

Bell Helicopter **TEXTRON**

A Subsidiary of Textron, Inc.

July 26, 2005

TO: All Owners/Operators of Bell 206L Series Helicopters

**SUBJECT: REVISION "A" TO TECHNICAL BULLETIN 206L-99-197:
(TAIL ROTOR GEARBOX 206-040-402-ALL, UPGRADE AND
CONFIGURATION OF)**

Revision "A" to this Technical Bulletin is introduced to reflect the configuration changes required to upgrade 206L series tail rotor gearboxes to P/N 206-040-402-111 and -113:

TECHNICAL BULLETIN

Bell Helicopter **TEXTRON**

A Subsidiary of Textron Inc.

No. 206L-99-197

Date 10-01-99

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DATE 07-26-05
REV "A"

MODEL AFFECTED: 206L Series

SUBJECT: TAIL ROTOR GEARBOX 206-040-402-ALL, UPGRADE AND CONFIGURATION OF.

HELICOPTERS AFFECTED: 206L helicopters: S/N 45001 through 45153 and S/N 46601 through 46617.

206L-1 helicopters: S/N 45154 through 45790

206L-3 helicopters: S/N 51001 through 51612

206L-4 helicopters: S/N 52001 through subsequent.

GEARBOXES AFFECTED: The tail rotor gearbox assemblies that follow are affected by this bulletin:

<u>GEARBOX P/N</u>	<u>NOTE</u>		<u>PROD. EFFECTIVITY</u>
206-040-402-003	(1)	206L	45004 thru 45153 46001 thru 46617
206-040-402-003	(1)	206L-1	45154 thru 45790
206-040-402-003	(1)	206L-3	41001 thru 51612
206-040-402-101	(1)	206L-4	52001 thru 52180 and 52182
206-040-402-107	(1)	206L-4	52183 thru 52275 and 52181
206-040-402-111	(2)	206L4	52276 and subsequent
206-040-402-109	(3)	206L4	BHT-206-SI-2054 and BHT-206-SI-2057
206-040-402-113	(4)	206L4	BHT-206-SI-2054 and BHT-206-SI-2057

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NOTES:

1. Any tail rotor gearbox assemblies can be upgraded to a newer configuration of tail rotor gearbox assembly, refer to Table 1.
2. Tail rotor gearbox assembly -111 is an authorized spare tail rotor gearbox useable on all 206L, 206L-1, 206L-3 and 206L-4 helicopters.

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3. Tail rotor gearbox assembly 206-040-402-109 can be upgraded to a tail rotor gearbox assembly 206-040-402-113, refer to Table 1.
 4. Tail rotor gearbox assembly –113 is an authorized spare tail rotor gearbox useable on 206L4 helicopters equipped with a High Altitude Tail Rotor Kit.

COMPLIANCE:

At the option of the operator. However, it is recommended that this bulletin be accomplished whenever the tail rotor gearbox assembly is overhauled.

All applicable Alert Service Bulletins and Technical Bulletins must be done in order to upgrade to a newer tail rotor gearbox assembly configuration. Refer to the REFERENCES section of this bulletin.

DESCRIPTION:

This bulletin gives the changes necessary to upgrade older model 206L series, tail rotor gearbox assemblies, to newer tail rotor gearbox assembly configurations.

When upgraded, the tail rotor gearbox assemblies can be used on model 206L series helicopters listed in the GEARBOXES AFFECTED block.

APPROVAL:

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

MANPOWER:

No additional manpower is necessary when you accomplish this bulletin during overhaul.

MATERIAL:

The parts necessary to upgrade the tail rotor gearbox are listed in Table 1. You can get the parts through your Bell Helicopter Textron Supply Center.

SPECIAL TOOLS:

No additional overhaul tools are necessary. Refer to the applicable Component Repair and Overhaul Manual.

WEIGHT AND BALANCE:

Not affected.

ELECTRICAL LOAD DATA:

Not affected

REFERENCES:

BHT-206L-SERIES-CR&O-1, 15 October 1996.

Chapter 65, Tail Rotor Drive System.

BHT-206L-SERIES-IPB, Rev. 1, 2 February 1998.

Chapter 65, Tail Rotor Drive System.

BHT-206-SI 2054, High Altitude Tail Rotor Kit.

Technical Bulletin 206L-94-170, Tail Rotor Gearbox Oil Seal, Improved.

Technical Bulletin 206L-95-176, Tail Rotor Gearbox Assembly 206-040-425-111, Introduction of.

Technical Bulletin 206L-96-190, Tail Rotor Gearbox Case Assembly 206-040-425, Modification.

PUBLICATIONS AFFECTED:

BHT-206L-SERIES-IPB, Rev. 1, 2 February 1998.

Chapter 65, Tail Rotor Drive System.

ACCOMPLISHMENT INSTRUCTIONS:

1. Refer to the 206L series Component Repair and Overhaul Manual, Chapter 65, for the disassembly and assembly instructions for the tail rotor gearbox.

-NOTE-

Table 1 contains only the major components of the tail rotor gearbox assembly. Refer to the applicable Illustrated parts Breakdown Manual for the other parts you may need.

2. To upgrade the tail rotor gearbox assemblies, use the information of Table 1. The components listed below the assembly dash number are included in that specified configuration.
3. Identify the tail rotor gearbox assembly with the correct configuration dash number that you defined in Step 2.
 - a. Use a vibrating tool to identify the data plate of the tail rotor gearbox assembly. The depth of the vibroetch must not exceed 0.0005 inch (0.127 mm).

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Example: 206-040-402-003-111 FM.

-NOTE-

You must do all the changes given in Table 1, for that part number, to be able to replace the part number on the data plate or the historical record sheet.

4. Make an entry in the tail rotor gearbox assembly Historical Record (HR) to show:
 - The new part number;
 - The new Time Between Overhaul (TB), if it applies;
 - The new retirement life of tail rotor assembly parts, if it applies;
 - That this Technical Bulletin is completed.

TABLE 1 – Tail Rotor Gearbox Configuration (Sheet 1)

NOMENCLATURE / PART NUMBER	NOTES	TAIL ROTOR GEARBOX 206-040-402								
		-003	-101	-103M -103	-105	-107	-109FM -109	-111	-113	
NOTES		(1)(2)	(2)	(3)(4)	(2)		(4)(5)			
CASE ASSEMBLY	206-040-425-017	(6)(7)(9)(11)	X							
	206-040-425-111	(10)(11)		X	X					
	206-040-425-127	(7)(9)(11)				X				
	206-040-425-135					X	X	X	X	
CAP	206-040-437-001	(12)	X	X	X	X	X	X	X	
PINION (INPUT)	206-040-440-001	(13)	X			X				
	206-040-440-103			X	X	X	X	X	X	
GEAR	206-040-441-001	(14)	X			X				
	206-040-441-103			X	X	X	X	X	X	
SHAFT	206-040-439-001		X	X		X	X		X	
	206-040-949-101				X		X		X	
BEARING (INPUT)	206-040-438-001	(15)	X			X				
	206-040-428-101			X	X	X	X	X	X	
BEARING (OUTPUT)	206-040-410-003	(16)(17)	X			X				
	206-040-410-005	(17)		X	X	X	X			
	206-040-410-101							X	X	
BEARING	206-040-205-003	(18)	X			X				
	206-040-205-105			X	X	X	X	X	X	
BEARING	206-040-409-001	(19)	X			X				
	206-340-400-101	(20)		X	X	X	X	X	X	
NUT	206-040-421-001		X	X	X	X	X	X	X	
NUT	206-040-415-001		X	X	X	X	X	X	X	
NUT	206-040-414-001		X	X	X	X	X	X	X	

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TABLE 1 – Tail Rotor Gearbox Configuration (Sheet 2)

NOMENCLATURE / PART NUMBER	NOTES	TAIL ROTOR GEARBOX 206-040-402							
		-003	-101	-103M -103	-105	-107	-109FM -109	-111	-113
SPACER	206-040-420-001	(21)	X	X		X	X		
	206-040-420-101			X			X	X	X
GLASS	204-040-514-001	(22)	X	X	X	X	X		
	412-340-416-101							X	X
INDICATOR	204-040-508-011		X	X	X				
	204-040-508-101				X	X	X	X	X
SLEEVE	J-1105	(23)(24)(25)	X	X	X	X	X	X	
	206-340-401-101							X	X
FILLER CAP	204-040-502-009	(26)	X	X	X	X	X	X	
	412-040-318-101							X	X
SEAL (INPUT)	410136-H19	(27)(28)(29)(30)	X			X			
	206-340-103-101	(31)		X	X		X	X	
	206-340-206-101							X	X
SEAL (OUTPUT)	410082-HAE	(32)(33)(34)	X						
	406-340-105-101			X	X	X	X	X	X
CHIP DETECTOR	B-3225C		X	X	X	X	X	X	X

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TABLE 1 Notes
Tail Rotor Gearbox Configuration 206-040-402

- 1) You can modify to a T/R gearbox 206-040-402-105. Refer to Technical Bulletin 206L-96-190. As an alternative you can use T/R Gearbox assembly 206-040-402-105. (2)
- 2) This can be replaced by T/R Gearbox assembly 206-040-402-107. The T/R Gearbox 206-040-402-101 can be modified to a T/R Gearbox 206-040-402-107. Refer to Technical Bulletin 206L-96-190.
- 3) T/R Gearbox assembly 206-040-402-103 is a T/R Gearbox 206-040-402-101 with the Service Instruction BHT-SI-2054 that has been done at Bell Helicopter manufacture.
The T/R Gearbox 206-040-402-103M is a T/R Gearbox 206-040-402-101 with the Service instruction NHT-SI-2054 that has been done in the field. The two T/R Gearboxes do not have Technical Bulletin 206L-96-190 accomplished.
- 4) The T/R Gearbox 206-040-402-103, -103M, -109FM, and -109 are replaced by T/R Gearbox 206-040-402-113.
- 5) The T/R Gearbox assembly 206-040-402-109 is a T/R Gearbox 206-040-402-103 with the Technical Bulletin 206L-96-190 accomplished.
The T/R Gearbox 206-040-402-109FM is a T/R Gearbox 206-040-402-103M with the Technical Bulletin 206L-96-190 accomplished.
- 6) You can modify to a case assembly 206-040-425-127 **(7) (9) (11)**. Refer to the Technical Bulletin 206L-96-190.
- 7) This can be replaced by case assembly 206-040-425-101 **(8) (9) (11)**.
- 8) You can modify and re-identify to a case assembly 206-040-425-131 per the accomplishment instructions section of TB 206L-96-190 **(9) (11)**.
- 9) The case assembly is replaced by 206-040-425-111 **(10) (11)**. At the initial replacement of the case assembly 206-040-425-017, -101, -127, or -131, the bearing 206-040-409-001 must also be replaced with bearing 206-340-400-101. Refer to Technical Bulletin 206L-95-176.
- 10) You can modify to a case assembly 206-040-425-135. Refer to Technical Bulletin 206L-96-190.

TABLE 1 Notes (cont'd)
Tail Rotor Gearbox Configuration 206-040-402

- 11) The case assembly is replaced by 206-040-425-135. At the initial replacement of the case assembly 206-040-425-017, -101, -127 or -131, the bearing 206-040-409-001 must also be replaced with bearing 206-340-400-101. Refer to Technical Bulletin 206L-95-176.
- 12) As an alternative, you can use cap 206-040-935-001.
- 13) Replaced by pinion 206-040-440-103.
- 14) Replaced by gear 206-040-441-103.
- 15) As an alternative, you can use bearing 206-040-438-10).
- 16) As an alternative, you can use bearing 206-040-410-005 **(17)**.
- 17) This is replaced by bearing 206-040-410-101.
- 18) This is replaced by bearing 206-040-205-005.
- 19) Can be used with case assembly 206-040-425-017, -101, -127, and -131. If you use case assembly 206-040-425-111 or -135, you must replace this bearing with bearing 206-340-410-101. Refer to Technical bulletin 206L-95-176.
- 20) Can be used with case assembly 206-040-425-111, and -135 only. Refer to Technical Bulletin 206L-95-176.
- 21) Replaced by spacer 206-040-420-101.
- 22) Replaced by glass 412-340-416-101.
- 23) As an alternative, you can use sleeve 29800-8054. **(24)**
- 24) This is replaced by sleeve 536827. **(25)**
- 25) This is replaced by 206-340-401-101.
- 26) This is replaced by filler cap 412-040-318-101.
- A** 27) As an alternative, you can use seal 525894 **(28)**.
- 28) This is replaced by seal 545166 **(29)**.
- 29) This is replaced by seal 2890-51468. **(30)**

TABLE 1 Notes
Tail Rotor Gearbox Configuration 206-040-402

- 30) This is replaced by seal 206-340-103-101. Refer to Technical bulletin 206L-94-170. **(31)**
- 31) This is replaced by seal 206-340-206-101. Refer to Technical bulletin 206L-04-215.
- 32) As an alternative you can use seal 2810-51832. **(33)**
- 33) This is replaced by seal 2890-51832. **(34)**
- 34) This is replaced by seal 406-340-105-101. Refer to Technical Bulletin 206L-94-170.

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