

AIRCRAFT INCIDENT REPORT

(cf. Aircraft Accident Investigation Act, No. 59/1996)

M-03303/AIG-20

TF-FIK
Boeing 757
Near Faro, Portugal
8 July 2003



This investigation was carried out in accordance with Annex 13 (Aircraft Accident and Incident investigation) to the Convention on International Civil Aviation. The aim of aircraft accident investigation is solely to identify mistakes and/or deficiencies capable of undermining flight safety, whether contributing factors or not to the accident in question, and to prevent further occurrences of similar cause(s). It is not up to the investigation authority to determine or divide blame or responsibility. This report shall not be used for purposes other than preventive ones.

1. FACTUAL INFORMATION

Aircraft

- **type and registration:** Boeing 757-28A, TF-FIK
- **year of manufacture:** 1996
- **serial number:** 26276
- **engines:** Two 178,4 kN Rolls-Royce RB211-535E4 turbofans

Date: 8 July 2003, at 13:05 hrs UTC

Location: Near Faro, Portugal

Type of flight: Public Transport (Passenger)

Persons on board: Crew - 8 Passengers - 199

Injuries: None

Nature of damage: Smoke in passenger cabin

Commander

- **age and sex:** 50 year old male
- **flight experience:** 12,600 total hrs

The aircraft departed Faro, Portugal at 12:51 hrs for a flight to Keflavik, Iceland. Shortly after climbing through 5,000 feet the flight crew received a call from a cabin attendant regarding smoke and burning smell in the aft cabin. The commander asked the first officer to go to the aft cabin to check and when he returned a few moments later he confirmed that there was smoke and burning smell in the aft cabin. The commander immediately requested clearance back to Faro due to smoke in cabin. Clearance was received from ATC and radar vectors were provided for direct in approach. The crew prepared the aircraft for landing, informed the passengers on the situation and landed the aircraft in Faro at 13:15 hrs.

During inspection of the aircraft at Faro it was revealed that the smoke came from right door number 3 duct heater (P/N 116817-3) that had burned over (duct heater is an electrical heater located in the air conditioning duct below the floor at each door in the Boeing 757 aircraft). The heater was deactivated and the aircraft was dispatched for a ferry flight to Keflavik in accordance with the aircraft Minimum Equipment List (MEL).

A thermostat and a fuse control are built into the duct heater unit and designed to operate if the heater's air temperature exceeds 250 F or if the surface temperature exceeds 300 F. Boeing Aircraft Company and the manufacturer of the heater (Electrofilm Mfg Co) inspected the failed part to determine the specific fault and to understand if the protective features of the unit were functioning. (See a drawing in Appendix A of the duct heater and its location in the aircraft).

Electrofilm's conclusion is that a metallic object appears to have impacted the intake end of the duct heater tube with sufficient force to bend the tube edges and pierce the power lead insulation causing an arc short. This condition circumvented both the thermostat and fuse controls. The duct heater continued to operate in this condition until shut down. The burn pattern also indicates, according to Electrofilm, that the incident occurred in a low airflow condition.

Due to the location of the duct heater in the air conditioning duct below the floor of the aircraft it is unlikely that the damage to the heater tube could have occurred during normal operation of the aircraft.

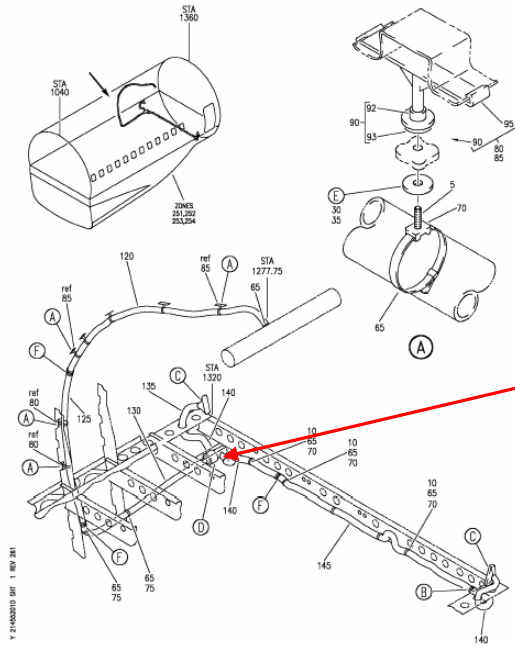
2. SAFETY RECOMMENDATIONS

None

Reykjavik, 16 April 2004

Aircraft Accident Investigation Board, Iceland

Appendix A - Duct heater and it's location in the aircraft



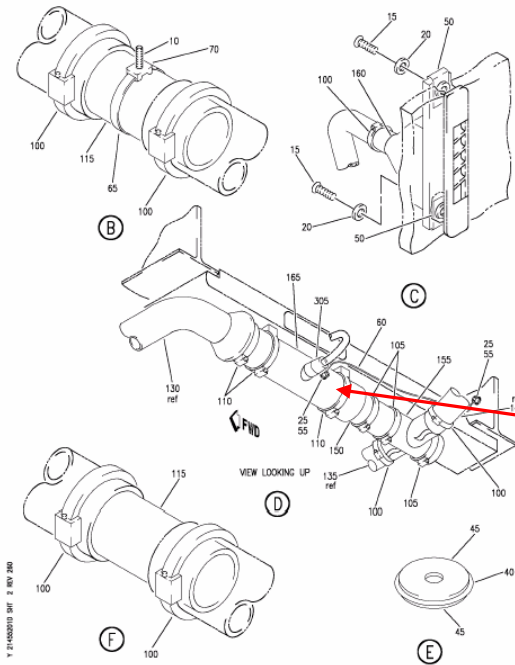
The duct heater is located in the air conditioning duct below the floor of the Boeing 757 aircraft

HEATER SYSTEM INSTL-DOOR 3 AREA
FIGURE 10 (SHEET 1)

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Duct heater and tube

HEATER SYSTEM INSTL-DOOR 3 AREA
FIGURE 10 (SHEET 2)

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