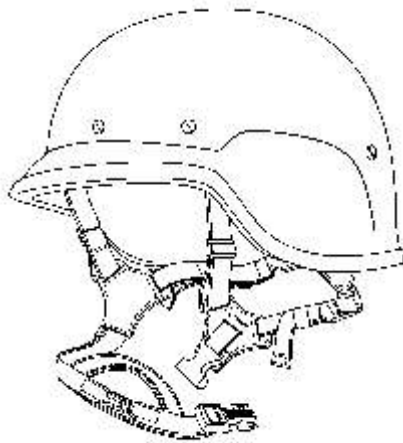


**TM-08744B-12&P**

**OPERATOR'S CARE AND USE MANUAL FOR  
LIGHTWEIGHT HELMET (LWH)**



**8470-01-560-2866 - X-Small  
8470-01-560-3267 - Small  
8470-01-560-3076 - Medium  
8470-01-560-3270 - Large  
8470-01-560-3271 - X-Large  
8470-01-560-3272 - XX-Large**

**PCN 500 087440 00**

**TM 08744B-12&P**

**REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS**

You can help improve this manual. If you find any mistakes, or if you know of a way to improve procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms) direct to: Commanding General, MARCORSSYSCOM, Attn: CESS - PM ICE, 2200 Lester Street, Quantico, VA 22134-6050. A reply will be furnished to you.

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 **WARNING**

If your helmet is equipped with a mesh crown suspension system, this system must be removed from the helmet and replaced with a pad suspension system per MARADMIN 480/06, dated October 5, 2006.

When retrofitting to pads, discard the screws and A-nuts; do not reuse them.

The hardware (nut) inside the helmet—where the retention system webbing attaches to the helmet (in **four** places)—must be covered by padding at all times. Failure to observe this precaution could result in serious injury or death.

If you experience fit problems, tightness, looseness, or the helmet is too high or too low, refer to Paragraph 3.4.2, Troubleshooting the Fit.

The helmet provides the most impact protection using the standard seven-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.

Never remove the crown pad.

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.

 **WARNING**

Always wear the helmet with the chinstrap properly fastened and adjusted. Failure to secure the chinstrap will decrease helmet stability and may result in injury to the wearer.

Replace the helmet if dents or cuts measuring over 2 inches exist or are deeper than 1/8 inch, or if any delaminations (ply separations) exist. Failure to do so may result in reduced head protection.

Replace the helmet if edge beading is missing or loose. Missing or loose edge beading will result in exposed rough helmet edges that may cause injury.

Replace the retention assembly if the webbing is torn or frayed, if the nape strap buckles are broken, or if the buckle pad buckle is damaged. Replace missing hardware and tighten loose hardware. Failure to do so may result in injury.

Replace any chinstrap that is cut or torn, has broken buckles, or has hook/pile fasteners that do not secure. Failure to do so may result in injury.

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

Use only the screws and A-nuts described in this manual.

For the wearer's safety, ensure that the screws do not protrude through the A-nuts when installed.

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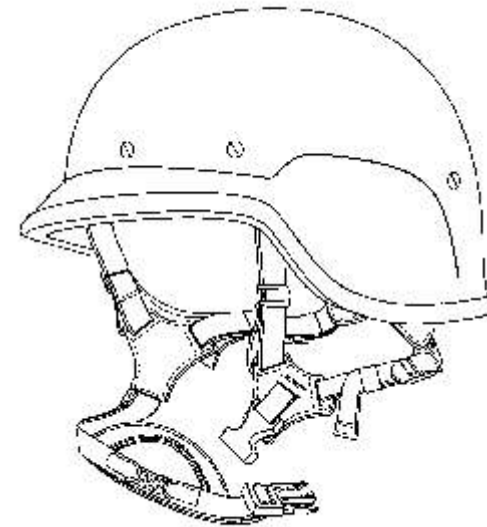
**5. NATIONAL STOCK NUMBERS (NSN) LIST . . . . . 53**

**6. CONSUMABLE ITEMS LIST . . . . . 55**

**NOTE:** The National Stock Numbers (NSNs) for the major components of this item are listed in Section 5.

## 1. GENERAL INFORMATION

- 1.1 **Type of Manual.** Operator care and use manual.
- 1.2 **Helmet Name.** Lightweight Helmet (LWH), shown in Figure 1.
- 1.3 **Purpose of Helmet.** Provide ballistic, fragmentation, hand-gun, and impact protection.



**Figure 1. Lightweight Helmet**

## 2. COMPONENT DESCRIPTION

The helmet consists of a helmet shell incorporating state-of-the-art composite materials to enhance protection with reduced weight, and an improved suspension and retention system for comfort and stability. It is available in five sizes, allowing for optimum fit and stability.

## 2.1 Suspension and Retention System

The suspension and retention system (Figure 2) consists of the following components:

- **Pad Suspension System.** The pad suspension system is a set of seven pads providing sizing and fitting adjustments. In conjunction with the shell, the pad suspension system provides impact protection. In conjunction with the chin/nape retention system, the pad suspension system provides stability. The helmet has 3/4-inch-thick pads installed; they can be replaced with 1-inch-thick pads if necessary (except for the crown pad at the center top of the helmet; it is always 3/4-inch).
- **Chin/Nape Retention System.** The integrated chin/nape retention provides stability and comfort. It includes a nape pad with adjustable straps and an adjustable chinstrap. The chinstrap (also available separately) can be configured to fasten and unfasten on the right or left side.

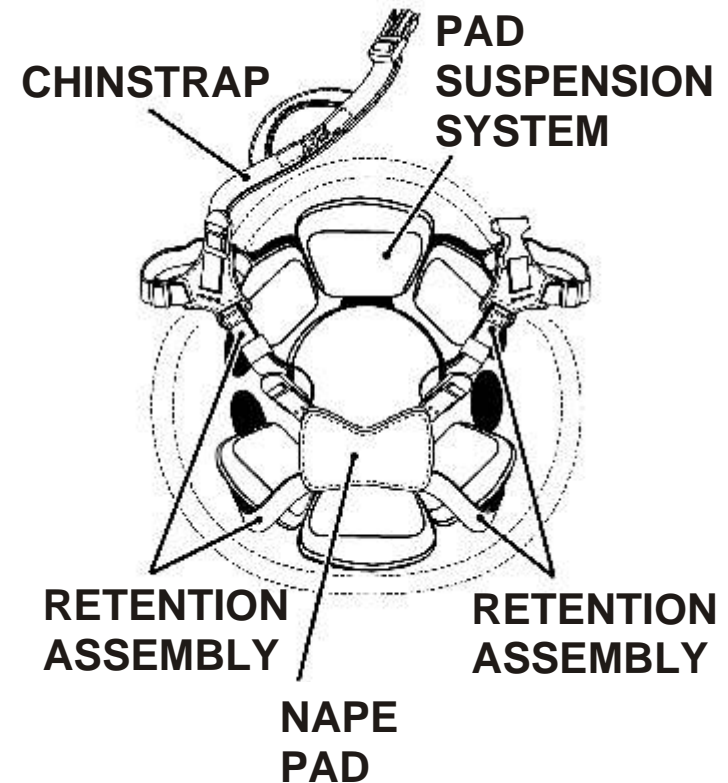


Figure 2. Pad Suspension and Chin/Nape Retention Systems



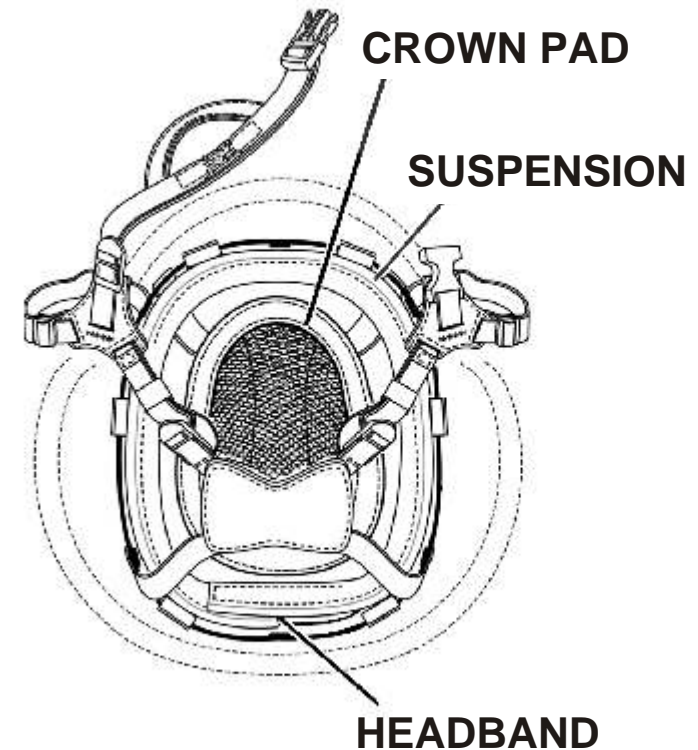
## HELMET RETROFIT NOTICE

### WARNING

If your helmet is equipped with a headband/crown suspension system (shown at right), this system must be removed from the helmet and replaced with a pad suspension system per MARADMIN 480/06, dated October 5, 2006. Failure to do so will result in reduced impact protection, which can increase the risk of injury.

### NOTE

In this retrofit, the center front and center rear holes of the helmet are to be plugged with hardware supplied for this task.



**Headband/Crown Pad  
Suspension System**

Perform the retrofit procedure in Paragraph 4.5. Then return to Paragraph 3, Helmet Preparation, and perform all fitting and adjustment procedures.

### **3. HELMET PREPARATION**

Helmet preparation consists of (1) selecting the helmet size, (2) switching the chinstrap buckle to the other side of the helmet (optional), and (3) checking the helmet fit making adjustments as necessary.

#### **3.1 Selecting Helmet Size**

Helmet sizes are X-Small, Small, Medium, Large, X-Large, and XX-Large. To determine proper helmet size, you must (1) measure and record the wearer's head length, (2) measure and record the wearer's head width, (3) measure and record the wearer's head circumference, and (4) select the helmet size based upon established parameters and guidelines.

##### **3.1.1 Tools/Equipment Needed**

- Caliper
- Ruler
- Tape measure

### 3.1.2 Measuring Head Length

- (1) Use a caliper and a ruler as shown in Figure 3 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.

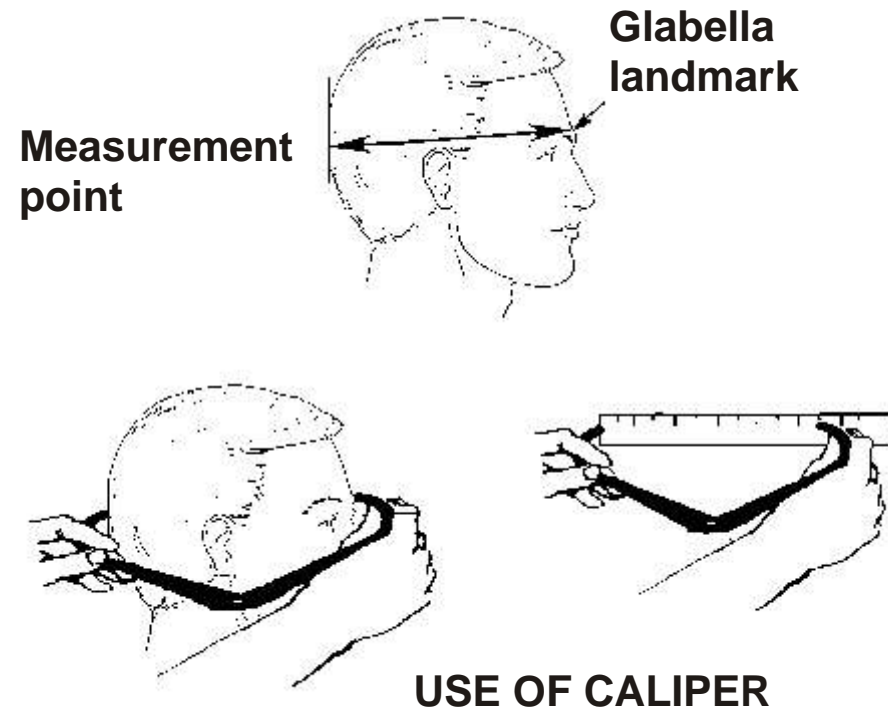


Figure 3. Measuring Head Length

- (2) Record the measurement.

### 3.1.3 Measuring Head Width

- (1) Use a caliper and a ruler as shown in Figure 4 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.
- (2) Record the measurement.

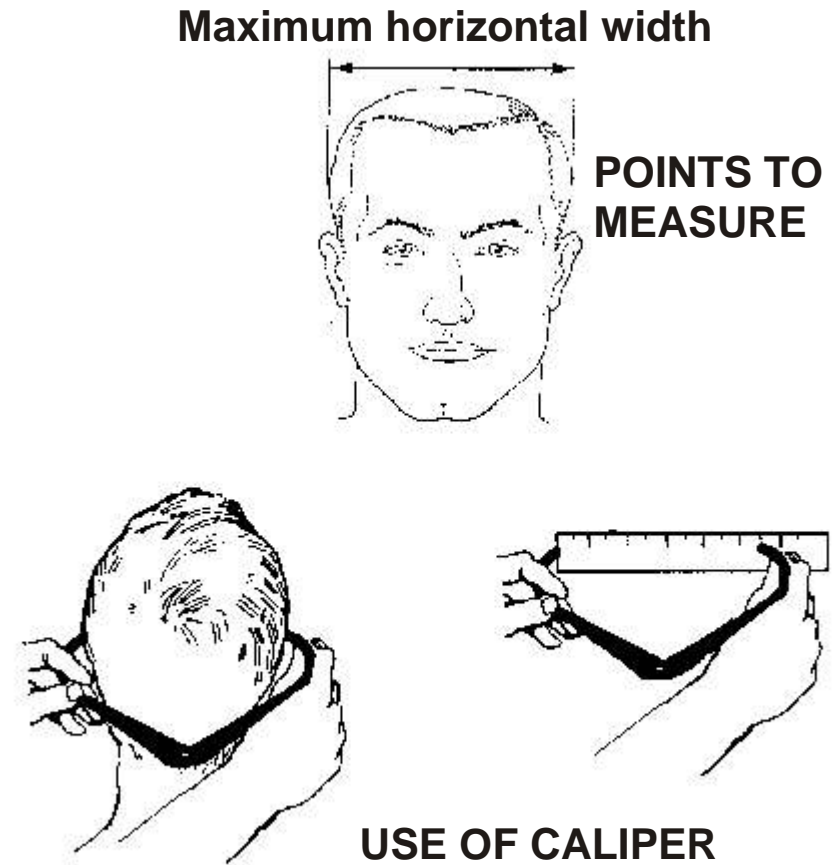


Figure 4. Measuring Head Width

### 3.1.4 Measuring Head Circumference

- (1) Use a tape measure as shown in Figure 5 to measure the maximum head circumference (to the nearest 1/16 inch) of the head above the ears.
- (2) Record the measurement.

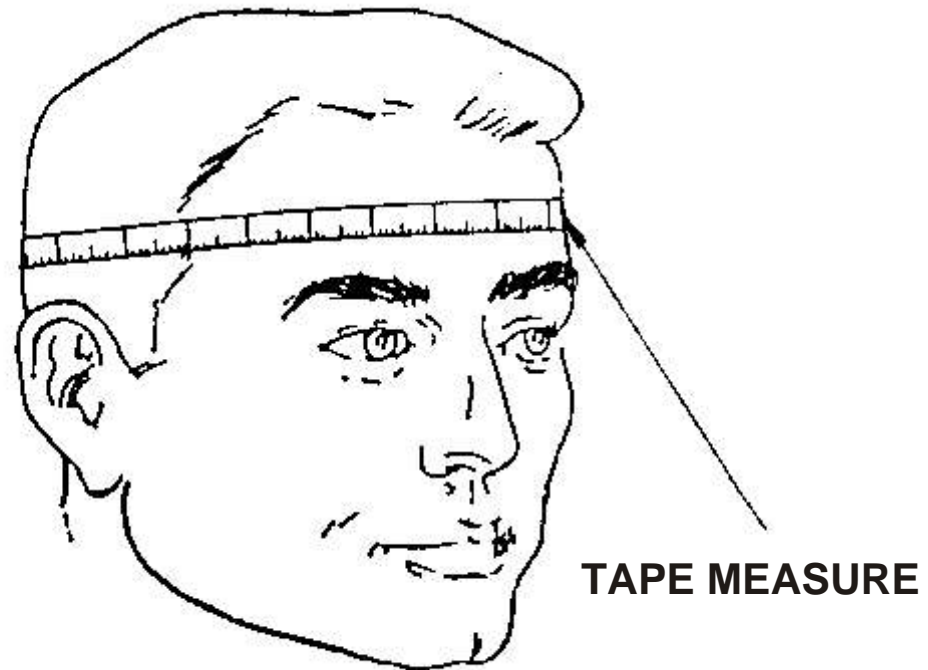


Figure 5. Measuring Head Circumference

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## 3.1.5 Using Sizing Parameters to Select Helmet Size

- (1) Compare the head length, head width, and head circumference measurements to the sizing parameters shown in Table 1.

**Table 1. Sizing Parameters**

<b>HELMET SIZE</b>	<b>MEASUREMENTS - inches up to maximum*</b>		
	<b>Head Length</b>	<b>Head Width</b>	<b>Head Circumference</b>
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	Larger than 8-5/8	Larger than 6-7/8	Larger than 24-1/4

\* **Be sure to take all three measurements.**

- (2) Of the three measurements (head length, head width, and head circumference), select the measurement that corresponds to the largest helmet size. For example, if the head length corresponds to helmet size Large, and the other two measurements correspond to helmet size Medium, select helmet size Large.

**NOTE**

The use of both a balaclava and an M-40 mask adds  $\frac{1}{4}$  inch to the user's head width and  $\frac{5}{16}$  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 helmet size be selected.

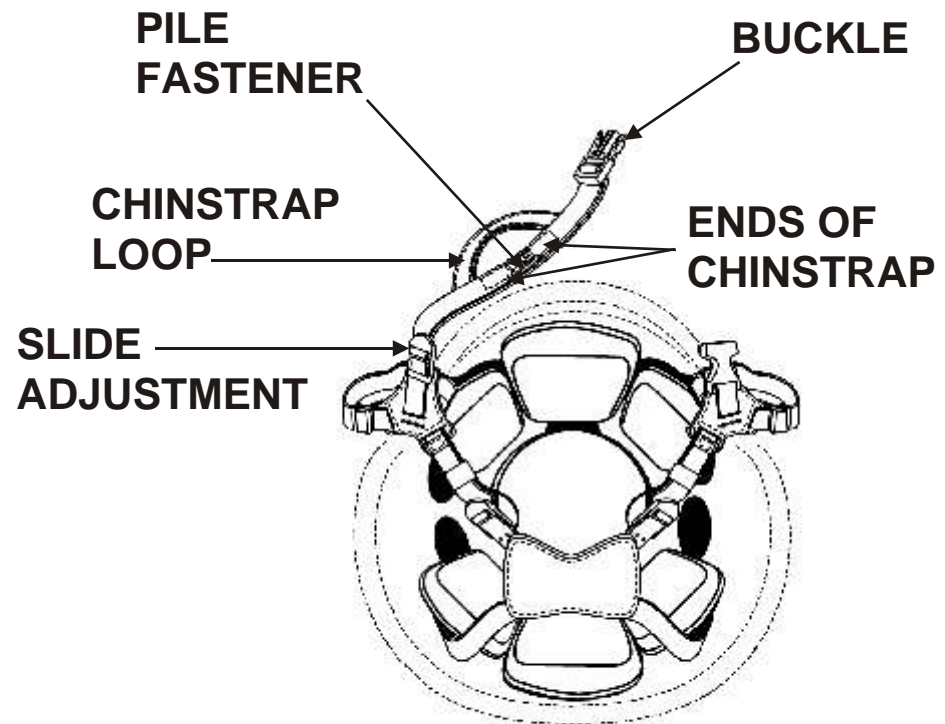
### **3.2 Switching Chinstrap Buckle to Other Side (Optional)**

The chinstrap buckle is factory-installed on the left side (as worn) of the helmet. However, if necessary, the chinstrap buckle can be switched to the right side (as worn) to accommodate left-handed shooters. Following is the procedure for moving the chinstrap buckle to the right side.

#### **NOTE**

When properly installed, the pile fastener on the chinstrap will be on the bottom, under the chin, and the attached loop will be on the top of the chinstrap.

- (1) Referring to Figure 6, unbuckle the chinstrap. Detach the ends of the chinstrap from the pile fastener, and unlace the chinstrap from both the buckle and the slide adjustment.



**Figure 6. Chinstrap**



- (2) Reverse the chinstrap so that the end that was laced through the buckle is now aligned with the slide adjustment. Lace this end through the slide adjustment; lace the other end through the buckle. Reattach the ends of the chinstrap to the pile fastener. The chinstrap loop will now appear upside down as shown in Figure 7.

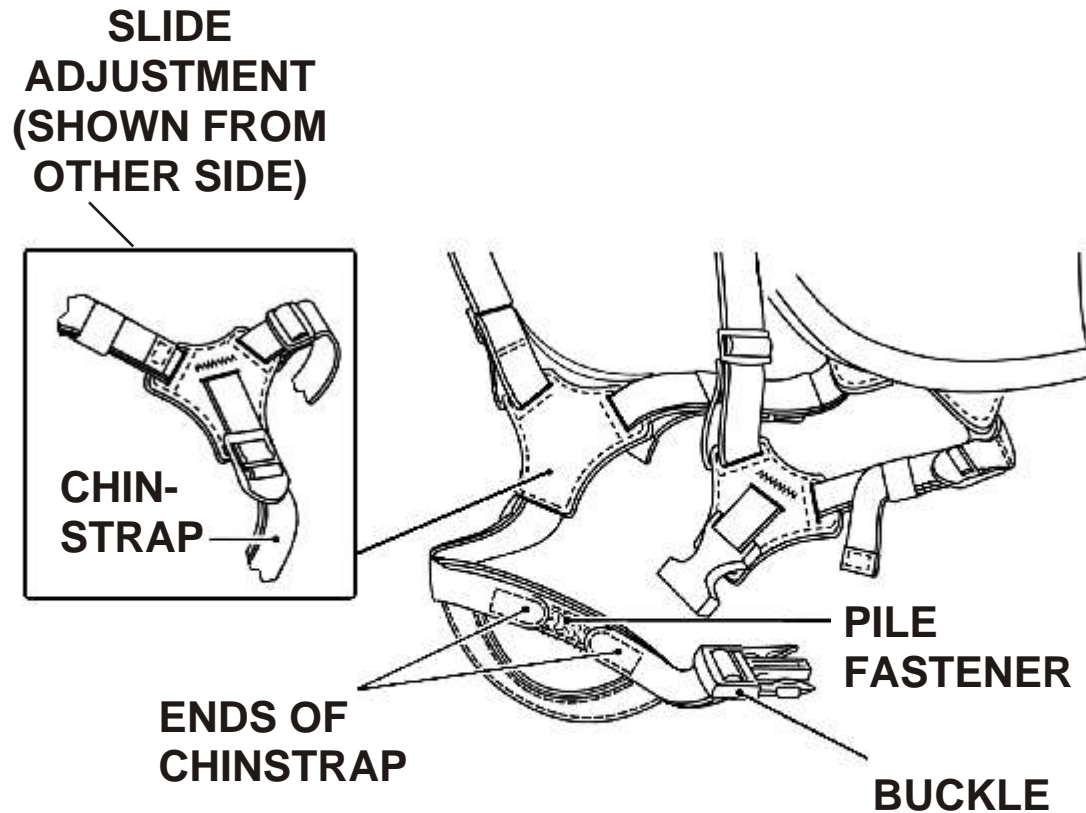
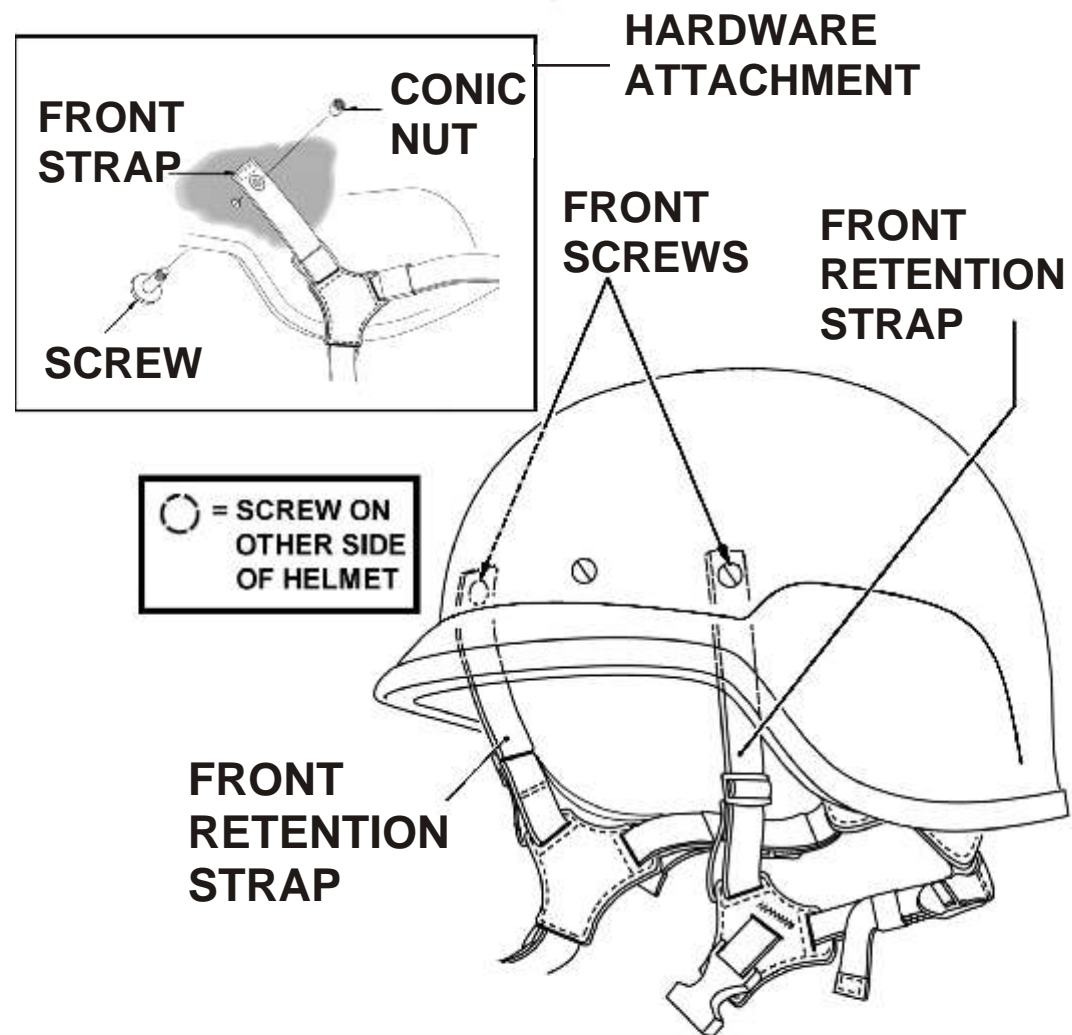


Figure 7. Chinstrap Reversed

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- (3) Refer to Figure 8. If your retention has two attachment holes in each strap, note which hole on the front retention straps is used. On one side of the helmet, remove the front screw that attaches the front retention strap to the helmet. (The conic nut will also be removed from the inside of the helmet.) Note how the conic nut is positioned in the front strap inside the helmet; you will reinstall the conic nut in the same manner later.



**Figure 8. Hardware Locations and Front Straps**

(4) Referring to Figure 9, unlace the front strap from the pad. Then unlace the rear strap from the pad.

(5) Repeat Steps 3 and 4 on the other side of the helmet to unlace the front and rear retention straps from the pad.

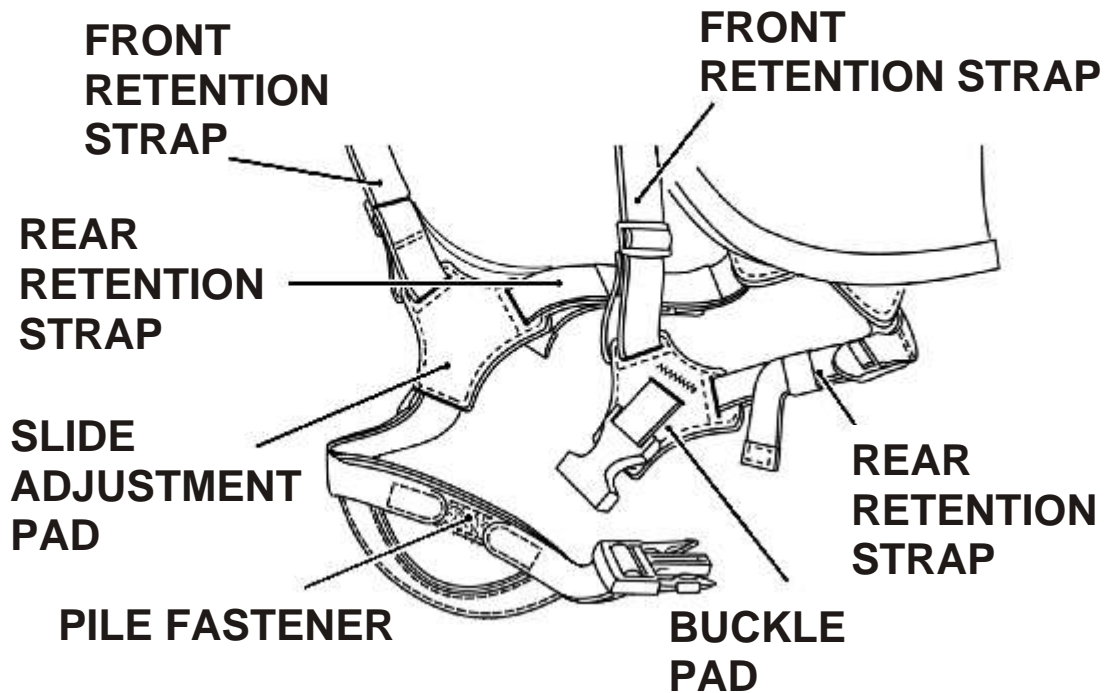


Figure 9. Straps and Pads

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- (6) Refer to Figure 10. Take the buckle pad that was on the left side (as worn) and orient it on the right side of the helmet. Ensure that the buckle side of the buckle pad faces outward. Lace the right rear retention strap through **Slot A** in the buckle pad and elastic loop. Then lace the right front retention strap through **Slot B** in the buckle pad.

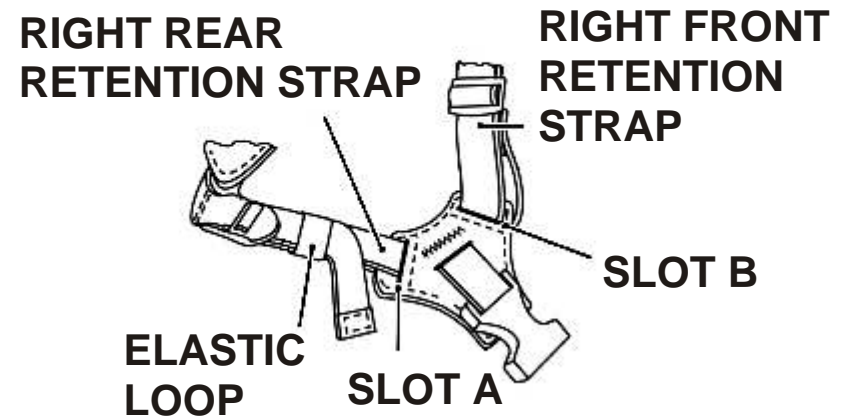


Figure 10. Buckle Pad

- (7) Refer to Figure 11. Take the slide adjustment pad that was on the right side (as worn) and orient it on the left side of the helmet. Ensure that the slide adjustment side faces outward. Lace the left rear retention strap through **Slot A** in the slide adjustment pad and the elastic loop. Then lace the left front retention strap through **Slot B** in the slide adjustment pad.

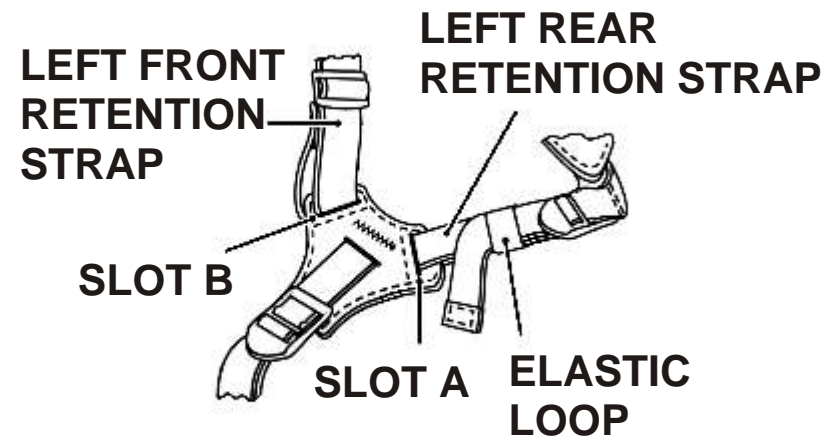
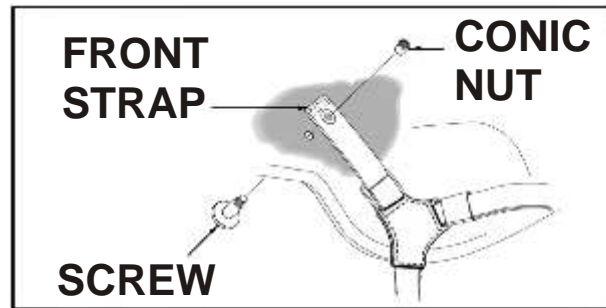


Figure 11. Slide Adjustment Pad

(8) Refer to Figure 12. Attach the right front retention strap to the helmet using the hardware removed previously. Be sure to position the slot in the conic nut toward the inside of the helmet.



(9) Repeat Step 8 on the other side of the helmet to complete the procedure. Ensure that the chinstrap pile fastener is at the bottom.

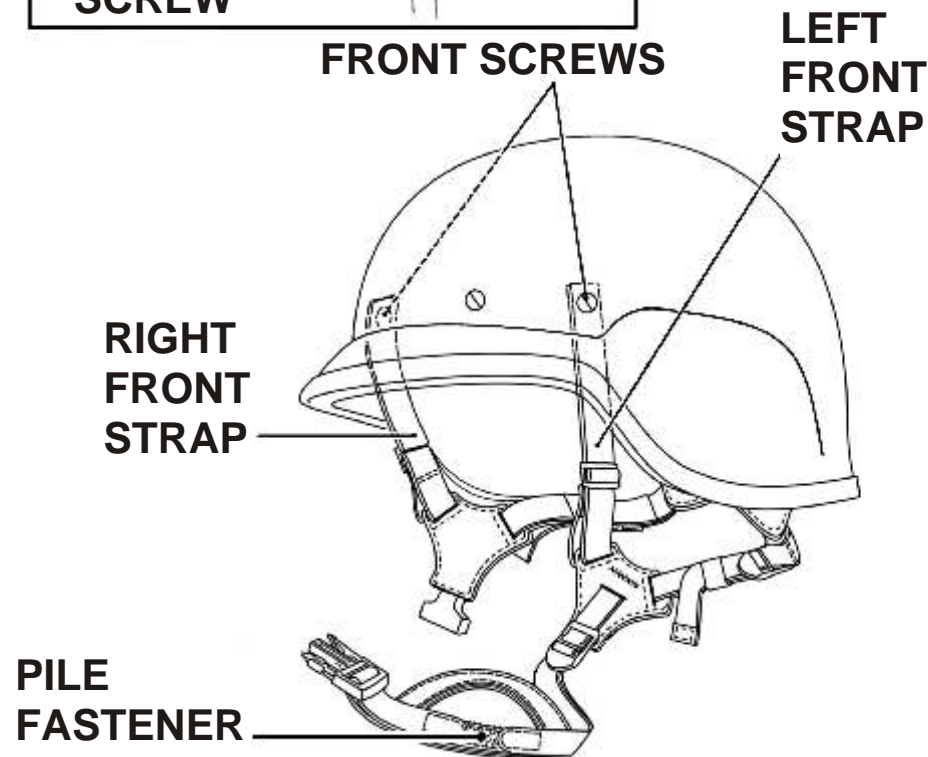
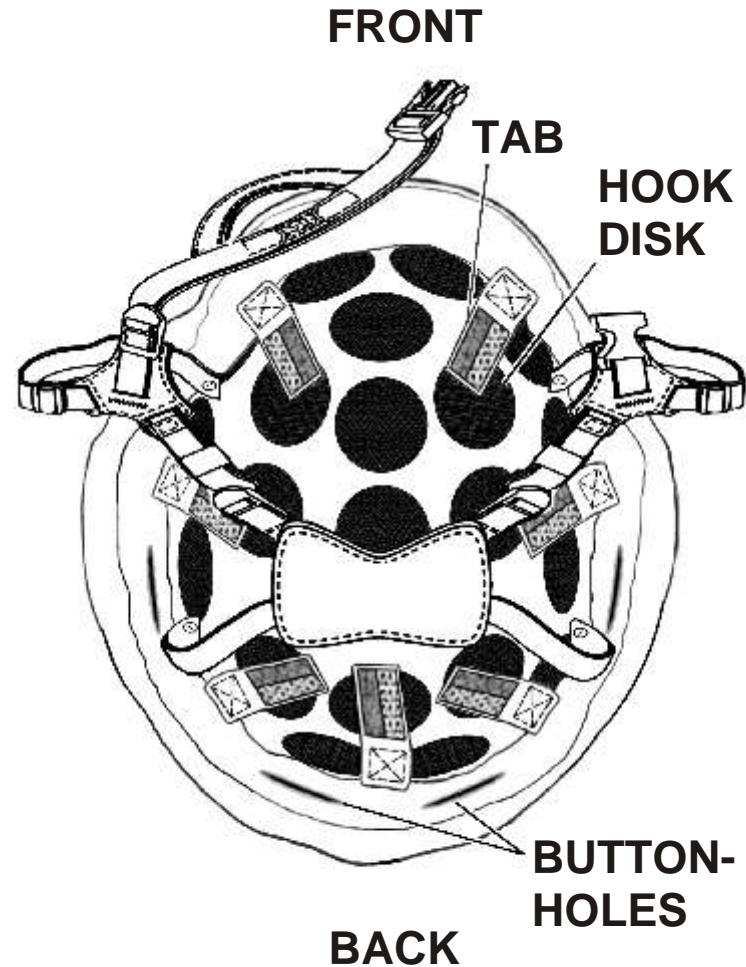


Figure 12. Chinstrap Buckle on Other Side

### 3.3 Installing Helmet Cover

If you wear a helmet cover (**Item 12**, NSN List), refer to Figure 13 and install the cover as follows:

- (1) Remove the suspension pads from the inside of the helmet, noting their positioning and arrangement.
- (2) If the helmet cover is reversible, orient it so that the desired color or pattern is on the outside.
- (3) Align the end of the cover with two buttonholes at the back of the helmet and the end without buttonholes at the front of the helmet.
- (4) Pull the cover over the helmet.
- (5) Attach the tabs on the cover to the hook disks on the helmet.
- (6) Reinstall the suspension pads in the same position and arrangement as before.



**Figure 13. Helmet with Suspension Pads Removed and Cover Installed**

### 3.4 Checking Helmet Fit

To check the helmet fit, you must (1) don the helmet and adjust the retention and the chinstrap, (2) evaluate the fit, (3) troubleshoot the fit (if necessary) to eliminate any problems, and (4) become familiar with alternate pad configurations.

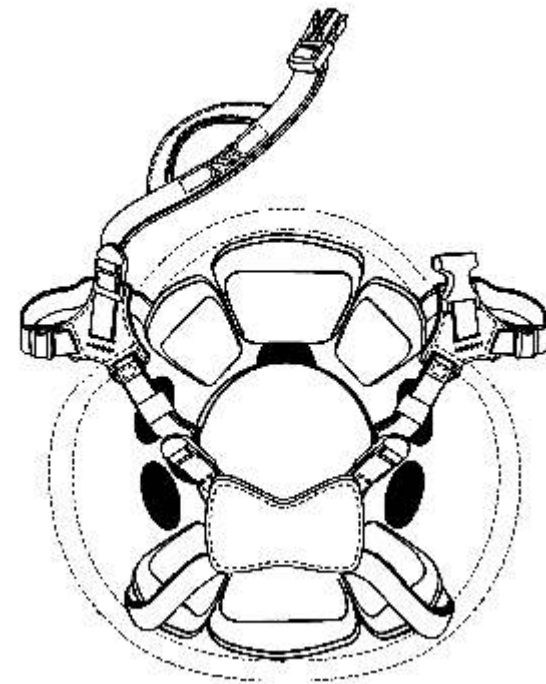
#### 3.4.1 Donning Helmet and Evaluating Fit

##### **WARNING**

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

Do the following:

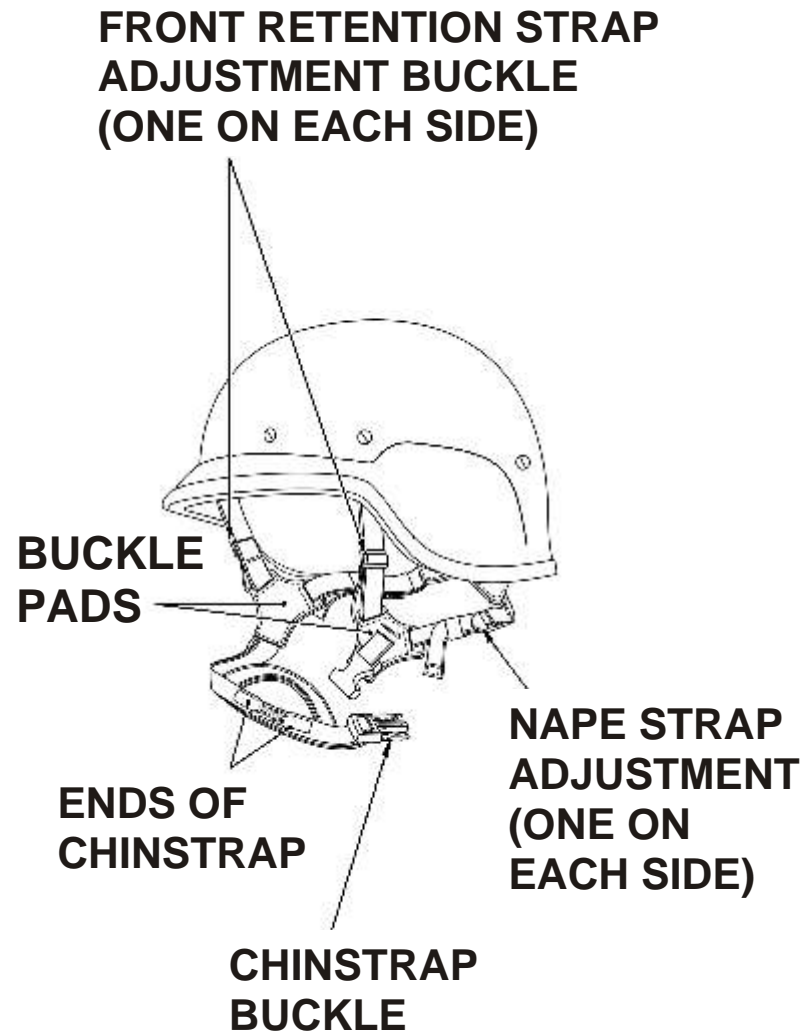
- (1) Ensure that the suspension pads are arranged in the standard pad configuration (see Figure 14). **If other equipment is to be used with the helmet, such as a headset, evaluate size with that equipment (if possible).**



**Figure 14. Standard Pad Configuration**

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- (2) Referring to Figure 15, do the following:
  - (a) Don the helmet.
  - (b) Ensure that the buckle pads are below the earlobes. If the buckle pads cover the earlobes, lower the front retention strap buckles until the buckle pads are below the earlobes.
  - (c) Buckle the chinstrap.
  - (d) Adjust the nape straps for a snug, secure, comfortable fit at the nape.



**Figure 15. Nape Strap, Front Retention Strap, and Chinstrap Adjustment**



- (e) Tighten the chinstrap by pulling on the hook ends of the chinstrap until the fit is snug, secure, and comfortable. Reattach the ends to the pile 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 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 2d through 2g as necessary. Recheck helmet stability; no straps should be loose.
- (3) Evaluate the fit of the helmet. The helmet should not be too high (crown pad does not contact the head or too much of forehead is exposed), too low (too low on brow or not compatible with eyewear, etc.), too tight, or too loose. Shake head rapidly from side to side to check for stability. The helmet should not rotate from side to side when head is shaken. If any of these problems exist, follow Paragraph 3.4.2.

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### 3.4.2 Troubleshooting the Fit

This section provides sizing and fitting troubleshooting techniques.

- (1) If the helmet is **too tight**:  
(Figure 16):
  - Try arranging the oblong (smallest) pads in a horizontal configuration or diagonal direction (see pad configuration illustrations in Paragraphs 3.4.3.1 and 3.4.3.2).
  - If rearranging the pads does not alleviate the tightness, try the next larger helmet size.



**Figure 16. Helmet Too Tight**

(2) If the helmet is **too loose**, that is, if it slides when you shake your head from side to side (Figure 17):

- If available, try a thicker pad set. Remove the 3/4-inch-thick pads from the helmet (except the crown pad); replace them with the 1-inch-thick pads. **Note:** Only 3/4-inch-thick crown pads are available.
- Select the next smaller helmet size.



**Figure 17. Helmet Too Loose**

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(3) If the helmet is **too high**, that is, if too much forehead is exposed (Figure 18), if the crown pad does not touch the top of the head (Figure 19), or if the wearer does not see the edge of the rim (Figure 20):

- Try rearranging pads (horizontal or diagonal—see pad configuration illustrations in Paragraphs 3.4.3.1 and 3.4.3.2).
- Try a larger helmet size.

It is extremely important that the helmet not sit too high on the head. Here are some things to look for:

- a. Refer to Figure 18. If too much of the forehead is exposed (approximately more than  $\frac{1}{2}$ -inch above eyebrow), then the helmet is too high.

**MORE THAN  
 $\frac{1}{2}$ -INCH  
ABOVE  
EYEBROW**



**Figure 18. Too Much Forehead Exposed**

- b. Refer to Figure 19. If the crown pad does not touch the head (if you cannot feel the pad), then the helmet is too high.

**SPACE BETWEEN PAD AND HEAD**



**Figure 19. Crown Pad Not Touching Head**

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- c. Refer to Figure 20. Look upward by moving your eyes, but without moving your head. If you cannot see the brim of the helmet, then the helmet is too high.



**Figure 20. Looking Past Brim**

(4) If the helmet is **too low** on the brow, not compatible with eyewear, or has other compatibility issues (Figure 21):

- Try rearranging pads (horizontal or diagonal—see pad configuration illustrations in Paragraphs 3.4.3.1 and 3.4.3.2).
- Try a smaller helmet.
- If available, try a thicker pad set. Remove the 3/4-inch-thick pads (except the crown pad) from the helmet; replace them with the 1-inch-thick pads.  
**Note:** Only 3/4-inch-thick crown pads are available.

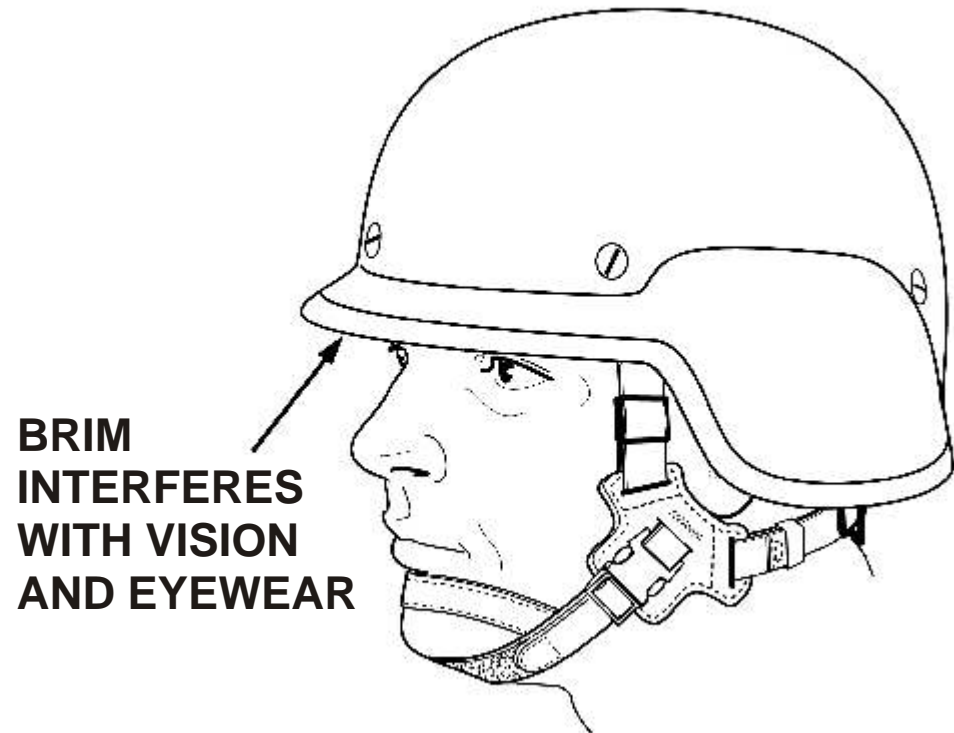


Figure 21. Helmet Too Low

### 3.4.3. Pad Suspension Adjustment and Configurations

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



The hardware (nut) inside the helmet—where the retention system webbing attaches to the helmet (in **four** places)—must be covered by padding. The oblong/oval pad must be placed flush with the rim (edge) of the helmet and completely cover the hardware; see Figure 22 (next page). Failure to observe this precaution could result in serious injury or death.

For maximum stability, place pads as close as possible to the edge of the helmet.

If you experience fit problems, tightness, looseness, or the helmet is too high or too low, refer to Paragraph 3.4.2, Troubleshooting the Fit.



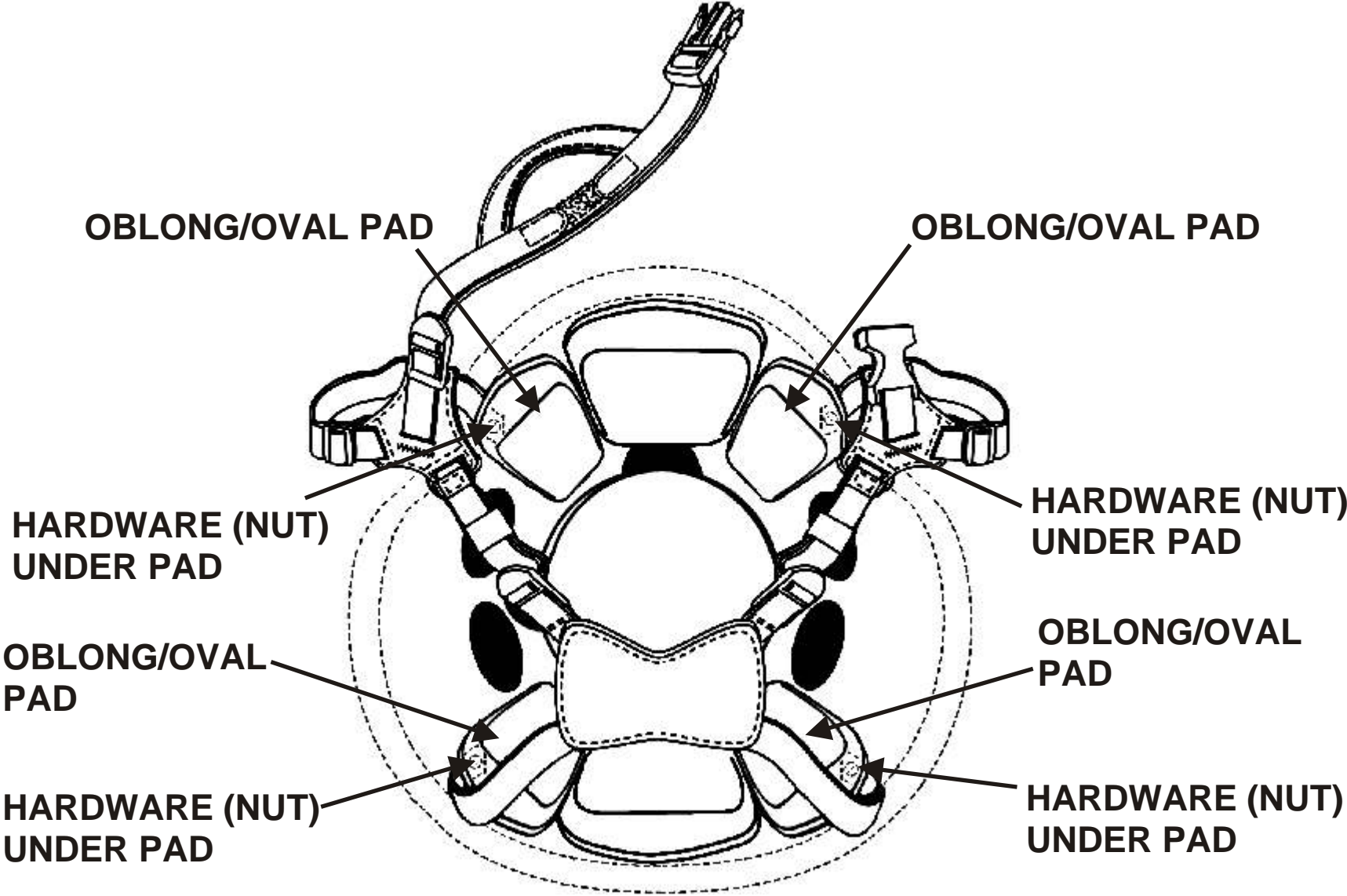


Figure 22. Pad Placement Over Hardware (Four Places)

**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.

**NOTE**

If you experience hot spots or discomfort, try rearranging the pad system to accommodate a more comfortable fit. (See Paragraphs 3.4.3.1 and 3.4.3.2.) If discomfort persists, try another helmet size. (See Paragraph 3.1.)

### 3.4.3.1 Standard Seven-Pad Configuration



All seven pads provide maximum impact protection. Never remove the crown pad. Failure to observe this precaution could result in serious injury or death.

Figure 23 shows the standard seven-pad configuration, with the pads placed vertically. The pads may also be placed in other directions as described on the next page.

**NOTE:** Size XX-Large contains the standard seven-pad configuration **plus** two additional oblong/oval pads, one positioned above each eardome.

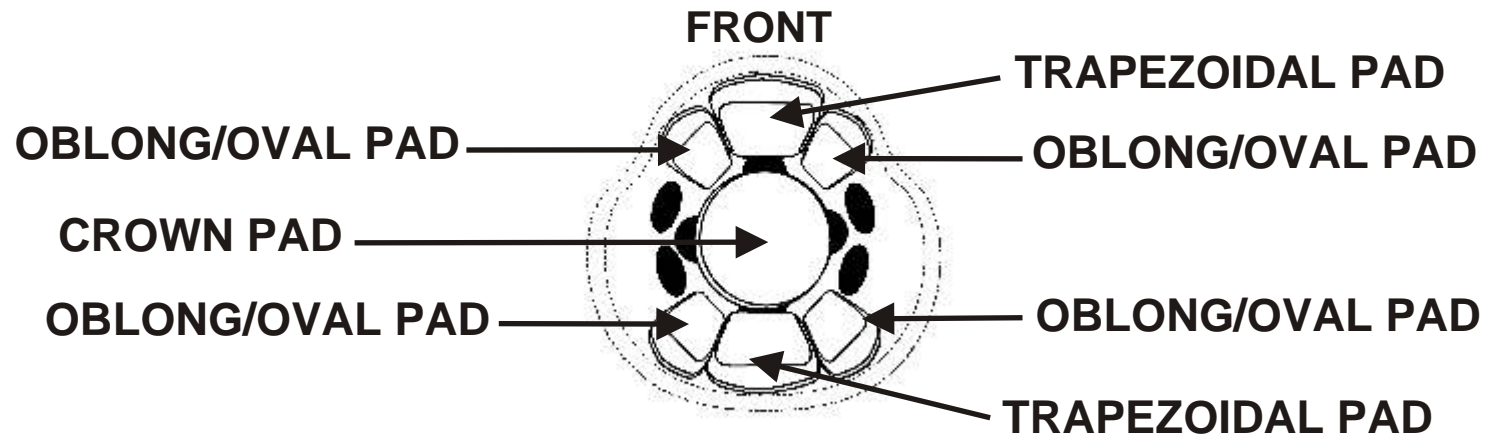


Figure 23. Standard Pad Configuration

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Pads can be placed in vertical or horizontal directions (as shown in Figure 24) 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.

Hardware **MUST** be covered with pads at all times.

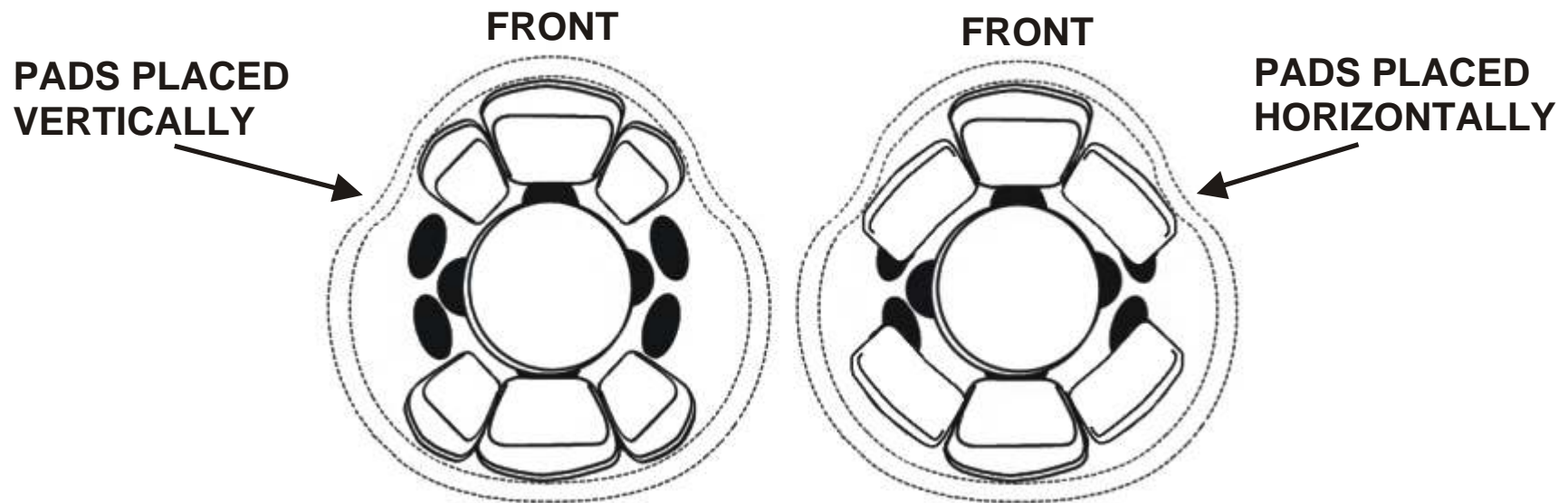


Figure 24. Vertical and Horizontal Pad Placement

### 3.4.3.2. Alternate Non-Standard Pad Configurations



The helmet provides the most impact protection using the standard seven-pad configuration.

Alternate pad configurations may not provide optimal protection.

Never remove the crown pad.

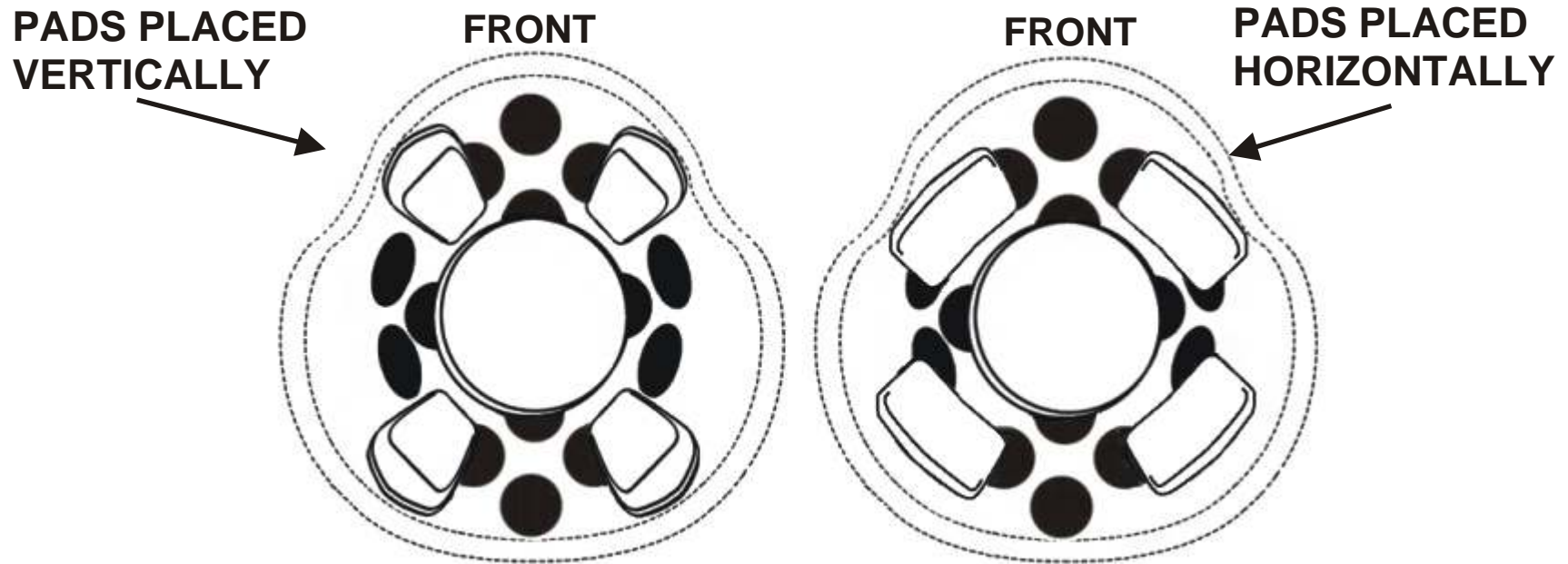
Alternate pad configurations (shown on the next two pages) are allowed to obtain a better fit or more comfort.

- 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 (trapezoid or oblong/oval) can be removed in non-risk situations. The circular crown pad must always remain in the helmet.
- An oblong/oval pad can be substituted for a trapezoidal pad.
- Pads should be placed around the inside of the helmet to provide optimum comfort and stability.
- Hardware should be covered with pads at all times.
- For size X-Large, up to nine pads may be used.

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Figures 25 and 26 show non-standard pad 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.

Figure 25 shows the five-pad configuration.



**Figure 25. Five-Pad Configuration**

The six-pad configuration (Figure 26) is useful for wearers who have long heads or when protective masks are worn. Optionally, you may substitute a fifth oblong/oval pad for the trapezoidal pad.

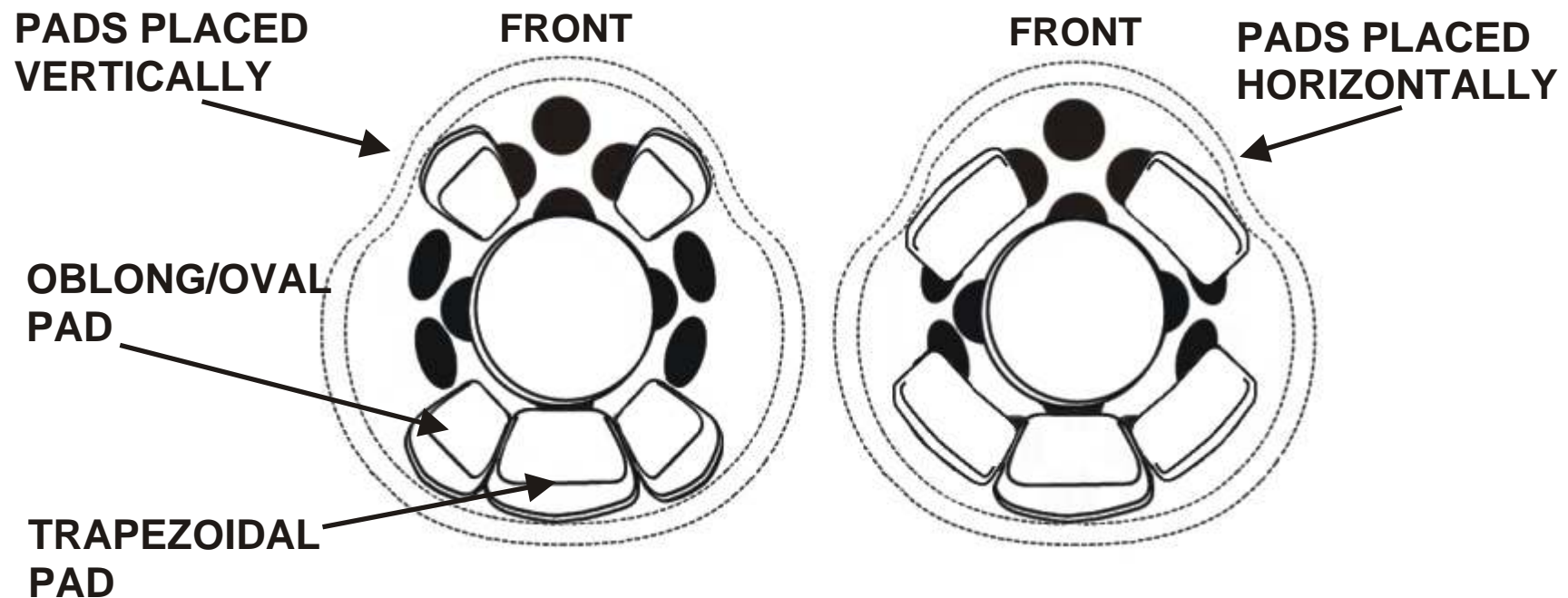
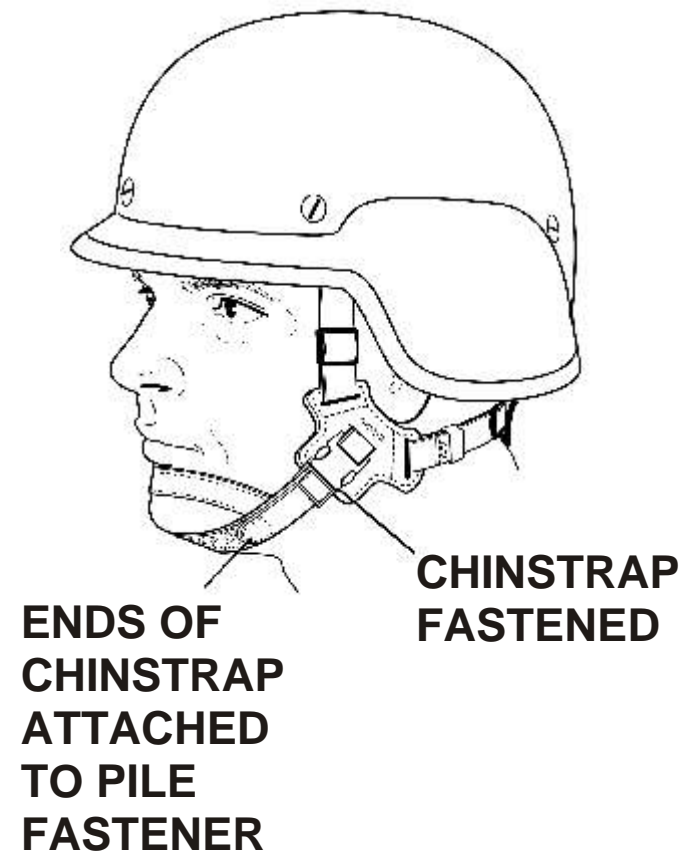


Figure 26. Six-Pad Configuration

### **3.5 Final Fit Check**

Do the following:

- (1) Don the helmet as shown in Figure 27 and check the fit in accordance with paragraph 3.4.1.
- (2) 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 straps in accordance with paragraph 3.4.1 until the helmet is stable.
- (3) Make any necessary adjustments in accordance with paragraph 3.4.1.



**Figure 27. Helmet Donned**



### 3.6 Donning/Doffing/Operation

**▲ WARNING**

Always wear the helmet with the chinstrap properly fastened and adjusted. Failure to secure the chinstrap will decrease helmet stability and may result in injury to the wearer.

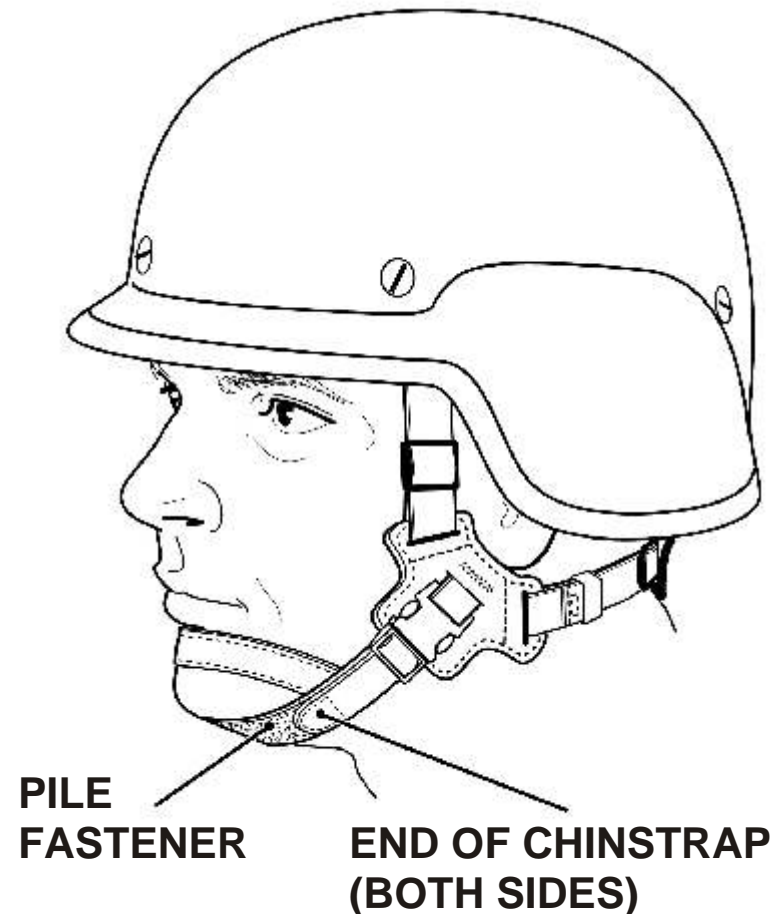
- (1) Don the helmet, ensuring that the helmet front brim rests just above the eyebrows.
- (2) Refer to Figure 28. Buckle the chinstrap. Ensure that it fits securely on the chin.



**Figure 28. Chinstrap Buckle**

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- (3) Refer to Figure 29. Check the fit in accordance with paragraph 3.4.1. Adjust the chinstrap, if required, as follows:
  - (a) Detach the ends of the chinstrap from the pile fastener.
  - (b) Pull on the ends until the chinstrap fits snugly, securely, and comfortably.
  - (c) Reattach the ends of the chinstrap securely to the pile fastener.
- (4) To doff the helmet, unbuckle the chinstrap and remove the helmet from the head.



**Figure 29. Chinstrap**

## 4. MAINTENANCE

### 4.1 Preventive Maintenance Checks

Table 2 lists the preventive maintenance tasks for each component and refers you to the appropriate procedure.

**Tools Needed:** Two ¼" flat-blade screwdrivers (Special Tools: None)

**Table 2. Preventive Maintenance Checks**



COMPO- NENT	EXAMINE FOR:	HELMET IS NOT READY IF:	WHERE FOUND
Helmet Shell (Item 11, NSN List)	<p>Dents or cuts greater than 2 inches or deeper than 1/8 inch, or any delaminations.</p> <p style="text-align: center;"> <b><u>WARNING</u></b></p> <p>Replace the helmet if dents or cuts measuring over 2 inches exist or are deeper than 1/8 inch, or if any delaminations exist. Failure to do so may result in reduced head protection.</p>	<p>Helmet shell has dents or cuts greater than 2 inches or deeper than 1/8 inch exist, or any delaminations exist.</p>	
Edge Beading	<p>Missing or loose edge beading.</p> <p style="text-align: center;"> <b><u>WARNING</u></b></p> <p>Replace the helmet if the edge beading is missing or loose. Missing or loose edge beading will result in exposed rough helmet edges that may cause injury.</p>	<p>Edge beading is missing or loose.</p>	

Table 2. Preventive Maintenance Checks

COMPO- NENT	EXAMINE FOR:	HELMET IS NOT READY IF:	WHERE FOUND
Retention Assembly (Item 5, NSN List)	<p>Torn/frayed webbing, broken nape strap buckles, damaged buckle pad, or missing or loose attaching hardware.</p> <p><b>⚠ WARNING</b></p> <p>Replace the retention assembly if the webbing is torn or frayed, if the nape strap buckles are broken, or if the buckle pad buckle is damaged. Replace missing and tighten loose hardware. Failure to do so may result in injury.</p>	<p>Webbing is torn or frayed, nape strap buckles are broken, buckle pad buckle is broken, or attaching hardware is loose or missing.</p>	<p>Paragraph 4.4.2</p>
Chinstrap (Item 6, NSN List)	<p>Broken buckles; torn, cut, or frayed webbing; or worn hook/pile fasteners.</p> <p><b>⚠ WARNING</b></p> <p>Replace any chinstrap that is cut or torn, has broken buckles, or has hook/pile fasteners that do not secure. Failure to do so may result in injury.</p>	<p>Buckles are broken; webbing is cut, torn or frayed; or hook/pile fasteners do not secure.</p>	<p>Paragraph 4.4.1</p>

**Table 2. Preventive Maintenance Checks**

<b>COMPO- NENT</b>	<b>EXAMINE FOR:</b>	<b>HELMET IS NOT READY IF:</b>	<b>WHERE FOUND</b>
<p>Pads (<b>Item 2 or 3,</b> NSN List)</p>	<p>Cuts, tears or other damage to outer fabric or inner foam; pads not adhering to hook disks. Replace the pads if they are torn or cut, exposing the inner padding.</p> <p style="text-align: center;"><b>⚠ WARNING</b></p> <p>Replace missing or damaged pads. Failure to do so will result in a helmet that may not protect the wearer.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>Pads should be replaced after 6 months of continuous daily use.</p>	<p>Pads are torn, cut or otherwise damaged; or pads will not adhere to hook disks.</p>	<p>Paragraph 4.4.3</p>
<p>Hook disks (<b>Item 4,</b> NSN List)</p>	<p>Loose or damaged hook disks. Replace the hook disks as necessary.</p>	<p>Hook disks are damaged such that they will not securely hold the pads in place</p>	<p>Paragraph 4.4.4</p>

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## 4.2 Cleaning

Table 3 lists the cleaning procedure for each of the helmet components.

**Table 3. Cleaning**

<b>COMPONENT</b>	<b>PROCEDURE</b>
Helmet Shell ( <b>Item 11</b> , NSN List)	Wipe clean with damp cloth.
Pad Suspension ( <b>Item 2 or 3</b> , NSN List)	Hand-wash with mild soap and water. Rinse well and air-dry. (Do not machine-wash or machine-dry.)
Leather Components	Clean with soap, rinse thoroughly, wipe dry with clean cloth.
Retention Assembly ( <b>Item 5</b> , NSN List)	Wipe clean with damp cloth.

### 4.3 Troubleshooting

Listed below are the troubleshooting tasks for each component, along with the appropriate repair procedure.

- (1) Malfunction: **Unable to fasten or adjust chinstrap (Item 6, NSN List)**  
 Test/Inspection: Inspect chinstrap for defective webbing, buckles, or hook/pile fasteners.  
 Corrective Action: Replace chinstrap as in Paragraph 4.4.1.
  
- (2) Malfunction: **Unable to attain/maintain helmet stability**  
 Test/Inspection: Inspect retention assembly (**Item 5, NSN List**) for defective buckles or torn/frayed webbing.  
 Corrective Action: Replace retention as in Paragraph 4.4.2.
  
- Test/Inspection: Inspect pads (**Item 2 or 3, NSN List**) for damage, wear, or loss of adhesion  
 Corrective Action: Replace pads as in Paragraph 4.4.3.

## 4.4 Removal and Installation of Components

### 4.4.1 Chinstrap

**NOTE:** This procedure is for helmets with the chinstrap buckle installed on the left side (as worn). If your chinstrap buckle has been switched to the right side, perform this procedure accordingly (fasten/unfasten buckle on right, lace/unlace chinstrap on left).

*a. Removal*

- (1) Refer to Figure 30. Unfasten the chinstrap buckle on the left side (as worn) of the retention assembly.
- (2) Unlace the chinstrap (**Item 6**, NSN List) from the right side (as worn) of the retention assembly.

*b. Installation*

- (1) Lace the chinstrap through the buckle on the right side (as worn) of the retention assembly.
- (2) Don the helmet. Fasten the chinstrap to the buckle on the left side (as worn) of the retention assembly.
- (3) Check the fit in accordance with Paragraph 3.4, and make any necessary adjustments.

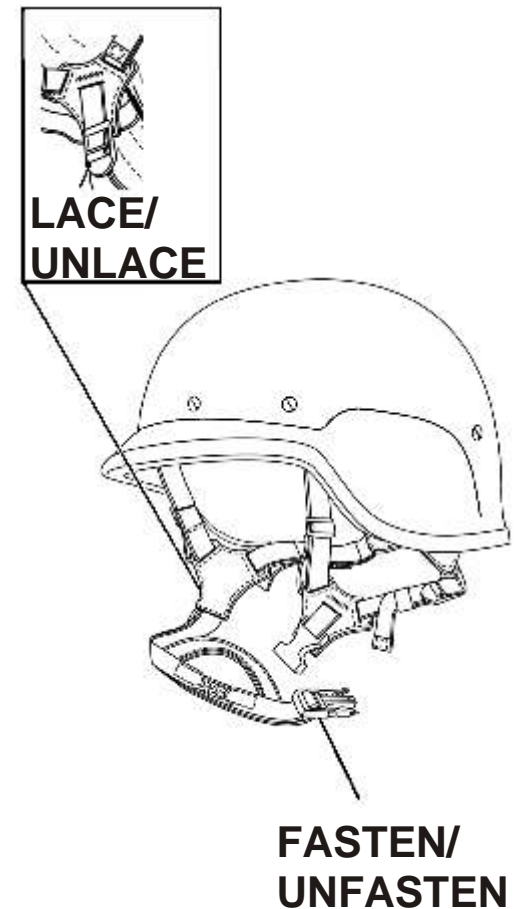


Figure 30. Chinstrap



## 4.4.2 Retention Assembly

### a. Removal

- (1) Inside the helmet, remove the pads that cover the four retention hardware locations shown in Figure 31.
- (2) Remove the screws shown in Figure 31 (**Item 9**, NSN list) and conic nuts (**Item 10**, NSN list) attaching the retention assembly to the helmet shell (**Item 11**, NSN list), noting the position of components.

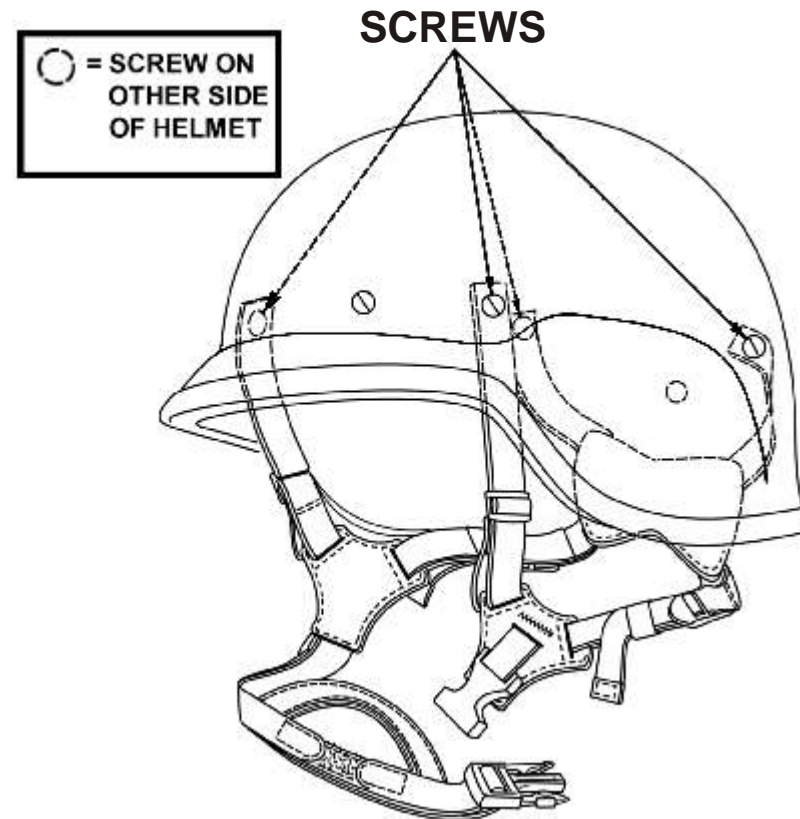


Figure 31. Retention Hardware Locations

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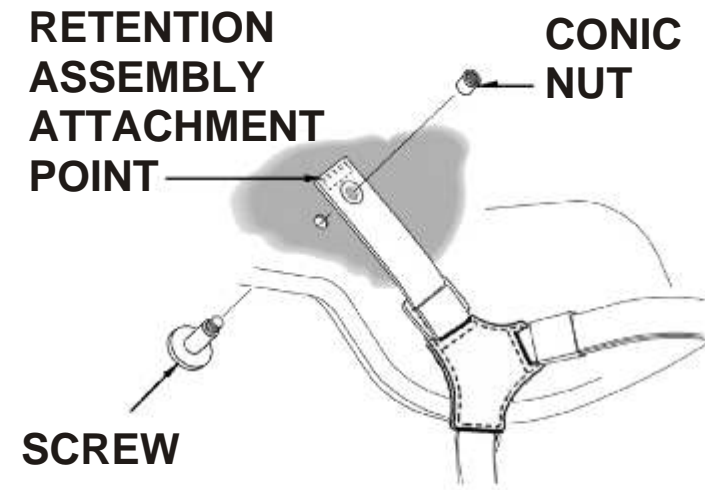
### *b. Installation*

- (1) Position the new retention assembly (**Item 5**, NSN List) in the helmet in the same manner as the old one, ensuring that the nape pad is in the rear.

#### **NOTE**

Before installing screws, apply a small amount of thread-locking adhesive (**Item 1**, Consumable Items List) to the threads of each screw.

- (2) Refer to Figure 32. On one side of the helmet, position the rear attachment point of the retention assembly against the helmet shell. Install a conic nut into the hole in the retention assembly. On the outside of the helmet, install and tighten a screw into the conic nut. Repeat this step for the front retention attachment point on the same side.
- (3) Repeat Step 2 to attach the other two retention assembly attachment points to the helmet.
- (4) Don the helmet, check the fit as in Paragraph 3.4, and make any necessary adjustments.



**Figure 32. Retention Assembly and Hardware**

### 4.4.3 Replacing Pad Suspension

#### NOTE

One side of each pad has printing. ONLY THE PRINTED SIDE OF THE PAD WILL ATTACH TO THE HOOK DISKS ON THE HELMET. Press the pad against the hook disks.

#### *a. Removal*

- (1) Note the arrangement of pads in the helmet.
- (2) Pull the individual pads off the hook disks inside the helmet.

#### *b. Installation*

Press the replacement pads (**Item 2 or 3**, NSN List) against the hook disks in the same arrangement as noted in Step 1. (See Paragraphs 3.4.3, 3.4.3.1, and 3.4.3.2 for Pad Configurations and Pad Suspension Adjustment.)

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### 4.4.4 Replacing Hook Disks

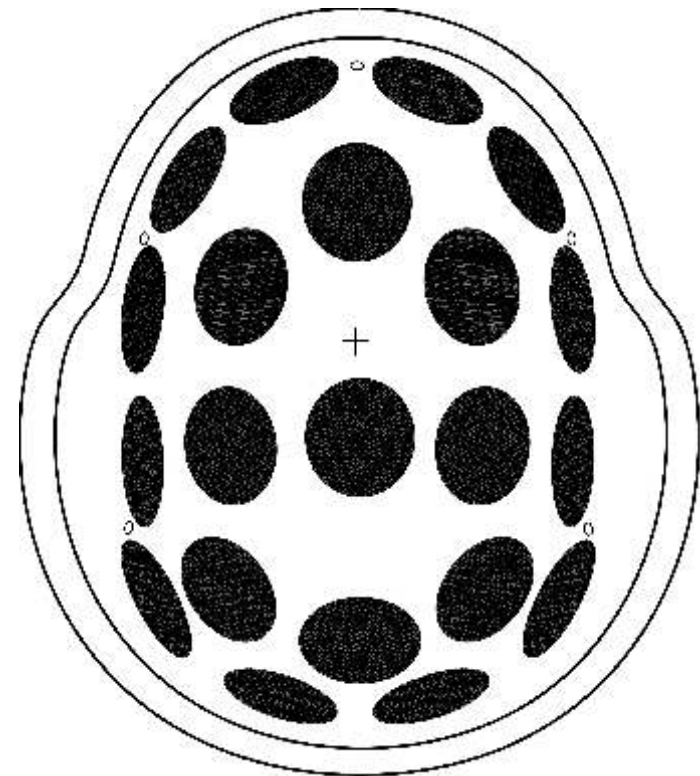
This procedure describes the replacement of one or more hook disks inside the helmet.

#### *a. Removal*

- (1) Remove the old/damaged hook disk(s).
- (2) Clean the inside of the helmet shell with isopropyl alcohol (**Item 2**, Consumable Items List) where each hook disk was removed. Allow to dry thoroughly.

#### *b. Installation*

Referring to Figure 33, press the new hook disk(s) (**Item 4**, NSN List) firmly to the inside of the helmet shell in approximately the same location(s) as the old ones.



**Figure 33. Approximate Location of Hook Disks**

### 4.5 Retrofitting the Helmet (Removing Headband/Crown Pad Suspension and Installing Pad Suspension)

If your helmet has a headband/crown pad suspension (Figure 34), you must retrofit the helmet to a pad suspension (Figure 35). This requires (1) removing the headband/crown pad suspension **and** the existing retention, (2) cleaning the inside of the helmet shell, (3) installing hook disks, (4) plugging the front and rear attachment holes (which will no longer be used), (5) installing a new retention assembly, and (6) installing the pad suspension system.

**(Note:** If your existing retention has two attachment holes in each strap, note which holes are used. You may continue using this retention until it is no longer serviceable.)

Follow the procedure outlined in Paragraphs 4.5.1 through 4.5.6, beginning on the next page.

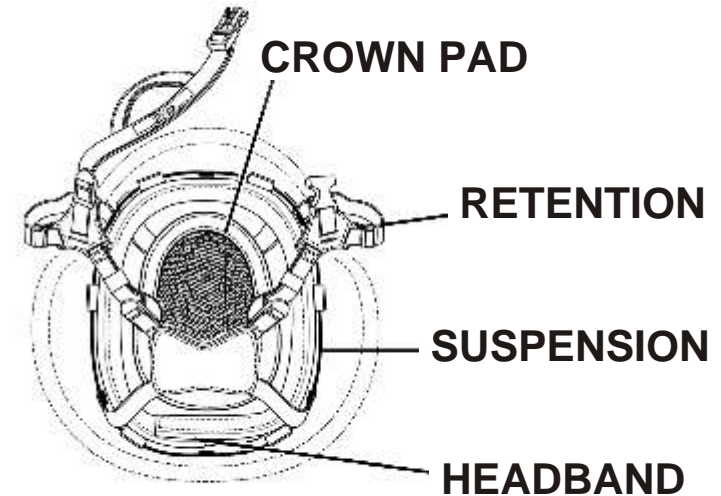


Figure 34. Headband/Crown Pad Suspension

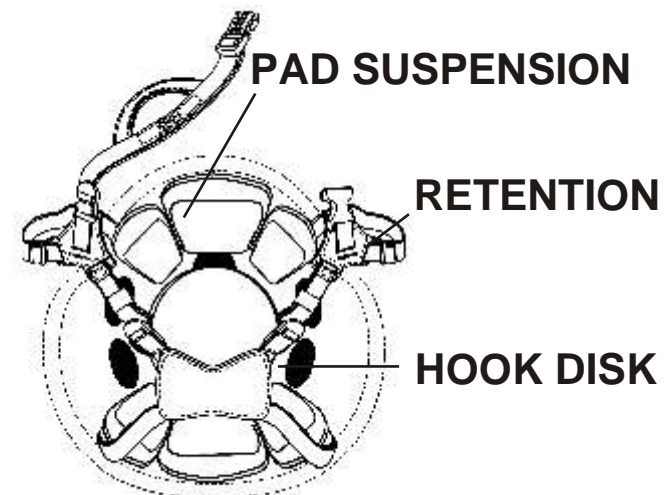


Figure 35. Pad Suspension

### 4.5.1 Removing the Headband/Crown Pad Suspension

 **WARNING**

When you perform Step 1, **discard all six screws and the four side A-nuts**; do not reuse them. They do not provide the same level of protection as the replacement hardware. (However, **keep the center front and center rear A-nuts**; you will use them to plug the center front and center rear holes.)

- (1) Using a ¼" flat-tip screwdriver, remove the six screws (shown in Figure 36) and A-nuts attaching the headband/crown pad suspension and retention to the helmet shell.
- (2) Remove the headband/crown pad suspension and retention from the helmet.

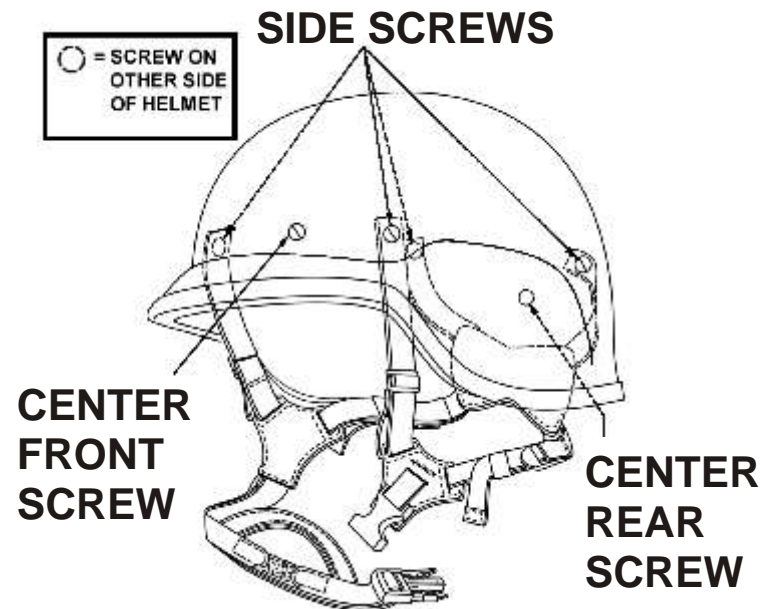


Figure 36. Hardware Locations

### 4.5.2 Cleaning the Inside of the Helmet

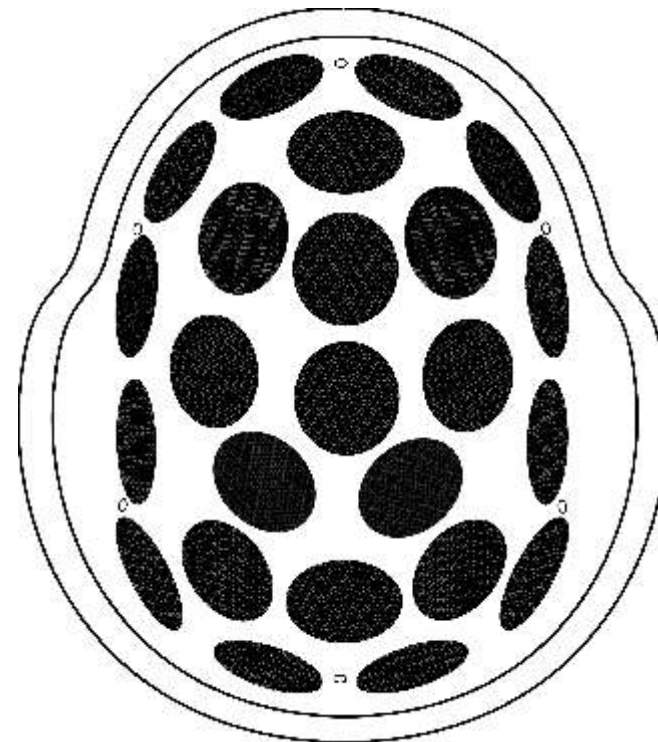
- (1) Clean the inside of the helmet with isopropyl alcohol (**Item 2**, Consumables List).
- (2) Allow the helmet to air-dry.

### 4.5.3 Installing Hook Disks

Press the new hook disks (**Item 4**, NSN List) firmly to the inside of the helmet shell. Space the disks as evenly as possible. Do not cover the two ear sections or the six screw holes.

Figure 37 shows a typical disk arrangement for size Medium. Use the correct number of disks for your helmet size as follows:

<b>X-Small:</b>	<b>22</b>
<b>Small:</b>	<b>23</b>
<b>Medium:</b>	<b>24</b>
<b>Large:</b>	<b>27</b>
<b>X-Large:</b>	<b>32</b>
<b>XX-Large</b>	<b>35</b>



**Figure 37. Hook Disks Installed in Helmet (Typical Arrangement for Size Medium)**

#### 4.5.4 Plugging Front and Rear Holes in Helmet

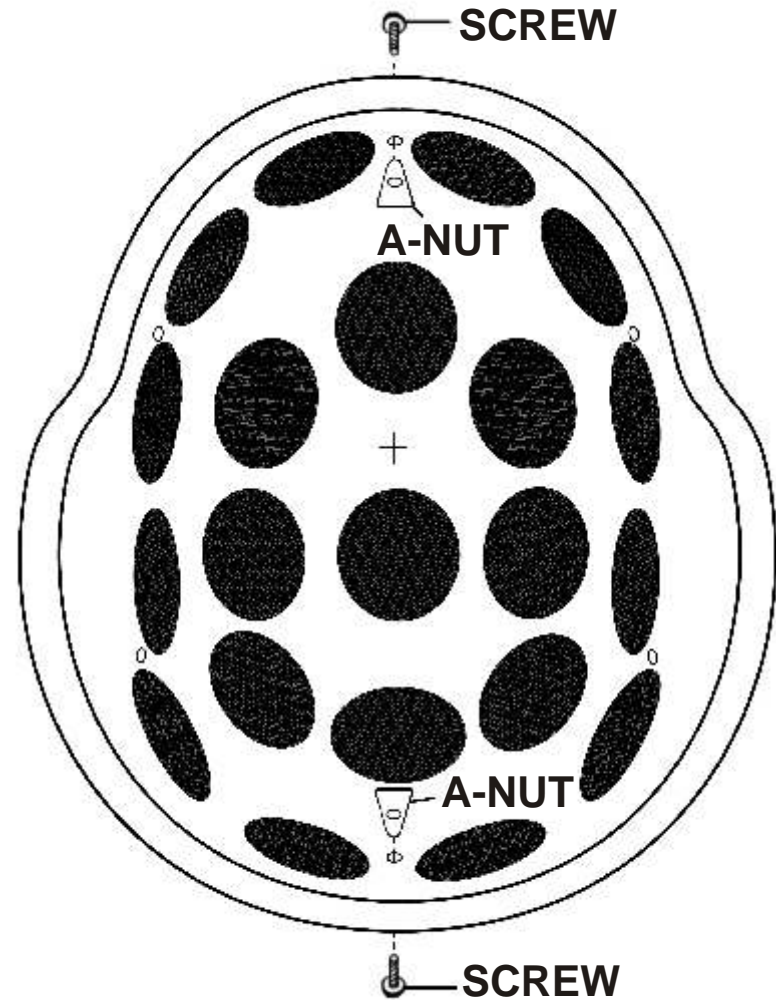
### **WARNING**

Use only the screws and A-nuts described below.

For the wearer's safety, ensure that the screws **do not** protrude through the A-nuts when installed.

Referring to Figure 38, do the following:

- (1) Install a screw (**Item 7**, NSN List) and an A-nut (**Item 8**, NSN List) into the center front hole of the helmet shell.
- (2) Install a screw (**Item 7**, NSN List) and an A-nut (**Item 8**, NSN List) into the center rear hole in the helmet shell.



**Figure 38. Holes to Be Plugged**



### 4.5.5 Installing New Retention

- (1) Position the retention assembly (**Item 6**, NSN List) in the helmet, ensuring that the nape pad is in the rear.

#### NOTE

Before installing screws, apply a small amount of thread-locking adhesive (**Item 1**, Consumable Items List) to the threads of each screw.

- (2) Refer to Figure 39. At each of the four attachment points, do the following:
  - a. Position the retention assembly (**Item 5**, NSN List) against the inside of the helmet.
  - b. Install a conic nut (**Item 10**, NSN List) into the hole in the retention assembly. Ensure that the slotted end of the conic nut faces inward.
  - c. On the outside of the helmet, install and tighten a screw (**Item 9**, NSN List) into the conic nut.

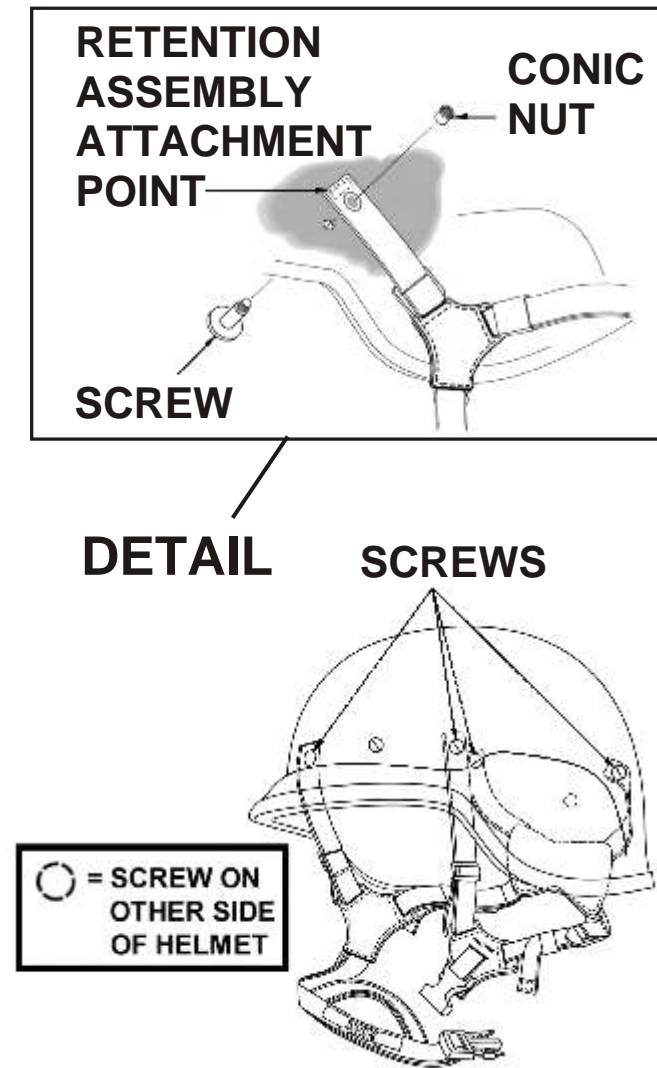
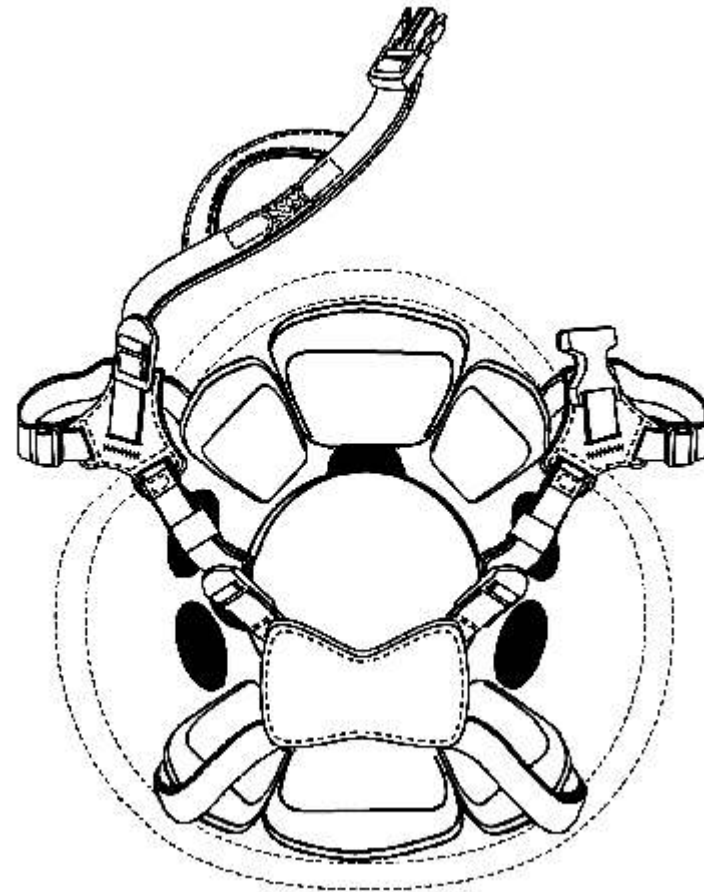


Figure 39. Attachment Points

### **4.5.6 Installing Pad Suspension**

- (1) Press the pads (**Item 2 or 3**, NSN List) against the hook disks in the arrangement shown in Figure 40. This is the standard seven-pad configuration.
- (2) Proceed to Paragraphs 3.3 through 3.4 to check the fit of the helmet and make any necessary adjustments.



**Figure 40. Standard Seven-Pad Configuration**

**5. NATIONAL STOCK NUMBERS (NSN) LIST**

<b>ITEM NUMBER</b>	<b>DESCRIPTION</b>	<b>SIZE</b>	<b>NSN</b>
1	Lightweight Helmet	X-Small	8470-01-560-2866
		Small	8470-01-560-3267
		Medium	8470-01-560-3076
		Large	8470-01-560-3270
		X-Large	8470-01-560-3271
		XX-Large	8470-01-560-3272
2	Pad Set, ¾ inch	All sizes	8470-01-546-9420
3	Pad Set, 1 inch (¾ inch crown)	All sizes	8470-01-476-5648
4	Hook Disk	All sizes	8470-01-506-6742
5	Retention Assembly	X-Small, Small	8470-01-560-3033
		Medium, Large	8470-01-560-3043
		X-Large	8470-01-560-3061
		XX-Large	8470-01-560-3072

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## NSN LIST (Continued)

ITEM NUMBER	DESCRIPTION	SIZE	NSN
6	Chinstrap	All Sizes	8470-01-560-3549
7	Screw (center front and center rear)	All Sizes	8470-01-494-5989
8	A-nut (center front and center rear)	All Sizes	8470-01-494-5990
9	Shoulder Screw (retention)	All Sizes	8470-01-551-2480
10	Conic Nut (retention)	All Sizes	8470-01-541-9320
11	Helmet Shell	X-Small	TBD
		Small	TBD
		Medium	TBD
		Large	TBD
		X-Large	TBD
		XX-Large	TBD

**NSN LIST (Continued)**

<b>ITEM NUMBER</b>	<b>DESCRIPTION</b>	<b>SIZE</b>	<b>NSN</b>
12	Helmet Cover	X-Small, Small	8415-01-549-4944
		Medium, Large	8415-01-549-4946
		X-Large	8415-01-549-4948
		XX-Large	TBD
13	Nape Protection Pad (NAPP), Coyote Brown 498	All Sizes	8470-01-554-6751

**6. CONSUMABLE ITEMS LIST**

<b>ITEM NUMBER</b>	<b>DESCRIPTION</b>
1	Thread-locking Adhesive (local purchase; Loctite 222MS recommended)
2	Isopropyl Alcohol (local purchase)



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TP0187-17

FEBRUARY 2008