
Instrument failure and smoke, Airbus A319-131, G-EUPF

Micro-summary: Following takeoff, instrument failures and fumes on this A319 prompt a return to base.

Event Date: 2005-10-30 at 1320

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

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

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INCIDENT

Aircraft Type and Registration:	Airbus A319-131, G-EUPF
No & Type of Engines:	2 IAE V2522-A5 turbofan engines
Year of Manufacture:	2000
Date & Time (UTC):	30 October 2005 at 1320 hrs
Location:	Aberdeen, Scotland
Type of Flight:	Public Transport (Passenger)
Persons on Board:	Crew - 6 Passengers - 132
Injuries:	Crew - None Passengers - None
Nature of Damage:	Worn avionics vent fan bearing
Commander's Licence:	Airline Transport Pilot's Licence
Commander's Age:	53 years
Commander's Flying Experience:	11,000 hours (of which 2,000 were on type) Last 90 days - 105 hours Last 28 days - 35 hours
Information Source:	Aircraft Accident Report Form submitted by the commander

History of flight

Following takeoff from Aberdeen, failure messages related to the Instrument Landing System (ILS) and Ground Proximity Warning System (GPWS) illuminated and shortly after this the cabin crew became aware of a strange smell in the forward cabin area. The flight crew were informed of the smell and they asked the cabin crew to monitor the situation. The strange smell then became evident on the flight deck and there was an increase in cabin temperature. Initially it was thought that the smell emanated from the galley ovens but, as it was early in the flight, these had not yet been switched on.

The flight crew donned their oxygen masks, declared an emergency and then carried out an uneventful return

to Aberdeen. After landing the smell had dissipated and, following a thorough inspection by the attending fire service, the aircraft was taxied onto the stand for a normal disembarkation of the passengers.

Previous flight

On the previous flight, ILS system 1 and the pressurisation system were not working correctly and after landing the 'AVIONICS VENT SYS FAULT' message appeared on the engine and warning display.

Engineering investigation

After the event, a thorough inspection of the engines, auxiliary power unit and air conditioning system did not

reveal any problem that could have caused the strange smell. However, due to the ILS fault, GPWS fault and the earlier 'AVIONICS VENT SYS FAULT' message, it was suspected that the source of the problem lay with the avionics cooling system, so the avionics vent fan and filter were replaced. There was no repeat of the strange smell on subsequent flight sectors. The avionics vent fan was sent for repair, where examination revealed noisy and worn bearings.

There have been previous failures of the avionics vent fan on A319 and A320 aircraft and these have generally been related to the bearings. The symptoms of the

bearing starting to fail are a low rumbling noise followed by the smell of burning in the cabin. The bearing failure can then reduce the amount of avionics cooling and produce warning messages such as 'AVIONICS VENT SYS FAULT'.

The avionics vent fan manufacturer has issued a Vendor Service Bulletin 3454-21-108, which replaces the current bearings, containing steel ball bearings, with an improved type utilising ceramic ball bearings. Consequently, the aircraft manufacturer has issued a service information letter (SIL 21-141) which notifies aircraft operators of the improvement.