

AAIB Bulletin No: 11/95 **Ref: EW/C95/6/3** **Category: 1.1**

INCIDENT

Aircraft Type and Registration: Boeing 767-323ER, N366AA

No & Type of Engines: 2 General Electric CF6-80C2 turbofan engines

Year of Manufacture: Not known

Date & Time (UTC): 30 June 1995 at 0720 hrs

Location: Over Atlantic Ocean, 49°N 08°W

Type of Flight: Public Transport

Persons on Board: Crew - 14 Passengers - 201

Injuries: Crew - None Passengers - None

Nature of Damage: Static Inverter severely overheated

Commander's Licence: Airline Transport Pilot's Licence Rating (USA)

Commander's Age: Not relevant

Commander's Flying Experience: Not relevant

Information Source: AAIB Field Investigation

The aircraft was operating a scheduled passenger service flight from Chicago O'Hare Airport (USA) to Milan Malpensa Airport (Italy). After passing the TAKAS reporting point (some 120 nm south west of Lands End) at FL370, fumes were noted on the flight deck followed by smoke coming from the glareshield area. The smoke continued to intensify in the flight deck, although the flight instruments were not obscured. The three flight deck crew donned their oxygen masks and the Boeing Quick Reference Handbook checklist for 'Electrical Fire/Smoke - Unknown Source' was actioned. Air Traffic Control was notified of the emergency, and the commander decided to divert to London Heathrow Airport. The aircraft was cleared direct to Land's End and descended to FL250 initially. During the latter stages of checklist action, the smoke began to clear. The flight proceeded without further incident as the smoke cleared completely. The aircraft landed from a straight in approach to Runway 09L at Heathrow at 0811 hrs. Fire Service vehicles met the aircraft on landing and confirmed that no signs of external fire were present. The aircraft was taxied to the parking stand where the passengers were deplaned normally. The aircraft's EICAS displayed the 'STBY INV' message.

Examination of the aircraft showed that a Static Inverter, Boeing part number S282T004-8 located within the main electrical/electronic equipment centre below the flight deck had suffered a severe overheat. The unit was removed and replaced with a serviceable item and the aircraft's electrical system tested and found to function correctly. The unit was returned to the aircraft manufacturer who, in conjunction with the unit's manufacturer carried out a detailed examination. This examination revealed that an electrical connection securing screw had, over a period of time, become loose which produced a high resistance at the connection causing localised heating at one end of a capacitor. Over a period of time the capacitor degraded until it eventually failed which then caused a cascade of failures within the unit resulting in the severe overheat. The unit manufacturer, aware of the seriousness of the event is proposing to issue a Service Bulletin (SB) which will introduce a locking device on the electrical connection securing screw to prevent a recurrence. This Static Inverter is fitted to a range of aircraft and this event is the first that the aircraft and unit manufacturer are aware of and consequently, at this time, the SB will be applicable to new units and those that are returned to a workshop facility.