Related Incidents

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De Havilland DHC-8-202

- Operator : Horizon Air
- 30/dec/2004 – Kelowna (Canada)
- Aircraft de-iced (Type I) and anti-iced (Type IV)
- Aircraft did not respond to back pressure on the controls to initiate rotation
- Aborted T/O at 115 kts
- Type 4 fluid accumulation/residue observed on the leading edge and various locations of elevator control surface.

Source : TCCA CADORS Report 2005P0001

Dornier 328-110

- Operator : Not known
- 28/nov/2005 – Ronaldsway (Scotland)
- Aircraft de/anti-iced (Type II/Water 75/25%)
- The pilot moved the control column aft at 109 kt for rotation. As the A/C control was not responding to elevator control input, the T/O was aborted.
- The incident was the result of a too low rotation speed selection. The rotation speed should have been increased to 128 kts after de/anti-icing treatment as defined in AFM.

Source : AAIB

ATR42-500

- Operator : Airlinair
- 17/Jan/2009 – Lyon (France)
- Aircraft de/anti-iced (Type II)
- Abnormal elevator effort at 110 kt felt by the Captain. As per AFM and pre-flight briefing , method 2 procedure was performed (Both captain and F/O pulled the control wheel together) without managing to rotate the aircraft.
- Aborted T/O at 120 kts
- The incident was driven by an inadequate FWD CG but was aggravated by the fluid effects

Source : BEA Report

BAe ATP

- Cargo version
- Operator : West Air
- 11/Jan/2010 – Helsinki (Finland)
- Aircraft de-iced (Type I) and anti-iced (Type IV)
- At Vr, Control column could not be pulled back using normal effort for rotation. Significant increased level of resistance from neutral position. Although, the column was pulled as far back as possible, the A/C did not respond.
- Aborted T/O
- No deviations or Fault of the load and its distribution

Source : SHK Report

BAe ATP

- Similar occurrences had involved the same aircraft model with common factors :
  - Elevator restriction or stiff at the time of rotation
  - Aircraft had been treated with type II or IV prior to T/O
  - Elevator control split on few occasions
  - Full elevator travel confirmed after incident
  - No known balance / no Technical nor mechanical problem

Source : SHK Report

BAe ATP

- Operator : Next Jet
- 30/Nov/2009 – Arvidsjaur (Sweden)
- Aircraft de-iced (Type I) and anti-iced (Type II)

- At Vr (99kts) , Co-pilot pulled the control column back to rotate A/C without any sign of responding. Co-pilot informed the captain about the difficulty above V1 (+ 10 to +15 kts). The captain took over control and pulled back throttles to abort T/O. At the same moment, “stdby controls” was activated and A/C lifted off from the runway. Then Captain set full power again to keep A/C airborne. The flight was safely completed to Stockholm without any further incident.

Source : SHK Report

BAe ATP

- In the frame of investigations, flight tests were performed and suggested that the minimum gap clearance between the stabilizer and elevator on this aircraft model may be one the interacting factors involved in the phenomena.
- TC Holder implemented actions :
  - to inform operator and identify A/C below minimum acceptable gap clearance
  - To publish a revision of the Operations Manual to introduce further advices on stick force increase when thickened fluids have been used
- EASA raised an Airworthiness Directive – **AD 2010-0263** dated 17/Dec/2010 to mandate the gap clearance inspection and introduce a limitation for ATP aeroplane with gap clearance below AMM limit.

Source : EASA

Safety Alert

Safety Alert for Operator (FAA) – SAFO 010001 – 04/Feb/2010

- For airplanes with unpowered elevator control surfaces
- Several reports of rejected takeoffs after airplanes treated with thickened anti-icing fluids as aircraft did not respond to control column back pressure inputs for rotation
- Recommended actions :
  - to ensure pilots are trained that control column force increase may be necessary after airplane treatment with thickened anti-icing fluids
  - to incorporate A/C manufacturer's procedures in operator flight crew procedure
  - To review procedure as part of pre-takeoff briefing whenever airplane is treated with thickened fluid

Source : FAA

Safety Information Bulletin(EASA) – SIB 2010-28– 17/Sep/2010

- EASA supported the recommended actions of the SAFO 10001

Source : EASA

Safety Alert

Civil Aviation Safety Alert (TC) – CASA 2010-02– 19/Oct/2010

- TC supported the recommended actions of the SAFO 10001

Source : TC

Safety Information Bulletin(EASA) – SIB 2012-20– 20/Nov/2012

- EASA requested Type Certificate Holder to assess, in case they are uncertain, any potential effect of the fluids on the aircraft during take-off and report to EASA any known case that may result in an unsafe condition.

Source : EASA

EASA
European Aviation Safety Agency

Thank you for your attention!

Any questions….?

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