Australian Government
Australian Transport Safety Bureau

Collision with terrain involving Cessna 172, VH-SCU

about 6 km south of Newcastle Waters, Northern Territory, on 7 November 2025

ATSB Transport Safety Report
Aviation Occurrence Investigation (Short)
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Published by: Australian Transport Safety Bureau
Postal address: GPO Box 321, Canberra, ACT 2601
Office: 12 Moore Street, Canberra, ACT 2601
Telephone: 1800 020 616, from overseas +61 2 6257 2463
Accident and incident notification: 1800 011 034 (24 hours)
Email: atsbinfo@atsb.gov.au
Website: atsb.gov.au

Acknowledgement of Country and Traditional Owners

The Australian Transport Safety Bureau acknowledges the traditional owners of country throughout Australia, and their continuing connection to land, sea and community. We pay our respects to them and their cultures, and to elders both past and present.

Investigation summary

What happened

At around 0655 local time on 7 November 2025, a Cessna 172N, registered VH-SCU and operated by Consolidated Pastoral Company (CPC), departed Newcastle Waters Airport, Northern Territory, on a training flight. On board the aircraft were the pilot and an instructor. The pilot was being trained to fly at low level, with the intention of obtaining a low-level operational rating.

About one hour into the flight while flying at around 300 ft above the ground at an airspeed of 80 kts, and manoeuvring to follow a creek bed, the pilot initiated a steep turn to the right. During the turn, control of the aircraft was lost and it descended towards the ground. The instructor attempted to override the pilot's control inputs but could not do so before the aircraft impacted terrain. The aircraft came to rest upright but was substantially damaged. The instructor received minor injuries, the pilot was uninjured.

What the ATSB found

The ATSB found that while conducting a steep turn at low level, excessive aft control input was applied which almost certainly caused the aircraft to enter an aerodynamic stall. Subsequently, inappropriate recovery control inputs by the pilot limited the instructor's ability to intervene before the aircraft collided with the ground.

The initial excessive control input was likely a combined result of the pilot being focused on maintaining a track over the ground feature and their inexperience in handling the aircraft during low-level flight. The subsequent application of an inappropriate stall recovery technique was likely caused by the pilot reverting to instinctive rather than learned behaviour under stress.

The ATSB also found that the instructor's recovery control inputs likely prevented the aircraft from impacting terrain in a nose down attitude and reduced the severity of the collision.

What has been done as a result

The flight training provider undertook a critical review of its training practices and risk mitigation measures.

Safety message

This accident highlights the importance of understanding the relationship between the elevator control stick position and the aircraft's angle of attack, to minimise the risk of an aerodynamic stall. The wing will stall when the control stick is moved beyond a fixed position, irrespective of airspeed and attitude. During steep turns at low airspeed, awareness of the stick position provides increased awareness of the aircraft's performance relative to its limits. This is particularly important to consider when operating close to the ground, such as during take-off, landing, and when conducting low-level air work. Attention may become focused on positioning the aircraft relative to ground features rather than monitoring its aerodynamic performance, and the time available for recovery from an undesired state will be limited.

The investigation

The ATSB scopes its investigations based on many factors, including the level of safety benefit likely to be obtained from an investigation and the associated resources required. For this occurrence, the ATSB conducted a limited-scope investigation in order to produce a short investigation report, and allow for greater industry awareness of findings that affect safety and potential learning opportunities.

The occurrence

At around 0655 local time on 7 November 2025, a Cessna 172N, registered VH-SCU and operated by Consolidated Pastoral Company (CPC), departed Newcastle Waters Airport, Northern Territory, on a training flight. On board the aircraft were the pilot and an instructor. The pilot was being trained to fly at low level,[1] with the intention of obtaining a low-level operational rating and had completed 6 training flights with the instructor over the previous 3 days. The purpose of this flight was to consolidate the earlier training and prepare for the low-level rating flight test.

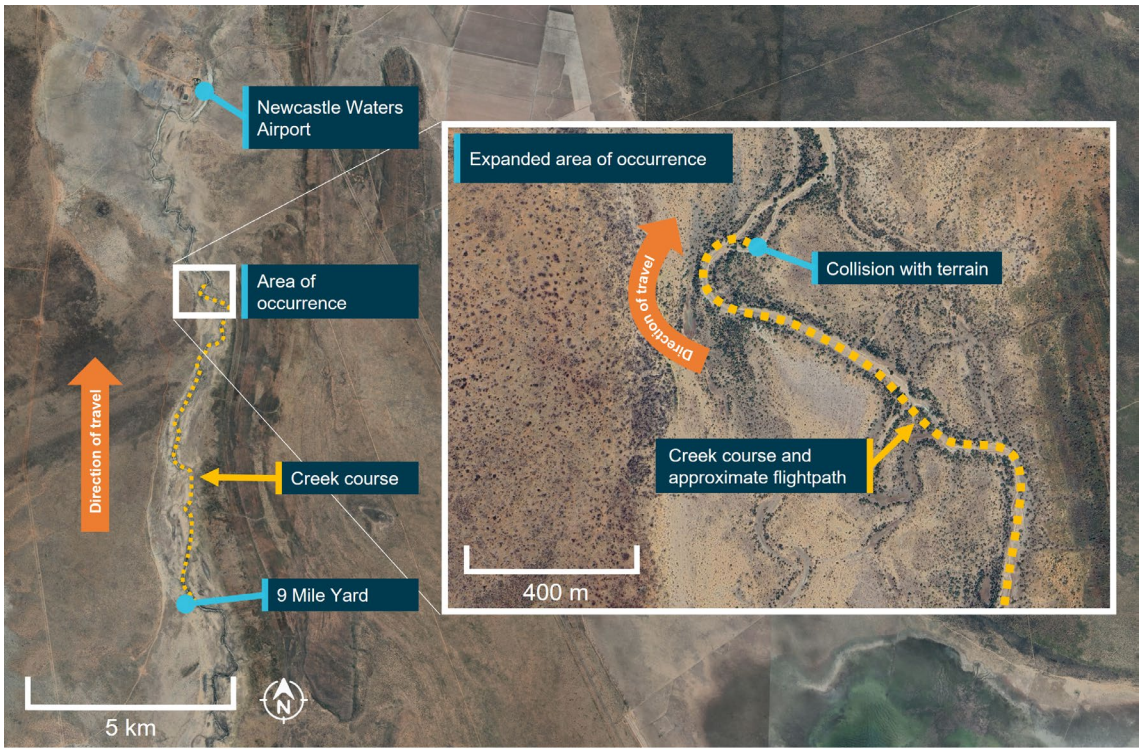
The aircraft was initially climbed to an altitude of approximately 2,000 ft above ground level (AGL), where the pilot demonstrated a sequence of flight manoeuvres. These included left and right turns at angles of bank up to 60° and minimum radius turns at angles of bank up to 45° (see the section titled *Minimum radius turns*). The pilot also demonstrated their ability to identify and recover from a stall during a minimum radius turn.

The pilot then proceeded to perform a pre-briefed low-level task, which simulated a typical airborne survey of station infrastructure. This task was flown at altitudes between 200 ft and 1,000 ft AGL and incorporated simulated contingencies such as system and engine failures. At the completion of this portion of the training flight, the aircraft was approximately 13 km south of Newcastle Waters Airport, just north of 9 Mile Yard (Figure 1).

The instructor then asked the pilot to return to the departure airport by following the Newcastle Waters Creek in a northerly direction, simulating a water course survey activity (Figure 1). The task commenced at an altitude of 300 ft and the pilot was reminded not to descend below the pre-briefed minimum altitude of 200 ft. At around 0750, a few minutes into the activity, the pilot observed that the creek bed ahead made a sharp turn to the right and they began to manoeuvre the aircraft to keep the ground feature directly below the aircraft. At the start of this manoeuvre, the aircraft was flying approximately 300 ft above the terrain at an airspeed of around 80 kt, with flaps retracted.

[1] CASA defines low-level flight operation as any flying conducted below 500 ft above ground level (AGL), other than for the purpose of take-off or landing.

Figure 1: Low-level flightpath over the Newcastle Waters Creek and the location of the collision with terrain



Source: Google Earth, annotated by ATSB

The pilot rolled the aircraft right to a bank angle of around 45º. As the turn commenced, both the pilot and instructor noted that the aircraft's nose was pitching down and the aircraft was beginning to descend. The instructor expected that the pilot would correct the pitch attitude by adding power, following the technique that had been taught and successfully demonstrated during the preceding training.

In addition to the observed descent, the pilot also noted that the aircraft was not turning quickly enough to remain above the ground feature, and in response they rapidly applied more aft control column input to tighten the turn, recalling that they also added a 'smidge' more power, however the instructor advised no power was added. In response, the aircraft rolled further to the right and continued to descend. Immediately, the pilot attempted to level the aircraft's wings and arrest its descent by applying left roll control input, however they maintained aft control input. They stated they did not hear the stall warning horn activate throughout the manoeuvre.

The instructor could also not recall if they heard the stall warning, however they assessed that the aircraft was in an aerodynamic stall and attempted to intervene by making opposing corrective inputs through their own control column but they could not overcome the control forces being held by the pilot. They could not remember if they advised they were 'taking over' however, the pilot flying recalled that the instructor had announced that they were 'taking over' and they subsequently released the controls. The pilot advised that the aircraft was already below the tops of the trees before the instructor's inputs could take effect.

The instructor stated that they judged that the aircraft would now almost certainly impact the terrain, and that the rudder pedals and throttle were the only effective control inputs

available. They applied full power and right rudder with the aim of raising the aircraft's nose and inducing further right yaw. The instructor's intent was to prevent the aircraft from impacting terrain nose first and therefore improve the likelihood of survivability.

As the aircraft descended below the height of the treetops, its pitch attitude had almost levelled, its roll angle had reduced, and it was yawing to the right. The aircraft then impacted the trees, before coming to rest upright on its undercarriage, on relatively flat terrain. It had yawed during the impact sequence, such that it was facing back along its flightpath through the trees. The aircraft sustained extensive damage, particularly to its wings and tail section, with the latter being almost completely detached from the rear fuselage (Figure 2).

Figure 2: VH-SCU as it came to rest following impact with trees and terrain

Source: Supplied

Immediately after the aircraft came to rest, fuel began draining from a rupture in the right wing prompting the crew to exit the aircraft through the left door. During the impact, the instructor sustained minor injuries, while the pilot suffered no visible injuries but reported some neck pain.

The pilot used a mobile telephone to report the occurrence to the operator, and a ground vehicle was dispatched, which arrived at the accident site at around 0835 and subsequently transported both crew members back to the Newcastle Waters station. Following an initial examination by medical staff, both crew were conveyed to a medical clinic for treatment. The instructor was later discharged, while the pilot was transported to a hospital in Alice Springs for further assessment and monitoring. The pilot was discharged from hospital the following day.

Context

Flight crew

The pilot of VH-SCU held a Commercial Pilot Licence (Aeroplane) issued in 2024 and a class 1 aviation medical certificate. They had accumulated around 300 flight hours, mostly on single engine piston training aircraft, including the Cessna 172 and Diamond DA40. They had worked as a pilot on the station since October 2025.

The instructor held an Air Transport Pilot Licence (Aeroplane), a class 1 aviation medical, and a low-level rating, among other ratings and endorsements. They had accumulated a total of around 24,500 flying hours, with approximately 2,500 hours in the Cessna 172. They had flown 240 hours in the 90 days prior to the occurrence, with 25 of those in the Cessna 172.

Aircraft

VH-SCU was a Cessna Aircraft Company 172N manufactured in the United States in 1977 and assigned serial number 17268700. It was equipped with a Textron Lycoming O-320-H2AD piston engine, fixed pitch propeller, and fixed tricycle undercarriage. Maintenance records indicated that the airframe had accumulated a total flying time of 15,995 hours prior to the accident flight and the engine had 927.6 hours since overhaul. The aircraft was being maintained under the Civil Aviation Safety Authority Schedule 5 and had flown 45 hours since its most recent maintenance event, which was a 100-hour inspection performed on 23 August 2025.

The aircraft had no recording devices on board and nor was it required to.

Weather

No weather information was recorded for Newcastle Waters station, however the Bureau of Meteorology provided information for the nearest observation station at Daly Waters, approximately 123 km north. An observation issued at 0800 local time reported the temperature to be 29°, with a dew point of 21°, an atmospheric pressure of 1010 hectopascals, and a surface wind of between 8–10 kt from the north. This station did not provide a report of visibility or cloud cover.

Both flight crew provided consistent reports of the weather conditions at Newcastle Waters. They recalled a temperature of between 22–26°, winds of between 5–10 kt from the north-west, smooth air with no mechanical turbulence, and no cloud. There was light smoke haze but this did not significantly impair their visibility. The instructor estimated the density altitude[2] to be approximately 3,000 ft.

Low-level training

The low-level flight training was being provided under the provisions of Part 141 of the Civil Aviation Safety Regulations (CASR). The instructor was qualified to deliver this training and had provided the same training to other pilots, employed at the station, on numerous occasions prior.

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[2] Density altitude is the pressure altitude corrected for non-standard temperature. It is the altitude at which the aircraft 'feels' it is flying regardless of its actual height above sea level.

Part 61 of the CASR required an applicant for a low-level rating and aeroplane low-level endorsement to have, among other conditions:

- undertaken at least 5 hours of dual flight training in an aeroplane while receiving training in low level operations
- pass a flight test defined in the Part 61 manual of standards.

The Part 61 manual of standards prescribed a set of knowledge and flying competencies, which must be satisfactorily demonstrated during the low-level rating flight test. The specific activities and manoeuvres to be demonstrated during the flight test included:

- navigate at low-level
- conduct steep, max rate and min radius turns
- recover from approach to stalls – level and turning
- recover from unusual attitudes
- recover from wing drop at the stall

The training syllabus employed by the instructor planned for all airborne activities and manoeuvres to be taught over a period of 5 flying hours. The instructor reported that, in their experience, most students achieved competency within this period.

At the time of the accident, the pilot flying had undertaken 10.1 hours of low-level training. Training records indicated that additional flying hours were required at the start of the course for the student to demonstrate competency in some manoeuvres, including maintaining altitude during steep turns, stall recognition and recovery. However, during a period of upper air work conducted earlier in the accident flight, the student had successfully demonstrated competency in all these manoeuvres.

Aircraft stall behaviour

The angle of attack (AOA) is the angle at which the wing meets the relative airflow passing the aircraft. It is directly related to elevator position and therefore control stick position. The amount of lifting force produced by the wing increases with increasing AOA until a critical angle is reached. At the critical AOA (typically 16–18°), the wing aerodynamically stalls and lift production decreases abruptly. Recovering from a stall requires AOA be reduced below the critical angle by reducing aft control stick displacement.

Should the critical AOA be approached during a turn, using aileron to level the wings increases the AOA of the inside wing and may cause it to stall prior to the outside wing. This can result in the angle of bank rapidly increasing rather than decreasing. Instead, it is recommended that rudder is used to level the wings when a stall is encountered.

Minimum radius turns

A minimum radius turn achieves a change in aircraft direction over the smallest possible ground space. This technique is often used in low-flying operations where manoeuvring is made with respect to a ground feature and within confined terrain. Minimum radius turns are typically conducted at high angles of bank and lower airspeeds. Both conditions increase the AOA required to maintain level flight. The margin between required AOA and the critical (stalled) AOA is therefore reduced.

Adding additional aft control stick displacement during a minimum radius turn can quickly result in the wing exceeding the critical AOA and entering a stalled condition. For this reason, pilots are often instructed to correct low attitude during minimum radius turns through application of power, rather than additional aft control stick input.

Related occurrences

There have been a number of recent ATSB investigations into fatal accidents that resulted from a loss of control while manoeuvring during low-level flight.

ATSB investigation AO-2024-037

On 27 June 2024, the pilot of a Cessna 172N, registered VH-SQO, was mustering sheep at Mulgathing Station, South Australia. The aircraft was observed to dive to an estimated height of about 50 ft above the ground before climbing rapidly, turning to the left and then descending towards the ground. The ATSB found that, while mustering without the appropriate endorsement, the pilot lost control of the aircraft leading to an aerodynamic stall and spin from an altitude that was not recoverable.

ATSB investigation AO-2022-011

On 3 March 2022, the sole pilot of a Cessna U206G, registered VH-JVR, was conducting a low-level geophysical survey, about 120 km west of Norseman, Western Australia. At about 1430, the aircraft's satellite tracking system stopped reporting its position. Wreckage was subsequently located 3.2 km west of the aircraft's last recorded position. The ATSB found it was likely that, during a manoeuvre to intercept the next survey line, for undetermined reasons, control of the aircraft was lost at a height from which recovery was not possible.

ATSB investigation AO-2021-016

On 13 April 2021, a Cessna R172K, registered VH-DLA, departed Canberra Airport, Australian Capital Territory, with a pilot and observer on board to conduct powerline survey work to the north of Sutton township, New South Wales. The aircraft was subsequently observed flying low above the trees before commencing a left turn that continued in to a steep descent and collision with terrain. The ATSB found that while manoeuvring to align the aircraft to inspect a powerline, the aircraft aerodynamically stalled and entered a spin at a height that was insufficient for recovery prior to the collision with terrain.

ATSB investigation AO-2021-052

On 4 December 2021, the pilot of an Air Tractor AT-400 aircraft, registered VH-ACQ, was conducting aerial spraying operations on a property 75 km west-south-west of Moree, New South Wales. During a right procedure turn, the aircraft was observed to climb then descend rapidly and collide with terrain. The ATSB found that the aircraft was too close to the start of the spray run during the turn, which probably resulted in the pilot tightening the turn. This almost certainly resulted in an aerodynamic stall at a height too low to recover before colliding with the terrain.

Safety analysis

The pilot and instructor were conducting a low-level navigation exercise, tracking along a ground feature at approximately 300 ft AGL and 80 kt.

Accounts from both crew members indicated that while making a steep right turn to follow the ground feature, the aircraft's nose dropped. Additionally, the pilot observed that the aircraft was not turning quickly enough to remain over the river. In response, they sharply increased their aft control stick input rather than increase the bank angle. This almost certainly placed the aircraft into an aerodynamically stalled condition rapidly increasing the rate of descent and further rolling to the right.

The pilot did not follow the recommended method to address the nose drop at low level - application of power rather than increasing pitch, which they had demonstrated successfully earlier in the flight. The ATSB could not determine why the correct recovery technique was not applied. However, human factors research (Martin, Murray, Bates and Lee 2013) noted that when faced with a sudden unexpected aircraft condition, pilots may experience a rapid increase in stress and revert to instinctive behaviour over trained behaviour.

After recognising that the pilot had applied inappropriate control inputs the instructor attempted to intervene. It is uncertain what verbal communication was made between the crew, but there was a period of confusion over who had control of the aircraft, and it is likely both crew members were making control inputs simultaneously resulting in the instructor being unable to override the control inputs of the pilot, delaying the effectiveness of the recovery actions. Due to the proximity to the ground, the aircraft descended into terrain before this confusion could be resolved. Despite this, the instructor's inputs to the throttle and rudder likely prevented the aircraft from contacting the ground in a nose down attitude and reduced the severity of the impact.

Findings

ATSB investigation report findings focus on safety factors (that is, events and conditions that increase risk). Safety factors include ‘contributing factors’ and ‘other factors that increased risk’ (that is, factors that did not meet the definition of a contributing factor for this occurrence but were still considered important to include in the report for the purpose of increasing awareness and enhancing safety). In addition ‘other findings’ may be included to provide important information about topics other than safety factors.

These findings should not be read as apportioning blame or liability to any particular organisation or individual.

From the evidence available, the following findings are made with respect to the collision with terrain involving Cessna 172, VH-SCU, about 6 km south of Newcastle Waters, Northern Territory, on 7 November 2025.

Contributing factor

- While training to follow a ground feature at low level, the pilot flying applied and held inappropriate control inputs, which led to an aerodynamic stall and limited the instructor’s ability to make corrective actions, resulting in the aircraft colliding with terrain.

Other finding

- The instructor's control inputs likely prevented the aircraft from impacting terrain in a nose down attitude and reduced the severity of the collision.

Safety actions

Whether or not the ATSB identifies safety issues in the course of an investigation, relevant organisations may proactively initiate safety action in order to reduce their safety risk. The ATSB has been advised of the following proactive safety action in response to this occurrence.

Safety action by flight training provider

The flight training provider undertook a critical review of its training practices and risk mitigation measures.

General details

Occurrence details

Date and time:	7 November 2025 – 0750 Central Standard Time	
Occurrence class:	Accident	
Occurrence categories:	Collision with terrain, Loss of control	
Location:	About 6 km south of Newcastle Waters, Northern Territory	
	Latitude: 17.4289° S	Longitude: 133.4170° E

Aircraft details

Manufacturer and model:	Cessna Aircraft Company 172N	
Registration:	VH-SCU	
Operator:	Consolidated Pastoral Company Pty Ltd	
Serial number:	17268700	
Type of operation:	Part 141 - training	
Activity:	General aviation / Recreational-Instructional flying-Instructional flying - dual	
Departure:	Newcastle Waters Airport, Northern Territory	
Destination:	Newcastle Waters Airport, Northern Territory	
Persons on board:	Crew – 2	Passengers – 0
Injuries:	Crew – 1 minor	Passengers – 0
Aircraft damage:	Destroyed	

Sources and submissions

Sources of information

The sources of information during the investigation included:

- the pilot and instructor of the accident flight
- Consolidated Pastoral Company
- Bureau of Meteorology.

References

Martin, Murray, Bates, and Lee (2015) Fear-potentiated startle: A review from an aviation perspective. *The International Journal of Aviation Psychology*, *25*(2), pp.97-107.

Submissions

Under section 26 of the *Transport Safety Investigation Act 2003*, the ATSB may provide a draft report, on a confidential basis, to any person whom the ATSB considers appropriate. That section allows a person receiving a draft report to make submissions to the ATSB about the draft report.

A draft of this report was provided to the following directly involved parties:

- the pilot and instructor of the accident flight
- Consolidated Pastoral Company
- Civil Aviation Safety Authority.

Submissions were received from:

- the pilot and instructor of the accident flight
- Consolidated Pastoral Company.

The submissions were reviewed and, where considered appropriate, the text of the report was amended accordingly.

About the ATSB

The **Australian Transport Safety Bureau** is the national transport safety investigator. Established by the *Transport Safety Investigation Act 2003* (TSI Act), the ATSB is an independent statutory agency of the Australian Government and is governed by a Commission. The ATSB is entirely separate from transport regulators, policy makers and service providers.

The ATSB's function is to improve transport safety in aviation, rail and shipping through:

- the independent investigation of transport accidents and other safety occurrences
- safety data recording, analysis, and research
- influencing safety action.

The ATSB 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.

About ATSB reports

ATSB occurrence investigation reports are organised with regard to international standards or instruments, as applicable, and with ATSB procedures and guidelines.

An explanation of ATSB terminology used in this report is available on the ATSB website.