ALERT SERVICE BULLETIN

Bell Helicopter TEXTRON

A Subsidiary of Textron Inc.

NO.	407-05-68
DATE	June 30, 2005
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DATE	
REV	

MODEL AFFECTED: **407**

SUBJECT: **ROLLS-ROYCE 250-C47B ENGINE GEARBOX ASSEMBLY – INSPECTION AND REWORK OF GEARBOX HOUSING.**

HELICOPTERS AFFECTED: Bell 407 helicopters with certain Rolls-Royce 250-C47B engines installed.

407 helicopters serial number 53648 and subsequent will have the intent of this bulletin accomplished prior to delivery.

COMPLIANCE: In accordance with Rolls-Royce Corporation Alert Commercial Engine Bulletin CEB-A-72-6056 (dated June 30, 2005)

DESCRIPTION:

Rolls-Royce has advised that within the past 12 months, some Rolls-Royce Model 250-C47B engine gearbox housings may have been manufactured with an incompletely drilled and cleaned #6, #7, and #8 bearing oil passage. Rolls-Royce reports that an incompletely drilled oil passage can cause a restriction in oil flow and potentially damage the number 8 bearing. This bulletin references the procedure to inspect the affected engines and the action to take following the inspection.

Bell 407 helicopters serial number 53597, 53621, 53623, 53625, 53627, 53628, 53629, 53630, 53631, 53632, 53633, 53636, 53637, 53639, 53640, 53646, and 53647 were delivered with engine gearboxes listed in the Rolls-Royce Corporation Alert Commercial Engine Bulletin CEB-A-72-6056 (dated June 30, 2005), attached.

If an engine or gearbox has been changed during the past 12 months, operators should refer to the attached Rolls-Royce Corporation Alert Commercial Engine Bulletin CEB-A-72-6056 (dated June 30, 2005) for applicability.

This Bell Helicopter Alert Service Bulletin is sent as a matter of record for complete distribution and will not be revised in the event of subsequent changes to the Rolls-Royce Corporation Alert Commercial Engine Bulletin CEB-A-72-6056 (dated June 30, 2005).

APPROVAL:

Refer to Rolls-Royce Corporation Alert Commercial Engine Bulletin CEB-A-72-6056 (dated June 30, 2005).

MANPOWER:

Refer to Rolls-Royce Corporation Alert Commercial Engine Bulletin CEB-A-72-6056 (dated June 30 2005).

WARRANTY:

Rolls-Royce Corporation has committed to providing financial compensation for engine removal and installation, shipping charges, and parts necessary for compliance with CEB-A-72-6056 (dated June 30, 2005). Please contact your Rolls-Royce Approved Maintenance Center (AMC) for details.

MATERIAL:

Refer to Rolls-Royce Corporation Alert Commercial Engine Bulletin CEB-A-72-6056 (dated June 30, 2005).

SPECIAL TOOLS:

Refer to Rolls-Royce Corporation Alert Commercial Engine Bulletin CEB-A-72-6056 (dated June 30, 2005).

WEIGHT AND BALANCE:

Not affected.

ELECTRICAL LOAD DATA:

Not affected.

REFERENCES:

Refer to Rolls-Royce Corporation Alert Commercial Engine Bulletin CEB-A-72-6056 (dated June 30, 2005).

PUBLICATIONS AFFECTED:

Refer to Rolls-Royce Corporation Alert Commercial Engine Bulletin CEB-A-72-6056 (dated June 30, 2005).

ACCOMPLISHMENT INSTRUCTIONS:

1. Comply with Rolls-Royce Corporation Alert Commercial Engine Bulletin CEB-A-72-6056 (dated June 30, 2005).

ENGINE, GEARBOX ASSEMBLY - INSPECTION AND REWORK OF GEARBOX HOUSINGS

1. PLANNING INFORMATION

A. Effectivity

(1) Engines

All Rolls-Royce Model 250-C30, -C40 and C47 Series engines listed below are affected by this bulletin.

GEARBOX HOUSING P/N	GEARBOX HOUSING S/N	ENGINE S/N
23064603	HL16529	896004
23064603	HL16532	895985
23064603	HL16537	895987
23064603	HL16545	895986
23064603	HL16546	895984
23064603	HL16552	895992
23064603	HL16554	895990
23064603	HL16555	895988
23064603	HL16560	895989
23064603	HL16563	895991
23064603	HL16565	895993
23064603	HL16566	895995
23064603	HL16570	895994
23064603	HL16574	895996
23064603	HL16578	895997
23064603	HL16584	895999
23064603	HL16585	896000
23064603	HL16595	896002
23064603	HL16597	896001
23064603	HL16600	896005
23064603	HL16602	896003
23064640	HL16536	410936
23064640	HL16538	410935
23064640	HL16543	410937
23064640	HL16544	410940
23064640	HL16550	410938
23064640	HL16557	410939

23064640	HL16564	410942
23064640	HL16568	410941
23064640	HL16618	410943
23064640	HL16585	410944
23074603	HL16573	895998
23076082	HL16513	847707
23076082	HL16519	847690
23076082	HL16530	847691
23076082	HL16531	847687
23076082	HL16534	847676
23076082	HL16535	847677
23076082	HL16539	847674
23076082	HL16540	847685
23076082	HL16542	847675
23076082	HL16547	847680
23076082	HL16551	847688
23076082	HL16553	847678
23076082	HL16556	847686
23076082	HL16558	847891
23076082	HL16559	847892
23076082	HL16561	847679
23076082	HL16562	847684
23076082	HL16567	847683
23076082	HL16569	847681
23076082	HL16571	847682
23076082	HL16572	847689
23076082	HL16575	847694
23076082	HL16576	847692
23076082	HL16577	847695
23076082	HL16579	847693
23076082	HL16580	847696
23076082	HL16582	847697
23076082	HL16583	847699
23076082	HL16586	847702
23076082	HL16587	847698
23076082	HL16594	847700
23076082	HL16596	847708
23076082	HL16599	847704

23076082	HL16601	847701
23076082	HL16604	847706
23076082	HL16605	847716
23076082	HL16608	847703
23076082	HL16609	847705
23076082	HL16611	847710
23076082	HL16612	847714
23076082	HL16613	847711
23076082	HL16614	847712
23076082	HL16615	847713
23076082	HL16617	847717
23076082	HL16621	847715
N/A	N/A	844249

(2) Spares - Not affected

B. Reason

Rolls-Royce has found that some Rolls-Royce Model 250-C30 and -C47 Series gearbox housings were manufactured with an incompletely drilled and cleaned #6, #7 and #8 bearing oil passage. The incompletely drilled oil passage can cause a restriction in oil flow and potentially damage the #8 bearing.

One -C40B turbine was run on a -C47B engine while at Rolls-Royce, so that turbine should be subjected to Accomplishment Instructions 2.C.(4) - 2.C.(8).

C. Description

This bulletin contains the procedure to inspect the engines listed above and the action to take following the inspection.

D. Approval

Technical aspects are FAA approved.

E. Compliance

Compliance Code 2. To be complied with within the next five hours or no later than July 31, 2005, whichever comes first.

F. Interchangeability - Not affected

G. Material Availability

Non-FADEC

P/N	NAME	QTY/ENG
23064603	Housing, Gearbox	1
23058131	#8 Bearing	1

FADEC

P/N	NAME	QTY/ENG
23076082	Housing, Gearbox	1
23058131	#8 Bearing	1

H. Tooling – Not applicable

I. Weight and Balance – Not affected

J. Electrical Load Data – Not affected

K. References

(1) 14W2 Operation and Maintenance Manual, Turboshaft Models 250-C30, -C30S, -C30G, -C30G/2, -C30P, -C30M (OMM).

(2) 14W3 Overhaul Manual, Turboshaft Models 250-C30, -C30S, -C30M, -C30P, -C30G, -C30G/2, -C30R, -C30U (O/H).

(3) 14W4 Illustrated Parts Catalog, Turboshaft Models 250-C30, -C30P, -C30M, -C30S, -C30G, -C30G/2 (IPC).

(4) CSP 21003 Operation and Maintenance Manual, Turboshaft Model 250-C30R/3 (OMM).

(5) CSP 23003 Illustrated Parts Catalog, Turboshaft Model 250-C30R/3, -C30R/3M (IPC).

(6) CSP 21006 Operation and Maintenance Manual, Turboshaft Model 250-C30R/3M (OMM).

(7) CSP 21000 Operation and Maintenance Manual, Turboshaft Model 250-C40B (OMM).

(8) CSP 21001 Operation and Maintenance Manual, Turboshaft Model 250-C47B (OMM).

(9) CSP 23001 Illustrated Parts Catalog, Turboshaft Models 250-C40B, -C47B and C47M (IPC).

(10) CSP 21004 Operation and Maintenance Manual, Turboshaft Model 250-C47M (OMM).

(11) CSP 22001 Overhaul Manual, Turboshaft Models 250-C40B, -C47, -C30R/3 (O/H).

L. Other Publications Affected – None

M. Prerequisites – None

2. ACCOMPLISHMENT INSTRUCTIONS

NOTE: When performing the following procedures obey the warnings and cautions to make sure best practices for personnel safety and health are followed and to prevent damage (OMM).

A. Inspection of the #6, #7 and #8 bearing oil passage.

(1) Use a borescope (4mm) to inspect for an incompletely drilled oil passage or hanging burrs left from the drilling process.

(a) The borescope is to be inserted into the gearbox housing at the A/C oil pressure gage port, marked PRESS, on the right hand side of the engine. The borescope should then be moved up and to the left (gearbox forward looking aft) (REF. Fig. 1).

(b) With the borescope positioned in the #6, #7 and #8 bearing oil supply passage, the drill hole should be visible in the aft region of the oil passage.

(c) Determine if the drill hole is not completely drilled through and free of any machining debris or burrs.

- If the drill hole is not completely drilled through, or if any debris is noted around the drill hole, then the engine should be removed and sent to a FIRST Network Facility for repair. The FIRST Network Facility is to follow the instructions in 2.C.
- If the oil supply hole is completely drilled through the housing and properly deburred then the proceed to 2.B.

B. For all gearbox housings that were found to have a clean drill hole, properly drilled and deburred , do the following:

(1) Inspect all oil delivery lines to the #6, #7 and #8 bearing, the check valve, and the #6 and #7 bearing oil screen.

(2) Do the procedure for Cleaning of Power Turbine Support Scavenge and Pressure Oil System Components (REF. OMM).

(3) If all lines are found to be free of debris , the engine may be returned to service.

(4) If debris is found in the oil system, the engine should be removed and sent to a FIRST Network Facility for repair. The FIRST Network Facility is to follow the instructions in 2.C.

C. For all gearbox housings that were found to have an incompletely drilled hole or with burrs/debris noted around the hole, in oil delivery lines, in the check valve or in the screen, do the following:

(1) Disassemble the gearbox (REF. OMM).

(2) Do the Rolls-Royce approved gearbox repair procedure for the #6, #7 and #8 bearing oil passage.

(3) Assemble the gearbox (REF. OMM).

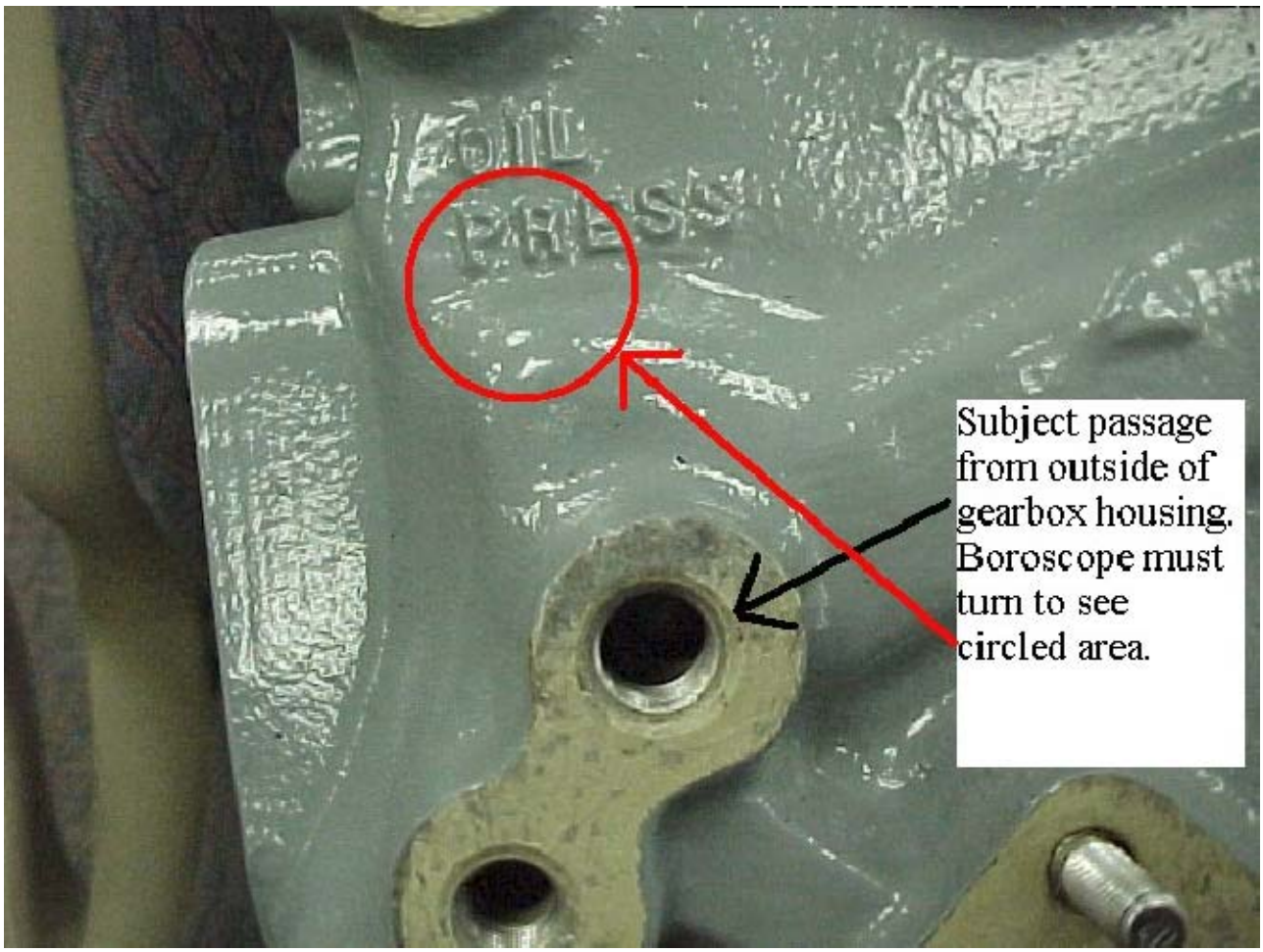
(4) Disassemble the turbine to the #8 bearing (REF. O/H).

(5) Replace the #8 bearing (REF. OMM).

(6) Do an inspection of the #8 bearing bore (REF. OMM).

(7) Clean and flush all oil lines, check valve, #6, #7 oil jet, and #8 oil jet (REF. O/H).

(8) Assemble the turbine (REF O/H).



Gearbox Housing Borescope Access
FIG. 1

D. Record compliance with this bulletin in the applicable section of the engine logbook, Engine Assembly (white pages), AD Note Compliance and CEB Modification Record, Part III, as well as Gearbox Assembly (yellow pages), AD Note Compliance and CEB Modification Record, Part III, as applicable with the following:

250-C30 Series	CEB-A-72-3274
250-C40 Series	CEB-A-72-5050
250-C47 Series	CEB-A-72-6056

3. MATERIAL INFORMATION

A. Configuration Chart

NEW P/N	QTY/ ENG	NAME	OLD P/N	QTY/ ENG	INSTRUCTIONS/ DISPOSITION
23064603	1	Housing, Gearbox	23064603	1	2
23076082	1	Housing, Gearbox	23076082	1	2
23058131	1	#8 Bearing	23058131	1	1

INSTRUCTIONS/DISPOSITION NOTES

1. New item, if required.
2. Rework at a FIRST Network Facility, if required.

CUSTOMER SUPPORT
ROLLS-ROYCE

CEB-A-72-3274

CEB-A-72-5050

CEB-A-72-6056

Please email the following to Rolls-Royce at: model250custsupp@rolls-royce.com

Operator: _____

Engine S/N: _____

G/B S/N: _____

Borescope Results: Pass/Fail

If engine is to be removed please indicate FIRST Network Facility doing the work.