Smoke emergencies, ATR72-202, G-BVTJ

Micro-summary: **On two occasions, this ATR72 experienced a smoke emergency.**

Event Date: **1997-02-16 at 1350 UTC**

Investigative Body: **Aircraft Accident Investigation Board (AAIB), United Kingdom**

Investigative Body's Web Site: **http://www.aaib.dft.gov/uk/**

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ATR72-202, G-BVTJ

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Aircraft Type and Registration:	ATR72-202, G-BVTJ
No & Type of Engines:	2 Pratt & Whitney PW-124 turboprop engines
Year of Manufacture:	1993
Date & Time (UTC):	16 February 1997 at 1350 hrs
Location:	In cruise from Dublin, Eire
Type of Flight:	Public Transport
Persons on Board:	Crew - 4 - Passengers - 66
Injuries:	Crew - None - Passengers - None
Nature of Damage:	Component damage, air conditioning system
Commander's Licence:	Airline Transport Pilot's Licence
Commander's Age:	61 years
Commander's Flying Experience:	21,678 hours (of which 1,758 were on type) Last 90 days - 131 hours Last 28 days - 36 hours
Information Source:	Aircraft Accident Report Form submitted by the Commander

During a previous flight on 19 December 1996 and whilst in the cruise, acrid smoke and fumes affected the flight deck causing the crew to transmit a 'Pan' call before making a precautionary descent and diversion into Bristol Airport. The smoke drill was actioned by the crew and, during the descent, the fumes dissipated and the aircraft landed safely. Subsequent engineering inspection of the air conditioning system failed to find any evidence of oil ingress, burning or smoke damage. Since level 2 anti-icing had been in use at the time of the incident, the engines were ground run at 80% torque for some 2 minutes. However, no signs of overheating or smoke were observed and the aircraft was therefore released back to service, with no attendant recurrence of the fault.

However, on 16 February 1997 the aircraft was returning from Dublin to London Gatwick when traces of smoke, accompanied by pungent fumes, again appeared on the flight deck. At about this time,the cabin staff reported that there was smoke in the centre area of the cabin, around seat row 6, and that the cabin walls in this area were 'hot'. The commander declared an emergency and diverted into Liverpool. After subsequent inspection the aircraft was cleared for a flight to Gatwick Airport where more detailed engineering checks could be carried out. Following arrival at Gatwick

a problem was identified with the No 1 air conditioning recirculation fan/control circuit where a relay, positioned beneath row 6 in the passenger cabin, was found to show evidence of electrical arcing and overheating. Overheating damage was also evident on the cabin air recirculation fan motor. This unit was removed from the aircraft and sent to the manufacturer for inspection and rectification, and a report has been requested by the AAIB. Any significant findings will be reported in a future issue of the AAIB Bulletin.