Tire tread loss, damage, Boeing 737-436, G-DOCV

Micro-summary: **This Boeing 737-436 experienced a loss of tire tread, resulting in significant gear well damage.**

Event Date: **1996-06-10 at 1933 UTC**

Investigative Body: **Aircraft Accident Investigation Board (AAIB), United Kingdom**

Investigative Body's Web Site: **http://www.aaib.dft.gov/uk/**

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Boeing 737-436, G-DOCV

AAIB Bulletin No: 1/97 Ref: EW/G96/06/13 Category: 1.1

INCIDENT

Aircraft Type and Registration:	Boeing 737-436, G-DOCV
No & Type of Engines:	2 CFM56-3C1 turbofan engines
Year of Manufacture:	1992
Date & Time (UTC):	10 June 1996 at 1933 hrs
Location:	London Heathrow Airport
Type of Flight:	Public Transport
Persons on Board:	Crew - 7 - Passengers - 88
Injuries:	Crew - None - Passengers - None
Nature of Damage:	Damage to the main landing gear door, hydraulic pipes and electrical cables and to a wing flap and spoiler
Commander's Licence:	Airline Transport Pilot's Licence
Commander's Age:	46 years
Commander's Flying Experience:	13,690 hours (of which 8,800 were on type)
	Last 90 days - 94 hours
	Last 28 days - 2 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot and AAIB telephone inquiries

The aircraft was taking-off on Runway 27R at Heathrow Airport for a scheduled flight to Inverness. The wind was from 270°M at 5 kt, ambient temperature was 20°C and the runway surface was dry. The crew felt a slight shimmy on take-off rotation at 135 kt and ATC subsequently advised that tyre and metallic debris had been found on the runway.

The flight diverted to Glasgow Airport. On arrival a low pass was made in order for ground personnel to view the underside of the aircraft; this failed to positively identify the problem. The aircraft then made an uneventful landing at Glasgow. It was found that the right hand tyre of the right main landing gear was severely distressed, with the entire tread missing, together with substantial parts of the carcass outer plies. The landing gear door had been severely damaged and damage had also resulted to hydraulic pipelines and to an electrical cable conduit associated with the

right landing gear anti-skid system. The wing flap trailing edge and the under surface of the No 5 spoiler panel were also damaged.

Information from the operator suggested that the tyre tread had partially separated following damage inflicted by contact with a foreign object. A piece of metallic debris was found in the same area as the tyre debris; it was identified as a blocker door from a Rolls Royce RB211-524G or 524H engine but it was not possible to ascertain its origin. Examination of the tyre by the manufacturer found no signs of pre-failure defect and also indicated that the damage was most likely to have been caused by impact with a sharp object when the tyre had been rotating at high speed. It appeared that the flailing tread had caused the damage to the landing gear door, the hydraulic pipes and the electrical cables and that the damaged door had then detached under aerodynamic loading and struck the flap and the spoiler.