

**ALERT SERVICE BULLETIN**

**Bell Helicopter** **TEXTRON**

A Subsidiary of Textron Inc.

**NO. 206L-01-124**

**DATE 10-11-01**

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**DATE**

**REV**

**MODEL AFFECTED: 206L**

**SUBJECT: ROLLS-ROYCE ENGINE, GEARBOX ASSEMBLY  
- INSPECTION OF HELICAL TORQUEMETER  
GEARSHAFT ASSEMBLY**

**HELICOPTERS AFFECTED: All model 206L helicopters with Rolls-Royce  
model 250-C20B, C-20J or 250-C20R engines  
installed.**

**COMPLIANCE: In accordance with Rolls-Royce ALERT Commercial  
Engine Bulletins CEB A-1386 or CEB A-72-4087.**

**DESCRIPTION:**

Rolls-Royce has advised Bell Helicopter Textron of a recent investigation of a failed Series II helical torqueometer gearshaft, which revealed that the failure was due to a manufacturing induced stress corrosion crack. This gear could fail with little or no warning (magnetic chip detection) and lead to a power turbine wheel burst or in-flight shutdown.

The Rolls-Royce ALERT Commercial Engine Bulletins (CEB A-1386 or CEB A-72-4087) give a list of affected helical torqueometer gearshaft assemblies and the procedure to remove them and send to AMC for inspection.

This Bell Helicopter Textron Alert Service Bulletin is sent as a matter of record and will not be revised in the event of subsequent changes to the Rolls-Royce ALERT Commercial Engine Bulletins (CEB A-1386 or CEB A-72-4087).

**APPROVAL:**

Not required

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AN APPROPRIATE ENTRY SHOULD BE MADE IN THE AIRCRAFT LOG BOOK UPON ACCOMPLISHMENT  
IF OWNERSHIP OF AIRCRAFT HAS CHANGED PLEASE FORWARD TO NEW OWNER

**MANPOWER:**

Refer to Rolls-Royce ALERT Commercial Engine Bulletins CEB A-1386 or CEB A-72-4087.

**WARRANTY:**

Refer to Rolls-Royce ALERT Commercial Engine Bulletins CEB A-1386 or CEB A-72-4087.

**MATERIAL:**

**Required Material:**

Refer to Rolls-Royce ALERT Commercial Engine Bulletins CEB A-1386 or CEB A-72-4087.

**SPECIAL TOOLS:**

None required

**WEIGHT AND BALANCE:**

Not affected

**ELECTRICAL LOAD DATA:**

Not affected

**REFERENCES:**

Refer to Rolls-Royce ALERT Commercial Engine Bulletins CEB A-1386 or CEB A-72-4087.

**PUBLICATIONS AFFECTED:**

None affected

**ACCOMPLISHMENT INSTRUCTIONS:**

**-NOTE-**

This Alert Service Bulletin applies to all 206L series helicopters with a Rolls-Royce model 250-C20B, C-20J or 250-C20R Series II engines installed.

1. Comply with Rolls-Royce ALERT Commercial Engine Bulletin CEB A-1386 or CEB A-72-4087.

# ALERT COMMERCIAL ENGINE BULLETIN



## ENGINE, GEARBOX ASSEMBLY – INSPECTION OF HELICAL TORQUEMETER GEARSHAFT ASSEMBLY

### 1. PLANNING INFORMATION

#### A. Effectivity

##### (1) Engines

All Rolls-Royce Model 250–C20, –C20R, –B17 and –B17F series II engines with less than 100 hours TSN and all series II engines that have repaired or overhauled gearboxes and contain a helical torquemeter gearshaft with less than 100 hours TSN are affected by this bulletin as follows:

<u>Model No.</u>	<u>Serial No.</u>
250–C20 250–C20R 250–B17 250–B17F	All serial numbers might be affected

##### (2) Spares

23035299, Gearshaft Assembly, Helical Torquemeter  
 23038191, Gearshaft Assembly, Helical Torquemeter  
 6889701, Gearshaft Assembly, Helical Torquemeter  
 6871218, Gearshaft Assembly, Helical Torquemeter  
 6870941, Gearshaft Assembly, Helical Torquemeter  
 23030857, Gearshaft Assembly, Helical Torquemeter  
 23004504, Gearshaft Assembly, Helical Torquemeter  
 23037441, Gearshaft Assembly, Helical Torquemeter

#### B. Reason

Recent investigation of a failed Series II helical torquemeter gearshaft revealed that the failure was due to a manufacturing induced stress corrosion crack. This gear could fail with little or no warning (magnetic chip detection) and lead to a power turbine wheel burst and in-flight shutdown.

#### C. Description

This commercial engine bulletin gives you the procedure to remove all of the helical torquemeter gearshaft assemblies (23035299, 23038191, 6889701, 6871218, 6870941, 23030857, 23004504 and 23037441) with less than 100 hours total time in service before further flight and send to an AMC for inspection. All spare gearshaft assemblies (23035299, 23038191, 6889701, 6871218, 6870941, 23030857, 23004504 and 23037441) that are new or have less than 100 hours total time in service must be inspected immediately.

#### D. Approval

Technical aspects are FAA approved.

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250–C20 Series	CEB A–1386
250–C20R Series	CEB A–72–4087
250–B17 Series	TP CEB A–1331
250–B17F Series	TP CEB A–72–2083

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E. Compliance

Compliance Code 1: To be complied with prior to further flight.

F. Interchangeability – Not affected

G. Material Availability

NEW P/N	NAME	QTY/ENG
23035299	Gearshaft Assembly, Helical Torquemeter	1
23038191	Gearshaft Assembly, Helical Torquemeter	1

H. Tooling – Not applicable

I. Weight and Balance – Not affected

J. Electrical Load Data – Not affected

K. References

- (1) 10W2 Operation and Maintenance Manual, Turboshaft Model 250–C20 (OMM).
- (2) 10W4 Overhaul Manual, Turboshaft Model 250–C20 (O/H).
- (3) GTP 5232–2 Operation and Maintenance Manual, Turboshaft Model 250–C20 (OMM).
- (4) GTP 5232–4 Overhaul Manual, Turboshaft Model 250–C20 (O/H).
- (5) 11W2 Operation and Maintenance Manual, Turboprop Model 250–B17 (OMM).
- (6) 11W4 Overhaul Manual, Turboprop Model 250–B17 (O/H).
- (7) GTP 5243–2 Operation and Maintenance Manual, Turboprop Model 250–B17F (OMM).
- (8) GTP 5243–4 Overhaul Manual, Turboprop Model 250–B17F (O/H).
- (9) PMI C0006 Part Modification Instruction

L. Other Publications Affected – None

M. Prerequisites – None

2. ACCOMPLISHMENT INSTRUCTIONS

A. (Option 1) Remove the helical torquemeter gearshaft assembly.

- (1) Get access to the engine.
- (2) Remove the engine from the airframe (Ref. applicable manual)
- (3) Remove turbine and compressor from gearbox assembly (Ref. applicable manual).
- (4) Remove the gearshaft assembly and send it to a Rolls-Royce Authorized Maintenance Center for inspection (Ref. PMI C0006).
- (5) Install an acceptable gearshaft assembly (Ref. applicable manual).

**NOTE:** Gearshaft assemblies inspected in accordance with PMI C0006 can be identified by the black oxide missing from the skirt of the small gear. Reinspected gears should be tagged noting compliance with or inspected per this CEB.

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250–C20R Series	CEB A–72–4087
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- (6) Assemble the gearbox assembly (Ref. applicable manual).
- (7) Assemble the turbine and compressor to the gearbox assembly (Ref. applicable manual).
- (8) Install the engine in the airframe (Ref. applicable manual).
- B. (Option 2) Remove engine.
  - (1) Remove the engine from the airframe (Ref. applicable manual).
  - (2) Send the engine to a Rolls-Royce Authorized Maintenance Center for gear removal and inspection (Ref. PMI C0006).
  - (3) When the engine is returned, install it in the airframe (Ref. applicable manual).
  - (4) Verify that the correct entries are made in the engine logbook (Ref. Para D).
- C. Reidentify the part – N/A
- D. Record compliance with this commercial engine bulletin in the applicable section of the engine logbook, engine assembly (white pages), gearbox assembly (yellow pages), Part III, Modification Record as applicable with the following:

250-C20 Series	CEB A-1386
250-C20R Series	CEB A-72-4087
250-B17 Series	TP CEB A-1331
250-B17F Series	TP CEB A-72-2083

**NOTE:** Record the gear part number and serial number in each location listed above.

- E. Complete the requested information on the last page of this bulletin and fax to Rolls-Royce Model 250 Customer Support at 1-317-230-3381.

### 3. MATERIAL INFORMATION

- A. Configuration Chart
- B. Basis for quantities is per engine assembly.

NEW P/N	QTY/ ENG	NAME	OLD P/N	QTY/ ENG	INSTRUCTIONS/ DISPOSITION
23035299	1	Gearshaft Assy, Helical Torquemeter	23035299	1	1,2,3
23038191	1	Gearshaft Assy, Helical Torquemeter	23038191	1	1,2,3
6889701	1	Gearshaft Assy, Helical Torquemeter	6889701	1	1,2,3
6871218	1	Gearshaft Assy, Helical Torquemeter	6871218	1	1,2,3
6870941	1	Gearshaft Assy, Helical Torquemeter	6870941	1	1,2,3
23030857	1	Gearshaft Assy, Helical Torquemeter	23030857	1	1,2,3
23004504	1	Gearshaft Assy, Helical Torquemeter	23004504	1	1,2,3
23037441	1	Gearshaft Assy, Helical Torquemeter	23037441	1	1,2,3

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250-C20 Series	CEB A-1386
250-C20R Series	CEB A-72-4087
250-B17 Series	TP CEB A-1331
250-B17F Series	TP CEB A-72-2083

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#### INSTRUCTIONS/DISPOSITION NOTES

1. New item.
  2. Inspect, return to service.
  3. Scrap and return to Rolls-Royce if inspection failed.
- C. Consumable Materials – None
- D. Expendable Parts – None

CUSTOMER SUPPORT  
ROLLS-ROYCE

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250-C20 Series  
250-C20R Series  
250-B17 Series  
250-B17F Series

CEB A-1386  
CEB A-72-4087  
TP CEB A-1331  
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**Rolls-Royce Model 250 Alert Service Bulletin Reporting Form**

Alert Service Bulletin:     CEB-A-1386     CEB-A-72-4087  
                                   TP CEB-A-1331     TP CEB-A-72-2083

Helical Gearshaft P/N \_\_\_\_\_ S/N \_\_\_\_\_

Installed in engine \_\_\_\_\_ date \_\_\_\_\_

Owner \_\_\_\_\_

Inspection performed by \_\_\_\_\_

Instruction: Please fill out the information above and fax to the number listed below:  
Att: Model 250 Customer Support  
Fax # 1-317-230-3381