BAe ATP, G-MANE

AAIB Bulletin No: 7/2003	Ref: EW/G2003/02/08	Category: 1.1
INCIDENT		
Aircraft Type and Registration:	BAe ATP, G-MANE	
No & Type of Engines:	2 Pratt & Whitney (Canada) PW126 turboprop engines	
Year of Manufacture:	1992	
Date & Time (UTC):	10 February 2003 at 1310 hrs	
Location:	15 miles SW of Edinburgh	
Type of Flight:	Public Transport (Passenger)	
Persons on Board:	Crew - 4	Passengers - 22
Injuries:	Crew - None	Passengers - None
Nature of Damage:	None	
Commander's Licence:	Airline Transport Pilot's Licence	
Commander's Age:	49 years	
Commander's Flying Experience:	14,000 hours (of which 4,000 were on type)	Last 90 days - 88 hours Last 28 days - 27 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot and subsequent enquiries by the AAIB	

History of the flight

Shortly after takeoff from Edinburgh when approaching FL80 in the climb, the amber 'SMOKE' caption illuminated on the Central Warning Panel (CWP) in the cockpit, indicating that smoke had been detected in either the toilet compartment or the baggage hold. There was an accompanying strong smell of fumes in the cockpit, prompting the flight crew to don their oxygen masks. The climb was stopped and a diversion to Glasgow was initiated. The captain briefed the Senior Cabin Crew Member (SCCM) and asked her to check the toilet compartment. The flight crew then proceeded to action the 'Fire or Smoke within Fuselage' emergency checklist. The CWP 'SMOKE' caption extinguished after approximately two minutes. On returning to the cockpit, the SCCM reported that there was a light mist in the toilet compartment and that the first four overhead lockers felt warmer to the touch than the others. There were no other signs of smoke or fire.

A priority approach was flown for a landing at Glasgow. The cabin crew and passengers were briefed and secured for a normal landing. The landing was completed uneventfully and the aircraft was stopped when clear of the runway whilst the crew established contact with the airport fire service. In the absence of any immediate risk, the decision was taken to taxi the aircraft onto stand, where the passengers were disembarked normally with the fire service in attendance.

Engineering investigation

Troubleshooting efforts following the incident included operationally testing the cockpit and cabin lighting, electronic flight instrument and weather radar displays. Checks of the flight deck, avionic bay and cabin service panels were carried out for evidence of burnt wiring, but none was found. Operational tests of the toilet and baggage bay smoke detectors were also completed satisfactorily. Engine ground runs were performed and both bleed air packs were tested over their full range, with all functions and indications normal. A review of the aircraft technical log did not highlight any evidence of excessive engine oil consumption or overfilling of the engines with oil. As no defect could be identified despite these comprehensive checks, the aircraft was considered to be fit for further service.

On 11 February after completion of a further four sectors since the incident, the flight crew reported an indefinable musty smell in the cockpit and cabin, similar to the smell produced by curing adhesive. In their assessment it was neither associated with smoke nor electrical burning. Investigation revealed that the smell was associated with the No 2 (right hand) bleed air pack and that the smell disappeared when the No 1 pack was used in isolation. On the ground, Maintenance Manual procedure 71-05-04 for 'Smoke Odour/Oil Mist in Cabin' was carried out, enabling the fault to be traced to an accumulation of oil in the No 2 engine LP compressor inlet. The area was cleaned and engine ground runs performed, whereupon the smell of oil could be detected in the cabin and the oil leak in the LP compressor inlet recurred. The decision was taken to ferry the aircraft to the airline's maintenance base with the No 2 engine bleed switched off, where the No 2 engine could be changed. The No 2 engine, serial number 124236, was removed and returned to the manufacturer for investigation.

The reason for the first four overhead lockers being warmer to the touch than the others could not be established, but does not appear to have been associated with the cause of the incident.