Transport Canada Transports Canada

TP 7245E

No. CF-2004-06 1/3
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AIRWORTHINESS DIRECTIVE

The following airworthiness directive (AD) may be applicable to an aircraft which our records indicate is registered in your name. ADs are issued pursuant to ***Canadian Aviation Regulation*** **(CAR) 593**. Pursuant to **CAR 605.84** and the further details of **CAR Standard 625, Appendix H**, the continuing airworthiness of a Canadian registered aircraft is contingent upon compliance with all applicable ADs. Failure to comply with the requirements of an AD may invalidate the flight authorization of the aircraft. Alternative means of compliance shall be applied for in accordance with **CAR 605.84** and the above-referenced **Standard**.

This AD has been issued by the Continuing Airworthiness Division (AARDG), Aircraft Certification Branch, Transport Canada, Ottawa, telephone (613) 952-4357.

Number: **CF-2004-06**

Subject: **Pratt & Whitney Canada PW206 and PW207 Engines – Low Cycle Fatigue (LCF) Count**

Effective: 2 April 2004

Applicability: All Pratt & Whitney Canada (P&WC) PW206B engines that have incorporated Service Bulletin (SB) 28119 or its later revisions;

All PW206C engines that have incorporated SB 28151 or SB 28165 or their later revisions;
All PW206E engines;
All PW207D engines; and
All PW207E engines.

The above engines are installed on, but not limited to, Augusta 109E, Bell 427, Eurocopter EC135, and MD Explorer helicopters.

Compliance: As detailed below, unless already accomplished.

Background: Two cases were identified where the PW206 Data Collection Unit (DCU) had not adequately recorded the engine Low Cycle Fatigue (LCF) cycles which are used to track life limited critical parts. The operators are required to verify the DCU data each week in accordance with the maintenance manual. However, it appears some operators were not confirming/verifying this data.

This problem is caused when the electrical supply to the Engine Electronic Control (EEC) or Data Collection Unit is turned OFF prematurely during engine shutdown.

There is a potential for some life limited parts to be close to or even beyond the currently approved and published limits. Hence the operators are required to verify their engine log books to confirm the LCF count and to use the proper engine shutdown procedures in accordance with P&WC Alert Service Bulletin (ASB) A28252, Revision 2, dated 11 March 2004, or its later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

P&WC has identified and notified the operators that have high cycle engines to mitigate the possibility of life limited parts going beyond the approved limitations.

Corrective Action: **Part A – Ensure the engine DCU is powered during data transfer.**

1. To ensure the engine DCU is powered when LCF data is being written, accomplish the following by 15 April, 2004:

   To prevent DCU corruption and errors, maintain electrical power to the EEC, at engine shutdown until Ng (N1) speed reaches zero, in accordance with the Accomplishment Instructions of P&WC Alert Service Bulletin (ASB) A28252, Revision 2, dated 11 March 2004, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Part B – Confirmation of DCU properly collecting engine LCF data, and confirmation of engine LCF count values.

1. To confirm that the data stored in the DCU is correct and that data recorded in the engine log books is correct, perform a **Comparison Check (I)** and a **Consistency Check (II)** within the following compliance requirements:

   (a) For engines with Impeller and/or Compressor Turbine (CT) Disks and/or Power Turbine (PT) Disks, having less than 2,000 cycles life limit remaining; within the next 50 engine flight hours or 2 months, whichever occurs first after the effective date of this directive.

   and

   (b) For engines with Impeller and/or CT Disks and/or PT Disks having from 2,000 to 5,000 cycles life limit remaining; within the next 200 engine flight hours or 3 months, whichever occurs first after the effective date of this directive.

   and

   (c) For engines with Impeller and/or CT Disks and/or PT Disks having more than 5,000 cycles life limit remaining; within the next 500 engine flight hours or 4 months, whichever occurs first after the effective date of this directive.

   (I) Comparison Check: Perform a comparison check of the data stored by the DCU as per the Accomplishment Instructions identified in ASB A28252, Revision 2, paragraph 3.C. Interpret the results of the comparison check as per ASB A28252, Revision 2, paragraphs 3.C.9.a and 3.C.9b. If necessary, restore the baseline LCF life of components using manual counting as indicated in ASB A28252, Revision 2, paragraph 3.E.

   (II) Consistency Check: Perform a consistency check by reviewing the engine log books to confirm the Impeller, CT, and PT disks LCF counts are correct in accordance with ASB A28252, Revision 2, Accomplishment Instructions, paragraph 3.D. Interpret the results as per paragraphs 3.D.5 and 3.D.6. If necessary, restore the baseline LCF life of components using manual counting as indicated in ASB A28252, Revision 2, paragraph 3.E.

2. If any LCF critical component is exceeding its published life, this component must be removed before next flight.

3. For engines not installed in helicopters (i.e. engines at overhaul facilities or spare engines):

   Before the engines are installed in helicopters, perform the checks identified in ASB A28252, Revision 2, paragraph 3.B, as well as the instructions contained in SB 28253, dated 12 February 2004, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

   Note: Compliance with previous revisions of P&WC ASB A28252 prior to the effective date of this directive satisfies the requirements of ASB A28252, Revision 2, mandated by Part A and Part B of this directive.

Part C – Revision of the Airworthiness Limitations Section:

1. By 15 April 2004, incorporate the following P&WC Temporary Revisions (TR) into the Airworthiness Limitation Section of the applicable engine Maintenance Manuals:

TR No.	TR date	Engine Model	Maintenance Manual Part Number
AL-10, AL-11	11 Mar. 2004	PW206B	P/N 3039732
AL-8, AL -9	11 Mar. 2004	PW206C	P/N 3043322
AL-15, AL-16	11 Mar. 2004	PW206E	P/N 3038324
AL-5	11 Mar. 2004	PW207D	P/N 3043612
AL-15, AL-16	11 Mar. 2004	PW207E	P/N 3038324

Authorization: For Minister of Transport

R.A. Raoux
for B. Goyaniuk
Chief, Continuing Airworthiness

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