Operational event, Darwin Aerodrome
On 17th December 2008, a Boeing 737-4MO aircraft, registered PK-GZJ, made a significant diversion around weather at night while en route to Darwin, Northern Territory from Denpasar, Indonesia. The aircraft was cleared to conduct the runway 11 very high frequency omnidirectional radio range (VOR) approach via the initial approach fix NASUX. After the weather diversion, it was more convenient for the flight crew to make a pilot intercept of the 285 radial from the VOR but there was a period of misunderstanding as a result of a breakdown in the application of standard radiotelephony readbacks.

The flight crew left the previously-cleared altitude of 3,000 ft on descent although they had not been cleared to do so. When this became apparent, no updated clearance for a pilot intercept of the 285 radial was issued by the controller. The aircraft continued to descend on the basis of the runway 11 VOR descent profile, even though it was not conducting the runway 11 VOR approach.

The flight crew used the position calculated by the aircraft’s inertial reference system (IRS) to intercept the 285 radial, instead of using the signal from the VOR. The IRS position was not accurate enough for this, and the aircraft tracked to outside of the stipulated 5 degrees tolerance either side of the 285 radial. From then on, the aircraft was no longer ‘established’ on the 285 radial even though it was below the minimum sector altitude in cloud. When it broke through the cloud, the aircraft was clearly not aligned with the runway and a missed approach was carried out.

The investigation did not identify any organisational or systemic issues that might adversely affect the future safety of aviation operations. However, in response to the occurrence, the aircraft operator developed a corrective action plan that addressed a number of crew resource management and non-precision approach training aspects to the event.

Stickshaker activation, Alice Springs
On 18th September 2008, a Boeing 717-200 (717), registered VH-NXE, was being operated on a scheduled passenger flight from Cairns, Queensland to Alice Springs, Northern Territory. There were 70 passengers, four cabin crew and two flight crew on board. During the manually-flown visual approach by the pilot in command (PIC) to runway 30 at Alice Springs Aerodrome, the stickshaker activated. The
pilot flying lowered the nose while continuing the turn onto final. The stickshaker activated again before the flight crew stabilised the approach to within the operator’s criteria and landed without further incident.

The investigation found that the stickshaker activated because of a combination of bank angle, high nose-up pitch change rate and airspeed slightly below the approach speed. The aircraft was higher, faster and closer to the aerodrome than was suitable for the direct-to-final approach being attempted. The autothrottle was inadvertently not engaged by the flight crew after the automatic flight system was disconnected earlier in the approach, which contributed to the airspeed reduction. The PIC’s response to the stickshaker did not conform to the aircraft manufacturer’s procedures.

The investigation also found that the PIC’s judgement and monitoring ability were probably adversely affected by personal and work stress and associated fatigue, although the duty roster met the necessary standards. Pilots operating within flight and duty time limitations can still experience fatigue. Responsibility for adequate flight crew wellbeing before flight rests with both operators and their pilots.

The investigation did not identify any organisational or systemic issues that might adversely affect the future safety of aviation operations. However, in response to this occurrence, the operator proactively issued a number of notices to pilots to enhance pilot flight mode annunciator and auto mode awareness in the 717, to highlight the aircraft’s buffet protection system and to discuss recent stickshaker events, and to describe the stall recovery procedure in the 717. In addition, the operator amended a number of its command upgrade and recurrent simulator training requirements and worked with the aircraft manufacturer to reduce the incidence of stickshaker events across the operator’s 717 fleet.