ATSB Report: Main landing gear failure

Following landing at Melbourne Aerodrome from Adelaide on 20th October 2009, the crew of a Boeing 737-8FE aircraft, registration VH-VUI, reported that the aircraft was difficult to taxi, requiring more power and steering input than usual. A subsequent visual inspection revealed the number-4 wheel to be oriented at an angle with respect to the axle and, following disassembly, it was discovered that the inner wheel hub and bearing mount had broken away from the wheel assembly.

Examination of the wheel revealed, according to an Australian Transport Safety Bureau (ATSB) report of early January this year that the inner hub had failed from fatigue cracking that had initiated in the area adjacent to the bearing cup.

Fatigue cracking of the inboard bearing cup bore was an emerging issue for the 737 wheel type at the time of the failure. In May 2009, the wheel manufacturer issued a temporary revision to the Standard Practices Manual, with an updated inspection method for the susceptible area, and the aircraft manufacturer had issued a service letter in August 2009 with a periodic inspection requirement. The operator was in the process of reviewing and incorporating the changes into their own maintenance schedules at the time of the incident.

Immediately following the occurrence, the operator performed a fleet-wide examination, identifying those wheels potentially at risk of a similar failure. Subsequently, ten wheels were removed from service for immediate inspection. The operator also implemented an ultrasonic inspection programme for wheels with over 4,000 cycles at every tyre change.

The manufacturers of both the aircraft and the wheel released updated information to operators and maintainers in early 2010, which included a revision to the recommended inspection interval.