SERIOUS INCIDENT

Aircraft Type and Registration:	Bombardier DHC-8-402 Dash 8, G-JECH
No & Type of Engines:	2 Pratt & Whitney Canada PW150A turboprop engines
Year of Manufacture:	2005
Date & Time (UTC):	12 October 2011 at 0657 hrs
Location:	Near Brussels Airport, Belgium
Type of Flight:	Commercial Air Transport (Passenger)
Persons on Board:	Crew - 4 Passengers - 49
Injuries:	Crew - None Passengers - None
Nature of Damage:	Split in inflatable seal at aft baggage compartment door
Commander's Licence:	Airline Transport Pilot's Licence
Commander's Age:	50 years
Commander's Flying Experience:	11,643 hours (of which 1,003 were on type) Last 90 days - 96 hours Last 28 days - 35 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot

Synopsis

During the initial descent prior to landing at Brussels Airport, the aircraft's cabin depressurised due to a split seal on the aft baggage compartment door. An emergency descent was initiated before the aircraft levelled at FL80, following which the cabin pressurisation system functioned correctly. The crew and passengers were uninjured and the aircraft landed normally.

History of the flight

The aircraft was operating a scheduled flight between Manchester Airport and Brussels Airport, and was descending from FL250 to FL200 when the crew felt the cabin pressure reduce, which they associated with a sudden onset of mild inner ear pain. The cabin pressure control panel indicated a rate of climb of cabin altitude in excess of 3,000 ft/min and it had climbed above the set level of 7,000 ft. The commander, who was flying the aircraft on this sector, asked the first officer to request ATC for a continuous descent to FL100. The cabin crew reported by interphone that a loud 'pop' had been heard from the rear of the aircraft, followed by the noise of air escaping from the rear left galley area. Shortly after this the red CABIN PRESS warning caption illuminated on the caution warning panel, so both crew donned their oxygen masks and the commander initiated an emergency descent, in accordance with the emergency checklist. He set the transponder code to 7700 and instructed the first officer to declare a MAYDAY.

The commander stopped the descent at FL80 and the crew reviewed the situation. After establishing with the cabin crew that the passengers were not in difficulty, and observing that the cabin pressurisation system had stabilised the cabin altitude at 2,000 ft, the commander cancelled the MAYDAY, reset the transponder to their previously allocated code and decided to continue the flight to Brussels Airport, where the aircraft landed without further incident.

Engineering examination

Following the incident the aircraft was inspected by the operator's maintenance personnel. They determined that the inflatable seal on the aft baggage compartment cargo door had split, allowing the aft baggage bay to depressurise. This had caused the 'blow-out' panels on the bulkhead dividing the aft baggage compartment from the passenger cabin to open, causing the 'pop' noise, and the open 'blow-out' panels then allowed the passenger cabin to depressurise.

Analysis

The cause of the cabin depressurisation was traced to a split in the inflatable seal on the aft baggage compartment door. After descending to FL80, the rate of cabin air leakage past the door seal was low enough to allow the cabin pressurisation system to stabilise the cabin altitude at 2,000 ft. The operator is working with the aircraft's manufacturer to identify a more reliable door seal material.