



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-2024-33

Effective Date:

30 September 2024

ATA:

72

Type Certificate:

E-21

Subject:

Engine – First-Stage Power Turbine (PT1) Blade Failure

Applicability:

Pratt & Whitney Canada Corp. (P&WC) Models PT6A-64, PT6A-66, PT6A-66A, PT6A-66B, PT6A-66D, PT6A-67, PT6A-67A, PT6A-67AF, PT6A-67AG, PT6A-67B, PT6A-67D, PT6A-67P, PT6A-67R and PT6A-67T engines, all serial numbers.

Compliance:

As indicated below, unless already accomplished.

Background:

There has been one recent in-service report of a PT1 blade failure on a PT6A-67P engine. P&WC reported that the aircraft landed safely at its destination, with no emergency protocols activated.

P&WC is still investigating the root cause of the blade failures, but preliminary investigation determined that the power turbine module contained Part Number (P/N) 3122972-01 blades manufactured from specific raw material which may be at higher risk of low time fracture. Failure of PT1 blades could lead to engine power loss or in-flight shut down, potentially resulting in reduced control of the aeroplane.

To address this issue, P&WC published Alert Service Bulletin (ASB) PT6A-72-A14575, dated 13 June 2024, to inspect and replace, if installed, the suspect PT1 blades manufactured from this specific raw material.

This AD mandates a one-time inspection and replacement of any suspect PT1 blade.

Corrective Actions:

For the purpose of this AD, the following definitions apply:

P&WC ASB: PT6A-72-A14575 Revision 2, dated 24 July, 2024, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Suspect PT1 blade: First-stage power turbine blade P/N 3122972-01 from heat code 22034.

Group 1 engines: engines listed in Table 1 of the P&WC ASB.

Group 2 engines:

PT6A-64 BS758 engines that are post-SB14273 and were repaired or overhauled between 1 June, 2023, and 13 June 2024.

PT6A-66A BS1015, BS1133 engines that were repaired or overhauled between 1 June 2023 and 13 June 2024.

PT6A-66B BS1352 engines that were repaired or overhauled between 1 June 2023 and 13 June 2024.

PT6A-66D BS1198, BS1323, BS1354 engines that were repaired or overhauled between 1 June 2023 and 13 June 2024.

PT6A-67A BS1189, BS1239, BS1365 engines that are post-SB14273 and were repaired or overhauled between 1 June 2023 and 13 June 2024.

PT6A-67AG BS848, BS1103, BS1314, BS1315 engines that are post-SB14273 and were repaired or overhauled between 1 June 2023 and 13 June 2024.

PT6A-67B BS737, BS1179, BS1362 engines that are post-SB14273 and were repaired or overhauled between 1 June 2023 and 13 June 2024.

PT6A-67P BS1226, BS1274, BS1361, BS1400 engines that were repaired or overhauled between 1 June 2023 and 13 June 2024.

PT6A-67T BS1466 engines that were repaired or overhauled between 1 June 2023 and 13 June 2024.

Group 3 engines: all engines.

Part I – Inspection and Replacement – Applicable to Group 1 and Group 2 Engines

- A. Within 100 hours air time or 6 months, whichever occurs first, from the effective date of this AD, inspect and determine if the engine has any suspect PT1 blade, in accordance with the Accomplishment Instructions of the P&WC ASB section 3.A.(1) or sections 3.A.(2) and 3.B. to 3.E.(1).
- B. If any suspect PT1 blade is installed, within 100 hours air time or 6 months, whichever occurs first, from the effective date of this AD, remove and replace any suspect PT1 blade identified at paragraph A. in accordance with the Accomplishment Instructions of the P&WC ASB section 3.A.(1) or section 3.E.(1).

Inspection and replacement of the suspect PT1 blades in accordance with earlier versions of the P&WC ASB, prior to the effective date of this AD, also meets the requirements of this part.

Part II – Installation Prohibition – Applicable to Group 3 Engines

As of the effective date of this AD, it is prohibited to install any suspect PT1 blade.

Authorization:

For the Minister of Transport,

ORIGINAL SIGNED BY

Jenny Young
Chief, Continuing Airworthiness
Issued on 17 September 2024

Contact:

Isabelle Hallé, Continuing Airworthiness, Ottawa, telephone 888-663-3639, facsimile 613-996-9178 or e-mail TC.AirworthinessDirectives-Consignesdenavigabilite.TC@tc.gc.ca or any Transport Canada Centre.