SERVICE LETTER 23-002

Subject: Optional strain relief rework of FCI connectors found on Cable Interface Assemblies, P/N 508976-201 and 508976-205, as well as End-Release Buckle Assys, P/Ns 7035-201011XXXX*, 7035-201031XXXX, 7035-201021XXXX, and 7035-201041XXXX.

Applicability:
Cessna Models 172, 182, 206 aircraft equipped with AmSafe Aviation AAIR V23 Systems.

Background:
Cessna Aircraft inquired into the feasibility of rework of the FCI connectors found on the Cable Interface Assembly and the End-Release Buckle Assembly to include a more robust strain relief that completely covers the wire leads into the connector. AmSafe has found an appropriate strain relief part to be permanently attached to these connectors and cabling.

Discussion:
This optional rework of the FCI connectors on affected parts already delivered or in service will be carried out at the appropriate Cessna Service Centers. Future new production units will be manufactured with the new strain relief already installed.

Operator Action:
This rework is not a mandatory retrofit program and is at the sole discretion of the affected Cessna model operator/owner.

A Part Number Effectivity Matrix

<table>
<thead>
<tr>
<th>P/Ns</th>
<th>Description</th>
<th>Qty per System</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>172 Aircraft</td>
</tr>
<tr>
<td>508976-201</td>
<td>CABLE INTERFACE ASSEMBLY – Pilot and Co-Pilot Seat</td>
<td>1</td>
</tr>
<tr>
<td>508976-203</td>
<td>CABLE INTERFACE ASSEMBLY – Pilot to Middle Seat LH and Co-Pilot to Middle Seat RH</td>
<td>2</td>
</tr>
<tr>
<td>508976-205</td>
<td>CABLE INTERFACE ASSEMBLY – Rear Seat, LH and RH</td>
<td>1</td>
</tr>
<tr>
<td>7035-201011XXX*</td>
<td>END-RELEASE BUCKLE ASSY (All Seat Positions) LH</td>
<td>2</td>
</tr>
<tr>
<td>7035-201031XXX</td>
<td>END-RELEASE BUCKLE ASSY (All Seat Positions) RH</td>
<td>2</td>
</tr>
</tbody>
</table>

*XXXX indicates color code
B Rework Procedures

Tool/Consumables List

<table>
<thead>
<tr>
<th>Item</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety Glasses</td>
<td>Standard Issue</td>
</tr>
<tr>
<td>Needle-nose pliers</td>
<td>Standard Issue</td>
</tr>
<tr>
<td>Miniature Screwdriver, 3.0 mm</td>
<td>Standard Issue</td>
</tr>
<tr>
<td>Precision Probe, 10 Mil</td>
<td>Standard Issue</td>
</tr>
<tr>
<td>Variable Temperature Heat Gun</td>
<td>Standard Issue</td>
</tr>
<tr>
<td>Multimeter with probes</td>
<td>Standard Issue</td>
</tr>
</tbody>
</table>

CAUTION: VERIFY THAT THE AAIR SYSTEM IS UNBUCKLED BEFORE PERFORMING PROCEDURE

Cable Interface Assembly

(1) Locate and remove the Cable Interface Assembly completely from the AAIR V23 System (see table in section A for part number). Figure 1 shows the Cable Interface Assembly’s FCI connectors to be reworked. Refer to AmSafe Aviation SMM, E508804, for complete Cable Interface Assembly disengagement instructions, if necessary. Remember to note cable routing for re-attachment of reworked cable to system.
(2) Locate first FCI Connector (Figure 1).

(3) Remove blue locking mechanism with miniature screwdriver. Use access slots on each side of the connector. Do not discard blue locking mechanism. It will be reinstalled into the assembly.

(4) Remove white back shell from connector with miniature screwdriver. Use notches on each side of the back shell to remove.
(5) Remove the three (3) terminals from the connector with a precision probe. Place probe between terminals and latch. Carefully slide terminals toward rear of connector. The terminals can not be completely removed until all terminals are unlocked. Note: Work area must be well lit to perform task.
   a. Save red insulator.
   b. Discard white back shell.

(6) Slide on 1½” of heat shrink over terminals onto cable assembly. Heat shrink material to be per SAE specification SAE-AMS-DTL-23053/4 (formerly MIL-DTL-23053/4), Class, 3, .63 inch (16mm).

(7) Slide on new back shell, P/N 509325-1.

(8) Slide on insulator removed in step 5. Position wire in insulator: White in position #1, Orange in #2, and Blue in #3. Note wire colors through insulator with respect to connector orientation (See Figure 6).

![Figure 4 – Connector Terminal Removal](image)

![Figure 5 – Cable Connector Terminal Positions](image)
(9) Insert terminals into connector with White in position #1, Orange in #2, and Blue in #3, until there is a visual and audible lock (see Figure 5). Check the locking mechanism by slightly tugging the connector and cable.

(10) Replace blue locking mechanism from step #4.

(11) Seat insulator firmly inside connector.

(12) Slide back shell to connector and lock in place. Check that the back shell is locked by slightly tugging the back shell and connector.

(13) Slide cable protective wrap (Figure 7, Top), until it makes contact with the back shell and hold in place.

(14) Slide heat shrink until it evenly covers back shell grip and protective wrap and shrink in place with heat gun (see image series Figure 7). Refer to heat shrink specification regarding heat gun temperature setting. Slightly tug protective wrap and connector to assure heat shrink is properly installed.
Figure 7 – Heat Shrink Wrap Steps

1. Fit onto Connector Assy.
3. Finished Connector Assy.

Protective Wrap
(15) Repeat steps 3 through 14 for second FCI connector.

(16) Attach Cable Interface Assembly to AAIR System on aircraft and perform diagnostic check. Refer to AmSafe Aviation SMM, E508804, for complete Cable Interface Assembly connection instructions, if necessary. Also, refer to appropriate Cessna aircraft model Installation drawing concerning cable routing. Refer to AmSafe Aviation V23 SDT Maintenance and Operation Manual, E508750, for diagnostic tool instructions.

**End-Release Buckle Assembly**

(1) Locate and remove the End-Release Buckle Assy completely from the AAIR V23 System (see table in section A for part number). Figure 1 shows the End-Release Buckle Assy’s FCI connector to be reworked. Refer to AmSafe Aviation SMM, E508804, for complete part disengagement instructions, if necessary. Remember to note cable routing for re-attachment of reworked assembly to system.

![Figure 8 – End-Release Buckle Assy FCI and Squib Connector](image)
(1) Locate FCI Connector (see Figure 8).

(2) Remove red locking mechanism with needle-nose pliers. Save the locking mechanism.

(3) Remove white back shell from connector with miniature screw driver. Use notches on each side of the back shell to remove.

(4) Remove the four (4) terminals from the connector with a precision probe (Figure 11). Place probe between terminals and latch. Carefully slide terminals toward rear of connector. The terminals can not be completely removed until all terminals are unlocked. Note: Work area must be well lit to perform task.
   a. Save insulator.
   b. Discard back shell
(5) Slide on 1½” of heat shrink over terminals onto cable assembly. Heat shrink material to be per SAE specification SAE-AMS-DTL-23053/4 (formerly MIL-DTL-23053/4), Class, 3, .63 inch (16mm).

(6) Slide on new back shell, P/N 509325-1.

(7) Slide on insulator removed in step #4. Position wire in insulator: White in position #1, Blue in #2, Orange in #3, and Green in #4 (see Figure 13). Note wire colors through insulator with respect to connector orientation (See Figure 12).
(8) Insert terminals into connector with White in position #1, Blue in #2, Orange in #3, and Green in #4 until there is a visual and audible lock (see Figure 13). Check the locking mechanism by slightly tugging the connector and cable.

![Figure 13 – Cable Assy of End-Release Buckle Assy Connector Terminal Positions](image)

(9) Replace red locking mechanism from step #3.

(10) Seat insulator firmly inside connector.

(11) Slide back shell to connector and lock in place. Check that the back shell is locked by slightly tugging the back shell and connector.

(12) Slide cable protective wrap (Figure 14, Top), until it makes contact with the back shell and hold in place.

(13) Slide heat shrink until it evenly covers back shell grip and protective wrap and shrink in place with heat gun (see image series in Figure 14). Refer to heat shrink specification regarding heat gun temperature setting. Slightly tug protective wrap and connector to assure heat shrink is properly installed.
AMSAFE AVIATION INFLATABLE RESTRAINTS DIVISION
SERVICE LETTER 23-002
29-September-2005

Figure 14 – Shrink Wrap Steps

1. Fit onto Connector Assy.
3. Finished Connector Assy.

Protective Wrap
(14) Attach End-Release Buckle Assy to AAIR System on aircraft and perform diagnostic check. Refer to AmSafe Aviation SMM, E508804, for complete connection instructions, if necessary. Also, refer to appropriate Cessna aircraft model Installation drawing concerning cable routing. Refer to AmSafe Aviation V23 SDT Maintenance and Operation Manual, E508750, for diagnostic tool instructions.

C Recording Rework of Parts in Aircraft Log Book.

Rework of the appropriate assemblies must be recorded and tracked in the aircraft's log and is the responsibility of the modifying agency.

Prepared By: 
Ron Shields
Sr. Product Engineer

Approved By: 
John Magish
Certification Manager

Date 10/10/05
TITLE
INFLATABLE SEAT RESTRAINTS WIRING CONNECTOR STRAIN RELIEF INSTALLATION

EFFECTIVITY

<table>
<thead>
<tr>
<th>Model</th>
<th>Serial Numbers</th>
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<tbody>
<tr>
<td>172R</td>
<td>17280001 thru 17281272</td>
</tr>
<tr>
<td>172S</td>
<td>172S8001 thru 172S10102</td>
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<tr>
<td>182S</td>
<td>18280001 thru 18280944</td>
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<tr>
<td>182T</td>
<td>18280945 thru 18281741</td>
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<tr>
<td>T182T</td>
<td>T18208001 thru T18208540</td>
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<td>206H</td>
<td>20608001 thru 20608257</td>
</tr>
<tr>
<td>T206H</td>
<td>T20608001 thru T20608594</td>
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</table>

REASON
To transmit AMSAFE Service Letter No. 23-002.

DESCRIPTION
AMSAFE has developed a more robust strain relief which should be installed at the base of FCI connectors found on the Cable Interface Assemblies and the End-Release Buckle Assemblies. The strain relief is permanently attached to the connectors and cabling to help protect and assist in preventing the wires at the connector from becoming exposed or damaged.

COMPLIANCE
Recommended: should be accomplished at the next scheduled airplane inspection, not to exceed 100 hours of operation or 12 months, whichever occurs first.

APPROVAL
Refer to the attached AMSAFE Service Letter No. 23-002 (or latest revision).

MANPOWER
Approximately 0.5 man-hour per seat
REFERENCES

AMSAFE Service Letter No. 23-002 (or latest revision)

NOTE: Make sure all publications used are complete and current.

NOTE: This information shall be considered an amendment to the Cessna Manufacturer's Service/Maintenance Manual and should be accomplished within the specified time requirement.

OTHER PUBLICATIONS AFFECTED

Model 172R and Model 172S Illustrated Parts Catalog
Model 182S/182T/T182T Illustrated Parts Catalog
Model 206H/T206H Series 1998 Illustrated Parts Catalog

NOTE: Make sure all publications used are complete and current.

MATERIAL PRICE AND AVAILABILITY

The part below is available from Cessna Parts Distribution through an appropriate Cessna Service Station for the suggested list price shown.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Qty/Airplane</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>509325-1</td>
<td>Strain Relief</td>
<td>(as required)</td>
<td>$1.26</td>
</tr>
</tbody>
</table>

ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE

CREDIT INFORMATION

Not applicable

ACCOMPLISHMENT INSTRUCTIONS

Material Information

The part below may be necessary:

<table>
<thead>
<tr>
<th>NEW P/N</th>
<th>QUANTITY</th>
<th>DESCRIPTION</th>
<th>OLD P/N</th>
<th>DISPOSITION</th>
</tr>
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<tbody>
<tr>
<td>509325-1</td>
<td>(as required)</td>
<td>Strain Relief</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The material below, or equivalent, may be necessary.

<table>
<thead>
<tr>
<th>NAME</th>
<th>NUMBER</th>
<th>MANUFACTURER</th>
<th>USE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat Shrink</td>
<td>SAE-AMS-DTL-23053/4, Class, 3, 0.63 inch (16 mm)</td>
<td>Commercially Available</td>
<td>To help secure cable to connector.</td>
</tr>
</tbody>
</table>

Instructions

1. Do AMSAFE Service Letter No. 23-002 (or latest revision).
2. Make an entry in the airplane logbook that states compliance with this Service Bulletin and AMSAFE Service Letter No. 23-002 (or latest revision).
OWNER NOTIFICATION

On February 12, 2007 the following message will be sent to applicable owners of record in SB07-25-01A.

Dear Cessna Owner:

This Owner Advisory is to inform you that Service Bulletin SB07-25-01 has been issued to announce AMSAFE Service Letter No. 23-002.

AMSAFE has developed a more robust strain relief which should be installed at the base of FCI connectors found on the Cable Interface Assemblies and the End-Release Buckle Assemblies. The strain relief is permanently attached to the connectors and cabling to help protect and assist in preventing the wires at the connector from becoming exposed or damaged.

The inflatable seat restraints strain relief should be installed as specified in SB07-25-01/AMSAFE Service Letter No. 23-002 (or latest revision).

Compliance is recommended: should be accomplished at the next scheduled airplane inspection, not to exceed 100 hours of operation or 12 months, whichever occurs first.

The information contained in the referenced Cessna Service Bulletin shall be considered an amendment to the Cessna Manufacturer's Service/Maintenance Manual and should be accomplished within the specified time requirement.

Please contact a Cessna Single Engine Service Station for detailed information and arrange to have Cessna Service Bulletin SB07-25-01/AMSAFE Service Letter No. 23-002 (or latest revision) accomplished on your airplane.