

Boeing 737-300E, G-IGOH

AAIB Bulletin No: 3/99 Ref: EW/G99/1/15 **Category: 1.1**

Aircraft Type and Registration: Boeing 737-300E, G-IGOH

No & Type of Engines: 2 CFM-56 turbofan engines

Year of Manufacture: 1988

Date & Time (UTC): 24 January 1999 at 2032 hrs

Location: In the cruise near Talla reporting point, Scotland

Type of Flight: Public Transport

Persons on Board: Crew - 5 - Passengers - 45

Injuries: Crew - Nil - Passengers - Nil

Nature of Damage: Damage to coaming floodlight wiring

Commander's Licence: Airline Transport Pilot's Licence

Commander's Age: N/K

Commander's Flying Experience: N/K

Last 90 days - N/K

Last 28 days - N/K

Information Source: AAIB inquiries and information supplied by the maintenance organisation

The aircraft was in the cruise at Flight Level 260 on a flight from London Stansted to Edinburgh, and was experiencing moderate turbulence. Just prior to the descent, the flight crew became aware of a continuous noise which they later described as a 'ticking' or 'clicking' sound and subsequently were unable to select a lower altitude using the selector on the Mode Control Panel (MCP). The autopilot was disengaged and the descent initiated manually. However, during the descent severe arcing was seen on the front windscreens followed by loss of MCP heading and indicated airspeed. At this point the crew elected to make a high speed descent to below cloud level and continued the approach in order to land as soon as possible at Edinburgh. The autothrottle and flight director were disengaged and a PAN declared to ATC. Following a manually flown approach using raw ILS data the aircraft landed safely.

Initial examination of the MCP, associated cables and connectors and other cables in the general area, failed to find any obvious defects. However, after the instrument panel coaming had been removed, a power cable integral with the MCP floodlight panel was discovered 'chafed'-through to the conductor in such a position to suggest that it had been in contact with the MCP. This damage was within approximately 0.5 inch of an in-line connector used to facilitate connection of the MCP floodlighting panel wires to the aircraft wiring. It was commented upon by the maintenance organisation that the insulation of the wires integral with the floodlight panel seemed to be less robust than normal and of a type not seen elsewhere on the aircraft. Other wiring in this area and along the front of the windscreen was also examined, but no further damage was found. Although a small area of polishing was present on the MCP in a position where the wire was thought to have made contact, there was no reported evidence of arcing damage at this location. Following replacement of the damaged section of wire and the in-line connector, the MCP was re-fitted and found to function normally. However, in order to be certain that no damage had been caused to this unit, it was replaced with another MCP which had been removed two days previously as a result of defects with the commander's course selection and flight director. With this in mind, the aircraft was released back to service with a CAT 1 only limitation. Should any pre-existing defects be revealed within the MCP after bench testing, they will be reported upon in a future AAIB Bulletin.

The MCP floodlight is mounted on the aft edge of the coaming, and is supplied by two integral wires normally routed from the left side of the aircraft as shown in Figure 1. The in-line connectors and any excess wire lengths are normally stowed under the coaming in such a manner as to be clear of the MCP and coaming support structure. In the case of G-IGOH, these wires had been pulled through and were resting on top of the MCP. A check of other aircraft revealed signs of insulation abrasion on at least one wire where it had also been in contact with the MCP. The maintenance organisation has advised the manufacturer of this event, and has instigated a fleet wide check of all similar aircraft for which they are responsible to determine the extent of this problem.