
Directional control problems, Boeing 737-204 Advanced, EI-CJH

Micro-summary: During a no-spoiler landing, two tires burst, creating directional control problems.

Event Date: 2001-08-15 at 0620 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 737-204 Advanced, EI-CJH

AAIB Bulletin No: 5/2003	Ref: EW/C2001/8/3	Category: 1.1
Aircraft Type and Registration:	Boeing 737-204 Advanced, EI-CJH	
No & Type of Engines:	2 JT8D-15 Pratt & Whitney turbofan engines	
Year of Manufacture:	1980	
Date & Time (UTC):	15 August 2001 at 0620 hrs	
Location:	Manchester International Airport	
Type of Flight:	Public Transport	
Persons on Board:	Crew - 5	Passengers - 33
Injuries:	Crew - None	Passengers - None
Nature of Damage:	Both left main landing gear tyres burst	
Commander's Licence:	Airline Transport Pilot's Licence	
Commander's Age:	49 years	
Commander's Flying Experience:	9,800 hours (6,800 hours on type) Last 90 days - 190 hours Last 28 days - 50 hours	
Information Source:	AAIB Field Investigation	

History of the Flight

The aircraft was being flown on a scheduled passenger service from Dublin, Ireland, to Manchester, England, with a training captain in the right seat and a command trainee pilot in the left seat. The training captain was the handling pilot. The aircraft had despatched from Dublin with the outboard anti-skid inoperative in accordance with the Minimum Equipment List (MEL).

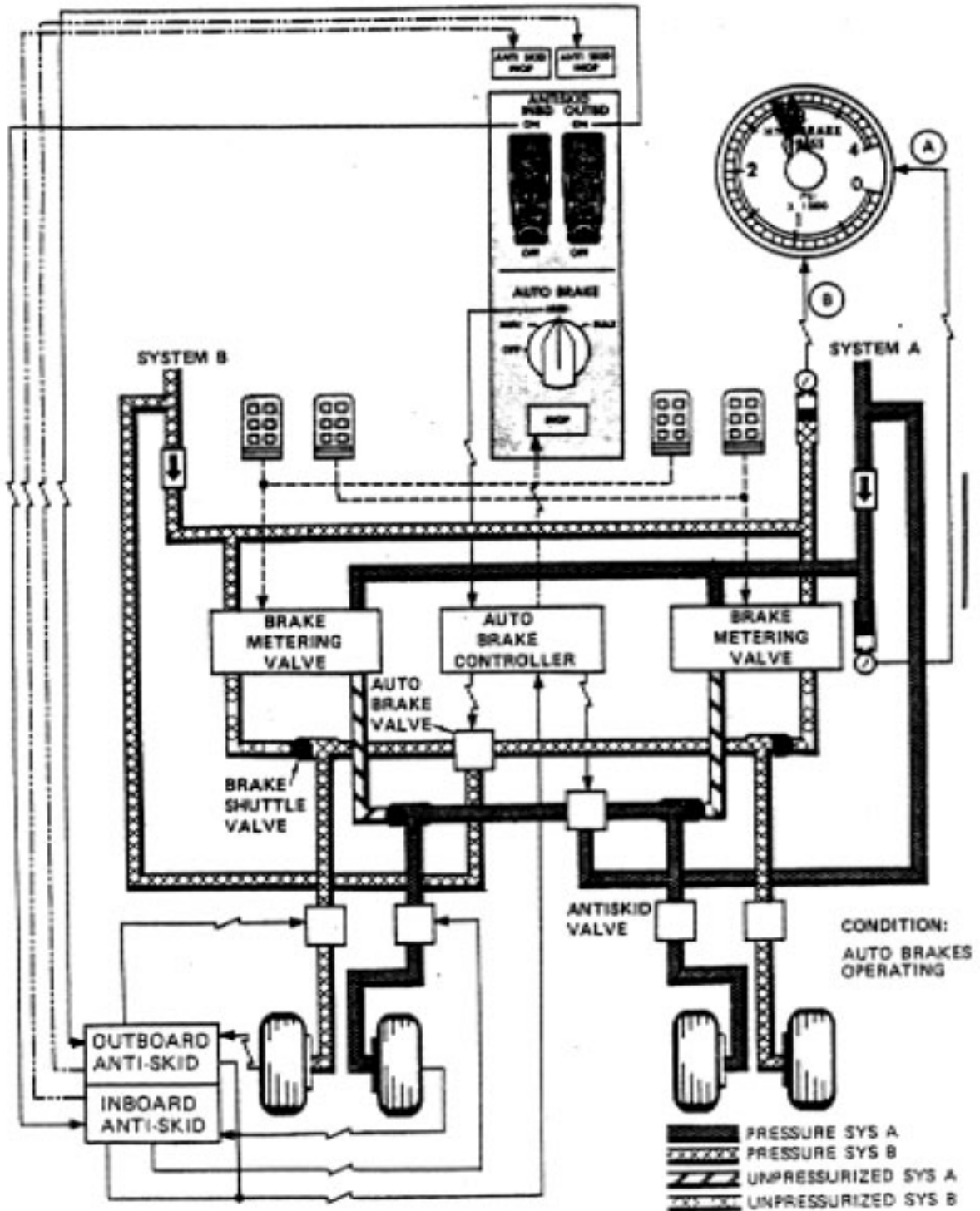
The weather for the arrival in Manchester was fine with a wind of 060°/5 kt, good visibility and no significant cloud or weather. At about seven miles from touchdown on Runway 24R the crew selected flap 15° and armed the speedbrake for automatic spoiler deployment on the ground. Immediately the speedbrakes were armed the SPEEDBRAKE DO NOT ARM warning light illuminated. The crew therefore replaced the speedbrake lever in the DOWN position and briefed for manual spoiler deployment after landing.

The touchdown was smooth and the handling pilot lowered the nosewheel, selected reverse thrust, placed the speedbrake lever in the UP position and applied gentle braking. Immediately after the speedbrakes deployed the left main undercarriage inboard tyre burst and the crew felt a slight swing to the left. As the aircraft approached the runway turn off the outboard tyre on the left main undercarriage also burst and the aircraft slewed more dramatically to the left. The handling pilot passed control to the left seat pilot, who has control of the Nose Gear Steering Wheel, and he attempted to turn the aircraft to the right on to runway turn off "BD". With difficulty the trainee captain turned the aircraft to exit the runway and brought the aircraft to a halt on "BD". After being informed by ATC that there were no signs of fire, the crew decided against carrying out an emergency passenger evacuation and shut the aircraft down on the taxiway.

MEL Despatch Procedures Anti-Skid Inoperative

The anti-skid system in the Boeing 737-200 series, Figure 1, is controlled by two control switches located on the pilots' forward instrument panel. One switch controls anti-skid to both inboard mainwheels whilst the other controls anti-skid to both outboard mainwheels. The MEL permits despatch with the entire anti-skid system inoperative provided operations are conducted in compliance with the Aircraft Flight Manual (AFM).

Figure 1



BRAKE SYSTEM SCHEMATIC

Aircraft Examination

Following the incident, the operating company carried out comprehensive checks on the aircraft, including those for Brake Seizure, Hard Landing or High Drag/Sideload, High Energy Stop and Tread Loss/Tyre Burst. Before the aircraft was returned to service, the No 1 and No 2 wheels and brake units, the left brake metering valve and the left inboard anti-skid control valve, were replaced, and a full check of the anti-skid and automatic brake system carried out.

The brake metering valve was returned to the manufacturer for testing, but no significant faults were found. The anti-skid control valve was also returned to its manufacturer. The strip report on this unit indicated that it was defective and that this could have caused the left inboard wheel to lock. The aircraft manufacturer also indicated that a fault in the left inboard anti-skid circuit could have prevented the hydraulic pressure to the left inboard brake from being released when a skid was detected. It was considered that the left outboard tyre had burst as a result of supporting double its normal load, after the inner tyre had failed, whilst the outboard anti-skid system was inoperative.