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Australian Transport Safety Bureau

Landing on a closed runway involving a Cessna 310, VH-TWN

Corowa aerodrome, NSW, 20 February 2013

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Published by: Australian Transport Safety Bureau
Postal address: PO Box 967, Civic Square ACT 2608
Office: 62 Northbourne Avenue Canberra, Australian Capital Territory 2601
Telephone: 1800 020 616, from overseas +61 2 6257 4150 (24 hours)
Accident and incident notification: 1800 011 034 (24 hours)
Facsimile: 02 6247 3117, from overseas +61 2 6247 3117
Email: atsbinfo@atsb.gov.au
Internet: www.atsb.gov.au

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Addendum

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Landing on a closed runway involving a Cessna 310, VH-TWN

What happened

On 20 February 2013, at about 0615 Eastern Daylight-saving Time¹, the pilot of a Cessna 310 aircraft, registered VH-TWN (TWN), arrived at Wagga Wagga Airport to conduct a freight charter flight to Albury and Corowa, New South Wales.

In preparation for the flight, the pilot reviewed the applicable weather forecasts and Notice to Airmen (NOTAM)² on a computer. At that time, another company employee initiated a conversation with the pilot. The pilot completed his pre-flight preparations and the aircraft departed at 0730 for Albury.

Prior to 0800, four workers at the Corowa aerodrome commenced laying unserviceability cross markers on runway 05/23. The runway had been declared closed from 0800 to 1800 due to works in progress (WIP); runway 14/32 remained open.

Soon after, the Corowa Aerodrome Manager and works contractor drove along the runway to discuss the WIP. The Aerodrome Manager was also aware that the regular charter flight was due to arrive and was maintaining a lookout for the aircraft, which he expected to land on runway 14/32.

At about 0810, TWN departed Albury for Corowa. When 19 NM and 10 NM from Corowa, the pilot reported broadcasting an inbound call on the common traffic advisory frequency (CTAF).³ Due to the calm wind conditions, the pilot elected to join the base leg of the circuit for runway 23. The pilot broadcast additional calls on the CTAF advising he had joined base, and soon after, turned onto final.

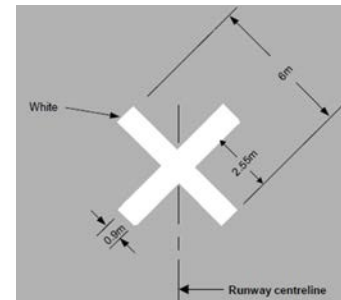
The workers at Corowa were in the process of placing the last unserviceability cross marker near the runway 05 threshold, when they observed an aircraft (TWN) on final approach for runway 23 (Figure 1). The workers vehicle, with its headlights and flashing safety light on, was also positioned on the runway facing the direction of TWN. The workers and vehicle vacated the runway.

At the same time, the Aerodrome Manager and contractor drove to the parking area located next to the aerodrome terminal and exited the vehicle. The Aerodrome Manager then reported hearing an aircraft. He looked across and observed TWN below the tree line, about 5 m above the ground.

At about 0825, TWN landed on runway 23. Immediately after landing, when about 90-120 m along the runway, the pilot observed an unserviceability cross marker on the ground. The aircraft was taxied to the parking area via runway 14/32, during which time the pilot checked the NOTAM for Corowa and noted that runway 05/23 was closed due to WIP.

The workers were monitoring the CTAF on a hand held radio, but no broadcasts from TWN were reportedly heard.

Unserviceability marking



Source: CASA

¹ Eastern Daylight-saving Time (EDT) was Coordinated Universal Time (UTC) + 11 hours.

² A Notice to Airmen (NOTAM) advises personnel concerned with flight operations of information concerning the establishment, condition or change in any aeronautical facility, service, procedure, or hazard, the timely knowledge of which is essential to safe flight.

³ Radio broadcasts made by the pilot on the CTAF could not be verified as transmissions at Corowa were not recorded.

Figure 1: Position of VH-TWN and aerodrome workers



Source: Google earth

Runway works in progress (WIP)

Major repair work was to be conducted on runway 05/23 as a result of flood damage. Prior to the work being commenced, core samples of the runway were to be taken on 20 February 2013 using a drilling rig, which necessitated the closure of the runway.

Two days prior to the scheduled works, the Aerodrome Manager submitted a request to Airservices Australia for the issue of a NOTAM declaring runway 05/23 closed between 0800 and 1800 due to the WIP. The Aerodrome Manager received a copy of the NOTAM the day prior to the incident.

Runway unserviceability markings

The Civil Aviation Safety Authority (CASA) Manual of Standards (MOS) Part 139 – Aerodrome⁴, states that:

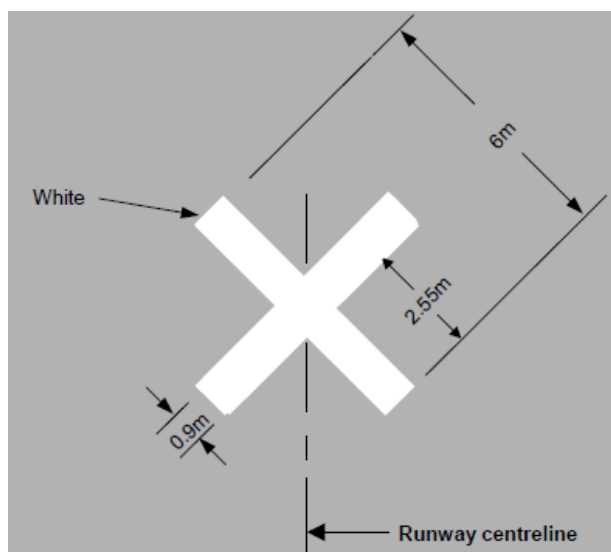
An unserviceability marking or closed marking must be used to indicate any part of a runway, which is not to be used by aircraft. The marking must comprise a white cross placed on the unserviceable portion of the runway.

According to MOS 139, the unserviceability marker used on runway 05/23 was considered a 'smaller' marking (Figure 2). These types of markings are to be displayed at each end of the unserviceability and in the intermediate area at intervals of no more than 200 m. The Aerodrome Manager reported that there was 10-11 unserviceability markers placed on the runway, with the first marker placed near the runway 23 number. Consequently, the spacing between each unserviceability marker was per the requirements of MOS 139.

The Aerodrome Manager also reported that each cross arm was 6 m long and 0.75 m wide. The crosses were made from white canvas and were nailed to the runway.

⁴ www.comlaw.gov.au/Details/F2012C00280/Download

Figure 2: A ‘smaller’ unserviceability marking



Source: CASA

Pilot comments

The pilot provided the following comments regarding the incident:

- The job had become repetitive in nature as he had conducted the same flight 3-4 times per week, for the last 2 years.
- When reviewing the NOTAMs for the flight, he did not observe the description stating that runway 05/23 was not available due to WIP. The pilot reported that he had become distracted by the other company employee and that the NOTAM looked the same as it had on previous occasions. The additional information regarding the WIP was not obvious.
- The pilot did not observe any workers/vehicle on the runway during the approach and landing.
- When on final approach, he did not see an unserviceability cross marker near the runway 23 threshold. However, when he departed in the afternoon, a marker was observed.
- The unserviceability cross markers did not appear large in size. The pilot would have expected the markers to cover a large portion of the runway width.

The pilot also identified a number of points that all pilots should consider:

- double check NOTAMs, even if they appear the same as previously;
- do not engage in conversation during the planning stages of flight;
- even when operating to the same location on a regular basis, overfly the aerodrome and conduct a circuit to assess the suitability of the runway.

Aerodrome Manager comments

The Aerodrome Manager reported that the runways at Corowa were inspected only twice per week. Consequently, hazards from surrounding farm land or from other sources may be present. The Manager suggested that pilots operating into country aerodromes should overfly the aerodrome and inspect the runway for hazards prior to landing.

Aircraft operator comments

The operator had previously identified complacency as an issue in their freight operations. Consequently, the operator rarely maintains their pilots in the one geographical location for more than 12 months, and in the majority of cases, pilots are relocated within 6 months. However, this is dependent on the pilot's personal circumstances.

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.

Aircraft operator

As a result of this occurrence, the aircraft operator has advised the ATSB that they have distributed a flight crew notice to all staff highlighting the dangers of complacency in the work place.

Safety message

This incident demonstrates the importance of maintaining a high level of vigilance, even when conducting familiar tasks; and the unexpected nature of distractions and the impact they can have on pre-flight preparations.

Familiarity of operations

Complacency, the feeling of satisfaction or contentment with what is happening, may occur from a pilot's overconfidence in performing a task that has been previously conducted numerous times, without incident. This feeling is generally due to a lack of understanding of the hazards that may occur during a flight. This may result in a pilot inadvertently overlooking important information or responding to a situation inappropriately. The best defence against complacency is for pilots to remain vigilant and alert, and be mindful that the even the most routine tasks must be conducted with care and concentration.⁵

Distractions

While distractions occur frequently, some cannot be avoided, but others can be minimised or eliminated. Acknowledging this distinction is the first step in developing preventative strategies and lines-of-defence. The Flight Safety Foundation suggests that after a distraction source has been recognised and identified, the next priority is to re-establish situation awareness by conducting the following:⁶

- *Identify:* What was I doing?
- *Ask:* Where was I distracted?
- *Decide/act:* What decision or action shall I take to get 'back on track'?

General details

Manufacturer and model:	Cessna Aircraft Company 310R	
Registration:	VH-TWN	
Type of operation:	Charter - freight	
Occurrence category:	Serious incident	
Primary occurrence type:	Runway event	
Location:	Corowa aerodrome, New South Wales	
	Latitude: 35° 59.42' S	Longitude: 146° 21.08' E
Persons on board:	Crew – 1	Passengers – Nil
Injuries:	Crew – Nil	Passengers – Nil
Damage:	Nil	

⁵ [www.skybrary.aero/index.php/Discipline_\(OGHFA_BN\)](http://www.skybrary.aero/index.php/Discipline_(OGHFA_BN))

⁶ flightsafety.org/files/alar_bn2-4-distractions.pdf

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.