



AERONAUTICAL ACCESSORIES, INC.

P.O. BOX 3689

BRISTOL, TENNESSEE 37625-3689 U.S.A.

TELEPHONE: 423-538-5151

800-251-7094

TELEFAX: 423-538-8469 E-MAIL: sales@aero-access.com

ALERT SERVICE BULLETIN

ASB No. AA-03037

SUBJECT:

External Hoist Kits

P/Ns 206-995-100, -101, -110, -111, -120, -130

P/Ns 206-995-200, -201, -210, -211, -220, -230

P/Ns 407-995-001, -002, -003, -004

P/Ns 206-999-100, -110

MODELS AFFECTED:

Bell Helicopter Textron 206A,B,L,L-1,L-3,L-4, and 407 with the subject External Hoist Kit installed.

COMPLIANCE:

This bulletin shall be complied with within 25 flight hours of receipt of this bulletin.

DESCRIPTION:

This Alert Service Bulletin is being issued in response to an incidence of fatigue cracking of the fairing attachment point of P/N 206-992-110/-120 and 407-992-102 Hoist Support Assembly. This bulletin provides the procedures for inspection of the Hoist Support Assembly and identifies the appropriate modification of the part as necessary post inspection.

MANPOWER:

Approximately 2.0 - 4.0 man hours.

IF OWNERSHIP OF AIRCRAFT HAS CHANGED, PLEASE FORWARD THIS BULLETIN TO NEW OWNER

1.0 MATERIAL:

The following materials are required to comply with this bulletin:

- AAI P/N 407-997-001 Hoist Support Assembly Modification Kit
(This kit is available from Aeronautical Accessories, Inc. at no cost.
Contact our SALES department at 1-800-251-7094.)

The following additional consumable material will be required for this modification:

- Epoxy Polyamide primer per MIL-PRF-23377
- Alodine, per MIL-C-81706
- Isopropyl Alcohol

2.0 REQUIRED TOOLS:

Screw Driver, Philips Head

Screw Driver, Standard Flat Head

5/16" Wrench

Torque Wrench

Drill with #40 Drill Bit, 1/4" Drill Bit, and a 100° Counter Sink Bit

Solid Rivet Installation Tool

Center punch, small diameter (<.097" Dia.)

For TYPE 3 REPAIR: Gas Tungsten Arc Weld (GTAW) equipment.

3.0 WEIGHT AND BALANCE:

Weight change (Model 206A/B): +1lb, STA 93.22, LBL 21.86

Weight change (Model 206L,L-1,L-3,L-4): +1lb, STA 114.72, LBL 21.86

Weight change (Model 407): +1lb, STA 113.81, LBL 20.25

4.0 PUBLICATIONS AFFECTED:

AAI Report No. AA-91023 Revision Q or earlier.

AAI Report No. AA-92085 Revision P or earlier.

AAI Report No. AA-93003 Revision H or earlier.

AAI Report No. AA-94007 Revision F or earlier.

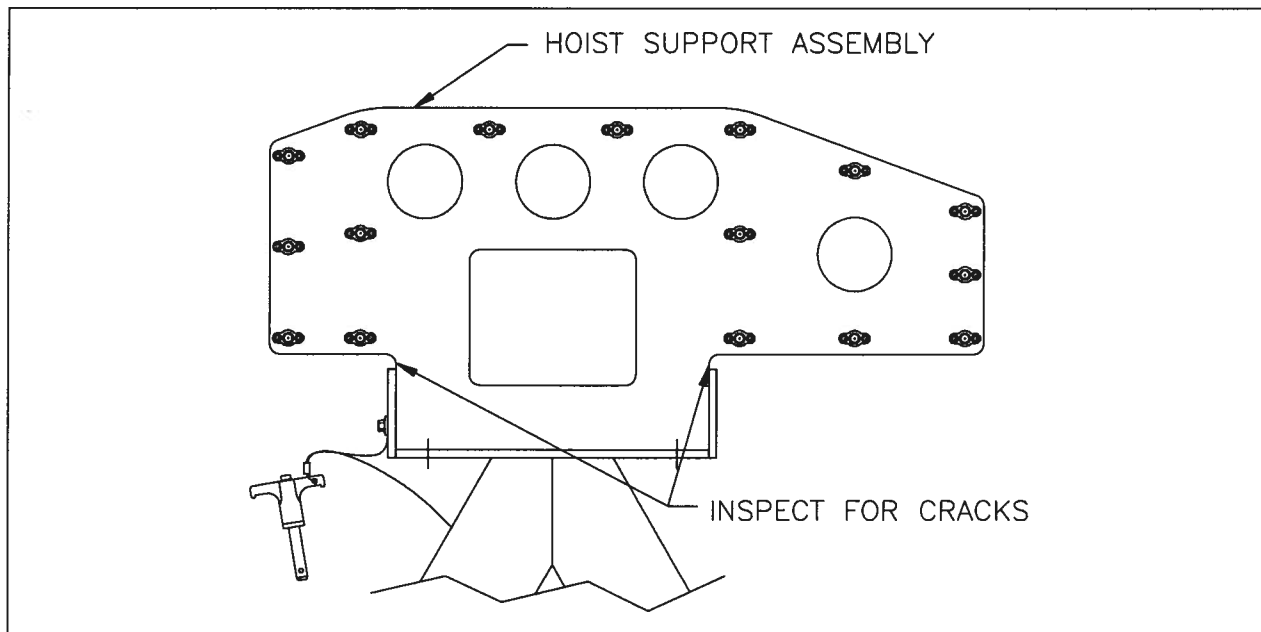
AAI Report No. AA-97005 Revision E or earlier.

AAI Report No. AA-97006 Revision H or earlier.

AAI Report No. AA-97044 No Revision.

5.0 ACCOMPLISHMENT INSTRUCTIONS:**5.1 INSPECTION**

- 5.1.1 (If applicable) Remove Hoist Motor/Fairing/Support Assembly from helicopter.
- 5.1.2 (If applicable) Remove Faring halves from Hoist Motor/Support Assembly and retain hardware for later reinstallation.
- 5.1.3 (If applicable) Remove Hoist Motor from Hoist Support Assembly (P/Ns 206-992-110/-120 or 407-992-102) by removing the four ¼" bolts fastening the feet of the motor to the Hoist Support Assembly. Discard hardware. Place Hoist Motor in a secure dry place away from the work area.
- 5.1.4 Inspect Hoist Support Assembly for any sign of cracking in the plate areas directly above the weld fillet between the two small diagonal gussets and the back plate, as shown in Figure 1.

**FIGURE 1- HOIST SUPPORT ASSEMBLY INSPECTION**

5.1.5 Determine **DAMAGE TYPE** as detailed in **Table 1 - DAMAGE AND REPAIR LIMITS** and proceed to the appropriate instructions as identified in **Section 6.0 REPAIR PROCEDURES**.

TABLE 1- DAMAGE AND REPAIR LIMITS

MAXIMUM ALLOWABLE DAMAGE AND REPAIR LIMITS (A crack may be repaired as noted in Section 6.0 REPAIR PROCEDURES, if it does not exceed these limits.)	DAMAGE TYPE
No Cracks	Type 1
Crack above one gusset not exceeding 1.3"	Type 2
Crack above one gusset exceeding 1.3" but less than 2"	Type 3
Cracks exceeding 2" or above both gussets	Type 4 No Repair allowed Replace Part

6.0 REPAIR PROCEDURES

The following are applicable REPAIR PROCEDURES for P/N 206-992-110/-120 and 407-992-102 Hoist Support Assemblies with damage as noted. Accomplishment of this ASB may be expedited by proceeding directly to Section 6.4 DAMAGE – TYPE 4 and using TABLE 2 – HOIST SUPPORT ASSEMBLY REPLACEMENT as guidance for part replacement.

6.1 DAMAGE – TYPE 1 REPAIR

(Refer to Drawing 407-997 "Hoist Support Assembly Modification", Sheet 4).

- 6.1.1 Remove the four Nut Plates (two to either side of the square hole) in the vertical plate by carefully drilling off the heads of the two rivets fastening each Nut Plate with a #40 drill (.097"-.102" Dia) and using a small diameter center punch to push the rivets through the plate. Remove fastener from Quick Pin lanyard located on the small forward gusset.
- 6.1.2 Using a 100° Counter Sink Bit, Counter Sink the outboard side (Nut Plate side) of the eight (8) rivet hole locations to .19" diameter and "Double Flush" the holes with the provided MS20426AD3-4 Rivets. Brush Alodine bare aluminum

surfaces. Install rivets wet with Epoxy Polyamide primer and touch up rivets after installation.

- 6.1.3 Temporarily fasten the 407-997-121 Fwd Gusset and 407-997-122 Aft Gusset using the ¼" hoist mounting hole locations in the gussets and the Hoist Support Assembly using the hoist mounting hardware as shown. Use a "C"-clamp or vise grip to secure the vertical portions of the Gussets in place square with the Hoist support assembly and parallel to the small forward and aft gussets.
- 6.1.4 With a marker, transfer the four #10 holes (.193"-.199" Dia) hole locations from the removed Nut Plates to the Fwd and Aft Gussets. Match drill, #10 hole (.193"-.199" Dia), the -121 Fwd Gusset to the existing hole through the small forward gusset. Using this forward hole location as an example, match drill, #10 hole (.193"-.199" Dia), the -122 Aft Gusset and the small aft gusset to mirror the hole through the forward gussets. Use a 100° Counter Sink Bit to Counter Sink the forward side of the small aft gussets to .358" diameter. Deburr all holes and brush Alodine bare aluminum surfaces.
- 6.1.5 Remove the Fwd and Aft Gussets and drill four #10 holes (.193"-.199" Dia) at the location marked above. Deburr all holes.
- 6.1.6 Using these two #10 holes in each Gusset install new MS21069L3 Nut Plates to the outboard side of the Gussets using MS20426AD3-2 Rivets. For the rivets, drill #40 holes (.097"-.102" Dia) through the Gussets and use a 100° Counter Sink Bit to Counter Sink the inboard side of the Gussets to .19" diameter. Deburr all holes. Using Epoxy Polyamide primer, install rivets wet and touch up rivets and holes drilled through Gussets.
- 6.1.7 Touch up Hoist Support Assembly color as required to match pre-existing finish. Re-identify Hoist Support Assembly as detailed on Note 10 of Drawing 407-997.
- 6.1.8 Loosely install the Fwd and Aft Gussets on the Hoist Support Assembly with #10 screws through the back plate. Reinstall the Hoist Motor using new hardware with the Gussets in the stack-up as shown on drawing. Torque ¼" fasteners to 50-70 in-lbs. Remove the #10 screws fastening the Gussets to the Hoist Support Assembly.
- 6.1.9 Reinstall the inboard Fairing half with the retained hardware substituting four MS27039-1-10 Screws in the four new Gusset Nut Plate locations. Torque all #10 Screws to 20-25 in-lbs. Reinstall the outboard Fairing half and secure all ¼ turn fasteners.
- 6.1.10 Modification complete. Make a notation in the helicopter's log indicating that ASB No. AA-03037 has been accomplished.

6.2 DAMAGE – TYPE 2 REPAIR**NOTE**

DAMAGE – TYPE 3 REPAIR may be used as an alternate to DAMAGE – TYPE 2 REPAIR.

(Refer to Drawing 407-997 "Hoist Support Assembly Modification", Sheet 5).

- 6.2.1 Remove the four Nut Plates (two to either side of the square hole) in the vertical plate by carefully drilling off the heads of the two rivets fastening each Nut Plate with a #40 drill (.097"-.102" Dia) and using a small diameter center punch to push the rivets through the plate. Remove fastener from Quick Pin lanyard located on the small forward gusset.
- 6.2.2 Using a 100° Counter Sink Bit, Counter Sink the outboard side (Nut Plate side) of the eight (8) rivet hole locations to .19" diameter and "Double Flush" the holes with the provided MS20426AD3-4 Rivets. Brush Alodine bare aluminum surfaces. Install rivets wet with Epoxy Polyamide primer and touch up rivets after installation.
- 6.2.3 Locate 407-997-123 Doubler centered over crack, Counter Sinks outboard, and aligned with edge of square hole through back plate. Match drill (.097"-.102" Dia) the Hoist Support Assembly to the four holes in the Doubler installing clecos as drilling progresses. Trace around Doubler with a marker. Remove the Doubler and use a 100° Counter Sink Bit to Counter Sink the inboard side of the four new holes through the Hoist Support Assembly to .19" diameter.
- 6.2.4 Use paint stripper or equivalent to carefully remove paint and primer from inside of the tracing.
- 6.2.5 Stop drill the crack at the end with a 1/8" bit (.124"-.129" Dia) to restrict further crack propagation. Enlarge the hole as required to a maximum of ¼" (.249"-.255") to ensure no crack is present to the opposite side of the hole from the original crack. Carefully deburr the hole and round all edges to avoid further crack initiation from that location. Brush Alodine bare aluminum surfaces.
- 6.2.6 Apply a thin coat of 099-050-131 Adhesive (EA934) to the contacting surfaces of the Doubler and Hoist Support Assembly and install with four MS20426AD3-7 Rivets "Double Flushed" with the inboard and outboard surfaces of the Hoist Support Assembly and wet with 099-050-131 Adhesive (EA934). Fill the crack stop hole with 099-050-131 Adhesive (EA934) and tape it off until cured. After Adhesive has initially cured, approximately 1 hour, apply a coat of Epoxy Polyamide primer over the patch area's inboard and outboard sides.
- 6.2.7 Temporarily fasten the 407-997-121 Fwd Gusset and 407-997-122 Aft Gusset using the ¼" hoist mounting hole locations in the gussets and the Hoist Support Assembly using the hoist mounting hardware as shown. Use a "C"-clamp or vise

grip to secure the vertical portions of the Gussets in place square with the Hoist support assembly and parallel to the small forward and aft gussets.

- 6.2.8 With a marker, transfer the four #10 holes (.193"-.199" Dia) hole locations from the removed Nut Plates to the Fwd and Aft Gussets. Match drill, #10 hole (.193"-.199" Dia), the -121 Fwd Gusset to the existing hole through the small forward gusset. Using this forward hole location as an example, match drill, #10 hole (.193"-.199" Dia), the -122 Aft Gusset and the small aft gusset to mirror the hole through the forward gussets. Use a 100° Counter Sink Bit to Counter Sink the forward side of the small aft gusset to .358" diameter. Deburr all holes and brush Alodine bare aluminum surfaces.
- 6.2.9 Remove the Fwd and Aft Gussets and drill four #10 holes (.193"-.199" Dia) at the locations marked above. Deburr all holes.
- 6.2.10 Using these two #10 holes in each Gusset install new MS21069L3 Nut Plates to the outboard side of the Gussets using MS20426AD3-2 Rivets. For the rivets, drill #40 holes (.097"-.102" Dia) through the Gussets and use a 100° Counter Sink Bit to Counter Sink the inboard side of the Gussets to .19" diameter. Deburr all holes. Using Epoxy Polyamide primer, install rivets wet and touch up rivets and holes drilled through Gussets.
- 6.2.11 Touch up Hoist Support Assembly color as required to match pre-existing finish. Re-identify Hoist Support Assembly as detailed on Note 2 of Drawing 407-997.
- 6.2.12 Loosely install the Fwd and Aft Gussets on the Hoist Support Assembly with #10 screws through the back plate. Reinstall the Hoist Motor using new hardware with the Gussets in the stack-up as shown on drawing. Torque ¼" fasteners to 50-70 in-lbs. Remove the #10 screws fastening the Gussets to the Hoist Support Assembly.
- 6.2.13 Reinstall the inboard Fairing half with the retained hardware substituting four MS27039-1-10 Screws in the four new Gusset Nut Plate locations. Torque all #10 Screws to 20-25 in-lbs. Reinstall the outboard Fairing half and secure all ¼ turn fasteners.
- 6.2.14 Modification complete. Make a notation in the helicopter's log indicating that ASB No. AA-03037 has been accomplished.

6.3 DAMAGE – TYPE 3 REPAIR

(Refer to Drawing 407-997 "Hoist Support Assembly Modification", Sheet 6).

- 6.3.1 Remove the four Nut Plates (two to either side of the square hole) in the vertical plate by carefully drilling off the heads of the two rivets fastening each Nut Plate with a #40 drill (.097"-.102" Dia) and using a small diameter center punch to push the rivets through the plate. Remove fastener from Quick Pin lanyard located on the small forward gusset.
- 6.3.2 Using a 100° Counter Sink Bit, Counter Sink the outboard side (Nut Plate side) of the eight (8) rivet hole locations to .19" diameter and "Double Flush" the holes with the provided MS20426AD3-4 Rivets. Brush Alodine bare aluminum surfaces. Install rivets wet with Epoxy Polyamide primer and touch up rivets after installation.
- 6.3.3 Locate 407-997-123 Doubler centered over crack, Counter Sinks outboard, and aligned with edge of square hole through back plate. Match drill (.097"-.102" Dia) the Hoist Support Assembly to the four holes in the Doubler installing clecos as drilling progresses. Trace around Doubler with a marker. Remove the Doubler and use a 100° Counter Sink Bit to Counter Sink the inboard side of the four new holes through the Hoist Support Assembly to .19" diameter.
- 6.3.4 Use paint stripper or equivalent to carefully remove paint and primer from inside of the tracing and ½" above and below the crack. Also remove paint and primer from the inboard side of the Hoist Support Assembly ½" above and below the crack.
- 6.3.5 Grind a ¼" wide "V" channel on both inboard and outboard sides of the crack area, leaving approximately .050" material between the two channels. Weld both channels with Gas Tungsten Arc Weld (GTAW). Grind both sides flush after weld process is complete. Clean surfaces with isopropyl alcohol and brush Alodine bare aluminum surfaces.
- 6.3.6 Apply a thin coat of 099-050-131 Adhesive (EA934) to the contacting surfaces of the Doubler and Hoist Support Assembly and install with four MS20426AD3-7 Rivets "Double Flushed" with the inboard and outboard surfaces of the Hoist Support Assembly and wet with 099-050-131 Adhesive (EA934). After Adhesive has initially cured, approximately 1 hour, apply a coat of Epoxy Polyamide primer over the patch area's inboard and outboard sides.
- 6.3.7 Temporarily fasten the 407-997-121 Fwd Gusset and 407-997-122 Aft Gusset using the ¼" hoist mounting hole locations in the gussets and the Hoist Support Assembly using the hoist mounting hardware as shown. Use a "C"-clamp or vise grip to secure the vertical portions of the Gussets in place square with the Hoist support assembly and parallel to the small forward and aft gussets.

- 6.3.8 With a marker, transfer the four #10 holes (.193"-.199" Dia) hole locations from the removed Nut Plates to the Fwd and Aft Gussets. Match drill, #10 hole (.193"-.199" Dia), the -121 Fwd Gusset to the existing hole through the small forward gusset. Using this forward hole location as an example, match drill, #10 hole (.193"-.199" Dia), the -122 Aft Gusset and the small aft gusset to mirror the hole through the forward gussets. Use a 100° Counter Sink Bit to Counter Sink the forward side of the small aft gussets to .358" diameter. Deburr all holes and brush Alodine bare aluminum surfaces.
- 6.3.9 Remove the Fwd and Aft Gussets and drill four #10 holes (.193"-.199" Dia) at the location marked above. Deburr all holes.
- 6.3.10 Using these two #10 holes in each Gusset install new MS21069L3 Nut Plates to the outboard side of the Gussets using MS20426AD3-2 Rivets. For the rivets, drill #40 holes (.097"-.102" Dia) through the Gussets and use a 100° Counter Sink Bit to Counter Sink the inboard side of the Gussets to .19" diameter. Deburr all holes. Using Epoxy Polyamide primer, install rivets wet and touch up rivets and holes drilled through Gussets.
- 6.3.11 Touch up Hoist Support Assembly color as required to match pre-existing finish. Re-identify Hoist Support Assembly as detailed on Note 2 of Drawing 407-997.
- 6.3.12 Loosely install the Fwd and Aft Gussets on the Hoist Support Assembly with #10 screws through the back plate. Reinstall the Hoist Motor using new hardware with the Gussets in the stack-up as shown on drawing. Torque ¼" fasteners to 50-70 in-lbs. Remove the #10 screws fastening the Gussets to the Hoist Support Assembly.
- 6.3.13 Reinstall the inboard Fairing half with the retained hardware substituting four MS27039-1-10 Screws in the four new Gusset Nut Plate locations. Torque all #10 Screws to 20-25 in-lbs. Reinstall the outboard Fairing half and secure all ¼ turn fasteners.
- 6.3.14 Modification complete. Make a notation in the helicopter's log indicating that ASB No. AA-03037 has been accomplished.

6.4 DAMAGE – TYPE 4 (NO REPAIR)

No repair allowed for Cracks exceeding 2", or above both gussets. A Hoist Support Assembly with TYPE 4 Damage should be replaced as noted in Table 2.

TABLE 2 – HOIST SUPPORT ASSEMBLY REPLACEMENT

ORIGINAL PART NUMBER	SUPERSEDING PART NUMBER
206-992-110 Hoist Support Assembly	206-992-101 Hoist Support Assembly
206-992-120 Hoist Support Assembly	Contact AAI Product Support
407-992-102 Hoist Support Assembly	407-992-202 Hoist Support Assembly

7.0 CONTACT INFORMATION

Any questions regarding this bulletin should be addressed to:

AERONAUTICAL ACCESSORIES, INC.
PRODUCT SUPPORT
1-800-251-7094