



**Australian Government**

**Australian Transport Safety Bureau**

# Collision with terrain involving Robinson R44, VH-IDW

King River, Northern Territory, on 28 February 2022

**ATSB Transport Safety Report**

Aviation Occurrence Investigation

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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 28 February 2022, the crew of three Robinson R44 helicopters were preparing to conduct crocodile egg collection in Arnhem Land, Northern Territory. The egg collection was conducted under contract to Wildlife Harvesting (Northern Territory).

Each helicopter had two crewmembers – one nominated pilot in command and one egg collector. Two of the helicopters were operating under a Civil Aviation Safety Authority Instrument. The instrument authorised the pilot in command to operate with a person outside the aircraft in a harness system attached to the helicopter for the purpose of collecting crocodile eggs. The authorisation was subject to a number of conditions, which included fitment of equipment under an Engineering Order or a Supplemental Type Certificate and an associated flight manual supplement.

The two helicopters used for sling operations were fitted with dual external cargo hooks, which attached to rings on a 100 ft long line. This enabled the egg collector ('sling person') to be slung 100 ft below the helicopter to access the nests. The line could be released by the pilot via a quick release system for the cargo hooks. The cargo hooks were fitted with primary and back-up dual quick release systems, to reduce the likelihood of inadvertent pilot activation and provide redundancy in case of failure. One of those two helicopters was an R44 Raven II, registered VH-IDW, operated by Helibrook Pty Ltd. The third helicopter was primarily to be used for transporting eggs, although both its pilot and collector also collected eggs on foot and wore a harness so they could be slung under either of the other two helicopters as needed.

At about 0703 Central Standard Time,<sup>1</sup> the three helicopters departed from Noonamah, for a 90-minute flight to a site where fuel drums had been pre-positioned en route to the collect sites. Fuel was available at Noonamah and the drum site, however, there were no accurate records of fuel uplift for VH-IDW.

The helicopters departed from the drum site at about 0830 and tracked to the King River staging area, where the crews prepared to commence egg collection operations (Figure 1). Recorded OzRunways<sup>2</sup> data for two of the helicopters recorded their arrival at the staging area at 0850. The pilot and sling person of VH-IDW planned to start the egg collection from a nest located close to the staging area. At about 0900, the other two helicopters departed the staging area for their crew to commence collecting eggs about 12 km to the north-east. Data recorded for the egg collection showed that the crew of those two helicopters collected eggs from nine nests between 0911 and 1014.

By 1014, the four crewmembers operating to the north-east became concerned that they had not heard any radio communications from the crew of VH-IDW since departing the staging area. As a result, one of the pilots elected to return to the area they expected VH-IDW to be operating in. At 1036, the pilot located the wreckage of VH-IDW and landed near the accident site (Figure 1). They found the helicopter substantially damaged having collided with trees and terrain. The sling person was deceased, and the pilot had sustained serious injuries. After providing reassurance to the

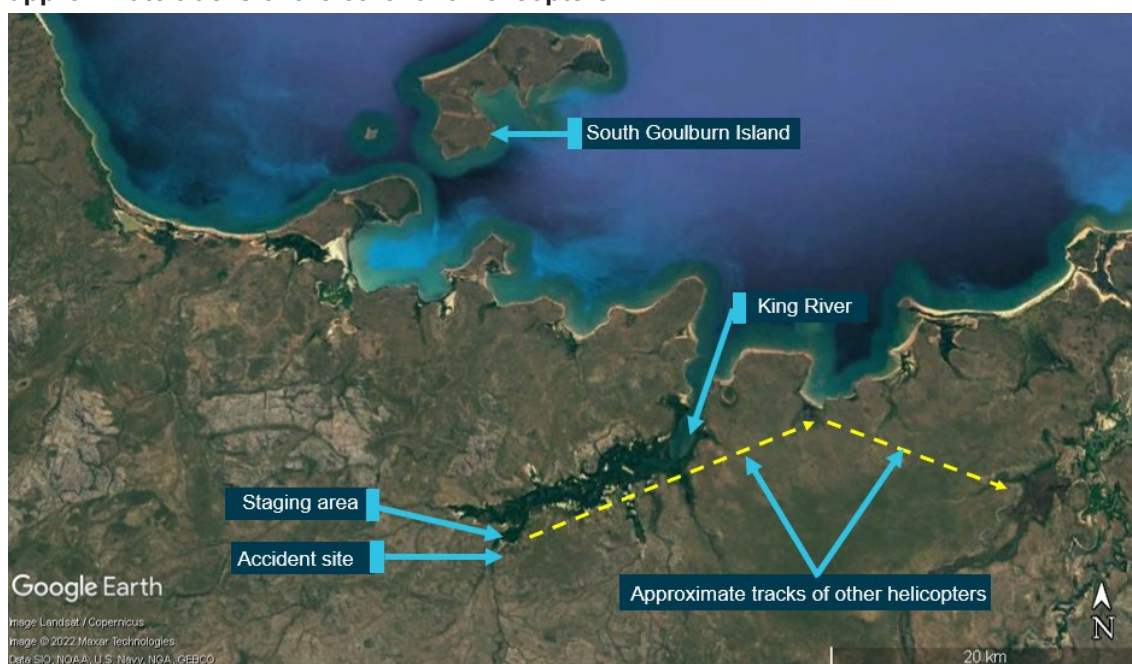
<sup>1</sup> Central Standard Time (CST): Coordinated Universal Time (UTC) + 9.5 hours

<sup>2</sup> OzRunways is an electronic flight bag application that provides navigation, weather, area briefings and other flight information. It provides the option for live flight tracking by transmitting the device's position and altitude.

pilot of VH-IDW, the other pilot returned to their helicopter and took off briefly to get mobile reception and call for assistance. A Careflight helicopter arrived on site at about 1230 and airlifted the pilot to Maningrida, where they were transferred to an aeroplane and flown to Darwin.

The location of the accident was in the vicinity of the first target nest for egg collection by the crew of VH-IDW. No eggs had been collected, indicating that the accident probably occurred about 90 minutes before it was found. A handheld emergency position indicating radio beacon and the helicopter's emergency locator transmitter, which was not mounted in the installed airframe rack or armed in case of emergency, were subsequently found in helicopter. Neither was activated to alert rescue personnel at the time of the accident.

**Figure 1: Accident area including King River, staging area, accident site and the approximate tracks of the other two helicopters**



Source: Google earth overlaid with positions obtained from OzRunways and collection data

## Context

### *Site and wreckage*

The accident site was located in a paperbark swamp approximately 300 m from the staging area. Preliminary analysis of the site indicated that the accident sequence had occurred in a north-westerly direction. The sling person was found approximately 40 m prior to the main wreckage. The long line attachment rings were not connected to the helicopter cargo hooks. Although the pilot reported that they had been wearing the 4-point seat restraint, the pilot had egressed the helicopter and lay beside it.

The helicopter's main rotor blade had struck and cut through the trunk of at least one tree at multiple points before the helicopter collided with terrain upright, facing north-east (Figure 2). The helicopter's skids had splayed and fractured, and the base of the pilot's seat had crushed as designed to absorb impact forces.



**Figure 2: VH-IDW accident site**



Source: Careflight

Initial assessment indicated that the engine was stopped when the helicopter collided with the ground. There was no visible damage to the tail rotor blades and continuity of the drive system and flight controls was established.

The two fuel bladder tanks were intact despite breaches of the surrounding metal tanks and there was no fire. However, the fuel system was compromised in the accident and it was possible fuel escaped into the creek that flowed beneath the wreckage. After initial assessment, the helicopter wreckage was retrieved from the site. ATSB investigators subsequently drained about 250 ml of blue fuel from the main tank's bladder.

### ***Engine examination***

The engine and associated components were taken to CASA-authorised maintenance facilities for examination under supervision of the ATSB. The examinations did not identify defects of the engine likely to result in engine stoppage.

### ***Pilot qualifications and experience***

The pilot held a Class 1 Medical Certificate, a Commercial Pilot Licence (helicopter) and a low-level helicopter rating. At the time of the accident, the pilot had a total aeronautical experience of about 2,500 hours.

### ***Weather***

The weather recorded at 0900 at the two nearest Bureau of Meteorology weather stations was:

- Warruwi (Goulburn Island) 30 km north of the accident site: west-north-westerly wind at 13 km/hr, QNH 1009.6 hPa, temperature 28.8 °C.
- Maningrida 90 km east of the accident site: westerly wind at 6 km/hr, QNH 1009.1, temperature 27.5 °C.

At sea level QNH 1009 hPa and 28 °C, the density altitude is 1,680 ft.

## Further investigation

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

- electronic components retrieved from the accident site
- fuel system components
- refuelling practices
- fuel quality
- maintenance records
- operational documentation
- regulations
- survivability aspects.

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.

## Acknowledgements

The ATSB would like to acknowledge the assistance of Careflight, the Northern Territory Police and Nautilus Aviation.

# General details

## Occurrence details

|                        |   |                           |
|------------------------|---|---------------------------|
| Date and time:         | 28 February 2022 – approximately 0910 Central Standard Time           |                           |
| Occurrence class:      | Accident  |                           |
| Occurrence categories: | Collision with terrain  |                           |
| Location:              | 30 km south of South Goulburn Island (King River), Northern Territory |                           |
|                        | Latitude: 11° 55.731' S   | Longitude: 133° 24.728' E |

## Aircraft details

|                         |   |                |
|-------------------------|---|----------------|
| Manufacturer and model: | Robinson Helicopter Co R44 Raven II                             |                |
| Registration:           | VH-IDW  |                |
| Operator:               | Helibrook Pty Ltd   |                |
| Serial number:          | 12335   |                |
| Type of operation:      | Part 138 Aerial work operations                                 |                |
| Activity:               | General aviation/recreational – Aerial work – Other aerial work |                |
| Departure:              | King River, Northern Territory                                  |                |
| Destination:            | King River, Northern Territory                                  |                |
| Persons on board:       | Crew – 1 on board, 1 sling person                               | Passengers – 0 |
| Injuries:               | Crew – 1 (Serious), 1 sling person (Fatal)                      | Passengers – 0 |
| Aircraft damage:        | Substantial   |                |