Australian Government
Australian Transport Safety Bureau

Collision with water involving Bell Helicopter Co 204B, VH-EQW

Tarome, Queensland, on 20 September 2023

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Addendum

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Preliminary report

This preliminary report details factual information established in the investigation's early evidence collection phase, and has been prepared to provide timely information to the industry and public. Preliminary reports contain no analysis or findings, which will be detailed in the investigation's final report. The information contained in this preliminary report is released in accordance with section 25 of the *Transport Safety Investigation Act 2003*.

The occurrence

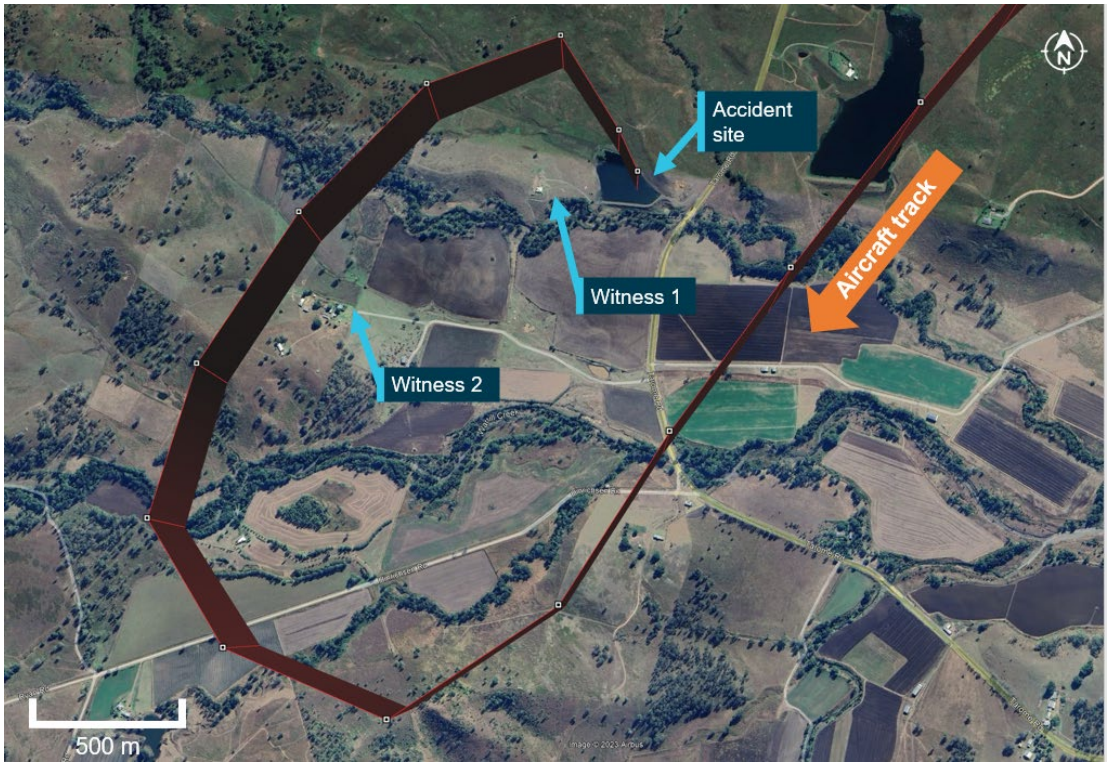
On the afternoon of 20 September 2023, the pilot of a Bell Helicopter Co 204B, registered VH-EQW, was tasked with fire-fighting operations utilising a 1,200 L bucket with a short line. The helicopter departed from a private property near Amberley, Queensland, and tracked to another property in Tarome, about 26 NM (48 km) away. The pilot was operating the helicopter from the left seat for visibility while conducting the operation.

After arriving at Tarome, the pilot commenced picking up their first load of water from a dam. The pilot reported that, during water collection, they heard an unusual noise and that the helicopter 'kicked'. Remaining in the hover, the pilot checked that all engine indications were normal and that the bucket and line were in the appropriate place. However, the pilot reported that something still did not feel right. As a result, they elected to dump the water from the bucket and initiate a climb out. Within about 10-15 seconds, as engine power was being applied, and the water was being released from the bucket, the pilot heard what they described as a 'loud roaring' sound and the helicopter pitched up, yawed, and subsequently had a reduction in power. The helicopter rolled left and impacted the water at low speed. The pilot sustained minor injuries and the helicopter was destroyed.

Witness observations

The accident was observed by 2 witnesses (Figure 1). 'Witness 1' observed the helicopter circle, move towards the dam on their property to collect water, and the entirety of the accident sequence. They photographed and videoed the helicopter's movements up until a few seconds before the accident (Figure 2). That witness did not see or hear anything unusual before the helicopter impacted the water. 'Witness 2' was on an adjacent property; they noted a definitive increase in what they thought may have been engine noise just before the accident occurred.

Figure 1: VH-EQW flight track with accident site and witness locations



Source: Google Earth, modified by the ATSB

Figure 2: VH-EQW picking up water from the dam just prior the accident

Source: Supplied

Pilot egress

Almost immediately after the impact, the helicopter inverted, started to fill with water, and sink rapidly. The pilot removed their seatbelt and helmet, and attempted to open the front left door but could not open it with either the normal or emergency release handles. When the helicopter was almost fully submerged, the pilot swam to the rear of the cabin and tried to open the rear right door but could not open it either, making further attempts to get out by kicking the helicopter windows. The pilot then moved to the rear left door and, utilising considerable force, was able to successfully open it. The pilot noted in interview, that when they initially attempted to open the doors, they may have been trying to move the door handles in the incorrect (opposite) direction due to the helicopter being inverted.

The pilot escaped and swam a few metres to the surface and then to the side of the dam. The pilot stated that familiarity with the helicopter, the open area in the cabin (all seats removed) and HUET (helicopter underwater escape training) all assisted with their ability to successfully escape from the helicopter.

Context

Pilot information

The pilot held a Commercial Pilot Licence (Helicopter) with ratings for single and gas turbine engine helicopters. Prior to the accident flight, the pilot had accumulated 2,599.4 hours of total flying experience and 220.8 hours on the Bell 204B type helicopter.

The pilot last completed an aerial application proficiency check on 29 June 2023, which was valid until 20 June 2024. The pilot was qualified to conduct helicopter fire-fighting operations and had both low-level and sling operation ratings.

The pilot held a Class 1 Aviation Medical Certificate, valid to 12 June 2024, with no restrictions.

Aircraft information

The Bell Helicopter Company 204B is the civilian version of the UH-1 Iroquois. It was designed in the mid 1950's as a utility helicopter. The helicopter had a 2-blade main rotor and 2-blade tail rotor and was powered by an Ozark Aeroworks T53-L-13B turboshaft engine. The accident helicopter (S/N 2038) was manufactured in the United States in 1965. The helicopter was first registered in Australia in 2014 as VH-EQW and had accumulated about 23,515 total time-in-service. It had a current airworthiness certificate and maintenance release with no outstanding defects at the time of the accident.

Wreckage examination

The helicopter was recovered from the dam and taken to a secure facility for detailed examination. The helicopter's rotor systems, flight controls, exits, and engine were visually examined. No pre-accident damage was identified. The pilot's left front door emergency jettison system was tested serviceable.

Further investigation

To date, the ATSB has interviewed the pilot, the witnesses, and conducted a preliminary examination of the helicopter wreckage.

The investigation is continuing and will include review and examination of:

- the pilot's training and records
- maintenance documentation
- key components of the helicopter.

Should a critical safety issue be identified during the course of the investigation, the ATSB will immediately notify relevant parties so appropriate and timely safety action can be taken.

A final report will be released at the conclusion of the investigation.

General details

Occurrence details

Date and time:	20 September 2023 – 1440 EST	
Occurrence class:	Accident	
Occurrence categories:	Collision with terrain	
Location:	7 NM (13 km) west of Aratula, Queensland	
	Latitude: 27°58'37.80"S	Longitude: 152°26'42.94"E

Aircraft details

Manufacturer and model:	Bell Helicopter Co 204B	
Registration:	VH-EQW	
Operator:	Forest Air Helicopters (Aust) Pty Limited	
Serial number:	2038	
Type of operation:	Part 138 Aerial work operations - Dispensing	
Activity:	General aviation/recreational - Aerial work – Fire-fighting	
Departure:	Amberley, Queensland	
Destination:	Tarome, Queensland	
Persons on board:	Crew – 1	Passengers – 0
Injuries:	Crew – 1 (minor)	Passengers – N/A
Aircraft damage:	Destroyed	

Australian Transport Safety Bureau

About the ATSB

The ATSB is an independent Commonwealth Government statutory agency. It is governed by a Commission and is entirely separate from transport regulators, policy makers and service providers.

The ATSB's purpose is to improve the safety of, and public confidence in, aviation, rail and marine transport through:

- independent investigation of transport accidents and other safety occurrences
- safety data recording, analysis and research
- 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, as well as participating in overseas investigations involving Australian-registered aircraft and ships. It prioritises investigations that have the potential to deliver the greatest public benefit through improvements to transport safety.

The ATSB performs its functions in accordance with the provisions of the *Transport Safety Investigation Act 2003* and Regulations and, where applicable, international agreements.

Purpose of safety investigations

The objective of a safety investigation is to enhance transport safety. This is done through:

- identifying safety issues and facilitating safety action to address those issues
- providing information about occurrences and their associated safety factors to facilitate learning within the transport industry.

It is not a function of the ATSB to apportion blame or provide a means for determining 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. The ATSB does not investigate for the purpose of taking administrative, regulatory or criminal action.

Terminology

An explanation of terminology used in ATSB investigation reports is available on the ATSB website. This includes terms such as occurrence, contributing factor, other factor that increased risk, and safety issue.