Farnborough House
Berkshire Copse Road
Aldershot, Hants GU11 2HH

Tel: 01252 510300
Telex: 858119 ACCINV G
Fax: 01252 376999

Air Accidents Investigation Branch

Department for Transport

AAIB Bulletin S2/2005
SPECIAL

INCIDENT

Aircraft Type and Registration:	Airbus A319-131, G-EUOB
No & Type of Engines:	2 V2522-A5 turbofan engines
Category:	1.1
Year of Manufacture:	2001
Date & Time (UTC):	22 October 2005 at 1926 hrs
Location:	Near Clacton, Essex
Type of Flight:	Public Transport (Passenger)
Persons on Board:	Crew - 6 Passengers - 76
Injuries:	Crew - None Passengers - None
Nature of Damage:	None
Commander's Licence:	Airline Transport Pilot's Licence
Commander's Age:	53 years
Commander's Flying Experience:	11,800 hours (of which 4,000 were on type) Last 90 days - 180 hours Last 28 days - 70 hours
Information Source:	AAIB Field Investigation

History of flight

The aircraft departed London Heathrow at 1918 hrs on a scheduled flight to Budapest. At 1926 hrs, as it approached FL200 in clear weather conditions, the crew reported that there was an audible 'CLUNK' and the flight deck became dark with a number of electrical systems and flight information displays were lost. The crew reported the following symptoms:

- *Loss of the Captain's and the First Officer's Primary Flight Displays, Navigation Displays and the Upper ECAM*[1] *display, leaving only the lower ECAM display available*
- *Loss of the Autopilot, with an associated aural Master Warning tone*
- *Loss of Autothrust, with an associated aural Master Caution tone*
- *Loss of intercom*
- *Loss of most flight deck lighting including all integral lights on glareshield, overhead and pedestal panels.*

The commander, who was the Pilot Flying (PF), took manual control and maintained the aircraft attitude by reference to the external night horizon, the standby horizon and those other standby instruments that he was able to see. (It is probable that the electrically driven standby horizon was not powered or lighted, however according to the flight manual it does remain useable for 5 minutes.) The commander transmitted a 'MAYDAY' call on VHF No 1, however this was not received by Air Traffic Control because the radio was no longer powered. The First Officer carried out the ECAM actions. The primary flight instruments and most other systems were restored after selection of the 'AC ESS FEED' push button switch, in accordance with the ECAM procedure. The aircraft was in the degraded condition for a period of about two minutes.

Communication with ATC was regained and the crew requested, and were allocated, a holding pattern while they reviewed the status of the aircraft. The crew reported that, following completion of the ECAM actions, a number of systems remained inoperative including the No 1 Transformer Rectifier unit and the Captain's windshield and window heat. The aircraft was in the hold for some 40 minutes following which the flight was continued to Budapest where the First Officer performed the landing. During the landing roll the flight crew noted a No 1 thrust reverser amber caution.

After landing all the remaining affected systems were successfully reset by a maintenance engineer and the aircraft continued in operation for six days with no further electrical failures reported.

Subsequent action

The circumstances of this incident came to the attention of the AAIB through the UK Mandatory Occurrence Reporting (MOR) Scheme. The aircraft was then taken out of service for investigation under AAIB supervision. Troubleshooting actions included integrity checks of the electrical power system and inspection of the Integrated Drive Generator feeder connectors located in the engine pylons. These tests did not reveal any anomalies.

The No 1 Generator Control Unit and a number of other components were removed for investigation, including all three Display Management Computers, the No 2 System Data Acquisition Concentrator unit and the No 2 Flight Warning Computer. The aircraft was returned to service and has continued in operation without any further reports of similar malfunctions.

Footnote

[1] Electronic Centralized Aircraft Monitor

Summary

The flight crew lost all of the primary flight instrument displays and used both the visual and standby horizons for attitude reference. The standby horizon, which was unpowered, would only have been available for 5 minutes. The AAIB is investigating this incident with the cooperation of the aircraft manufacturer and the operator. A further report will be published when the investigation is complete.

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