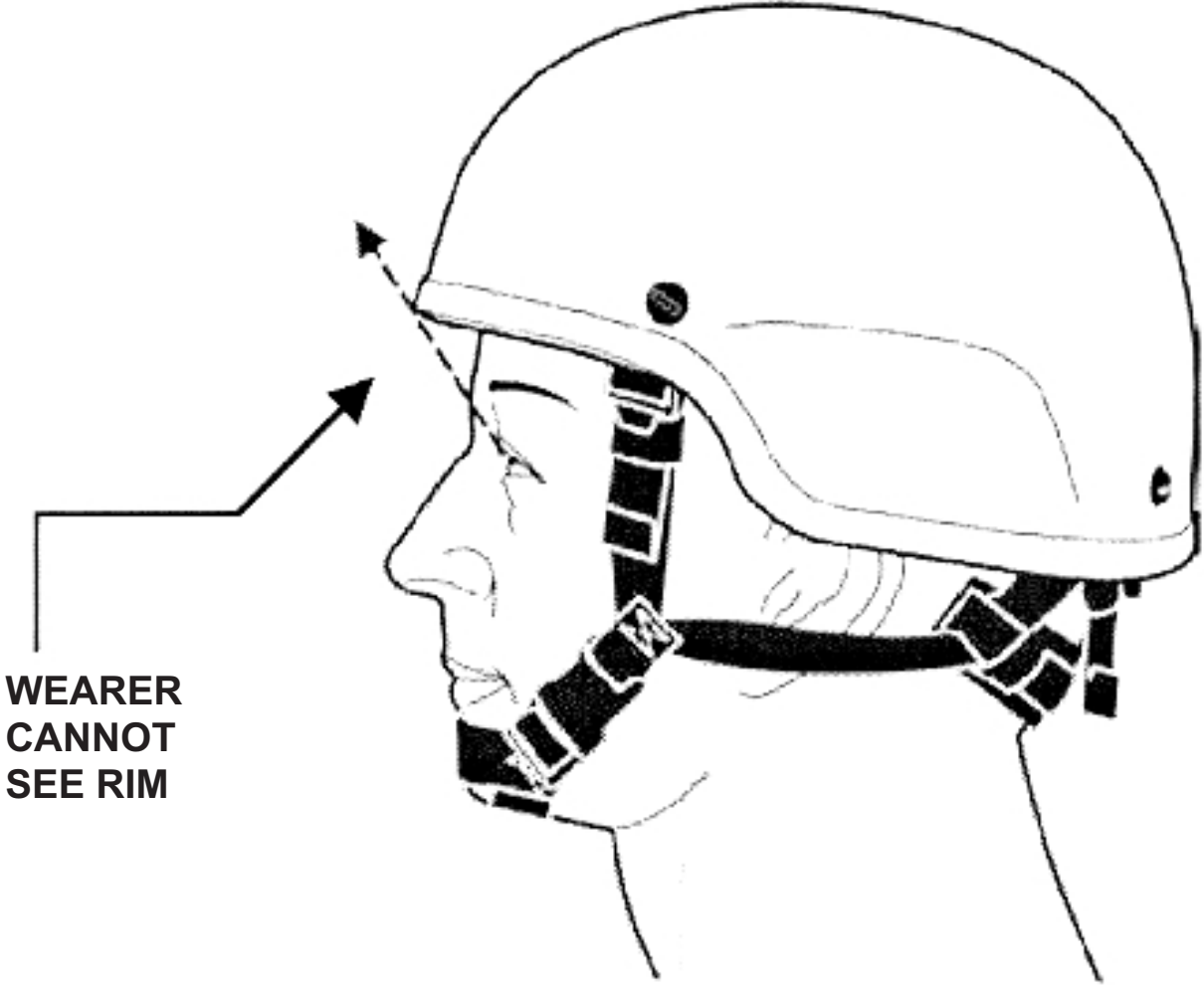
If crown pad does not hit head (wearer cannot feel pad), then ACH may be too high.

**SPACE BETWEEN PAD
AND HEAD**



ACH Too High (Crown Pad Not Touching Head)

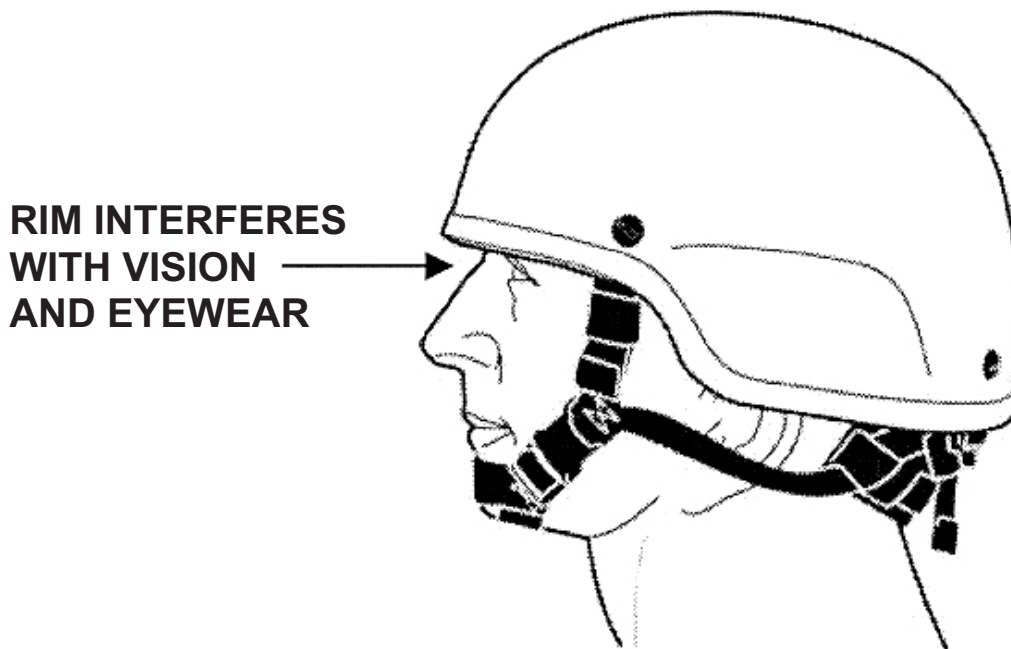
When fitting, have subject look upward by moving eyes, but without moving head. If subject cannot see rim of ACH, ACH may be too high.



ACH Too High (Looking Past Rim)

4. If **too low**: (i.e. ACH too low on brow, ACH not compatible with eyewear, or has other similar compatibility issues)

- Try larger (thicker) pad set.
- Try rearranging pads (horizontal or diagonal—see pad configuration illustrations in Chapter 2.)
- Try a smaller size ACH.



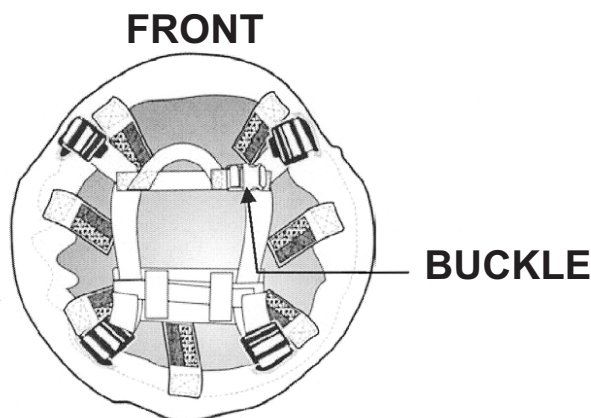
ACH Too Low

END OF SECTION

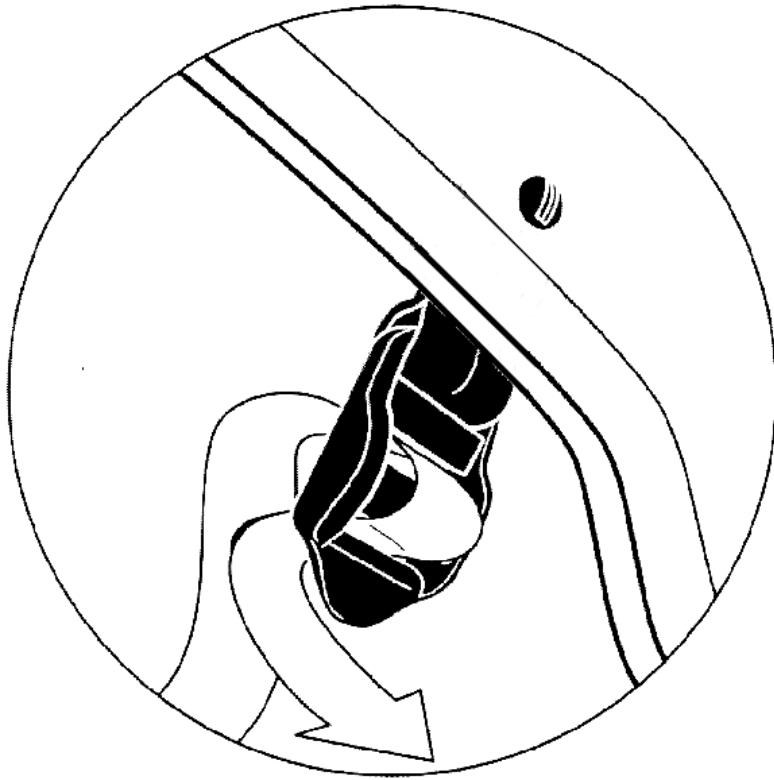
REPLACING RETENTION SYSTEM WEBBING

This section provides instructions for replacing the ACH's retention system webbing.

1. Slide the elastic bands off the loose ends of the webbing
2. Unthread the chinstrap retention system webbing from the four ladder-locks.
3. Lay the ACH on its crown with the front of the ACH away from you. Drape the replacement retention system over the ACH with the nape-strap pad facing down on the back/rear of the ACH and the chinstrap. The buckle is located on the right side of the ACH. (See Chinstrap Retention Orientation illustration below)
4. Insert and thread the four legs of the retention system into their corresponding ladder locks. (See Routing of Retention System Webbing through Ladder Lock illustration on the next page.) For illustration of entire assembled ACH with retention and hardware—please refer to Chapter 1. Take care to ensure that webbing is not twisted.
5. Slide elastic band over loose ends of webbing.



Retention System Orientation



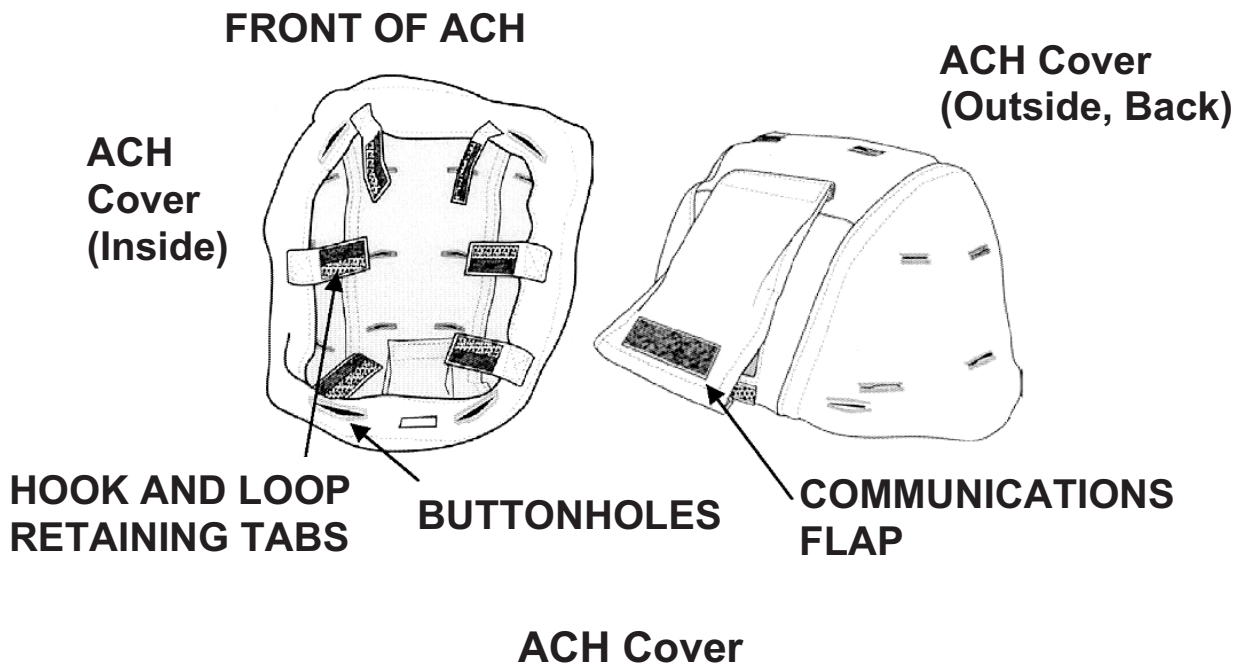
Routing of Retention System Webbing Through Ladder Lock

END OF SECTION

ATTACHING ACH COVER

This section provides instructions for attaching the camouflage ACH cover to your ACH.

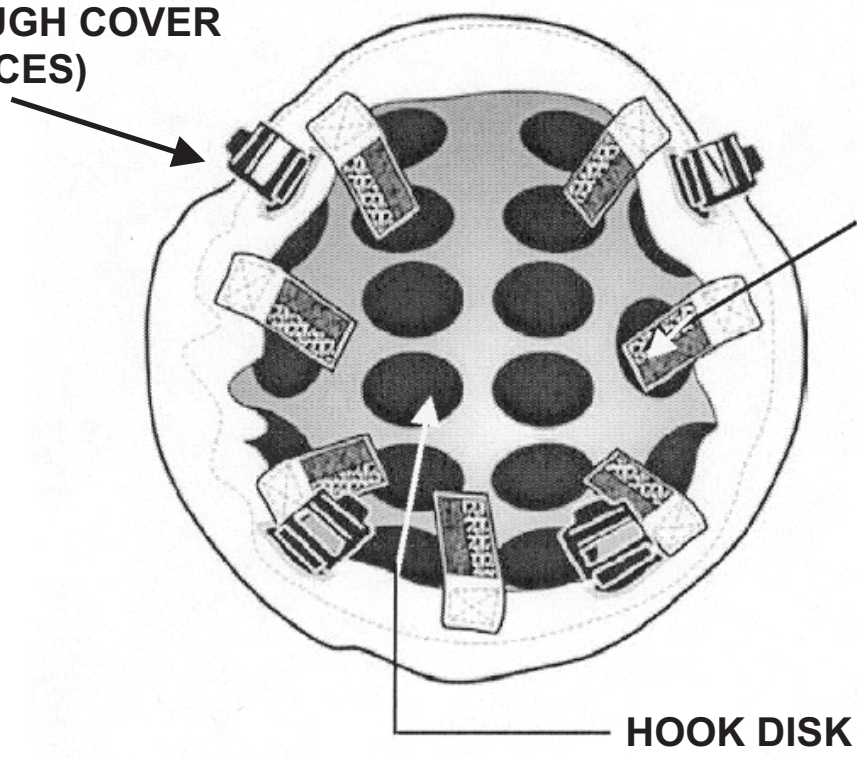
The following covers are available for the ACH: a universal camouflage, reversible woodland/desert cover and a white (Arctic) cover.



1. Remove the suspension pads from the inside of the ACH shell.
2. Remove the chinstrap retention system. (See Chapter 2.)
3. Select the camouflage pattern to be worn and orient the cover so that the desired pattern is on the outside if using the reversible cover.
4. Align the communications flap with the rear of the ACH shell.

5. Pull the cover over the back and sides of ACH shell.
6. Thread each ladder-lock through the corresponding buttonhole at the edge of the cover.
7. Pull the cover retaining tabs down and attach tabs to hook disks inside ACH shell. Ensure tight smooth fit of cover by pulling the retaining tabs until tight.
8. Place suspension pads back into shell. (See Page 15.)
9. Replace retention system webbing. (See Page 32 for instructions for replacing the retention.)

**RETENTION STRAP
THREADED
THROUGH COVER
(4 PLACES)**



**COVER
RETAINING
TABS**

HOOK DISK

ACH Cover Installed

END OF SECTION

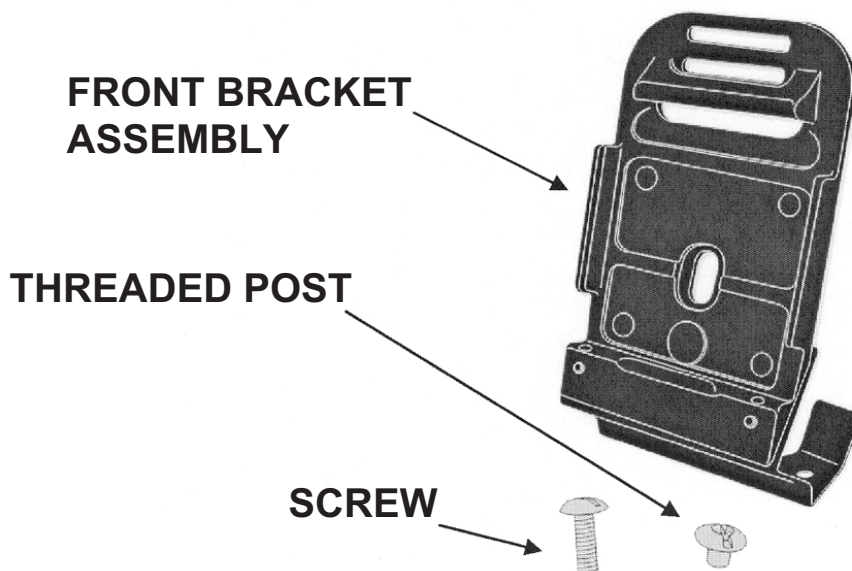
INSTALLING FRONT BRACKET ASSEMBLY KIT

WARNING

If no NVG Front Bracket is used—and the ACH has a hole for the front bracket—plug the hole with the 8-32 x 3/8 long screw and post. See Chapter 4, Associated and Repair Items List, for the appropriate part number.

This section provides instructions for installing the front bracket assembly kit on the ACH.

1. Make sure that the front bracket assembly kit has all the components. You should have a front bracket assembly, a screw, and a threaded post (see illustration below). See Chapter 4, Associated and Repair Items List, for the appropriate part number.
2. Install the ACH cover on your ACH. See Page 34 for instructions on attaching the ACH cover.



Front Bracket Assembly Kit Contents

3. Remove the front trapezoidal pad (located inside the center front of the ACH).
4. Place the front bracket assembly on the ACH over the ACH cover. Line up the hole in the plate, the front buttonhole in the cover, and the hole in the ACH shell (see “Front Bracket Assembly Positioned on ACH” illustration in this section). Move the cover around to line up the buttonhole in the cover.
5. Insert the screw through the front bracket assembly, cover, and into shell from the outside of the ACH. Insert the threaded post from inside the ACH. Start to tighten the screw and post (see “Front Bracket Assembly Positioned on ACH” illustration in this section).

CAUTION

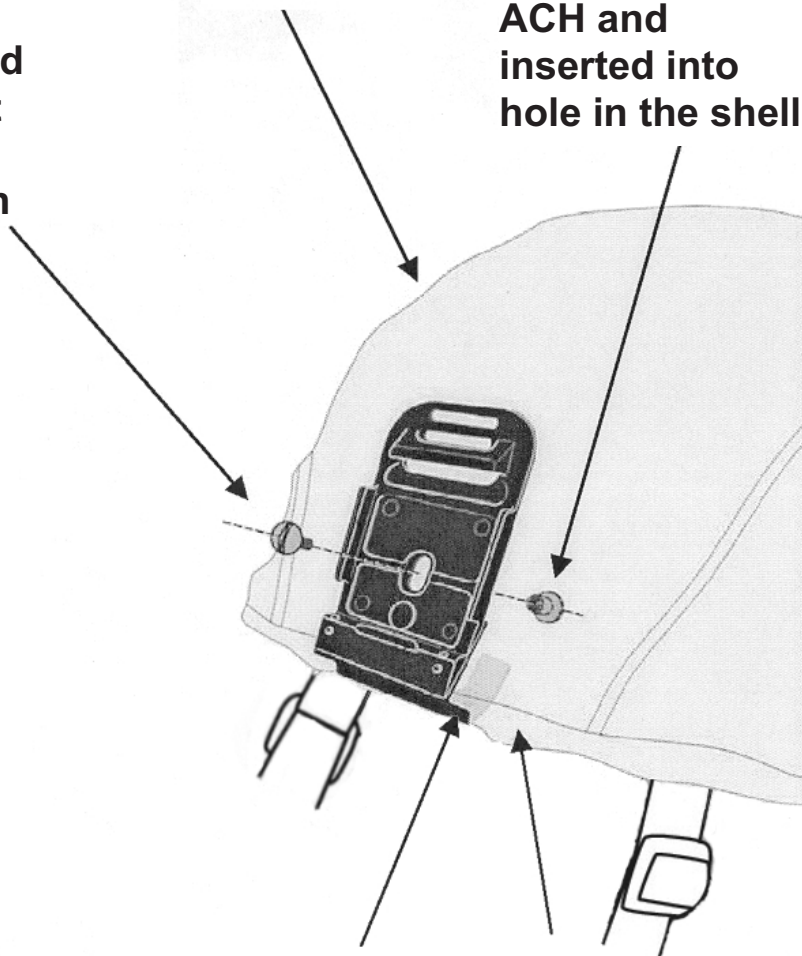
Do not over tighten the screw, or the front bracket assembly may break.

6. Before completely tightening the screw, ensure that the cleat of front bracket assembly is tight against the rim of the ACH. (See “Front Bracket Assembly Positioned on ACH” illustration in this section.) Push the bracket up so that the cleat is tight against the rim (edge) of the ACH while tightening the screw and post. It may be helpful to have another person assist with this step.
7. Reinstall the front trapezoidal pad.

Screw located on the outside of the ACH and inserted through front bracket assembly and ACH cover into hole in the shell.

ACH Cover

Post located on the inside of the ACH and inserted into hole in the shell.



Front Bracket Assembly Positioned on ACH

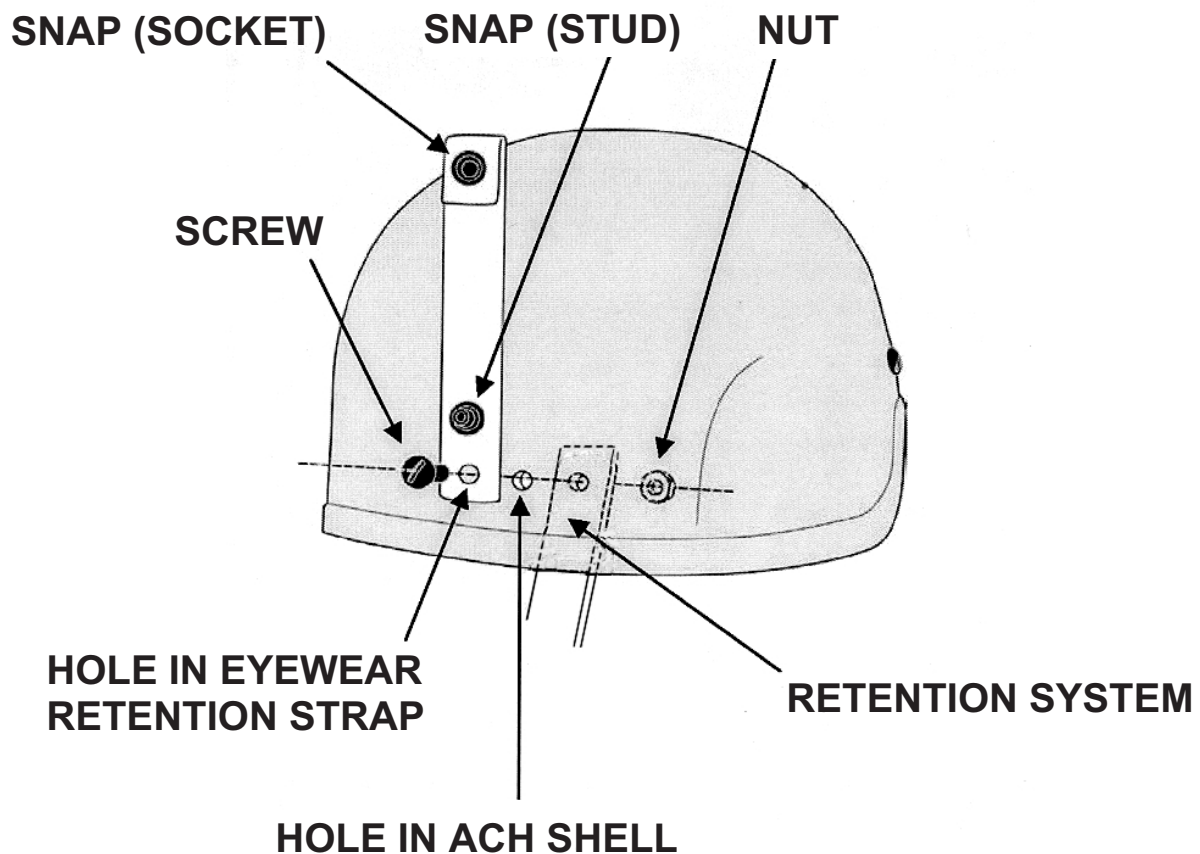
END OF SECTION

INSTALLING EYEWEAR RETENTION STRAP

This section provides instructions for installing the eyewear retention strap on the ACH.

1. Make sure you have two eyewear retention straps (see Chapter 4, Associated and Repair Items List, for the appropriate part number).
2. Remove the rear pads.
3. If the ACH cover is installed, unthread the rear retention system webbing from the ladder locks, remove the rear cover retaining tabs and slide the rear half of the cover up to expose the two rear screws. You can also remove the cover completely (see Page 34).
4. Remove one of the two rear screws. Place an eyewear retention strap over the barrel (shaft) of the screw with the snap socket and stud facing away from the ACH. (See Eyewear Retention Strap and Screw Assembly illustration in this section.)
5. Insert the screw, with the eyewear retention strap attached, into the hole in the ACH.
6. Place the retention system strap and nut (inside the ACH) on the screw and tighten until the nut bottoms out on the screw. (See Chapter 3, which shows screw and nut installation, for replacing the hardware.)
7. Repeat Steps 4-6 to install the other eyewear retention strap with the other rear screw.

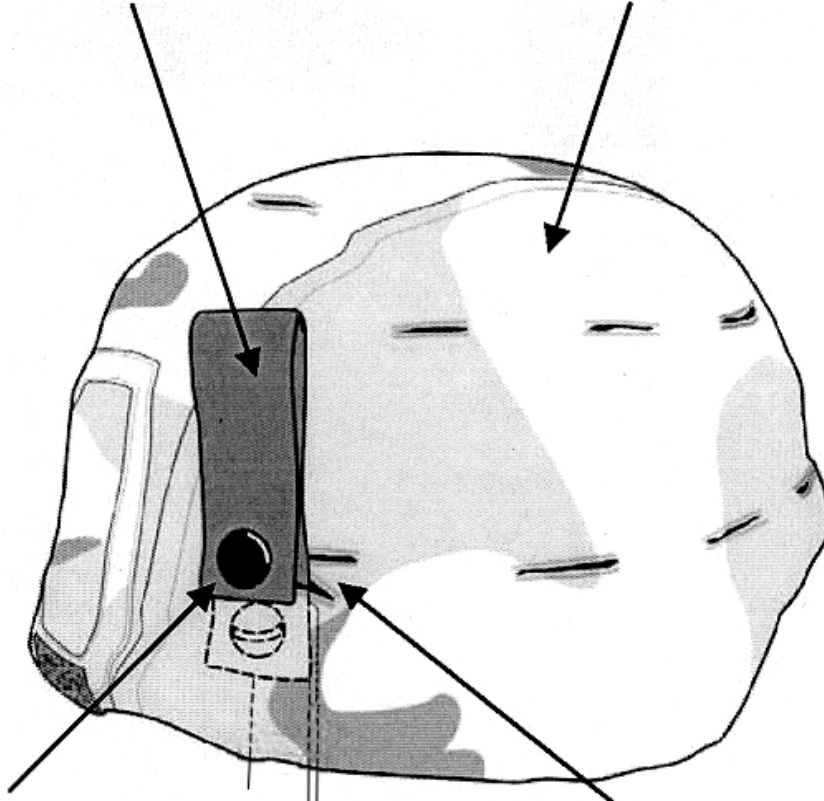
8. Install the ACH cover. While installing the cover, thread eyewear retention strap through rear buttonhole next to the communication flap on the cover. (See ACH with Eyewear Retention Strap Installed illustration for finished assembly, Page 41.)
9. Re-thread the ladder locks through the buttonholes at the edge of the cover and secure the cover retaining tabs.
10. Re-thread the retention system webbing through the ladder locks.
11. Reinstall the rear pads.



Eyewear Retention Strap and Screw Assembly

EYEWEAR RETENTION STRAP

ACH COVER



**SCREW (SHOWN
UNDER COVER)**

**BUTTONHOLE NEXT TO
COMMUNICATION FLAP**

ACH With Eyewear Retention Strap Installed

CONFIGURATION FOR AIRBORNE OPERATIONS

This section provides instructions for configuring the ACH for airborne operations as well as other high-risk operations such as air assault and rappelling/mountaineering. No other parts or components are required for airborne use of the ACH.

WARNING

The hardware (nut) inside the ACH—where the chinstrap retention system webbing attaches to the ACH shell in four places—must be covered by padding during airborne and other high risk operations such as air assault and rappelling/mountaineering. The oblong/oval pad must be placed flush with the rim (edge) of the ACH and completely cover the hardware—See illustration Pad Placement over Hardware (Front) and Pad Placement over Hardware (Rear). Failure to observe this precaution could result in serious injury or death.

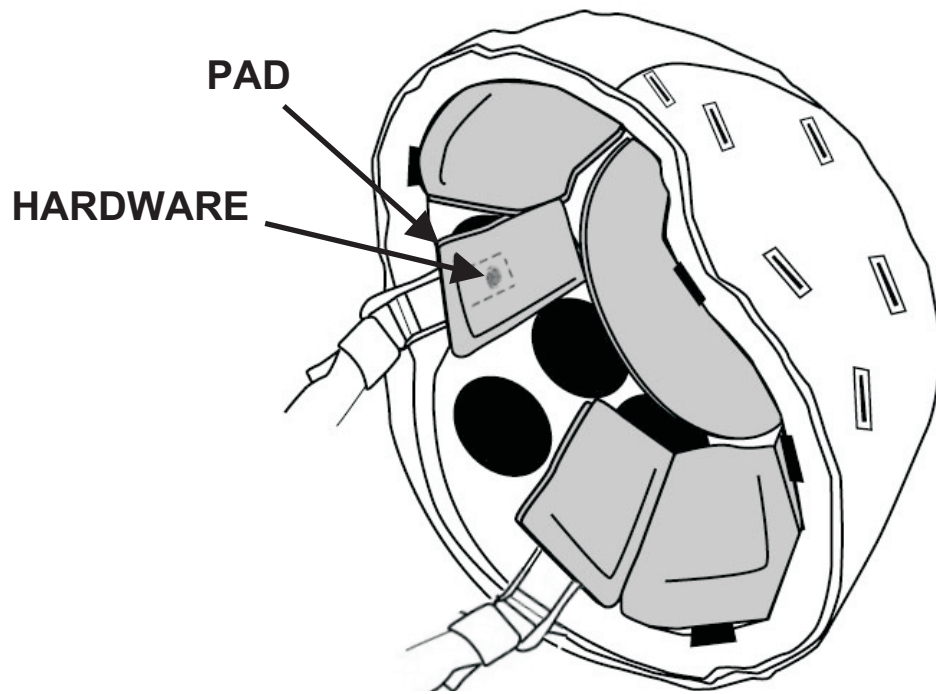
WARNING

All seven pads must be worn during airborne operations and should be worn during other high risk operations such as air assault and rappelling/mountaineering. Failure to observe this precaution could result in serious injury or death.

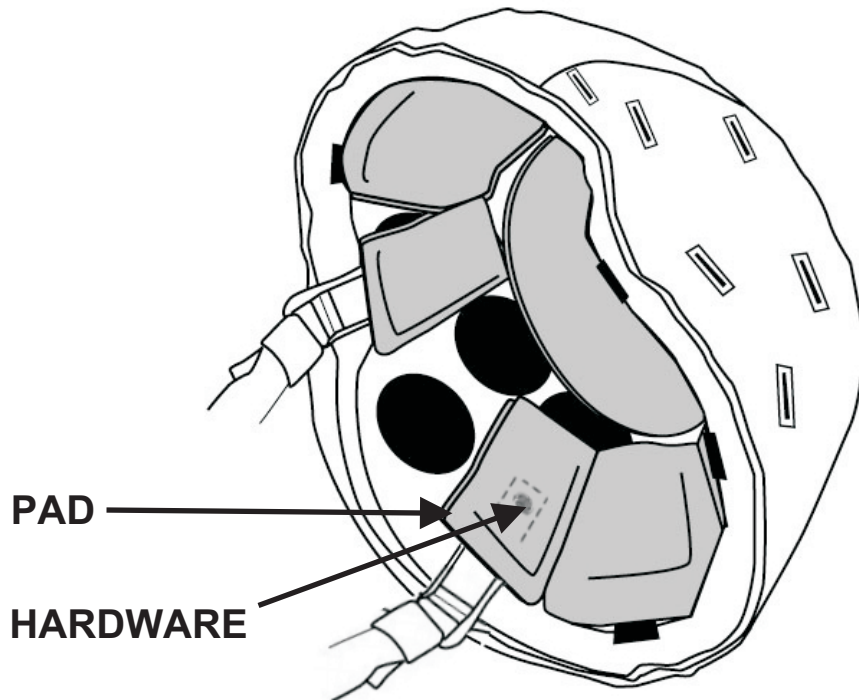
WARNING

The rear pads must be placed flush with the rim (edge) of the ACH for airborne operations. If you experience ACH rotation during airborne operations the rear pads can be placed so that they extend ½” beyond the rim of the ACH. Placement of the rear pads flush or beyond the rim (edge) of the ACH prevents the hard shell from hitting your neck. (See Pad Placement over Hardware (Front) and Pad Placement over Hardware (Rear) illustrations.)

END OF SECTION



Pad Placement Over Front Hardware Hardware (Two Places)



Pad Placement Over Hardware (Two Places)

CHAPTER 3

MAINTENANCE PROCEDURES

FOR ACH

MAINTENANCE PROCEDURES

REPLACING THE HARDWARE

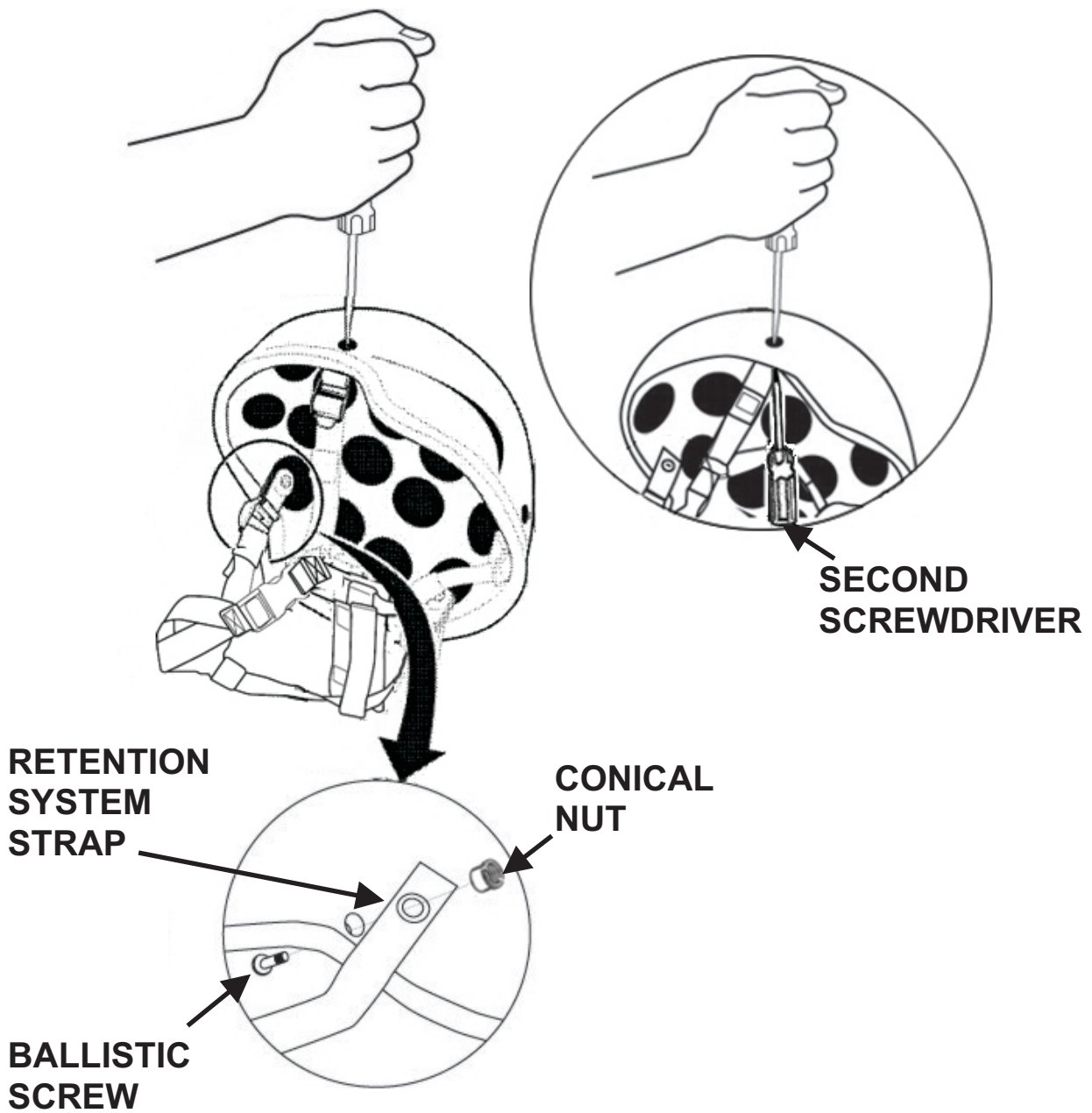
This section provides instructions for replacing the ACH's hardware (screw or nut).

NOTE

To replace hardware, use a standard flathead screwdriver. If this tool is unavailable, a coin may be used.

You may need to use a second screwdriver to hold the nut in place while you remove the screw. (See Hardware Installation illustration in this section.)

1. Remove the retention system as described in Chapter 2.
2. Remove the screw with a standard flathead screwdriver.
3. Replace screw and nut. Ensure the proper orientation hardware and retention system. (See Hardware Installation illustration in this section.) Tighten the screw until the nut bottoms out on the screw.
4. Inspect the screws to ensure tightness. If loosening persists, use the sealing compound (thread-locking compound; see Page 61, Expendable and Durable Items List). Follow directions on container.



Hardware Installation

END OF SECTION

MAINTENANCE PROCEDURES

REPLACING THE PAD SUSPENSION

This section provides information on replacing the pad suspension.

Replacing Pad Suspension

NOTE

One side of each pad contains labeling. **ONLY THE LABELED SIDE OF THE PAD WILL BE ATTACHED TO THE HOOK DISKS ON THE ACH SHELL.**

1. Pull the individual pads off the hook disks inside the ACH.
2. Press the replacement pads against the hook disks. (See Chapter 2 for Pad Configurations and Pad Suspension Adjustment.)

END OF SECTION

MAINTENANCE PROCEDURES

REPLACING THE HOOK DISK

This section provides instructions for replacing worn-out hook disks inside the ACH shell.

Replacing Hook Disk

1. Remove the old hook disks.
2. Clean the inside of the ACH shell with mild soap and water.
Allow to dry thoroughly.
3. Press the new hook disks firmly to the inside of the ACH shell in approximately the same locations as the old ones.

END OF SECTION

MAINTENANCE PROCEDURES CLEANING INSTRUCTIONS

This section provides instructions for cleaning the ACH.

ACH Shell

NOTE

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

1. Clean with mild soap and water. Use a soft brush or cloth.
2. Allow to air dry.

Chinstrap, ACH Cover, and Pad Suspension

1. Clean with mild soap and water. Wash by hand or in machine in the gentle cycle, cold water.
2. Allow to air dry. **DO NOT MACHINE DRY.**

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

END OF SECTION

MAINTENANCE PROCEDURES

PREVENTIVE MAINTENANCE CHECKS AND SERVICES

INTRODUCTION

General

Preventive maintenance checks and services (PMCS) are performed to keep the ACH in operating condition. The checks are used to find, correct, and report problems. The operator is to do the PMCS tasks shown in PMCS Table 1. PMCS is to be done before, during, and after use of the ACH.

Before you use the ACH, perform PMCS.

During use of the ACH, periodically perform PMCS.

After you have used the ACH, perform PMCS.

PMCS Column Description

ITEM – The order the PMCS should be performed and a reference number for maintenance forms. INTERVAL – Tells when the check should be performed. ITEM TO BE CHECKED OR SERVICED – Tells which items to perform the PMCS procedure on. PROCEDURE – Tells the procedure to perform. If item cannot be repaired, it must be replaced. EQUIPMENT NOT READY IF – Tells what conditions render the ACH unfit to perform the mission.

Table 1. Preventive Maintenance Checks and Services

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF
1	Before	Chinstrap Retention System	<p>Check for:</p> <p>1) Cuts, frays or other damage or loose or damaged stitching in the webbing. If webbing is frayed more than 1/2" or has a discernable cut, or loose or damaged stitching, replace the chinstrap retention system.</p> <p>2) Cracked, worn, or damaged hardware (ladderlock, nut, screw) and buckle. Replace the chinstrap retention system.</p> <p>3) Loose screws. Tighten screws.</p>	<p>Chinstrap webbing has cuts, frays, or other damage.</p> <p>Hardware or buckle is cracked, worn, or damaged.</p> <p>Screws are loose.</p>

Table 1. Preventive Maintenance Checks and Services

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF
2	Before	Pads	Cuts, tears or other damage to outer fabric or inner foam. If pads are torn or cut, exposing the inner padding, replace.	Pads are torn, cut or otherwise damaged.
3	Before	Shell	<p>1) Gouges, scrapes, cracks, delamination or other damage to shell. If gouges, scrapes, or damage extends below the surface (below the paint), replace the ACH shell.</p> <p>2) Loose or damaged edge beading. Replace the ACH shell.</p> <p>3) Loose or damaged hook disks. Replace the hook disks.</p>	<p>Gouges, scrapes, cracks, delamination or other damage extends below the surface (below the paint).</p> <p>Edging is excessively loose or damaged.</p> <p>Hook disks are damaged such that they will not securely hold the pads in place.</p>

Table 1. Preventive Maintenance Checks and Services

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF
4	Before	Cover	Cuts, frays or other damage to the fabric or cut or frayed stitching. Refer to higher level maintenance for repair.	Excessive cuts, frays, or other damage to the fabric or cut or frayed stitching.
5	During	Chinstrap Retention System	Inspect for damaged components (see Item 1)	Chinstrap components are damaged. See above.
6	After	Chinstrap Retention System, Pads, Hardware, Shell.	Perform all PMCS steps in Items 1-4 after use.	See Items 1-4.

END OF SECTION

CHAPTER 4
SUPPORTING INFORMATION
FOR ACH

SUPPORTING INFORMATION REFERENCES

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

FIELD MANUALS

FM 4-25.11 First Aid for Soldiers

END OF SECTION

SUPPORTING INFORMATION

COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LISTS

INTRODUCTION

Scope

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

General

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

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

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

Explanation of Columns in the COEI List and BII List

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

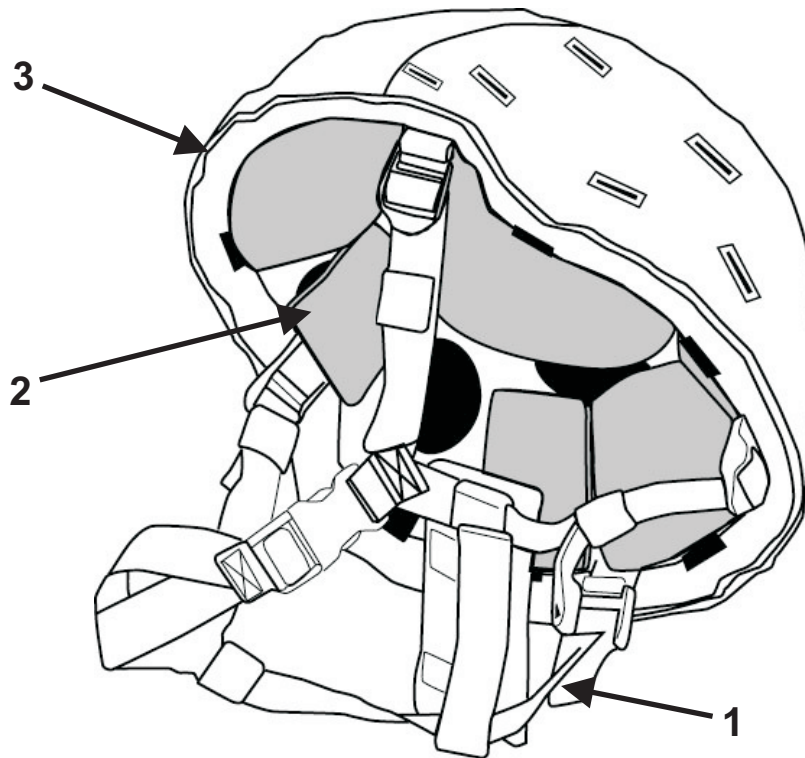
Column (2) National Stock Number (NSN). Identifies the stock number of the item to be used for requisitioning purposes.

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 CAGEC (Commercial and Government Entity Code) (in parentheses) and the part number.

Column (4) Usable On Code. When applicable, gives you a code if the item you need is not the same for different models of equipment. (Add the following only as applicable. Replace Xs with appropriate codes and model numbers.)

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.



Components of End Item and Basic Issue Items

Components of End Item List

(1) Illus Number	(2) National Stock Number	(3) Description, CAGEC, and Part Number	(4) Usable on Code	(5) U/I	(6) QTY rqr.
1		Retention System, 97427/05D11948-1	N/A	ea	1
2	8470-01-476-5643	Pad Suspension System, 3/4", 97427/05C11950-1	N/A	set	1
	8470-01-476-5648	Pad Suspension System, 1", 97427/05C11950-2	N/A	set	1

Basic Issue Items (BII) List

(1) Illus Number	(2) National Stock Number	(3) Description, CAGEC, and Part Number	(4) Usable on Code	(5) U/I	(6) QTY
3	8415-01-515-4662	Cover, ACH, Reversible, with communication flap, size S/M, 97427/04A11921-1	N/A	ea	1
	8415-01-515-4663	Cover, ACH, Reversible, with communication flap, size L/XL, 97427/04A11921-2	N/A	ea	1
	8415-01-515-4671	Cover, ACH, Reversible, without communication flap, size S/M, 97427/04D11921-3	N/A	ea	1
	8415-01-515-4674	Cover, ACH, Reversible, without communication flap, size L/XL, 97427/04D11921-4	N/A	ea	1
	8415-01-521-8806	Cover, ACH, Camouflage, Universal Print, Non-Reversible, S/M, with communication flap	N/A	ea	1
	8415-01-521-8808	Cover, ACH, Camouflage, Universal Print, Non-Reversible, L/XL, with communication flap	N/A	ea	1
	8415-01-515-4286	Cover, ACH, White, Non-reversible, with communication flap, size S/M	N/A	ea	1
	8415-01-515-4288	Cover, ACH, White, Non-reversible, with communication flap, size L/XL	N/A	ea	1
	8415-01-515-4289	Cover, ACH, White, Non-reversible, without communication flap, size S/M	N/A	ea	1
	8415-01-515-4290	Cover, ACH, White, Non-reversible, without communication flap, size S/M	N/A	ea	1
		Use and Care Manual (TP0271)	N/A	ea	1

END OF SECTION

SUPPORTING INFORMATION

EXPENDABLE AND DURABLE ITEMS LIST

INTRODUCTION

Scope

This section lists expendable and durable items that you will need to operate and maintain the ACH. This list is for information 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), or CTA 8-100, Army Medical Department Expendable/Durable Items.

Explanation of Columns in the Expendable/Durable Items List

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

Column (2) Level. This column identifies the lowest level of maintenance that requires the listed item (include as applicable: C = Operator/Crew, O = Unit/AVUM, F = Direct Support/AVIM, H = General Support, D = Depot).

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, Commercial and Government Entity Code (CAGEC), and Part Number (P/N). This column provides the other information you need to identify the item.

Column (5) Unit of Issue (U/I). Indicates the physical measurement or count of the item as issued per the National Stock Number shown in column (3).

Table 1. Expendable and Durable Items List

(1) ITEM #	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) ITEM NAME, DESCRIPTION, CAGEC, PART NUMBER	(5) U/I
1	C		Cloth	ea
2	C		Mild Soap	ea
3	C		Soft Brush	ea
4	C	8030-01-104-5392	Sealing Compound	bx

END OF SECTION

SUPPORTING INFORMATION

TOOL IDENTIFICATION LIST

INTRODUCTION

Scope

This section lists all common tools and supplements and special tools/fixtures needed to maintain the ACH.

Explanation of Columns in the Tool Identification List

Column (1) Item Number. This number is assigned to the entry in the list to identify the item.

Column (2) Item Name. This column lists the item by noun nomenclature and other descriptive features.

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

Column (4) Part Number/CAGEC. Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity) which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items. The manufacturer's Commercial and Government Entity Code (CAGEC) is also included.

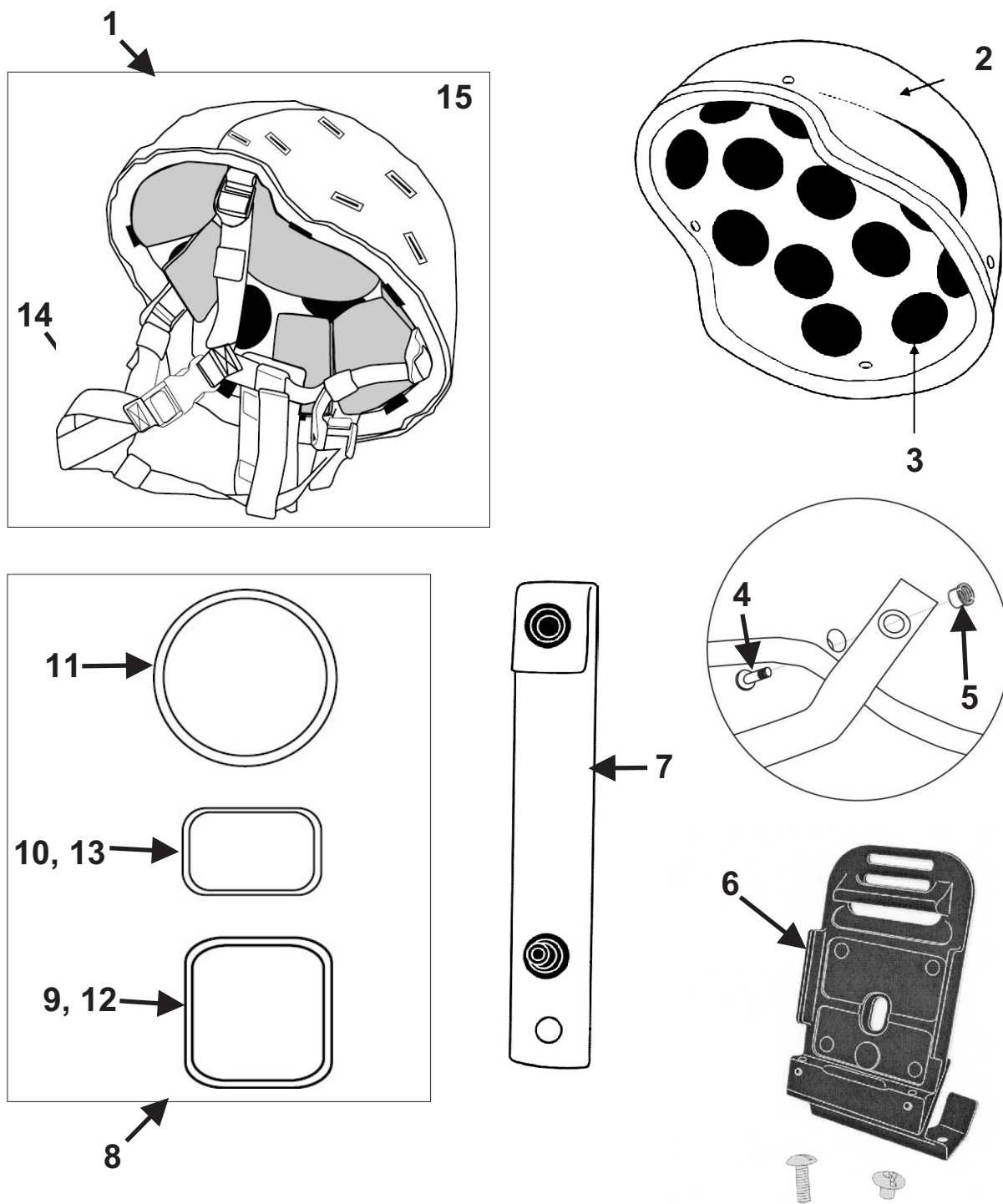
Column (5) Reference. This column identifies the authorizing supply catalog or RPSTL for items listed in this section.

Tool Identification List

ITEM NO.	ITEM NAME	NATIONAL STOCK NUMBER	PART NUMBER/ CAGEC	REFERENCE
1	Screwdriver			
2	Caliper	5210-01-434-9493		
	Measuring tape	8315-00-782-3520		

END OF SECTION

SUPPORTING INFORMATION ASSOCIATED AND REPAIR ITEMS LIST



ACH Repair Items

Associated and Repair Items List

ITEM #	NOMENCLATURE	QTY.	NATIONAL STOCK NUMBER
1	ACH, Small	1	8470-01-529-6302
	ACH, Medium	1	8470-01-529-6329
	ACH, Large	1	8470-01-529-6344
	ACH, X-Large	1	8470-01-529-6365
2	ACH Shell, Small	1	8470-01-523-0068
	ACH Shell, Medium	1	8470-01-523-0070
	ACH Shell, Large	1	8470-01-523-0071
	ACH Shell, X-Large	1	8470-01-523-0075
3	Hook Disk	21	8470-01-506-6742
4	Screw, Shoulder, 10-32	4	8470-01-541-9238
5	Conical Nut	4	8470-01-541-9320
6	NVG Mount Bracket (includes screw and post)	1	5430-01-509-1467
7	Eyewear Retention Strap, Camouflage Green	1	8415-01-487-1605
	Eyewear Retention Strap, Light Tan	1	8415-01-521-8801
	Eyewear Retention Strap, Foliage Green	1	8415-01-521-8802
8	Pad Set, 3/4"	1	8470-01-476-5643
	Pad Set, 1"	1	8470-01-476-5648
9	Trapezoidal Pad, 3/4"	2	8470-01-506-6851
10	Oblong/Oval Pad, 3/4"	4	8470-01-506-6454

Associated and Repair Items List (Continued)

ITEM #	NOMENCLATURE	QTY.	NATIONAL STOCK NUMBER
11	Crown Pad, 3/4" Thick	1	8470-01-506-6626
12	Trapezoidal Pad, 1"	2	0470-01-506-6855
13	Oblong/Oval Pad, 1"	4	8470-01-506-6456
14	Retention Assembly	1	05D11948-1
15	Cover, ACH, Reversible, with communication flap, size S/M	1	8415-01-515-4662
	Cover, ACH, Reversible, with communication flap, size L/XL	1	8415-01-515-4663
	Cover, ACH, Reversible, without communication flap, size S/M	1	8415-01-515-4671
	Cover, ACH, Reversible, without communication flap, size L/XL	1	8415-01-515-4674
	Cover, ACH, Foliage Green, S/M	1	8415-01-521-8806
	Cover, ACH, Foliage Green, L/XL	1	8415-01-521-8808
	Cover, ACH, non-reversible, white, with communication flap, S/M	1	8415-01-515-4286
	Cover, ACH, non-reversible, white, with communication flap, L/XL	1	8415-01-515-4288
	Cover, ACH, non-reversible, white, without communication flap, S/M	1	8415-01-515-4289
	Cover, ACH, non-reversible, white, without communication flap, L/XL	1	8415-01-515-4290

END OF SECTION

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