Operation and Maintenance Instructions

HGU-56/P COMMERCIAL
HELMET ASSEMBLY

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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.

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.
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OVERVIEW

This manual provides fitting, operation, and maintenance instructions for the Gentex HGU-56/P Commercial Helmet Assembly. The manual is divided into the following sections:

- **Section 1: Introduction and General Description.** This section provides basic information about the helmet.
- **Section 2: Preparation for Use.** This section provides instructions for installing optional components, fitting the helmet, and operating the helmet properly.
- **Section 3: Maintenance.** This section includes information for cleaning, troubleshooting, performing preventive maintenance, and replacing components.
- **Section 4: Parts List.** This section provides information for ordering replacement parts.

SECTION 1: INTRODUCTION AND GENERAL DESCRIPTION

1-1. SYSTEM DESCRIPTION

The HGU-56/P Commercial Helmet Assembly (Figure 1-1) provides ear, eye, and head bump protection for aircrew personnel. Through a custom-fitting process, the HGU-56/P Helmet provides a stable mounting base for all modules and components.

Figure 1-1. HGU-56/P Commercial Helmet Assembly
1-2 STANDARD COMPONENTS

The helmet consists of the following standard components (Figure 1-2):

- **Helmet Shell.** Provides bump protection for the head via the shock-dampening energy-absorbing liner.
- **Boom and Microphone.** Part of the communications system, which also includes two earphones (one inside each earcup) and a communications cord.
- **Earcups.** Protect hearing by reducing noise and attenuating some side impacts.
- **Retention Assembly.** Stabilizes the helmet on the head; consists of earcup retaining pads, a chinstrap with a buckle, and a nape strap pad with adjustable straps.
- **Thermoplastic Liner (TPL®).** Optimizes fit and comfort; can be heat-softened and custom-fitted if necessary.
- **Energy-Absorbing (EA) Liner.** Absorbs and reduces impact forces.
- **Dual Visor Assembly.** Protects the wearer’s eyes from sun glare, flash fires, ballistic spall, dust, and foreign particles. Includes a clear inner visor and a neutral gray (sunshade) outer visor.
- **Headband Pad Kit.** Used when necessary to improve helmet fit.
- **Earcup Spacer Pad Kit.** Used when necessary to improve earcup fit.

TPL® is a registered trademark of GENTEX Corporation.
1-3. OPTIONAL COMPONENTS

Optional components (Figure 1-3) include the following:

- **ANVIS dual visor assemblies.** Options include a quick-disconnect version, which allows one-handed attachment and removal of the ANVIS mount; and a direct-mount version, which has a raised area for direct mounting of the ANVIS V-1 mount.

- **Super Comfort Liner (SCL).** Provides the protective benefits of the TPL, but offers enhanced comfort; conforms to individual head shapes through body heat to ensure increased stability while nearly eliminating the need for additional custom-fitting.

- **Maxillofacial Shield (MFS).** Protects the lower face from rotor wash, flying debris, and windblast during helicopter operations; has dual side release latches that provide for positive lock and quick release of the shield from either side of the helmet.

- **High-contrast visor.** Provides enhanced vision for flying in low-light conditions, such as snowy, foggy, overcast, hazy or cloudy environments; causes the blue portions of the visible spectrum to appear black or dark while other colors appear nearly normal; available for installation as an outer visor on the HGU-56/P.

- **Flex boom.** Permits ease and flexibility for positioning the microphone.

- **36” coiled communications cord.** Similar to the standard communications cord, but coiled for convenience; stretches to approximately 60 inches in length.

- **Helmet bag.** Larger than standard helmet bags; available in black, woodland camo, ACU camo, and desert camo (see Page 71 for part numbers); has a thickly padded interior to protect helmets and accessories; includes a shoulder strap and multiple pockets.

![Figure 1-3. Optional Components](image-url)
SECTION 2: PREPARATION FOR USE

2-1. SERVICE UPON RECEIPT

This section contains instructions regarding the tasks to be performed upon receipt of the helmet. These tasks include unpacking and inspecting unpacked equipment.

2-1.1. Unpacking

1. Open the over pack carton and remove all unit pack cartons. Unit pack cartons are labeled according to their contents. Open each unit pack carton. Remove the sealed helmet and, if supplied, the helmet bag.

2. Unseal the bag containing the helmet. Take the helmet, the earcup spacer pad set, the headband fitting pad set, and the ANVIS mounting kit (if supplied) out of the bag. Remove the wrapping from the helmet.

3. Open the sealed bag containing the helmet bag (if supplied), and remove the helmet bag.

2-1.2. Inspecting Unpacked Equipment

1. Check the helmet and all included items for any damage incurred during shipment. Report any damage to your shipper.

2. Check the helmet and all other parts against the packing slip to determine if all parts have been included. Report any discrepancies immediately to your shipper.
2-2. SELECTING HELMET SIZE

*Tools and Materials Required*

- Carpenter’s combination square
- Ruler
- Marker
- Wood block (2 inches by 4 inches by 8 inches)
- Adhesive-backed hook-and-pile fastener

**WARNING**

Proper fitting is essential to the functioning of the helmet, all of its components, and, consequently, the safety of the wearer. Take as much time as necessary to fit the helmet precisely. Use extreme care in taking measurements and checking fit.

1. Obtain a block of wood 2 inches thick by 4 inches wide by 8 inches long. Referring to Figure 2-1, attach an 8-inch strip of hook fastener to the entire length of the center of one of the 4-inch-wide faces. Attach a 12-inch strip of pile fastener, running vertically, to a wall (bottom of the strip approximately 5 feet 4 inches above the floor) so that the block can be adjusted for the various heights of user’s heads.

2. Attach the block of wood to the wall at the height of the wearer’s head when the wearer is standing.

*(Continued on next page)*

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![Figure 2-1. Prepared Wood Block](image-url)
3. Have the wearer stand with the back of the head against the block. Ensure that the wearer's posture and body alignment are as straight as possible. The wearer should hold his or her head in a comfortable position while focusing on a point directly ahead at eye level.

4. Referring to Figure 2-2, View A, use a ruler to measure a distance 1-1/2 inches above the wearer's pupil. Using a marker, make a small mark at this point in the center of the wearer's forehead; this is the foreground reference point (FRP).

5. Referring to Figure 2-2, View B, use a combination square to measure from the FRP to the block; this is the head length. Be careful to just touch the wearer's skin at the FRP.

6. Select the correct helmet size based upon head length as follows:

<table>
<thead>
<tr>
<th>HEAD LENGTH (INCHES)</th>
<th>HELMET SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 8-5/16</td>
<td>XL</td>
</tr>
<tr>
<td>8-1/16 - 8-5/16</td>
<td>L</td>
</tr>
<tr>
<td>7-3/4 - 8</td>
<td>M</td>
</tr>
<tr>
<td>7-7/16 - 7-11/16</td>
<td>S</td>
</tr>
<tr>
<td>7-1/8&quot; - 7-3/8</td>
<td>XS</td>
</tr>
<tr>
<td>&lt; 7-1/8</td>
<td>XXS</td>
</tr>
</tbody>
</table>

Figure 2-2. Determining Head Length
2-3. INSTALLING OPTIONAL COMPONENTS

Install optional components on the helmet as needed. Installation procedures are as follows:

- Installing SCL: Paragraph 2-3.1 (Page 8)
- Installing Optional Dual Visor Assemblies (Quick-Disconnect and Direct-Mount): Paragraph 2-3.2 (Page 9)
- Installing ANVIS Attachment Kit (for Quick-Disconnect ANVIS Dual Visor Assembly): Paragraph 2-3.3 (Page 6)
- Installing ANVIS Attachment Kit (for Direct-Mount ANVIS Dual Visor Assembly): Paragraph 2-3.4 (Page 12)
- Installing High-Contrast Visor: Paragraph 2-3.5 (Page 16)
- Installing Flex Boom Microphone: Paragraph 2-3.6 (Page 18)
- Installing 36" Coiled Communications Cord: Paragraph 2-3.7 (Page 20)
- Installing Maxillofacial Shield: Paragraph 2-3.8 (Page 21)

**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.
2-3.1 Installing SCL

To install the SCL, you remove the TPL from the helmet and insert the SCL in place of the TPL.

**Tools and Materials Required**

SCL in one of the following sizes (to match helmet size):

- 02D11531-8 (XX-Small)
- 02D11531-9 (X-Small)
- 02D11531-10 (Small)
- 02D11531-11 (Medium)
- 02D11531-12 (Large)
- 02D11531-13 (X-Large)

**Procedure**

Install the SCL (Figure 2-3) as follows:

1. Remove the TPL from the helmet.

2. Referring to Figure 2-4, place the SCL in the helmet.

3. Ensure that the holes in the SCL are aligned with the holes in the energy-absorbing liner as shown in Figure 2-5. The SCL should seat down against, and align with, the front edge of the energy-absorbing liner.

4. Proceed to Paragraph 2-4 (beginning on Page 27) to check the fit of the helmet.

**NOTE:** The SCL usually does not require custom-fitting. However, the SCL may be custom-fitted, if necessary, as described in Paragraph 2-6 (beginning on Page 36).
2-3.2 Installing Optional ANVIS Dual Visor Assemblies (Quick-Disconnect or Direct-Mount)

Both types of ANVIS dual visor assemblies (quick-disconnect and direct mount, Figure 2-6) are installed in the same manner (after the existing dual visor assembly is removed).

**Tools and Materials Required**

- ANVIS dual visor assembly, quick-disconnect (95B9246)
  
  or

- ANVIS dual visor assembly, direct mount (88D7611-1)

**Procedure**

Install the ANVIS dual visor assembly (quick-disconnect or direct-mount) as follows:

1. Loosen (do not remove) the four thumb screws (Figure 2-7) on the existing dual visor assembly on the helmet.

2. Lift the entire existing dual visor assembly away from the helmet and set aside.

3. Align the thumbscrews of the ANVIS dual visor assembly over the four posts protruding upward through the helmet (Figure 2-8).

4. Tighten the four thumb screws on the ANVIS dual visor assembly into the posts. Ensure that the ANVIS dual visor assembly is securely attached to the helmet.

5. Install the ANVIS attachment kit per Paragraph 2-3.3 (for quick-disconnect) or Paragraph 2-3.4 (for direct-mount).
2-3.3 Installing ANVIS Attachment Kit (for Quick-Disconnect ANVIS Dual Visor Assembly)

Before you can attach the ANVIS night vision goggles to the ANVIS dual visor assembly, you must modify the ANVIS mount. An optional kit (Figure 2-9) contains the parts required for this modification. Once modified, the mount will provide one-handed attachment and removal.

Tools and Materials Required

ANVIS Attachment Kit (96A9378)

Procedure

Referring to Figure 2-9, modify the ANVIS mount as follows:

1. Remove the nut from the right side (as worn) of the ANVIS mount, and place the strain relief clamp over the ends of the screw threads.

2. Place the cable wires under the clamp arm, and replace the nut over the screw threads and the clamp. Tighten the nut until it is secure.

3. Position the backing plate on the rear of the mount so that the screw holes line up and the plate is flush with the top and bottom rear of the mount. Ensure that the wires extending from the rear of the mount are aligned in the mount slots to prevent crushing of wires.

4. Apply a small amount of thread-locking adhesive to the end of each top locating pin (identified by longer, tapered heads), and install these pins through the top holes of the backing plate and into the rear of the mount. Repeat with the bottom locating pins, installing them through the bottom holes. Tighten the pins until they are secure; do not tighten too much.

5. Remove the backing from the hook fastener, and wrap it around the cable connector until the ends meet.

(Continued on next page)
6. Attach the 2 x 2-inch pile fastener (supplied with the ANVIS mounting hardware kit) to the visor housing at the front of the helmet as shown in Figure 2-10. This fastener will anchor the connector.

7. Attach the two 2 x 3-inch pile fasteners (supplied with the ANVIS mounting hardware kit) to the back of the helmet as shown in Figure 2-10. These fasteners will hold the battery pack.

8. Referring to Figure 2-10, attach the mount to the ANVIS dual visor assembly as follows:
   a. Align the locating pins with the slots in the mounting platform on the visor housing.
   b. Insert the pins into the slots, and pull the mount down until it clicks into place.
   c. Attach the hook fastener on the connector to the pile fastener on the visor housing.

9. To remove the mount from the visor housing, depress the tab on top of the mounting platform, and lift the mount up and away from the housing.

Figure 2-10. ANVIS Mount and Pile Fasteners Installed
2-3.4 Installing ANVIS Attachment Kit (for Direct-Mount ANVIS Dual Visor Assembly)

**Tools and Materials Required**
- #1 Cross-tip screwdriver
- Jeweler’s screwdriver set
- Dual Visor Assembly (88D7611-1)
- V-1 ANVIS Mount
- ANVIS Attachment Kit (93A8654)

**Procedure**

In this procedure, you will use the ANVIS Attachment Kit (Figure 2-11) to attach the ANVIS mount (not supplied with the helmet) to the visor housing. Follow these steps.

1. Referring to Figure 2-12, remove the visor housing as follows:
   a. Loosen the four thumbscrews to remove the visor assembly from the helmet.
   b. Remove the thumbscrews from the visor assembly.
   c. Remove the visor housing from the tracks.

2. Remove the four screws on the back of the ANVIS mount.

3. Referring to Figure 2-13, place the ANVIS mount against the front of the visor housing. Align the four mount holes with the four visor housing holes.

4. Attach the mount to the housing by inserting four 4-40 x 3/16" pan-head screws (supplied in the ANVIS attachment kit) through the inside of the housing and into the mount. Fasten the screws securely, but do not tighten too much.

*(Continued on next page)*
5. Referring to Figure 2-14, remove the two screws, washers, and posts attaching the power cord block and power cord cover to the visor housing.

6. Referring to Figure 2-15, remove the moleskin patch on the inside of the visor housing. Beneath this patch is the power cord cover retaining screw.

7. Remove the screw from which you removed the moleskin patch in Step 6. This will detach the power cord cover from the housing.

8. Referring to Figure 2-16, align the power cord cover on the front of the housing, and route the cord and connector under the power cord cover.

9. Reinstall the screw that you removed in Step 7.

(Continued on next page)
When you install the screws in Step 10, be careful to tighten the screws just snugly enough to secure the cover. Tightening the screws too much may damage the cover.

10. Referring to **Figure 2-17**, reattach the power cord cover and the power cord block to the visor housing with the screws, washers, and posts removed in Step 8. Ensure that the red dot on the connector points up and that the knurls on the connector are seated between the ridges on the block.

![Figure 2-17. Reinstalling Power Cord Cover](image)

11. Referring to **Figure 2-18**, install moleskin patches (supplied in the ANVIS mounting kit) on the inside of the visor housing in the pattern shown.

12. Align the visor housing over the bushings that protrude upward through the tracks, and install the thumbscrews through the visor housing and the bushings.

*(Continued on next page)*
13. Position visor housing assembly on helmet, and start four thumbscrews into helmet to attach visor assembly as shown in Figure 2-19. After all four thumbscrews are started, tighten them.

14. Referring to Figure 2-20, attach two 2-inch x 3-inch pile fastener pieces (supplied in the ANVIS mounting kit) to the helmet as follows:

   a. Position the two pile fastener pieces at the rear of the helmet as shown, and mark the area with a pencil.

   b. Clean the marked area with isopropyl alcohol pads.

   c. Affix the pile fasteners within the marked area.

**NOTE:** If the pile fastener pieces fail to stick to the helmet shell, lightly sand the area; then affix the pile fasteners.

15. Install the ANVIS goggles (Figure 2-21) in accordance with TM 11-5855-263-10.

16. Perform a continuity check of the ANVIS goggles in accordance with TM 11-5855-263-10.
2-3.5 Installing High-Contrast Visor

The high-contrast visor is an outer visor that you install in place of the existing outer visor on the dual visor assembly. Follow these steps to install the high-contrast visor.

**Tools and Materials Required**

High-contrast visor (95A9302-5)

**Procedure**

1. Referring to Figure 2-22, remove the dual visor assembly from the helmet as follows:
   a. **Loosen** (do not remove) the four thumbscrews on the dual visor assembly.
   b. Lift the dual visor assembly away from the helmet posts.

2. Referring to Figure 2-23, remove the visor housing as follows:
   a. Remove the four thumbscrews from the visor housing.
   b. Lift the visor housing away from the tracks.

3. Referring to Figure 2-24, remove the lower retaining ring on the same side where the outer visor knob is located.

*(Continued on next page)*
4. Referring to Figure 2-25, remove the existing outer visor as follows:
   a. Push the outer visor knob outward, and move the knob downward along the tracks.
   b. Lift the upper track slightly to provide clearance for the knob.
   c. Slide the outer visor out of the tracks on both sides.

5. Set the existing outer visor aside; obtain the high-contrast visor.

6. Referring to Figure 2-26, install the high-contrast visor as follows:
   a. Lift the upper track slightly, and slide the high-contrast visor into the tracks where the previous outer visor was removed.
   b. Push the knob outward, and slide the high-contrast visor upward along the tracks.
   c. Release the knob to lock the visor in place.

7. Referring to Figure 2-27, reinstall the retaining ring that you removed in Step 3. Ensure that the retaining ring is seated in the groove on the bushing.

8. Referring to Figure 2-23 (previous page), reinstall the thumbscrews through the visor housing and the tracks.

9. Referring to Figure 2-22 (previous page), position the dual visor assembly over the helmet. Reinstall the four thumbscrews into the helmet posts. Tighten the screws evenly.
2-3.6 Installing Flex Boom Microphone

In this procedure, you will remove the existing wire boom microphone from the helmet and install the flex boom microphone with its associated hardware kit (Figure 2-28).

**Tools and Materials Required**
- Flex boom (03B11804-16B)
- Hardware kit (04A11895-1)
- Cross-tip screwdriver

**Procedure**

1. Referring to Figure 2-29, unplug the existing microphone from the communications cord connector at the rear of the helmet.

2. Referring to Figure 2-30, remove the existing boom microphone as follows:
   a. Remove the center screw of the swivel assembly.
   b. Remove the interior screw that attaches the swivel assembly to the helmet.

*(Continued on next page)*
3. Referring to **Figure 2-31**, do the following:

   a. From outside the helmet, insert the screw through the flat washer, the flex boom mount, and the microphone attachment hole in the helmet.

   b. From inside the helmet, insert the nut through the lock washer, and attach the nut to the screw.

   c. Tighten the screw to prevent the flex boom mount from moving on the helmet. Re-check the screw during periodic inspection to ensure tightness.

   d. Plug the microphone into the connector at the rear of the helmet.

---

**NOTE**: You can install the flex boom mount outside or inside the helmet as shown here.

---

**Figure 2-31. Flex Boom Microphone**
2-3.7. Installing Coiled Communications Cord

**NOTE:** See Figure 2-32 for a comparison of the standard communications cord and the coiled communications cord.

To install the coiled communications cord (87B7491-2), you must first remove the standard communications cord. This requires you to disassemble and remove several components from the helmet. Once you have disassembled these components, you can connect the coiled cord and then reassemble and reinstall the components. You will refer to Paragraph 3-3.7 (Page 57) as follows:

1. Remove the standard communications cord from the helmet by following the *Removal* procedure in Paragraph 3-3.7.

2. Install the coiled communications cord into the helmet by following the *Installation* procedure in Paragraph 3-3.7.

---

**Figure 2-32. Standard and Coiled Communications Cords**
2-3.8 Installing Maxillofacial Shield (MFS)

To install the MFS (Figure 2-33), you must install hardware on the helmet for attachment of the shield. (If ANVIS goggles are used, you might also need to trim the shield to accommodate the goggles; refer to Paragraph 2-5 on Page 35.)

Tools, Equipment, and Materials Required

- MFS (88C7626)
- Compass
- Screwdriver, cross-tip
- Drill, electrical, portable
- Drill bit, 1/16
- Drill bit, 9/64
- Drill bit, 3/16
- Respirator
- MFS with latches
- Striker hardware kit
- White glue
- Pencil
- Goggles, eye-protective
- 2x4 wood block

Procedure

1. Remove the dual visor assembly from the helmet.

2. Set a compass to the value shown below for your helmet size.
   - Small, XS, XXS: 3-1/8 inches
   - Medium: 3-3/16 inches
   - Large: 3-19/64 inches
   - X-Large: 3-21/64 inches

3. With the compass set to the appropriate value as specified in Step 2, position the point of the compass in the dimple on one side of the helmet, and draw an arc from approximately 2 inches to 2-1/2 inches below the dual visor assembly post as shown in Figure 2-34.

4. Repeat Step 3 for the other side of the helmet.

5. Set the compass to the value shown below for your helmet.
   - Small, XS, XXS: 2-9/64 inches
   - Medium: 2-9/64 inches
   - Large: 2-5/32 inches
   - X-Large: 2-9/64 inches

(Continued on next page)
6. With the compass set to the appropriate value as specified in Step 5, position the point of the compass below the lower dual visor assembly post on one side of the helmet, and draw an arc as shown in Figure 2-35 to intersect with the first arc.

7. Repeat Step 6 for the other side of the helmet.

8. On one side of the helmet, center punch the point at which the arcs intersect. Repeat for the other side.

**WARNING**

- Wear eye-protective goggles when drilling holes in Steps 9-11 to prevent eye injury.
- Use the 2x4 block of wood as specified in Steps 9-11 to prevent hand injury.

**CAUTION**

- Be careful not to damage any components inside the helmet when performing Steps 9-11.
- Be sure to drill the helmet shell as specified in Steps 9-11, or delamination of the helmet shell could result, making the helmet unserviceable.
- When performing Steps 9-11, hold the drill perpendicular to the helmet shell to prevent damage to the shell and the energy-absorbing liner.
- Use the 2x4 block of wood as specified in Steps 9-11 to prevent damage to the helmet shell.

9. On both sides of the helmet, at the center punched marks where the two arcs intersect, firmly hold a 2x4 block of wood inside the helmet shell behind the drilling point. Use a 1/16-inch drill bit to drill a pilot hole. Continue to hold the block in this manner in Steps 10 and 11.

10. Use a 9/64 drill bit to drill through the pilot hole.

11. Finish drilling the hole with 3/16-inch drill bit.

*(Continued on next page)*
12. Referring to Figure 2-36, attach a striker to one side of the helmet by using one screw and a post through the lower hole of the striker and the drilled hole in the helmet, applying a drop of white glue to the threads of each screw. Leave the screw just loose enough to allow the striker to rotate.

13. Repeat Step 12 for the other side of the helmet.

14. Reattach the dual visor assembly to the helmet. Referring to Figure 2-37, use the two downstop locking screws (one on each side of the visor) to adjust the visor downstop to the lowest position.

15. Referring to Figure 2-38, attach the MFS to the striker and latch the MFS into place as follows:

   a. On one side, position the pin on the MFS latch into the slot of the striker, and flip the latch against the helmet shell. Ensure that the latch is locked in place.

   b. Swing the MFS to the closed position on the other side, and fasten the other latch in place.

Continued on next page
16. Referring to Figure 2-39, adjust the MFS position as follows:

a. Lower the inner (clear) visor to the full down position. (Push the inner visor knob outward and down.)

b. Push up or down on the MFS so that an even, approximately 1/16-inch clearance exists between the inside surface of the visor and the top edge beading of the MFS where they overlap. The bottom edge of the visor should align with the bottom edge of the edge beading on the MFS. The MFS must not touch any part of the dual visor housing.

c. With the MFS in this position, snug the two lower striker screws.

17. Check the MFS position as follows:

a. Raise the inner visor.

b. Unlatch one side of the MFS and swing the MFS out, ensuring that there is no interference with with dual visor assembly. Re-latch the MFS, and repeat for the other side.

c. Re-latch both sides of the MFS.

d. Lower the visor again to ensure that the alignment and clearance specified in Step 16 has been maintained. Readjust as necessary.

e. Raise and lower the inner visor again to ensure clearance and proper operation.

f. Raise the visor again.

*Continued on next page*
CAUTION

- Be careful not to damage any components inside the helmet when performing Steps 18 and 19.
- Be sure to drill the helmet shell as specified in Steps 18 and 19, or delamination of the helmet shell could result, making the helmet unserviceable.
- When performing Steps 18 and 19, hold the drill perpendicular to the helmet shell to prevent damage to the shell and the energy-absorbing liner.
- Use the 2x4 block of wood as specified in Steps 18 and 19 to prevent damage to the helmet shell.
- When performing Step 19, ensure that both strikers are rotated out of the way before you begin drilling. Do not drill through the strikers with the 3/16-inch drill bit.

18. Drill the pilot holes as follows:
   a. With both sides of the MFS latched in place and the two lower striker fasteners snug, firmly hold a 2x4 block of wood inside the helmet shell behind the drilling point.
   b. Use a drill with a 1/16-inch drill bit to drill a pilot hole through the upper hole of both strikers.
   c. Continue to hold the wood block behind the drilling point, and drill the upper hole of both strikers with a 9/64-inch drill bit.

19. Drill the final holes as follows:
   a. Remove the MFS, loosen the two lower striker fasteners, and rotate both strikers out of the way to allow access to the pilot holes drilled in Step 18.
   b. Firmly hold a 2x4 block of wood inside the helmet shell behind the drilling point.
   c. Using a drill with a 3/16-inch drill bit, drill through both pilot holes.

Continued on next page
20. Rotate the strikers back to their previous positions. Referring to Figure 2-40, install the remaining screws and posts through the upper striker holes and the newly drilled holes to attach the strikers, applying a drop of white glue to the threads of each screw. Tighten all four screws.

21. Reattach the MFS, lower the inner visor, and check for proper alignment on the helmet. If the MFS does not align properly, loosen all four screws (with the MFS still attached), realign the MFS as necessary, and re-tighten the screws.

22. Clean the inside of the helmet to remove all debris resulting from drilling.

23. Adjust the microphone boom as necessary so that it can be placed behind the MFS as shown in Figure 2-41. To do this, loosen the knurled knob on the boom swivel, move the boom forward or back until it can be placed inside the recessed space of the MFS, and tighten the knurled knob.

NOTES:

- Ensure that the MFS is fitted to the wearer during the helmet fit check. Refer to Paragraph 2-4, beginning on Page 27.
- If the wearer uses night vision goggles, the MFS may require trimming. Refer to Paragraph 2-5 (Page 35).
2-4. HELMET FITTING AND OPERATION

Following is the procedure for donning and fitting the helmet, operating the helmet components, and removing the helmet.

**Tools and Materials Required**

- Needle and thread
- Small cross-tip screwdriver

**NOTES:**

- Ensure that the correct helmet size has been selected as described in Paragraph 2-2 (Page 5).
- If night vision goggles are to be used, check helmet fit with the goggles attached.
- In preparation for the fitting procedure, females with long hair should arrange their hair so that it is completely covered by the helmet and/or the flight suit. The hair must be worn the same way thereafter.

**Procedure**

1. Before having the wearer don the helmet, verify that:
   - the TPL or SCL seats down against, and is aligned with, the front edge of the energy-absorbing liner, and that the TPL or SCL is centered in the helmet.
   - the holes in the front of the TPL or SCL align with the holes in the energy-absorbing liner as shown in Figure 2-42.

*(Continued on next page)*

![Figure 2-42. Alignment of TPL/SCL Holes](image)
2. Have the wearer don the helmet as follows:

   a. Grasp the helmet as shown in Figure 2-43, and flex the helmet slightly to clear the head.

   b. Position the helmet firmly against the forehead; rotate the helmet rearward and down onto the head.

   c. Press the helmet down firmly with both hands to ensure that the helmet is properly positioned on the head.

3. Align the front edge of the helmet with the FRP (marked in Step 4 on Page 6).

4. Ask the wearer to evaluate the fit. As applicable, do any of the following:

   • If a pressure point exists in the center of the forehead, refer to Figure 2-44 and add headband fitting pads between the TPL or SCL and the energy-absorbing liner to either side of the pressure point to even the pressure.

   • If any pressure point remains, TPL custom fitting may be required; refer to Paragraph 2-6 (Page 36).

   • If the fit is too loose, try a smaller-size helmet and repeat Steps 2 through 4.

(Continued on next page)
5. Adjust the earcups so that they cover the wearer’s ears. Ask the wearer if the ear is centered in the earcup.

**NOTE:** Earseals (Figure 2-45) should be compressed evenly and to the greatest degree possible without causing discomfort. (Proper earseal compression may be indicated by a visible ring impression around the ear when the helmet is removed. If no ring is visible, check carefully to see that none of the ear is pinched under the earseal.)

6. Check the earseal compression. As necessary, refer to Figure 2-46 and Figure 2-47 and do any of the following:

- If earseal compression is too great (causing discomfort) **without** earcup spacer pads, select the next larger helmet size.
- If the earseals are not sufficiently compressed, have the wearer remove the helmet. Add one or more earcup spacer pads (Figure 2-46) as needed between the earcup retaining pad and the helmet shell (NOT between the earcup and the retaining pad). Then have the wearer don the helmet; recheck earseal compression.

**NOTE:** Earcup spacer pads may be installed whole, cut in half horizontally to adjust up/down earcup tilt, cut in half vertically to adjust forward/rearward earcup tilt, or trimmed in any other manner that will achieve proper earseal compression. (See Figure 2-47 for examples.) You may have to try various combinations of pads to achieve proper compression.

*Continued on next page*
7. Referring to Figure 2-48, fasten the chinstrap as follows:

a. Insert the toggle through the square receiver, and allow the toggle to lie flat against the square receiver so that it will not separate.

b. Adjust the chinstrap for a snug fit.

c. Center the chinpad under the wearer's chin; tack the chinpad into place using suitable thread.

d. Attach the end of the chinstrap to the chinpad.

8. Referring to Figure 2-49, adjust the nape strap pad as follows:

a. Tighten the nape strap pad by grasping the two pull tabs, pulling to the back, and then pulling from side to side until the nape strap is snug.

**NOTE:** When the nape strap pad is centered, both nape straps will be the same length.

b. Check the fit of the pad by inserting two fingers (index and middle) between the pad and the wearer's head. The fingers should just fit.

c. To loosen the nape strap, flip the buckles towards the center of the nape strap pad. The straps will slide through the buckles easily.

*(Continued on next page)*
9. Referring to Figure 2-50, lower the visors (to check centering and nose clearance) as follows:

a. Use the left-hand knob to move the outer visor. To use the visor knob, brace your thumb against the visor track, squeeze the knob with your forefinger, and move the knob down or up.

b. Use the right-hand knob in the same manner to move the inner visor.

10. If necessary, adjust the visors as follows:

a. Loosen the downstop locking screws (Figure 2-50); one is located on each side of the visor. (Loosening the screws allows the downstop to be raised or lowered approximately one inch for visor-to-mask or facial conformance.)

b. When the desired position is attained, tighten the screws.

11. If night vision goggles are used, place systems in normal operating position and check for full operational capability in accordance with technical manual supplied by the goggle manufacturer.

WARNING

Ensure that the night vision system mounted on your helmet is working properly in accordance with the appropriate technical manual prior to using it. Failure to check the night vision goggles or to be able to see the low battery warning light when using the night vision goggles may result in a critical loss of equipment use.

(Continued on next page)
12. Connect the helmet communications system as follows:

a. Referring to Figure 2-51, ensure that the microphone cord is plugged into the communications cord connector at the rear of the helmet.

b. Plug the helmet communications cord into the aircraft communications device.

13. Referring to Figure 2-52, adjust the microphone to the proper operating position as follows:

a. Loosen the swivel by rotating it counterclockwise.

b. Rotate the boom up or down.

c. Slide the rear part of the boom forward or back.

d. Tighten the boom swivel by rotating it clockwise.

e. Adjust the front of the boom.

f. Loosen the knurled screw on the microphone, adjust the microphone, and tighten the knurled screw.

(Continued on next page)
14. If the MFS is used, refer to Figure 2-53 and check operation as follows:

   a. To attach the MFS, position the pin on one side of the MFS into the slot of the striker, and flip the latch against the helmet shell. Ensure that the latch is locked in place. Repeat for the other side.

   b. Adjust the microphone boom as necessary so that it can be placed behind the MFS. To do this, loosen the swivel, move the boom forward or back until it can be placed under the recessed area of the MFS, and tighten the swivel.

   c. If night vision goggles are used, remove the lens caps and lower the night vision goggles. If the goggles clear the MFS and are properly positioned over the eyes, no trimming is needed. If the goggles contact the shield, trim the shield as specified in Paragraph 2-5 (Page 35).

   d. To remove the MFS, flip the latch on one side of the MFS away from the helmet shell, and remove the pin from the slot. Repeat for the other side.

NOTES:

- The helmet can be donned or doffed while the MFS is attached to either side and swung open. However, if the ML-24 light (from Seitz Scientific Industries, Inc.) is attached, the MFS should be swung open from the right side as worn to avoid disconnecting the light.

- The MFS can also be swung open while the helmet is worn, allowing the crewmember to eat or drink.

- If the helmet is stowed with the MFS attached, the shield should be secured to the helmet on both sides.

(Continued on next page)
15. To help prevent the visor lenses from fogging when the MFS is worn, use Sea Drops™ anti-fogging solution as follows:

a. Apply two drops of anti-fogging solution to the inside surface of each lens.

b. Rub the solution over the entire surface of the lens.

c. Wait 10 seconds, then buff with a Micronet™ microfiber cloth or any soft, dry cloth until the lens is clear.

**NOTE:** Sea Drops™ and Micronet™ are available from McNett Corporation, 1411 Meador Ave., Bellingham, WA 98229, phone 360-671-2227. (www.mcnett.com)

16. Remove the helmet as follows:

a. Loosen the chinstrap by separating the free end from the chin pad and pushing the free end of the strap back through the toggle as needed.

b. Grasp the helmet in the earcup areas, and flex the helmet just enough to clear the head.

c. Rotate the helmet forward and off the head.

17. After the first flight, recheck and adjust as necessary the helmet straps, TPL (or SCL), and earcups as necessary to achieve a snug fit.

**NOTE:** If the wearer cannot be fitted according to these fitting instructions, contact Gentex Corporation.
2-5 TRIMMING MFS FOR ANVIS COMPATIBILITY

If the night vision goggles contact the MFS (as described in the fitting procedure), trim the MFS following the procedure below.

**Equipment, Tools, and Materials Required**
- Pencil
- Rotary tool kit
- Drum, sanding
- Band, abrasive

**Procedure**
1. Have the crewmember don the helmet and attach the MFS.
2. Attach the night vision goggles to the ANVIS mount.
3. Remove the lens caps and lower the night vision goggles.
4. Mark a trim line on the shield by tracing along the edge of the goggles where they contact the shield. Figure 2-54 shows an example of trim lines.
5. Stow the goggles; remove the shield.

![Figure 2-54. Areas to be Trimmed on MFS](image)

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**WARNING**
- Wear eye-protective goggles when trimming the MFS, or chips of the MFS may injure the eyes.
- Wear a respirator when trimming the MFS, or harmful airborne particles may be inhaled.

**NOTE:** Trim the MFS with the edge beading left in place. You will cut through the edge beading and the shield. Trim no more than necessary to allow the night vision goggles to clear the MFS.
6. Using a rotary cutting tool, trim the shield along the marked trim line.
7. Reattach the shield and lower the night vision goggles. Ensure that the goggles clear the shield and are properly positioned over the eyes.

**NOTE:** Replace the abrasive band of the sanding drum on the rotary tool as necessary.
2-6. TPL CUSTOM-FITTING

Equipment, Tools, and Materials Required

- Convection oven
- Oven thermometer
- Ruler
- Timer
- Masking tape
- Cotton gloves
- Helmet with TPL to be fitted

**WARNING**

Proper fitting is essential to the functioning of the helmet, all of its components, and, consequently, the safety of the wearer. Take as much time as necessary to fit the helmet precisely. Use extreme care in taking measurements and checking fit.

**CAUTION**

If using an oven with upper heating elements to heat the TPL, ensure that the upper heating elements do not activate during the heating process, or plastic TPL layers will melt.

**NOTE:** Do not use a microwave oven; it will not heat plastic layers.

1. Referring to Figure 2-55, set the oven rack to the lowest position; heat the oven to 200°F ±5°F (93.3°C ±2.8°C).

**CAUTION**

Before you place the TPL in the oven, ensure that the cover is attached properly to the plastic layers (not on backwards).

2. Place the TPL in the center of the rack in the heated oven, cloth side on the rack.

*(Continued on next page)*
3. Ensure that the oven stabilizes at the temperature listed in Step 1 before starting the timed sequence.

4. Set the timer, stopwatch, or equivalent for 10 minutes. Heat the TPL for approximately 10 minutes.

5. While the TPL heats, review steps 8 through 12 so that they may be completed in 30 seconds or less.

6. Using an oven thermometer, check the oven temperature every 3 to 5 minutes during the heating process. Adjust the oven controls if the temperature falls outside the range specified in Step 1.

7. Describe the fitting procedure to the wearer being fitted.

NOTE:

- If headband fitting pads are installed in the helmet, remove them.
- Cover the hook fastener on the nape strap pad with masking tape to ease installation of the heated TPL, and loosen the nape strap pad.
- Steps 8-13 should be completed in less than 30 seconds.

WARNING

Handle the heated TPL carefully; the plastic layers will be hot. Touch the fabric cover only. Wear gloves if necessary.

8. Remove the TPL from the oven.

9. Squeezing sides of TPL together to clear earcups, install liner in helmet as shown in Figure 2-56. Ensure that label and holes are positioned toward front of helmet.

10. Have the wearer hold the helmet upside down. Insert the TPL so that the front edge extends approximately ¼” past the front edge of the energy-absorbing liner. Ensure that the liner is centered in the helmet.

CAUTION

Do not deform the hot, soft TPL by pressing too hard in any one area when positioning the liner in the helmet.

11. Position the top of the TPL in the helmet. Position the rear of the TPL against the top edge of, but not down in front of, the nape strap pad while holding the nape strap pad taut.

(Continued on next page)
CAUTION
When donning or removing the helmet, flex the helmet just enough to clear the head. Excessive spreading may damage the helmet.

12. Have the wearer grasp the helmet in the earcup area and flex the helmet slightly. Place the front of the helmet against the FRP (marked on the forehead in the procedure on Page 6). Referring to Figure 2-57, hold the edge of the TPL and the nape strap pad with pull down. Have the wearer don the helmet and rotate the helmet rearward.

NOTE: Holding the TPL and the nape strap pad when donning the helmet with a heat-softened TPL will prevent the TPL from bunching up in the rear.

13. Have the wearer pull downward with his or her hands on top of the helmet until it is seated firmly on the head. Lower the visor to check nose centering and clearance. Fasten the chinstrap and the nape strap as tightly as possible, without causing discomfort, to optimize the wearer’s peripheral vision. Have the wearer maintain as much downward pressure as possible, without causing discomfort, for 3-5 minutes.

NOTE: The TPL top should be compressed as much as possible; this will afford a low center of gravity and long-lasting comfort.

14. Release pressure on top of the head and the remove helmet. Ensure that the TPL lies smoothly in the helmet. Reposition the liner if necessary to maintain a ¼” protrusion at the front of the helmet.

NOTE: If the TPL is not properly fitted, reheat the TPL, and repeat the custom-fitting procedure.

15. Remove the masking tape from the nape strap pad hook fastener.

16. Have the wearer don the helmet. Adjust the earcups; tighten the nape strap and the chinstrap.

17. Perform a final fit check. No pressure points should exist; if they do, remove the TPL from the helmet and repeat the custom-fitting procedure.

18. If the fit is still too tight after the TPL has been custom-fitted, select the next larger helmet size.

19. If the helmet fits properly, proceed to Step 2 of Paragraph 2-4 (Page 27).
SECTION 3: MAINTENANCE

This section provides instructions for maintaining the helmet to ensure that it remains in good operating condition. Maintenance tasks are as follows:

- Preventive maintenance and cleaning (Paragraph 3-1, beginning on this page).
- Troubleshooting (Paragraph 3-2, beginning on Page 43)
- Component replacement (Paragraph 3-3, beginning on Page 47)

3-1. PREVENTIVE MAINTENANCE AND CLEANING

To keep the helmet in satisfactory operating condition, the user should perform preventive maintenance to discover all deficiencies and have them corrected as soon as possible before additional damage or failure occurs. The preventive maintenance procedure consists of pre-flight and post-flight inspections.

The user should also keep the helmet clean. The cleaning procedure consists of various cleaning tasks.

3-1.1. Pre-flight Inspection

Prior to each flight, the user shall inspect the helmet to see that it is in serviceable condition, reporting any damage to the maintenance technician. Refer to Table 3-1, which begins on the next page.

3-1.2. Post-flight Inspection

After each flight, the user shall inform the maintenance technician of any component malfunction or damage to the helmet. Refer to Table 3-1, which begins on the next page.

3-1.3. Cleaning

The user shall clean the helmet as needed. Refer to Table 3-2 on Page 42.
### TABLE 3-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES

B - Before (pre-flight)  A - After (post-flight)  C - Every 120 calendar days

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>INTERVAL B A C</th>
<th>ITEM TO BE INSPECTED/PROCEDURE</th>
<th>NOT FULLY MISSION CAPABLE IF:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td>Helmet shell.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><img src="image" alt="WARNING" /></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Do not repair or use any helmet that is damaged beyond the limits set forth in this PMCS chart. Injury or death may result if you do.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>x x x Inspect surface for chipped paint with penetration of fibers.</td>
<td>Surface has chipped paint with penetration of fibers.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x x x Inspect surface for delaminations larger than a nickel, or cracks that are forked or branched.</td>
<td>Surface has delaminations larger than a nickel, or cracks that are forked or branched.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x x x Inspect surface for cracks, running front to back, measuring longer than 2 inches, or penetrating the light-colored inner fiber layers.</td>
<td>Surface has cracks, running front to back, measuring longer than 2 inches, or penetrating the light-colored inner fiber layers.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x x x Inspect surface for cracks, running side to side, measuring 1 inch or longer, or penetrating the light-colored inner fibers.</td>
<td>Surface has cracks, running side to side, measuring 1 inch or longer, or penetrating the light-colored inner fiber layers.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x x x Inspect the edge for cracks.</td>
<td>Edge has any cracks.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x x x Inspect the eardome area for holes or cracks.</td>
<td>Any cracks penetrate all fiber layers, or any holes exist in the eardome area.</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td>TPL or SCL.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>x x x Check fit.</td>
<td>Loose fit or improperly fitted.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x x x Inspect plastic layers for attachment.</td>
<td>Plastic layers have one or more plies that have been separated from the stack.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x Check for cover for dirt.</td>
<td>Cover is greasy, oily, or dirty.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x x x Check for holes and cracks.</td>
<td>Energy-absorbing liner has holes or compressions, gouges deeper than 1/4&quot; cracks in front, or cracks wider than ½&quot; in rear.</td>
</tr>
</tbody>
</table>

(Continued on next page)
### TABLE 3-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (Continued)

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>INTERVAL B A C</th>
<th>ITEM TO BE INSPECTED/PROCEDURE</th>
<th>NOT FULLY MISSION CAPABLE IF:</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td></td>
<td><strong>Earcups.</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>x x x Check fit.</td>
<td>Earseals are not properly compressed around wearer’s ears.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x x x Check for holes, cracks, and tears.</td>
<td>Holes, cracks, or tears exist.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x x x Inspect earcup for cracks, breaks, or loose/missing hook fastener on back</td>
<td>Earcup is cracked or broken; hook fastener is loose or missing.</td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td><strong>Earseals.</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>x Inspect for cuts, tears, and split seams.</td>
<td>Cuts or tears exist; seams are split, inner foam is exposed.</td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td><strong>Retention Assembly.</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>x x x Check attachment.</td>
<td>Not properly attached to helmet.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x x x Check fit of nape assembly.</td>
<td>Nape assembly is improperly fitted.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x x x Check buckles for breaks, straps for tearing/fraying, and nape assembly for holes and cracks.</td>
<td>Buckle is broken, strap is torn/frayed, or nape assembly has holes or cracks.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x Inspect for broken, loose, or missing hardware; split seams; fraying; dirt.</td>
<td>Hardware is broken, loose, or missing; seams are split; fabric is frayed, oily, greasy, or dirty.</td>
</tr>
<tr>
<td>7.</td>
<td></td>
<td><strong>Earphones.</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>x x Check operation in aircraft.</td>
<td>Any malfunction exists.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x Check earphone for malfunctions using Test Set, Intercommunications Unit.</td>
<td>Earphones are malfunctioning.</td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td><strong>Microphone/Boom Assembly.</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>x x Check the attachment of hardware including set screws.</td>
<td>Hardware is loose or missing, or boom fails to hold microphone in place.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x x Check operation in aircraft</td>
<td>Microphone is malfunctioning.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x Check microphone for malfunctions using Test Set, Intercommunications Unit.</td>
<td>Any malfunction exists.</td>
</tr>
</tbody>
</table>

(Continued on next page)
Table 3-1. Preventive Maintenance Checks and Services (Continued)

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>INTERVAL</th>
<th>ITEM TO BE INSPECTED/PROCEDURE</th>
<th>NOT FULLY MISSION CAPABLE IF:</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>A</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>x x x</td>
<td>Visor assembly.</td>
<td>Dirt or scratches interfering with vision exist.</td>
</tr>
<tr>
<td></td>
<td>x x x</td>
<td>Check visors for dirt or scratches.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>x x x</td>
<td>Check operation of visors.</td>
<td>Visors do not move freely in tracks.</td>
</tr>
<tr>
<td></td>
<td>x x x</td>
<td>Check function of locking mechanism.</td>
<td>Visor fails to lock in desired position.</td>
</tr>
<tr>
<td></td>
<td>x</td>
<td>Check housing for holes and cracks.</td>
<td>Visor housing has any holes or cracks.</td>
</tr>
<tr>
<td>10.</td>
<td>x x x</td>
<td>Helmet Bag.</td>
<td>Fabric is dirty; hardware is missing; stitching is broken.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inspect for dirt, missing hardware, broken stitching.</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>x x x</td>
<td>MFS.</td>
<td>MFS has holes, cracks, or any other damage.</td>
</tr>
<tr>
<td></td>
<td>x x x</td>
<td>Check for holes, cracks, or other damage.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Check function of latches.</td>
<td>Latches do not function properly.</td>
</tr>
</tbody>
</table>

Table 3-2. Cleaning

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>CONDITION</th>
<th>CLEANING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helmet shell</td>
<td>Dirt, grease, scuff marks</td>
<td>Use mild detergent and clean cloth</td>
</tr>
<tr>
<td>Earcups</td>
<td>Dirt, perspiration</td>
<td>Wipe with a damp cloth; for earphone protection, do not use too much water.</td>
</tr>
<tr>
<td>Communications cord assembly</td>
<td>Dirt, grease</td>
<td>Wipe with damp cloth; dry thoroughly.</td>
</tr>
<tr>
<td>Visors</td>
<td>Dust, grease, perspiration</td>
<td>Use soft cloth and mild soap solution; rinse thoroughly.</td>
</tr>
<tr>
<td>Visor housing, track, knob</td>
<td>Sediment, dirt buildup, grease</td>
<td>Use clean cloth dampened with mild soap solution.</td>
</tr>
<tr>
<td>Retention assembly</td>
<td>Dirt, grease</td>
<td>Use clean cloth dampened with water; allow to dry thoroughly.</td>
</tr>
<tr>
<td>Cloth cover, TPL or SCL</td>
<td>Dirt, stains</td>
<td>Machine wash (gentle cycle) or hand wash with warm water; allow to air-dry. (Do not use dryer.)</td>
</tr>
<tr>
<td>Plastic layers, TPL or SCL</td>
<td>Dirt</td>
<td>Wipe exterior layers with damp cloth. Replace two-sided tape after cleaning.</td>
</tr>
<tr>
<td>MFS</td>
<td>Dirt, dust</td>
<td>Wipe with a clean cloth dampened with a mild soap solution.</td>
</tr>
</tbody>
</table>
3-2. TROUBLESHOOTING

Table 3-3 provides an index of common malfunctions of helmet components and directs you to the procedures required to eliminate those malfunctions. When examining this table, keep the following in mind:

1. You should first find the malfunction that most closely describes the problem, then perform the tests, inspections, and corrective actions in the order in which they are listed.

2. This manual may not list every possible malfunction. If you encounter a malfunction not listed in the table and are unable to resolve it, notify your supervisor.

<table>
<thead>
<tr>
<th>MALFUNCTION</th>
<th>TEST OR INSPECTION</th>
<th>CORRECTIVE ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. UNABLE TO RAISE OR LOWER VISOR LENS.</td>
<td>Step 1. Inspect for sediment or dirt buildup in tracks.</td>
<td>Clean tracks in accordance with Table 3-2 (Page 42).</td>
</tr>
<tr>
<td></td>
<td>Step 2. Inspect for defective visor knob.</td>
<td>Replace defective visor in accordance with Paragraph 3-3.8 (Page 60).</td>
</tr>
<tr>
<td></td>
<td>Step 3. Inspect for defective visor tracks.</td>
<td>Replace defective visor tracks in accordance with Paragraph 3-3.8 (Page 60).</td>
</tr>
<tr>
<td></td>
<td>Step 4. Inspect for defective visor housing.</td>
<td>Replace defective visor housing in accordance with Paragraph 3-3.8 (Page 60).</td>
</tr>
<tr>
<td></td>
<td>Step 5. Inspect visor lenses for defects.</td>
<td>Replace defective lens in accordance with Paragraph 3-3.8 (Page 60).</td>
</tr>
</tbody>
</table>

2. UNABLE TO OPERATE ANVIS GOGGLES (ON OPTIONAL DUAL VISOR ASSEMBLY).

Refer to the appropriate technical manual.

(Continued on next page)
Table 3-3. Aviation Unit Maintenance Troubleshooting Procedures (continued)

<table>
<thead>
<tr>
<th>MALFUNCTION</th>
<th>TEST OR INSPECTION</th>
<th>CORRECTIVE ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. UNABLE TO FASTEN OR ADJUST CHINSTRAP.</td>
<td>Inspect retention assembly for defective hardware or webbing.</td>
<td>Replace retention assembly in accordance with Paragraph 3-3.3 (Page 51).</td>
</tr>
<tr>
<td>4. UNABLE TO ADJUST NAPE STRAP.</td>
<td>Inspect retention assembly for defective hardware or webbing.</td>
<td>Replace retention assembly in accordance with Paragraph 3-3.3 (Page 51).</td>
</tr>
<tr>
<td>5. UNABLE TO KEEP MICROPHONE IN POSITION.</td>
<td>Inspect boom/swivel assembly for loose screw.</td>
<td>If unable to tighten screw, replace in accordance with Paragraph 3-3.5, Page 55 (wire boom), or Paragraph 3-3.6, Page 56 (flex boom).</td>
</tr>
<tr>
<td>6. UNABLE TO ATTACH MFS.</td>
<td>Inspect MFS latches and strikers for faulty hardware.</td>
<td>As needed replace latch hardware as in paragraph 3-3.9 (Page 62) or striker hardware as in Paragraph 3-3.10 (Page 63).</td>
</tr>
<tr>
<td>7. UNABLE TO COMMUNICATE.</td>
<td>Ensure that communications cord is plugged into communications unit and that unit is working. Ensure helmet connector on left rear side of helmet is secured. If still unable to hear, perform continuity check as follows:</td>
<td>Step 1. Disconnect microphone cable from microphone.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Step 2. Remove receivers.</td>
</tr>
</tbody>
</table>

(Continued on next page)
Step 3. Using a multimeter, refer to Figure 3-1 and perform Test 1 in accordance with the chart below. If no failure is detected, proceed to Step 4. If a failure is detected, replace the communication cord in accordance with Paragraph 3-3.7 (Page 57). Proceed to Step 5.

**NOTE:** Numbers in the Test 1 chart correspond to numbered call-outs in Figure 3-1.

### Test 1 Chart

<table>
<thead>
<tr>
<th>FROM</th>
<th>TO</th>
<th>OPEN</th>
<th>SHORTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>Good</td>
<td>Bad</td>
</tr>
<tr>
<td>1</td>
<td>3</td>
<td>Bad</td>
<td>Good</td>
</tr>
<tr>
<td>1</td>
<td>5</td>
<td>Good</td>
<td>Bad</td>
</tr>
<tr>
<td>1</td>
<td>6</td>
<td>Good</td>
<td>Bad</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>Bad</td>
<td>Good</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>Good</td>
<td>Bad</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
<td>Good</td>
<td>Bad</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
<td>Good</td>
<td>Bad</td>
</tr>
</tbody>
</table>

*(Continued on next page)*
Table 3-3. Aviation Unit Maintenance Troubleshooting Procedures (continued)

<table>
<thead>
<tr>
<th>MALFUNCTION</th>
<th>TEST OR INSPECTION</th>
<th>CORRECTIVE ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Step 4. Using a multimeter, refer to Figure 3-2 and perform Test 2 in accordance with the chart below.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>If no failure is detected, the communication cord is working. Replace the earphones or the microphone as necessary. Proceed to step 5.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>If a failure is detected, unscrew the plug cover and check for any loose connections or cold solder joints. Resolder any defective connections. Proceed to step 5.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NOTE: Numbers in the Test 2 chart correspond to numbered call-outs in Figure 3-2.</td>
<td></td>
</tr>
</tbody>
</table>

Test 2 Chart

<table>
<thead>
<tr>
<th>FROM</th>
<th>TO</th>
<th>OPEN</th>
<th>SHORTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 or 3</td>
<td>7</td>
<td>Bad</td>
<td>Good</td>
</tr>
<tr>
<td>2 or 4</td>
<td>9</td>
<td>Bad</td>
<td>Good</td>
</tr>
<tr>
<td>5</td>
<td>8</td>
<td>Bad</td>
<td>Good</td>
</tr>
<tr>
<td>6</td>
<td>10</td>
<td>Bad</td>
<td>Good</td>
</tr>
</tbody>
</table>

Step 5. Test the communications system by connecting it to a working radio.

Step 6. If the communications system still does not work, replace the communications cord in accordance with Paragraph 3-3.7 (Page 57).

Figure 3-2. Test Points for Test 2
3-3. COMPONENT REPLACEMENT
Replace components that are damaged or worn. Component replacement procedures are as follows:

• 3-3.1 TPL or SCL cloth cover (Page 48)
• 3-3.2 Energy-absorbing liner (Page 49)
• 3-3.3 Retention assembly (Page 51)
• 3-3.4 Earcups or earphones (Page 53)
• 3-3.5 Microphone-boom-cord-swivel assembly, wire boom (Page 55)
• 3-3.6 Flex boom microphone (Page 56)
• 3-3.7 Communications cord (Page 57)
• 3-3.8 Dual visor assembly (Page 60)
• 3-3.9 MFS latches on shield (Page 62)
• 3-3.10 MFS strikers on helmet (Page 63)

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.
3-3.1 TPL or SCL Cloth Cover

Tools and Materials Required

- Scissors
- Double-sided tape
- TPL cloth cover (XX-Small, 85D7088-15; X-Small, 85D7088-16; Small, 85D7088-17; Medium, 85D7088-18; Large, 85D7088-19; X-Large, 85D7088-20)
  or
- SCL cloth cover (XX-Small, 02D11546-8; X-Small, 02D11546-9; Small, 02D11546-10; Medium, 02D11546-11; Large, 02D11546-12; X-Large, 02D11546-13)

Removal

1. Detach the earcups from earcup retainer pads by disengaging the hook-and-pile fasteners, and passing them through the retention straps. Allow the earcups to hang outside the helmet by the communications cord.

2. Referring to Figure 3-3, squeeze the sides of the TPL (or SCL) and remove the TPL (or SCL) from the helmet.

3. Remove the TPL (or SCL) cloth cover (Figure 3-4) as follows:
   a. Remove and discard the thread attaching the cloth cover to the plastic layers. Replacement of thread is not necessary.
   b. Fold the sides of the cover down to expose the double-sided tape.
   c. Remove the cover from the layers.
   d. Remove the double-sided tape from the layers.

Installation

1. Cut two 2-1/2-inch pieces of double-sided tape.

2. Attach a piece of tape to each side of the layer assembly (where the old tape was removed).

3. Turn the replacement cloth cover inside out; place the cover inside the layer assembly; fold the sides of the cloth cover over the layer assembly. Ensure that the cover is positioned correctly.

4. Squeezing the sides of the TPL (or SCL), reinstall it in the helmet, aligning the rear edge of the TPL (or SCL) with the top edge of the nape strap pad. Ensure that the nape hanger strap is taut and the hook-and-pile fasteners are engaged.

5. Reinstall the earcups.

6. Check the fit of the helmet per Paragraph 2-4, beginning on Page 27.
3-3.2. Energy-Absorbing Liner

**Tools and Materials Required**

- Flat-tip screwdriver
- Icing spatula
- Energy-absorbing liner (XX-Small, 89D7812-1; X-Small, 89D7812-2; Small, 89D7812-3; Medium, 89D7812-4; Large, 89D7812-5; X-Large, 89D7812-6)

**NOTE:** Before performing this procedure, disengage the chinstrap buckle, and loosen the nape strap pad. This will ease removal of the energy-absorbing liner.

**Removal**

1. Detach the earcups from the earcup retaining pads by disengaging the hook-and-pile fasteners, and pass the earcups through the retention straps. Allow earcups to hang outside the helmet by communications cord.

2. Referring to Figure 3-5, squeeze sides of TPL (or SCL) and remove it from helmet by disengaging the front and rear hook-and-pile fasteners.

3. Referring to Figure 3-6, remove the pan-head screw, spring washer, and post fastening the retention assembly to the center rear of the helmet shell. Retain the screw, washer, and post for reassembly.

4. Loosen the nape strap pad as much as possible.

*(Continued on next page)*
NOTE: Removing the energy-absorbing liner may require some practice.

5. Referring to Figure 3-7, use a spatula to separate the hook-and-pile fasteners attaching the energy-absorbing liner to the helmet shell. Following the contour of the helmet shell, carefully slide the energy-absorbing liner out of the helmet.

---

**Figure 3-7. Removing Energy-Absorbing Liner**

---

**Installation**

1. Position the front of the energy-absorbing liner at the rear of the helmet between the nape strap pad assembly and the helmet shell.

2. Following the contour of the helmet shell, slide the energy-absorbing liner into the helmet. Attach the pile fasteners on the energy-absorbing liner to the hook fasteners on the inside of the helmet shell. Ensure front edge of liner is aligned with front edge of helmet shell.

**NOTE:** Installing the energy-absorbing liner may require some practice.

3. Reattach the nape strap pad to the helmet shell via the screw, washer, and post removed previously.

4. Squeezing the sides of the TPL (or SCL), reinstall it in the helmet with the rear edge aligned with the top edge of the nape strap pad. Ensure that the nape hanger strap is taught and the hook-and-pile fasteners are engaged.

5. Reattach the earcups to the earcup retaining pads.

6. Check the fit of the helmet per Paragraph 2-4, beginning on Page 27.
3-3.3. Retention Assembly

Tools and Materials Required

- Screwdriver, flat-tip
- Spatula
- Retention assembly (95D9303-1)

Removal

**NOTE:** Ensure that the chinstrap is disengaged from the D-rings, and loosen nape strap pad adjustment. This will provide easier access to the helmet for installation.

1. Detach the earcups from earcup retainer pads by disengaging hook-and-pile fasteners, and pass the earcups through the retention straps. Allow earcups to hang outside the helmet by communications cord.

2. Referring to Figure 3-8, remove the TPL (or SCL) from the helmet.

3. Referring to Figure 3-9, remove the pan-head screw, spring washer, and post attaching the retention assembly to the center rear of the helmet shell. Retain the screw, washer, and post for reinstallation.

4. Referring to Figure 3-10, use a spatula to separate the hook-and-pile fastener attaching the energy-absorbing liner to the helmet shell.

**NOTE:** Removing the energy-absorbing liner may require some practice.

5. Carefully slide the energy-absorbing liner out through the rear of the helmet, following the contour of the helmet shell.

*(Continued on next page)*
6. Inspect the energy-absorbing liner in accordance with Table 3-1; replace if necessary following 3-3.1.

7. Referring to Figure 3-11, remove the remaining two pan-head screws, spring washers, and posts attaching the retention assembly to each side of the helmet shell.

8. Remove the entire retention assembly from the helmet.

**Installation**

1. Attach the retention assembly to the helmet shell by installing four screws, washers, and posts at the attachment points indicated in Removal step 7.

2. Position the front edge of the energy-absorbing liner between the nape strap pad and the helmet shell at the rear of the helmet. Following the contour of the helmet shell, slide the liner into the helmet until the front edge of the liner is flush with the front edge of the helmet shell. Ensure that the hook-and-pile fasteners are engaged.

   **NOTE:** Ensure that the holes in the energy-absorbing liner align with the plenum openings for air cooling. In addition, the square hole should be located to allow access to the retention assembly mounting hardware.

3. Reinstall the screw, washer, and post removed in Removal step 3.

4. Squeezing the sides of the TPL (or SCL), reinstall it in the helmet with the rear edge aligned with the top edge of the nape strap pad. Ensure that the nape hanger strap is taut and the hook-and-pile fasteners are engaged.

5. Reinstall the earcups.

6. Check the fit of the helmet per Paragraph 2-4, beginning on Page 27.
3-3.4 Earcups or Earphones

Tools and Materials Required
- Jeweler’s screwdriver set
- Earcup (98C10337-1) or earphone (73B2619)

Removal
1. Referring to Figure 3-12, detach the earcup from the earcup retaining pad.

2. Referring to Figure 3-13, do the following:
   a. Remove the earseal from the earcup by stretching it carefully over the lip of the earcup shell.
   b. Remove the earphone holder from the earcup.
   c. Remove the earphone from the earphone holder.
   d. Using a jeweler’s screwdriver, loosen (do not remove) the two set screws on the back of the earphone; remove the communications cord leads from the earphone.

(Continued on next page)
e. Remove the foam filler pad from the earcup.

f. If you are replacing the earcup, carefully remove the communications cord leads through the hole in the earcup.

3. Inspect all earcup components in accordance with Table 3-1, and replace as necessary.

Installation

1. If you removed the communications cord leads (Step 2f), insert the communications cord leads through the hole in the earcup.

2. Insert the communications cord leads into the receiver. Using a jeweler's screwdriver, tighten the two set screws.

3. Insert the filler pad into the earcup, ensuring that the slit in the pad is positioned toward the earcup hole. Route the communications cord through the slit, ensuring that the receiver and the communications cord leads are accessible.

4. Insert the earphone into the earphone holder, and insert both into the earcup.

5. Install the earseal on the earcup as follows: hook one end of the earseal over the lip of the earcup shell. Carefully stretch the earseal over the remainder of the earcup.

6. Attach the earcup to the earcup retainer pad. Ensure that the earcup is securely attached.

7. Check earcup position per Paragraph 2-4, beginning on Page 27, and adjust as necessary.
3-3.5. Microphone Boom/Cord/Swivel Assembly (Wire Boom)

Tools and Materials Required
- Screwdriver, flat-tip
- Screwdriver, cross-tip
- Microphone boom/cord/swivel assembly, wire boom (95B9314-2)

Removal
1. Referring to Figure 3-14, unplug the microphone cord from the connector at the rear of the helmet.
2. Referring to Figure 3-15, remove the center screw attaching the microphone-boom-cord-swivel assembly to the helmet.

Installation
1. Referring to Figure 3-15, attach the replacement microphone-boom-cord-swivel assembly to the helmet. Ensure that the boom is seated within the grooves on the grooved washers.
2. Referring to Figure 3-14, plug the microphone cord into the connector at the rear of the helmet.
3-3.6. Flex Boom Microphone

Tools and Materials Required

- Screwdriver, flat-tip
- Screwdriver, cross-tip
- Flex boom microphone (03B11804-16B)

Removal

1. Referring to Figure 3-16, unplug the microphone cord from the connector at the rear of the helmet.

2. Referring to Figure 3-17, remove the hardware attaching the flex boom microphone to the helmet.

Installation

1. Referring to Figure 3-17, attach the replacement flex boom microphone to the helmet with the hardware. Tighten the screw to prevent the flex boom mount from moving on the helmet.

2. Referring to Figure 3-16, plug the microphone cord into the connector at the rear of the helmet.

NOTE: You can install the flex boom mount outside or inside the helmet as shown here.
3-3.7. Communications Cord

**Tools and Materials Required**

- Screwdriver, flat-tip
- Screwdriver, cross-tip
- Spatula
- Jeweler’s screwdriver set
- Heat gun
- Small scissors
- Communications cord (standard, 77C3523-1; or coiled, 87B7491-2)

**Removal**

1. Referring to Figure 3-16 (previous page), unplug the microphone cord from the connector at the left rear of the helmet.

2. Perform Steps 1-3 of Paragraph 3-3.4 (beginning on Page 53) to remove and disassemble both earcups and remove the earphones from the communications cord.

3. Perform Steps 1-5 of Paragraph 3-3.2 (beginning on Page 49) to remove the TPL (or SCL) and the energy-absorbing liner from the helmet.

4. Referring to Figure 3-18, remove the strain relief plate (and the shrink tubing on the connector) as follows:

   a. Remove the screw, washer, and post attaching the communications cord strain relief plate to the helmet shell.

   b. Untie the communications cord from the strain relief plate.

   c. Cut the shrink tubing from the connector.

(Continued on next page)
5. Referring to Figure 3-19, bend the arms of the jack holder slightly away from the connector, and remove the connector from the jack holder.

6. Referring to Figure 3-20, remove the two screws attaching the jack holder and plate to the rear of the helmet.

7. Referring to Figure 3-21, remove the grommet from the helmet, and remove the entire communications cord from the helmet through the grommet hole.

**Installation**

1. Referring to Figure 3-21, insert the replacement communications cord from the outside of the helmet through the grommet hole so that only the connector and the grommet are on the outside of the helmet.

2. Insert the grommet so that it is firmly seated in the hole.

3. Referring to Figure 3-20, reattach the jack holder and plate to the helmet with the two screws.

4. Referring to Figure 3-19, insert the connector into the jack holder, and bend the arms of the jack holder slightly to help hold the connector in place.

(Continued on next page)
5. Referring to Figure 3-22, place a 3/4”-long segment of shrink tubing over the connector.

6. Apply heat to shrink the tubing to the connector. Trim the shrink tubing as flush as possible with the edge of the connector.

7. Referring to Figure 3-23, reinstall the strain relief plate as follows:
   a. Tie the cord to the strain relief plate.
   b. Reattach the strain relief plate to the helmet with the screw, washer and post.

8. Perform Installation Steps 1-6 of Paragraph 3-3.2 (Page 50) to reattach the nape strap pad and reinstall the TPL (or SCL) and the energy-absorbing liner.

9. Perform Installation Steps 1-7 of Paragraph 3-3.4 (Page 54) to reattach the earphones and reassemble and reinstall both earcups.

10. Referring to Figure 3-16 (Page 56), plug the microphone into the connector at the left rear of the helmet.
3-3.8. Dual Visor Assembly

**Tools and Materials Required**
- Jeweler’s screwdriver set
- Screwdriver, cross-tip
- Dual visor assembly (plain, 95B9301-3; ANVIS quick disconnect, 95B9246; or ANVIS direct-mount, 88D7611-1)

**Removal**

**NOTE:** Screws, retaining rings, tracks, and bushings are shown on one side only in Figure 3-24. A similar configuration exists for the other side.

1. Referring to Figure 3-24, loosen the four thumbscrews that attach the visor assembly to the helmet. Holding the tracks and the housing together, lift the visor assembly from the helmet.

2. Remove the thumbscrews from the visor assembly.

3. Remove the housing from the tracks.

4. Disassemble the visors and the tracks by removing the retaining rings and the bushings. Repeat for the other side.

**NOTE:** A nut plate on the underside of the helmet shell holds the posts in place. If the post threads are stripped, remove energy-absorbing liner as directed in Paragraph 3-3.2 (Page 49), replace the nut plate, and reinstall the energy-absorbing liner.

5. Inspect the components in accordance with Table 3-1, and replace as necessary.

(Continued on next page)
Installation

NOTES:

- When installing lenses, ensure lens guides are seated in track grooves.
- Ensure bushing mates with locking notch in lower track to prevent rotation when installing or removing thumbscrews.
- If energy-absorbing liner was removed, replace it as directed in Paragraph 3-3.2 (after replacing the nut plate).

1. Referring to Figure 3-24, insert the bushings upward through the lower track.
2. Place the inner visor over the lower track.
3. Place the middle track over the inner visor. Insert the bushings upward through the middle track.
4. Place the upper track over the outer visor, and install it in place on the bushings.
5. Reinstall the retaining rings.
6. Attach the housing to the tracks by inserting the thumbscrews through the housing and threading them through the bushings.
7. Install the four thumbscrews downward through the bushings and into the nut plate posts to attach the visor assembly to the helmet. Tighten the thumbscrews evenly.
8. If necessary, adjust the visor as follows:
   a. **Loosen** (do not remove) the downstop locking screws through the holes on each side of the visor housing. (Loosening the screws allows the downstop to be raised or lowered approximately 1 inch (25 mm) for visor-to-mask or facial conformance.)
   b. When the desired position is attained, tighten the downstop locking screws.
3-3.9 MFS Latch Assembly (on shield)

**Tools and Materials Required**
- Screwdriver, cross-tip
- White glue
- MFS latch hardware kit (89C7816-2)

**Removal**
Referring to Figure 3-25, remove the latch assembly by removing the screws and posts that attach the latch assembly to the MFS.

**Installation**
Referring to Figure 3-25, attach the replacement latch assembly to the shield with the screws and posts (6-32 x 0.100") provided in the latch assembly kit, applying a drop of white glue to the threads of each screw.

Figure 3-25. Latch Assembly
3-3.10 MFS Striker (on helmet)

Tools and Materials Required

- Screwdriver, cross-tip
- White glue
- MFS striker hardware kit (89C7816-1)

Removal

Referring to Figure 3-26, remove screws and posts attaching the striker to be replaced.

Installation

Referring to Figure 3-26, install the new striker with the screws and posts (6-32 x 0.053") supplied in the hardware kit, applying a drop of white glue to the threads of each screw.

Figure 3-26. Striker and Hardware
SECTION 4: REPLACEMENT PARTS

This section contains figures and lists of replacement parts for the HGU-56/P Commercial Helmet Assembly. Each figure is associated with a parts list that includes quantities and part numbers. Numbers in the ITEM NO. column of each list correspond to numbered call-outs in the figures. For more information, contact:

GENTEX Corporation
P.O. Box 315
Carbondale, PA 18407
Phone: (570) 282-3550
Fax: (570) 282-8555
www.gentexcorp.com

4-1 STANDARD COMPONENTS

Figures 4-1 through 4-4 show standard components. (For optional components, see Figures 4-5 through 4-9, beginning on Page 70.)

Figure 4-1. Standard Components of HGU-56/P
<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>DESCRIPTION</th>
<th>QTY.</th>
<th>PART NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Helmet Shell, Small (Used on XX-Small, X-Small, and Small Assemblies)</td>
<td>1</td>
<td>95A9241-2</td>
</tr>
<tr>
<td></td>
<td>Helmet Shell, Medium</td>
<td>1</td>
<td>95A9242-2</td>
</tr>
<tr>
<td></td>
<td>Helmet Shell, Large</td>
<td>1</td>
<td>95A9243-2</td>
</tr>
<tr>
<td></td>
<td>Helmet Shell, X-Large</td>
<td>1</td>
<td>95A9244-2</td>
</tr>
<tr>
<td>2</td>
<td>Hook Fastener, ½ inch x 1 inch (Not Shown)</td>
<td>2</td>
<td>90B8021-2</td>
</tr>
<tr>
<td>3</td>
<td>Dual Visor Assembly, Plain (Breakdown: Figure 4-2)</td>
<td>1</td>
<td>95B9301-3</td>
</tr>
<tr>
<td>4</td>
<td>Nut Plate</td>
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Figure 4-2. Dual Visor Assembly, Plain
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4-2 OPTIONAL COMPONENTS

Figures 4-5 through 4-9 show optional components. (For standard components, see Figures 4-1 through 4-4, beginning on Page 64.)

Figure 4-5. Optional Components of HGU-56/P
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Figure 4-6. ANVIS Quick-Disconnect Dual Visor Assembly
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Figure 4-7. ANVIS Direct-Mount Dual Visor Assembly
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Figure 4-9. MFS