Transport Canada Transports Canada

TP 7245E
AD Number: CF-2013-21R1
Issue Date: 31 October 2013

AIRWORTHINESS DIRECTIVE

The following airworthiness directive (AD) may be applicable to an aircraft which our records indicate is registered in your name. ADs are issued pursuant to ***Canadian Aviation Regulation*** **(CAR) 521 Division X**. Pursuant to **CAR 605.84** and the further details of **CAR Standard 625, Appendix H**, the continuing airworthiness of a Canadian registered aircraft is contingent upon compliance with all applicable ADs. Failure to comply with the requirements of an AD may invalidate the flight authorization of the aircraft. Alternative means of compliance shall be applied for in accordance with **CAR 605.84** and the above-referenced **Standard.**

This AD has been issued by the Continuing Airworthiness Division (AARDG), National Aircraft Certification Branch, Transport Canada, Ottawa, telephone 613-952-4357.

Number:

CF-2013-21R1

Subject:

Compressor Turbine (CT) Blade Failures

Effective Date:

13 November 2013

Revision:

Supersedes AD 2013-21, issued 1 August 2013.

Applicability:

Pratt & Whitney Canada model PT6A-114 and PT6A-114A engines, with Pre-SB1669 or Pre-SB 1727 Configuration CT Blades Installation.

Compliance:

As indicated below, unless already accomplished.

Background:

There have been a number of reported incidents where Compressor Turbine (CT) blades failures have caused power loss on PT6-114 & PT6A-114A engines, resulting in in-flight shutdown (IFSD). Investigation by engine manufacturer Pratt & Whitney Canada (P&WC) has determined that when operated at high power and high temperature settings, the subject CT blades are prone to crack/fracture as result of creep and/or sulfidation.

P&WC issued Service Bulletin (SB) 1669 that introduces a newly designed CT blade which has proven to be far less affected by the blade "Creep" phenomenon. Additionally, to help prevent IFSD by identifying pending Creep induced blade failure of the pre-SB 1669 configuration blades, P&WC has revised the SB 1669 to include specificinspection/maintenance requirements for engines with pre-SB 1669 configuration CT blade installation.

An engine power loss or IFSD on a single engine powered aeroplane such as Cessna 208 could result in an unsafe condition. AD CF-2013-21 was issued on 1 August 2013 tomandate the compliance with SB 1669R9 requirements to inspect and replace the existing CT blades on PT6A-114 & PT6A-114A engines with a new type of post SB 1669 configuration CT blades.

P&WC, through SB 1727, has now introduced a new version of the post SB 1669 configuration CT blade that features a tighter tolerance on the platform width. This enhances the ability of the maintainer to achieve the required inter-platform gap. This AD is now revised to include the installation of the new post SB 1727 CT blades as terminating action of this AD.

Corrective Actions:

Part I - For Engines With 500 or More Hours Air Time Since New That Have Not Been Previously Inspected Or Have Accumulated More Than 500 Hours Air Time Since Last Inspection, Per The MM 72-00-00, Table 601 Requirements:

Within 150 hours of air time from the effective date of this AD, perform a borescopeinspection of the CT blades in accordance with Accomplishment Instructions in paragraph 3.A of the P&WC SB 1669R9 dated 28 June 2013 or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Part II - For Engines That Have Been Previously Inspected Per MM 72-00-00, Table 601 Requirements:

At intervals not to exceed 500 hours air time since the last inspection, perform aborescope inspection of the CT blades in accordance with the Accomplishment Instructions in paragraph 3.A of the P&WC SB 1669R9 dated 28 June 2013 or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Part III - For All Affected Engines:

During the next engine Hot Section Inspection (HSI) as of the effective date of this AD; submit a two-CT blade sample in accordance with Accomplishment Instructions in paragraph 3.B of the P&WC SB 1669R9, to P&WC approved overhaul facility for metallurgical evaluation. If the evaluation results are not satisfactory, replace the complete set of CT blades with Post-SB 1669 or Post-SB 1727 CT blades, in accordance with either paragraph 3.C of the P&WC SB 1669R9 dated 28 June 2013 or the Accomplishment Instructions in SB 1727 dated 23 August 2013, or later revisions of either SB approved by the Chief, Continuing Airworthiness, Transport Canada.

Part IV - For All Affected Engines:

Within 36 months as of the effective date of this AD, replace all existing CT blades with new CT blades P/N 3072791-01 or P/N 3072791-02 and/or replace the Compressor Turbine Disk Balancing Assembly with new P/N 3072801-01 or P/N 3072801-02 as required, in accordance with either the Accomplishment Instructions in paragraph 3.C of the P&WC SB 1669R9 dated 28 June 2013 or the Accomplishment Instructions in SB 1727 dated 23 August 2013, or later revisions of either SB approved by the Chief Continuing Airworthiness, Transport Canada.

Compliance with Part IV of this AD constitutes terminating action of this AD.

Compliance with earlier versions of SB 1669 prior to the effective date of this AD also meets the Part IV requirements of this AD and constitutes terminating action of this AD.

Authorization:

For the Minister of Transport,

ORIGINAL SIGNED BY

Derek Ferguson
Chief, Continuing Airworthiness

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.

Pursuant to CAR 202.51 the registered owner of a Canadian aircraft shall, within seven days, notify the Minister in writing of any change of his or her name or address.

To request a change of address, contact the Civil Aviation Communications Centre (AARC) at Place de Ville, Ottawa, Ontario K1A 0N8, or 1-800-305-2059, or www.tc.gc.ca/civilaviation/communications/centre/address.asp

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