



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-2022-26

Effective Date:

26 May 2022

ATA:

75

Type Certificate:

E-21

Subject:

Engine Bleed Air – Bleed-Off Valve (BOV) Failure to Close

Replacement:

Supersedes AD CF-2021-37, issued 2 November 2021.

Applicability:

Pratt & Whitney Canada (P&WC) model PT6E-67XP engines, serial number HP0194 and earlier engines.

Compliance:

As indicated below, unless already accomplished.

Background:

Multiple incidents of engines failing to achieve the required power (torque) during high power applications, have been reported. An investigation by P&WC revealed that the bleed-off valves (BOVs) on the incident engines failed to fully close at high power settings, due to internal leaks caused by contaminants. The primary source of contaminants was determined to be the glass beads that were used in the manufacturing process during the gas generator casing (GGC) production.

The failure of an engine to achieve the required power during a go-around maneuver of the aeroplane is considered hazardous and potentially an unsafe condition that needs mitigation. To address the BOV contamination issue, P&WC has issued an Alert Service Bulletin (SB) A75018 for the affected engines, requiring inspection and cleaning of the BOVs.

To address this potentially unsafe condition, AD CF-2021-20, which was superseded by AD CF-2021-37, mandated compliance with P&WC SB A75018 Revision 2.

Subsequently on 8 June 2021, P&WC released SB 75020 introducing a compressor BOV assembly with a pre-loaded plastic seal ring and metal ring. This assembly has been validated to be more tolerant to glass bead contamination. AD CF-2021-37 was issued to mandate compliance with P&WC inspection SB A75018 Revision 4 and incorporation of SB 75020 Revision 1 within 100 hours air time from 16 November 2021, the effective date of AD CF-2021-37.

To minimize exposure of the BOV seals to contaminants, P&WC released SB 75025 on 10 December 2021, introducing a BOV orifice feed air tube assembly with a P3 probe snorkel. This design has proven, by testing, to significantly reduce contamination ingress into the BOV orifice feed air tube. This AD mandates incorporation of this new design change which also terminates the previously mandated inspection requirements.

Corrective Actions:

Part I – Applicable to Serial Number HP0138 and Earlier Engines

Within 50 hours air time from the effective date of this AD:

- A. Replace the BOV assembly with one that has a pre-loaded plastic seal ring and metal ring, in accordance with the Accomplishment Instructions of P&WC SB 75020 Revision 1, dated 6 October 2021, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Replacement of the BOV assembly in accordance with P&WC SB 75020, Initial Issue, dated 8 June 2021, prior to the effective date of this AD, also meets the requirement of this paragraph.

- B. Remove the BOV orifice feed air tube assembly and install the P3 probe snorkel and the BOV orifice feed air tube assembly in accordance with Part C of P&WC SB 75025 Revision 3, dated 17 February 2022, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Part II – Applicable to Serial Number HP0194 and Earlier Engines That Are Post-SB 75020 and Pre-SB 75025

Within 600 hours air time or 12 months, whichever occurs first, from the effective date of this AD, remove the BOV orifice feed air tube assembly and install the P3 probe snorkel and the BOV orifice feed air tube assembly in accordance with Part C of P&WC SB 75025 Revision 3, dated 17 February 2022, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Replacement of the BOV orifice feed air tube assembly and installation of the P3 probe snorkel and the BOV orifice feed air tube assembly in accordance with earlier versions of P&WC SB 75025 prior to the effective date of this AD, also meets the requirement of Part I.B. and Part II this AD.

Authorization:

For the Minister of Transport,

ORIGINAL SIGNED BY

Rémy Knoerr
Chief, Continuing Airworthiness
Issued on 12 May 2022

Contact:

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