



適航指令發布單

Airworthiness Directive Issuance Form

民航局 AD 編號 AD number	CAA-2023-08-008	發布日期 Date issued	2023/8/22
適用之航空產品 Applied to (models, serial numbers or part numbers, as applicable)	Pratt & Whitney Canada (P&WC) engines: Model PW535E Engines with build specification (BS)1229 and BS1348, all serial numbers; Model PW535E1 Engines with BS1439, all serial numbers.		
主旨摘要 Subject	Engine - Gas generator case to turbine support case retaining bolts - Inadequate fatigue life		
民航局 CAA <input type="checkbox"/> 本國產品 Native product <input type="checkbox"/> 其他個案 Other	設計國民航主管機構 Original Authority <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <input type="checkbox"/> FAA <input type="checkbox"/> EASA <input type="checkbox"/> Brazil <input checked="" type="checkbox"/> Transport Canada Civil Aviation <input type="checkbox"/> DGAC </div> <div style="width: 48%;"> <input type="checkbox"/> Germany LBA <input type="checkbox"/> CAA-NL <input type="checkbox"/> UK CAA <input type="checkbox"/> Japan CAB <input type="checkbox"/> CAA of Israel <input type="checkbox"/> Other _____ </div> </div>		
	設計國 AD 編號 Original AD number		CF-2023-60
	1. 直接採用原 AD 之內容?(Is the original AD directly adopted?) <input checked="" type="checkbox"/> 是(Yes) <input type="checkbox"/> 否(No) _ a. 生效日期另訂為(Re-specify the effective date as) : _____ b. 執行時限另訂為(Re-specify the compliance time or period as) : _____ 2. 使用人是否需要將 AD 執行結果向民航局提出報告?(Do Users need to report the status of compliance to the CAA?) <input type="checkbox"/> 是(Yes) <input checked="" type="checkbox"/> 否(No)		
備註 Note	ATA 72. Ref SB: P&WC PW500-72-30571, dated 9 June 2023, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.		
註： 1. AD 內容後附。 2. 航空器產品使用人得向民航局提出豁免、替代符合方法、執行時限之展延之申請。 3. 如有任何問題，請聯絡交通部民用航空局初始適航科。Tel：(02)2349-6330 / 6332, Fax：(02)2545-8464, e-mail： adcaa@mail.caa.gov.tw Note： 1. The AD text is enclosed. 2. Exemption, an alternative method of compliance or adjustment of the compliance time may be proposed to the CAA for approval. 3. For further information, please contact Civil Aeronautics Administration on Tel：(02)2349-6330 / 6332, Fax：(02)2545-8464, e-mail： adcaa@mail.caa.gov.tw			



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-2023-60

Effective Date:

28 August 2023

ATA:

72

Type Certificate:

E-27

Subject:

Engine – Gas generator case to turbine support case retaining bolts – Inadequate fatigue life

Applicability:

Pratt & Whitney Canada (P&WC) engines:

Model PW535E Engines with build specification (BS)1229 and BS1348, all serial numbers;

Model PW535E1 Engines with BS1439, all serial numbers.

Compliance:

As indicated below, unless already accomplished.

Background:

The engine gas generator case and turbine support case are secured by a set of nuts and bolts on the joint flange. During a design review, P&WC identified that the existing low cycle fatigue (LCF) life of these flange bolts, at certain high stress circumferential locations, is inadequate.

Even though no fractured bolts have been reported to date in service, there is the potential that LCF cracks could develop on the flange bolt and lead to the bolt's fracture. Multiple fractured bolts could lead to flange separation or case rupture, which may damage the engine and aeroplane.

To address this potential bolt cracking issue, P&WC issued Service Bulletin (SB) PW500-72-30571, dated 9 June 2023, to inspect and/or replace the gas generator case to the turbine support case retaining bolts until they are replaced with new.

This AD mandates the inspection or replacement of the bolts Part Number (P/N) MS9696-08 and P/N MS9489-06, as indicated in the Corrective Actions below.

Corrective Actions:

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

Group 1 engines: are engines that:

- have accomplished an Overhaul prior to November 2021 using the Overhaul manual P/N 3072703 (Pre-Revision 11), and have not incorporated P&WC SB PW500-72-30556;
- or
- have accumulated 5000 cycles and greater and have not replaced the bolts P/N MS9696-08 and P/N MS9489-06 with new during maintenance/repair.

Group 2 engines: all engines.

The applicable SB: P&WC PW500-72-30571, dated 9 June 2023, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

A. For Group 1 engines:

1. Inspect the bolts P/N MS9696-08 and P/N MS9489-06 within 400 cycles from the effective date of this AD, and rectify any discrepancy in accordance with the Accomplishment Instructions of the applicable SB.
2. Repeat the above paragraph A.1. inspection and rectification requirements of this AD at intervals not to exceed 400 engine cycles, until the bolts are replaced, in accordance with paragraph B of this AD.

Replacement of the bolts in accordance with paragraph B of this AD meets the intent of inspection.

B. For Group 2 engines, replace the bolts P/N MS9696-08 and P/N MS9489-06 with new at the next scheduled engine Hot Section Inspection or Overhaul, whichever occurs first, in accordance with the Accomplishment Instructions of the applicable SB.

C. As of the effective date of this AD, bolts P/N MS9696-08 and P/N MS9489-06 removed in accordance with either paragraph A or B of this AD are not eligible for re-installation on the flange between the engine gas generator case and turbine support case on model PW535E engines (BS1229 and BS1348) and PW535E1 engines (BS1439).

Authorization:

For the Minister of Transport,

ORIGINAL SIGNED BY

Jenny Young
Chief, Continuing Airworthiness
Issued on 14 August 2023

Contact:

Liviu Badita, 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.