

**TECHNICAL BULLETIN**  
**Bell Helicopter** **TEXTRON**

A Subsidiary of Textron Inc.

No. 407-03-51

Date Dec 02, 2003

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DATE
REV

**MODEL AFFECTED:** 407

**SUBJECT:** HUB FRAHM ASSY 407-010-150-ALL REMOVAL OF

**HELICOPTERS AFFECTED:** Model 407 helicopters serial number 53000 and sub.

**COMPLIANCE:** At Customer's Option

**DESCRIPTION:**

Several operators have requested that Bell Helicopter evaluate the removal of the main rotor hub FRAHM assembly in order to improve operations.

Bell has determined that the aircraft may be operated satisfactorily with the FRAHM removed. Additionally, removing the FRAHM reduces the helicopter empty weight by approximately 50 pounds, but could increase the perceived level of 4-per-rev vibration in the cabin under certain loading conditions.

The perceived 4-per-rev is less noticeable at higher helicopter gross weights and speeds below 130 KIAS, but increases progressively as fuel is consumed and when cruising above 130 KIAS. Bell Helicopter has not evaluated all possible configuration changes, due to customizing, which may affect the perceived vibration to varying degrees. Some combinations may require the continued use of the FRAHM due to the proven vibration lowering characteristics.

This bulletin authorizes the removal of the main rotor hub FRAHM assembly on fielded aircraft, at customer's option. Please note that a well-tuned FRAHM will provide the best ride quality, and that Bell Helicopter will continue to include the FRAHM on all new Bell 407 deliveries.

**APPROVAL:**

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

**MANPOWER:**

Approximately 1 man-hour is required to complete this bulletin. Man-hours are based on hands-on time, and may vary with personnel and facilities available.

**MATERIALS:**

**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</u>	<u>Nomenclature</u>	<u>Quantity</u>
MS21042L5	NUT	8
NAS1149F0563P	WASHER	8
140-007-24S20A8	WASHER	8

**SPECIAL TOOLS:**

None required

**WEIGHT AND BALANCE:**

<u>Weight</u>	<u>Arm</u>	<u>Longitudinal</u> <u>Moment</u>	<u>Arm</u>	<u>Lateral*</u> <u>Moment</u>
-50.5 Lbs (-22.9 Kg)	122.2 in. (3104 mm)	-6171 in-Lbs (-711.0 mm kg/100.)	-0.7 in. (-18 mm)	35 in-Lbs (4.1 mm kg/100.)

\* In lateral calculations, - is left and + is right.

**ELECTRICAL LOAD DATA:**

Not affected

**REFERENCES:**

BHT-407-MM-6, Rev 18, 29 Aug 2003 .Maintenance Manual

Chapter 62, Main Rotor.

**PUBLICATIONS AFFECTED:**

BHT-407-IPB, Rev 3, 06 Sep 2002

Chapter 62, Main Rotor.

BHT-407-MM-6, Rev 18, 29 Aug 2003, Maintenance Manual


Chapter 62, Main Rotor.

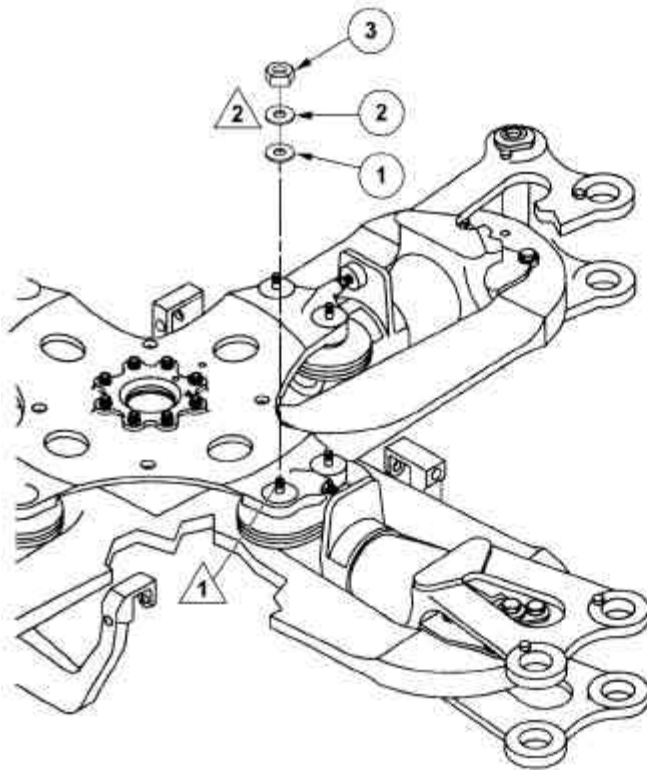
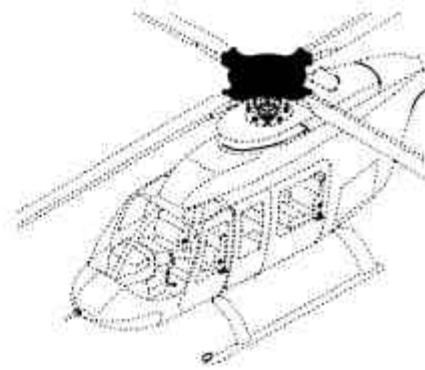
**ACCOMPLISHMENT INSTRUCTIONS:**

1. Remove the cover and the FRAHM assembly (BHT-407-MM-6, Chapter 62).
2. The cover and the Hub FRAHM assembly may be stored for future use if required.

**-NOTE-**

Do not permit the corrosion protective compound to contaminate the threads.

3. Apply a layer of corrosion preventive compound (C-104, BHT-ALL-SPM) to the exposed upper stud shank of the lead and lag dampers.
4. Install washers (1 and 2, Figure 1) and nuts (3) on the upper studs of the lead and lag dampers. 
5. Apply a layer of corrosion preventive compound (C-101, BHT-ALL-SPM) to the nut (3) washers (1 and 2) and exposed threads.
6. If required, adjust ballast as necessary to return helicopter weight empty CG to within allowable limits.
7. Make an entry in the helicopter Historical Service Records to show that this Technical Bulletin is completed.



- 1. Washer (140-007-24S20A8)
- 2. Washer (NAS1149F0563P)
- 3. Nut (MS21042L5)

**T** 75 to 95 IN-LBS (8.4 to 10.7 Nm)

**NOTES**

- 1. (C-104) to stud shank. Do not apply to threads.
- 2. (C-101) to washers, nut and exposed threads.

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Figure 1. Aircraft configuration without FRAHM assembly