

Australian Government Australian Transport Safety Bureau

Total power loss involving a Piper PA-28-140, VH-RVJ

Kilcoy (ALA), Queensland, 22 September 2013

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Postal address:	PO Box 967, Civic Square ACT 2608
Office:	62 Northbourne Avenue Canberra, Australian Capital Territory 2601
Telephone:	1800 020 616, from overseas +61 2 6257 4150 (24 hours)
	Accident and incident notification: 1800 011 034 (24 hours)
Facsimile:	02 6247 3117, from overseas +61 2 6247 3117
Email:	atsbinfo@atsb.gov.au
Internet:	www.atsb.gov.au

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Addendum

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What happened

On 22 September 2013, the pilot of a Piper PA-28-140 aircraft, registered VH-RVJ, was conducting a pre-flight inspection in preparation for a local private flight from the Kilcoy aeroplane landing area (ALA), Queensland with one passenger. During the inspection, the pilot conducted fuel drain checks, with nil contaminants found.

At about 0700 Eastern Standard Time,¹ the pilot taxied the aircraft to the threshold of runway 27 and conducted engine run-ups. The pilot reported that the engine operated as normal. In preparation for take-off, he selected the right fuel tank and turned the fuel pump on.

During the take-off on runway 27, the pilot reported that the engine performed as expected, but at about 50-80 ft above ground level (AGL), the engine suddenly stopped. The pilot immediately confirmed that the fuel tank selection and fuel pump were on. He also noted that the engine revolutions per minute (RPM) indicator was reading zero.

The pilot elected to land ahead on the remaining runway and advised the passenger to brace for impact. The aircraft touched down with about 50 m of runway remaining,² but the pilot was unable to brake sufficiently to stop the aircraft prior to the end of the runway.

The aircraft left the end of the runway and collided with a fence, with the left wing striking a strainer post, then continued through a paddock and a ditch before coming to rest after colliding with a second fence.

The aircraft sustained substantial damage (Figure 1) but the pilot and passenger did not receive any injuries.



Figure 1: Damage to VH-RVJ

Source: Aircraft owner

Pilot comments

The pilot provided the following comments regarding the incident:

- A routine 50 hourly inspection of the aircraft was completed 2 weeks prior to the accident.
- An engineer conducted an inspection of the aircraft 4 days after the accident and was able to start the engine.
- There was evidence on the exhaust pipe that the fuel mixture had been running rich.

¹ Eastern Standard Time (EST) was Coordinated Universal Time (UTC) + 10 hours.

² Runway 09/27 was 800 m in length.

- It was unlikely to have been a magneto problem as the engine had two magnetos and the likelihood of both failing simultaneously to cause a complete engine failure was very low.
- The most likely cause of the engine failure was a carburettor problem.
- He had conducted practice engine failures and emergency procedures during his training and biannual flight reviews and believed that this assisted him in responding promptly to the situation.

Safety action

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.

Aerodrome safety officer

As a result of this occurrence, the aerodrome safety officer has advised the ATSB that they are taking the following safety actions:

Earthworks

The fence posts located beyond the runway are to be painted white, with a white belt hung from the fence to improve its visibility. Earthworks will be carried out to re-profile the paddock and an earth bridge will be constructed over the ditch to provide a safe overrun area. At the time of writing this report, the construction works were still subject to final approval from the leaseholder.

Safety message

This accident highlights the importance of remaining proficient in emergency procedures. Having a plan prior to an emergency situation may mitigate some of the effects of decision making under stress. Knowing that you have a plan under non-stressful and controlled conditions should give you the confidence to carry out the required actions in an emergency situation.

The ATSB 'Avoidable Accidents' booklet, titled *Managing partial power loss after take-off in single-engine aircraft,* focuses on the issues relating to managing a partial power loss after take-off in single-engine aircraft. The key messages highlighted in the booklet are equally applicable to a total engine failure after take-off. It highlights that, accidents resulting from a power loss after take-off can be prevented or significantly minimised by using the following strategies:

- pre-flight decision making and planning for emergencies and abnormal situations for the particular aerodrome
- conducting a thorough pre-flight and engine ground run to reduce the risk of a power loss occurring
- taking positive action and maintaining aircraft control either when turning back to the aerodrome or conducting a forced landing until on the ground, while being aware of flare energy and aircraft stall speeds.

The report is available at www.atsb.gov.au/publications/2010/avoidable-3-ar-2010-055.aspx.

General details

Occurrence details

Date and time:	22 September 2013 – 0700 EST	
Occurrence category:	Accident	
Primary occurrence type:	Total power loss	
Location:	Kilcoy (ALA), Queensland	
	Latitude: 26° 58.27' S	Longitude: 152° 33.92' E

Aircraft details

Manufacturer and model:	Piper Aircraft Corporation PA-28-140		
Registration:	VH-RVJ		
Serial number:	28-7425175		
Type of operation:	Private		
Persons on board:	Crew – 1	Passengers – 1	
Injuries:	Crew – Nil	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 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.