

ALERT SERVICE BULLETIN

Bell Helicopter **TEXTRON**

A Subsidiary of Textron Inc.

NO. 430-99-10

DATE 12-16-99

PAGE 1 of 7

DATE

REV

MODEL AFFECTED: 430

SUBJECT: Electrical Power Distribution System, Improvements

HELICOPTERS AFFECTED: PART I: Model 430 S/N 49002, 49004 through 49006, 49008 through 49016, 49018 through 49025 and 49027 through 49036

[Helicopters S/N 49001, 49003, 49007, 49017, 49026 and S/N 49037 and subsequent will have the intent of Part I of this bulletin accomplished prior to delivery]

PART II: Model 430 equipped with single EFIS or electromechanical flight instruments, (S/N 49009, 49013, 49019, 49021, 49027 and 49031).

PART III: Model 430 equipped with dual EFIS, (S/N 49002, 49004 through 49006, 49008, 49010 through 49012, 49014 through 49016, 49018, 49020, 49022, 49023 through 49025, 49028 through 49030 and 49032 through 49036).

[Helicopters S/N 49001, 49003, 49007, 49017, 49026 and S/N 49037 and subsequent will have the intent of Part II or Part III of this bulletin accomplished prior to delivery]

COMPLIANCE: At the next annual (600 hour) inspection but not later than December 31, 2000.

7851 55192 REV 1198

DESCRIPTION:

Detailed analysis of the aircraft electrical systems carried out during the single-pilot IFR evaluation process has highlighted a number of areas where a system improvement will increase safety and reliability. This bulletin introduces electrical system improvements as follows:

- Aircraft battery life following failure of both DC generators is improved by modifying the electrical bus distribution system to include emergency, essential and non-essential busses. Electrical system-circuit breakers are relocated accordingly.
- A second redundant aircraft DC power supply with associated circuit breaker is added for each FADEC, Electronic Control Unit (ECU).
- AC inverter switching logic is improved to prevent inadvertent loss of AC power following a DC emergency bus failure.
- Improved battery relay P/N SX7EJ10 is installed to prevent inadvertent battery trip following start abort or dry motoring run.
- Electrical bonding of the DC generator ground circuits is improved by increasing the size of the hardware securing the ground shunt bus bar to the airframe structure.

APPROVAL:

The engineering design aspects of this bulletin are Transport Canada approved.

MANPOWER:

Approximately 140 man-hours are required to accomplish this bulletin. Man-hours are based on hands-on time and may vary with personnel and facilities available.

WARRANTY:

Owners/operators of 430 helicopters who comply with the instructions outlined in this bulletin are eligible for a special 100% warranty credit toward the purchase of the kits contained in this bulletin.

In addition, warranty credit for labor to incorporate the kits will be allowed to a maximum of U.S. \$7,700.00.

To receive this credit:

- Customers must order the replacement parts from an approved BHTI supply source.
- Comply with the instructions outlined in this bulletin no later than 31 December 2000.
- Send a completed Malfunction Report (MR) to BHT Warranty Administration. A copy of the invoice referencing parts used to accomplish this bulletin must be attached to the Malfunction Report.

- NOTE -

Customers who fail to comply with the instruction in this bulletin after 31 December 2000 are not eligible for the special warranty credit provisions listed above.

MATERIALS:

Required Material:

Refer to the Helicopters Affected section of this bulletin to determine the required materials for your helicopter. The following kits may be obtained through your Bell Helicopter Textron Supply Center.

PART I:

| <u>Part Number</u> | <u>Nomenclature</u> | <u>Quantity</u> |
|--------------------|---------------------|-----------------|
| CA-430-99-10-01 | Installation Kit | 1 |

PART II:

| <u>Part Number</u> | <u>Nomenclature</u> | <u>Quantity</u> |
|--------------------|---------------------|-----------------|
| CA-430-99-10-02 | Installation Kit | 1 |

Which consists of:

| | | |
|-----------------|----------------------------|---|
| 430-375-073-111 | Panel Lit (AFCS/2EFIS/E/M) | 1 |
| 430-375-074-111 | Panel Lit (AFCS/2EFIS/E/M) | 1 |
| 430-375-075-111 | Panel Lit (AFCS/2EFIS/E/M) | 1 |
| 430-375-076-111 | Panel Lit (AFCS/2EFIS/E/M) | 1 |
| 430-704-002-117 | Decal | 1 |
| 430-705-506-113 | Decal | 1 |

PART III:

| <u>Part Number</u> | <u>Nomenclature</u> | <u>Quantity</u> |
|---------------------------|---------------------------|-----------------|
| CA-430-99-10-03 | Installation Kit | 1 |
| <u>Which consists of:</u> | | |
| 430-375-073-111 | Panel Lit (AFCS/EFIS/E/M) | 1 |
| 430-375-074-111 | Panel Lit (AFCS/EFIS/E/M) | 1 |
| 430-375-075-115 | Panel Lit (AFCS/4EFIS) | 1 |
| 430-375-076-115 | Panel Lit (AFCS/4EFIS) | 1 |
| 430-704-002-117 | Decal | 2 |
| 430-705-506-113 | Decal | 2 |

CONSUMABLE MATERIAL:

The following material is required to accomplish this bulletin, however this material is considered consumable (bench stock) material and may not require ordering depending on the operators consumable stock levels. This material may be obtained through your Bell Helicopter Textron Supply Center.

| <u>PART NUMBER</u> | <u>NOMENCLATURE</u> | <u>REFERENCE</u> |
|----------------------|---------------------|------------------|
| 299-947-066 TY1 | Adhesive | C-301 |
| 299-947-125 TYPE 1 | Adhesive | C-331 |
| 3950 | Sealer | C-349 |
| CCCC440TY2CL2 | Cheesecloth | C-486 |
| METHYL METHANOL | Alcohol | C-302 |
| MILS46163 TY II GR M | Sealant | C-299 |
| MIL-S-81733TYI2.5 OZ | Sealant | |
| MILS8802CLB2 PT | Sealant | C-308 |
| SCOTCHBRITE TY-A | Abrasive Pad | C-407 |
| TT-N-95, TYII 1GAL | Aliphatic Naphtha | C-305 |

- NOTE -

The 'C' REFERENCE NO. above is a cross reference found in the Standard Practice Manual.

| <u>PART NUMBER</u> | <u>NOMENCLATURE</u> | <u>REFERENCE</u> |
|--------------------|---------------------|------------------|
| SN63WRMAP3 | Solder | EC-041 |

- NOTE -

The 'EC' REFERENCE NO. above is a cross reference found in the Electrical Standard Practice Manual.

TOOLS REQUIRED:

Refer to installation instruction 430-II-2001.

WEIGHT AND BALANCE:

Not affected.

ELECTRICAL LOAD DATA:

Refer to BHT-430-MM, Revision 4 dated 07 January 2000 for revised Electrical Load Analysis (ELA).

REFERENCES:

BHT-430-MM-5
BHT-430-MM-10
BHT-430-MM-11
BHT-ALL-SPM
BHT-ELEC-SPM

PUBLICATIONS AFFECTED:

BHT-430-MM-10
BHT-430-MM-11
BHT-430-MM-12
BHT-430-FM-1
BHT-430-MD-1
BHT-430-FMS-7
BHT-430-FMS-24
BHT-430-FMS-29
BHT-430-FMS-30
BHT-430-FMS-34

ACCOMPLISHMENT INSTRUCTIONS:

- NOTE -

Installation instruction 430-II-2001 is contained in kit CA-430-99-10-01.

1. Refer to Installation Instruction BHT430-II-2001. Accomplish the instructions contained in BHT430-II-2001 (Part I, Part II and Part III as applicable) by helicopter serial number. Refer to the HELICOPTERS AFFECTED section of this bulletin for helicopter serial number requirements.
2. Refer to Revision 4 of the BHT-430-MM dated 07 January, 2000 for the post modification wiring diagrams.
3. Incorporate BHT-430-FM-1 Temporary Revision dated 9 February 1999 in the rotorcraft flight manual.
4. Incorporate BHT-430-MD-1 Temporary Revision dated 9 February 1999 in the rotorcraft manufacturers data manual.

- NOTE -

The contents of BHT-430-FMS-7 have been incorporated into the Single AFCS and Dual AFCS flight manual supplements.

5. Remove BHT-430-FMS-7, Single and Dual EFIS from the rotorcraft flight manual and insert the corresponding cancellation sheet.

- NOTE -

Only the flight manual supplement that is relevant to the system installed on the helicopter needs be inserted into the flight manual.

6. Incorporate the applicable AFCS Flight Manual Supplement (FMS) into the rotorcraft flight manual:

BHT-430-FMS-24, DAFCS & Dual EFIS reissue dated 25 March, 1999.
BHT-430-FMS-29, SAFCS & Single EFIS new issue dated 28 August, 1999.
BHT-430-FMS-30, SAFCS & Dual EFIS new issue dated 9 February, 1999.
BHT-430-FMS-34, DAFCS & Single EFIS new issue dated 24 June, 1999.

7. Annotate the helicopter records to reflect compliance with this bulletin.
8. Return the helicopter to flight status.