



Australian Government

Australian Transport Safety Bureau

Collision with terrain involving Cessna U206G, VH-JVR

124 km west of Norseman, Western Australia, on 3 March 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 3 March 2022, a Cessna U206G, registered VH-JVR, was being operated by MAGSPEC Aviation for low-level, geophysical survey flights to the west of Norseman, Western Australia.

At about 1200 WST,¹ the aircraft departed Kalgoorlie, Western Australia, for the survey block about 120 km west of Norseman. The pilot was the sole occupant on board the aircraft.

Weather conditions in the survey area were fine with light southerly winds. Earlier in the morning, another company pilot had flown the aircraft on a survey flight. That pilot had conducted a confirmatory reconnaissance flight, noting no major obstacles or issues other than a few taller trees. This information was passed to the pilot of the accident flight before they departed.

The survey lines were parallel to each other at 25 m spacing in an east-west orientation. The survey lines were to be flown at a height of 25 m (82 ft) above ground level (AGL).

The pilot commenced the first survey line at about 1252. At 1343, the GPS tracking device recorded the aircraft was on a westerly heading at a speed of 116 kt and a height of 1,398 ft (GPS height).² This was the last position recorded and the height was consistent with the intended survey height above ground level.

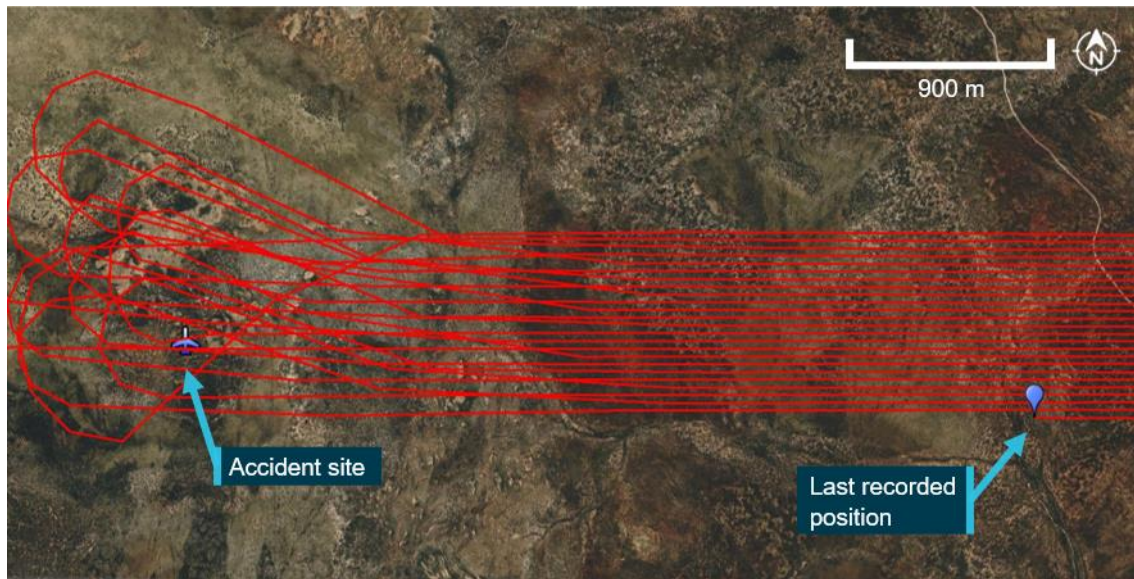
The aircraft did not return to Kalgoorlie by the pilot's nominated estimated time of arrival of 1630, and the operator commenced its emergency response. The operator had another aircraft and pilot at Norseman, which was dispatched to VH-JVR's last known position; however, that pilot was not able to locate the aircraft.

The Joint Rescue Coordination Centre (JRCC) initiated a search operation after it was advised by the operator at 1700 that the aircraft was overdue. A search aircraft located the aircraft wreckage at 1852, approximately 3.6 km west of its last recorded position (Figure 1). That aircraft's crew were not able to establish communications with the pilot of the accident flight. The JRCC also deployed a rescue helicopter to the site, and its crew confirmed that the pilot had been fatally injured.

¹ Western Standard Time (WST) was Universal Coordinated Time (UTC) + 8 hours.

² Data points were recorded every 15 seconds and uploaded once per minute.

Figure 1: VH-JVR's accident site and last recorded position



Source: Recorded flight path data and Google Earth, annotated by the ATSB

Context

Pilot information

The pilot held a valid commercial pilot licence (aeroplane) with a multi-engine command instrument and low-level ratings. Their last flight review was completed in June 2021 and their class 1 medical was valid until June 2022. The pilot had held a low-level rating since June 2021 and had completed the operator's low-level survey training in July 2021.

The pilot had previously worked as a flight instructor and high-level survey pilot. At the time of the accident, the pilot had about 1,772 hours total, of which about 557 hours was with the operator.

Aircraft information

General

VH-JVR was a Cessna U206G Stationair, which was a single-engine, fixed landing gear aeroplane powered by a Continental IO-520-F piston engine (Figure 2). It was manufactured in 1978 with serial number U20604795 and was first registered in Australia in 1998. Its last periodic inspection was in March 2022 and it had accrued almost 8,000 hours total time in service.

Modifications

VH-JVR had been modified to conduct geophysical survey flights. A magnetometer boom was installed at the rear of the aircraft and associated survey equipment was in the rear cabin. The survey equipment had its own separate power supply. The aircraft also had a GPS tracking device.

The aircraft had also been modified with a fuel selector valve from a C210, which enabled the selection of both fuels tanks to supply the engine at same time.

Figure 2: VH-JVR

Source: Jarrod Swanwick (via www.jetphotos.com), modified by the ATSB

Site information

The aircraft was located in dense bushland 124 km west of Norseman. Access to the site was difficult with the nearest vehicle-accessible track only reaching to within 4 km of the accident site. An additional track was cleared through bushland to enable vehicle access to the accident site.

Damage at the point of impact indicated that the aircraft initially struck trees in an upright but relatively steep nose-down attitude. The impact caused the left wingtip and aileron to separate from the aircraft. The aircraft then impacted the ground on its left side and continued through the bush in a southerly direction, coming to rest about 45 m from the initial point of impact (Figure 3).

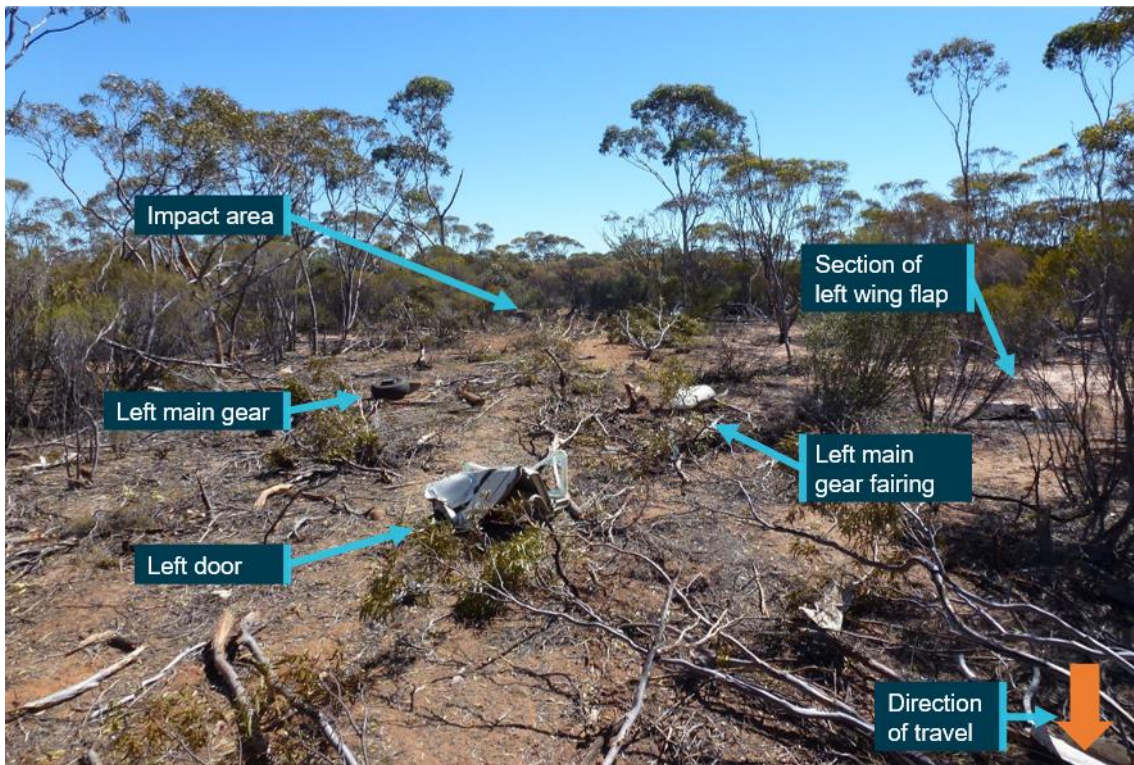
The aircraft felled a number of trees and several parts had separated from the main body, including the nose gear assembly, left main gear, left door, windscreen and sections of the lower engine cowlings and lower engine components (Figure 4). There was no indication of fire in the wreckage trail, either in the bushland or aircraft components. However, the remainder of the aircraft was almost entirely destroyed by a post-impact fire. The propeller had separated from the engine and was located towards the rear of the wreckage and the engine had been detached from its mounts. The right wing was relatively intact as was the magnetometer boom, albeit damaged by fire (Figure 5).

Figure 3: Wreckage trail looking south towards the main wreckage



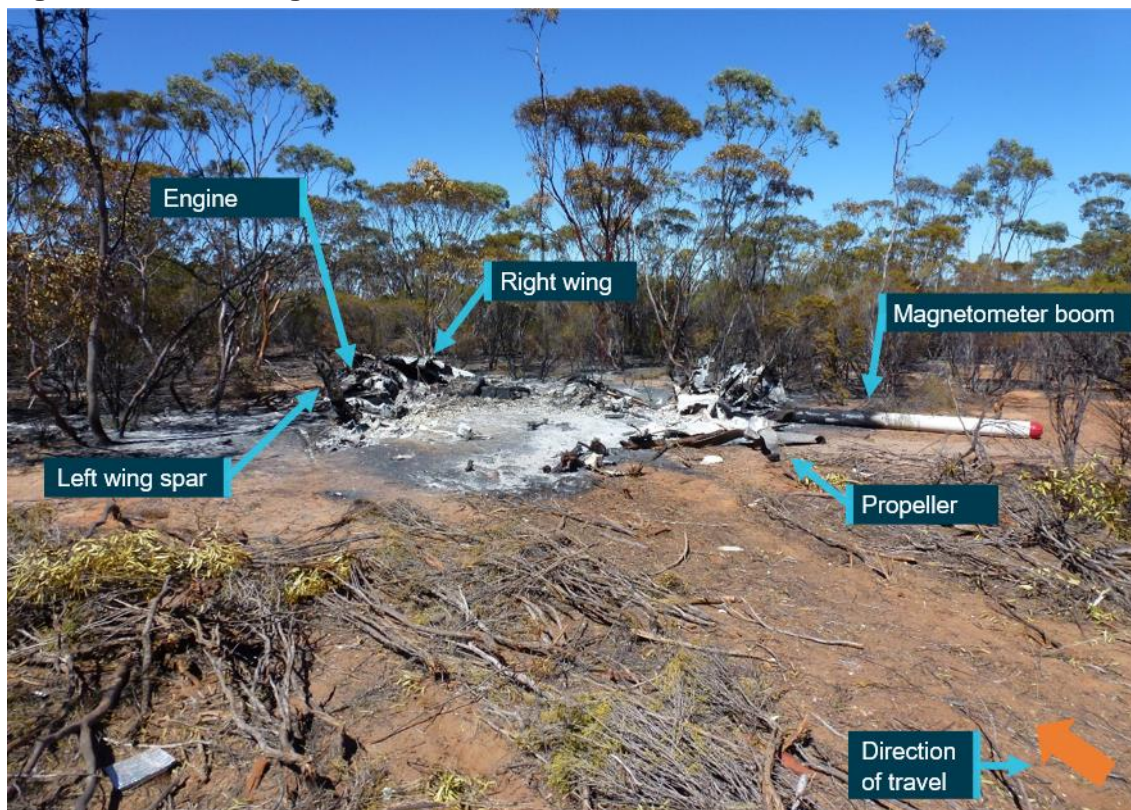
Source: ATSB

Figure 4: Wreckage trail looking north towards the impact area



Source: ATSB

Figure 5: Main wreckage



Source: ATSB

Wreckage examination

The wreckage was examined on-site and to the extent possible (given the post-impact fire). The following observations were made:

- all components of the aircraft were accounted for at the site
- there were no indications of pre-impact structural failures
- flight control continuity was established
- propeller damage and propeller strike marks observed in the trees were indicative of the engine producing power at the time of impact
- there were no indications of pre-impact damage or defects to the engine
- the flaps were fully retracted (although only the right wing was able to be examined due to fire damage)
- there was no indication of a pre-impact, inflight fire (although the extent that this was able to be verified was limited due to the post-impact fire).

Further investigation

To date, the ATSB has:

- examined the wreckage
- recovered aircraft components and other items for further analysis
- interviewed relevant parties
- collected aircraft and operator documentation
- collected the pilot's records.

The investigation is continuing and will include:

- further review of aircraft and operator documentation
- further review of the pilot's records
- further review and examination of aircraft components and other items recovered from the accident site
- further analysis of flight path information from the aircraft's GPS tracking device
- review of the risk controls in place for low-level survey work.

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 significant assistance provided by the Western Australia Police Force and Poseidon Nickel Ltd during the onsite investigation phase.

General details

Occurrence details

Date and time:	03 March 2022 – 1343 WST	
Occurrence class:	Accident	
Occurrence categories:	Collision with terrain	
Location:	124 km west of Norseman, Western Australia	
	Latitude: 32° 1.808' S	Longitude: 120° 28.963' E

Aircraft details

Manufacturer and model:	Cessna Aircraft Company U206G	
Registration:	VH-JVR	
Operator:	MAGSPEC Aviation Pty Ltd	
Serial number:	U20604795	
Type of operation:	Aerial Work	
Activity:	General aviation – Aerial work – Other surveying	
Departure:	Kalgoorlie-Boulder Aerodrome, Western Australia	
Destination:	Kalgoorlie-Boulder Aerodrome, Western Australia	
Persons on board:	Crew – 1	Passengers – 0
Injuries:	Crew – 1 (Fatal)	Passengers – 0
Aircraft damage:	Destroyed	