Safety Regulation Group
Safety Investigation and Data Department

Follow-up Action on Occurrence Report

ACCIDENT TO BAE 146-200, G-JEAX, NEAR BIRMINGHAM AIRPORT ON 12 DECEMBER 2002
(RAPID PITCH UP IN CLIMB INJURED TWO CABIN CREW MEMBERS)

CAA FACTOR NUMBER	:	F11/2004
FACTOR PUBLICATION DATE	:	16 March 2004
OPERATOR	:	flybe
CAA OCCURRENCE NUMBER	:	2002/08911
AAIB REPORT	:	Bulletin 2/2004

SYNOPSIS

(From AAIB Report)

The aircraft was carrying out a scheduled passenger flight from Birmingham to Belfast City. During the climb, it appeared to hunt in pitch more than usual whilst the autopilot was engaged and it seemed to the flight crew that it would fail to maintain FL240, their cleared cruising level. When the autopilot was disconnected, the aircraft pitched up and the elevator control forces to counteract this were found to be very heavy. Nose down trim was applied, which caused the aircraft to pitch down. In an attempt to level the aircraft, both pilots then pulled back on the control columns with considerable force. The controls suddenly freed causing the aircraft to pitch up rapidly, resulting in a large excursion in normal acceleration which caused serious injuries to two cabin crew members.

The investigation determined that the accident was probably caused by icing of the elevator servo tabs, coupled with the crew's response to the situation for which they had not been trained.

There have been a number of previous occurrences of suspected servo tab icing on the BAe 146/RJ aircraft series. This report makes a number of safety recommendations calling for maintenance and inspection actions to reduce the probability of this occurring and for the introduction of an emergency procedure to enable flight crews to respond to such an event in a manner that minimises the risk to the aircraft and its occupants.

FOLLOW UP ACTION

The five Safety Recommendations, made by the AAIB following their investigation, are reproduced below, together with the CAA's responses.

CAA Note: AAIB Recommendations 2003-81 and 82 are reiterated in the Report (Bulletin 2/2004). The CAA Responses to those Recommendations were published in FACTOR 5/2004 dated 12 January 2004.

Recommendation 2003-119

It is recommended that the Civil Aviation Authority require operators of aircraft with non-powered flying controls that are vulnerable to the effects of freezing of re-hydrated de-icing fluid residues, to establish engineering procedures for the inspection and removal of such residues from critical flying control surfaces.

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CAA Response

The CAA accepts this Recommendation. This Recommendation, as worded, is directed at the CAA oversight of aircraft operators.

The CAA believes that operator procedures for the inspection and cleaning of re-hydrated de-icing fluid residues must be based on formal information from the applicable Type Certificate Holder/Type Design Organisation.

Since 28 September 2003, responsibility for the matters addressed in this Safety Recommendation as far as they relate to TC holders has passed to EASA under Regulation (EC) 1592/2002 and the Recommendation should be addressed to that Agency.

Under the EASA transition arrangements and as the regulator within the State of Design for a number of aircraft types with non-powered flying control systems, CAA accepts this Recommendation on behalf of EASA. CAA will therefore review the applicable UK aircraft types, and those types for which CAA is the EASA Lead Authority, with the Type Certificate Holders and where necessary require the development, approval and publication of such information and require operators to incorporate this information into their procedures. CAA will recommend the same action to EASA for any other applicable type.

The CAA has set a target date of September 2004 to complete this action.

CAA Status - Open

Recommendation 2003-120

On behalf of EASA the CAA should take an oversight on the manufacturer's proposed flight crew abnormal and emergency checklist procedure for recognising and responding to frozen flight controls on the 146/RJ series aircraft to ensure the timely introduction of a suitable procedure.

CAA Response

Since 28 September 2003, responsibility for the matters addressed in this Recommendation has passed to EASA under Regulation (EC) 1592/2002 and the Recommendation should be addressed to that Agency.

Under the EASA transition arrangements and as the regulator within the State of Design for the BAE146 aeroplane type, CAA accepts this Recommendation on behalf of EASA.

The CAA is monitoring the manufacturer's actions relating to possible amendments to the flight crew abnormal and emergency procedure, for recognising and responding to frozen flight controls on the 146/RJ series aircraft. It is intended that this work will be completed by 31 December 2004.

CAA Status - Open

Recommendation 2003-121

The aircraft manufacturer, BAE Systems, should alert operators of 146/RJ series aircraft to the possibility of precipitation accumulating in the elevator gaps whilst the aircraft is parked in near freezing conditions, or following a hailstorm, and that if untreated, this precipitation can lead to pitch control problems in flight.

CAA Response

This Recommendation is not addressed to the CAA.

CAA Status - Closed

Recommendation 2003-122

The CAA should require UK AOC holders operating BAe 146/RJ series aircraft to issue instructions to their staff for inspecting the gaps between the elevator and the tailplane and between the elevator and the trim and servo tabs for any precipitation contamination prior to departure, with a Recommendation to de-ice the aircraft, when any doubt exists.

CAA Response

The CAA accepts this Recommendation. This Recommendation, as worded, is directed at the CAA oversight of UK AOC operators.

The CAA believes that operator procedures for the inspection of contamination must be based on formal information from the applicable Type Certificate Holder/Type Design Organisation.

Since 28 September 2003, responsibility for the matters addressed in this Safety Recommendation as far as they relate to the TC holder has passed to EASA under Regulation (EC) 1592/2002 and the Recommendation should be addressed to that Agency.

Under the EASA transition arrangements and as the regulator within the State of Design for the BAe 146 and AVRO 146-RJ aircraft types, CAA accepts this Recommendation on behalf of EASA. CAA will therefore require the Type Certificate Holder of the BAe 146 and AVRO 146-RJ aircraft types to develop, obtain approval and publish such information and require operators to incorporate this information into their procedures.

The CAA has set a target date of September 2004 to complete this action.

CAA Status - Open

Recommendation 2003-123

The aircraft manufacturer, BAE Systems, should consider the introduction of a sampling programme for the elevator servo tab bearings and other flight control system bearings that are vulnerable to the effects of aircraft washing and de-icing, with a view to establishing a regular maintenance or replacement requirement for those bearings as necessary.

CAA Response

This Recommendation is not addressed to the CAA.

CAA Status - Closed