

ALERT SERVICE BULLETIN
REVISION NOTICE
Bell Helicopter **TEXTRON**
A Subsidiary of Textron Inc.

DATE Sep 3, 2004

TO: **All Owners/Operators of Bell 407 Helicopters**

SUBJECT: **ENGINE, TURBINE SECTION – INSPECTION OF ROLLS-ROYCE
MODEL 250-C47B THIRD-STAGE TURBINE WHEELS (6898663)**

Revision “A” to this Alert Service Bulletin introduces the change that follow:

- Revision 1 to CEB-A-72-6050. This revision adds cycles limitation to the compliance statement and makes minor editorial changes.

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

ALERT SERVICE BULLETIN
Bell Helicopter **TEXTRON**

A Subsidiary of Textron Inc.

NO. 407-04-64

DATE Mar 10, 2004

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DATE Sep 3, 2004

REV A

MODEL AFFECTED: 407

SUBJECT: ENGINE, TURBINE SECTION – INSPECTION OF ROLLS-ROYCE MODEL 250-C47B THIRD-STAGE TURBINE WHEELS (6898663)

HELICOPTERS AFFECTED: All model 407 helicopters.

COMPLIANCE: In accordance with Rolls-Royce Corporation ALERT Commercial Engine Bulletin CEB A-72-6050 Revision 1 dated September 1, 2004. **A**

DESCRIPTION:

Rolls-Royce Corporation has recently investigated several incidents in which the third-stage turbine wheel (6898663) was the primary failed item.

Rolls-Royce Corporation has released the ALERT Commercial Engine Bulletin (CEB) A-72-6050 that provides instructions to do a one time visual and NDT inspection of all applicable third stage turbine wheels for cracks in the turbine blades.

In addition, Bell Helicopter is in the process of revising the Flight Manual BHT-407-FM-1 for avoidance of steady-state Power Turbine (Np) operation between 68.0% and 86.0%.

This Bell Helicopter Alert Service Bulletin is being sent to all Bell Helicopter 407 operators of record who may be affected by the release of Rolls-Royce ALERT Commercial Engine Bulletin CEB A-72-6050 Revision 1 dated September 1, 2004. This Bell Helicopter Alert Service Bulletin will not be revised in the event of subsequent changes to the Rolls-Royce ALERT Commercial Engine Bulletin **A**

APPROVAL:

The engineering aspects of this bulletin are Transport Canada approved.

MANPOWER:

Refer to Rolls-Royce Corporation ALERT Commercial Engine Bulletin CEB A-72-6050 Revision 1 dated September 1, 2004.

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WARRANTY:

Rolls Royce has committed to providing financial consideration for engine removal/installation labor, shipping charges and wheel replacement as necessary in compliance with CEB-72-6050. Please contact your Rolls Royce approved maintenance center for full details.

MATERIAL:

Refer to Rolls-Royce Corporation ALERT Commercial Engine Bulletin CEB A-72-6050 Revision 1 dated September 1, 2004.

| A

SPECIAL TOOLS:

Not applicable.

WEIGHT AND BALANCE:

Not affected.

ELECTRICAL LOAD DATA:

Not affected.

REFERENCES:

Refer to Rolls-Royce Corporation ALERT Commercial Engine Bulletin CEB A-72-6050 Revision 1 dated September 1, 2004.

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PUBLICATIONS AFFECTED:

Refer to Rolls-Royce Corporation ALERT Commercial Engine Bulletin CEB A-72-6050 Revision 1 dated September 1, 2004.

| A

ACCOMPLISHMENT INSTRUCTIONS:

1. Comply with Rolls-Royce Corporation ALERT Commercial Engine Bulletin CEB A-72-6050 Revision 1 dated September 1, 2004.

| A

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Rolls-Royce

P U B L I C A T I O N T R A N S M I T T A L

September 1, 2004

TO: Recipients of 250-C40 and -C47 Commercial Engine Bulletins

SUBJECT: Engine, Turbine Section - Inspection of Rolls-Royce Model 250-C47B Third Stage Turbine Wheels (6898663).

This letter transmits Revision 1 to the subject commercial engine bulletins:

<u>Model</u>	<u>Bulletin Number</u>
250-C40 Series	CEB-A-72-5044
250-C47 Series	CEB-A-72-6050

This is a complete revision. Replace the original issue with this Revision 1.

Revision 1 adds cycles to compliance statement and makes a minor editorial change.

If you have complied with the previous issue of this bulletin, no additional work is required.

The following list includes the original issue date and all revisions to this bulletin:

Original issue	March 5, 2004
Revision 1	September 1, 2004

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**ENGINE, TURBINE SECTION - INSPECTION OF ROLLS-ROYCE MODEL
250-C47B THIRD-STAGE TURBINE WHEELS (6898663)**

1. PLANNING INFORMATION

A. Effectivity

(1) Engines

All Rolls-Royce Model 250-C47B engines (23063392), any 250-C40 or C47 Series Turbine Module that has been installed and operated in a 250-C47B engine, or any third-stage turbine wheel (6898663) that has been installed and operated in a 250-C47B engine.

(2) Any 250-C47B engine that has had a new, 0 TSN, third-stage wheel (6898663) installed after December 17, 2003, is not affected by this bulletin.

NOTE: All Rolls-Royce Model 250-C47B engines, CAE 847638 and subsequent are not affected by this bulletin.

(3) Spares

All

B. Reason

Rolls-Royce has recently investigated several incidents in which the third-stage turbine wheel (6898663) was the primary failed item. As a result of the investigation, Rolls-Royce has determined that a one time inspection of all third-stage turbine wheels that are currently operating in, or have at one time been operated in Rolls-Royce Model 250-C47B engines be completed. This inspection requires a visual and NDT inspection for any crack in one of the turbine blades.

C. Description

This commercial engine bulletin gives you the procedure to do a one time visual and NDT inspection of all applicable third-stage turbine wheels for cracks in the turbine blades.

D. Approval

Technical aspects are FAA approved.

E. Compliance

Compliance Code 2:

NOTE: Customers are to comply with the earliest of the conditions listed below. If you have complied with the previous issue of this bulletin, no additional work is required.

- (1) For turbine wheels that at the original publication date of this bulletin (5-Mar-04), had a total time of less than 1,000 hours TSN or 1,000 hours TSO if overhaul inspected in accordance with publication CSP 22001 - To be complied with prior to reaching 1000 hours TSN or TSO.
- (2) For turbine wheels that at the original publication date of this bulletin (5-Mar-04), had a total time of more than 1,000 hours TSN or 1,000 hours TSO if overhaul inspected in accordance with publication CSP 22001 - To be complied with within the next 300 hours.

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- (3) For turbine wheels that at the publication date of Revision 1 to this bulletin, had a total cycle count of less than 1200 cycles TSN or TSO if overhaul inspected in accordance with publication CSP 22001 - To be complied with before reaching 1500 cycles.
- (4) For turbine wheels that at the publication date of Revision 1 to this bulletin, had a total cycle count of more than 1200 cycles TSN or TSO if overhaul inspected in accordance with publication CSP 22001 - To be complied with within the next 300 cycles of operation.
- (5) In any case, all turbine wheels must have complied with this bulletin no later than 5-Mar-06.

F. Interchangeability - Not affected

G. Material Availability

NEW P/N	NAME	QTY/ENG
6898663	Turbine Wheel, Third-Stage	1

NOTE: Rolls-Royce might offer special policy for inspection and/or replacement of third-stage turbine wheels provided the work is performed within the Rolls-Royce Model 250 FIRST (Full-service Integrated Rolls-Royce Support Team) network.

H. Tooling - Not applicable

I. Weight and Balance - Not affected

J. Electrical Load Data - Not affected

K. References

- (1) CSP 21000 Operation and Maintenance Manual, Turboshaft Model 250-C40B (OMM).
- (2) CSP 21001 Operation and Maintenance Manual, Turboshaft Model 250-C47B (OMM).
- (3) CSP 21004 Operation and Maintenance Manual, Turboshaft Model 250-C47M (OMM).
- (4) CSP 23001 Illustrated Parts Catalog, Turboshaft Models 250-C40B, -C47B and -C47M (IPC).
- (5) CSP 22001 Overhaul Manual, Turboshaft Models 250-C40B, -C47 and -C30R/3 Series (O/H).

L. Other Publications Affected - None

M. Prerequisites - None

2. ACCOMPLISHMENT INSTRUCTIONS

A. Remove the engine or turbine module and send to an authorized repair/overhaul facility (Ref. OMM).

REF. FIG. 1

- (1) Remove the third-stage turbine wheel (6898663) (Ref. O/H).
 - (a) Perform FPI and visual inspection (for cracks, nicks, etc) in accordance with the applicable Rolls-Royce Model 250 Overhaul Manual. Particular attention should be paid to the four locations on the blades as specified following: (Ref. O/H), (Ref. Fig. 1).
 - Leading edge near shroud (especially on the convex side of the airfoil where the fillet radius becomes tangential to the airfoil, on the right side of the blade when looking at the leading edge).

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250-C40 Series
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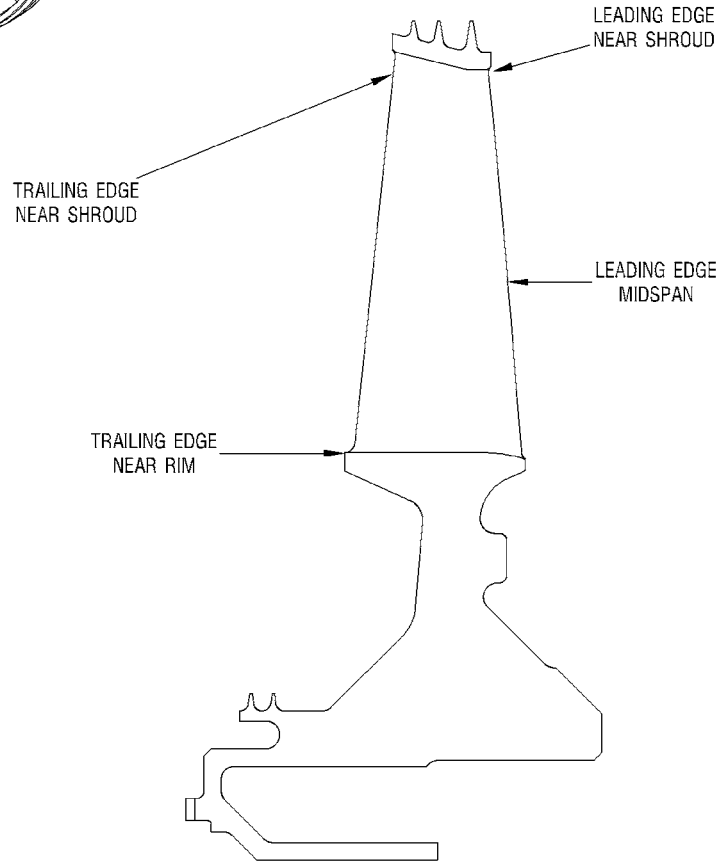
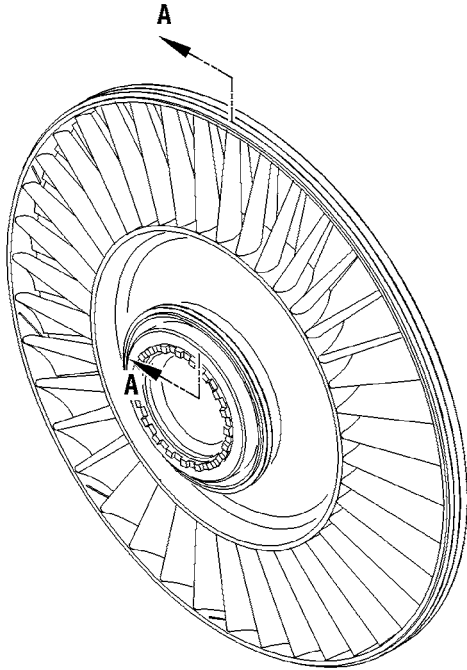
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- Leading edge mid-span.
 - Trailing edge near rim (especially slightly to the concave side of the airfoil where the fillet radius becomes tangential to the airfoil, on the right side of the blade when looking at the leading edge).
 - Trailing edge near shroud.
- (2) Install new or inspected third-stage turbine wheel (6898663) (Ref. O/H).
- B. Install the engine or turbine (Ref. OMM).

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APG048XA

Third-Stage Turbine Wheel Inspection
FIG. 1

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- C. Record compliance with this commercial engine bulletin in the applicable section of the engine logbook, turbine assembly (pink pages), AD Note Compliance and CEB Modification Record, Part III, as applicable with the following:

250-C40 Series
250-C47 Series

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CEB-A-72-6050

3. MATERIAL INFORMATION

A. Configuration Chart

- (1) Basis for quantities is per turbine assembly.

NEW P/N	QTY/ ENG	NAME	OLD P/N	QTY/ ENG	INSTRUCTIONS/ DISPOSITION
6898633	1	Turbine Wheel, Third-Stage	6898663	1	1,2

INSTRUCTIONS/DISPOSITION NOTES

1. New or inspected item.
2. Inspect removed item.

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