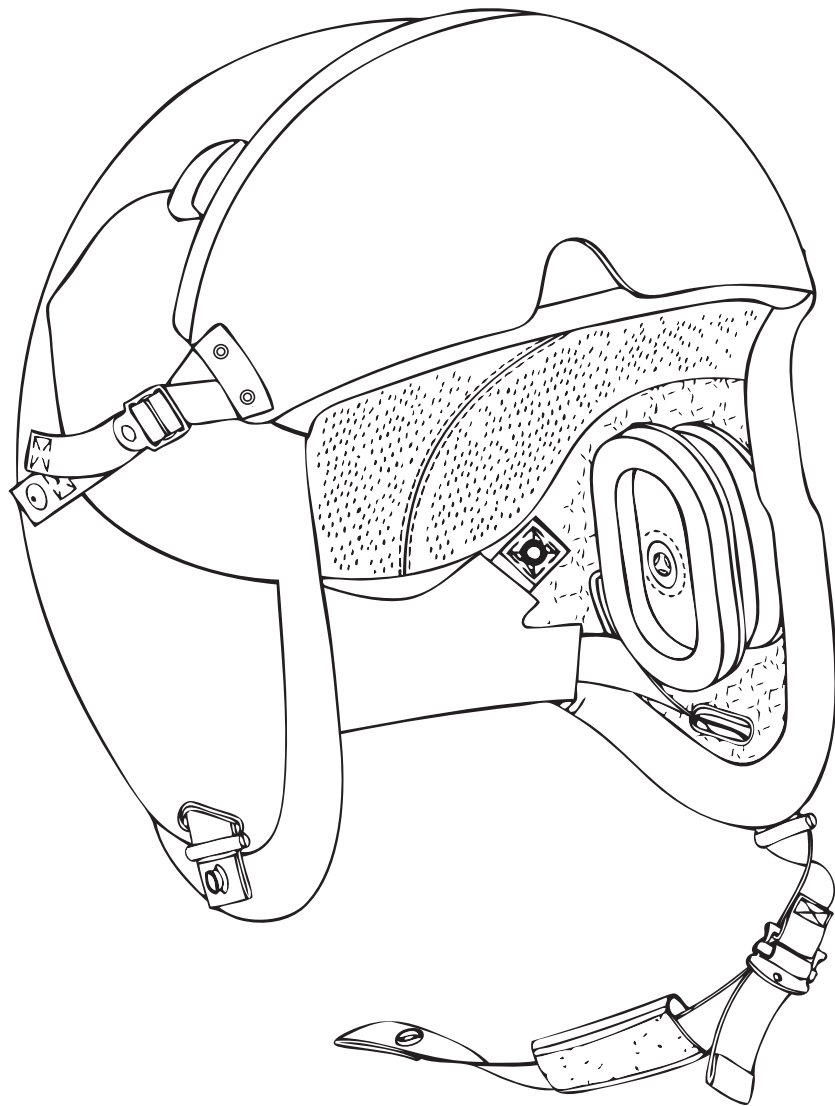


**Operation and Maintenance Instructions  
with Illustrated Parts Breakdown**

**Lightweight HGU-55/P  
Helmet Assembly**





** WARNING**

When you replace components or install additional components on Gentex products, always use genuine factory-new Gentex parts. This will ensure a correct fit and maintain the safety of the product. Use of non-Gentex parts (salvage, refurbished, etc.) for replacement or additional installation will void any product warranty and may compromise the safety of the user.

** WARNING**

Proper fitting, operation, and maintenance of the helmet is imperative for the safety of the user.

Before you use or maintain the helmet, read this entire manual thoroughly. Follow all Warnings and Cautions precisely.



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## CHAPTER 1: INTRODUCTION AND GENERAL INFORMATION

### 1-1. GENERAL

This chapter provides a description of the HGU-55/P Helmet. It also includes lists of the equipment, tools, and materials needed to maintain the helmet.

### 1-2. HELMET DESCRIPTION

The HGU-55/P Helmet (**Figure 1-1**) provides basic head protection, sound attenuation, and communications for aircrew personnel. The helmet features a snap-on visor assembly that provides facial protection to users from windblast, high light intensity, spall resulting from canopy or wind screen failure, and particles arising from ballistic fragmentation.

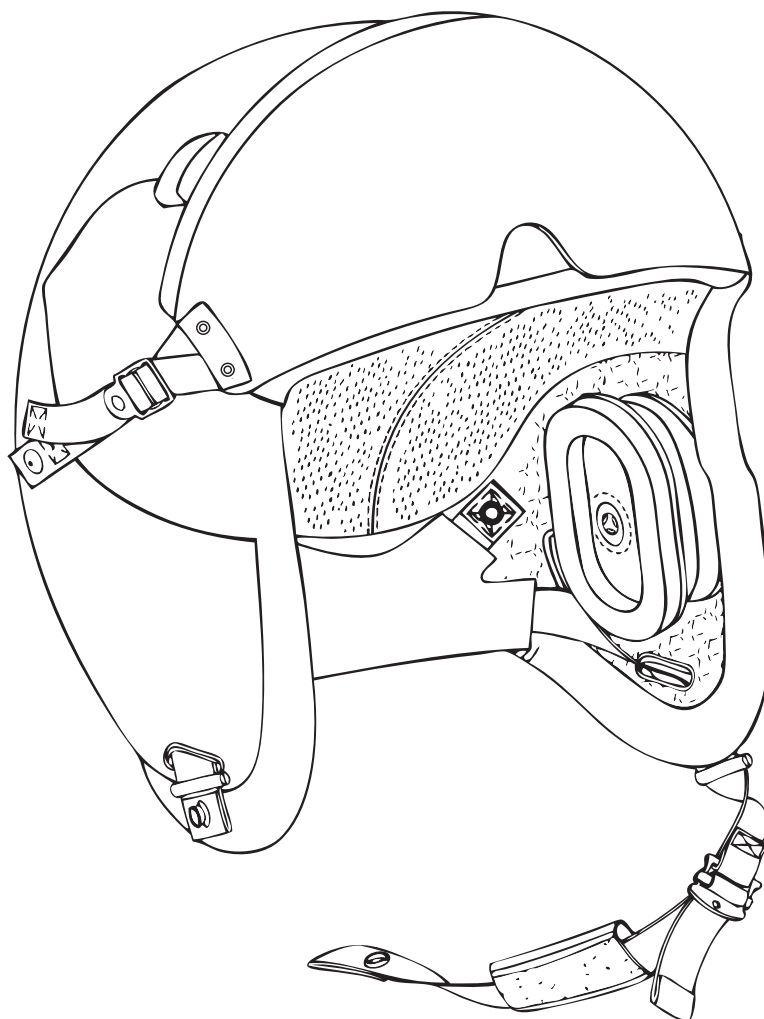


Figure 1-1. HGU-55/P Helmet

### 1-3. HELMET COMPONENTS

The helmet includes the following components, shown in **Figure 1-2**:

**Helmet Shell.** The helmet shell is intended to provide head protection during in-flight buffeting and emergencies such as ejection, bailout, or crash landings. It has a fitted leather **edgeroll**. **Leather buffers** prevent the visor from scratching the helmet shell. **Pile fastener** inside the shell holds the earcups in place. Portions of the pile fastener are left detached to allow installation of the oxygen mask bayonet receivers.

**Energy-Absorbing Liner.** The rigid polystyrene energy-absorbing liner absorbs and reduces impact forces. The liner is held snugly to the inside of the helmet shell by the edgeroll.

**XLiner® or Thermoplastic Liner (TPL®).** The helmet comes with a choice of the XLiner or the TPL. The **XLiner** provides a close fit, improved comfort, ease of adjustment, and simplified installation. It is constructed of anti-microbial, anti-static fabric that also reduces heat buildup inside the helmet. The preformed **TPL** consists of a thermoplastic **layer assembly** (which can be heated and custom-fitted if necessary) and a removable, washable, ventilated **cloth cover**. (An optional Super Comfort Liner, or **SCL™**, is also available; see Page 56 for details.)

**Integrated Chin/Nape Assembly.** The integrated chin/nape assembly, when properly adjusted, stabilizes the helmet during routine flight, bailout, and other high-stress conditions. Tightening the **chin strap** also tightens the fit of the **nape pad**. Metal **clamps** help keep the adjusted chin strap in place.

**Headset.** The headset allows the aircrew member to communicate both inside and outside the aircraft. It also helps protect the ears from hearing loss due to long-term exposure to noise. Included are two **earcups** (for lateral impact protection and sound attenuation), two 19-ohm H-143/AIC **earphones**, and a CX-4708A/AIC **cable**. The earphones are housed inside the earcups and are connected to the cable. A **jack holder** fastens the cable to the outside of the helmet.

**Visors.** Each helmet includes two snap-on visors (one clear and one sunshade) and a visor cover. Helmet-visor configurations are as follows:

- HGU-55/P helmet with **MBU-12/P visors**:  
81D5330-7 (**Medium**), 81D5330-8 (**Large**), or 81D5330-9 (**X-Large**)
- HGU-55/P helmet with **high-speed visors**:  
81D5330-13 (**Medium**), 81D5330-14 (**Large**), or 81D5330-15 (**X-Large**)
- HGU-55/P helmet with MBU-20/P visors:  
81D5330-16 (**Medium**), 81D5330-17 (**Large**), or 81D5330-18 (**X-Large**)

**Bayonet Receiver Kits.** For attachment of the oxygen mask, there are two types of bayonet receiver kits. The **standard bayonet receiver kit** is provided with all helmets. The **anti-snag receiver spacer kit** is provided with helmet part numbers 81D5330-13, 81D5330-14, and 81D5330-15 and includes components to prevent snagging on the bayonet receivers; it is used with the bayonet receivers and backing plates from the standard bayonet receiver kit. Both types of kits include all attaching hardware. The receivers are custom-fitted to each aircrew member. (Other types of bayonet receivers are also available; see Page 59 for details.)

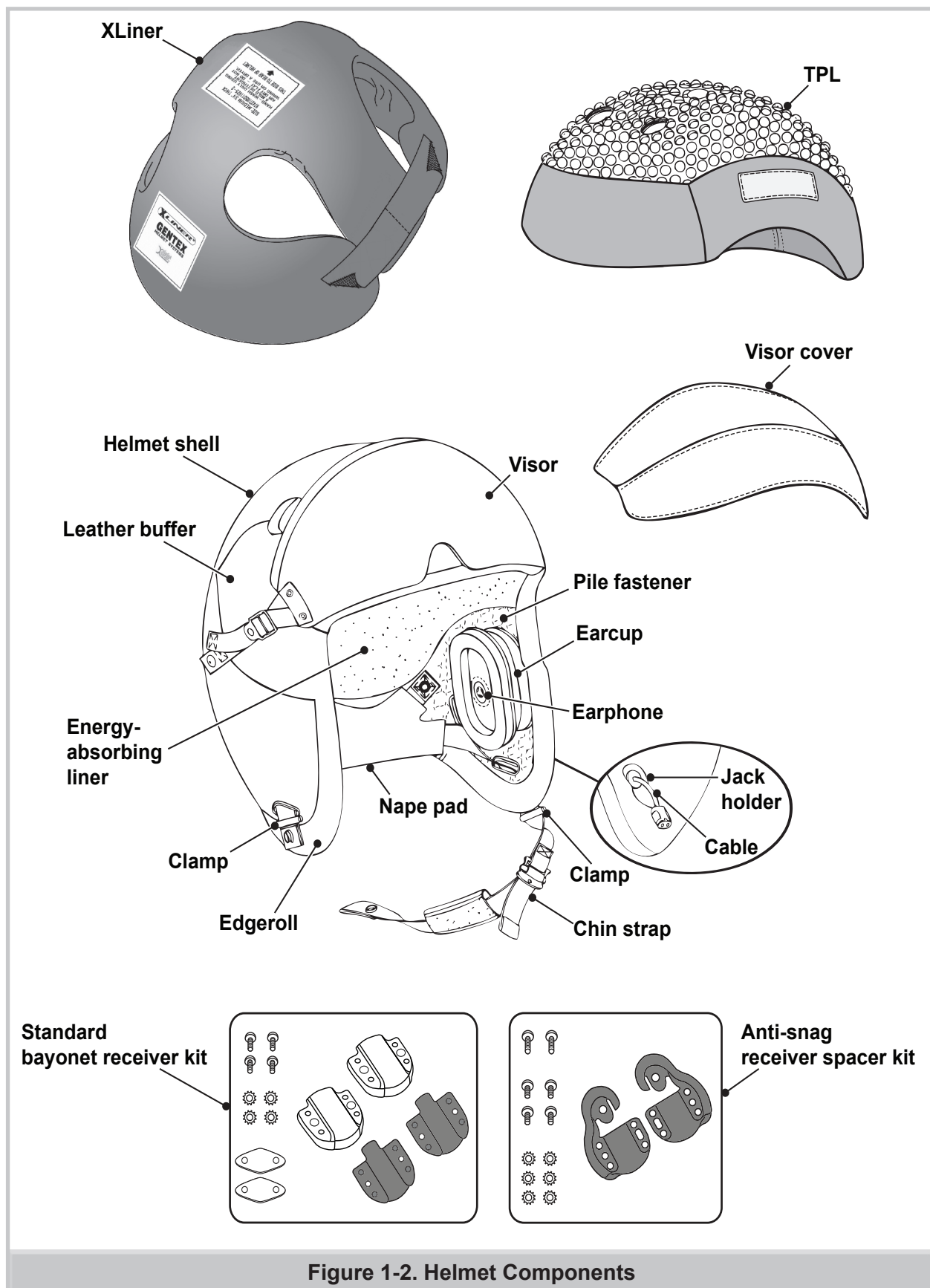


Figure 1-2. Helmet Components

## 1-4. EQUIPMENT, TOOLS, AND MATERIALS NEEDED

This section provides information about the equipment, tools, and consumable materials needed for helmet preparation and maintenance. **Table 1-1** lists the necessary equipment. **Table 1-2** lists the required tools. **Table 1-3** lists the consumable materials used in the preparation and maintenance of the helmet.

**Table 1-1. Equipment**

ITEM	PURPOSE
Life Support Integrated Tester (LSIT-1/A), G006-1001-01 (6695-01-449-4690)	To test the helmet/oxygen mask fit and the headset/oxygen mask communications
MQ-1/MQ1A tester (6695-01-097-0441)	To test the headset/oxygen mask communications
DMH-1 tester (6625-01-251-8705)	To check communication equipment for shorts or open circuits; to isolate problem components. Instructions provided with each tester.

**Table 1-2. Tools**

ITEM	PURPOSE
Caliper	To measure head length, width, and height for determining helmet size; may be locally manufactured from sheet aluminum, plastic, or cardboard
Ruler: standard, calibrated in inches to tenths, or metric	To obtain the dimensions of the caliper measurements for determining helmet size
Torque screwdriver	To adjust screws to proper tightness as needed
Drill with #25 (5/32") drill bit	To drill holes in the helmet shell for the bayonet receiver hardware
Utility knife	To make X-shaped openings in the pile fasteners inside the helmet for access to bayonet receiver hardware
Jeweler's screwdriver or 1/32 hex wrench	To loosen and tighten earphone set screws during maintenance
Thin, flexible metal spatula	To remove energy-absorbing liner during maintenance
Flat-tip and cross-tip screwdrivers	To remove and attach various types of hardware

*(Continued on next page)*

**Table 1-3. Consumable Materials**

ITEM	PURPOSE
Plastic sheeting	To make it easier to position the earcups during the helmet fit check
Pencil	To mark the helmet shell for installation of the bayonet receivers
Adhesive, polychloroprene (MIL-A-5540, Class 3 or equivalent)	To attach the loose portion of the helmet pile fasteners after the bayonet receivers are installed
<ul style="list-style-type: none"> <li>• Clean, lint free cloths</li> <li>• Chamois (Optional)</li> <li>• Sponge</li> <li>• Mild detergent</li> <li>• Soft scrubbing detergent/cleaner</li> <li>• Saddle soap</li> </ul>	To clean various helmet components
Isopropyl alcohol (70 percent solution)	To clean the visor
Thread-locking adhesive (MIL-S-22473, Grade C or equivalent)	To apply to bayonet receiver screws during installation or replacement
Aliphatic naphtha	To clean the helmet shell or bayonet receivers in preparation for painting
<ul style="list-style-type: none"> <li>• Paint brush</li> <li>• Polyurethane paint, lusterless gray (NSN 8010-01-167-1139)</li> <li>• 320 grit sandpaper</li> <li>• Epoxy filler putty (NSN 8040-00-753-4800)</li> <li>• Putty knife, squeegee, or other applicator suitable for epoxy filler putty</li> <li>• Epoxy primer paint (MIL-P-23377)</li> </ul>	To paint the helmet and/or bayonet receivers
<ul style="list-style-type: none"> <li>• Respirator (NSN 4240-01-108-4172) with filter NSN 4240-115-0590 (or equivalent)</li> <li>• Neoprene gloves</li> <li>• Safety glasses or goggles</li> </ul>	To wear for protection during the painting process



## CHAPTER 2: HELMET PREPARATION AND OPERATION

### 2-1. GENERAL

This chapter includes instructions for the tasks required to prepare the helmet for use. These tasks include helmet fitting, familiarizing the aircrew member with the operation of the helmet, and installing bayonet receivers. There is also a summary of operational tasks at the end of the chapter.

### 2-2. HELMET FITTING

#### **WARNING**

**Proper fitting of the helmet is imperative for the safety of the aircrew member. An improperly fitted helmet can become unstable (failing to provide bump protection), or it can be lost during a high-speed ejection (causing injury to the aircrew member). Ensure that the helmet is properly fitted to the aircrew member.**

A properly fitted helmet is much more likely to remain on the head during a high-speed ejection, minimizing the risk of injury. The helmet should provide protection and stability in emergency ejections up to 600 knots indicated airspeed (KIAS). A properly fitted helmet also aids in maintaining the stability of helmet-mounted devices such as night vision goggles. In addition, a proper fit ensures a comfortable helmet (no pressure points) and is less distracting during high-G maneuvers.

This section provides instructions for the tasks involved in ensuring a proper helmet fit. These tasks include:

- **2-2.1 Determining Helmet Size** (Page 8).
- **2-2.2 Fitting the TPL, SCL, or XLiner** (Page 9)
- **2-2.3 Checking Helmet Fit and Operation** (Page 10).

### 2-2.1. Determining Helmet Size

To determine helmet size, you measure the aircrew member's **head length** and **head width**. After you make these measurements, you then compare the measurements to established size data and **select the helmet size** accordingly.

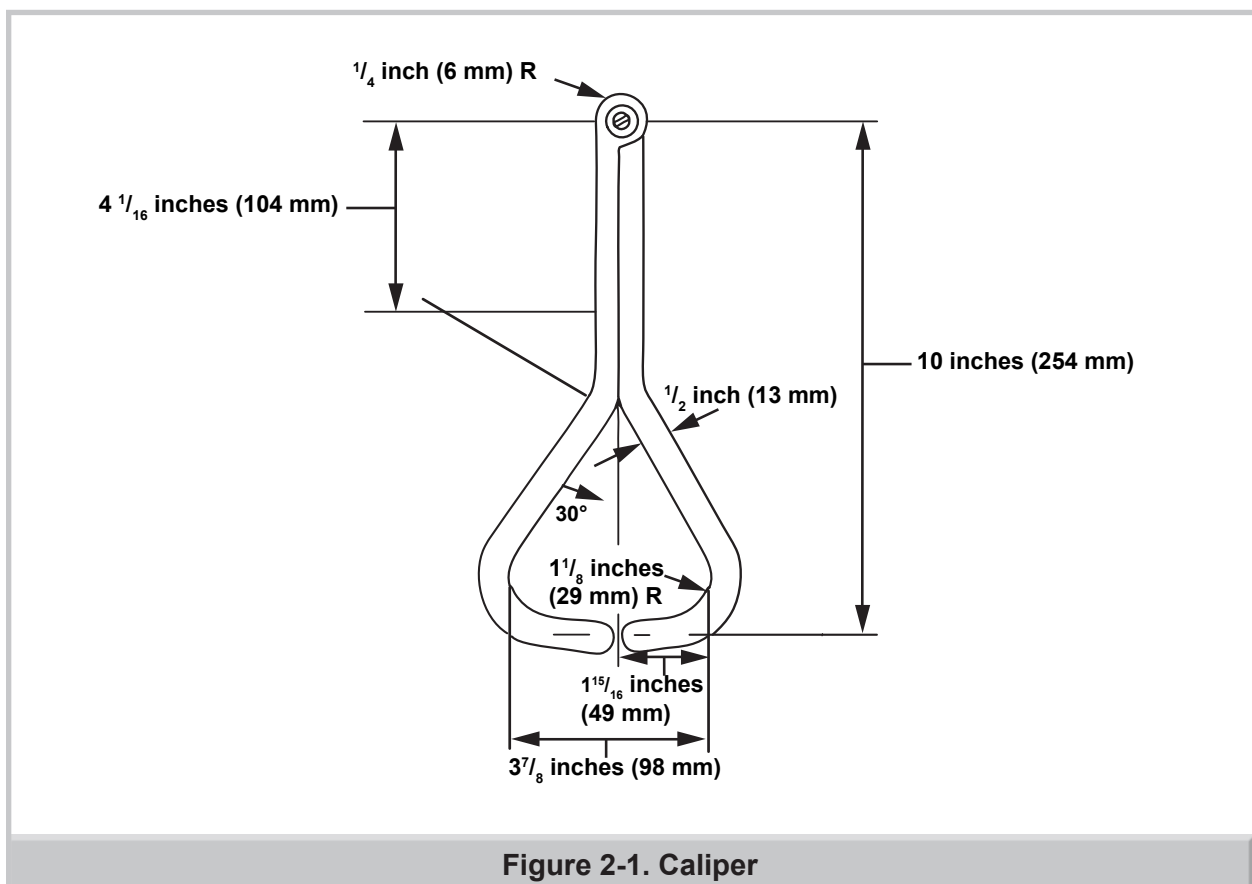
#### **WARNING**

Proper fitting of the helmet is imperative for the safety of the aircrew member. An improperly fitted helmet can become unstable (failing to provide bump protection), or it can be lost during a high-speed ejection (causing injury to the aircrew member). Ensure that the helmet is properly fitted to the aircrew member.

#### *Tools/Equipment/Materials Needed*

- **Caliper (Figure 2-1)**; used to measure head length and width; may be locally manufactured from sheet aluminum, plastic, or cardboard
- **Ruler** calibrated in inches to tenths (or metric); used to obtain the dimensions of the caliper measurements

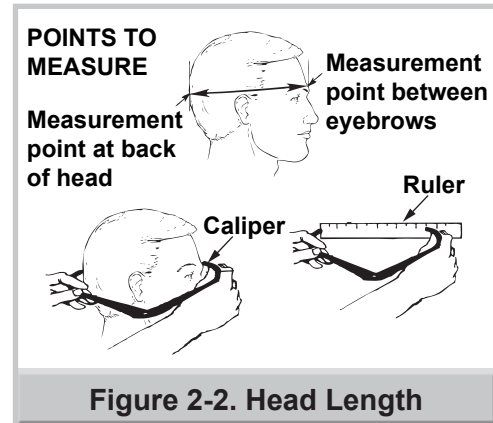
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### Measuring Head Length

Measure the aircrew member's head length as follows:

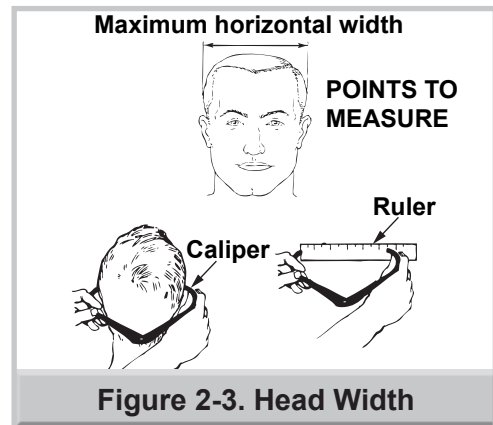
1. Use a caliper and a ruler as shown in **Figure 2-2** to measure the distance (to the nearest .1 inch or 2.5 mm) from the point between the eyebrows to the back of the head. This is the **head length**. Ensure that the caliper touches the skin lightly and does not indent the skin surface.
2. Record the measurement.



### Measuring Head Width

Measure the aircrew member's head width as follows:

1. Use a caliper and a ruler as shown in **Figure 2-3** to measure the maximum horizontal width (to the nearest .1 inch or 2.5 mm) 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.



### Selecting Helmet Size Based on Measurements

Compare the head length and head width measurements to the sizing parameters shown in **Table 2-1**, and select the helmet size.

#### NOTES:

- The dimensions shown in **Table 2-1** are intended as guidelines. At times, the next smaller or larger size may be needed.
- If the measurements fall into different size ranges, select the larger size.

**Table 2-1. Size Data for HGU-55/P**

Head Length, inches (mm)	Maximum Head Width, inches (mm)	Helmet Size
7.2 to 7.8 (183 to 198)	6.2 (157)	Medium
7.7 to 8.3 (195 to 211)	6.5 (165)	Large
8.2 to 8.7 (208 to 221)	6.8 (173)	X-Large

### 2-2.2. Fitting the TPL, SCL, or XLiner

- **TPL:** Refer to TP0008.
- **SCL:** Refer to TP0236.
- **XLiner:** Refer to TP0265.

### 2-2.3. Checking Helmet Fit and Operation

Once you have determined the correct helmet size and custom-fitted the TPL, you must ensure that the helmet is properly fitted and adjusted to the aircrew member, as well as familiarize the aircrew member with proper helmet operation.

#### **WARNING**

**Proper fitting of the helmet is imperative for the safety of the aircrew member. An improperly fitted helmet can become unstable (failing to provide bump protection), or it can be lost during a high-speed ejection (causing injury to the aircrew member). Ensure that the helmet is properly fitted to the aircrew member.**

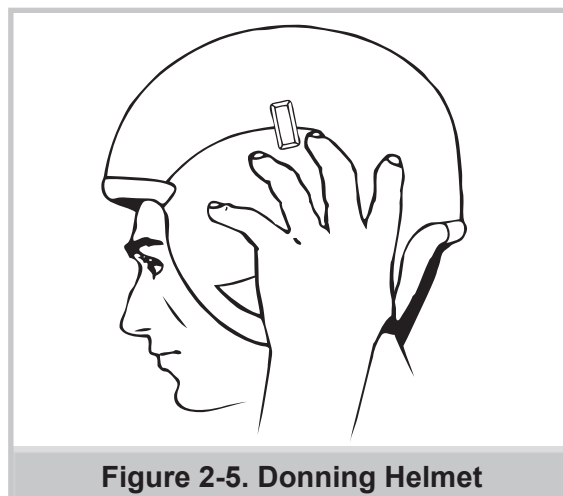
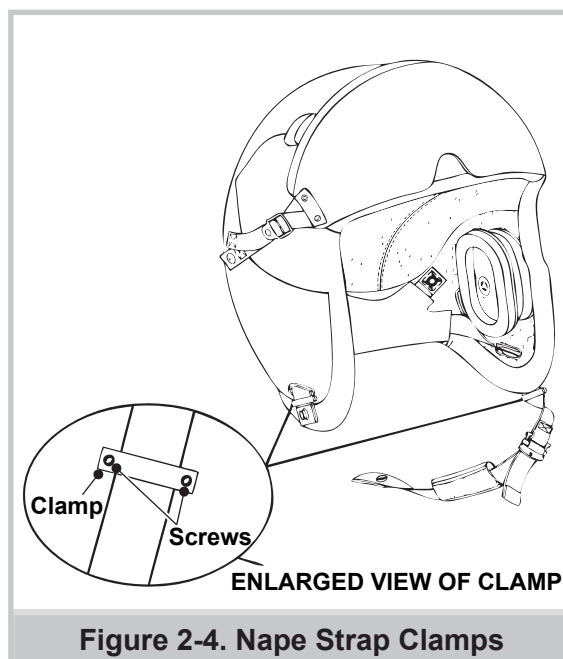
#### *Tools/Equipment/Materials Needed*

- **Small cross-tip screwdriver;** used to adjust the attaching hardware on the helmet
- **Plastic sheeting;** used to make it easier to position the earcups as the aircrew member wears the helmet
- **Torque screwdriver;** used to adjust the nape strap clamp screws to the proper tightness

#### *Procedure*

1. Referring to **Figure 2-4**, loosen (do not remove) the two screws on each nape strap clamp. Move both clamps down as far as possible on the straps to provide slack during the fitting process.
2. Temporarily insert a piece of paper or plastic between each earcup and the pile faster inside the helmet (to make it easier to reposition the earcups).
3. Holding the earcups in place inside the helmet, assist the pilot in donning the helmet (**Figure 2-5**).
4. Reposition the earcups until the ears are centered within the earcups.

*(Continued on next page)*



5. Have the pilot fasten and adjust the chin strap as follows (**Figure 2-6**):
  - a. Snap the chin strap.
  - b. Adjust the end of the chin strap so that the nape pad fits snugly against the back of the head.
  - c. Center the chin pad under the chin. Attach the end of the chin strap to the chin pad.
6. Referring to **Figure 2-7**, check the height from the edge of the helmet to the aircrew member's eye pupils. This height should be approximately 1½ inch  $\pm$  ¼ inch (38 mm  $\pm$  6 mm) for maximum field of view.

If the height is correct, go to Step 11 (next page).

If the height is not correct, perform Step 7.

7. Attempt to adjust the height by rotating the helmet forward or rearward as applicable. Readjust the chin strap. Perform Step 8.
8. Check the height as in Step 6.

If the height is correct, go to Step 11 (next page).

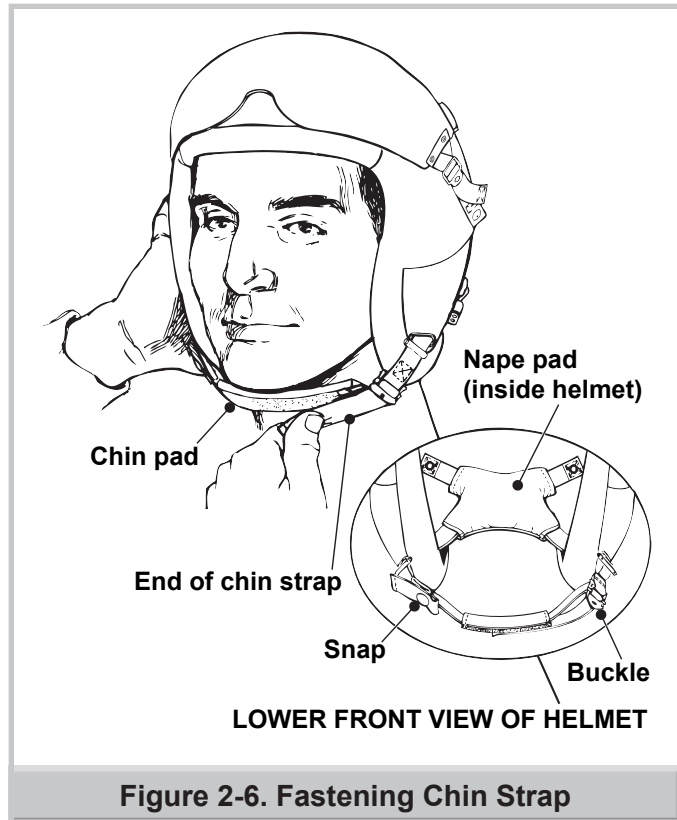
If the height is not correct, perform Steps 9 and 10.

9. Re-fit the TPL, SCL, or XLiner (Paragraph 2-2.2). Then perform Step 10.
10. Check the height of the helmet as in Step 6.

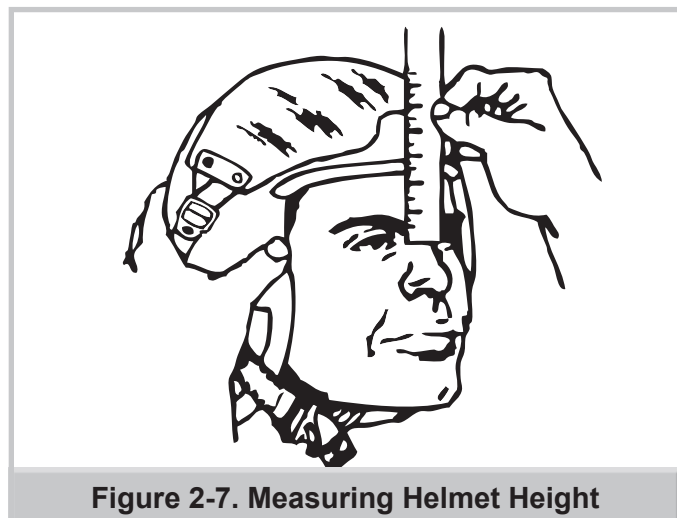
If the height is correct, go to Step 11 (next page).

If the height is not correct, obtain a helmet of a different size and return to Step 1.

**(Continued on next page)**



**Figure 2-6. Fastening Chin Strap**



**Figure 2-7. Measuring Helmet Height**

11. Confirm that the pilot is comfortable while wearing the helmet.

If the pilot is comfortable, proceed to Step 12.

If the helmet is too tight, or pressure points exist, re-fit the TPL, SCL, or XLiner (Paragraph 2-2.2).

If the helmet is too loose, obtain a smaller-size helmet return to Step 1 (Page 10).

12. Check the compression of the earseals against the pilot's ears. For best communication, hearing protection, and comfort, the earseals should be compressed to approximately half of their original thickness.

If the earseals are sufficiently compressed, continue to Step 14.

If the earseals are not sufficiently compressed, go to Step 13.

13. Have the pilot remove the helmet. Referring to **Figure 2-8**, attach one or more fitting pads to the back of each earcup. Then continue to Step 14.

**NOTE:** You can install the fitting pads whole or cut them to any size or shape necessary to achieve the best fit.

14. Check the fit of the nape pad. It should fit as snugly as possible without causing discomfort. Adjust the fit as necessary by tightening the chin strap.

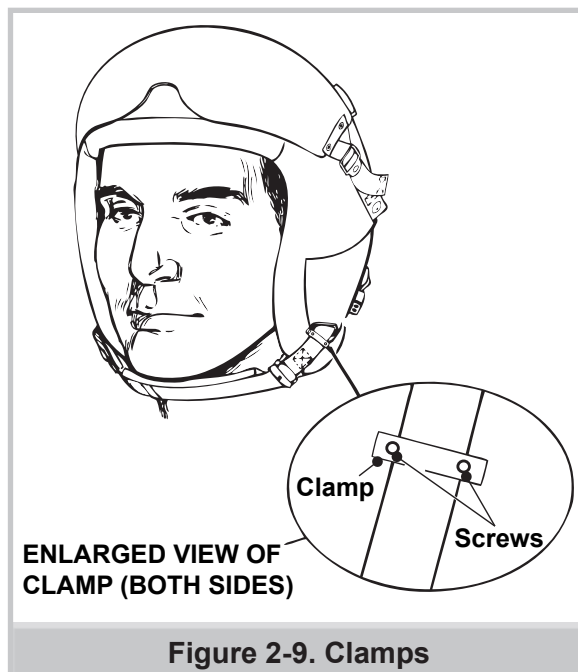
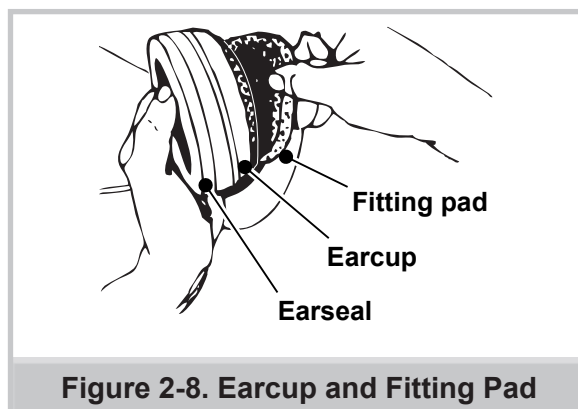
15. Ensure that the pilot is comfortable.

**CAUTION**

When you perform Step 16, do not tighten the screws too much, or the clamps will crack.

16. With the nape pad properly adjusted, move both clamps (**Figure 2-9**) up the straps as far as possible, and tighten the screws on the clamps to a torque value of  $22 \pm 2$  inch-ounces (in.oz), or  $15.5 \pm 1$  centi Newton meters (cNm).

(Continued on next page)



17. Check the overall fit; the helmet should be snug, yet comfortable. Attempt to rock the helmet back and forth on the head; the helmet should not move.

If the fit is correct, go to Step 18.

If the helmet moves, it may be too loose. Obtain a smaller size and return to Step 1 (Page 10).

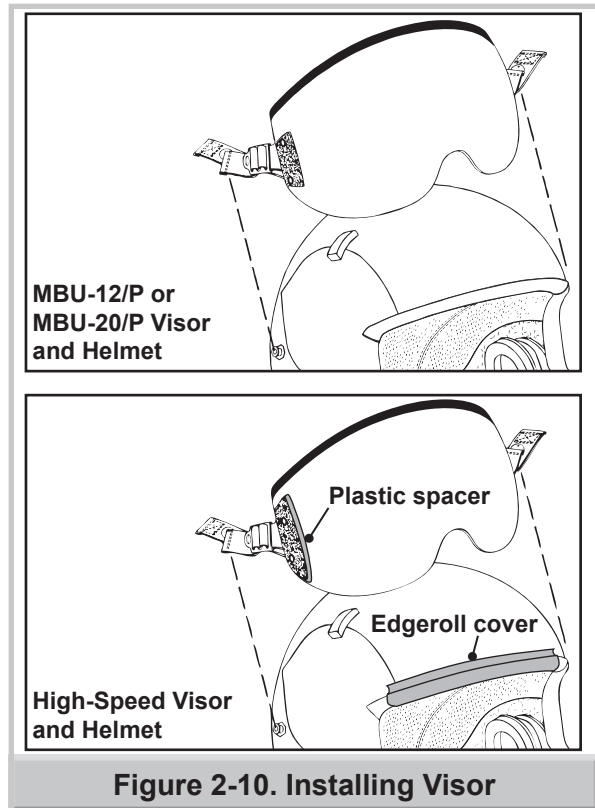
18. If not already done, snap the visor to the helmet (**Figure 2-10**). Fasten each snap from front to back. Adjust the visor for a snug fit to the helmet.

### **WARNING**

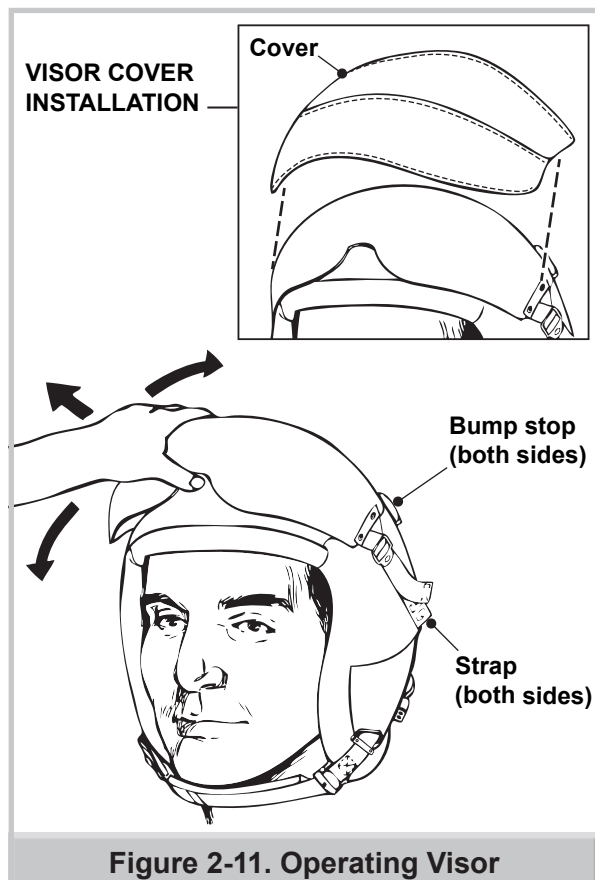
If the pilot wears a high-speed helmet (which includes an installed edgeroll cover), use **ONLY** a high-speed visor (which includes plastic spacers near the straps); see Figure 2-10. Use of any other visor type will not provide 600-knot capability and may cause a loss of the visor or the helmet during ejection.

19. Referring to **Figure 2-11**, operate the visor as follows:
  - a. Grasp the visor in the center and pull it slightly away from the helmet.
  - b. Move the visor up or down. When the visor is up, ensure that its top edge is against the two bump stops.
  - c. Adjust the visor straps to center the visor over the nose. Ensure that the visor is snug enough; it should not slide freely up and down. There should be enough resistance to require pulling the visor away from the helmet to raise or lower it.

**NOTE:** When the visor is up, you can attach the visor cover. Press the hook fasteners on the cover to the pile fastener on the visor.



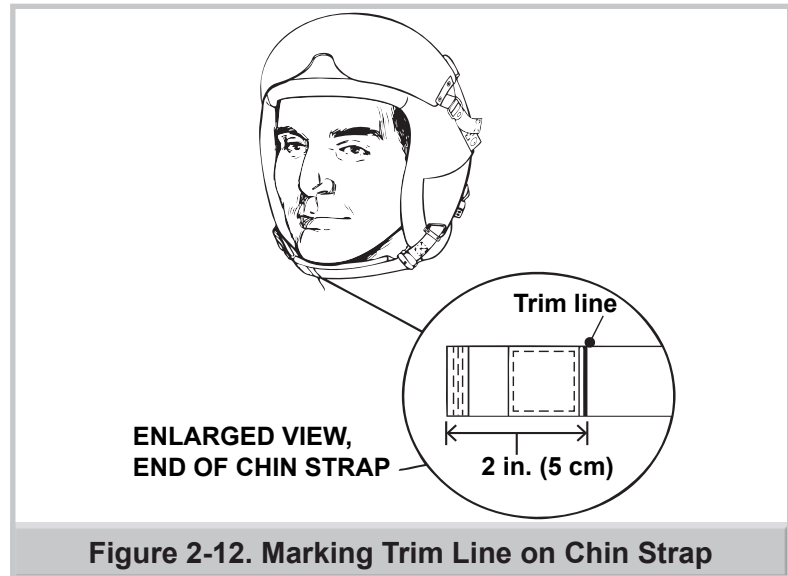
**Figure 2-10. Installing Visor**



**Figure 2-11. Operating Visor**

*(Continued on next page)*

20. With the helmet still on the pilot's head, remove the plastic sheeting from behind the earcups.
21. If the chin strap is too long after it is adjusted, mark a trim line at the end of the chin strap approximately 2 inches (5 cm) from the edge as shown in **Figure 2-12**.



22. If you marked the chin strap (Step 21), trim the chin strap as follows:
  - d. Unsnap the chin strap; have the aircrew member remove the helmet.
  - e. Unlace the other end of the chin strap from the buckle.
  - f. Note the orientation of the chin pad, and remove the chin pad from the chin strap.
  - g. Cut the strap at the trim line.
  - h. Sear the cut edge to prevent the strap from unraveling.
  - i. Fold the cut end of the chin strap under (doubled 1/4 inch, or 6mm) and stitch the fold using thread (waxed black MIL-T-83193), 10 to 12 stitches per inch (2.54 cm).
  - j. Replace the hook fastener (**Figure 2-13**) with 1 inch (2.54 cm) of hook fastener (NSN 8315-01-445-8812) using thread (MIL-T-83193), 10 to 12 stitches per inch (2.54 cm).
  - k. Slide the chin pad onto the chin strap, ensuring that it is oriented correctly.
  - l. Lace the chin strap through the buckle.



## 2-3. BAYONET RECEIVER INSTALLATION

The standard bayonet receiver kit (Paragraph 2-3.1) is included for installation on all helmet configurations. The anti-snag bayonet receiver kit (Paragraph 2-3.2) is included for installation on helmet part numbers **81D5330-13**, **81D5330-14**, and **81D5330-15** and is designed to prevent the helmet bayonet receivers from snagging on objects.

**NOTE:** An optional anodized black bayonet receiver is also available; see Page 59 for details.

### 2-3.1. Installing Standard Bayonet Receivers

The standard bayonet receivers are individually fitted to the aircrew member. Before you install the receivers, you must ensure that the helmet has been properly fitted as described in Paragraphs 2-2.1, 2-2.2, and, 2-2.3. You will also familiarize the aircrew member with mask attachment in this procedure.

#### Tools and Equipment Required

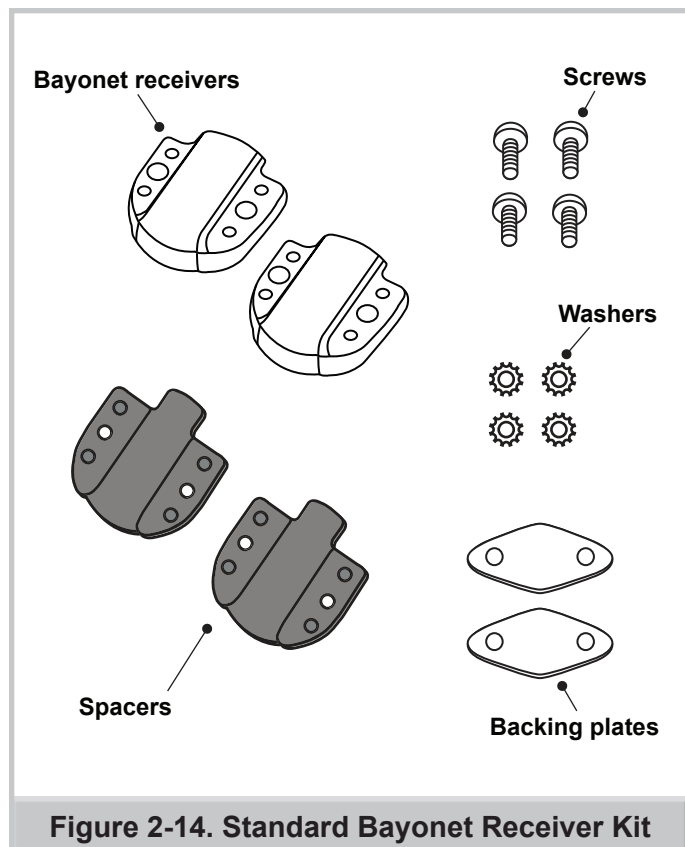
- Pencil
- Drill with #25 (5/32") drill bit
- Small cross-tip screwdriver
- Adhesive, polychloroprene MIL-A-5540, Class 3 or equivalent
- Utility knife
- Standard bayonet receiver kit (**82A5614-10**)

Before you begin this procedure, refer to **Figure 2-14** and ensure that you have the following components of the standard bayonet receiver kit:

- Two bayonet receivers
- Two spacers
- Four screws
- Four lock washers
- Two backing plates

**NOTE:** If the aircrew member has worn the oxygen mask with a helmet other than the one being fitted with receiver assemblies, check the mask straps. New straps may be needed to maintain the helmet offset measured during helmet fitting. This allows the helmet to be positioned correctly on the crewmember's head during bayonet receiver installation.

*(Continued on next page)*



**Figure 2-14. Standard Bayonet Receiver Kit**

## Procedure

Install the bayonet receiver parts on the helmet as follows:

1. Raise the visor; have the aircrew member don the properly fitted helmet.
2. Insert the mask bayonets into the bayonet receivers to the second locking position. Ensure that all straps are fully extended, have equal tension, and flow smoothly from the mask to the facepiece and the bayonets.

### CAUTION

When performing Step 3, do not position the bayonet receivers on top of the edgeroll. Improper function, jamming, or damage to the hardware may result if the bayonet does not lie flat against the helmet shell.

3. Center the oxygen mask on the aircrew member's face. Lower the visor to check the interface between the visor and the mask.
4. With the mask and the helmet symmetrically positioned, place the bayonet receiver on the helmet with the projection facing aft as shown in **Figure 2-15**. Ensure that the numbered side of the receiver faces the helmet shell.
5. Hold the receiver firmly against the helmet. Referring to **Figure 2-16**, trace lightly around the receiver with a pencil. Repeat for the other side.
6. Remove the receivers and the mask from the helmet; have the aircrew member remove the helmet.

(Continued on next page)



Figure 2-15. Positioning Bayonet Receiver



Figure 2-16. Tracing Outline of Bayonet Receiver

7. Referring to **Figure 2-17**, carefully align the receiver within the traced outline and mark the two screw holes for drilling. Repeat for the other side.
8. Referring to **Figure 2-18**, detach the earcups from the pile fasteners, and peel back the pile fasteners.

**WARNING**

When drilling (Step 9), keep your hands away from the drill bit to avoid injury.

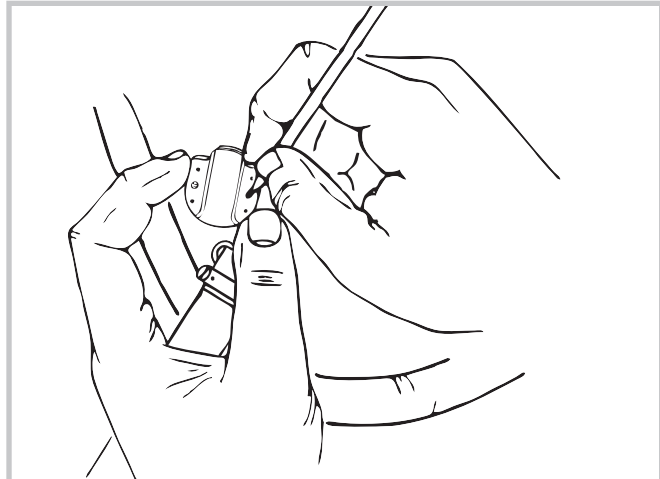
**CAUTION**

When drilling (Step 9), hold the drill perpendicular to the helmet to prevent damage.

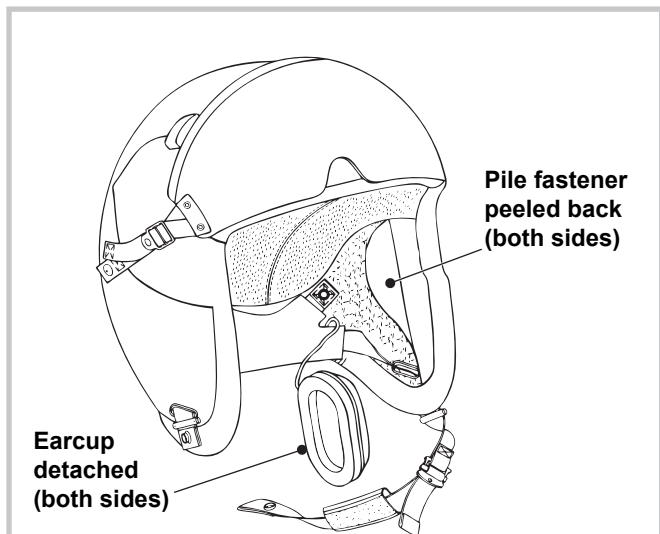
**NOTES:**

- If necessary, peel the edgeroll away in the earcup area to protect it from the drill bit.
  - It is advisable to drill pilot holes, using a #52 (1/16") drill bit, before drilling full-size holes.
9. Ensuring that the pile fastener inside the helmet is not in the drilling area, drill both the right and the left marked hole locations with a #25 drill bit (**Figure 2-19.**)
  10. Carefully remove any frayed fibers resulting from drilling.

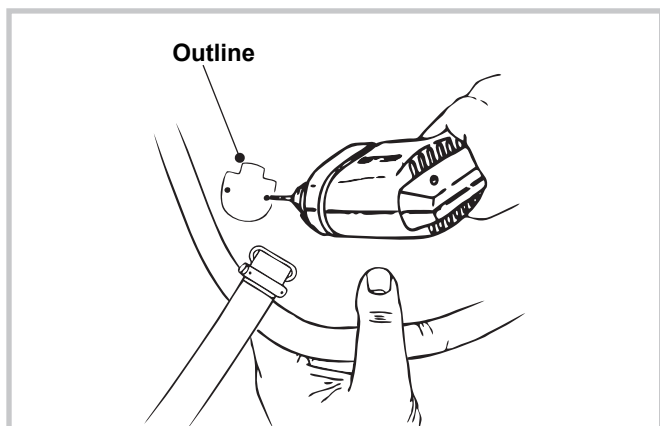
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**Figure 2-17. Marking Hole Locations**



**Figure 2-18. Earcup and Pile Fastener**



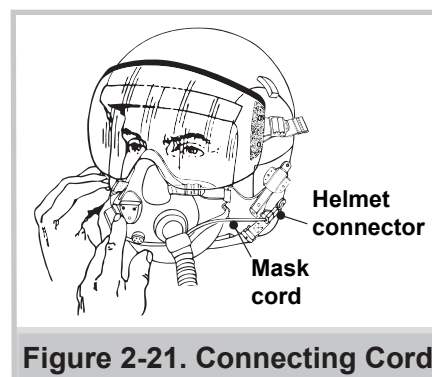
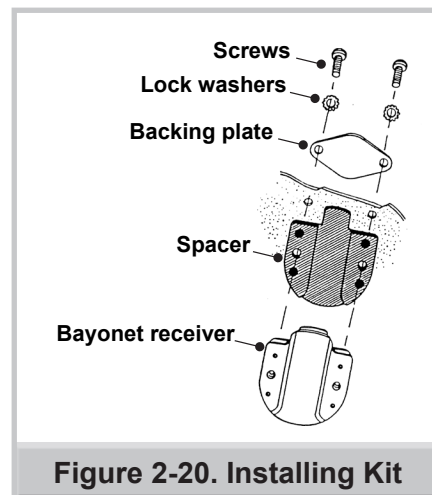
**Figure 2-19. Drilling Holes**

**CAUTION**

In Step 11, do not tighten either screw in the receiver until both screws have been started, or you might cross-thread the receiver assembly.

11. Referring to **Figure 2-20**, do the following:
  - a. Insert the screws through the lock washers and the backing plate in that order.
  - b. On the inside of the helmet, position the backing plate against holes; insert the screws through the holes.
  - c. On the outside of the helmet, position the spacer and the receiver over the screws with the projections pointed toward the helmet rear. Ensure that the numbered side of the receiver faces the helmet. Tighten the screws into the spacer and receiver.
  - d. Repeat Steps a-c on the other side of the helmet.
12. Apply a thin, even coat of polychloroprene adhesive to both the inside surface of the helmet shell earcup areas and the back of the earcup pile fastener material. Do not allow the adhesive to contact the backing plates, the screws, or the retention assembly hardware. Allow the adhesive to dry approximately two minutes or until tacky.
13. Press the earcup pile fastener material firmly against the shell surface. Allow the adhesive to set at least 15 minutes; ideally, you should allow it to set overnight.
14. Use a utility knife to cut an "X" pattern through the pile fastener over each screw head. This will facilitate inspection, tightening, or replacement of the hardware.
15. Reinstall the earcups and the visor.
16. Have the aircrew member don the helmet. Re-check the helmet fit as described in Paragraph 2-2.3 and make any needed adjustments.
17. Have the aircrew member don the mask. Check the mask for proper position and tension in accordance with applicable oxygen mask technical orders. Check the interface between the visor and the mask. Adjust the mask straps as required.
18. Connect the mask cord to the helmet connector (**Figure 2-21**).

**NOTE:** To remove the mask cord from the helmet connector, pull firmly on the cord plug.



### 2-3.2. Installing Anti-Snag Receiver Spacer Kit

The anti-snag receiver spacer kit is intended for installation on helmets that already have the standard bayonet receiver kit installed. Before you install the receivers, you must ensure that the helmet has been properly fitted as described in Paragraphs 2-2.1, 2-2.2, and, 2-2.3; and that the standard bayonet receiver kit has been installed as described in Paragraph 2-3.1. You will also familiarize the aircrew member with mask attachment in this procedure.

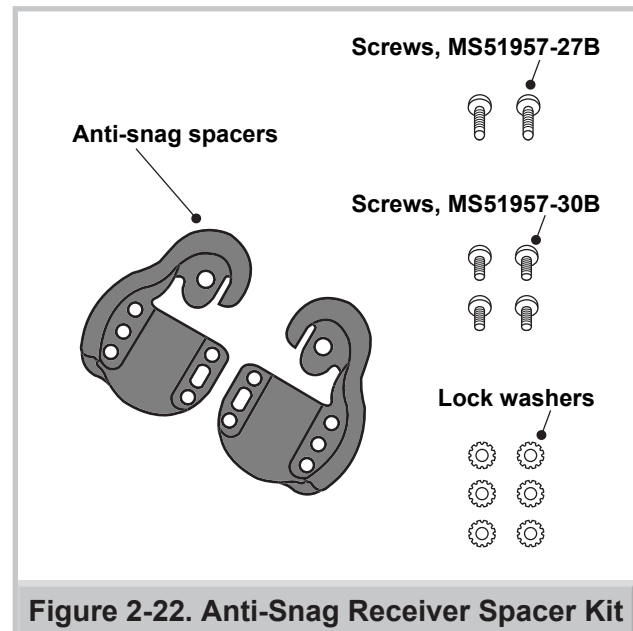
#### Tools and Equipment Required

- Pencil
- Drill with #25 (5/32") drill bit
- Small cross-tip screwdriver
- Adhesive, polychloroprene MIL-A-5540, Class 3 or equivalent
- Utility knife
- Anti-snag bayonet receiver kit (**05A12024-1**)

Before you begin this procedure, refer to **Figure 2-22** and ensure that you have the following components of the anti-snag receiver spacer kit:

- Two anti-snag spacers
- Two 5/16" MS51957-27B screws
- Four 1/2" MS51957-30B screws
- Six lock washers

**NOTE:** If the aircrew member has worn the oxygen mask with a helmet other than the one being fitted with receiver assemblies, check the mask straps. New straps may be needed to maintain the helmet offset measured during helmet fitting. This allows the helmet to be positioned correctly on the aircrew member's head during bayonet receiver installation.



**Figure 2-22. Anti-Snag Receiver Spacer Kit**

#### Procedure

1. Detach both earcups from the pile fasteners inside the helmet. Position the earcups clear of the work area.
2. If the interior screws for the bayonet receivers are not accessible, peel back both pile fasteners from the inside of the helmet to provide access to the screws of the existing bayonet receivers. Position the peeled-back portions clear of the work area.

*(Continued on next page)*

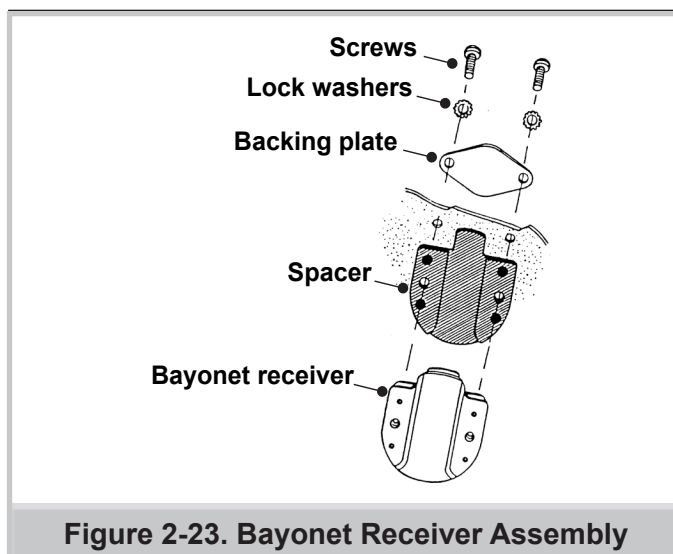
3. Referring to **Figure 2-23**, remove the two screws, the two washers, and the backing plate from the inside of the helmet to detach the existing bayonet receiver assembly and the spacer on one side of the helmet. Discard the spacer, screws, and washers; you will replace them with new ones.
4. Repeat Step 3 for the other side of the helmet.

**NOTE:** Keep the bayonet receivers and backing plates for reinstallation.

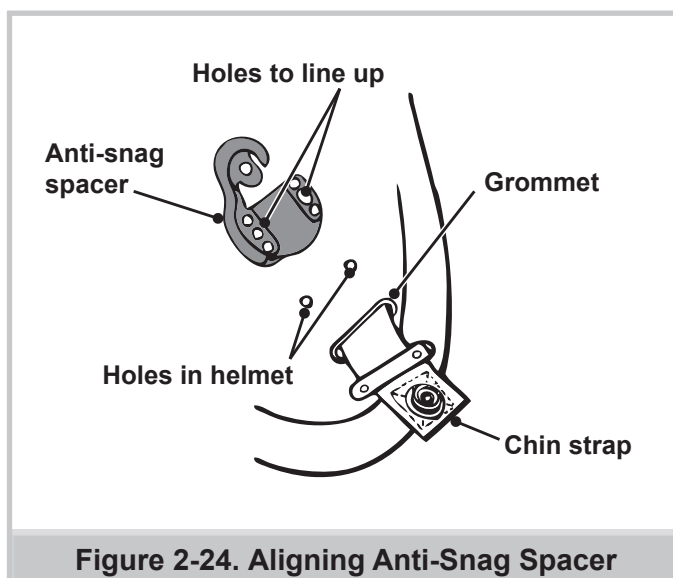
**NOTE:** The kit includes left-hand and right-hand anti-snag spacers. Ensure that you are using the correct spacer for the side of the helmet on which it is being installed. **Figure 2-24** shows the right-hand spacer on the right-hand side of the helmet (as worn).

5. Mark the top spacer hole as follows:
  - a. On one side of the helmet, align the holes of the anti-snag spacer (**Figure 2-24**) over the bayonet receiver mounting holes in the helmet. (If necessary, adjust the angle of the spacer to eliminate interference with the chinstrap or the grommet.)
  - b. Mark the helmet through the top hole in the anti-snag spacer (**Figure 2-25**).
  - c. Repeat Steps a and b to mark the upper hole in the other anti-snag spacer on the other side of the helmet.

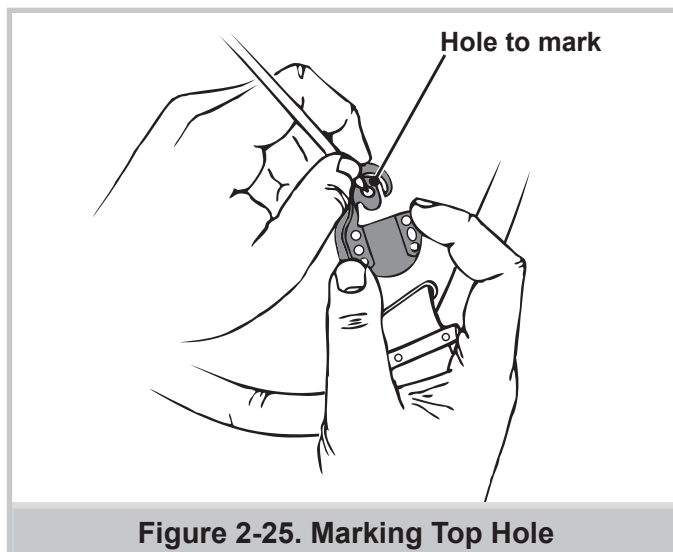
*(Continued on next page)*



**Figure 2-23. Bayonet Receiver Assembly**



**Figure 2-24. Aligning Anti-Snag Spacer**



**Figure 2-25. Marking Top Hole**

# **WARNING**

**When drilling, position your hands away from the drill bit to avoid injury**

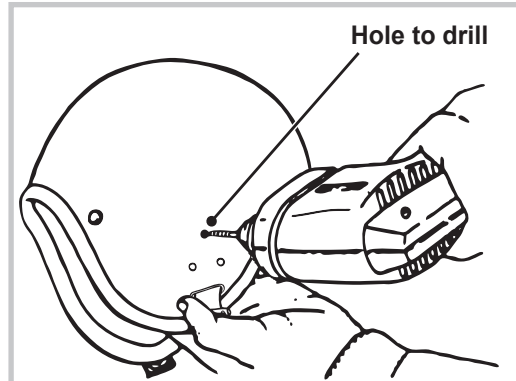
# **CAUTION**

When drilling, hold the drill perpendicular to the helmet to prevent damage.

**NOTE:** Before drilling full-size holes in the helmet shell, it is advisable to drill pilot holes with a #52 (0.0625") drill bit.

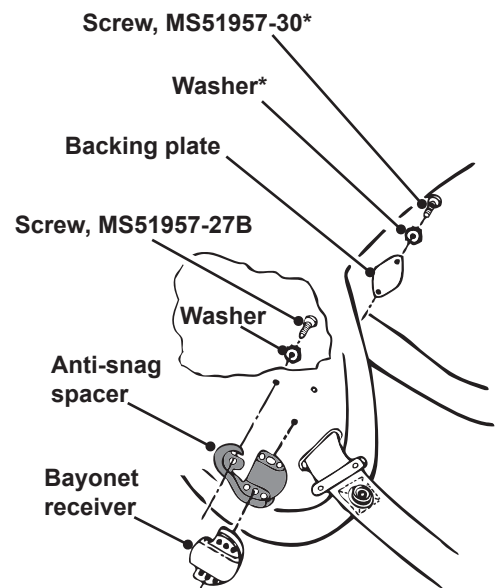
6. Referring to **Figure 2-26**, use a drill with a #20 (0.161") bit to drill both upper holes marked in Step 5.
7. Referring to **Figure 2-27**, attach the kit as follows:
  - a. On one side of the helmet, align the anti-snap spacer over the holes, ensuring all three holes line up.
  - b. Align the bayonet receiver over the anti-snap spacer, ensuring that the four rivets in the bayonet receiver are seated within the four holes in the spacer.
  - c. From inside the helmet, attach the bayonet receiver and the spacer using the backplate, washers, and MS51957-30B screws. Ensure that the edgeroll is trimmed or pushed back so that the backplate will lie flush against the inside of the helmet.
  - d. Install the MS51957-27B screw and washer into the anti-snap spacer where the hole was drilled in Step 4. Tighten the screw to no more than 60 inch-ounces of torque. Ensure that each screw is rotated at least three turns so that it is properly engaged in the bayonet receiver.
  - e. Repeat Steps a-d on the other side of the helmet.

*(Continued on next page)*



**Figure 2-26. Drilling Marked Hole**

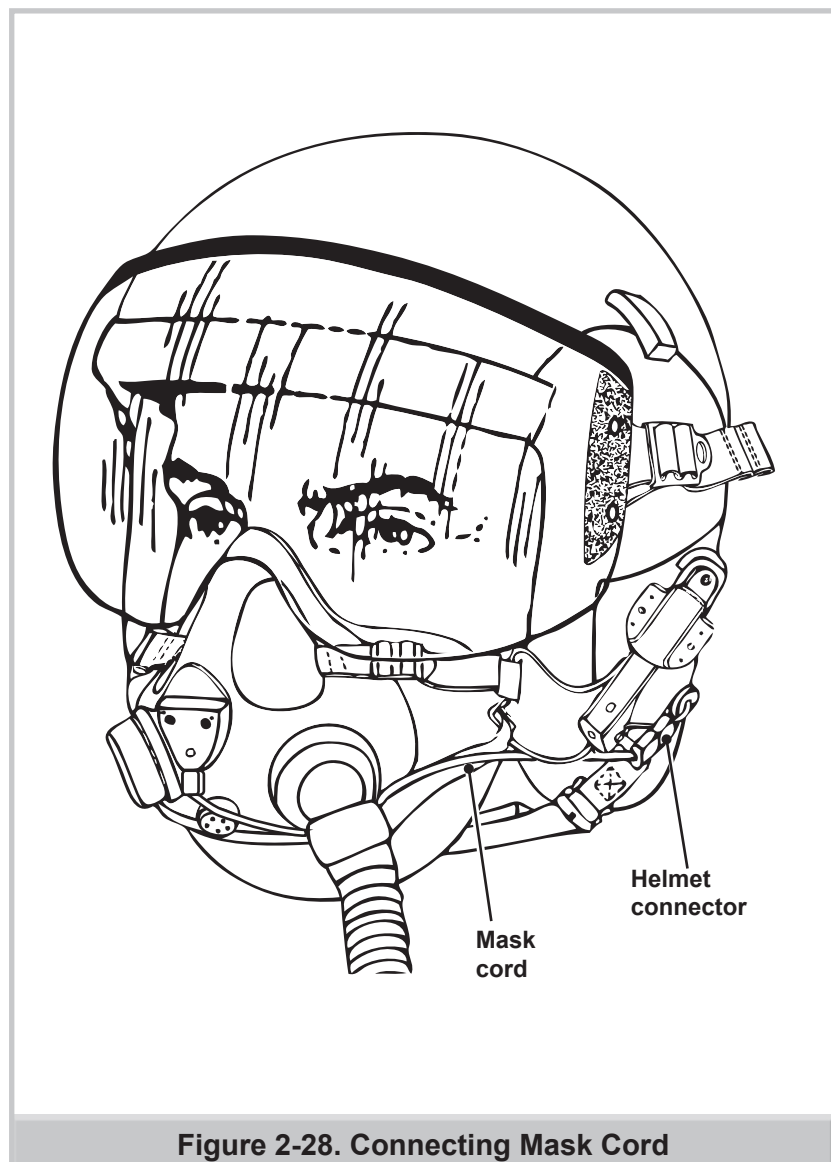
**\*NOTE:** For clarity, only one screw and washer are shown for the bayonet receiver assembly. There are actually two.



**Figure 2-27. Attachment of Kit**

8. Apply a thin, even coat of polychloroprene adhesive to the back of the peeled-away portion of both pile fasteners and to the inside surface of the helmet shell where the pile fasteners were peeled away. Do not allow the adhesive to contact the backing plates, the screws, or the retention assembly hardware. Allow the adhesive to dry approximately two minutes or until tacky.
9. Press the pile fasteners firmly against the shell surface. Allow the adhesive to set at least 15 minutes; ideally, you should allow it to set overnight.
10. Use a utility knife to cut an "X" pattern in the pile fasteners over the screws. This will permit future inspection and tightening of the screws.
11. Reattach both earcups to the pile fasteners.
12. Reinstall the visor.
13. Have the aircrew member don the helmet. Re-check the helmet fit as described in Paragraph 2-2.3 and make any needed adjustments.
14. Have the aircrew member don the mask. Check the mask for proper position and tension in accordance with applicable oxygen mask technical orders. Check the interface between the visor and the mask. Adjust the mask straps as required.
15. Connect the mask cord to the helmet connector, shown in **Figure 2-28**.

**NOTE:** To remove the mask cord from the helmet connector, pull firmly on the cord plug.



**Figure 2-28. Connecting Mask Cord**

## 2-4. OPERATION

This section contains a summary of the helmet operational tasks described in the fitting and installation sections of this chapter. Operational tasks include donning the helmet, fastening and adjusting the chin strap, operating the visor, and connecting the mask microphone cord to the helmet connector.

### 2-4.1. Donning Helmet

Don the helmet as follows:

1. Grasp the helmet in the earcup areas.
2. Referring to **Figure 2-29**, place the front of the helmet against the forehead, and rotate the helmet toward the rear and down onto the head.
3. Ensure that the ears are centered in the earcups.

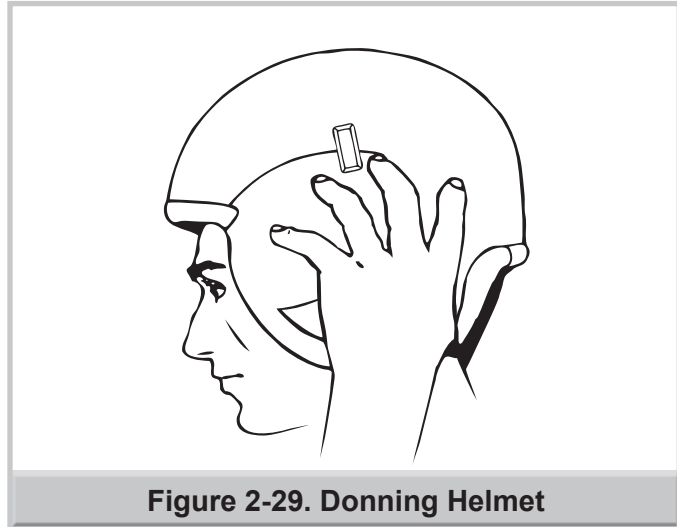


Figure 2-29. Donning Helmet

### 2-4.2. Fastening Chin Strap



For the safety of the aircrew member, the chin strap must remain firmly secured at all times of flight. This prevents helmet rotation during high-G maneuvers, or loss of helmet during emergency ejection

Referring to **Figure 2-30**, fasten and adjust the chin/nape assembly as follows:

1. Snap the chin strap.
2. Pull on the end of the chin strap to adjust it for a snug fit.
3. Attach the end of the chin strap securely to the pile fastener on the chin pad.

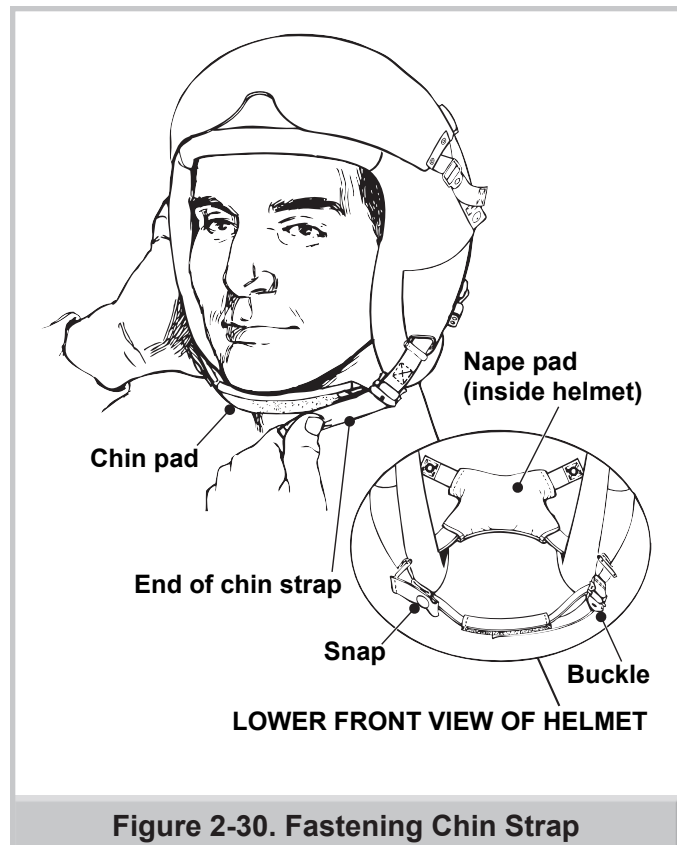


Figure 2-30. Fastening Chin Strap

### 2-4.3. Operating Visor

Operate the visor as follows:

1. Referring to **Figure 2-31**, grasp the visor in the center and pull the visor slightly away from the helmet.
2. Move the visor up or down. When the visor is up, ensure that the top edge of the visor is against the two bump stops.
3. As necessary, adjust the visor straps so that the visor is centered over the nose. Ensure that the visor is snug enough. The visor should not slide freely up and down. There should be enough resistance to require pulling the visor away from the helmet to raise or lower it.

**NOTE:** When the visor is up, you can attach the visor cover by pressing the hook fasteners on the cover to the pile fastener on the visor.

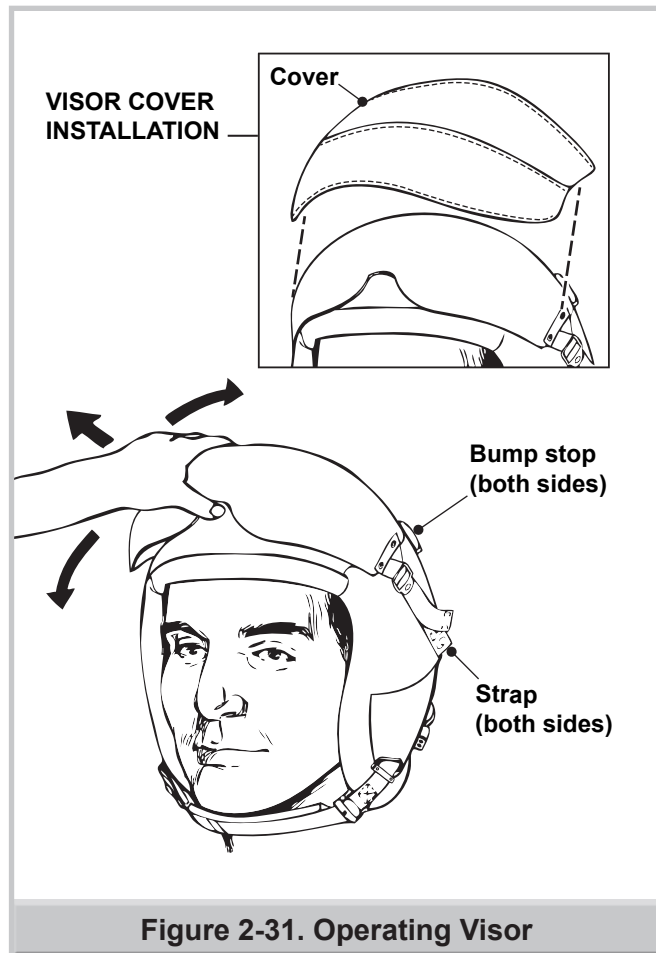


Figure 2-31. Operating Visor

### 2-4.4. Connecting Mask Microphone Cord to Helmet Connector

With the helmet donned and properly adjusted, do the following:

1. Don the mask. Check the mask for proper position and tension in accordance with applicable oxygen mask technical orders. Check the interface between the visor and the mask. Adjust the mask straps as required.
2. Connect the mask cord to the helmet connector, shown in **Figure 2-32**.

**NOTE:** To remove the mask cord from the helmet connector, pull firmly on the cord plug.

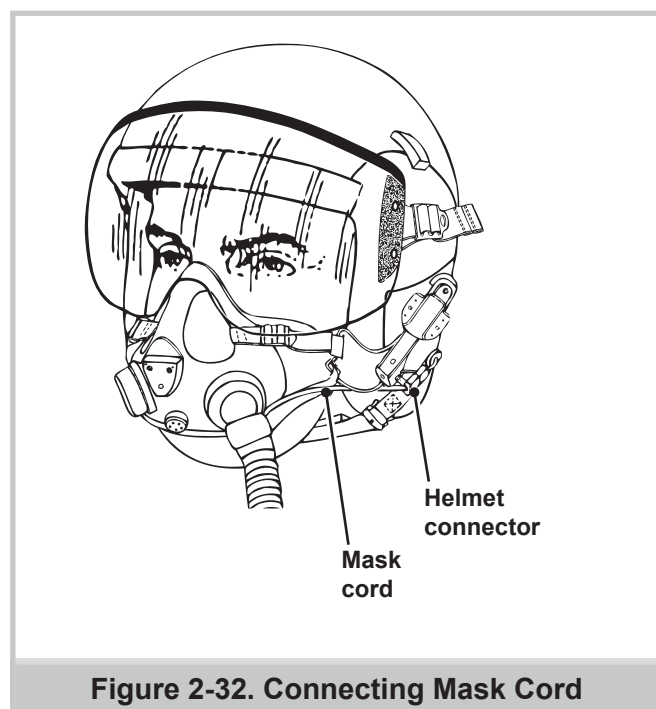


Figure 2-32. Connecting Mask Cord

## CHAPTER 3: HELMET MAINTENANCE

### 3-1. GENERAL

This chapter provides instructions for the task required to maintain the helmet. These tasks include inspection, cleaning, replacing components, and repainting.

### 3-2. INSPECTIONS

Proper care and use of the HGU-55/P helmet assembly is essential to ensure optimum performance during emergencies and routine operations. The helmet must be inspected at regular intervals to ensure that it is in serviceable condition. These intervals are described below.

#### 3-2.1. Inspection Upon Receipt

Upon receipt of the helmet, inspect the helmet as follows:

1. Remove the helmet from the shipping container. Retain the container for shipment, or dispose of it as applicable.
2. Inspect the helmet for any damage incurred during shipment, such as breaks or cuts in the helmet shell, or scratches or cracks in the visor.
3. Replace all damaged parts to make the helmet serviceable.
4. Report all deficiencies to a supervisor or quality assurance manager to resolve.

#### 3-2.2. Pre-Flight Inspection

Before each flight, the user shall inspect the helmet to ensure that it is serviceable. Perform the pre-flight inspection as follows:



**Any crack that has broken through the layers of helmet shell material (not just the paint surface) will affect the integrity of the helmet. Discard a helmet with such cracks.**

1. Check the helmet shell for cracks that have broken through the layers of helmet shell material. (Minor cracks in the paint surface are acceptable.)
2. Ensure that the helmet and the oxygen mask have been properly fitted.

*(Continued on next page)*

3. Ensure that the chin strap and nape strap have been properly adjusted for a snug fit and are securely attached to the helmet shell.



**Cracks in the visor are not acceptable. Cracks will weaken the visor and may cause the visor to fail, creating additional hazards during ejection.**

4. Ensure that the visors are free of cracks, scratches, dust, and smears. (Minor scratches that do not interfere with vision are acceptable.)
5. Ensure that the visors are securely attached to the helmet.
6. Ensure that the visors can be raised and lowered easily and that they lock in place securely.
7. Ensure that the headset components are securely attached and are working properly. You can perform checkout by plugging the mask microphone cable into the MQ-1/MQ1A tester, DMH-1 tester, or another tester while the mask microphone is connected to the helmet headset. Speak into the microphone. The microphone and earphones are working when the voice is transmitted through the amplifier and is heard through the headset.
8. Ensure that the energy-absorbing liner is securely attached to the helmet and is free of holes and cracks.
9. Ensure that the TPL or XLiner is securely attached, properly fitted, and free of holes or tears.
10. Check the general condition of all attaching hardware.
11. Inspect the oxygen mask and associated components for general condition as required by the appropriate technical manual.

### **3-2.3. Post-Flight Inspection**

Post-flight inspection is to be performed as designated following the last flight of the day. The helmets will be stored in a designated area, normally the life support shop. Perform the post-flight inspection as follows:



**Any crack that has broken through the layers of helmet shell material (not just the paint surface) will affect the integrity of the helmet. Discard a helmet with such cracks.**

1. Check the helmet shell for cracks that have broken through the the helmet shell material. (Minor cracks in the paint surface are acceptable.)

2. Inspect the edgeroll for loose edges or damage such as cuts, tears, or holes.

**NOTE:** Advise the aircrew member not to set the helmet on the canopy edge, boarding ladders, or pylons to prevent damage to the leather edgeroll.

3. Check the helmet for loose screws.

4. Ensure that the visors are free of cracks, scratches, dust, and smears. (Minor scratches that do not interfere with vision are acceptable.)

**NOTE:** Wipe the visor with a chamois or clean, non-scratching cloth. You may moisten the cloth with a 70% isopropyl alcohol/water mix to remove oil or grease smears from the visor.

5. Ensure that the visor is securely attached to the helmet.

6. Ensure that the visor fits the helmet snugly, with enough resistance to require pulling the visor away from the helmet to raise or lower it.

7. Ensure that the headset components are securely attached and are working properly. You can perform checkout by plugging the mask microphone cable into the MQ-1/MQ1A tester, DMH-1 tester, or another tester while the mask microphone is connected to the helmet headset. Speak into the microphone. The microphone and earphones are working when the voice is transmitted through the amplifier and is heard through the headset.

8. Ensure that the energy-absorbing liner is securely attached to the helmet and is free of holes or damage.

9. Ensure that the TPL or XLiner is securely attached, properly fitted, and free of holes and cracks.

10. Check the general condition of all attaching hardware.

### **3-2.4. Periodic Inspection**

Aircrew members are responsible for ensuring that their helmets have been inspected, cleaned, and repaired as necessary by certified Life Support Technicians within 30 days before each flight. Helmets used without oxygen masks shall be inspected within 90 days before each flight. Helmets used only with the aircrew chemical defense ensemble shall be inspected every 180 days before each flight. Inspections shall be annotated on an appropriate form as a record of inspection and maintenance. A piece of pressure-sensitive tape may be attached to the helmet/oxygen mask to record inspection dates.

***(Continued on next page)***

## NOTES:

- As a result of this inspection, any component found to be defective will be repaired or replaced as necessary.
- If any items are to be replaced, refitting of the helmet and mask may be necessary.

Perform the periodic inspection as follows:

1. Visually inspect the helmet shell for cleanliness, warping, holes, cracks, and scratches.
2. Inspect the leather edgeroll and visor buffers for holes, cuts, torn seams, or loose areas.
3. Inspect the TPL or XLiner for cleanliness. Replace the TPL cloth cover if it is too soiled to clean, or gently hand-wash the XLiner.
4. Inspect the energy-absorbing liner for damage such as gouges, depressions, or evidence of erosion from solvents. Replace the energy-absorbing liner if there is reasonable assumption that the damage is sufficient to compromise head protection.
5. Inspect the hook fasteners on the energy-absorbing liner to ensure that they are securely adhered to the liner and that they hold the TPL or XLiner securely.
6. Inspect the chin strap and the nape strap to ensure that the fabric and stitching are not torn; and that the chin strap buckle is not corroded, bent, or broken.
7. Inspect the attaching hardware of the chin strap and the nape strap for security of attachment (tightness) and corrosion. Ensure that the washers are properly positioned.
8. Inspect the earpads for secure attachment, cleanliness, cuts, tears, or other damage that could compromise safety or sound attenuation.
9. Inspect the cable for breaks or frayed areas.
10. Inspect the rubber grommet and the connector bracket for secure attachment to the helmet shell.
11. Plug the microphone cable and plug assembly into the MQ-1/MQ-1A tester or DMH-1 tester and ensure that the microphone and earphones are working properly.

### CAUTION

Visors have an abrasion-resistant coating, but they can still be scratched with improper handling. Handle the visors with care.

12. Ensure that the visors are free of cracks, scratches, dust, and smears. (Minor scratches that do not interfere with vision are acceptable.)

13. Check the visor attaching hardware to ensure that the visor is securely attached to the helmet.
14. Ensure that the visor fits the helmet snugly, with enough resistance to require pulling the visor away from the helmet to raise or lower it.
15. Inspect the bayonet receiver spacers for cracks or deterioration.
16. Check the bayonet receiver attaching hardware. Ensure that the screws are tightened and that the lock washers are installed.
17. Ensure that the bayonet receivers are installed with the part number facing the helmet shell.
18. Check the general condition of all helmet attaching hardware.

### **3-3. CLEANING**

Helmets should be cleaned at regular intervals to ensure that they are in serviceable condition and to prevent the possibility of dermatitis. Users and maintenance personnel should follow the guidelines below.

#### ***Materials Required***

- Clean, lint-free cloths
- Chamois (optional; to clean visor)
- Sponge
- Mild detergent
- Isopropyl alcohol (70 percent solution)
- Soft scrubbing detergent/cleaner
- Saddle soap
- Two-sided tape

#### **NOTES:**

- Use a clean, padded work surface to perform the cleaning.
- Allow the helmet to dry thoroughly after each cleaning.
- A protective bag, NSN 8415-00-782-2989 or 8415-00-650-6806, is available for carrying or storing the helmet and the oxygen mask only. Use only the outer storage pockets for storing other equipment.

***(Continued on next page)***

## Procedure

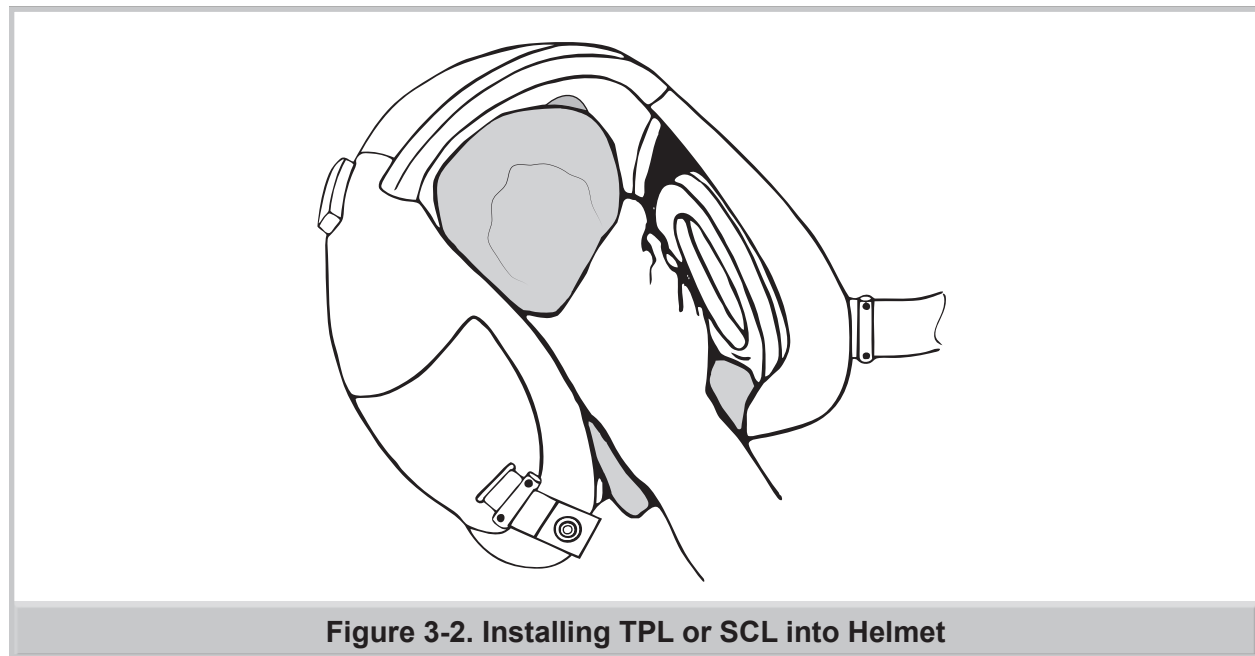
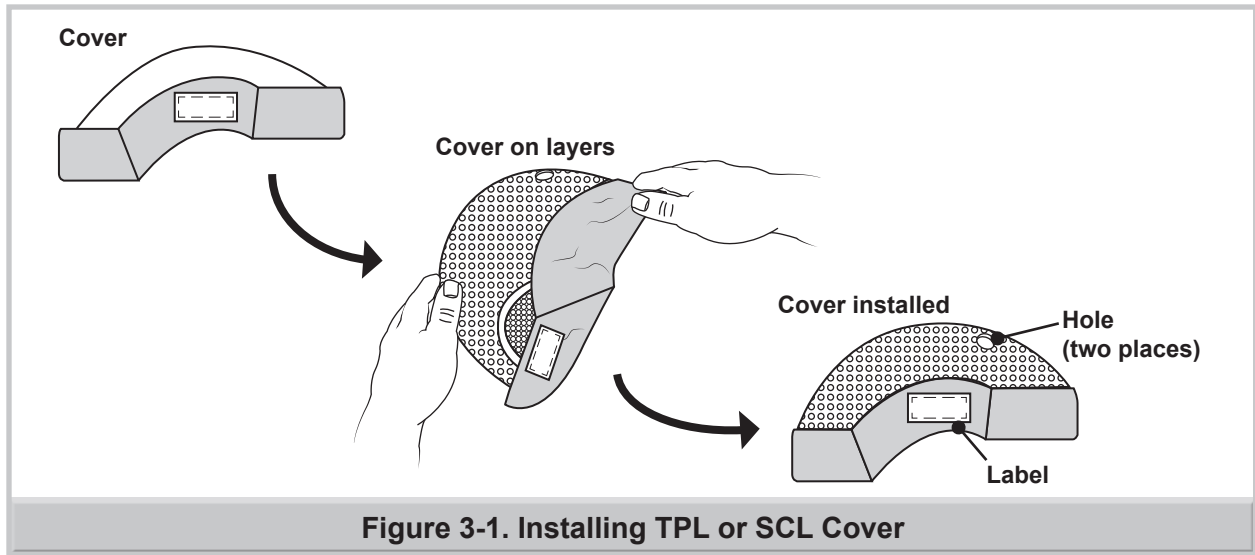
Clean the helmet as follows:

1. Helmet shell: Clean with mild detergent and clean cloth; for stains, use a soft-scrub type of detergent or equivalent. Do not use waxes or solvents as they may deteriorate the paint or damage the helmet.
2. Cable and connector: Wipe with damp cloth; dry thoroughly.

### CAUTION

Visors have an abrasion-resistant coating, but they can still be scratched with improper handling. Handle the visors with care.

3. Visors: Clean with a soft cloth and a mild soap solution; rinse with clean water, OR use a clean, lint-free cloth dampened with a 70 percent solution of isopropyl alcohol. You may also use a chamois.
4. Chin strap and nape strap webbing: Wipe with a clean cloth dampened with a mild soap solution; allow to dry thoroughly.
5. Leather components (edge roll, earpad, chin pad, nape pad): Apply a small amount of saddle soap with a damp sponge. Rub vigorously to generate a thin soap film. Wipe with a clean cloth and allow to dry overnight.
6. TPL or SCL: Do the following:
  - a. Remove the TPL or SCL from the helmet.
  - b. Referring to **Figure 3-1**, note the manner in which the cloth cover is installed on the plastic layers. (The holes in the plastic layers and the label on the cloth cover are at the same end.) Fold the sides of the cover down, and remove the cover from the plastic layers.
  - c. Hand-wash the cover with mild detergent only, and allow it to dry.
  - d. Referring to **Figure 3-1**, place the plastic layers over the clean, dry cover, ensuring that the cover will be installed properly (not backwards). Fold the sides of the cloth cover over the plastic layers.
  - e. Referring to **Figure 3-2**, reinstall the TPL or SCL into the helmet.
7. XLiner: Remove from the helmet; gently hand-wash with mild detergent; rinse thoroughly and allow to dry flat. Do not place in dryer. Do not wring. Do not use bleach or machine detergents. Reinstall the XLiner into the helmet as described in TP0265.



**CAUTION**

- Prolonged exposure to excessive heat can damage the TPL or SCL. Do not store the helmet in a closed cockpit or automobile where temperatures can exceed 200°F (93.3°C) on an 85°F(30°C) day.
- The TPL or SCL cover can be hand-washed only. Use mild detergent only, no bleaches or machine detergents.
- Do not put the TPL or SCL cover in the dryer.

### 3-4. REPLACEMENT OF COMPONENTS

The life support technician shall replace defective components. This section provides procedures for component replacement.

#### 3-4.1. Replacement of Jack Holder

##### *Parts Required*

Jack holder, chrome finish (78B4170)

**or**

Jack holder, black anodized finish (78B4170-1)

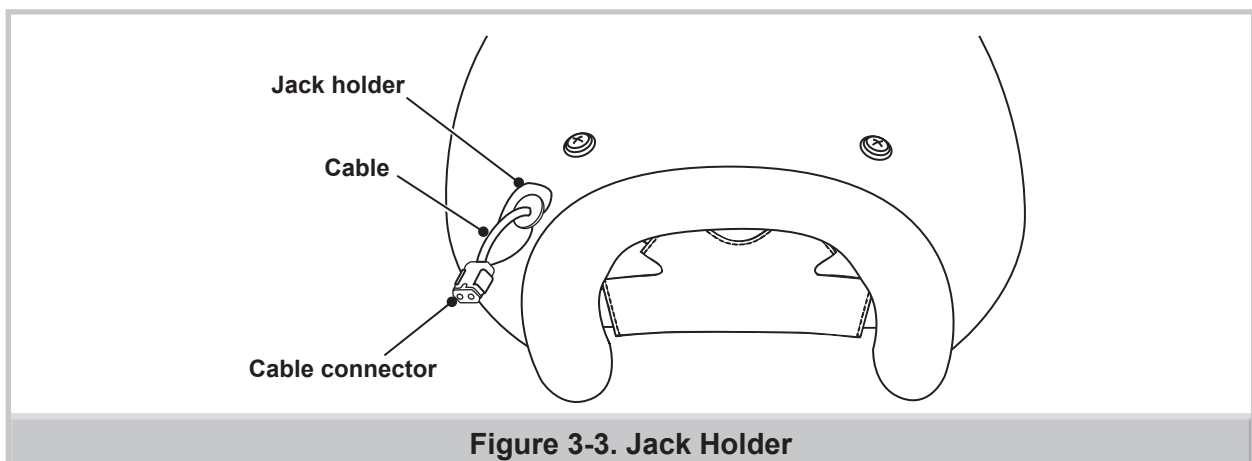
##### *Tools/Materials Required*

None

##### *Procedure*

Referring to **Figure 3-3**, replace the jack holder as follows:

1. Remove the cable connector from the jack holder.
2. Remove the jack holder by rotating it clockwise and pulling it away from the large grommet.
3. Obtain the replacement jack holder.
4. Press the replacement jack holder against the large grommet and rotate it counterclockwise.
5. Insert the cable connector into the jack holder.



### 3-4.2. Replacement of Earseals

#### *Parts Required*

Earseals (75C2990)

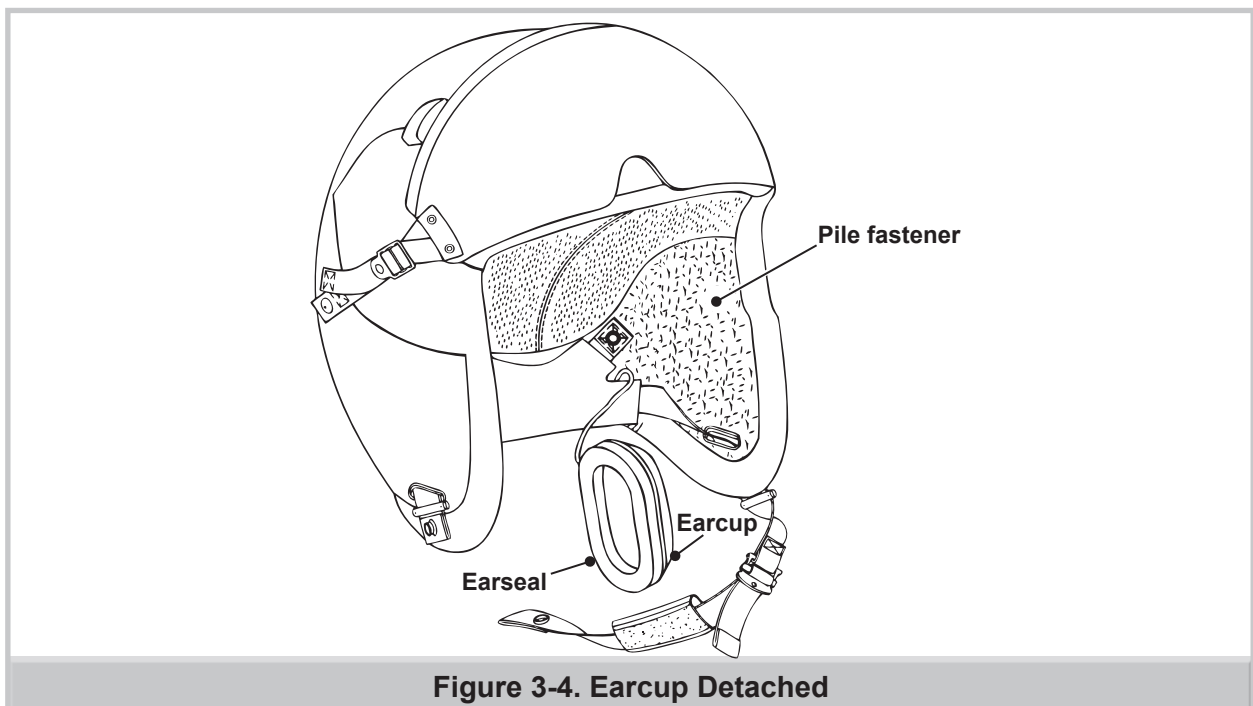
#### *Tools/Materials Required*

None

#### *Procedure*

Referring to **Figure 3-4**, replace the earseals as follows:

1. Detach the earcups from the pile fasteners inside the helmet.
2. Note how the existing earseals are installed on the earcups; then remove the earseals from the earcups.
3. Stretch the replacement earseals over the earcups in the same manner in which the previous earseals were installed.
4. Reattach the earcups to the pile fasteners.
5. Check earcup position as described in Paragraph 2-2.3, and make any necessary adjustments.



### 3-4.3. Replacement of Earcups or Earphones

#### Parts Required

Earcups (**80C4758**), quantity of 2  
**or**  
Earphones (**69B2032**), quantity of 2

#### Tools/Materials Required

- Jeweler's screwdriver
- Isopropyl alcohol (70 percent solution) or soap and water

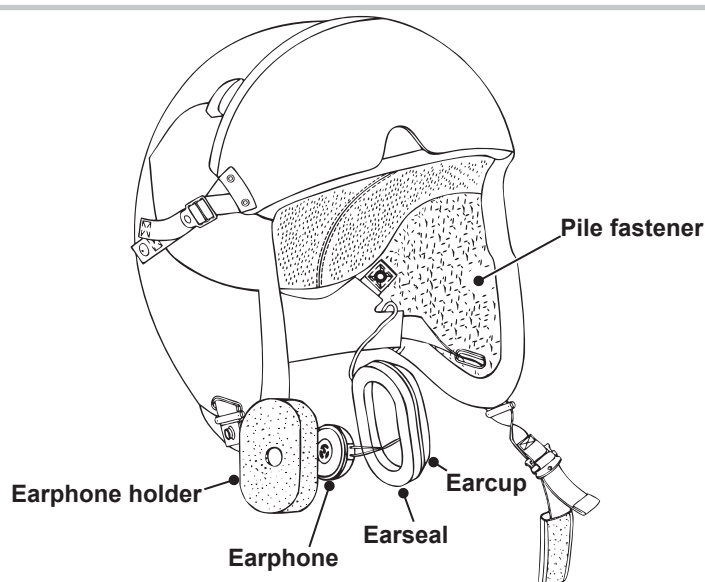
#### Procedure

1. Referring to **Figure 3-5**, pull the earphone out the earcup as follows:
  - a. Detach one earcup from the pile fastener inside the helmet.
  - b. Remove the earphone holder from the earcup.

**Optional:** You may also remove the earseal from the earcup to ease the removal of the earphone holder.

- c. Remove the earphone from the earphone holder.

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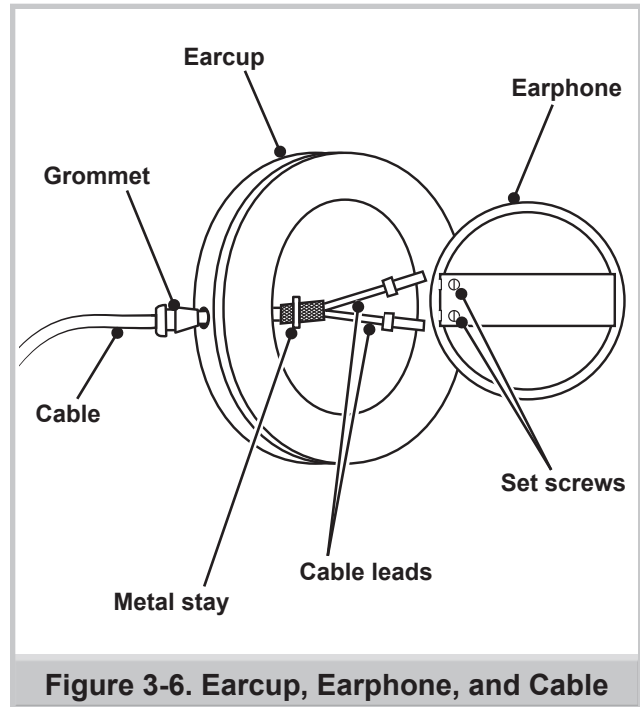
**Figure 3-5. Earphone Removed from Earcup**

2. Referring to **Figure 3-6**, disconnect the earphone from the cable as follows:

- a. Use a jeweler's screwdriver to **loosen** (not remove) the set screws on the back of the earphone.
- b. Withdraw the cable leads from the earphone.

**NOTE:** Ensure that the metal stay on the cord does not contact the earcup grommet; this will hinder the removal of the grommet.

- c. **If you are replacing the earcup**, remove the small rubber grommet from the hole in the earcup, and withdraw the cable leads from the earcup.



**Figure 3-6. Earcup, Earphone, and Cable**

3. Obtain a replacement earcup or earphone as applicable.
4. Referring to **Figure 3-6**, connect the earphone to the cable as follows:
  - a. **If you are replacing the earcup**, insert the cable leads into the replacement earcup through the small hole, and insert the small rubber grommet into the hole. Ensure that the grommet is seated properly.

**NOTE:** To ease insertion of the grommet, you may lubricate the grommet with a small amount of soap and water or 70 percent isopropyl alcohol.

  - b. Insert the cable leads into the earphone.
  - c. Use a jeweler's screwdriver to tighten the set screws on the back of the earphone.
5. Referring to **Figure 3-5** (previous page), install the earphone into the earcup as follows:
  - a. Insert the earphone into the earphone holder.
  - b. Insert the earphone holder into the earcup. If you removed the earseal, reinstall it on the earcup.
  - c. Reattach the earcup to the pile fastener inside the helmet.
6. If necessary, repeat Steps 1-5 for the other earcup or earphone.
7. Check earcup position as described in Paragraph 2-2.3, and make any necessary adjustments.

### 3-4.4. Replacement of Cable

#### Parts Required

Cable (77D3662)

#### Tools/Materials Required

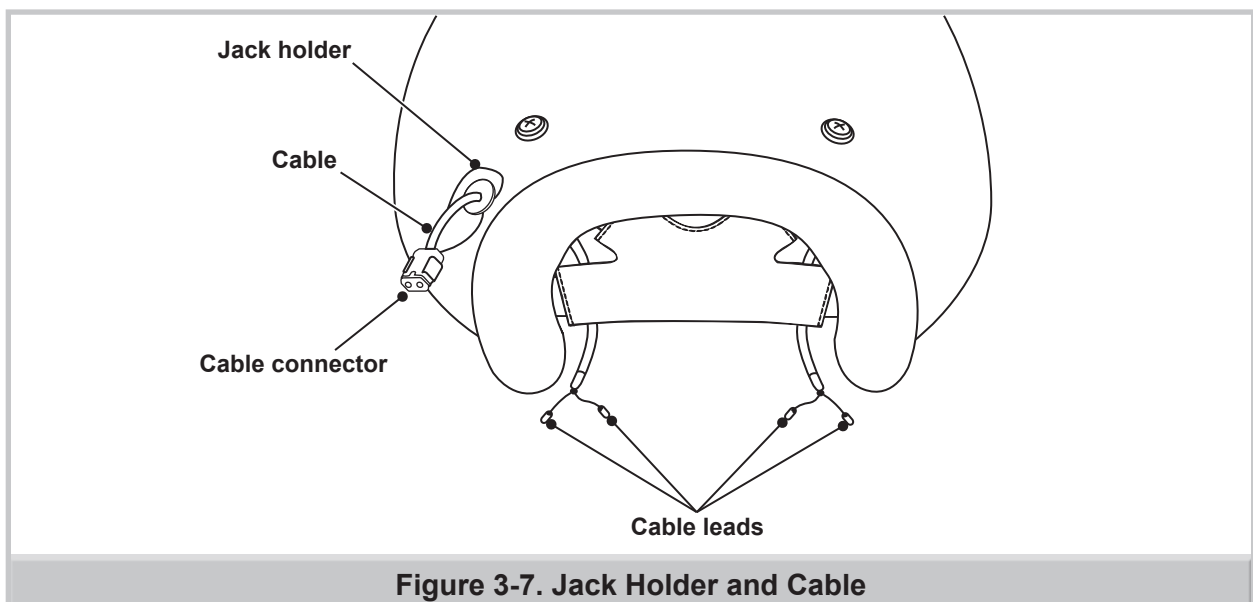
- Jeweler's screwdriver
- Isopropyl alcohol (70 percent solution) or soap and water

#### Procedure

Replace the cable as follows:

1. Referring to Paragraph 3-4.3, perform Steps 1-2 to remove the cable leads from both earcups.
2. Referring to **Figure 3-7**, do the following:
  - a. Remove the cable connector from the jack holder.
  - b. Remove the jack holder by rotating it clockwise and pulling it away from the large grommet.
  - c. Remove the large grommet from the hole in the helmet shell.

*(Continued on next page)*



- d. Withdraw the cable leads through the hole in the helmet shell.
  - e. Install the leads of the replacement cable into the helmet through the hole in the helmet shell. Ensure that the longer cable lead is positioned toward the right side of the helmet (as worn) inside the helmet.
  - f. Insert the large grommet of the replacement cable into the hole in the helmet shell. Ensure that the grommet is seated properly.  
  
**NOTE:** To ease insertion of the grommet, you may lubricate the grommet with a small amount of soap and water or 70 percent isopropyl alcohol.
  - g. Press the jack holder against the large grommet and rotate it counterclockwise.
  - h. Insert the cable connector into the jack holder.
3. Referring to Paragraph 3-4.3, perform Steps 4-6 to reinstall the cable and earphone into both earcups and reinstall both earcups into the helmet.
  4. Check earcup position as described in Paragraph 2-2.3 and make any necessary adjustments.

### **3-4.5. Replacement of Bayonet Receivers**

Refer to Paragraphs 2-3.1 and 2-3.2 as applicable.

### **3-4.6. Replacement of TPL, SCL, or XLiner**

- **TPL:** Refer to TP0008.
- **SCL:** Refer to TP0236.
- **XLiner:** Refer to TP0265.

### 3-4.7. Replacement of Energy-Absorbing Liner

#### Parts Required

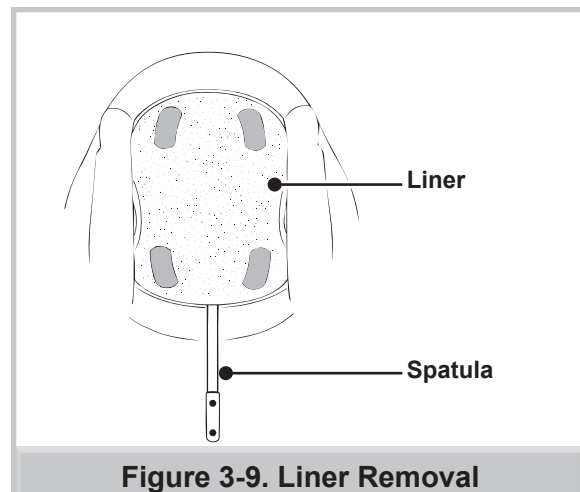
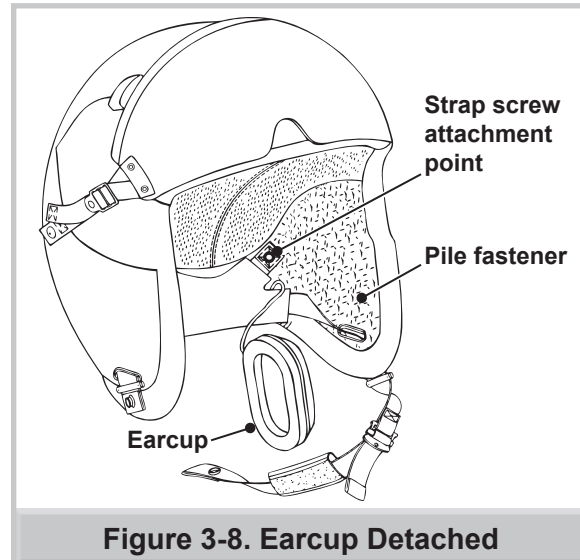
Energy-absorbing liner, Medium (85D7081-1); Large (85D7082-1); *or* X-Large (85D7083-1)

#### Tools/Materials required

Thin, flexible metal spatula

#### Procedure

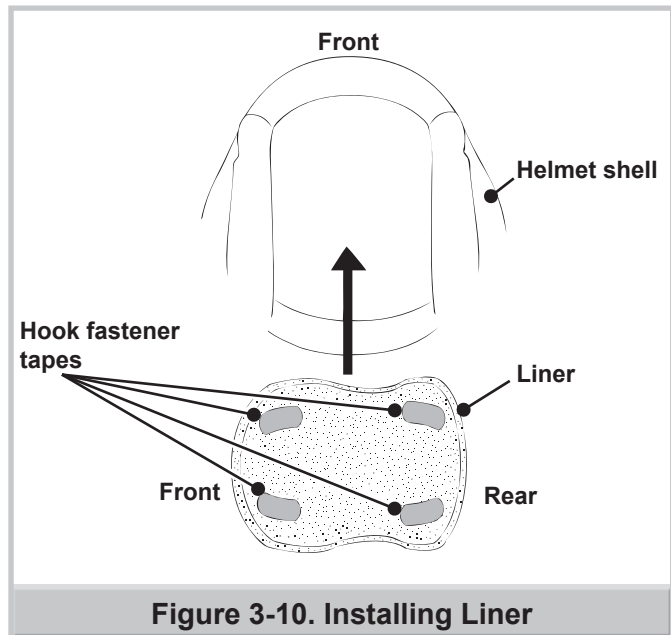
1. Remove the energy-absorbing liner as follows.
  - a. Remove the TPL or XLiner to expose the energy-absorbing liner.
  - b. Referring to **Figure 3-8**, detach both earcups from the pile fastener fabric in the helmet shell earcup cavity. Position the earcups clear of the work area.
  - c. At the rear of the helmet, remove the two screws attaching the integrated chin/nape strap to the helmet to ease removal and installation of the energy-absorbing liner.
  - d. Referring to **Figure 3-9**, insert a thin, flexible metal spatula between the inner surface of the helmet shell and the energy-absorbing liner at the rear of the helmet.
  - e. With the spatula at the center rear of the liner, gently pry inward and upward on the liner to obtain sufficient clearance to permit grasping the liner with the free hand.
  - f. Maintain upward pressure and continue to withdraw the liner from the interior of the helmet shell. Rotate the liner 90 degrees to the right or left to clear the helmet earcup cavities.



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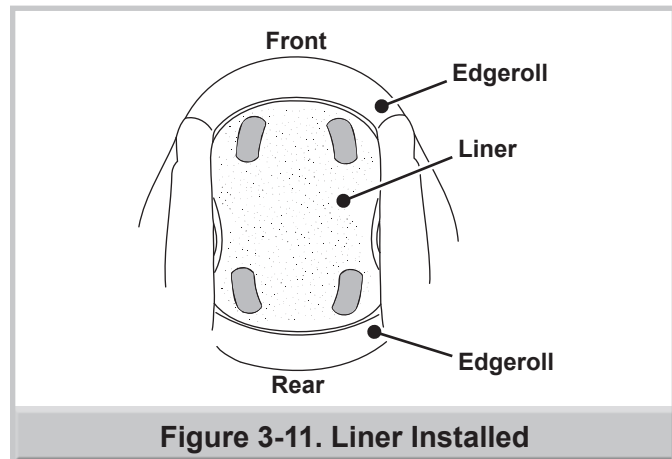
**NOTE:** Before you install the replacement liner (Steps 2 and 3), ensure all attaching hardware for visor configuration, which will be covered by liner, is in place. You can also cover the interior hardware with masking tape to ease installation of the liner.

2. Referring to **Figure 3-10**, do the following:
  - a. Install front and rear hook fastener tapes on the inside surface of the energy-absorbing liner. All four fasteners should be installed approximately 38mm (1-1/2 inches) to the left and right of the center of the liner and approximately 6mm (1/4 inch) from the edge to avoid pressure points.
  - b. Rotate the liner 90 degrees and place it into helmet shell.



**Figure 3-10. Installing Liner**

3. Referring to **Figure 3-11**, do the following:
  - a. Reverse the rotation, and place the front edge of the energy-absorbing liner firmly against the inside surface of the front helmet shell edgeroll. Ensure that the liner is centered within the helmet.
  - b. Press the rear portion of the liner into place, ensuring that the rear edgeroll is not pinched or curled under the liner.



**Figure 3-11. Liner Installed**

4. Reattach the integrated chin/nape strap to the helmet.
5. Attach the earcup assemblies to the pile fastener fabric in the helmet shell earcup cavities, and route the communications cord for the right earcup between the energy-absorbing liner and the rear edgeroll as required.
6. Reattach the TPL or XLiner to the energy-absorbing liner.
7. Have the aircrew member don the helmet; check the fit as described in Paragraph 2-2.3.

**NOTE:** Lower the visor to ensure that it is centered on the bridge of the nose. If it is not centered, you may have to reposition the TPL or XLiner or the energy-absorbing liner.

### 3-4.8. Replacement of Integrated Chin/Nape Strap Assembly

#### Parts Required

Integrated chin/nape assembly, Medium (90D7916-4), Large (90D7916-5) *or* X-Large (90D7916-6)

#### Tools/Materials Required

- Thin, flexible metal spatula
- Torque screwdriver
- Flat-tip screwdriver
- **Optional:** Hook made from wire coat hanger

#### Procedure

1. Referring to **Figure 3-12**, do the following:
  - a. Remove the TPL or XLiner, and detach both earcups from the helmet.
  - b. Remove the screws, flat washers, lock washers, and T-nuts that attach the integrated chin/nape assembly to the back of the helmet shell.
  - c. Withdraw the straps from the nape pad.

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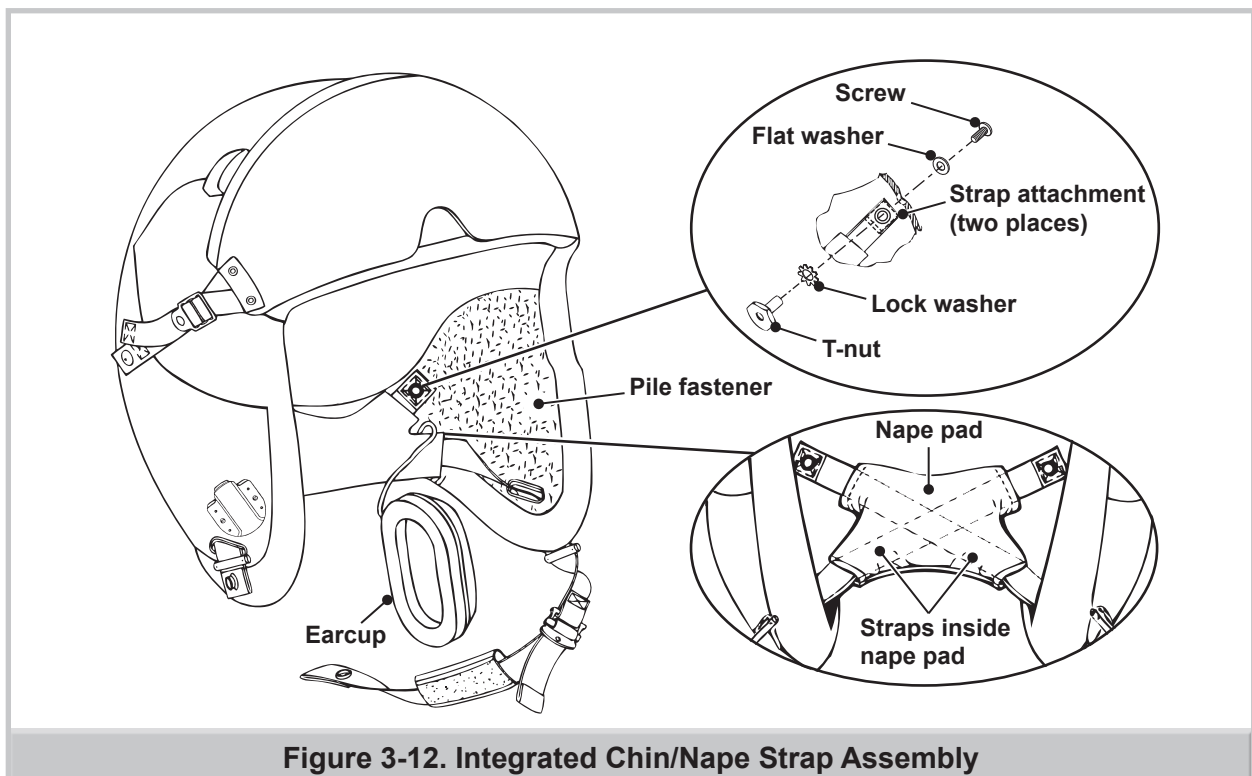


Figure 3-12. Integrated Chin/Nape Strap Assembly

2. Referring to **Figure 3-13**, withdraw the straps from the slots in the helmet shell.
3. Again referring to **Figure 3-13**, install the replacement chin/nape assembly as follows:
  - a. Insert the strap with the buckle through the slot in the left side (as worn) of the helmet shell.

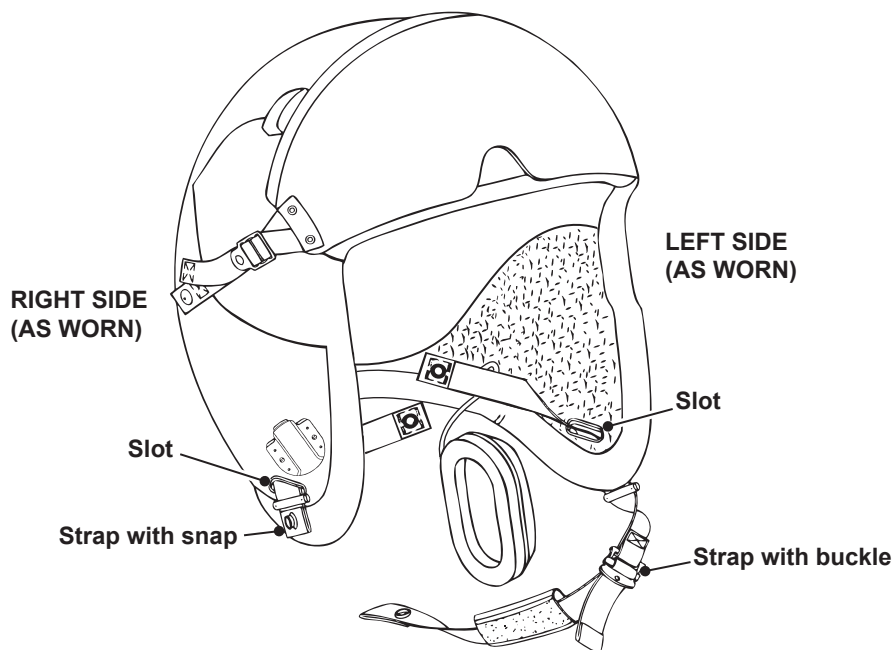
**NOTE:** Depending upon aircrew member preference, you may also install the strap with the buckle on the right side (as worn) of the helmet.

- b. Insert the strap with the snap through the slot on the right side (as worn) of the helmet shell. Ensure that the chin pad is on this strap.
4. Referring to **Figure 3-12** (previous page), insert the nape straps through the nape pad.

**NOTE:** Ensure that the straps are not twisted.

**Optional:** To make this task easier, you can pull the nape strap through the nape pad with a hook fashioned from a coat hanger.

5. Again referring to **Figure 3-12** (previous page), attach the straps to the helmet shell with the screws, flat washers, lock washers, and T-nuts. Tighten the screws to a torque value of 28.2 centi Newton meters (cNm) or 40 inch-ounces (in. oz.).
6. Reinstall both earcups and the TPL or XLiner into the helmet.
7. Have the aircrew member don the helmet; check the fit.



**Figure 3-13. Straps in Slots**

### 3-4.9. Replacement of Visor

#### Parts Required

Visor, MBU-12/P: Clear (81D5189-3); or Neutral (81D5189-4);  
**or** Visor, MBU-20/P: Clear (89D7697-1); or Neutral (89D7697-2)  
**or** Visor, High-Speed: Clear (04D11873-1); or Neutral (04D11873-3)

#### Tools/Materials Required

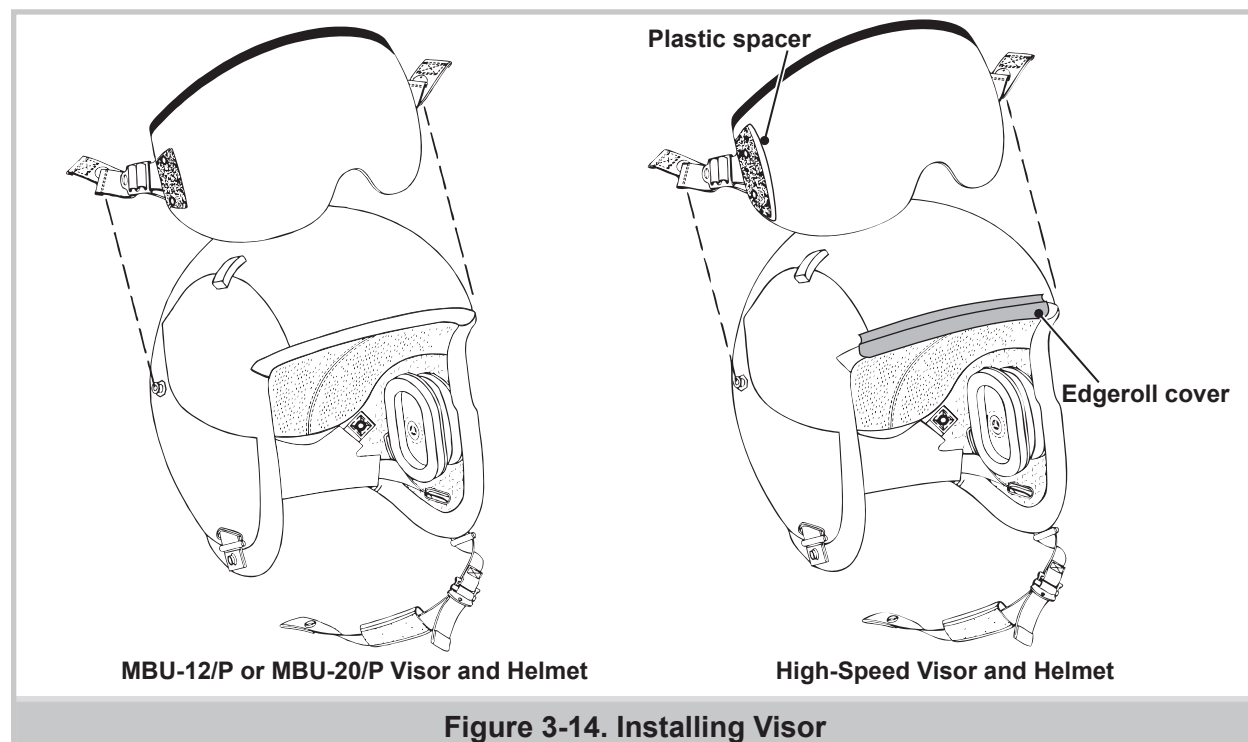
None

#### Procedure

1. Unsnap the existing visor from the helmet from *back to front*.
2. Snap the replacement visor to the helmet (**Figure 3-14**). Fasten each snap from *front to back*. Adjust each visor strap for a snug fit to the helmet.
3. Test visor operation as described in Paragraph 2-2.3.

#### **WARNING**

If the pilot wears a high-speed helmet (which includes an installed edgeroll cover), use **ONLY** a high-speed visor (which includes plastic spacers near the straps); see Figure 3-14. Use of any other visor type will not provide 600-knot capability and may cause a loss of the visor or the helmet during ejection



### 3-5. PAINTING

This section covers painting procedures for the helmet shell and the chrome bayonet receivers.

#### 3-5.1. Painting Helmet Shell

##### **WARNING**

- Keep all electrical equipment away from paint materials. Always work with adequate ventilation.
- When spraying primer (MIL-P-23377), wear a respirator NSN 4240-01-108-4172 with filter NSN 4240-115-0590 (or equivalent) neoprene gloves, and safety glasses or goggles.

##### **CAUTION**

Do not soak or submerge the helmet shell in any paint-stripping solutions, because paint strippers will degrade the shell composition.

Painting of the helmet shell is limited to the following:

- Touch-up of small areas of paint
- Repairing large areas of damaged paint (using epoxy filler putty)
- Replacing the topcoat of paint after repairs have been made

If inspection of the damaged area reveals holes or soft areas in the helmet shell, the shell shall be discarded.

#### ***Tools/Materials Required***

- Aliphatic naphtha
- Paint brush
- Polyurethane paint, lusterless gray (NSN 8010-01-167-1139)
- 320 grit sandpaper
- Epoxy filler putty (NSN 8040-00-753-4800)
- Putty knife, squeegee, or other applicator suitable for epoxy filler putty
- Epoxy primer paint (MIL-P-23377)
- Respirator NSN 4240-01-108-4172 with filter NSN 4240-115-0590 (or equivalent)
- Neoprene gloves
- Safety glasses or goggles

***(Continued on next page)***

### ***Touch-up***

This procedure will not restore the original appearance of the polyurethane paint. The original appearance can only be restored by re-coating the entire painted surface after a repair is made. Perform the touch-up as follows:

1. Remove the visor assembly and the oxygen mask.
2. Clean the affected area with a cloth dampened in aliphatic naphtha.
3. Using a paint brush, apply polyurethane paint only to the damaged area.

### ***Repair***

1. Hand-sand the damage area of the helmet shell with wet 320 grit sandpaper, feathering chipped and cracked edges.
2. Clean the affected area with a cloth dampened in aliphatic naphtha.
3. Fill the affected area with epoxy filler putty and allow to dry overnight. Filler putty may be applied with a putty knife, squeegee, or other suitable applicator.
4. Sand the filled area with sandpaper until it is level with the helmet shell.
5. Repeat Steps 3 and 4 until the repair is level and smooth.

**NOTE:** When accessory components are removed and relocated, unused holes in the helmet shell may be filled by using epoxy kit NSN 8040-00-753-4800.

### ***Refinishing***

1. When a repair has been completed, rough-sand the entire helmet shell with 320 grit sandpaper. This step is intended to prepare the shell to accept a finishing coat of polyurethane paint. It is not desirable or necessary to remove the epoxy primer paint.
2. Clean the entire painted surface with cloth dampened in aliphatic naphtha.
3. Mask all external components, edgeroll, and helmet opening.
4. Spray-paint only the repaired area with one coat of epoxy primer paint. Allow to cure for 8 hours at 21 degrees Celsius (70 degrees Fahrenheit).
5. Spray-paint one coat of polyurethane paint over the entire helmet shell. This coat is an anchor coat and should be applied thinly. Allow to cure for 15 minutes.
6. Spray-paint a finish (wet) coat of polyurethane. Allow to cure at for 24 hours at 21 degrees Celsius (70 degrees Fahrenheit).

### 3-5.2. Painting Chrome Bayonet Receivers

The chrome bayonet receivers may be painted to a dull gray finish in order to minimize reflection and aid in escape and evasion tactics.

 **WARNING**

- Keep all electrical equipment away from paint materials. Always work with adequate ventilation.
- When spraying primer (MIL-P-23377), wear a respirator NSN 4240-01-108-4172 with filter NSN 4240-115-0590 (or equivalent) neoprene gloves, and safety glasses or goggles.

#### ***Tools/Materials Needed***

- Aliphatic naphtha
- Paint brush
- Polyurethane paint, lusterless gray (NSN 8010-01-167-1139)
- 320 grit sandpaper
- Epoxy filler putty (NSN 8040-00-753-4800)
- Putty knife, squeegee, or other applicator suitable for epoxy filler putty
- Epoxy primer paint (MIL-P-23377)
- Respirator NSN 4240-01-108-4172 with filter NSN 4240-115-0590 (or equivalent)
- Neoprene gloves
- Safety glasses or goggles

#### ***Procedure***

Paint the chrome bayonet receivers as follows:

1. To remove paint, hand-sand using wet 320 grit sandpaper, feathering chipped or cracked areas of paint.
2. Paint the receivers with one coat of primer coating epoxypoyamide MIL-P-23377, allowing it to cure for 8 hours at 21 degrees Celsius (70 degrees Fahrenheit).
3. Thinly spray one coat of polyurethane, lusterless gray, as an anchor coat, allowing it to dry for 15 minutes.
4. Spray a finish coat (wet) of polyurethane, and allow it to cure for 24 hours at 21 degrees Celsius (70 degrees Fahrenheit).

**NOTE:** See Page 59 for information about the optional black anodized bayonet receiver kit.



## CHAPTER 4: REPLACEMENT PARTS AND OPTIONAL ITEMS

This chapter includes an Illustrated Parts Breakdown for replacement parts for the HGU-55/P helmet. It also includes lists of optional items that are not included with the helmet. For more information, contact Gentex Corporation, Carbondale, PA., USA, [www.gentexcorp.com](http://www.gentexcorp.com).

### 4-1. ILLUSTRATED PARTS BREAKDOWN

The illustrated parts breakdown (IPB) lists the repair parts for support of the HGU-55/G Helmet. The complete helmet assembly part numbers are as follows:

- HGU-55/P helmet with **MBU-12/P visors**:  
**81D5330-7 (Medium)**, **81D5330-8 (Large)**, or **81D5330-9 (X-Large)**
- HGU-55/P helmet with **high-speed visors**:  
**81D5330-13 (Medium)**, **81D5330-14 (Large)**, or **81D5330-15 (X-Large)**
- HGU-55/P helmet with **MBU-20/P visors**:  
**81D5330-16 (Medium)**, **81D5330-17 (Large)**, or **81D5330-18 (X-Large)**

The parts breakdown contains illustrations paired with lists of parts. Illustration numbers are shown in the **FIG. NO.** column of each parts list.

The **PART NO.** and **DESCRIPTION** columns are used to identify the parts. Within the **DESCRIPTION** column, parts are indented under their major assemblies. The **CAGE** column contains a five-digit CAGE (Contractor and Government Entity) code identifying the manufacturer of each part.

The **QTY.** (QUANTITY) column reflects the quantity of a part needed by its next higher assembly. This quantity may not be the total quantity of this part used for the complete assembly.

The **UOC** (USABLE ON CODE) column reflects codes assigned to each size of the helmet assembly. Codes A through I are used to represent the different helmet sizes and configurations. Where no code is entered, the part is used on all sizes and configurations.

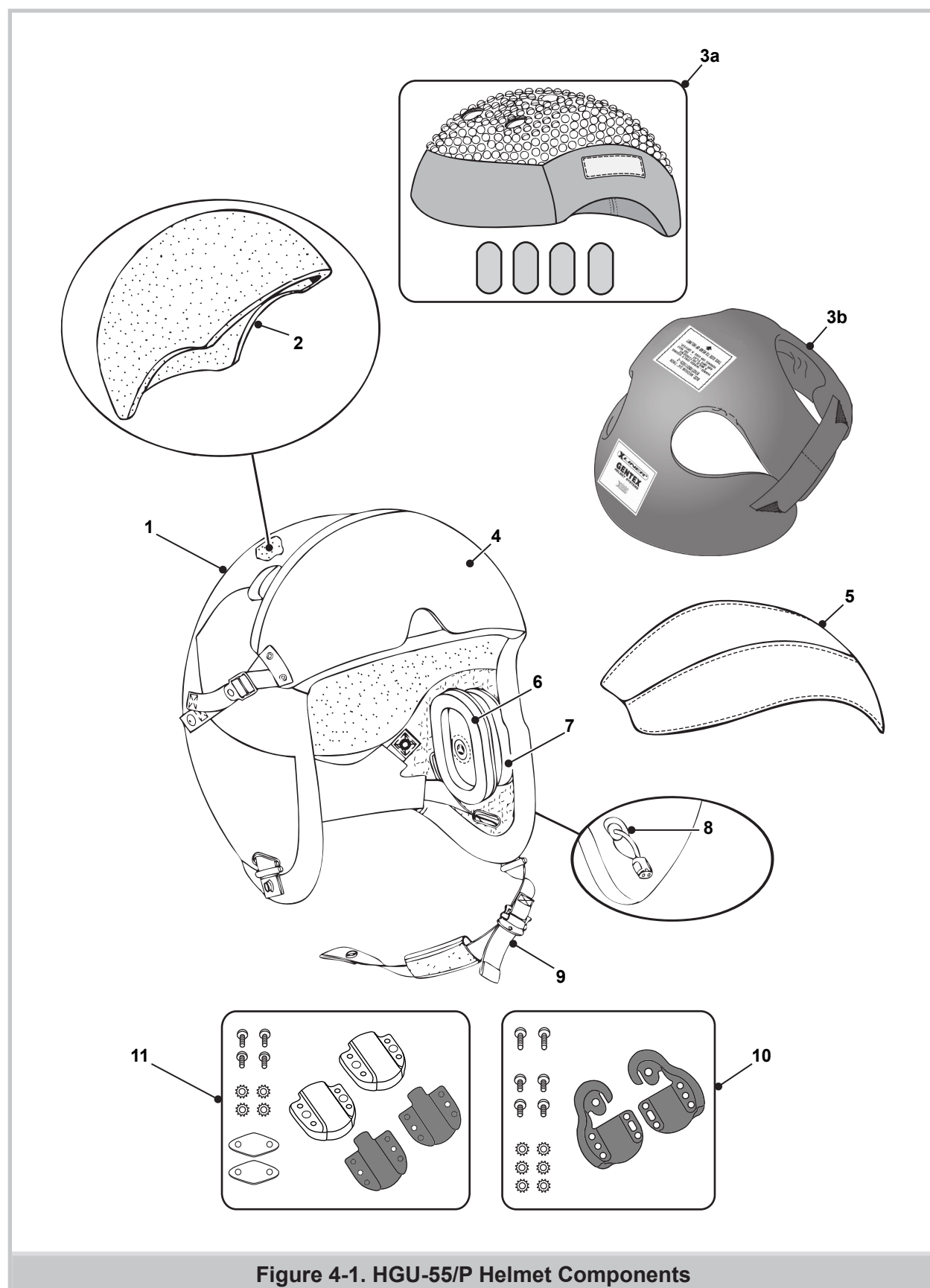


FIG. NO.	PART NO.	CAGE	DESCRIPTION	QTY.	UOC
<b>4-1</b>	<b>81D5330-7</b>	97427	HGU-55/P Helmet, <b>Medium, MBU-12/P</b> Visors	REF	A
	<b>81D5330-8</b>	97427	HGU-55/P Helmet, <b>Large, MBU-12/P</b> Visors	REF	B
	<b>81D5330-9</b>	97427	HGU-55/P Helmet, <b>X-Large, MBU-12/P</b> Visors	REF	C
	<b>81D5330-13</b>	97427	HGU-55/P Helmet, <b>Medium, High-Speed</b> Visors	REF	D
	<b>81D5330-14</b>	97427	HGU-55/P Helmet, <b>Large, High-Speed</b> Visors	REF	E
	<b>81D5330-15</b>	97427	HGU-55/P Helmet, <b>X-Large, High-Speed</b> Visors	REF	F
	<b>81D5330-16</b>	97427	HGU-55/P Helmet, <b>Medium, MBU-20/P</b> Visors	REF	G
	<b>81D5330-17</b>	97427	HGU-55/P Helmet, <b>Large, MBU-20/P</b> Visors	REF	H
	<b>81D5330-18</b>	97427	HGU-55/P Helmet, <b>X-Large, MBU-20/P</b> Visors	REF	I
<b>1</b>	<b>81D5331-10</b>	97427	Helmet Shell Subassembly, Medium	1	A
	<b>81D5331-20</b>	97427	Helmet Shell Subassembly, Large	1	B
	<b>81D5331-30</b>	97427	Helmet Shell Subassembly, X-Large	1	C
	<b>81D5331-11</b>	97427	Helmet Shell Subassembly, Medium	1	D, G
	<b>81D5331-21</b>	97427	Helmet Shell Subassembly, Large	1	E, H
	<b>81D5331-31</b>	97427	Helmet Shell Subassembly, X-Large	1	F, I
<b>2</b>	<b>85D7081-1</b>	97427	Energy-Absorbing Liner, Medium	1	A, D, G
	<b>85D7082-1</b>	97427	Energy-Absorbing Liner, Large	1	B, E, H
	<b>85D7083-1</b>	97427	Energy-Absorbing Liner, X-Large	1	C, F, I
<b>3a</b>	<b>85D7087-1P</b>	97427	TPL Kit, Medium (See <b>Figure 4-2</b> for breakdown)	1	A, D, G
	<b>85D7087-2P</b>	97427	TPL Kit, Large (See <b>Figure 4-2</b> for breakdown)	1	B, E, H
	<b>85D7087-3P</b>	97427	TPL Kit, X-Large (See <b>Figure 4-2</b> for breakdown)	1	C, F, I
<b>3b</b>	<b>05D11925-1</b>	97427	XLiner, Medium, ½ inch thick	1	A, D, G
	<b>05D11925-2</b>	97427	XLiner, Medium, ¾ inch thick	1	A, D, G
	<b>05D11925-3</b>	97427	XLiner, Large, ½ inch thick	1	B, E, H
	<b>05D11925-4</b>	97427	XLiner, Large, ¾ inch thick	1	B, E, H
	<b>05D11925-5</b>	97427	XLiner, X-Large, ½ inch thick	1	C, F, I
	<b>05D11925-6</b>	97427	XLiner, X-Large, ¾ inch thick	1	C, F, I
<b>4</b>	<b>81D5189-3</b>	97427	Visor, Clear, MBU-12/P	1	A, B, C
	<b>81D5189-4</b>	97427	Visor, Neutral, MBU-12/P	1	A, B, C
	<b>04D11873-1</b>	97427	Visor, Clear, High-Speed	1	D, E, F
	<b>04D11873-3</b>	97427	Visor, Neutral, High-Speed	1	D, E, F
	<b>89D7697-1</b>	97427	Visor, Clear, MBU-20/P	1	G, H, I
	<b>89D7697-2</b>	97427	Visor, Neutral, MBU-20/P	1	G, H, I
<b>5</b>	<b>82D5701</b>	97427	Visor Cover, MBU-12/P	1	A, B, C
	<b>05D12210-1</b>	97427	Visor Cover, MBU-20/P, Gray Leather	1	D, E, F, G, H, I
	<b>05D12210-2</b>	97427	Visor Cover, MBU-20/P, Black Leather	1	D, E, F, G, H, I

(Continued on next page)

FIG. NO.	PART NO.	CAGE	DESCRIPTION	QTY.	UOC
6	80C4754-3	97427	Headset Assembly (See <b>Figure 4-3</b> for breakdown)	1	
7	79C4416-20	97427	Earcup Spacer Pad Set	1	
8	78B4170	97427	Jack Holder	1	
9	90D7916-4	97427	Integrated Chin/Nape Assembly, Medium, Black (See <b>Figure 4-4</b> for breakdown)	1	A, D, G
	90D7916-5	97427	Integrated Chin/Nape Assembly, Large, Black (See <b>Figure 4-4</b> for breakdown)	1	B, E, H
	90D7916-6	97427	Integrated Chin/Nape Assembly, X-Large, Black (See <b>Figure 4-4</b> for breakdown)	1	C, F, I
	90B7948-1	97427	Integrated Chin/Nape Assembly, Medium, Gray (See <b>Figure 4-4</b> for breakdown)		
	90B7948-2	97427	Integrated Chin/Nape Assembly, Large, Gray (See <b>Figure 4-4</b> for breakdown)		
	90B7948-3	97427	Integrated Chin/Nape Assembly, X-Large, Gray (See <b>Figure 4-4</b> for breakdown)		
10	05A12024-1	97427	Anti-Snag Receiver Spacer Kit (See <b>Figure 4-5</b> for breakdown)	1	D, E, F,
11	82A5614-20	97427	Bayonet Receiver Kit (See <b>Figure 4-6</b> for breakdown)	1	

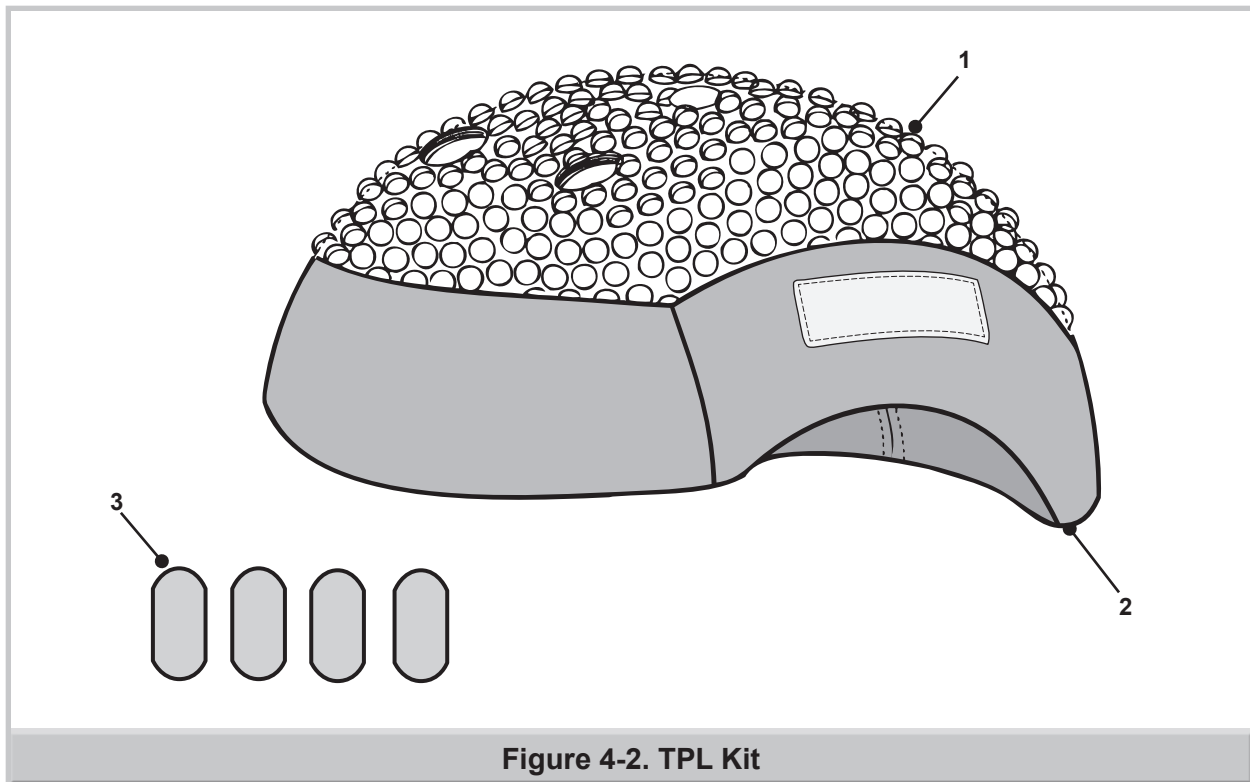
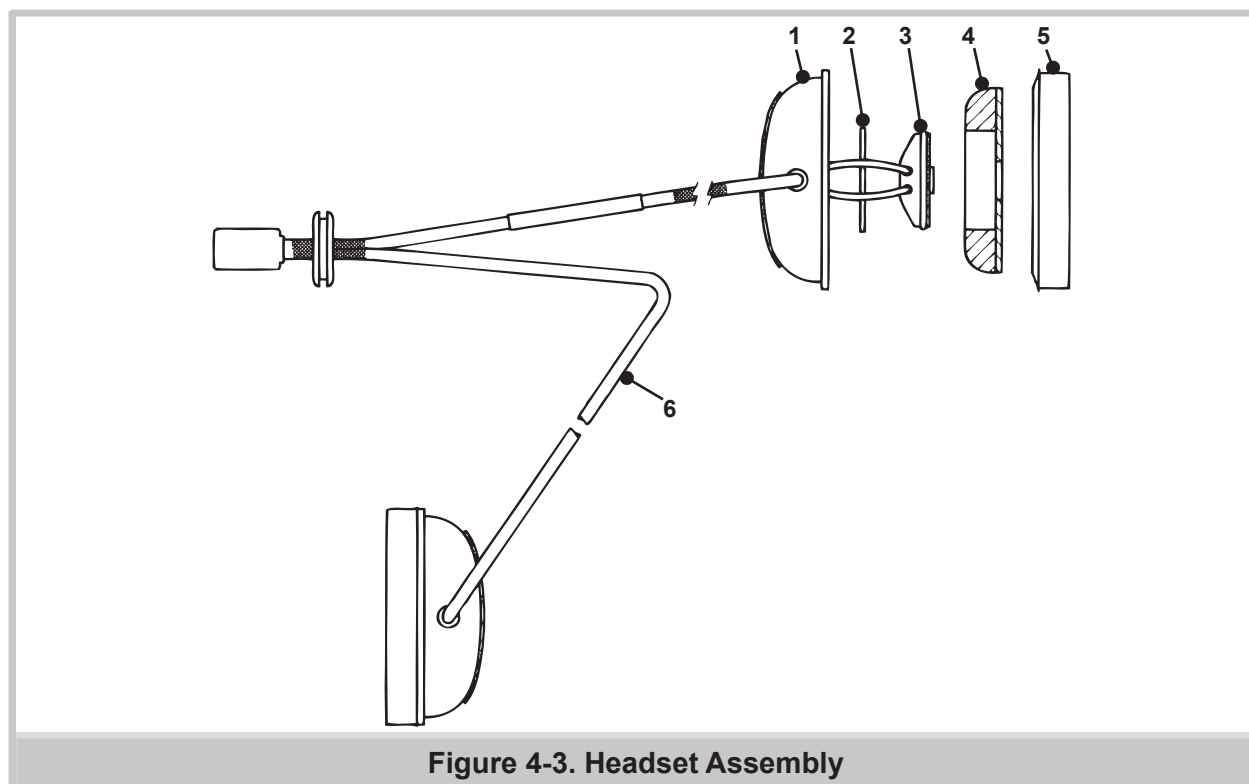


Figure 4-2. TPL Kit

FIG. NO.	PART NO.	CAGE	DESCRIPTION	QTY.	UOC
4-2	85D7087-1P	97427	TPL Kit, Medium	REF	A, D, G
	85D7087-2P	97427	TPL Kit, Large	REF	B, E, H
	85D7087-3P	97427	TPL Kit, X-Large	REF	C, F, I
1	88D7518-1	97427	Layer Assembly, Medium	1	A, D, G
	88D7518-2	97427	Layer Assembly, Large	1	B, E, H
	88D7518-3	97427	Layer Assembly, X-Large	1	C, F, I
2	85D7088-1	97427	Cover Assembly, Medium	1	A, D, G
	85D7088-2	97427	Cover Assembly, Large	1	B, E, H
	85D7088-3	97427	Cover Assembly, X-Large	1	C, F, I
3	85B7027	97427	Hook Fastener Tabs	4	



**Figure 4-3. Headset Assembly**

FIG. NO.	PART NO.	CAGE	DESCRIPTION	QTY.	UOC
<b>4-3</b>	<b>80C4754-3</b>	97427	Headset Asssembly	REF	
<b>1</b>	<b>80C4758</b>	97427	Earcup	2	
<b>2</b>	<b>67A1697</b>	97427	Filler Pad	2	
<b>3</b>	<b>69B2032</b>	97427	Earphone, H-143/AIC	2	
<b>4</b>	<b>70A2249</b>	97427	Earphone Holder	2	
<b>5</b>	<b>75C2990</b>	97427	Earseal	2	
<b>6</b>	<b>77D3662</b>	97427	Cord Assembly, CX4708 A/AIC	1	

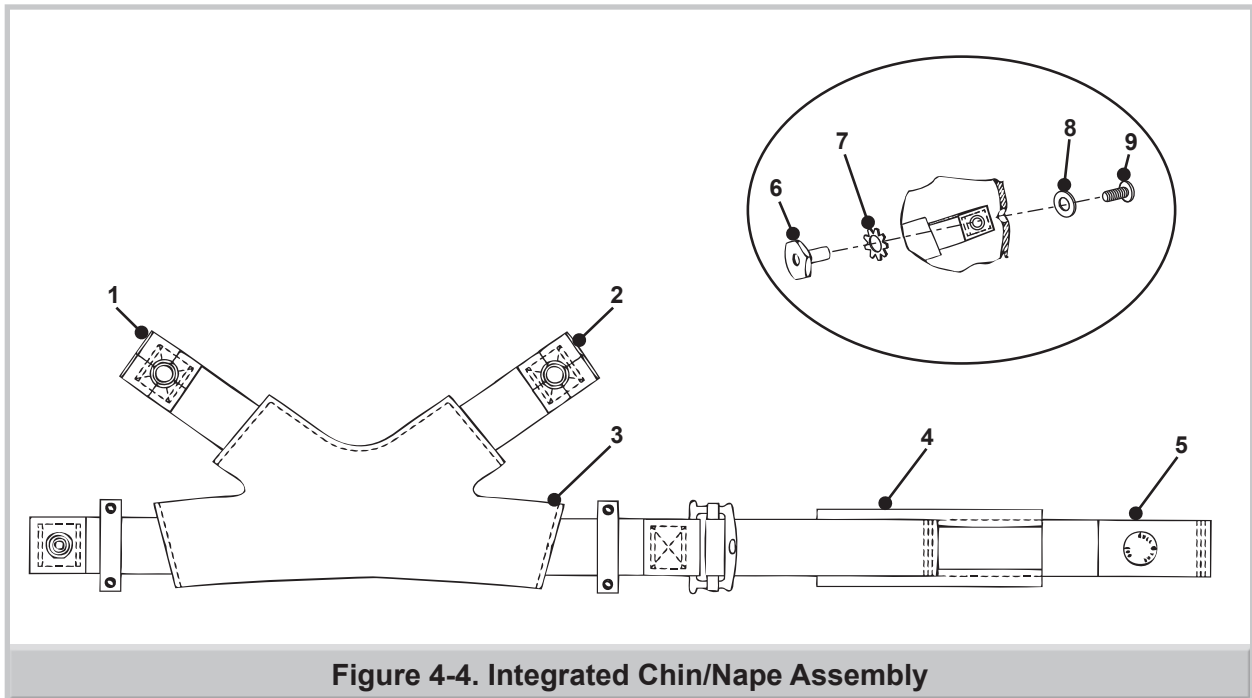
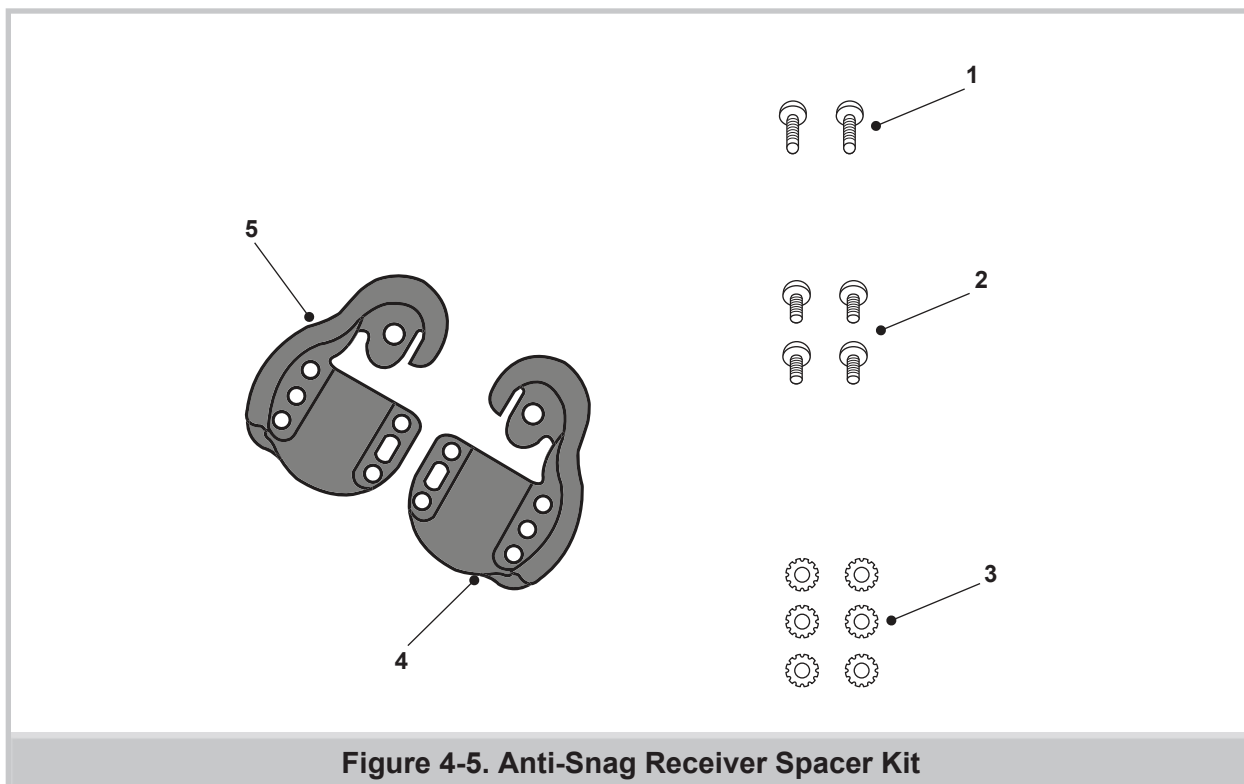


Figure 4-4. Integrated Chin/Nape Assembly

FIG. NO.	PART NO.	CAGE	DESCRIPTION	QTY.	UOC
4-4	90D7916-4	97427	Integrated Chin/Nape Assembly, Medium, Black	REF	A, D, G
	90D7916-5	97427	Integrated Chin/Nape Assembly, Large, Black	REF	B, E, H
	90D7916-6	97427	Integrated Chin/Nape Assembly, X-Large, Black	REF	C, F, I
	90B7948-1	97427	Integrated Chin/Nape Assembly, Medium, Gray	REF	A, D, G
	90B7948-2	97427	Integrated Chin/Nape Assembly, Large, Gray	REF	B, E, H
	90B7948-3	97427	Integrated Chin/Nape Assembly, X-Large, Gray	REF	C, F, I
1	89B7729-1	97427	Nape Strap with Buckle	1	
2	89B7730-1	97427	Nape Strap with Snap, Medium	1	A, D, G
	89B7730-2	97427	Nape Strap with Snap, Large/X-Large	1	B, C, E, F, H, I
3	84D6899-1	97427	Nape Pad, Leather, Black, Medium	1	A, D, G
	84D6899-2	97427	Nape Pad, Leather, Black, Large	1	B, E, H
	84D6899-3	97427	Nape Pad, Leather, Black X-Large	1	C, F, I
	88D7553-1	97427	Nape Pad, Leather, Gray, Medium	1	A, D, G
	88D7553-2	97427	Nape Pad, Leather, Gray, Large	1	B, E, H
	88D7553-3	97427	Nape Pad, Leather, Gray, X-Large	1	C, F, I
4	89C7764-1	97427	Chin Pad, Leather, Black	1	
	89C7764	97427	Chin Pad, Leather, Gray	1	
5	84C6708	97427	Chin Strap	1	
6	79A4436	97427	T-Nut, 10-32	2	
7	MS35335-34	97427	Lock Washer, External Tooth, 5/16	2	
8	77A3612-4	97427	Flat Washer, #10	2	
9	MS51958-61B	97427	Screw, Pan-Head, 10-32 x 3/8	2	



**Figure 4-5. Anti-Snag Receiver Spacer Kit**

FIG. NO.	PART NO.	CAGE	DESCRIPTION	QTY.	UOC
<b>4-5</b>	<b>05A12024-1</b>	97427	Anti-Snag Receiver Spacer Kit	REF	D, E, F
<b>1</b>	<b>MS51957-27B</b>	97427	Screw, Pan-Head, 6-32 x 5/16	2	
<b>2</b>	<b>MS51957-30B</b>	97427	Screw, Pan-Head, 6-32 x 1/2	4	
<b>3</b>	<b>MS35335-58</b>	97427	Washer, Lock, External Tooth, #6	6	
<b>4</b>	<b>05B12025-1</b>	97427	Receiver Spacer, Left-Hand	1	
<b>5</b>	<b>05B12025-2</b>	97427	Receiver Spacer, Right-Hand	1	

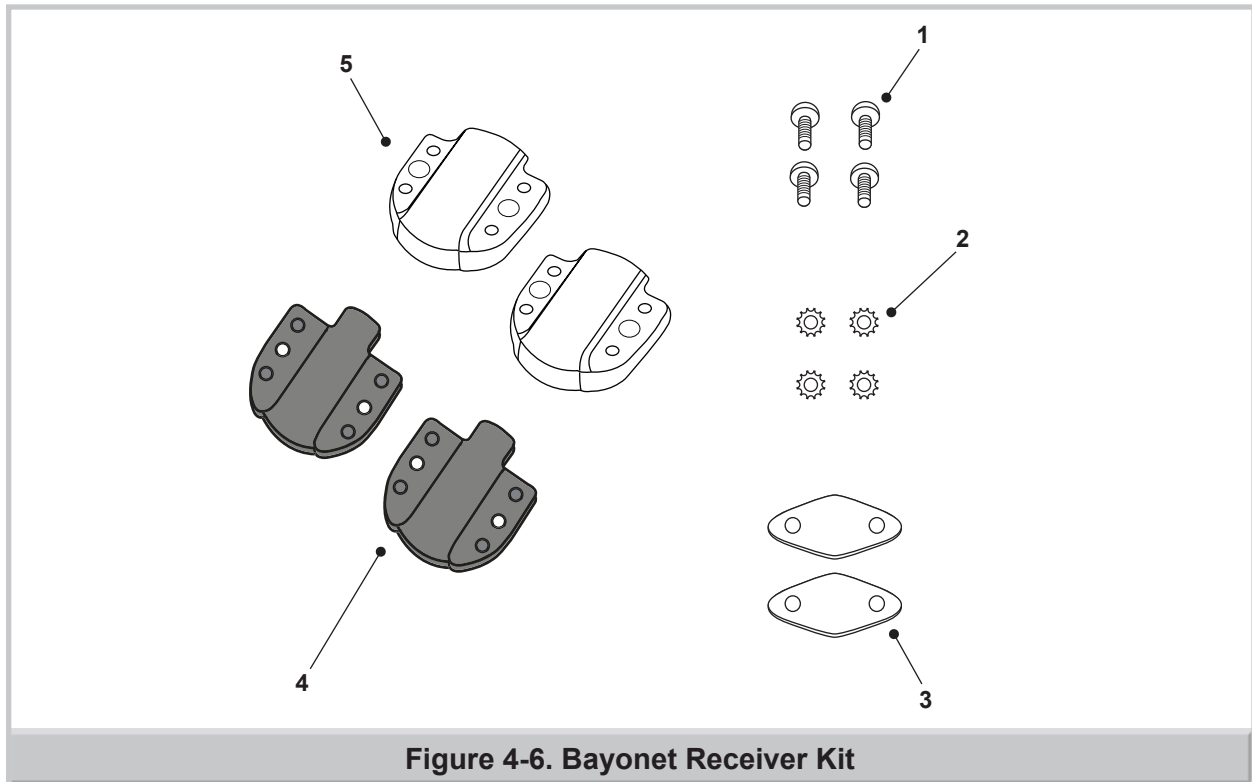


Figure 4-6. Bayonet Receiver Kit

FIG. NO.	PART NO.	CAGE	DESCRIPTION	QTY.	UOC
<b>4-6</b>	<b>82A5614-20</b>	97427	Bayonet Receiver Kit	REF	
<b>1</b>	<b>MS51957-29</b>	97427	Screw, Pan-Head, Cross-Recessed, 6-32 x 7/16	4	
<b>2</b>	<b>MS35335-58</b>	97427	Washer, Lock External Tooth, #6	4	
<b>3</b>	<b>82A5722</b>	97427	Backing Plate	2	
<b>4</b>	<b>80B4858</b>	97427	Spacer	2	
<b>5</b>	<b>80C4839-2</b>	97427	Bayonet Receiver	2	

## 4-2. OPTIONAL ITEMS

Optional items include additional components (not included with the helmet) that are available for installation on the helmet, as well as alternate helmet configurations. Contact Gentex Corporation ([www.gentexcorp.com](http://www.gentexcorp.com)) for more information.

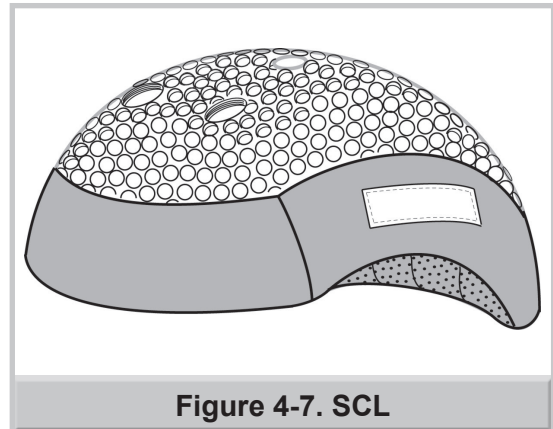
### 4-2.1. Additional Components

The following components are available.

#### SCL™ (Figure 4-7)

- Medium: **02D11531-1**
- Large: **02D11531-2**
- X-Large **02D11531-3**

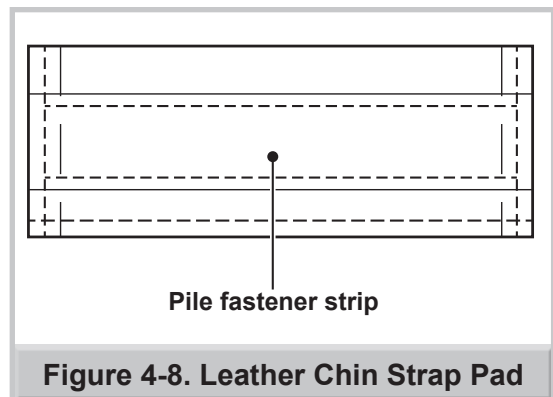
The Super Comfort Liner (SCL) conforms to individual head shapes through body heat to ensure increased stability, nearly eliminating the need for custom-fitting. The SCL cloth cover provides a more comfortable, plush feel than the standard TPL cover.



#### Leather chin strap pad (Figure 4-8)

- Gray: **89C7764**
- Black: **89C7764-1**

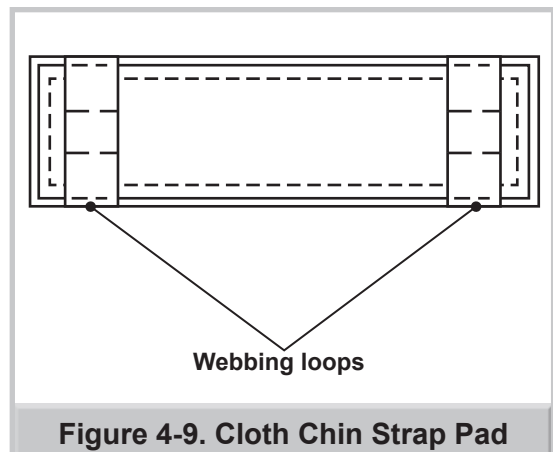
The leather chin pad slides easily onto the chin strap and provides a comfortable fit. It includes a pile fastener strip to hold the end of the chin strap.



#### Cloth chin strap pad (Figure 4-9)

Black: **80C4783**

The cloth chin strap pad has two elastic webbing loops through which the chin strap can be inserted.



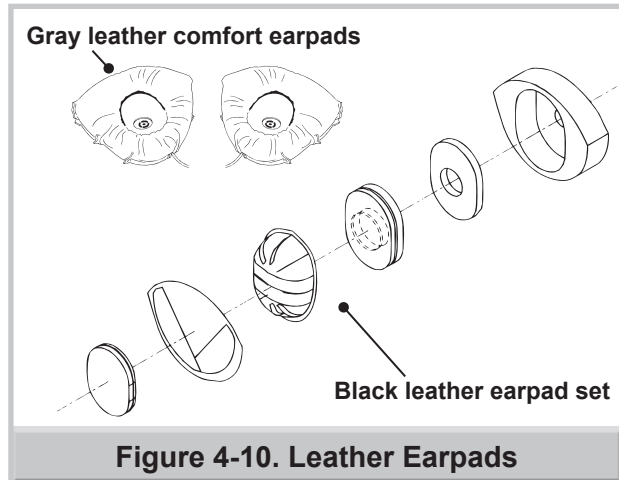
(Continued on next page)

**Leather earpads (Figure 4-10)**

- Gray: **79C4473-3**
- Black: **89C7735-1**

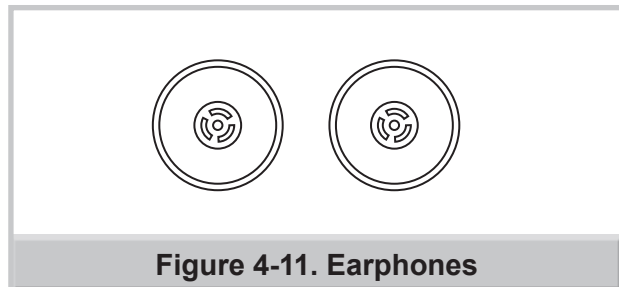
The gray leather comfort earpads are designed to hold the earphones directly inside.

The black leather earpad sets contain plastic earcups (with earphone holders inside) and are designed for high-noise environments.

**Figure 4-10. Leather Earpads****High-impedance earphones (Figure 4-11)**

- 300-ohm: **75B3195**
- 600-ohm: **90A7929**
- 1000-ohm: **71B2383**

Various impedances meet individual needs.

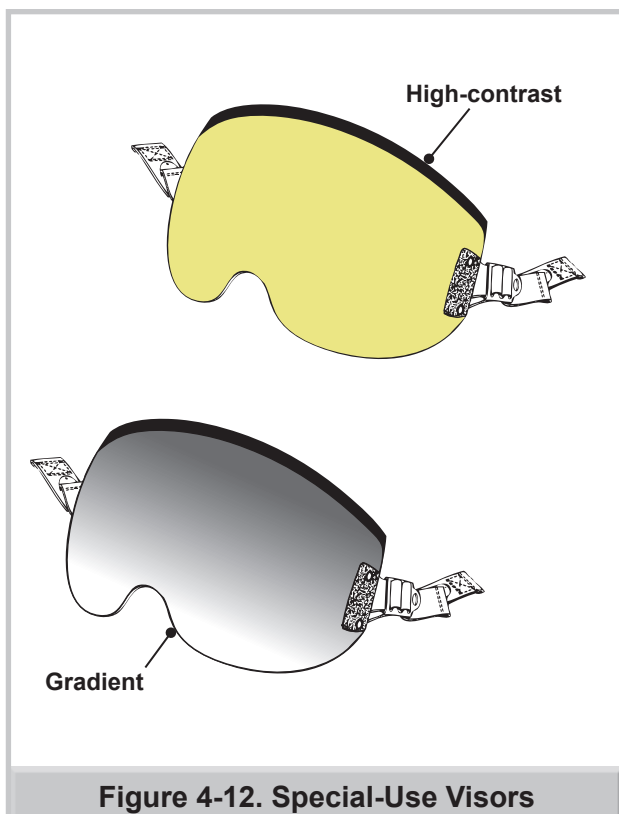
**Figure 4-11. Earphones****Special-use visors (Figure 4-12)**

- High-contrast, MBU-12/P: **81D5189-12**
- High-contrast, MBU-20/P: **91A8058-1**
- Gradient, MBU-12/P: **81D5189-11**
- Gradient, MBU-20/P: **91A8058-2**

The **high-contrast** visor (yellow) enhances vision in snowy, foggy, hazy or cloudy environments; it causes the blue portions of the visible spectrum to appear black or dark while other colors appear nearly normal. Many pilots prefer the high-contrast visor for use over desert environments.

The **gradient** visor (neutral gray at the top, transitioning to clear at the bottom) provides sunshade protection while allowing the user to see instrumentation clearly.

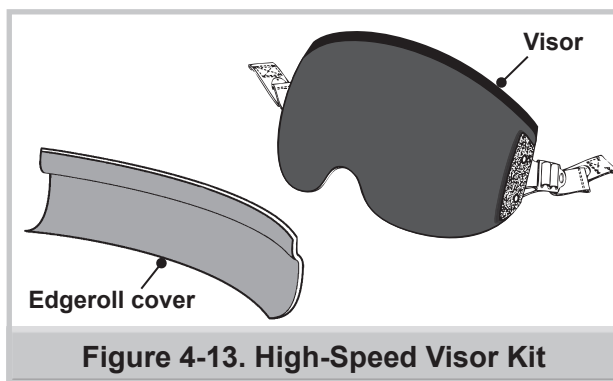
*(Continued on next page)*

**Figure 4-12. Special-Use Visors**

**High-speed visor modification kit  
(Figure 4-13)**

- Kit: **05B11943-3**

This kit is designed for enhanced windblast performance. The kit includes a neutral visor and a specially designed rubber edgeroll cover that provides friction holding of the visor during an ejection/windblast condition.

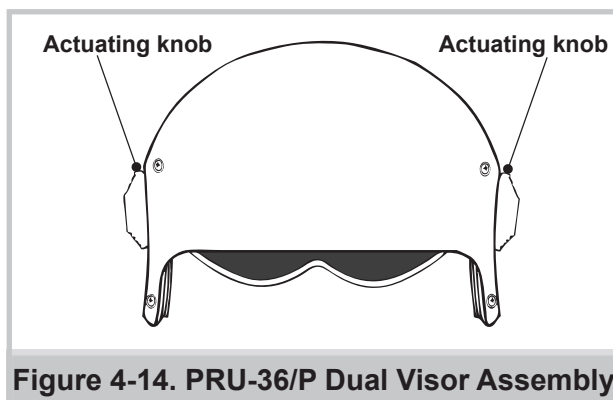


**Figure 4-13. High-Speed Visor Kit**

**PRU-36/P dual visor assembly  
(Figure 4-14)**

- MBU-12/P visors: **74D2682-4**
- MBU-20/P visors: **74D2682-7**

The side-actuated PRU-36/P dual visor assembly contains both a clear visor and a neutral gray visor. The inner clear and outer neutral gray visors are raised and lowered with actuating knobs at the sides.

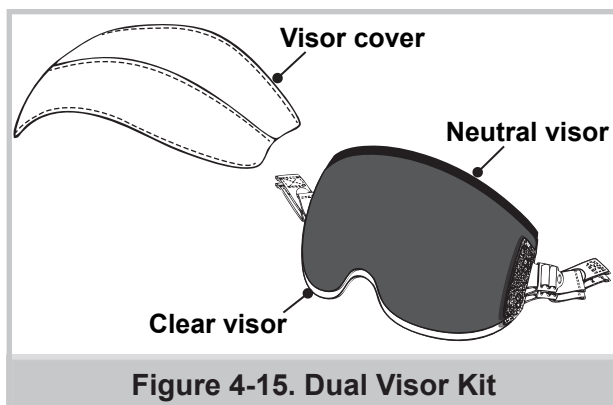


**Figure 4-14. PRU-36/P Dual Visor Assembly**

**Dual visor kit (Figure 4-15)**

- MBU-12/P: **85B7050-1**
- MBU-20/P: **85B7050-3**

The dual visor kit includes a visor cover and clear and neutral visors that snap to each other and to the helmet.



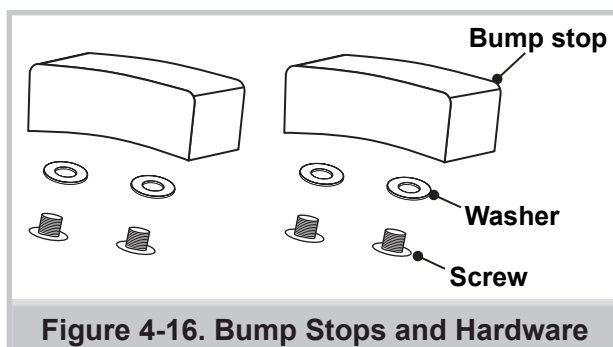
**Figure 4-15. Dual Visor Kit**

**Bump stops (Figure 4-16)**

- Bump stops: **85C7028-1**
- Screws: **75A3142-5**
- Washers: **75A2910**

These bump stops are taller than the standard helmet bump stops and are designed for use with the dual visor kit listed above (**85B7050-1** and **85B7050-3**).

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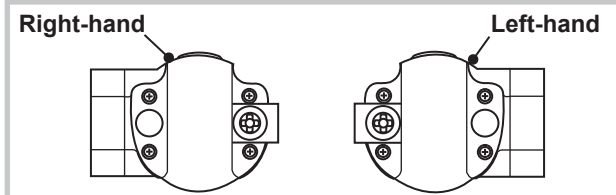


**Figure 4-16. Bump Stops and Hardware**

**Hinged bayonet receivers (Figure 4-17)**

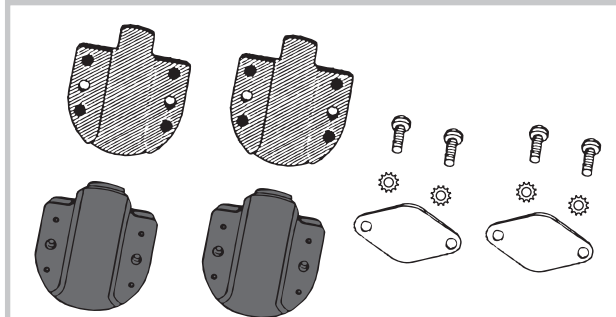
- Left-hand: **94D8975-1**
- Right-hand: **94D8975-2**

The hinged bayonet receivers allow an oxygen mask to be detached from the helmet on one side and swung open on the other side.

**Figure 4-17. Hinged Bayonet Receivers****Black bayonet receiver kit (Figure 4-18)**

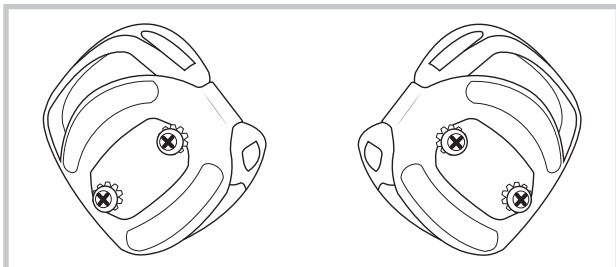
- Kit: **93A8514**

The black anodized bayonet receivers reduce reflection in the cockpit and aid in evasion tactics.

**Figure 4-18. Black Bayonet Receiver Kit****Rotatable bayonet receivers (Figure 4-19)**

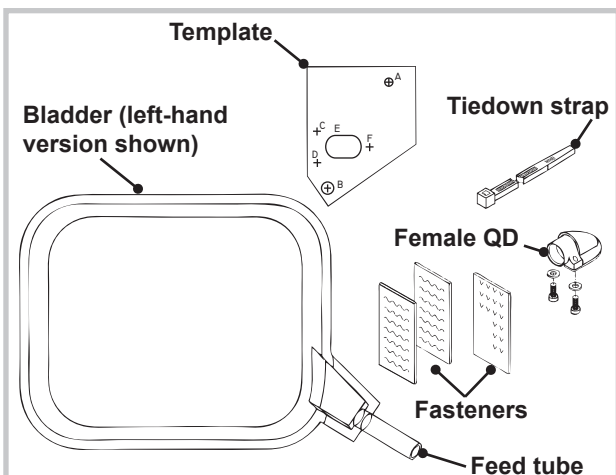
- Black: **G013-0003-01**
- Gray: **G013-0003-02**
- White: **G013-0003-03**

The rotatable bayonet receivers provide 30 degrees of rotation to accommodate both MBU-12/P and MBU-20/P mask bayonets. They are also hinged to allow the mask to swing away from the helmet without obscuring instrumentation to the left or right. In addition, they feature an anti-snag contour to prevent parachute risers from becoming entangled with either the bayonet or the receiver.

**Figure 4-19. Rotatable Bayonet Receivers****COMBAT EDGE bladder kit (Figure 4-20)**

- Left-hand: **95D8985-1**
- Right-hand: **95D8985-2**

This kit integrates the HGU-55/P with the man-worn COMBAT EDGE pressure breathing for G (PBG) system to reduce the probability of G-induced loss of consciousness (GLOC) during high-performance flight.

**Figure 4-20. COMBAT EDGE Bladder Kit**

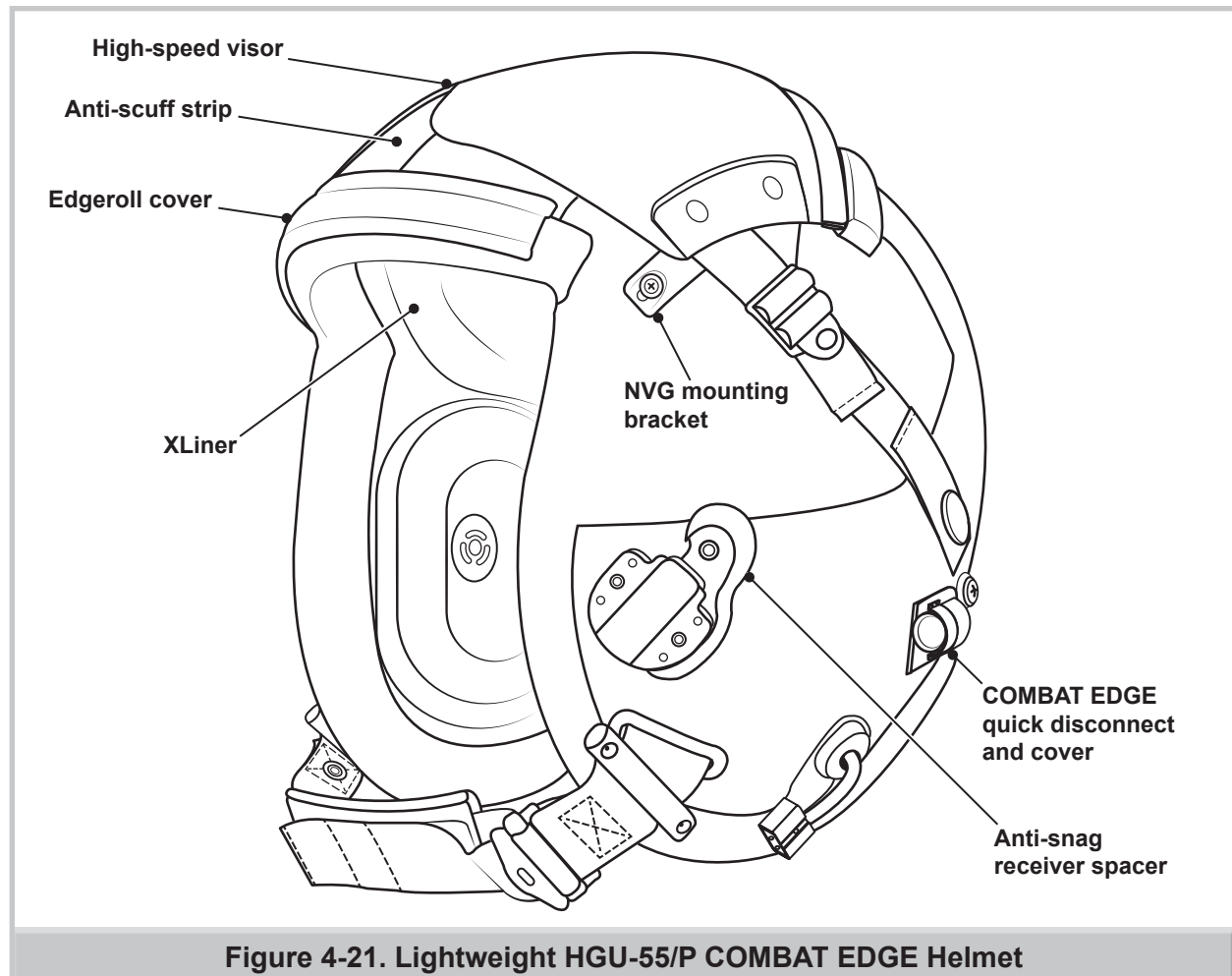
### 4-2.2. Alternate Helmet Configurations

Variations of the HGU-55/P helmet are available with special components factory-installed for convenience.

#### ***Lightweight HGU-55/P COMBAT EDGE helmet (Figure 4-21)***

- Medium: **06D12280-1**
- Large: **06D12280-2**
- X-Large: **06D12280-3**

This helmet incorporates the COMBAT EDGE bladder kit (including a bladder, quick disconnect, cover, and other items), high-speed visor kit (with friction-holding edgeroll cover), and anti-snag receiver spacers for use in high-speed, high-G environments. The helmet also has pre-drilled holes for the installation of night vision goggle (NVG) mounting brackets (for the banana bar) and includes an XLiner for comfort and stability. In addition, it has a leather anti-scuff strip at the top. This combination of features greatly reduces component installation time for the technician.



### Helmets with boom microphones

Helmets are available with various types of boom microphones installed for airlift or trainer use. These include wire booms and flex booms, as well as dynamic and electret microphones and communications cords. The following components are available.

#### Boom mount and accessories

(Figure 4-22):

- Black boom: **71B2285**
- Swivel assembly: **78A4047**
- Washer: **69A2142**
- Microphone cord, 13½ inches: **69C2080**
- Black cord clip: **69A2136**
- Strain relief plate: **69A2060**

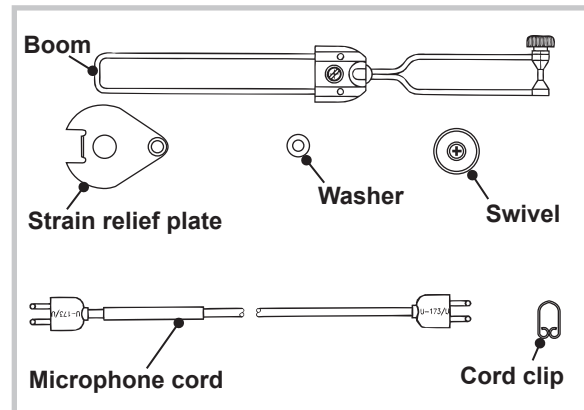


Figure 4-22. Boom and Accessories

#### Microphones and communications cords

(Figure 4-23):

- Microphone, 5-ohm dynamic: **78A4046-1**
- Microphone, 150-ohm dynamic: **77A3484**
- Microphone, electret: **79B4568-2**
- Communications cord, 25 inches, with U-174 plug: **77C3523-1**
- Lower cord with mask/boom switch: **06D12449-1**

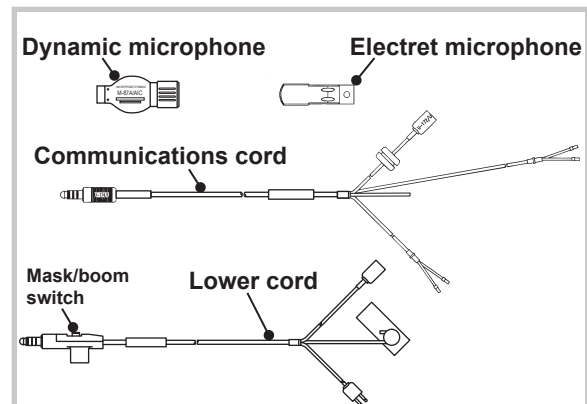


Figure 4-23. Microphones and Cords

#### Flex booms (Figure 4-24):

- Flex boom with U-173 plug and 5-ohm dynamic microphone: **03B11804-08B**
- Flex boom with U-173 plug and 150-ohm dynamic microphone: **03B11804-07B**
- Flex boom with U-173 plug and amplified electret microphone: **04C11892-05B**
- Flex boom flush mount kit: **04A11895-1**

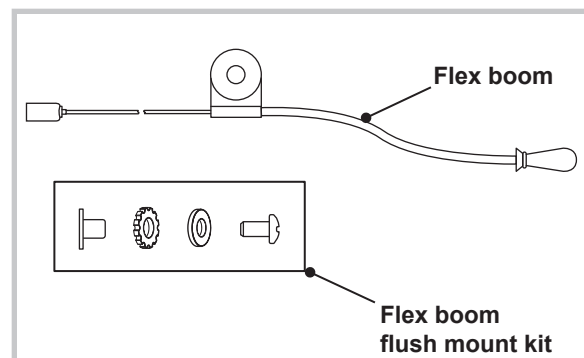


Figure 4-24. Flex Boom and Kit

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