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Australian Transport Safety Bureau

Aircraft proximity event between a Piper PA-28, VH-PZK and a Cessna 441, VH-VEJ

Rottneet Island aerodrome, Western Australia, 23 September 2012

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Aircraft proximity event between a Piper PA-28, VH-PZK and a Cessna 441, VH-VEJ

What happened

On 23 September 2012, a Cessna 441 aircraft, registered VH-VEJ (VEJ), was conducting flight safety checks¹ at a number of aerodromes in south-west Western Australia, including Rottnest Island. The flight safety checks required VEJ to conduct approaches to both duty and non-duty runways and to descend below the minimum altitudes. At Rottnest Island, the pilot of VEJ made all the necessary broadcasts on the common traffic advisory frequency (CTAF)².

Rottnest Island, WA



Source: Google earth

On the same day, the pilot of a Piper PA-28 aircraft, registered VH-PZK (PZK), conducted a scenic flight from Jandakot, through the Perth Control Zone, to Rottnest Island with three passengers. PZK's radios were fully serviceable for the departure from Jandakot and through the Perth Control Zone. After conducting an orbit of the Island, the pilot of PZK joined the circuit for runway 09, the runway favoured by the wind and in use by other aircraft. At the same time, VEJ was conducting an approach to runway 27, the reciprocal runway.

At 1221 Western Standard Time³, as PZK approached the threshold for runway 09 at about 200 ft above mean sea level, the pilot observed an aircraft about 650 m ahead on the reciprocal heading at the same level. As the pilot of PZK initiated a sharp right turn, he observed the other aircraft also turn right (Figure 1). The other aircraft was later identified as VEJ. The lateral distance between the aircraft reduced to 0.2 NM.

The pilot of PZK then realised that, although he had earlier observed an aircraft depart from runway 09, he had not heard any radio broadcasts on the Rottnest Island CTAF. The pilot checked PZK's radio plugs and cables, and ensured that he had the correct frequency selected, but could still not hear any broadcasts. The pilot of PZK then conducted a number of orbits of the Island, broadcasting his intentions as required, prior to landing on runway 09 without further incident. VEJ conducted a number of other missed approaches to both runways before landing on runway 09 without further incident.

After shutting the aircraft down, the pilot of PZK liaised with another pilot and, after restarting PZK, conducted a successful radio check. On the return flight to Jandakot later in the day, PZK's radio was fully serviceable. The aircraft operator checked PZK's radios and found no fault. The pilot of PZK later reported that he had made all the necessary CTAF broadcasts at Rottnest Island.

¹ The checks are conducted for the Civil Aviation Safety Authority to make sure flight paths at aerodromes continue to be safe. A series of low level flights will be undertaken at each aerodrome to check the flight paths. This will ensure that navigational aids are operational and not suffering interference, as well as looking for any new obstacles.

² The CTAF is the radio frequency on which pilots operating at a non-towered aerodrome should make positional radio broadcasts.

³ Western Standard Time (WST) was Coordinated Universal Time (UTC) + 8 hours.

Pilot comments (VH-PZK)

The pilot of PZK later stated that if a Notice to Airmen (NOTAM)⁴ had been issued on the flight safety check flight, he would not have amended his flight plan, but would have been aware of the potential for non-standard operations on his arrival at Rottnest Island. The pilot of PZK had checked the NOTAMs on the evening prior to the flight and again on the morning of the flight.

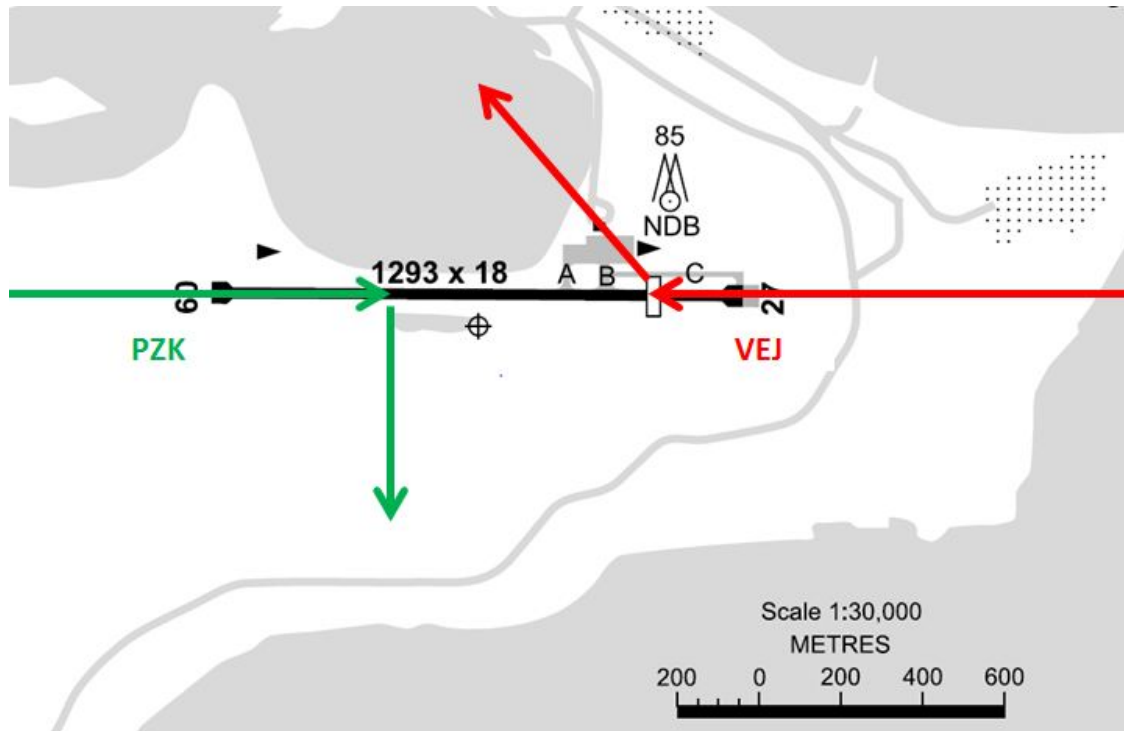
Notification of the flight safety check flights

The flight safety checks were conducted on behalf of the Civil Aviation Safety Authority (CASA). The crew of VEJ were responsible for coordinating the flight check with aerodrome operators and CASA was responsible for communicating with aircraft operators. CASA issued a '... standard press release that was posted on [their] website ...' and the information '... was also tweeted on twitter however no NOTAM was issued nor were any newspaper advertisements made.'

The pilot of VEJ had submitted a flight plan for Rottnest Island stating that the flights were for navigation aid validation. When pilots requested traffic information for the Rottnest area from Perth Centre air traffic control (ATC), they were advised of the flight safety check flight. However, the pilot of PZK did not request traffic information prior to changing from the Perth Centre frequency to the CTAF, nor was he required to do so. Following the incident, while the pilot of PZK was attempting to find the cause of the aircraft's radio problem, he contacted Perth Centre and was given traffic on VEJ.

The CASA Western Australia aerodrome flight safety checks media release is available here at www.casa.gov.au/scripts/nc.dll?WCMS:STANDARD::pc=PC_101069

Figure 1: Estimated track of VH-PZK (green) and VH-VEJ (red)



Source: Underlying image from Airservices Australia

⁴ NOTAMs are used to advise pilots of hazards and provide information that is of direct operational significance.

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.

Aircraft operator

As a result of this occurrence, the aircraft operator of VEJ advised the ATSB that they will not conduct flight safety check flights during busy periods at non-towered aerodromes.

Civil Aviation Safety Authority

In conjunction with the aircraft operator of VEJ, CASA will ensure a NOTAM is issued for future flights to promulgate information applicable to this type of operation.

Safety message

When operating outside controlled airspace, it is the pilot's responsibility to maintain separation with other aircraft. For this, it is important that pilots utilise both alerted and unalerted see-and-avoid principles.

Pilots should not assume that an absence of traffic broadcasts means an absence of traffic. CASA have published a number of Civil Aviation Advisory Publications (CAAPs) dealing with operations at non-towered aerodromes and the importance of not relying solely on radio broadcasts for traffic advice.

The following publications provide useful information on radio use and the limitations of see-and-avoid.

- Civil Aviation Advisory Publication 166-1(0) – *Operations in the vicinity of non-towered (noncontrolled) aerodromes* is available at casa.gov.au/wcmswr/assets/main/download/caaps/ops/166-1.pdf
- Civil Aviation Advisory Publication 166-2(0) – *Pilots' responsibility for collision avoidance in the vicinity of non-towered (non-controlled) aerodromes using 'see-and-avoid'* is available at casa.gov.au/wcmswr/assets/main/download/caaps/ops/166-2.pdf
- Civil Aviation Advisory Publication 5-59(1) – *Teaching and Assessing Single-Pilot Human Factors and Threat and Error Management* is available at casa.gov.au/wcmswr/assets/main/download/caaps/ops/5_59_1.pdf
- *Limitations of the see-and-avoid principle* (1991) is available at www.atsb.gov.au/publications/2009/see-and-avoid.aspx
- *A pilot's guide to staying safe in the vicinity of non-towered aerodromes* (AR-2008-004(1)) is available at [www.atsb.gov.au/publications/2008/ar-2008-044\(1\).aspx](http://www.atsb.gov.au/publications/2008/ar-2008-044(1).aspx)
- *Pilots' role in collision avoidance* (Federal Aviation Administration Advisory Circular AC 90-48C) is available at [rgl.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/list/AC%2090-48C/\\$FILE/AC90-48c.pdf](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/list/AC%2090-48C/$FILE/AC90-48c.pdf)

General details

Occurrence details

Primary occurrence type:	Airprox	
Occurrence category:	Serious incident	
Location:	Rottnest Island, Western Australia	
	Latitude: 32° 00.40' S	Longitude: 115° 32.38' E

Piper PA-28-161

Manufacturer and model:	Piper Aircraft Corporation PA-28-161	
Registration:	VH-PZK	
Type of operation:	Private	
Persons on board:	Crew – 1	Passengers – 3
Injuries:	Crew – Nil	Passengers – Nil
Damage:	None	

Cessna 441

Manufacturer and model:	Cessna Aircraft Company 441	
Registration:	VH-VEJ	
Type of operation:	Aerial work	
Persons on board:	Crew – 3	Passengers – 0
Injuries:	Crew – Nil	Passengers – Nil
Damage:	None	

About the ATSB

The Australian Transport Safety Bureau (ATSB) is an independent Commonwealth Government statutory agency. The Bureau 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.