



適航指令發布單

Airworthiness Directive Issuance Form

民航局 AD 編號 AD number	CAA-2019-08-005	發布日期 Date issued	2019/8/21
適用之航空產品 Applied to (models, serial numbers or part numbers, as applicable)	Pratt & Whitney Canada (P&WC) model PT6A-34, -34B, -34AG, -114, and -114A engines.		
主旨摘要	Compressor Turbine (CT) Blade Fracture due to Non-conforming CT Vane Installation		
民航局 CAA <input type="checkbox"/> 本國產品 Native products <input type="checkbox"/> 其他個案 Other	設計國民航主管機構 Original Authorities <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-2019-30	
	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	None		

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)2349-6331~3, 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)2349-6331~3, 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) to ADs.

Number:

CF-2019-30

Effective Date:

2 September 2019

ATA:

72

Type Certificate:

E-6, E-15

Subject:

Compressor Turbine (CT) Blade Fracture due to Non-conforming CT Vane Installation

Applicability:

Pratt & Whitney Canada (P&WC) model PT6A-34, -34B, -34AG, -114, and -114A engines.

Compliance:

As indicated below, unless already accomplished.

Background:

There have been 8 reported events of low time CT blade fractures resulting in power loss / In-flight shutdown (IFSD) on post P&WC Service Bulletin (SB) 1669 and SB 1767R3 and similarly configured engines, featuring new CMSX-6 CT blade installations. As most of the affected engines were installed on single-engine powered aeroplanes, these past events have resulted in the loss of the aeroplane and some fatalities.

In service data shows that all low time CMSX-6 CT blade failures occurred below 620 hours air time, and were reported on engines that had CT vanes installed that were repaired in accordance with repair specification number STI 72-50-254 held by Southwest Turbine Inc. (STI). Dimensional checks and operational testing of the subject STI repaired CT vane removed from an incident engine, revealed that it did not conform to the engine manufacturer's CT vane type design criteria. The noted variations and features in the STI repaired CT vane caused airflow distortion and subsequent aerofoil excitation of the CT blades that resulted in High Cycle Fatigue (HCF) failure of the blades.

An IFSD or loss of power on a single-engine powered aeroplane under certain conditions can lead to an unsafe condition as seen in some past events. This AD is issued to address the potential hazard of power loss / IFSD as a result of CMSX-6 CT blade fracture failures on engines with non-type design conforming STI repaired CT vane installations.

Corrective Actions:

1. Within 9 months or 250 hours air time, whichever occurs first, from the effective date of this AD, determine if a CT vane, repaired in accordance with repair specification number STI 72-50-254, is installed on the affected engine and replace it with a serviceable non-STI repaired CT vane.
2. Within 9 months or 250 hours air time, whichever occurs first, from the effective date of this AD, replace and discard any CMSX-6 CT blade that has been operating in service on an engine with an above-mentioned STI repaired CT vane installation.
3. As of the effective date of this AD, it is prohibited for anyone to allow the installation of an above-mentioned STI repaired CT vane on affected engines.

Authorization:

For the Minister of Transport,

ORIGINAL SIGNED BY

Matthew Weeks

Acting Chief, Continuing Airworthiness

Issued on 19 August 2019

Contact:

AK 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.