Australian Government
Australian Transport Safety Bureau

Collision with terrain involving a Robinson R22, VH-ZBH

Herbertvale Cattleyard (ALA), Queensland, 23 January 2015

ATSB Transport Safety Report
Aviation Occurrence Investigation
AO-2015-010
Final – 22 April 2015

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

Publishing information

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

Addendum

Page	Change	Date

Collision with terrain involving a Robinson R22, VH-ZBH

What happened

On 23 January 2015, the pilot of a Robinson R22 helicopter, registered VH-ZBH, prepared for a private flight to inspect a property at Herbertvale, Queensland, with one passenger on board. Nothing abnormal was found during the pre-flight inspection of the helicopter. About 35 L of fuel was on board the helicopter, and the pilot conducted a fuel drain with nil contaminants found. At about 0600 Eastern Standard Time (EST), the pilot started the engine. All indications were normal throughout the run-up checks.

The pilot then increased the power to 104% for take-off and the helicopter lifted off into a low hover. The pilot reported that the helicopter responded normally and he turned the helicopter 90° to the north to depart. The helicopter transitioned from the hover to forward flight, moving about 10 m forwards and climbed to about 20 ft above ground level. The engine then lost power and the pilot detected vibration. He observed the rotor rpm decreasing and the low rotor rpm warning sounded.

The pilot immediately wound on throttle and lowered the collective[1] in an attempt to increase the rotor rpm and to ensure the helicopter cleared a fence. He then prepared for an emergency landing. The rear of the skids touched down first and the helicopter skidded forwards. As the helicopter still had forward momentum, the pilot then pulled back on the cyclic[2] to prevent the helicopter rolling over forwards, and it became airborne, moved forwards and yawed right, and bounced again before coming to rest upright (Figure 1).

The helicopter was substantially damaged due to the impact on the skids, and the pilot and passenger were uninjured.

Engineering inspection

A post-accident engineering inspection did not reveal any cause of the engine loss of power.

Figure 1: Damage to VH-ZBH

Source: Owner

[1] A primary helicopter flight control that simultaneously affects the pitch of all blades of a lifting rotor. Collective input is the main control for vertical velocity.

[2] A primary helicopter flight control that is similar to an aircraft control column. Cyclic input tilts the main rotor disc varying the attitude of the helicopter and hence the lateral direction.

Safety message

The pilot in this incident had recently completed a check flight including practice autorotations. The avoidance of injury and handling of the autorotation highlights the benefits of practice. The following links provide information regarding practice autorotations:

• www.ainonline.com/aviation-news/hai-convention-news/2012-02-13/instructor-pilots-give-guidance-autorotation-training

• www.ainonline.com/aviation-news/aviation-international-news/2013-05-01/astar-accident-shines-light-autorotation-training

• www.aviationtoday.com/rw/training/specialty/Flight-Training-Tips-Dancing-With-the-Devil_13632.html

• www.faa.gov/documentLibrary/media/Advisory_Circular/AC_61-140.pdf

• www.faasafety.gov/files/gslac/library/documents/2011/Aug/56414/FAA%20P-8740-71%20Planning%20Autorotations%20[hi-res]%20branded.pdf

General details

Occurrence details

Date and time:	23 January 2015 – 0600 EST	
Occurrence category:	Accident	
Primary occurrence type:	Collision with terrain	
Location:	Herbertvale Cattleyard (ALA), Queensland	
	Latitude: 18° 57.52' S	Longitude: 138° 03.73' E

Helicopter details

Manufacturer and model:	Robinson Helicopter Company, R22	
Registration:	VH-ZBH	
Serial number:	4520	
Type of operation:	Aerial work	
Persons on board:	Crew – 1	Passengers – 1
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.