Australian Government
Australian Transport Safety Bureau

Runway excursion involving a Cirrus SR22, VH-SRI

Great Lakes Airfield, Victoria, 30 March 2014

ATSB Transport Safety Report
Aviation Occurrence Investigation
AO-2014-060
Final – 3 December 2014

Released in accordance with section 25 of the *Transport Safety Investigation Act 2003*

Publishing information

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Addendum

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Runway excursion involving a Cirrus SR22, VH-SRI

What happened

On 30 March 2014, a Cirrus SR22, registered VH-SRI, was being operated to conduct a private flight from Tyabb to Great Lakes Airfield, Victoria, with the pilot and one passenger on board. The flight was conducted in visual meteorological conditions.

During the cruise, the pilot assessed the wind at the airfield to be from the north-west and elected to land on runway 31, a shorter gravel runway, instead of the sealed longer runway 26 as initially planned.

The pilot reported that the approach and landing was normal. The aircraft touched down on the runway at the first white gable marker (Figure 1) at about 1320 Eastern Daylight-saving Time. As the aircraft passed the intersection with runway 26/08, the pilot realised that the aircraft was not slowing quick enough to stop in the remaining runway available and so applied the brakes harder. The aircraft departed the end of the runway, went through the airport boundary fence and came to rest on a road. The pilot turned off the fuel and all switches and exited the aircraft with the passenger. The pilot and passenger were uninjured and the aircraft was substantially damaged (Figure 2).

Figure 1: Great Lakes Airfield

Source: Google earth

Figure 2: Accident site

Source: Victoria Police

Pilot comment

The pilot reported that his pre-flight planning revolved around overflying the airport for a landing on the longer sealed runway 26 using the Cirrus performance data to calculate the landing distance for a dry, level, paved runway. During the flight, the pilot determined that the wind was coming from the north-west and decided that runway 31 was more suitable to land on. The pilot reported that he did not overfly the airfield or observe the wind sock prior to landing which was his normal practice.

About 15 minutes after the landing, the pilot observed the wind sock from the location of the accident site and thought that it was showing the wind coming along the runway, in the direction of the landing, at about 10 knots.

The pilot reported that after the accident, he went over the performance calculations with a flying instructor and they had calculated that runway 31 had an adequate landing distance but there was not a great margin if any of the random variables were different, like touch down point, airspeed and wind direction.

The pilot re-checked the meteorological data after the accident and saw that the wind was predicted to be from the north-west at 0900 and at 1500 was to be from the south-east. The pilot thought that he may have landed as the wind was changing direction and that a tail wind component may have existed at the time of landing.

The pilot reported that in the future he would review all the runways at the destination airport and overfly the airport to confirm the runway lengths and wind sock/s.

Safety message

The accident highlights the importance of thorough pre-flight planning to minimise safety critical decisions in flight, maintaining situational awareness, applying an appropriate safety margin to the landing distance including obstacle clearance and climb if a go around is required, confirming the runway length and wind direction prior to landing.

The ATSB report AR-2008-045, *Improving the odds: Trends in fatal and non-fatal accidents in private flying operations* encourages pilots to make decisions before the flight, continually assess the flight conditions (particularly weather conditions), evaluate the effectiveness of their plans, set personal minimums, assess their fitness to fly, set passenger expectations by making safety the primary goal, and to seek local knowledge of the route and destination as part of their pre-flight planning. The report is available at www.atsb.gov.au/publications/2008/ar2008045.aspx.

CASA has published several tools to assist pilots to learn more about human factors involving situational awareness, decision making and weather. Some of them include:

- CASA has developed the *Look out! Situational awareness* DVD for pilots to learn more about the safety-critical skills that makes up situational awareness. There is strong emphasis on the need to prepare and plan for every flight – not just for hours but for days and sometimes weeks, 'you can never be too prepared' and covers the techniques required for maintaining situational awareness. The DVD gives a definition of situational awareness as "what's happened, what's happening and what might happen".
- The CASA training resource *Safety Behaviours: Human Factors for Pilots* has been specifically designed for the General Aviation and Low Capacity Regular Public Transport sectors. The package contains a comprehensive resource guide that enables pilots to develop their knowledge in the areas of fatigue management, stress management, alcohol and other drugs, communication, teamwork, leadership, situational awareness, decision making, threat and error management and airmanship.
- The CASA *Weather to Fly* DVD provides educational material on weather related assessment and decision making. Tips are given on flying in and around bad weather and has advice from chief flying instructors from local aero clubs on some of the critical areas.

The CASA educational publications are available through the CASA online store.

The CASA Draft Advisory Circular 91-225(0) – *Safety during take-off and landing for small aeroplanes* discusses applying a safety factor to the performance calculations for landing distance as the certification process allows the manufacturer to determine the take-off and landing performance under ideal conditions. Transport Canada also discusses this in their power point presentation on *Flying: Risk Factors and Decision Making* available at www.tc.gc.ca/eng/civilaviation/publications/tp14112-risk-decision-ppt-6135.htm#s1.

General details

Occurrence details

Date and time:	30 March 2014 – 1320 EDT	
Occurrence category:	Accident	
Primary occurrence type:	Runway excursion	
Location:	Great Lakes Airfield, Victoria	
	Latitude: 37° 50.55 'S	Longitude: 148° 00.02' E

Aircraft details

Manufacturer and model:	Cirrus Design Corporation SR22	
Registration:	VH-SRI	
Serial number:	0631	
Type of operation:	Private	
Persons on board:	Crew – 1	Passengers – 1
Injuries:	Crew – 0	Passengers – 0
Damage:	Substantial	

About the ATSB

The Australian Transport Safety Bureau (ATSB) is an independent Commonwealth Government statutory agency. The ATSB 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.