
AIRWORTHINESS DIRECTIVE

For the reasons set out in the background section, the CASA delegate whose signature appears below issues the following Airworthiness Directive (AD) under subregulation 39.1 (1) of CASR 1998. The AD requires that the action set out in the requirement section (being action that the delegate considers necessary to correct the unsafe condition) be taken in relation to the aircraft or aeronautical product mentioned in the applicability section: (a) in the circumstances mentioned in the requirement section; and (b) in accordance with the instructions set out in the requirement section; and (c) at the time mentioned in the compliance section.

Pratt and Whitney Canada Turbine Engines - PW200 Series

AD/PW200/1**Low Cycle Fatigue Count****9/2004
DM**

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.

Note 1: The above engines are installed on, but not limited to, Augusta 109E, Bell 427, Eurocopter EC135, and MD Explorer helicopters.

Requirement: 1. **For installed engines** - Confirm that the data stored in the Data Collection Unit (DCU) is correct and that data recorded in the engine log books is correct, perform a **Comparison Check** and a **Consistency Check** as follows:

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.9.b. If necessary, restore the baseline LCF life of components using manual counting as indicated in ASB A28252, Revision 2, paragraph 3.E.

Consistency Check: Perform a consistency check by reviewing the engine log books to confirm the Impeller, CT, and PT disks Low Cycle Fatigue (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, during the Requirement 1 checks, any LCF critical component is found **exceeding** its published life replace the component.

Pratt and Whitney Canada Turbine Engines - PW200 Series

AD/PW200/1 (continued)

3. **For engines not installed (ie engines at overhaul facilities or spare engines) -**
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.

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 Requirements 1, 2 and 3 of this Directive.

4. Incorporate the following P&WC Temporary Revisions (TR) into the Airworthiness Limitation Section of the applicable engine Maintenance Manuals:

Engine Model	Maintenance Manual Part Number	TR Number	TR Date
PW206B	3039732	AL-10, AL-11	11 March 2004
PW206C	3043322	AL-8, AL -9	11 March 2004
PW206E	3038324	AL-15, AL-16	11 March 2004
PW207D	3043612	AL-5	11 March 2004
PW207E	3038324	AL-15, AL-16	11 March 2004

Note 2: Transport Canada AD CF-2004-06 refers.

Compliance: For Requirement 1 - Compliance as follows:

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.

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.

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.

For Requirement 2 - Before further flight after the Requirement 2 checks.

For Requirement 3 - Before the engines are installed in helicopters.

For Requirement 4 - Before 30 July 2004.

This Airworthiness Directive becomes effective on 14 July 2004.

Pratt and Whitney Canada Turbine Engines - PW200 Series

AD/PW200/1 (continued)

Background: Transport Canada has advised that two cases were identified where the PW206 DCU had not adequately recorded the engine LCF cycles, which are used to track life limited critical parts. 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 DCU 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, this Directive requires operators to verify their engine log books to confirm the LCF count.

Pratt & Whitney Canada has requested relevant helicopter manufacturers to amend their Aircraft Flight Manuals to prevent DCU corruption and errors by ensuring that the EEC remains powered until Ng (N1) speed reaches zero.



Bernard Malcolm Hole
Delegate of the Civil Aviation Safety Authority

5 July 2004