



Australian Government

Australian Transport Safety Bureau

Collision with terrain involving a Robinson R44, VH-UGR

near Yass, New South Wales, 22 February 2014

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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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Collision with terrain involving a Robinson R44, VH-UGR

What happened

On 22 February 2014, the pilot of a Robinson R44 helicopter, registered VH-UGR, was conducting aerial agricultural operations on a property near Yass, New South Wales.

At about 1630 Eastern Daylight-savings Time (EDT), after successfully completing five loads of spraying, the helicopter was refuelled and reloaded with chemical for the next flight. The elevation of the property was about 1,900 ft above mean sea level and the ambient temperature about 23 °C. To ensure the helicopter was well within normal operating limitations, the pilot refuelled it every second load with about 30-35 L of fuel. The helicopter was carrying a chemical load of about 230-240 L.

The wind at the time was light and variable, but favouring a southerly direction, so the pilot manoeuvred the helicopter to take off towards the south. During the take-off for the sixth load, when at about 3 ft above ground level (AGL), the pilot reported that the helicopter was not climbing as expected and he thought that the wind had veered to a more westerly direction.

He commenced a right pedal turn towards the west, and down the slope, in an attempt to gain translational lift.¹ The pilot reported that the wind had actually turned more easterly, and the helicopter therefore had a tailwind.

The low rotor revolutions per minute (RRPM) warning horn sounded and the pilot jettisoned the chemical load. The helicopter was then about 5 ft AGL, and the pilot was attempting to gain lift, and concentrating on keeping the helicopter straight in order to keep the landing skids level. He sighted a dry creek bed ahead and attempted to gain altitude prior to crossing it.

The helicopter was about 40-50 m beyond where the load had been jettisoned, and the pilot was focused on gaining lift, when the left skid contacted the ground, and the helicopter rolled over (Figure 1).

VH-UGR



Source: Operator

Figure 1: Damage to VH-UGR



Source: Operator

¹ The helicopter gains translational lift from horizontal movement or headwind.

Safety message

The pilot reported that if he had dumped the load earlier, and performed a run-on landing, rather than attempted to gain lift, the accident may have been avoided. This incident highlights the importance of assessing options in case of reduced aircraft performance on take-off. A pre-take-off safety brief can keep alternative options front-of-mind for pilots, particularly during operations with multiple take-offs and landings.

The Airbus Helicopters (formerly Eurocopter) publication, *Decision Making for Single-Pilot Helicopter Operations*, www.airbushelicopters.com/site/docs_wsw/RUB_36/EHEST4_Single-Pilot-Decision-Making-v1.pdf, explains some of the factors that affect pilots' decision making.

General details

Occurrence details

Date and time:	22 February 2014 – 1700 EDT	
Occurrence category:	Accident	
Primary occurrence type:	Collision with terrain	
Location:	near Yass, New South Wales	
	Latitude: 34° 46.25' S	Longitude: 149° 06.50' E

Helicopter details

Manufacturer and model:	Robinson Helicopter Company R44	
Registration:	VH-UGR	
Serial number:	1351	
Type of operation:	Aerial agriculture	
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 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.