



Australian Government

Australian Transport Safety Bureau

Wirestrike involving Robinson R44, VH-HGF

18 km E of Ballarat Airport, Victoria, 23 February 2013

ATSB Transport Safety Report

Aviation Investigation

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Addendum

Page	Change	Date

Wirestrike involving Robinson R44, VH-HGF

What happened

On 23 February 2013, a Robinson R44 Raven I helicopter, registered VH-HGF, was engaged in agricultural operations in a paddock near Clarks Hill, Victoria. The pilot was the only person on board.

At about 0915 Eastern Daylight-saving Time,¹ the pilot changed the orientation of the application runs across the paddock from west to east, to south to north. The change in direction of the application runs was required to apply chemical to areas of the paddock that could not be sprayed on the west to east runs, due to a power line located on the western boundary of the paddock (Figure 1).

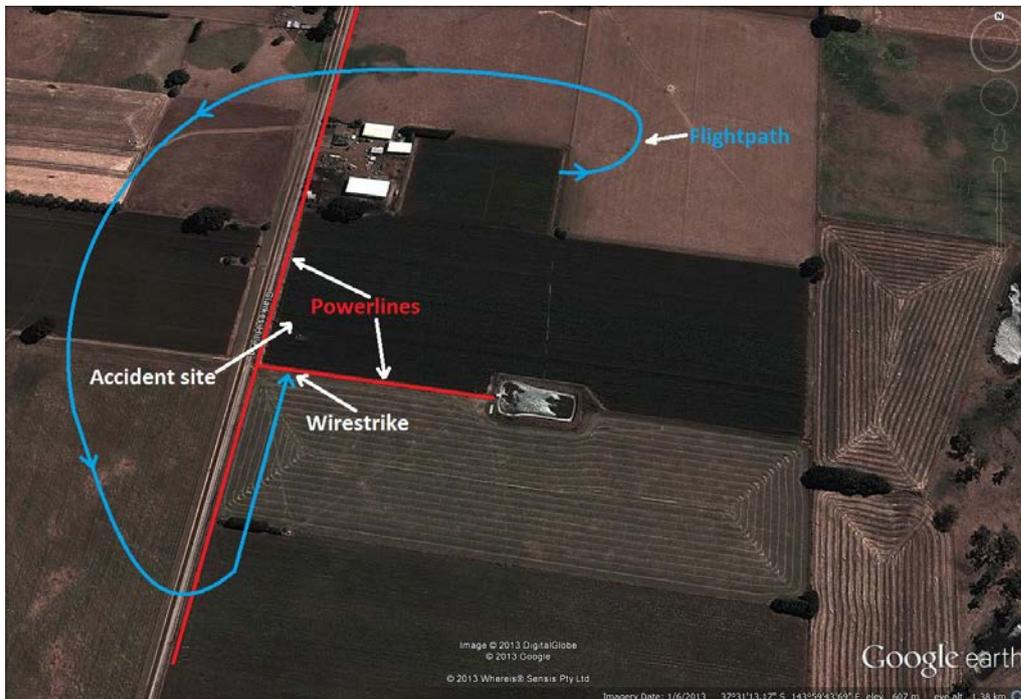
As the helicopter approached the paddock from the south, at 50 kt and at spray height, the pilot remembered a wire that extended halfway across the southern boundary of the paddock to a pump house. The pilot judged that it was too late to attempt to pull up over the wire and attempted to avoid the wire by flying underneath it. The vertical stabiliser contacted the wire and the tail rotor gearbox separated from the tail boom. The nose of the helicopter momentarily pitched upwards before the helicopter began to spin to the right. The pilot closed the throttle in an attempt to recover control, but the helicopter landed hard and rolled over. The pilot was able to exit the helicopter with minor injuries. The helicopter was substantially damaged. There was no fire.

Helicopter damage



Source: Helicopter operator

Figure 1: Accident site



Source: Google earth

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

Figure 2: Helicopter damage

Source: Helicopter operator

Pilot experience and comments

The pilot held a Commercial Pilot Licence (Helicopter) and a Grade 2 Agricultural rating. The pilot had about 1,255 hours total time and about 1,175 hours in the R44.

The pilot reported performing a thorough inspection of the paddock prior to commencing low level operations within the paddock. The pilot also commented that it was his usual practice to perform an additional hazard check prior to changing the orientation of the application runs. However, on this occasion, he did not perform this additional check. The pilot further commented that he knew the wire was there, but at the time was concentrating on other obstacles in the paddock, including an irrigator, the wire on the western boundary and tall trees located near the house (Figure1).

The pilot also reported feeling under some time pressure to complete the job prior to a forecast increase in wind speed.

ATSB Comment

About 3 weeks prior to the accident, the helicopter had been fitted with bladder-type fuel tanks, in accordance with the Robinson Service Bulletin SB-78. This action reduced the risk of a post-impact fire.

A number of R44 accidents in Australia involving low-energy impacts have resulted in the all-aluminium fuel tanks being breached and a fuel-fed fire. As a result, the ATSB issued a recommendation² that CASA take further action to ensure that owners and operators of Robinson R44 helicopters are aware of the relevant regulatory requirements and comply with the manufacturer's service bulletin SB-78B to replace all-aluminium fuel tanks with bladder-type tanks on Robinson R44 helicopters. On 29 April 2013, CASA issued Airworthiness Directive AD/R44/23 (R44 Bladder Fuel Tank Retrofit), which required all Australian operators of R44 aircraft to comply with the Robinson Helicopter Service Bulletin SB-78B.

² www.atsb.gov.au/publications/investigation_reports/2013/air/ao-2013-055/issue-1.aspx

Safety message

The practice within the aerial agricultural industry is to extensively pre-plan an application task that takes into account the specific hazards affecting an application. Any change from the previously planned application runs, including an unplanned change of direction has the potential to affect a pilot’s awareness of the relative position of previously known power lines and other hazards.

For this reason, the Aerial Agricultural Association of Australia recommends that an additional hazard check should be performed from a safe height prior to every change of direction or ‘clean up run’. The extra safety check for wires is important, as the obstructions are new from the new direction of flight.

For further reading of suggested approaches to risk management for Agricultural Pilot please see the *Aerial Application Pilots Manual*, available from the Aerial Agricultural Association of Australia.

www.aerialag.com.au/Home.aspx

General details

Manufacturer and model:	Robinson Helicopter Company R44 Raven I	
Registration:	VH-HGF	
Type of operation:	Aerial work – aerial agriculture	
Occurrence category:	Accident	
Primary occurrence type:	Wirestrike	
Location:	18 km E of Ballarat, Victoria	
	Latitude: 37° 31.13' S	Longitude: 143° 59.43' E
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.