

Cessna Citation 550, HB-VMX

AAIB Bulletin No:
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Category: 1.1

Aircraft Type and Registration: Cessna Citation 550, HB-VMX

No & Type of Engines: 2 Pratt & Whitney Canada PW530A turbofan engines

Year of Manufacture: 2000

Date & Time (UTC): 11 June 2001 at 1503 hrs

Location: Runway 20, Oxford Airport

Type of Flight: Public Transport (Passenger)

Persons on Board: Crew - 2 - Passengers - 3

Injuries: Crew - None - Passengers - None

Nature of Damage: Damage to nose landing gear and forward fuselage

Commander's Licence: Airline Transport Pilots Licence

Commander's Age: 44 years

Commander's Flying Experience: 11,645 hours (of which 2,010 were on type)

Last 90 days - 90 hours

Last 28 days - 28 hours

Information Source: Aircraft Accident Report Form submitted by the pilot and AAIB inquiries

History of the flight

The commander reported that following a flight from Zurich, the 'before landing' checks had been carried out and a standard visual approach had been made to runway 20 at Oxford Airport, followed by a short field landing. The aircraft had touched down normally and the brakes had been applied, followed by thrust reverser deployment and speed brake extension. However, after a very

short time the landing gear warning horn had sounded, the landing gear warning light had illuminated and the nose landing gear green light had extinguished. The nose landing gear had then collapsed and the aircraft had slid straight to a halt on the runway. The crew conducted an emergency shut down and the aircraft was evacuated without injuries. The Airport Fire Service attended the aircraft shortly afterwards, but there was no fire.

Damage was limited to the nose landing gear area of the nose. Photographs were provided to the AAIB by Oxford ATC. The aircraft was recovered from the runway and after subsequent local repairs it was flown back to its base in Switzerland.

Other similar occurrences and cause

From communications with Cessna it appears that there have been six such occurrences and these are the subject of an engineering investigation. The manufacturer has determined from tests that, in certain circumstances, a check (ie 'non-return') valve located in the landing gear hydraulic system return circuit can allow a pressure 'spike', produced in the return system, to be passed back through the valve to unlock the nose landing gear actuator downlock. Such pressure spikes can be caused by activation of either the speed brakes or thrust reversers on landing. The manufacturer thus believes that activating either the speed brakes or the thrust reversers simultaneously with nose wheel touchdown can cause the nose landing gear to retract.

Cessna safety action

As an interim measure, a revision to the Airplane Flight Manual has been issued by Cessna which cautions crews not to operate the speed brakes or thrust reversers until the nose wheel is in firm contact with the ground. For terminating modification action in the longer term, Cessna are working with the Federal Aviation Administration and a vendor to certify a new check valve.