



Australian Government

Australian Transport Safety Bureau

Collision with terrain involving a Cessna 206, VH-KRR

33 km west of Nowra Airport, New South Wales, on 16 October 2014

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Addendum

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Collision with terrain involving a Cessna 206, VH-KRR

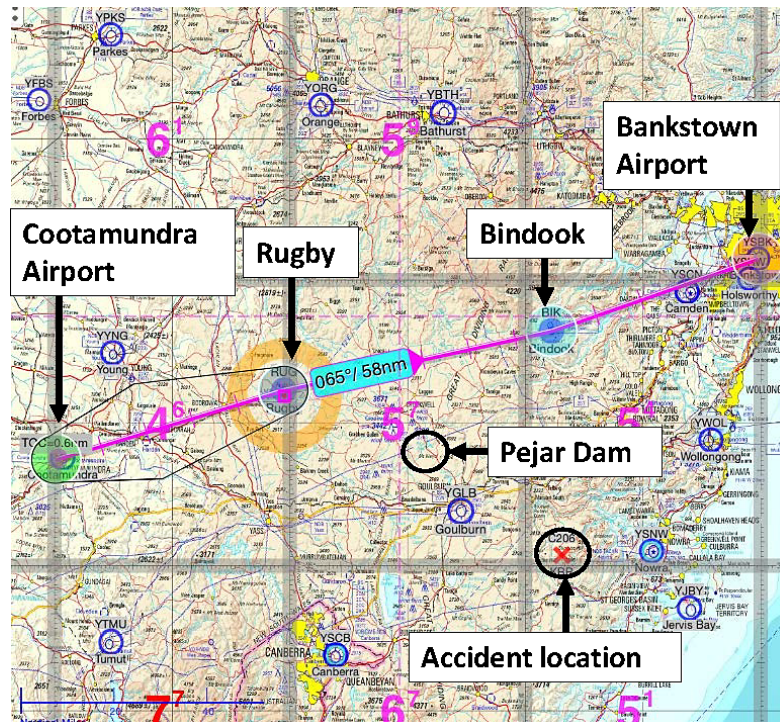
What happened

On 16 October 2014, the pilot of a Cessna 206 aircraft, registered VH-KRR, conducted pre-flight preparations for a solo training flight from Bankstown, New South Wales to Cootamundra and return. The pilot filled both the left and right fuel tanks to full, or 150 litres, with a total of 300 litres of fuel on board. Based on a planned fuel consumption rate of 60 litres per hour, this provided a fuel endurance of 300 minutes. At about 0800 Eastern Daylight Time, the aircraft departed Bankstown Airport with the fuel selected to the right tank. At about 0830, the pilot selected the fuel to the left tank and at about 0930 the pilot selected the right tank.

At about 0943, the aircraft landed at Cootamundra Airport. During taxi, the pilot selected the left fuel tank. After taxiing to the parking bay and shutting down the engine, the pilot dipped the fuel tanks. He reported that 100 litres remained in the right tank and 85 litres in the left. This indicated an actual fuel consumption rate of about 67-70 litres/hour, and about 12 litres less fuel remaining in the tanks than the pilot had expected. The pilot had calculated prior to departing Bankstown that the fuel required for the return flight was 66 litres and assessed therefore that sufficient fuel remained on board.

At about 1022 the aircraft departed Cootamundra with the right fuel tank selected. The planned route from Cootamundra to Bankstown was via Rugby and Bindook (Figure 1).

Figure 1: Planned route and accident location



Source: Aircraft owner

At about 1030, the pilot selected the left fuel tank. At about 1100, he observed that the aircraft had deviated from the planned track. He re-established the aircraft's position as overhead Pejar Dam. The pilot then selected the frequency for the Bindook non-directional beacon (NDB) on the aircraft's automatic direction finder (ADF) and attempted to track direct to Bindook. The pilot

reported then taking up a heading of about 120°, which resulted in a further deviation from the planned track rather than a turn towards it.

At about 1114, and when at about 5,500 feet above mean sea level, the aircraft's engine surged and then stopped. The pilot conducted some emergency checks including an attempt to restart the engine, but did not select the fuel pump ON or change the selected fuel tank. The pilot broadcast a Mayday¹ call, assumed a glide speed of about 75 knots and looked for a suitable landing area. Initially the pilot observed only heavily treed areas, but when passing about 3,500 feet on descent, he sighted a clearing ahead. The pilot did not extend the flaps, so as to increase the glide range of the aircraft, and reduced the airspeed to about 65 knots just prior to impact. The aircraft collided with trees about 50 metres short of the intended landing site and was substantially damaged (Figure 2). The pilot sustained a minor injury.

Figure 2: Damage to VH-KRR



Source: Aircraft owner

The pilot reported that, by his calculations, at least 35 minutes of fuel endurance remained at the time of the accident.

Post-accident inspection

The aircraft owners attended the accident site on Friday 17 October. They reported that about 7 litres of (unusable) fuel remained in the right tank and none in the left. The fuel bladders appeared to be intact and they did not observe any evidence of spilled fuel. The left fuel tank was selected and the master and magneto switches were ON. The engine casing was intact and there was no evidence of catastrophic engine damage.

Safety message

This incident highlights the importance of thorough pre-flight planning and monitoring and reassessing actual versus planned flight tracks and aircraft fuel consumption.

The ATSB publication *Avoidable Accidents No. 5 – Starved and exhausted: Fuel management aviation accidents*, www.atsb.gov.au/publications/2012/avoidable-5-ar-2011-112.aspx, states that

Accurate fuel management also relies on a method of knowing how much fuel is being consumed. Many variables can influence the fuel flow, such as changed power settings, the use of non-standard fuel leaning techniques, or flying at different cruise levels to those

¹ Mayday is an internationally recognised radio call for urgent assistance.

planned. If they are not considered and appropriately managed then the pilot's awareness of the remaining usable fuel may be diminished.

CAAP 234-4(1)² *Guidelines for Aircraft Fuel Requirements*, states that fuel gauges, particularly on smaller aircraft, may be unreliable. In an aircraft that is not fitted with a fuel flow indicator, the fuel gauges should not be relied on as the sole means of calculating fuel burn in flight.

General details

Occurrence details

Date and time:	16 October 2014 – 1123 EDT	
Occurrence category:	Accident	
Primary occurrence type:	Collision with terrain	
Location:	33 km W Nowra Airport, New South Wales	
	Latitude: 34° 52.93' S	Longitude: 150° 10.87' E

Aircraft details

Manufacturer and model:	Cessna Aircraft Company U206F	
Registration:	VH-KRR	
Serial number:	U20603210	
Type of operation:	Flying training - solo	
Persons on board:	Crew – 1	Passengers – Nil
Injuries:	Crew – 1 (Minor)	Passengers – Nil
Damage:	Substantial	

About the ATSB

The Australian Transport Safety Bureau (ATSB) is an independent Commonwealth Government statutory agency. The ATSB is governed by a Commission and is entirely separate from transport regulators, policy makers and service providers. The ATSB's function is to improve safety and public confidence in the aviation, marine and rail modes of transport through excellence in: independent investigation of transport accidents and other safety occurrences; safety data recording, analysis and research; and 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 that fall within Commonwealth jurisdiction, as well as participating in overseas investigations involving Australian registered aircraft and ships. A primary concern is the safety of commercial transport, with particular regard to fare-paying passenger operations.

The ATSB performs its functions in accordance with the provisions of the *Transport Safety Investigation Act 2003* and Regulations and, where applicable, relevant international agreements.

The object of a safety investigation is to identify and reduce safety-related risk. ATSB investigations determine and communicate the safety factors related to the transport safety matter being investigated.

It is not a function of the ATSB to apportion blame or determine 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

² www.casa.gov.au/wcmswrl/assets/main/download/caaps/ops/234_1.pdf

comment with the need to properly explain what happened, and why, in a fair and unbiased manner.

About this report

Decisions regarding whether to conduct an investigation, and the scope of an investigation, are based on many factors, including the level of safety benefit likely to be obtained from an investigation. For this occurrence, a limited-scope, fact-gathering investigation was conducted in order to produce a short summary report, and allow for greater industry awareness of potential safety issues and possible safety actions.