Australian Government

Australian Transport Safety Bureau

Runway incursion – Mackay airport safety vehicle

Mackay Airport, Queensland, 29 June 2012

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Final

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Runway incursion – Mackay airport safety vehicle

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What happened

On 29 June 2012, at about 1754 Eastern Standard Time[1], the Airport Safety Officer (ASO) at Mackay Airport, Queensland contacted Mackay Tower air traffic control (ATC) to request a clearance for Car Two to enter the airport runway environment for a routine runway pavement and lighting inspection. Car Two was a Toyota Hilux airport safety vehicle with appropriate and serviceable hazard lighting. Mackay Tower cleared Car Two to enter runway 14 and runway 05. Car Two entered runway 14 at taxiway Alpha, and proceeded in a south-easterly direction to initially inspect the runway 32 T-VASIS[2] installation. The ASO planned to inspect the T-VASIS installation, then position at the threshold of runway 32 before proceeding in a north- westerly direction along the runway to continue the runway pavement and lighting inspection (Figure 1).

At about this time, the pilot of a Piper PA-31 Navajo aircraft, registered VH-LWW (LWW), was preparing to depart Mackay on a charter flight to Emerald, Queensland. The pilot, who was the only person on board, contacted Mackay Ground for a taxi clearance from the western general aviation (GA) apron, and requested runway 05 for departure. Mackay Ground cleared LWW to taxi for runway 05 via taxiway Hotel.

The pilot of LWW contacted Mackay Tower when approaching runway 05 and was cleared to backtrack and line up on runway 05. Immediately following the pilot's read back, Mackay Tower instructed the ASO in Car Two to hold short of runway 05. The ASO, who was in the process of inspecting the runway 32 T-VASIS, understood and correctly read back the instruction. He later reported that he was aware that an aircraft was about to depart off runway 05.

As LWW backtracked on runway 05, the ASO completed his inspection of the runway 32 T-VASIS installation, and proceeded to the threshold of runway 32 to continue the runway pavement and lighting inspection. Between the time the ASO acknowledged the ATC instruction to hold short of runway 05 and positioning at the threshold of runway 32, the ASO received a mobile telephone call. The ASO accepted and continued with the call as he travelled to the threshold of runway 32 and commenced the runway 14/32 pavement and lighting inspection.

At around 1757, the pilot of LWW reported ready for takeoff on runway 05, and was cleared for takeoff several seconds later. By that time, the ASO had likely commenced his inspection of runway 14/32, moving in a north-westerly direction from the threshold of runway 32. Contrary to the ATC instruction to hold short of runway 05, the ASO continued through the runway intersection. LWW passed over Car Two at the runway intersection, at about 30 ft above ground level.

The ASO became aware of LWW as the aircraft passed overhead the vehicle. He immediately realised what had occurred, terminated the telephone call, and exited the runway toward the eastern GA apron on his right. The elapsed time between the ATC instruction to hold short of runway 05 to the runway incursion was about two minutes. The ASO had been on the telephone for about one minute when the incident occurred. In hindsight, the ASO believed that he was distracted by the telephone call, which allowed his situation awareness to be compromised.

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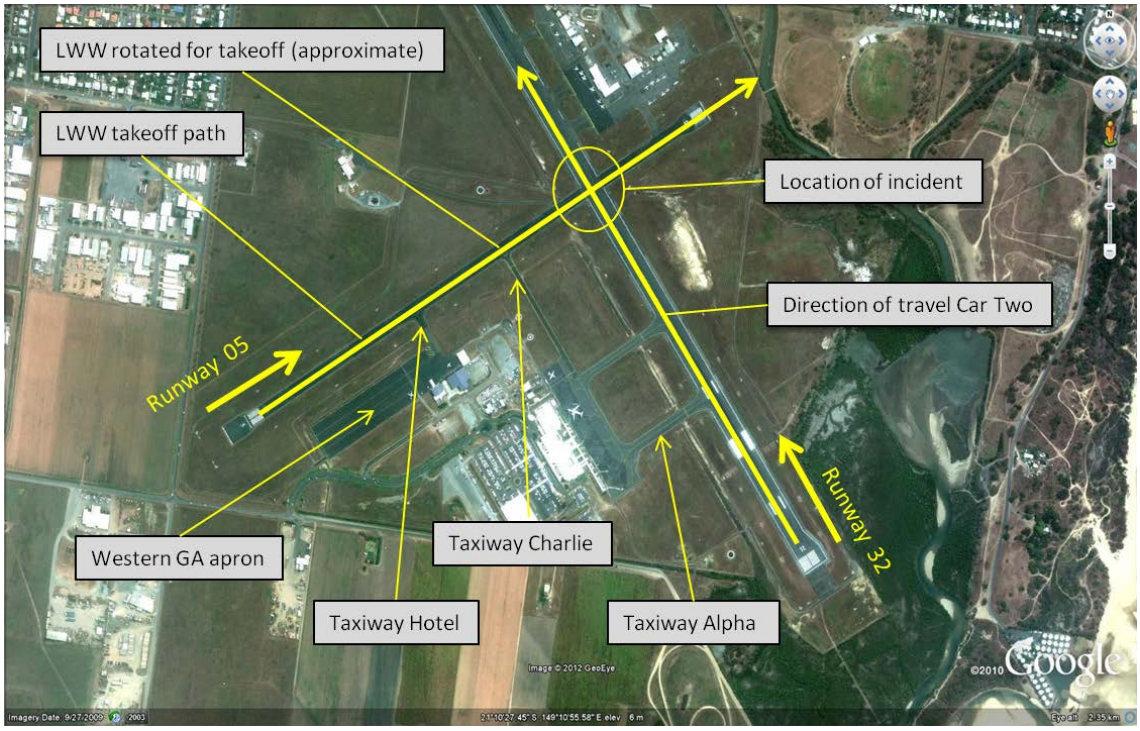
1 Eastern Standard Time (EST) was Coordinated Universal Time (UTC) +10 hours.

2 T-VASIS is the Visual Approach Slope Indicator System installed in the flight strip of some runways to provide approach guidance to that runway. The T-VASIS installation spans a large area each side of the runway pavement, extending from a point just beyond the threshold of the runway to a point approximately 500 metres from the runway threshold.

The pilot of LWW first noticed Car Two on his right, as he passed about 60 kts during the takeoff run on runway 05. He initially thought that the vehicle was moving along an airport perimeter road, but soon realised that the vehicle was moving in a north-westerly direction along the intersecting runway. The pilot was immediately concerned that a collision would occur, given that Car Two was maintaining a constant relative position in his field of view. The pilot assessed that if he rejected the takeoff, he would not be able to stop in time to avoid a collision and elected to continue the takeoff. The pilot rotated the aircraft for takeoff approximately abeam the runway intersection with taxiway Charlie.

Figure 1: Mackay Airport



Source: *Google Earth*

Safety action

Whether or not the ATSB identifies safety issues in the course of an investigation, relevant organisations may proactively initiate safety action in order to reduce their safety risk. The ATSB has been advised of the following proactive safety action in response to this occurrence.

Airport authority

As a result of this occurrence, the airport authority issued a safety bulletin to remind airside vehicle operators of the hazards associated with the use of a mobile telephone while driving. The Airside Driving Handbook issued by the airport authority stipulated that mobile telephones were not to be used while operating a mobile vehicle airside. To reinforce that stipulation, the safety bulletin required that drivers stop their vehicle in a safe place to make or receive a telephone call. The bulletin also required drivers under the control of ATC to advise ATC of their intentions and then vacate the manoeuvring area or runway environment before making or receiving a telephone call.

In addition to a number of short term follow-up actions, the airport authority has planned several wide-ranging actions to reduce the likelihood of similar occurrences. These actions include a review of the Safety Management System and Airside Vehicle Control Manual, a systemic review of the ASO role, and further development of the competency maintenance program for airport safety staff.

Safety message

In 2012, Airservices Australia published the third edition of *An Airside Driver's Guide to Runway Safety*. This publication identified a range of safety measures intended to help reduce the likelihood of runway incursions, including information about situation awareness and communications. This publication also highlighted the importance of scanning runways before entering or crossing a runway.

www.airservicesaustralia.com/wp-content/uploads/airside_drivers_guide.pdf

A Department of Infrastructure and Transport road safety grant report published in December 2010, titled *In-car distractions and their impact on driving activities*, recognised that distraction from a mobile telephone may divert a driver's mental and perceptual attention from the task of driving, and may increase response times to events.

www.infrastructure.gov.au/roads/safety/publications/2010/incar_distractions_att_10.aspx

This incident highlights the importance of remaining vigilant during airside operations, and to be mindful of the potential distraction presented by all portable communication devices, including mobile telephones.

Airport safety vehicle details

Manufacturer and model:	2008 Toyota Hilux Dual Cab	
Operator:	Mackay Airport Pty Ltd	
Registration:	Car Two	
Type of operation:	Airport safety vehicle – runway inspection	
Location:	Mackay Airport	
Occurrence type:	Runway incursion	
Persons on board:	Crew – 1	Passengers – nil
Injuries:	Crew – nil	Passengers – nil
Damage:	None	

About the ATSB

The Australian Transport Safety Bureau (ATSB) is an independent Commonwealth Government statutory agency. The Bureau is governed by a Commission and is entirely separate from transport regulators, policy makers and service providers. The ATSB's function is to improve safety and public confidence in the aviation, marine and rail modes of transport through excellence in: independent investigation of transport accidents and other safety occurrences; safety data recording, analysis and research; and fostering safety awareness, knowledge and action.

The ATSB is responsible for investigating accidents and other transport safety matters involving civil aviation, marine and rail operations in Australia that fall within Commonwealth jurisdiction, as well as participating in overseas investigations involving Australian registered aircraft and ships. A primary concern is the safety of commercial transport, with particular regard to fare-paying passenger operations.

The ATSB performs its functions in accordance with the provisions of the *Transport Safety Investigation Act 2003* and Regulations and, where applicable, relevant international agreements.

The object of a safety investigation is to identify and reduce safety-related risk. ATSB investigations determine and communicate the safety factors related to the transport safety matter being investigated.

It is not a function of the ATSB to apportion blame or determine liability. At the same time, an investigation report must include factual material of sufficient weight to support the analysis and findings. At all times the ATSB endeavours to balance the use of material that could imply adverse comment with the need to properly explain what happened, and why, in a fair and unbiased manner.

About this report

Decisions regarding whether to conduct an investigation, and the scope of an investigation, are based on many factors, including the level of safety benefit likely to be obtained from an investigation. For this occurrence, a limited-scope, fact-gathering investigation was conducted in order to produce a short summary report, and allow for greater industry awareness of potential safety issues and possible safety actions.