



**Australian Government**

**Australian Transport Safety Bureau**

# Controlled flight into water involving Robinson R22 VH-HOA

89 km NNW of Innamincka (ALA), South Australia, 31 October 2012

**ATSB Transport Safety Report**  
Aviation Occurrence Investigation  
AO-2012-146  
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# Controlled flight into water involving Robinson R22, VH-HOA

AO-2012-146

## What happened

On 31 October 2012, a Robinson R22 helicopter, registered VH-HOA (HOA) was being used to conduct mustering operations at Innamincka Station, South Australia. The pilot was the only person on board.

The helicopter commenced operations at about 0730 CDT<sup>1</sup>, with the pilot returning to base camp for fuel and refreshment breaks throughout the day. The pilot reported that, due to operating at low-level over the sandy and swampy terrain, the windscreen was dirty, leading to poor visibility. During one break, water was poured over the windscreen to clean it, however the pilot reported that the visibility did not improve.

The pilot reported that the weather was 38<sup>o</sup> C, with no cloud and minimal wind.

At 1415, HOA departed base camp for its final mustering run of the day. The helicopter and ground personnel were moving cattle in a northerly direction. As the cattle moved slowly along a narrow neck of land, east of Lake Marradibbadibba, the pilot looked for stray cattle by flying an east-west grid pattern, well behind the main herd.

At about 1520, HOA was traveling west at 60-70 kts between 120-150 ft above the ground. With about 19 inches of manifold pressure, the pilot conducted a turn to the east, over the edge of the lake. A few seconds later, the helicopter collided with the water and sank rapidly into 8-10 ft of water. The pilot exited the helicopter without injury and swam to shore. However the helicopter was seriously damaged.

Due to his location, well behind the ground personnel moving the main herd of cattle, there were no witnesses to the accident.

## ***Pilot comments***

The pilot stated that even though he was wearing sunglasses, during the turn there was significant sun-glare from a reflection off the water. He reported becoming disoriented, due to the combination of the sun-glare and the dirty windscreen, and consequently did not detect the rate of descent.

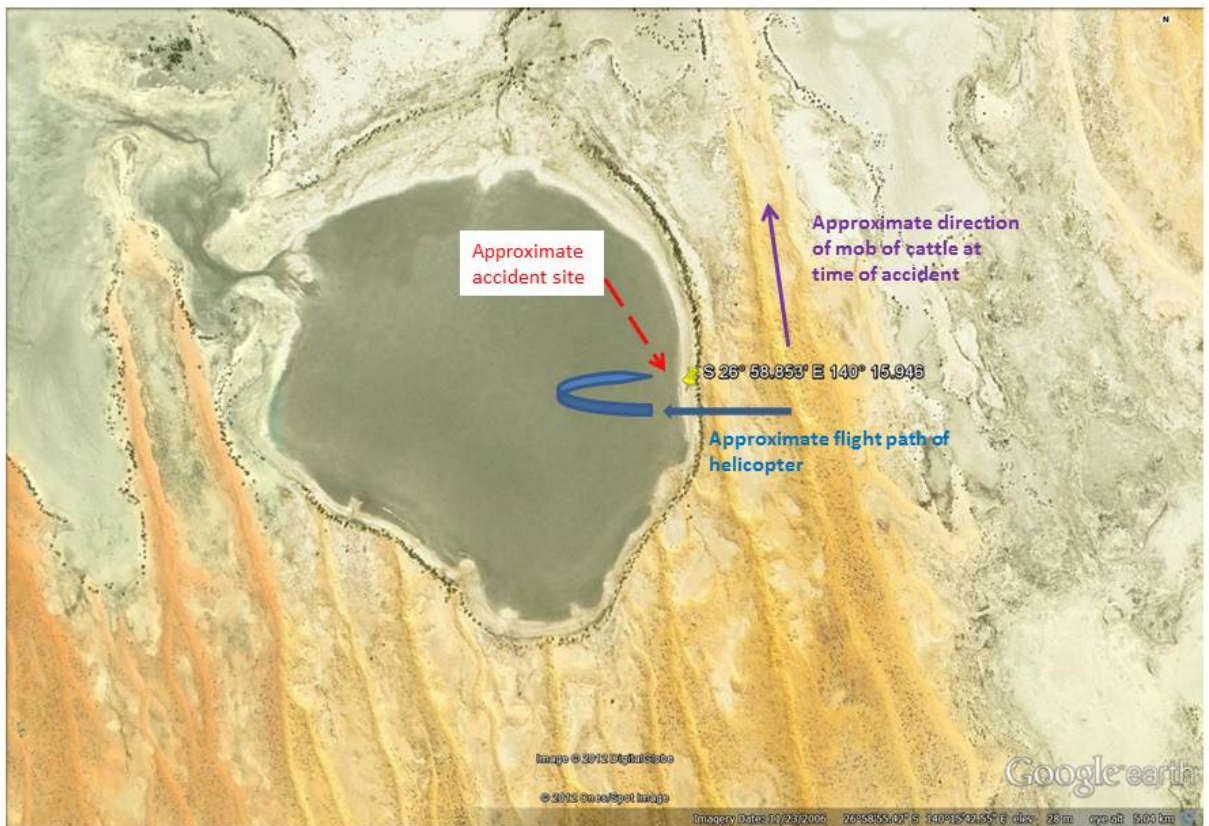
Due to previous damage to the pilot's helmet, he was not wearing a helmet on the day.

The majority of the pilot's 3000 hours flying experience had been mustering operations in the R22.

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<sup>1</sup> Central Daylight Time (CDT) was Coordinated Universal Time (UTC) + 10.5 hours.

**Figure 1: Accident site – Lake Marradibbadibba**



Source: Google Earth

### Safety message

The effect of sun-glare when relying on visual cues is an important consideration for all pilots. The US Federal Aviation Administration (FAA) has conducted research into sunlight and its association with aviation accidents. This research found:

- 80 per cent of accidents where glare was a contributing factor occurred during daytime hours, rather than in the early morning or evening.
- In five per cent of the accidents, a dirty or damaged windscreen was an additional contributing factor.
- The majority of accidents occurred during flight manoeuvres at low altitude in airspace congested with other aircraft or obstacles.

The report suggests a number of preventative techniques to reduce the effects of sun glare including wearing sunglasses and ensuring the windscreen is clean. The research report is available at:

[www.hf.faa.gov/docs/508/docs/cami/0306.pdf](http://www.hf.faa.gov/docs/508/docs/cami/0306.pdf)

In 2010, the ATSB investigated a collision with water involving a Cessna 172, VH-UFN over a lake in far western New South Wales. The investigation report noted the danger associated with flight operations overhead bodies of water when the surface is glassy (as in low or nil wind conditions). These conditions can lead to a difficulty in depth perception and effect a pilot's judgement of the aircraft's height above the surface. The report is available at:

[www.atsb.gov.au/publications/investigation\\_reports/2010/aa/ao-2010-045.aspx](http://www.atsb.gov.au/publications/investigation_reports/2010/aa/ao-2010-045.aspx)

Although the pilot was uninjured as a result of this accident, previous ATSB investigations have shown the benefits of wearing a helmet. The following ATSB investigation provides additional information on helicopter safety helmets:

- AO-2012-016: Partial power loss - Schweizer 300C helicopter, VH-FUJ, 19 km south of Long Hill (ALA), Tasmania, 25 January 2012  
[www.atsb.gov.au/publications/investigation\\_reports/2012/aa/ao-2012-016.asp](http://www.atsb.gov.au/publications/investigation_reports/2012/aa/ao-2012-016.asp)

## General details

Manufacturer and model:	Robinson R22	
Registration:	VH-HOA	
Type of operation:	Aerial work - mustering	
Primary occurrence type:	Controlled flight into terrain	
Location:	89 km NNW of Innamincka (ALA), South Australia	
	Latitude: S 27° 01.13'	Longitude: E 140° 15.52'
Persons on board:	Crew – 1	Passengers – Nil
Injuries:	Crew – Nil	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.