

EMB-110 BANDEIRANTE, G-OEAA, 24 May 1995

AAIB Bulletin No: 7/96 Ref: EW/C95/5/4 Category: 1.1

AIRCRAFT ACCIDENT REPORT No 2/96

This report was published on 27 June 1996 and is available from HMSO Bookshops and Accredited agents

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REPORT ON THE ACCIDENT TO EMB-110 BANDEIRANTE, G-OEAA, AT DUNKESWICK MOOR, NEAR LEEDS BRADFORD AIRPORT ON 24 MAY 1995

Shortly after departure from Leeds Bradford Airport on a scheduled flight to Aberdeen, the crew of the aircraft reported a 'problem with the artificial horizon(s)' and arranged to return to the airport. The weather was poor with a low cloud base, precipitation and recent thunderstorm activity. Air Traffic Control (ATC) observed the aircraft on their radar as it climbed to an altitude of 3,600 feet, turning predominantly to the left. Despite this the crew twice sought confirmation from ATC that the aircraft was 'going straight'. Shortly after reaching 3,600 feet the aircraft entered a steeply descending spiral dive. Due to an airspeed in excess of the design maximum, the aircraft began to break-up, with the wing failing outboard of the right hand engine, tailplane failure, disruption of the fuselage and the early stages of a fuel fed fire. It crashed onto open ground and all twelve occupants were killed.

The report identifies following causal factors :

- i) One or, possibly, both of the aircraft's artificial horizons malfunctioned and, in the absence of a standby horizon, for which there was no airworthiness requirement, there was no single instrument available for assured attitude reference or simple means of determining which flight instruments had failed.
- ii) The commander, who was probably the handling pilot, was initially unable to maintain control of the desired aircraft heading without his artificial horizon, and eventually lost control of the aircraft whilst flying in IMC by reference to other flight instruments.
- iii) The aircraft went out of control whilst flying in turbulent instrument meteorological conditions and entered a spiral dive from which the pilot, who most likely had become spatially disoriented, was unable to recover.

Under Regulations existing at the time the aircraft first received its Certificate of Airworthiness, it was not required to be fitted with flight recorders. The lack of any on board recorded data, in particular communication between the pilots, prevented any more conclusive findings than those contained in the report.

Four Safety recommendations have been made, three to the CAA and one to the JAA. The first requires improved overhaul procedures for the model of artificial horizons which were installed in the accident aircraft. The second requires aircraft in the Public Transport category, fitted with more than nine seats, to be fitted with a third (stand-by) artificial horizon. The fourth requires operators to

verify their minimum equipment lists with the masterlist which is maintained by the CAA. The fourth recommendation is to consider a requirement for a Cockpit Voice Recorder to be carried by aircraft in the Public Transport category with two or more engines and approved to carry more than nine passengers. The requirement for a CVR in this category is included in draft Joint Airworthiness Requirements but only for aircraft which first obtained a C of A after 1 January 1990. The JAA are invited to consider all aircraft in this category irrespective of the date of initial C of A.