ALERT SERVICE BULLETIN
REVISION NOTICE

Bell Helicopter
A Textron Company

DATE May 27, 2009

TO: **All Owners/Operators of Bell 427 Helicopters**

SUBJECT: **REVISION "A" TO ALERT SERVICE BULLETIN 427-09-26: TAIL ROTOR GEARBOX P/N 406-040-400-ALL AND TAIL ROTOR GEARBOX CASE ASSEMBLY P/N 406-040-406-ALL, ONE TIME INSPECTION**

Revision "A" to this bulletin is issued to correct the P/N for the tail rotor gearbox assembly in the subject which should have read **427-042-400-ALL**. In addition, a tolerance of +/- 0.030 inch has been added for the installation of the mounting studs in the gearbox case assembly.

MODEL AFFECTED: **427**

SUBJECT: **TAIL ROTOR GEARBOX P/N 427-042-400-ALL AND TAIL ROTOR GEARBOX CASE ASSEMBLY P/N 406-040-406-ALL, ONE TIME INSPECTION OF.** A

HELICOPTERS AFFECTED: **Model 427 helicopters serial number 56001 through 56074 and helicopters serial number 58001 and 58002.**

Model 427 helicopters serial numbers 56075 and subsequent and 58003 and subsequent will have the intent of this bulletin accomplished prior to delivery..

COMPLIANCE: PART I: Immediately upon receipt of this bulletin.

PART II: Within the next 10 hours but no later than 30 days after receipt of this bulletin.

PART III: At the next scheduled inspection but no later than 60 days after receipt of this bulletin.

DESCRIPTION:

Bell Helicopter has received reports of tail rotor gearbox assembly found with mounting studs incorrectly installed. This condition could lead to low clearance or fouling condition between the forward right hand stud and the aft end upper surface of the tail rotor control tube assembly 407-001-026 (long tube). Reports of dislodged or missing dowel pin in the gearbox case were also received.

PART I of this bulletin provides inspection instructions for the tail rotor gearbox case assembly or gearbox assembly consigned in spares.

PART II of this bulletin provides inspection instructions to determine if a fouling condition exists between the tail rotor control tube and the gearbox assembly stud.

PART III of this bulletin provides additional inspection instructions for proper stud and dowel pin installation.

APPROVAL:

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

MANPOWER:

Approximately 0.2 man-hour is required to complete PART I of this bulletin.
Approximately 0.5 man-hour is required to complete PART II of this bulletin.
No additional man-hour is required to complete PART III of this bulletin during the next scheduled inspection.

Man-hours are based on hands-on time, and may vary with personnel and facilities available.

WARRANTY:

There is no warranty credit applicable for parts or labor associated with this Bulletin.

MATERIAL:

Required Material:

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

Part Number	Nomenclature	Quantity
AN126324	STUD, STANDARD	A/R (NOTE 1)
AN126325	STUD, .003 OVERSIZE	A/R (NOTE 1)
AN126326	STUD, .006 OVERSIZE	A/R (NOTE 1)
AN126327	STUD, .009 OVERSIZE	A/R (NOTE 1)
AN126328	STUD, .012 OVERSIZE	A/R (NOTE 1)
NAS607-4-7P	PIN, DOWEL	A/R (NOTE 2)

NOTE:

1. Size to be determined at installation. Stud replacement may not be required.

2. Pin P/N 100-238P4-7 is an alternate for pin NAS607-4-7P. Required only if pin is missing.

SPECIAL TOOLS:

None required

WEIGHT AND BALANCE:

Not affected

ELECTRICAL LOAD DATA:

Not affected

REFERENCES:

BHT-427-IPB Illustrated Parts Breakdown, chapter 53 and 65
BHT-427-MM Maintenance Manual, chapter 53 and 65
BHT-427-CR&O Component Repair and Overhaul Manual, chapter 65

PUBLICATIONS AFFECTED:

BHT-427-CR&O Component Repair and Overhaul Manual, chapter 65 **A**

-NOTE-

If a discrepant part is found during accomplishment of this bulletin advise Bell Helicopter Product Support Engineering at the following:

Telephone: 450-437-2077
800-463-1971 (Canada)
800-463-3036 (U.S.A. only)
FAX: 450-433-0272
E mail: pseinter@bellhelicopter.textron.com

ACCOMPLISHMENT INSTRUCTIONS:

PART I:

ONE TIME INSPECTION OF TAIL ROTOR GEARBOX AND TAIL ROTOR GEARBOX CASE ASSEMBLY CONSIGNED IN SPARES.

1. Inspect the installation of the four tail rotor gearbox assembly and/or case assembly mounting studs (2, Figure 1). Measure all four studs for proper length. Refer to BHT-427-CR&O, Chapter 65 for stud installation height except the installation tolerance is +/- 0.030 inch. **A**

2. If the length of any of the four studs is not within limit, rework the installation of the defective stud. Refer to BHT-427-CR&O, Chapter 65 for stud installation height except the installation tolerance is +/- 0.030 inch.

3. If the length of all four studs is within limit, proceed to next step.

4. Inspect the installation of the two dowel guide pins (4, Figure 1). Inspect the tail rotor gearbox assembly and/or case assembly to insure that the two dowel guide pins are properly installed and have not become dislodged from the tail rotor gearbox assembly and/or case assembly.

5. If either of the two dowel guide pins are missing or have become dislodged, rework the installation of the dowel guide pin (4, Figure 1). Refer to BHT-427-CR&O, Chapter 65.

6. If the tail rotor gearbox assembly and/or case assembly meet the inspection requirements described in Steps 1 through 5, the tail rotor gearbox assembly and/or case assembly is serviceable.

7. Annotate the component records indicating compliance with PART I of this bulletin. **A**

PART II:

ONE TIME INSPECTION FOR FOULING WITH THE DIRECTIONAL CONTROL TUBE.

-NOTE-

At customer option part III of this bulletin may be carried out in conjunction with part I.

-NOTE-

The following inspection is accomplished while the control pedals are moved from stop to stop. Contact is most likely to occur in the middle of the range of motion when the directional control tube moves closest to the forward R/H mounting stud.

NOTE-

Part II of this bulletin is accomplished without removing the tail rotor gearbox fairings or lower access cover.

1. Using a flashlight and inspection mirror inserted through the side opening in the gearbox support casting. Inspect the forward right hand mounting stud (2, Figure 1) of the tail rotor gearbox (1) for fouling with the directional control tube (3). Refer to BHT-427-MM, Chapter 53.

2. If the directional control tube (3, Figure 1) shows any evidence of fouling with gearbox stud, proceed as follow:

   a. Remove the tail rotor gearbox fairings and inspect tube for mechanical damage. Refer to BHT-427-MM, chapter 67. Repair tube assembly in accordance with the BHT-427-MM, chapter 67.

   b. If damage limits are exceeded, discard and replace with a serviceable tube.

   c. Remove the tail rotor gearbox (1) and accomplish PART I of this bulletin.

3. If no evidence of contact is found, the directional control tube (3, Figure 1) is serviceable.

4. Annotate the helicopter records indicating compliance with PART II of this bulletin and accomplish PART III.

PART III:

ONE TIME INSPECTION OF TAIL ROTOR GEARBOX INSTALLED ON AIRCRAFT

-NOTE-

This inspection is performed with the gearbox assembly installed on the helicopter.

1. Remove the tail rotor gearbox fairing upper P/N 427-034-800-105 and lower P/N 427-034-800-101. Refer to BHT-427-MM, Chapter 53.

2. Remove the gearbox assembly access cover P/N 427-034-827-137.

3. Using a flashlight and inspection mirror, inspect all four of the tail rotor gearbox mounting studs (2, Figure 1) to ensure that no more than four threads of the stud extend beyond the end of the attaching nut.

4. If more than four threads are exposed beyond the end of attaching nut on any of the tail rotor gearbox mounting studs (2, Figure 1), remove the tail rotor gearbox (1) and rework the installation of the mounting studs. Refer to BHT-427-CR&O, Chapter 65 for stud installation height except the installation tolerance is +/- 0.030 inch. **A**

5. If four or fewer than four threads are exposed beyond the end of attaching nut on each of the tail rotor gearbox mounting studs (2, Figure 1), proceed to next step.

6. Using a flashlight and inspection mirror, inspect the tail rotor gearbox (1, Figure 1) for proper installation of the two dowel pins (4).

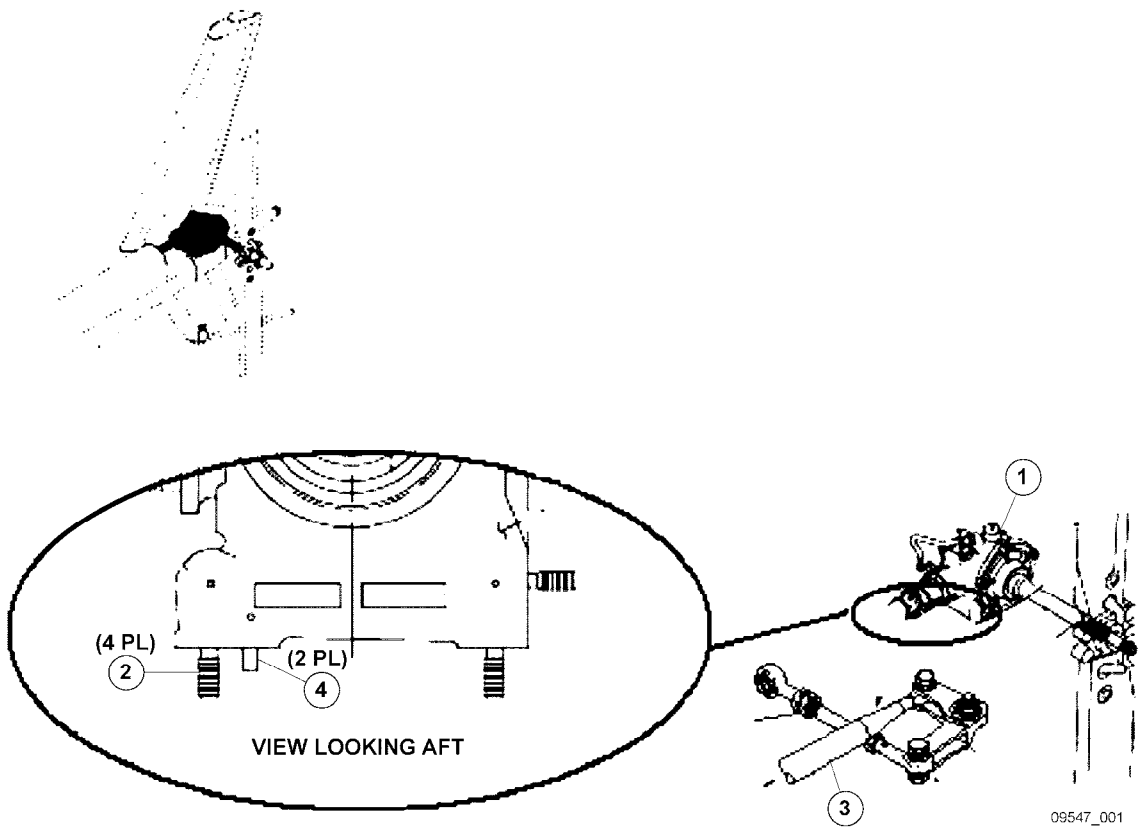
7. If either of the two guide pins are missing or have become dislodged, remove the tail rotor gearbox and rework the installation of the dowel pins. Refer to BHT-427-CR&O, Chapter 65.

8. If the tail rotor gearbox assembly meets the inspection requirements described in Steps 1 through 7, the tail rotor gearbox assembly is serviceable. .

9. Re-install the gearbox assembly access cover P/N 427-034-827-137.

10. Re-install the tail rotor gearbox fairing upper P/N 427-034-800-105 and lower P/N 427-034-800-101. Refer to BHT-427-MM, Chapter 53.

11. Annotate the helicopter records indicating compliance with PART III of this bulletin.



1. Tail rotor gearbox
2. Mounting stud
3. Directional control tube
4. Dowel pin

Figure 1. Studs and dowel pins location