



EMERGENCY 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-2022-64

Effective Date:

18 November 2022

ATA:

22

Type Certificate:

A-236

Subject:

Autoflight – Design Robustness Against Autopilot Inadvertent Engagement on Takeoff

Applicability:

Airbus Canada Limited Partnership (formerly C Series Aircraft Limited Partnership (CSALP), Bombardier Inc.) aeroplanes:

Model BD-500-1A10, all serial numbers,

Model BD-500-1A11, all serial numbers.

Compliance:

Within 7 days from the effective date of this AD, unless already accomplished.

Background:

Several in-service events have been reported whereby the crew inadvertently engaged the autopilot while attempting to either engage the autothrottle late into the takeoff phase or when re-engaging the autothrottle. Engaging the autopilot below 400 feet (ft) above ground level is prohibited by the Airplane Flight Manual (AFM). Currently, the autopilot engagement is not inhibited and with sufficient speed will cause the aeroplane to command a pitch increase to capture the Pitch Target Marker which may cause premature rotation, including at speeds below V1 at the time of autopilot engagement. Premature aeroplane pitch up will require the crew to intervene immediately as required, and depending on the speed, could lead to a tail-strike. If the crew does not reject the takeoff, auto-rotation below Vr may result in low-energy lift-off.

Airbus Canada has issued Flight Operations Transmission (FOT) A220-FOT-22-00-001 to provide operational recommendations and procedures to follow for autothrottle selection and in the event of an autothrottle disconnect during takeoff. Operators should be aware that the autothrottle cannot be re-engaged if it becomes disconnected on takeoff above 60 knots (kts) and below 400 ft. Crews should not attempt to re-engage the autothrottle if it becomes disconnected on takeoff as this may lead to an unsafe condition if the autopilot is inadvertently engaged.

This AD requires an amendment to the AFM to include a new warning regarding autopilot engagement on takeoff.

This AD is considered interim action and further AD action may follow.

Corrective Actions:

- A. Amend the applicable AFM, section Limitations, to incorporate the limitation as specified in Figure 1 of this AD.

This may be accomplished by inserting a copy of this AD into the existing AFM of the aeroplane.

Carrying this AD on board the aeroplane separately from the AFM in either electronic or physical form is also acceptable for compliance with this Corrective Action.

Figure 1 Limitation

<p>AUTOPILOT ENGAGEMENT</p> <p style="text-align: center;">WARNING</p> <p style="text-align: center;">Autopilot engagement during takeoff roll can result in premature rotation, possibly leading to tail-strike, inability to climb or loss of control. Immediate crew intervention is required.</p>

- B. Using an AFM revision which includes information identical to that indicated in Paragraph A of this AD is acceptable for compliance with the requirement of Paragraph A of this AD.
- C. Inform all flight crews of the new limitation and thereafter operate the aeroplane accordingly.

Authorization:

For the Minister of Transport,

ORIGINAL SIGNED BY

Daniel Gosselin
Acting Chief, Continuing Airworthiness
Issued on 17 November 2022

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