



# Collision with terrain – 5 km NE Purnululu ALA, WA

**14 September 2008**

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INFRA-08302

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

## Abstract

At about 1250 Western Standard Time on 14 September 2008, a Robinson Helicopter Company R44 Raven helicopter that was conducting a scenic flight of the Bungle Bungles impacted the ground 5 km north-east of the Purnululu Aircraft Landing Area (ALA), WA. The pilot and three passengers were fatally injured and the helicopter was seriously damaged.

The investigation is continuing.

## FACTUAL INFORMATION

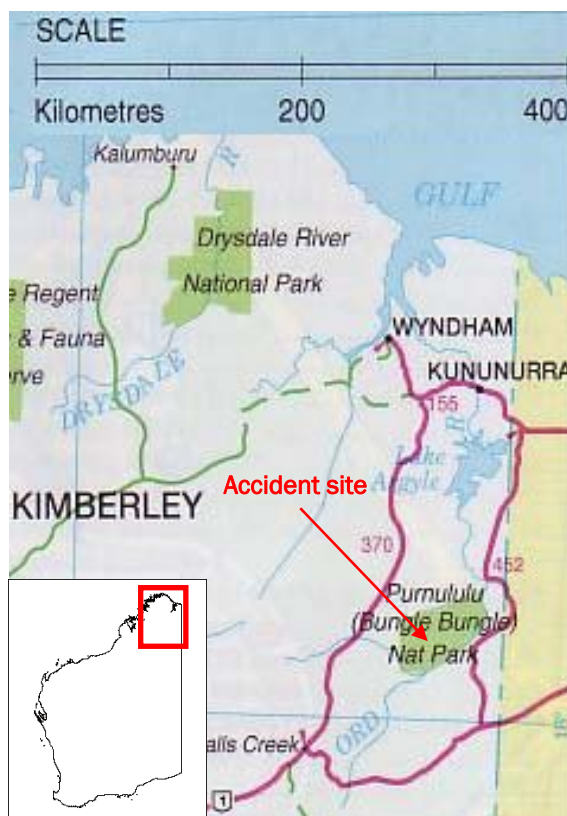
*The information contained in this preliminary report is derived from initial investigation of the occurrence. Readers are cautioned that there is the possibility that new evidence may become available that alters the circumstances as depicted in the report.*

## History of the flight

At about 1230 Western Standard Time<sup>1</sup> on 14 September 2008, a Robinson Helicopter Company R44 Raven helicopter, registered VH-RIO, departed the Purnululu Aircraft Landing Area<sup>2</sup> (ALA) on a scenic flight of the Bungle Bungles, which was located within the Purnululu National Park, about 250 km south of Kununurra, WA

(Figure 1). Onboard the helicopter were the pilot and three passengers.

**Figure 1: General location of the accident**



A search and rescue (SAR) time (SARTIME<sup>3</sup>) of 1250 was nominated by the pilot for the flight and held by other company pilots who were located at the ALA.

At about 1250, when the helicopter had failed to return to the ALA, a company pilot on the ground at the ALA attempted to contact the pilot of the helicopter via very high frequency (VHF) and ultra

- 1 The 24-hour clock is used in this report to describe the local time of day, Western Standard Time (WST), as particular events occurred. Western Standard Time was Coordinated Universal Time (UTC) + 8 hours.
- 2 Aircraft landing area (ALA) means a place that may be suitable for the landing and take-off of an aircraft of appropriate certification and performance, but which may not fully meet formal standards of construction, marking, maintenance or reporting.

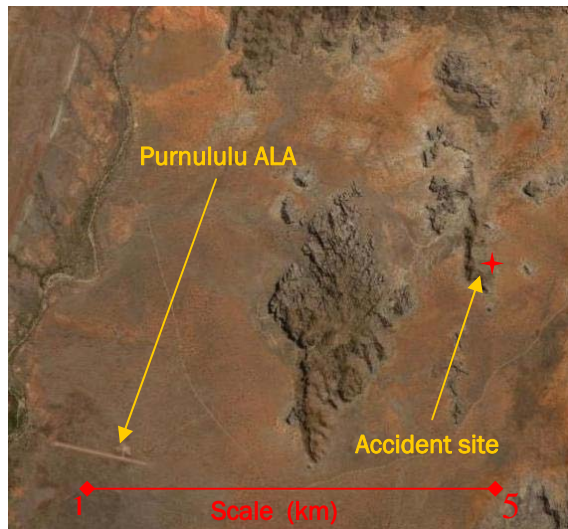
- 3 SARTIME. The time nominated by a pilot for the initiation of SAR action if a report has not been received by the nominated unit.

high frequency (UHF) radio, but without success. A second company pilot then commenced a search using another company helicopter. Shortly after becoming airborne, that pilot noticed smoke to the north-east of the ALA (Figure 2), and flew to that location. On arrival in the area of the smoke, the pilot determined that the missing helicopter had collided with the ground and was on fire. The pilot assessed that there were no survivors.

Officers from the Department of Conservation and Environment responded to the fire and arrived at the accident site at about 1330. On arrival, those officers confirmed that the pilot and three passengers were fatally injured. The helicopter was seriously damaged by the impact and post-impact fire.

The weather at the time of the accident was reported to have been fine with clear skies, a light south-easterly breeze and a temperature of approximately 38° C.

**Figure 2: Accident site relative to the Purnululu ALA**<sup>4</sup>



## Pilot information

The pilot held a Commercial Pilot (Helicopter) Licence that was issued in December 2002, and was endorsed to operate the R44 in January 2008. The pilot's Class 1 Medical Certificate was valid until March 2009.

An examination of the pilot's flying log book and of the operator's documentation showed that the

pilot had accrued about 525 hours, of which about 395 hours were in the R44.

## Helicopter information

The helicopter was manufactured in the US in 2006 and first registered in Australia in April 2006. It was powered by a Textron Lycoming O-540-F1B5 six-cylinder reciprocating engine. At the time of the accident, the helicopter had accumulated about 1,520 hours in service.

The most recent scheduled maintenance of the helicopter was a 100-hourly inspection that was carried out by the operator on 20 August 2008. Other, non-scheduled maintenance was carried out on the helicopter's main rotor system on 29 August 2008.

The pilot that had previously operated the helicopter reported that, prior to the accident flight, the aircraft was refuelled to 100 L. A number of photographs of the helicopter's instrument cluster that were taken by one of the passengers just prior to the departure from the ALA suggested that the total fuel quantity at that time was about 80 L.

## Wreckage and accident site information

The accident site, although relatively flat, was situated close to a rocky outcrop that extended several hundred feet above the underlying terrain (Figure 3).

Damage to the lower right corner of the engine firewall indicated that the helicopter impacted the ground heavily and with little or no forward speed before coming to rest on its right side. The helicopter's cabin and engine compartment were substantially damaged by the fire (Figure 4).

Due to the severity of the post-impact fire, it was not possible to verify the integrity of the flight control system. However, all steel components associated with the collective and cyclic flight controls were found intact and secure. Evidence of the rubber drive belts that transmit engine power to an overrunning clutch and then to the main and tail rotors was found within the drive pulley system. However their pre-impact serviceability could not be established.

A number of the helicopter's components, including the engine and other items were removed from the accident site for further technical examination.

<sup>4</sup> Image courtesy of Google Earth Pro.

Figure 3: Overhead view of the accident site

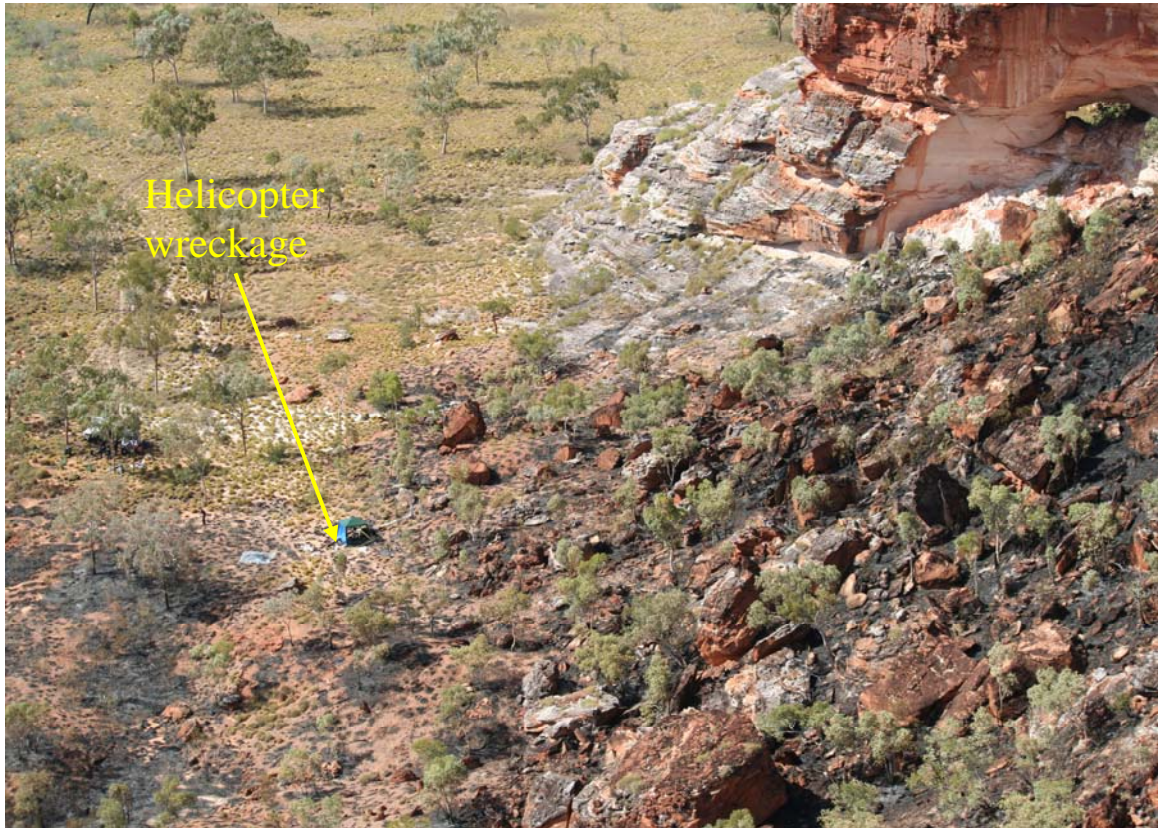


Figure 4: Accident site facing north



### Further investigation

The investigation is continuing and will include:

- Technical examination of the helicopter's engine and other recovered items and components.
- Analysis of additional photographs that were taken by one of the passengers just prior to and during the flight.
- A review of the operational factors and documentation affecting the flight.
- A review of the aircraft's documentation and maintenance records.