



AIRWORTHINESS DIRECTIVE

This Airworthiness Directive (AD) is issued pursuant to Canadian Aviation Regulation (CAR) 521.427. No person shall conduct a take-off or permit a take-off to be conducted in an aircraft that is in their legal custody and control, unless the requirements of CAR 605.84 pertaining to ADs are met. Standard 625 - Aircraft Equipment and Maintenance Standards Appendix H provides information concerning alternative means of compliance (AMOC) with ADs.

Number:

CF-2015-01R2

Effective Date:

16 October 2020

ATA:

72/77

Type Certificate:

E-20

Subject:

Engine Indicating - Incorrect Engine Torque Indication

Revision:

Supersedes AD CF-2015-01R1, issued 18 November 2016.

Applicability:

Pratt & Whitney Canada (P&WC) model PT6B-37A engines, with pre-SB 39117 configuration Reduction Gearbox (RGB).

Compliance:

As indicated below, unless already accomplished.

Background:

Five incidents of incorrect engine torque indication have been reported for PT6B-37A engine installations on AW119MKII helicopters. A lower than actual engine torque indication due to a faulty indication system, particularly on a helicopter being operated at max allowable torque (90 to 110%) range, may result in undetected over-torque condition.

Repeat undetected over-torque conditions that are not corrected in accordance with conditional inspection requirements of the original equipment manufacturer (OEM) Instructions for Continued Airworthiness (ICA), may have a negative impact on the operational life of aircraft components. Investigation by P&WC has determined the root cause of the torque indication anomaly to be an axial migration of the #9 and #10 bearings at the engine torque sensing gear location.

AD CF-2015-01 was initially issued for the periodic inspection and replacement of the affected bearings in accordance with P&WC Service Bulletins (SB) 39095 and SB 39092. Revision 1, AD CF-2015-01R1, was then issued to remove the repetitive inspection requirements and to mandate the installation of the new bearings within 48 months, in accordance with P&WC SB 39108 requirements that addressed the bearing axial migration problem.

At the time of issuance of AD CF-2015-01, the main cause of axial migration of the bearing was attributed to the variations in the allowed dimensional tolerances during bearing manufacturing, and accordingly, a compliance requirement based on a calendar time was deemed appropriate. However, data collected during the last three years now indicates that the bearing axial movement increases with the length of time it is exposed to the in-service operational load, as such, a compliance time based on operating hours is now deemed more appropriate.

This AD revision, CF-2015-01R2, is issued to update the compliance requirements by introducing a 3000 hours air time limit option to the existing 48 months calendar time limit. The engines with post P&WC SB 39117 configured RGB have a new design torque sensing gear installation that has the bearing inner race as an integral part of the torque gear shaft, which arrests the axial migration of the bearings, and thus are not affected by this AD.

Corrective Actions:

A. For pre SB 39092 configured engines:

During the next engine shop visit, but no later than 3000 hours air time or 48 months from 2 December 2016, the effective date of AD CF-2015-01R1, whichever occurs later, replace #9 and #10 position bearings on affected engines in accordance with the Accomplishment Instructions of P&WC SB 39108, dated 30 September 2016, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

B. For post SB 39092 configured engines:

Within 3000 hours air time or 48 months from 2 December 2016, the effective date of AD CF-2015-01R1, whichever occurs later, replace #9 and #10 position bearings on affected engines in accordance with the Accomplishment Instructions of P&WC SB 39108, dated 30 September 2016, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Authorization:

For the Minister of Transport,

ORIGINAL SIGNED BY

Rémy Knoerr
Chief, Continuing Airworthiness
Issued on 2 October 2020

Contact:

A.K. Durrani, Continuing Airworthiness, Ottawa, telephone 888-663-3639, facsimile 613-996-9178 or e-mail AD-CN@tc.gc.ca or any Transport Canada Centre.