



Australian Government

Australian Transport Safety Bureau

Collision with terrain involving a Bell 206, VH-KSV

200 km SW Kalumburu, Western Australia, 13 June 2014

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Addendum

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Collision with terrain involving a Bell 206, VH-KSV

What happened

On 13 June 2014, at about 0810 Western Standard Time, the pilot of a Bell 206 helicopter, registered VH-KSV, conducted a flight from Mitchell Plateau campground, Western Australia, to a remote site about 30 NM away to collect passengers.

Approaching the pick-up location, the pilot sighted the passengers and conducted an orbit of the area at about 300 ft above ground level (AGL) to assess the landing site. The site was located in the lee of a hill, and the wind was a south-easterly at about 20 kt. The pilot elected to approach the landing site from the south-west for best forward visibility during the approach.

As the helicopter descended over trees, the pilot observed that the helicopter was slightly higher than optimal for the approach, but still within limits for a safe approach. From a high hover, at about 10 ft AGL, the pilot continued to lower the helicopter slowly, and assess the landing area. The passengers were standing immediately behind the tree line, and the pilot elected to land towards the rear of a rocky sandstone platform to remain clear of the passengers. Behind the platform the ground sloped away, and from the air, during the approach, the pilot did not observe the slope to be overly steep (Figure 1).

Figure 1: Landing site and KSV



Source: Operator

VH-KSV at the landing site



Source: Operator

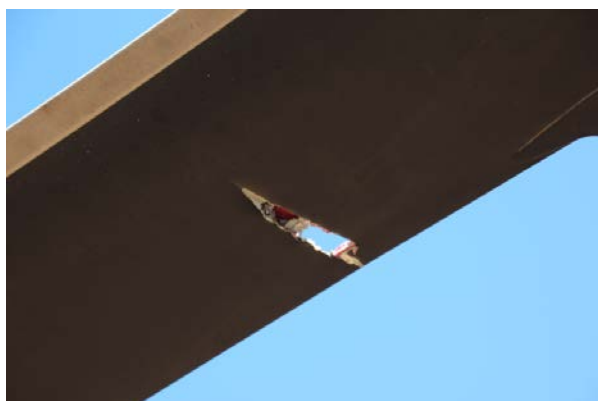
As the pilot lowered the helicopter, he looked out of the pilot side window to select the best position to touch down on the sandstone platform. The right landing skid touched down first, which the pilot noted was unusual, and he was then concerned about the suitability of the landing site. Only the front portion of the landing skids was in contact with the ground and the right skid was sitting on a rock. He then attempted to raise the helicopter back into the air to relocate to a better landing position, however as he raised the collective,¹ he felt the helicopter start to roll. He

¹ The collective pitch control, or collective, is a primary flight control used to change the pitch angle of the main rotor blades. Collective input is the main control for vertical velocity.

assessed that this may have been an incipient dynamic roll, consequently he lowered the collective. The helicopter tipped backwards off the edge of the rocky platform and slid about 2 m down the slope before coming to a halt.

The pilot opened the door, observed that the helicopter was on backwards sloping ground and did not see any damage to the helicopter. He then confirmed that there were no abnormal indications, vibrations or oscillations and he slowly raised the helicopter back up into the hover, moved it forwards a few metres and landed on a more level surface. After shutting down the engine, the pilot inspected the helicopter and found substantial damage to the landing skid, a hole in the main rotor blade (Figure 2) where it had struck the wirestrike cutter (Figure 3), and damage to the tail boom.

Figure 2: Hole in the main rotor blade



Source: Operator

Figure 3: Main rotor and wire cutter



Source: Operator

Pilot comments

The pilot of KSV provided the following comments:

- The night prior to the flight, the pilot had been given the GPS coordinates of the proposed landing site, and used Google earth to do an initial assessment of the suitability for landing.
- He probably lowered too much collective too quickly, resulting in the helicopter tilting back and sliding rearwards.
- If he had conducted a less steep approach, he may have had better visibility of the landing site and the sloping ground.
- The trees on the approach were higher than he expected, resulting in the helicopter being higher than in a normal approach.

Safety action

As a result of this occurrence, the operator of KSV has advised the ATSB that they have conducted base proficiency check flights with company flight crew and assessed confined area approach and landing techniques.

Safety message

This incident highlights the importance of assessing a landing site thoroughly and conducting the approach to land so as to optimize the opportunity of sighting any potential hazards. The operator highlighted the need to visually superimpose the skid position on the touchdown surface but primarily, when landing the helicopter to 'feel' the helicopter onto the landing surface by slowly lowering the collective and treat every landing (and lift off) as a slope landing.

General details

Occurrence details

Date and time:	13 June 2014 – 0830 WST	
Occurrence category:	Accident	
Primary occurrence type:	Collision with terrain	
Location:	200 km SW Kalumburu, Western Australia	
	Latitude: 15° 06.52' S	Longitude: 124° 58.57' E

Aircraft details

Manufacturer and model:	Bell Helicopter Company	
Registration:	VH-KSV	
Serial number:	45387	
Type of operation:	Charter	
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.