



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-2024-04

Effective Date:

14 March 2024

ATA:

72

Type Certificate:

E-19

Subject:

Turboprop Engine – Overspeed Governor Hydraulic Pump – Malfunction of Pressure Relief Valve

Applicability:

Pratt & Whitney Canada (P&WC) model PW118, PW118A, PW118B, PW120, PW120A, PW121, PW121A, PW123, PW123B, PW123C, PW123D, PW123E, PW123AF, and PW124B engines.

Compliance:

As indicated below, unless already accomplished.

Background:

There were 3 reported propeller control malfunction events in which the propeller system entered into a pitch-lock condition causing propellers to overspeed. In those events, the replacement of the overspeed governor (OSG) hydraulic pumps resolved the malfunction. The investigation determined that the regulating pressure of the pressure relief valve (PRV), which is part of the OSG hydraulic pump, was lower than the required pressure and was caused by contamination in the PRVs. This low regulating pressure resulted in the propeller entering into a pitch-lock condition and over-speeding in those events. A propeller over-speeding may cause thrust asymmetry and difficulty in controlling the aeroplane in flight and on the ground.

To eliminate potential contamination in the suspect OSG hydraulic pump PRV population, P&WC issued Service Bulletin (SB) PW100-72-21945, Initial Release, dated 29 April 2020, to remove suspected OSG hydraulic pumps with suspect PRVs and return them to authorized sources. Subsequently, P&WC revised the SB to add previously missed OSG hydraulic pumps and PRV serial numbers (SN) to Table 1 of the SB Appendix, and include re-identification instructions for the supplier Part Number (P/N) of the PRV.

To address the unsafe condition from a propeller entering into a pitch-lock condition and over-speeding caused by OSG hydraulic pump PRV contamination, this AD is issued to mandate the removal of affected OSG hydraulic pump PRVs.

Corrective Actions:

For the purpose of this AD, the following definition applies:

Affected OSG hydraulic pump PRV: the ones which have SN listed in Table 1 of this AD and do not have letter “R” marked after the supplier P/N C2371-08.

- A. Within 60 days from the effective date of this AD, if both engines on one aeroplane have affected OSG hydraulic pump PRVs installed, remove one of the affected OSG hydraulic pump PRVs in accordance with the Accomplishment Instructions of P&WC SB PW100-72-21945 Revision 5 or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.

Thereafter, it is prohibited to have two affected OSG hydraulic pump PRVs installed on the same aeroplane.

- B. Within 360 days from the effective date of this AD, remove any affected OSG hydraulic pump PRVs in accordance with the Accomplishment Instructions of P&WC SB PW100-72-21945 Revision 5 or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.
- C. After the effective date of this AD, affected OSG hydraulic pump PRVs are not eligible for re-installation on the engine.

Table 1 – SNs of Affected OSG Hydraulic Pump PRVs

13051	13011	13175
13019	13023	13166
13416	13018	13161
13158	13026	13176
13027	13003	13157
13014	13047	13167
13006	13046	13159
13013	13045	13160
13015	13044	13169
13022	13036	13155
13039	13028	13170
13017	13048	13164
13163	13031	13154
13042	13049	13401
13020	13030	13403
13172	13032	13390
13002	13035	13411
13025	13041	13415
13043	13034	13391
13010	13029	13407
13038	13033	13383
13037	13181	13389
13050	13174	13384
13173	13152	13395
13021	13177	13405
13004	13178	13420
13007	13165	13009
13008	13156	13012
13016	13179	13024
13005	13180	

Authorization:

For the Minister of Transport,

ORIGINAL SIGNED BY

Jenny Young

Chief, Continuing Airworthiness

Issued on 15 February 2024

Contact:

Zhiwei Wang, 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.