Australian Government
Australian Transport Safety Bureau

Partial engine power loss and runway excursion involving Cessna 210L VH-FTM

near Groote Eylandt Airport, Northern Territory on 16 June 2023

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*.

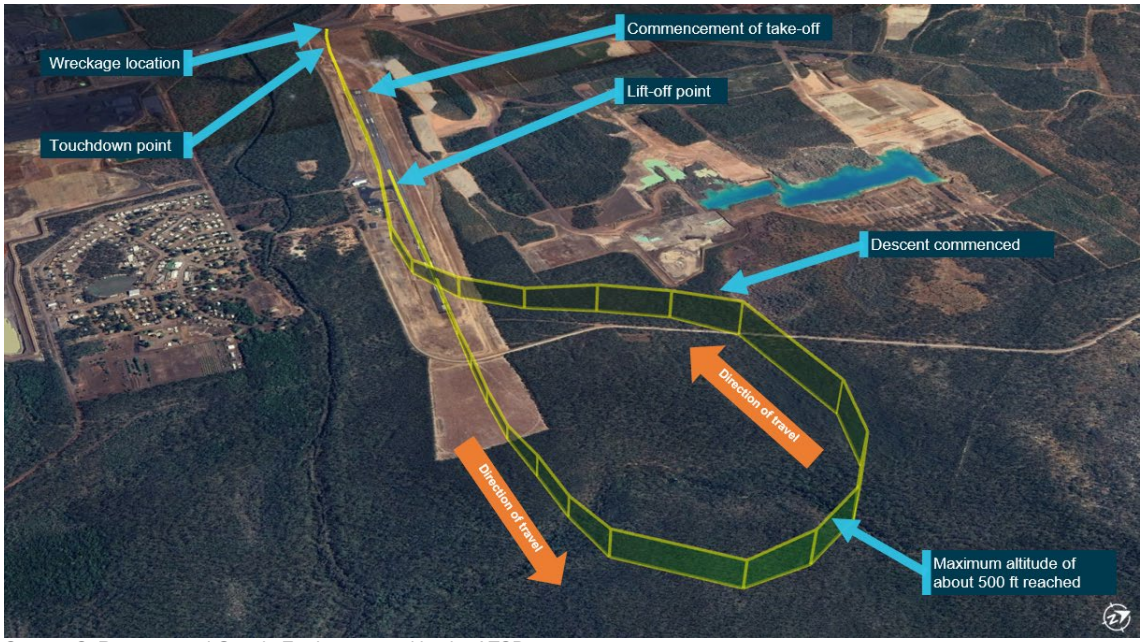
The occurrence

On the afternoon of 16 June 2023, a Cessna 210L, registered VH-FTM, taxied for a passenger air transport flight[1] from Groote Eylandt Airport, Northern Territory to Ngukurr Airport with a pilot and 5 passengers on board.

At about 1347:57, the pilot commenced the take-off from runway 10, using the full length of the runway. The surface wind at the time was recorded as south-southeast at 8–12 kt.

Based on the pilot recollection and flightpath data recorded on board the aircraft, the aircraft became airborne at about the midway point of the 1,903 m long runway. Shortly after becoming airborne, at an altitude of about 100 ft, the pilot noted engine surging accompanied by fuel flow fluctuations. The pilot continued to climb the aircraft straight ahead with a recorded ground speed of about 83 kt. At about 1349:35, and at an altitude of about 400 ft, the pilot made a broadcast on the Groote Eylandt Airport common traffic advisory frequency (CTAF) advising that they would be returning to Groote Eylandt Airport. At the same time, the pilot commenced a left turn and continued to climb to an altitude of about 500 ft (Figure 1).

Figure 1: Flight path overview



Source: OzRunways and Google Earth annotated by the ATSB

At about 1349:58, the pilot had a brief discussion on the Groote Eylandt Airport CTAF with another pilot that was in the area advising that the aircraft had fuel flow issues.

[1] The flight was operated under Civil Aviation Safety Regulations Part 135 (Air transport operations - smaller aeroplanes).

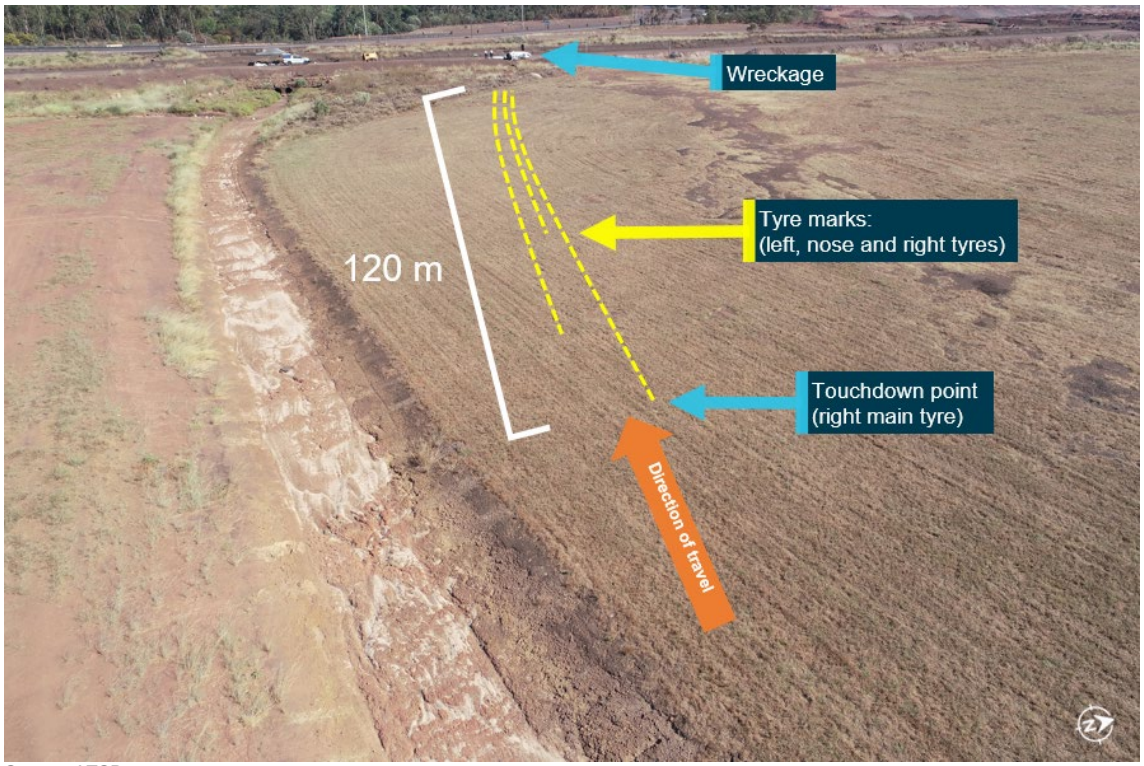
Shortly after 1350:00, the aircraft began to descend with a recorded ground speed of about 104 kt. The aircraft passed diagonally over the runway near the threshold for runway 28, and made a right turn to fly parallel to the runway while continuing to descend.

The aircraft was captured by a security camera and continued to descend while tracking parallel to runway 28. A minute later, the aircraft flew past the end of runway 28 at an altitude of about 100 ft and a ground speed of about 91 kt.

The aircraft was captured by a second security camera as it touched down in a clear grassed area about 500 m west of the threshold for runway 10. The aircraft continued along the ground for about 120 m with a recorded groundspeed of 87–62 kt before hitting an embankment on the eastern side of a culvert (Figure 2). The aircraft traversed the culvert and then struck a larger embankment on the western side. The aircraft flipped and came to rest inverted on a mine service road (Figure 3).

The pilot and passengers exited the aircraft prior to the arrival of first responders. Four passengers received serious injuries while the pilot and 1 passenger sustained minor injuries. The aircraft was substantially damaged.

Figure 2: Touchdown point overview



Source: ATSB

Figure 3: Site overview

Source: ATSB

Context

Pilot information

The pilot held a valid class 1 aviation medical certificate and a commercial pilot licence (aeroplane), having completed a flight review on 8 March 2023. At the time of the accident, the pilot had about 320 hours total aeronautical experience, including about 47 hours flying the Cessna 210L, and had commenced employment with the aircraft operator in May 2023.

Aircraft information

The Cessna 210L is a high-wing, all-metal, unpressurised aircraft with a retractable landing gear. The accident aircraft had a single Continental IO-520 reciprocating piston engine driving a constant-speed propeller. The aircraft, serial number 21061159, was manufactured in 1976 and was first registered in Australia in May 1976. Its last periodic inspection was completed 15 February 2023, and it had accrued 17,001.4 hours total time in service.

Prior to departure, the aircraft was loaded with 240 L of fuel (120 L in each of the two wing tanks).

Airport information

Groote Eylandt Airport was located about 1 km north of the town of Angurugu on Groote Eylandt, Northern Territory. The airport had an elevation of 53 ft above mean sea level and a single sealed runway, orientated in a 095°–275° magnetic direction, which was 1.903 km long. Groote Eylandt Airport was located within non-controlled Class G airspace and had a designated common traffic advisory frequency on which pilots were required to make positional broadcasts when operating within the vicinity of the airport.

Site and wreckage

The ATSB conducted an on-site examination of the aircraft wreckage. The aircraft initially struck the larger embankment on the western side of the culvert in an upright attitude. The culvert was located about 700 m to the west of the threshold for runway 10. The impact resulted in the detachment of the nose wheel and the right lateral displacement of the engine assembly. The aircraft then rotated vertically, pivoting at the nose, before coming to rest inverted (Figure 5).

Figure 4: Wreckage of VH-FTM

Source: ATSB

All major sections of the aircraft's structure were accounted for at the accident site. Flight control continuity was established where possible and wing flaps[2] were assessed to have likely been in the retracted position at the time of impact, rather than in the landing position. The landing gear was in the extended position and propeller damage was indicative of low rotational power at the time of impact.

Fuel was found spilled at the accident site and fuel samples were taken at various points throughout the fuel system. These samples showed no evidence of contamination with water. Fuel system components were examined and found to be free from contamination or obstruction.

Further investigation

To date, the ATSB has:

- examined the wreckage and accident site
- recovered aircraft components and other items for further examination
- interviewed relevant parties
- collected aircraft, pilot and operator documentation
- analysed engine data management system information
- analysed video recordings and recorded flight data.

The investigation is continuing and will include further:

- review and examination of aircraft components and other items recovered from the accident site
- review of aircraft, pilot and operator documentation
- analysis of engine data management system information

[2] A movable surface on the trailing edge of a wing that, when extended, increases both lift and drag and reduces the stall speed. Flaps are extended to improve take-off and landing performance.

- review of airport documentation and the runway end safety area
- analysis of flight path information from video recordings and flight data.

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 Northern Territory Police Force during the on-site investigation phase and initial evidence collection activities.

General details

Occurrence details

Date and time:	16 June 2023 1351 Central Standard Time	
Occurrence class:	Accident	
Occurrence categories:	Engine failure or malfunction, diversion / return, runway excursion, forced/precautionary landing	
Location:	1 NM 280° from Groote Eylandt Aerodrome	
	Latitude: 13.9703°S	Longitude: 136.4434E

Aircraft details

Manufacturer and model:	Cessna Aircraft Company 210L	
Registration:	VH-FTM	
Operator:	Katherine Aviation Pty Ltd	
Serial number:	21061159	
Type of operation:	Part 135 Australian air transport operations - Smaller aeroplanes-Standard Part 135	
Activity:	Commercial air transport-Non-scheduled-Passenger transport charters	
Departure:	Groote Eylandt Airport, Northern Territory	
Intended destination:	Ngukurr Airport, Northern Territory	
Actual destination:	Groote Eylandt Airport, Northern Territory	
Persons on board:	Crew – 1	Passengers – 5
Injuries:	Crew – 1 minor	Passengers – 4 serious, 1 minor
Aircraft damage:	Substantial	

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.