Australian Government
Australian Transport Safety Bureau

Runway excursion involving Cessna 210N, VH-WPD

Urapunga (ALA), Northern Territory, 23 August 2012

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Runway excursion involving Cessna 210N, VH-WPD

What happened

On 23 August 2012 at 1733 Central Standard Time,[1] a Cessna 210N, registered VH-WPD (WPD), departed Numbulwar for Urapunga, Northern Territory, on a charter passenger flight with the pilot and two passengers on-board. The pilot reported intermittent sun glare during descent to Urapunga, when at 3 NM for runway 28. On late final, the pilot stated that the sun, which had previously been obscured by the surrounding terrain, created sun glare on the windscreen greatly restricting visibility. The pilot reported that he could identify the runway and what he believed to be the runway centreline, so continued the approach. The approach at this stage was a little high to ensure enough clearance between the aircraft and trees located near the runway edge. During the flare,[2] the pilot identified a runway edge marker in line with the nose of the aircraft. The pilot manoeuvered the aircraft back in line with the centre of the runway and the aircraft continued to float down above the runway.

The pilot stated that sun glare increasingly restricted visibility during the landing and he was unsure the amount of runway used. The aircraft touched down and the pilot applied heavy braking in short bursts. The pilot reported that the aircraft only slowed a little on the runway gravel surface and then the aircraft departed the end of the runway and travelled through two fences before coming to a stop. The aircraft came to rest on the right side of the fuselage, right wing and right horizontal stabiliser. The pilot secured the aircraft and the pilot and two passengers evacuated the aircraft. The pilot received minor injuries while evacuating the aircraft from barbed wire that had become entangled around the front of the aircraft (Figure 1). The two passengers were uninjured.

Figure 1: Accident site

Source: Aircraft operator

Pilot comments

The pilot reported that he selected runway 28 as it was the most aligned with the approach direction and into wind.

Due to the poor visibility created from the sun glare, the pilot stated he was over cautious with avoiding trees near the edge of the runway and therefore was slightly higher than normal over the threshold.

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1 Central Standard Time (CST) was coordinated Universal Time (UCT) + 9.5 hours.

2 The flare is the final nose-up pitch of landing the aircraft to reduce the rate of descent to about zero at touch-down.

The pilot reported that he was wearing non-polarised sun glasses and that they made only a slight difference to his ability to see. The aircraft was equipped with sun visors, but they were not effective because the sun was so low on the horizon.

The windscreen was in good condition and clean.

Operator inspection

The operator inspected the runway, which was in good condition with a hard surface. The inspection found that the touchdown point was over half way down the runway. A runway edge marker had been run over by the left main landing gear tyre, before the aircraft came back onto the runway and then exited the end of the runway. The operator determined that the distance from the runway end to the second fence line was about 80 m. The flaps were observed to be at the full flap setting.

Safety action

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 are taking the following safety actions:

Pilot training

- During training greater emphasis will be placed on go-around procedures and identify situations when it would be used.
- Particularly during training increase awareness to consider the planning of circuit entry and ensure a backup is considered if conditions are not what was expected.
- Go-around procedures are practiced during in command under supervision (ICUS) training.

Safety message

A study[3] conducted by the US Federal Aviation Administration found that 85 per cent of accidents where glare from natural sunlight was considered among the reasons for the accident, occurred in clear weather and optimal visual conditions and 55 per cent were during the approach/landing and take-off/departure phase of the flight.

Identification of approach and landing hazards, decision making when a hazard becomes evident, recognition of a destabilised approach, being go-around prepared and go-around minded are among the safety issues identified by the Flight Safety Foundation[4] (FSF).

The FSF formed an approach–and–landing accident reduction (ALAR) task force that focused on accidents involving passenger and cargo operations of aircraft weighing 5,700 kg or more from 1980–1998. Although the study excludes most general aviation operations, lessons are transferable. The task force found that runway excursion and runway overruns equated to 20 per cent of the occurrences studied[5] and that failure to recognise the need for and to execute a go-around when appropriate was a primary reason of approach and landing accidents. The FSF

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[3] The study *Natural sunlight and its association to aviation accidents: frequency and prevention* identified 130 accidents from 1988 through 1998 in the US National Transport Safety Board database where glare from natural sunlight was considered among the reasons for the accident www.faa.gov/data_research/research/med_humanfacs/oamtechreports/2000s/media/0306.pdf.

[4] The Flight Safety Foundation (FSF) is an independent international organisation that was formed in 1947 to pursue the continuous improvement of global aviation safety through research, auditing, education, advocacy and publishing.

[5] FSF ALAR task force detailed study of 76 approach and landing accidents and serious incidents worldwide from 1984–1997.

developed briefing notes to assist in reducing the occurrence of approach and landing accidents. FSF briefing note 5.1 – *Approach hazards overview* contains an approach and landing risk awareness tool to help identify factors that can increase the risk of an accident during the approach and landing. The briefing note also contains the approach and landing risk reduction guide that is designed to help prevent approach and landing accidents. The briefing note is available at www.flightsafety.org/files/alar_bn5-1-apprhazard.pdf.

Other relevant FSF briefing notes include:

- FSF ALAR briefing note 6.1 – *Being prepare to go around* considers the importance of being go-around-prepared and being go-around-minded. The briefing note is available at www.flightsafety.org/files/alar_bn6-1-goaroundprep.pdf.
- FSF ALAR briefing note 8.1 – *Runway excursion and runway overruns* explores the factors involved in runway overruns and the strategies and lines of defence to mitigate such occurrences. The briefing note is available at www.flightsafety.org/files/alar_bn8-1-excursions.pdf.
- FSF ALAR briefing note 8.3 – *Landing distances* explores the factors that may affect the landing distance. The task force found that runway overruns were involved in 12 per cent of the 76 approach and landing occurrences studied. The briefing note is available at www.flightsafety.org/files/alar_bn8-3-distances.pdf.

General details

Manufacturer and model:	Cessna Aircraft Company 210N	
Registration:	VH-WPD	
Type of operation:	Charter – passenger	
Occurrence category:	Accident	
Primary occurrence type:	Runway excursion	
Location:	Urapunga (ALA), Northern Territory	
	Latitude: S 14° 42.65'	Longitude: E 134° 34.00'
Persons on board:	Crew – 1	Passengers – 2
Injuries:	Crew – 1 (minor)	Passengers – Nil
Damage:	Substantial	

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.