

INCIDENT

Aircraft Type and Registration: McDonnell Douglas DC9-32, G-PKBM

No & Type of Engines: 2 Pratt & Whitney JT8-9 turbofan engines

Year of Manufacture: 1974

Date & Time (UTC): 11 March 1993 at 0908 hrs

Location: London Heathrow Airport

Type of Flight: Public Transport

Persons on Board: Crew - 6 Passengers - 95

Injuries: Crew - None Passengers - None

Nature of Damage: Loss of tyre tread on No 3 mainwheel and damage to right-hand trailing edge flap

Commander's Licence: Air Transport Pilot's Licence

Commander's Age: 40 years

Commander's Flying Experience: 7,900 hours (of which 3,300 were on type)
Last 90 days - 125 hours
Last 28 days - 25 hours

Information Source: Reports submitted by the airline and tyre manufacturer

The aircraft was using Runway 27L for a passenger flight to Dublin. At about 130 kt, close to V_1 , the aircraft began to vibrate. The take off was continued and the landing gear was initially left in the 'DOWN' position. The vibration continued so the crew retracted the landing gear. About three minutes afterwards, rubber debris was reported on Runway 27L and LATCC informed the crew of G-PKBM.

Approximately 45 minutes after take off, G-PKBM returned to London Heathrow Airport, where it performed a fly-past of the Control Tower to check for signs of damage on the aircraft. The crew was informed that the tyre on the No 3 mainwheel (right-hand, inboard) was defective and the cabin was prepared for an Emergency landing, with a Full Emergency declared for the airport emergency services. The aircraft landed safely, approximately one hour after take off and, after the aircraft had taxied to its stand, the passengers disembarked.

Examination of the aircraft showed that the tyre on the No 3 mainwheel had lost its tread across the full width of the tyre. A piece of the tread had struck the trailing-edge flap, causing a gash on the lower flap surface measuring approximately 6 inches by 8 inches.

The damaged tyre was later examined by the tyre manufacturer. It was found that a number of inner casing cords had been severed in the crown area of the tyre and the fracture had been in a distinctive 'X'-shaped pattern, indicative of the cords breaking under sudden and extreme local force. The damage extended through the plies to a split in the inner liner and the resulting rapid deflation had resulted in the tyre shedding its tread. The tyre manufacturer concluded that the damage had been caused by an impact between the tyre and a hard foreign object during the take-off roll.