



A Textron Company

TECHNICAL BULLETIN

407-14-108

PSL 7000000211

13 February 2014

Revision A, 19 April 2017

MODEL AFFECTED: 407

SUBJECT: GSC46 Engine Signal Conditioner, Improvement of

HELICOPTERS AFFECTED: Serial numbers 54300 through 54657, 54660, 54662 through 54668, 54671, 54674 through 54687.

[Serial number 54658, 54659, 54661, 54669, 54670, 54672, 54673, 54688 and subsequent will have the intent of this bulletin accomplished prior to delivery.]

COMPLIANCE: **Part I:** Within 300 flight hours or 6 months, whichever occurs first.

Part II: As required by **Part I**, but no later than 30 June 2018.

DESCRIPTION:

Bell Helicopter has received reports of alternate torque (ALTN Q) CAS (Crew Alerting System) indications. Analysis has shown that under certain conditions, a transistor in the heater circuit of the GSC46 Engine Signal Conditioner can experience a shortened component lifetime. **Revision A** of this Technical Bulletin (TB) changes HELICOPTERS AFFECTED and introduces the MOD 3 unit to further improve upon the reliability of the GSC46 Engine Signal Conditioner. The MOD 2 units had not provided the expected increase in unit reliability.

Part I of this TB provides instructions to verify the MOD status of the GSC46 Engine Signal Conditioner. **Part II** of this Technical Bulletin provides instructions to replace the current unit with a GSC46 MOD 3 Engine Signal Conditioner with improved heater circuit performance.

APPROVAL:

The engineering design aspects of this bulletin are Transport Canada Civil Aviation (TCCA) approved.

CONTACT INFO:

For any questions regarding this bulletin, please contact:

Bell Helicopter Product Support Engineering - Light Helicopters
Tel: 450-437-2862 / 1-800-363-8023 / pselight@bh.com

MANPOWER:

Approximately 1.5 man-hours are required to complete this bulletin. This estimate is based on hands-on time and may vary with personnel and facilities available.

WARRANTY:

Owners / Operators of Bell Helicopters who comply with the instructions in this Bulletin will be eligible to receive non prorated replacement part as applicable, listed in the bulletin.

Bell Helicopter has recently introduced enhancements to the VISTA Portal which allocates specific warranty entitlement for an aircraft by serial number. The Product Service Letter (PSL), which will be listed below the bulletin number on the introduction page, is going to be a required field when submitting a claim for replacement parts, labor, and/or freight. If you receive a Service Directive that does not have a PSL number, then there is no warranty entitlement for that bulletin.

Labor entitlement: None.

To receive parts, under warranty:

- Comply with the instructions contained in this bulletin no later than the applicable date in the "**COMPLIANCE**" section.
- If there is a PSL number identified in the bulletin, you will be required to enter this PSL number which will validate warranty entitlement for the selected helicopter. Please make sure that you use the Bulletin tab on the warranty section in VISTA to file your claim.

NOTE: Customers who fail to comply with the instructions in this Bulletin before the **30 June 2018** are not eligible for the special warranty listed above.

MATERIAL:

Required Material:

The following material is required for the accomplishment of this bulletin and may be obtained through your Bell Helicopter Textron Supply Center.

<u>Part Number (Note)</u>	<u>Nomenclature</u>	<u>Qty</u>
013-N0337-00 (1)	Engine Signal Conditioner (MOD 3)	1

NOTE 1: The P/N 013-0337-00 (MOD 3) is an acceptable alternate.

Consumable Material:

The following material is required to accomplish this bulletin, but may not require ordering, depending on the operator's consumable material stock levels. This material may be obtained through your Bell Helicopter Textron Supply Center.

<u>Part Number</u>	<u>Nomenclature</u>	<u>Qty (Note)</u>	<u>Reference * (Note)</u>
2110-07015-00	Solvent, Drycleaning, Degreaser	1 gallon (1)	C-304 (2)
2010-12792-01	Sealant, Corrosion Inhibitor	1	C-251 (3)

* C-XXX numbers refer to the consumables list in the BHT-ALL-SPM, Standard Practices Manual

NOTES:

1. Products may be available in other quantity formats.
2. Products that meet the MIL-PRF-680 Type II specification can be used as an alternate.
3. Products that meet the MIL-PRF-81733 Type II specification can be used as an alternate.

SPECIAL TOOLS:

None required.

WEIGHT AND BALANCE:

Not affected.

ELECTRICAL LOAD DATA:

Not affected.

REFERENCES:

BHT-407-IPB Illustrated Parts Breakdown, Chapter 95
BHT-407-MM-3 Maintenance Manual, Chapter 25
BHT-407-MM-10 Maintenance Manual, Chapter 95
BHT-407-FM-2 Flight Manual Section 2 (Normal Procedures)
BHT-407-CR&O-V Component Repair and Overhaul Manual Vendor Data

PUBLICATIONS AFFECTED:

BHT-407-IPB Illustrated Parts Breakdown Chapters 95 and 96.

ACCOMPLISHMENT INSTRUCTIONS:

PART I: Affected Part Verification

1. Prepare the helicopter for maintenance.

-NOTE-

Access may be achieved by removing the upper access cover in the baggage compartment or by removing the hat bin.

2. Gain access to the GSC46 Engine Signal Conditioner (BHT-407-MM-3, Chapter 25, and Figure 1).
3. Verify the MOD status on the identification plate of the GSC46 Engine Signal Conditioner. If the identification plate is not **MOD 3**, as seen in Figure 2, then accomplishment of **Part II** of this bulletin is required, otherwise no further action is required.
4. Make an entry in the helicopter logbook and historical service records indicating compliance with **Part I** of this Technical Bulletin.

PART II: Upgrade of GSC46 Engine Signal Condition

1. Prepare the helicopter for maintenance.

-NOTE-

Access may be achieved by removing the upper access cover in the baggage compartment or by removing the hat bin.

2. Gain access to the GSC46 Engine Signal Conditioner (BHT-407-MM-3, Chapter 25, and Figure 1).
3. Remove the affected GSC46 Engine Signal Conditioner (BHT-407-MM-10, Chapter 95).

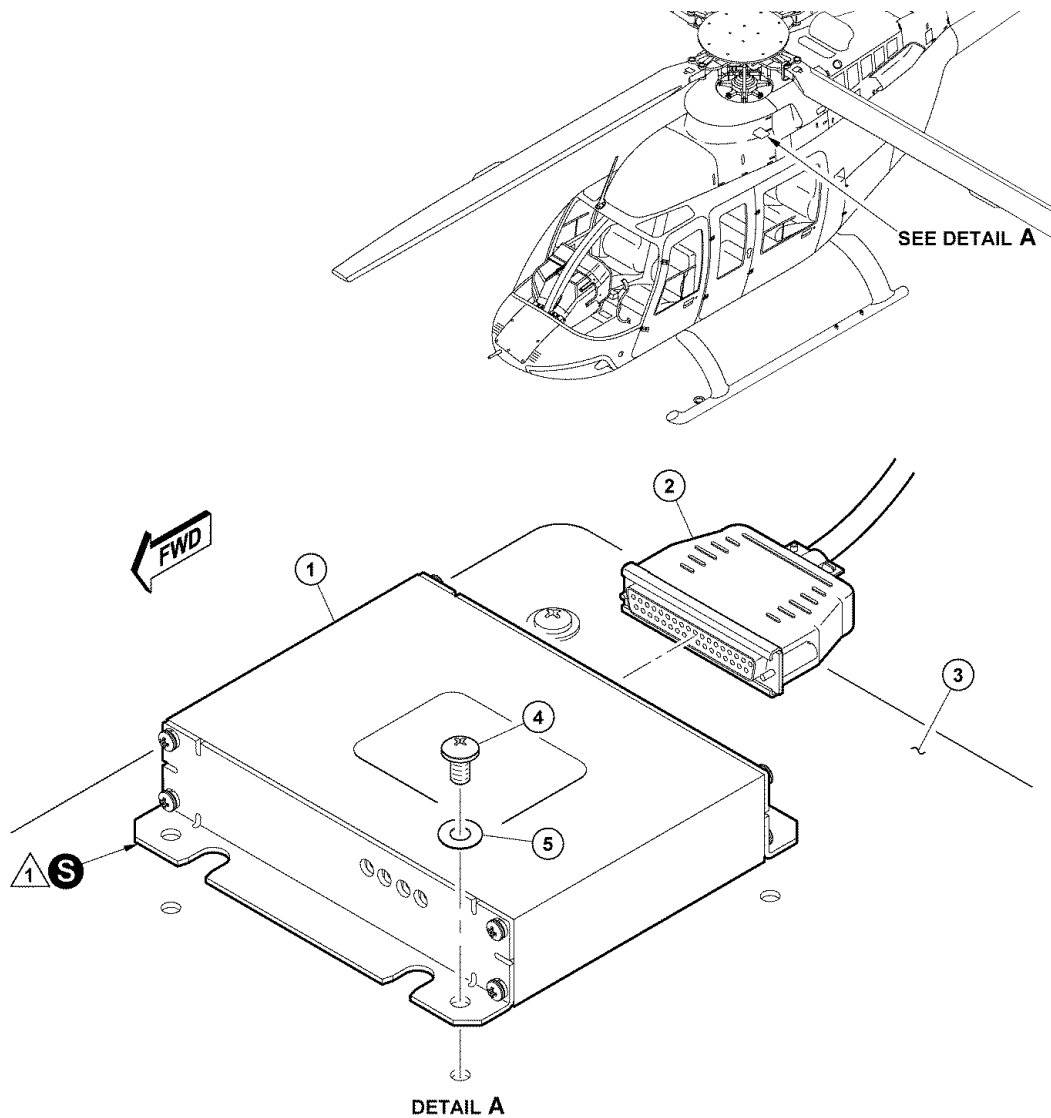
-NOTE-

A “new” GSC46 Engine Signal Conditioner will be identified as 013-00337-00. An “upgraded/repared” GSC46 will be identified as 013-N0337-00, and is considered as an acceptable alternate.

-NOTE-

A GSC46 Engine Signal Conditioner (013-00337-00 or 013-N0337-00) with the latest improvements incorporated will be stamped with a “MOD 3” identification (Figure 2).

4. Install the GSC46 “MOD 3” Engine Signal Conditioner (BHT-407-MM-10, Chapter 95).
5. Reinstall the hat bin if previously removed in step 2 (BHT-407-MM-3, Chapter 25).
6. Power the helicopter 28VDC system and verify on the PFD (Primary Flight Display) for the following:
 - a. CAS (Crew Alerting System) message “ALTN” in amber is not displayed above the PSI (Power Situation Indicator).
 - b. CAS (Crew Alerting System) message “ALTN DATA FAIL” in white is not displayed within the CAS window.
7. Make an entry in the helicopter logbook and historical service records indicating compliance with **Part II** of this Technical Bulletin.



- 1. Engine signal conditioner (GSC 46) (7730A1)
- 2. Electrical connector (7730A1P1)
- 3. Aft avionics equipment shelf
- 4. Screw
- 5. Washer

S SEALANT (C-251)

NOTE
1 After installation of the engine signal conditioner (1), apply sealant (C-251) to seal the edges of the electrical bonding area.

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Figure 1 – GSC46 Engine Signal Conditioner Installation

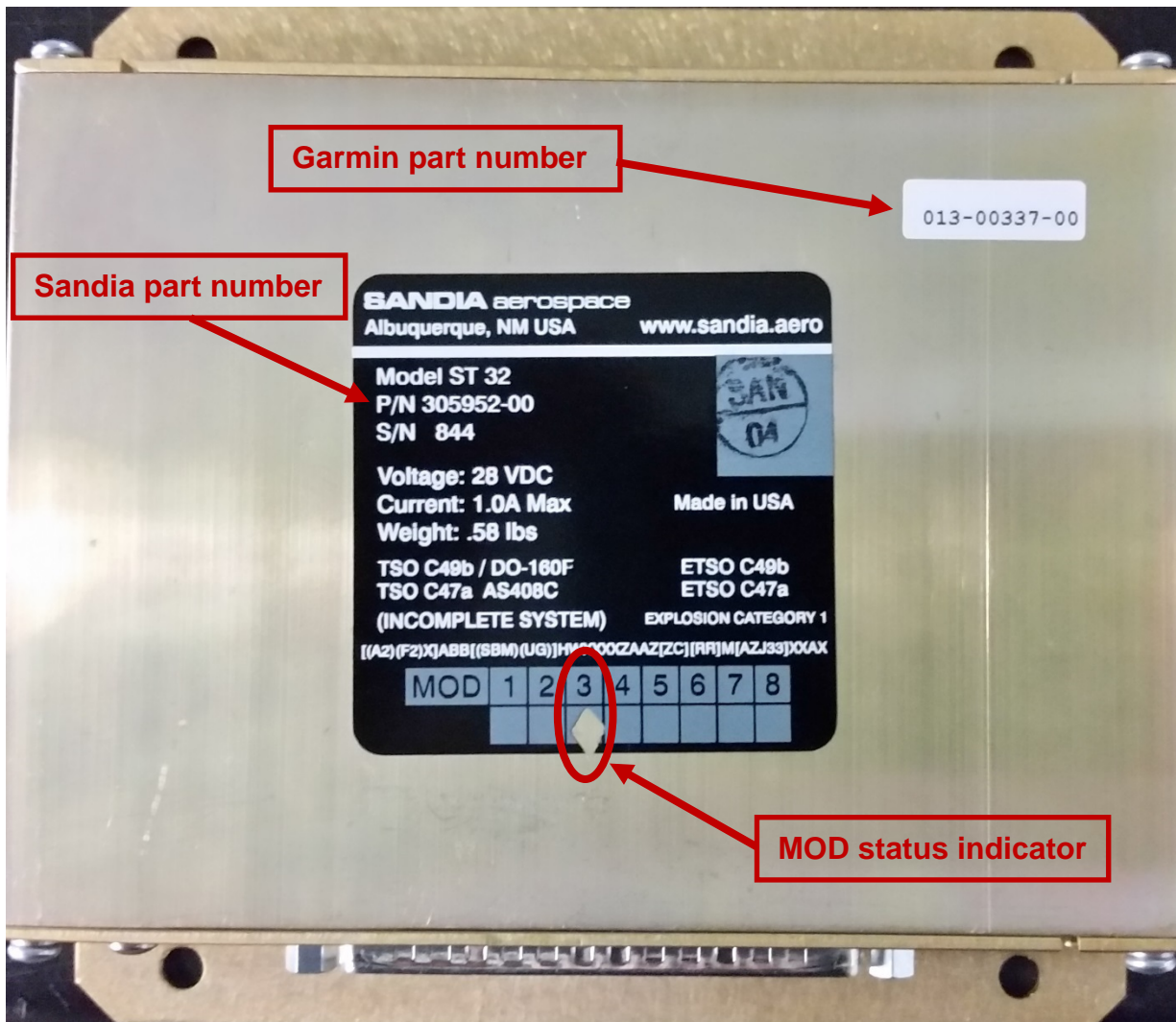


Figure 2 – GSC46 Engine Signal Conditioner Data Plate