Safety Regulation Group
Safety Information and Data Department

Follow-up Action on Occurrence Report

SERIOUS INCIDENT INVOLVING BAE ATP, G-JEMC, 10NM SE OF RONALDSWAY AIRPORT ON 23 MAY 2005
(HYDRAULIC LEAK IN CABIN AFTER TAKEOFF LEAD TO RETURN TO AIRFIELD)

CAA FACTOR NUMBER	:	F2/2007
FACTOR PUBLICATION DATE	:	10 January 2007
OPERATOR	:	Emerald Airways
CAA OCCURRENCE NUMBER	:	2005/03792
AAIB REPORT	:	AAR 1/2007

SYNOPSIS

(From AAIB Report

The aircraft was configured with 64 seats; 33 passengers were on board. Not long after takeoff, a seal associated with the retraction line for the hydraulically operated integral airstairs at the front left cabin door, failed. This allowed hydraulic fluid to escape in the form of a fine mist, depleting the contents of the main hydraulic system. This misting was perceived by the cabin crew as smoke, and they informed the flight crew accordingly. In flight, this line is normally de-pressurised but, owing to a jammed airstairs UP selection switch and a stuck door safety microswitch, it had remained pressurised.

The intensity of the misting in the forward section of the cabin led the cabin crew to reposition the passengers towards the rear of the cabin. As a result, the aircraft's centre of gravity (CG) position moved beyond the operator's specified aft limit. An emergency was declared to ATC and the aircraft returned to Ronaldsway. During the approach, the EGPWS system alerted the crew to an incorrect flap setting for landing. After landing, the aircraft was taxied clear of the runway but difficulties encountered with the nosewheel steering system forced the commander to stop the aircraft short of the terminal buildings. One passenger, who was asthmatic, was taken to a local hospital but later discharged as medical treatment was not considered necessary.

The investigation identified the following causal factors:

1. A combination of a stuck door safety microswitch plunger and a jammed-on airstairs UP switch caused hydraulic pressure to remain applied to the airstairs retraction actuators in-flight.

2. The failure of the hydraulic seal associated with the airstairs operating mechanism occurred in-flight; this resulted in the fluid contents of the main hydraulic system being discharged as a fine mist into the passenger cabin.

3. At the time of the incident, there were no periodic inspection or maintenance checks required on the airstairs operating system.

4. The rearward movement of the aircraft's CG position beyond the aft limit as specified by the operator, was caused by the cabin crew moving passengers towards the rear of the cabin in an attempt to minimise their exposure to the 'smoke'.

5. There was no requirement for cabin crews to obtain agreement from the commander prior to moving passengers towards the rear of the cabin although, on this occasion, the commander was informed of their actions.

6. The flight crew's non-adherence to SOPs1 and associated checklists put the aircraft and its occupants at unnecessary increased risk from potential handling problems as well as risk of fire and prolonged exposure to hydraulic fluid mist.

One safety recommendation was made.

FOLLOW UP ACTION

The one Safety Recommendation, made by the AAIB following their investigation, is reproduced below, together with the CAA's response.

Recommendation 2006-69

It is recommended that the Civil Aviation Authority advises all operators of Commercial Air Transport aircraft on the UK register of the need to ensure that the training of cabin crew members includes an awareness that handling problems may result from the movement of the aircraft's CG position, should a significant redistribution of passengers be required in flight. This awareness training should include the necessity to both inform and seek the approval of the flight crew prior to such a redistribution taking place and should be reflected in the appropriate Cabin Crew Safety Manuals.

CAA Response

The CAA accepts this Recommendation. The CAA published a "Flight Operations Department Communication to Operators" (FODCOM) on 13th October 2006 (FODCOM 16/2006). The FODCOM highlighted the circumstances surrounding this serious incident and made the following recommendations to operators:

Recommendations

1. Operators should ensure that, if appropriate to the type of operation and aircraft in their fleet, their Operations Manuals contain guidance to flight and cabin crews regarding the effect on the aircraft's CG position in the event of redistribution of a passenger or freight load whilst airborne.

2. Operators should ensure that the training of flight and cabin crew members includes an awareness of the potential problems on the flight characteristics, due to movement of the aircraft's CG position, caused by a significant redistribution of passenger or freight loads. Training should include the necessity for cabin crew to ensure that the flight crew are informed of any redistribution and that approval should be sought for the final redistribution.

CAA Status - Closed