Australian Government
Australian Transport Safety Bureau

Near collision involving Piper PA-32, VH-NKA, and Cessna 210, VH-SQT

7 km WNW of Oenpelli Airport, Northern Territory, 25 May 2016

ATSB Transport Safety Report
Aviation Occurrence Investigation
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Addendum

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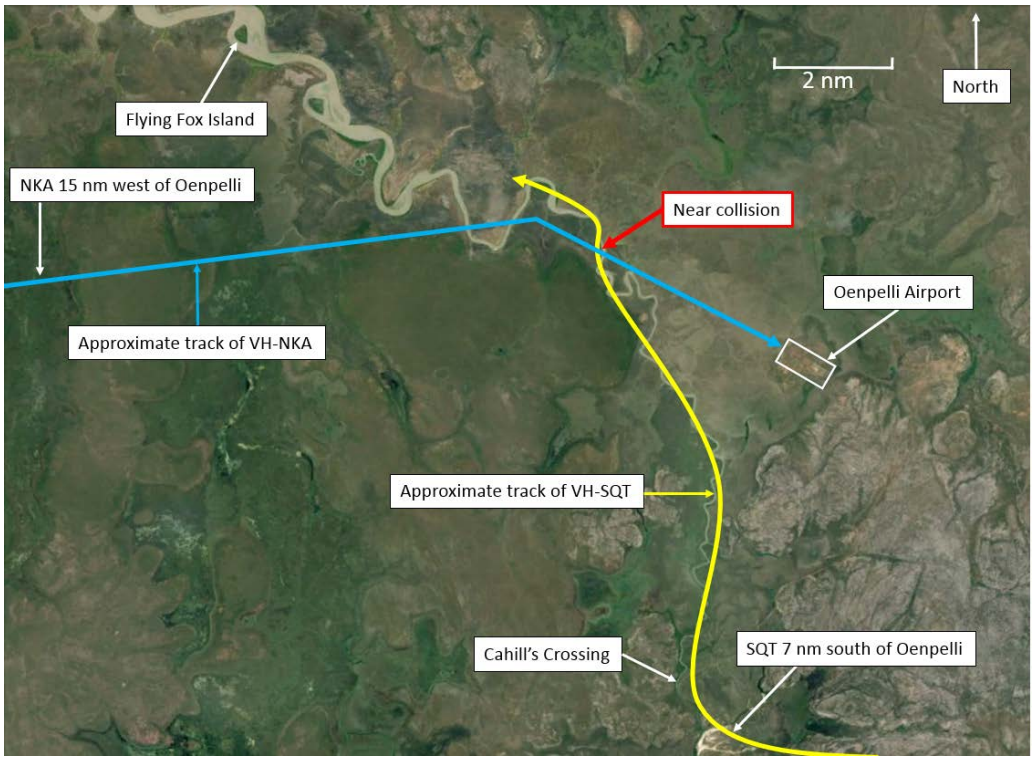
What happened

At 0856 Central Standard Time (CST) on 25 May 2016, a Piper PA-32, registered VH-NKA (NKA), departed Darwin Airport, Northern Territory (NT) for a business flight to Oenpelli Airport, NT. On board were a pilot under supervision, a supervising pilot and two passengers. The pilot under supervision was the pilot flying (PF), with the supervising pilot acting as pilot monitoring (PM),[1] observing the flight and providing assistance.

At 0926, a Cessna 210, VH-SQT (SQT), departed Jabiru Airport, NT, for a scenic flight over Kakadu National Park and the East Alligator River, NT. On board were the pilot and five passengers. SQT initially proceeded in an easterly direction before progressing north along the river (Figure 1).

At about 0930, the PF in NKA assessed the expected weather conditions at Oenpelli and elected to make a straight-in[2] approach to runway 12. At this time, the PF made an inbound broadcast on the Jabiru-Oenpelli common traffic advisory frequency (CTAF), advising their position as 50 NM west of Oenpelli. The PF then descended the aircraft from the cruising altitude of 9,500 ft and made a further broadcast on the Jabiru-Oenpelli CTAF as the aircraft reached 15 NM from Oenpelli. The pilots of NKA received no response to these broadcasts.

Figure 1: Overview of incident location



Source: Google Earth, annotated by ATSB

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1 Pilot Flying (PF) and Pilot Monitoring (PM) are procedurally assigned roles with specifically assigned duties at specific stages of a flight. The PF does most of the flying, except in defined circumstances; such as planning for descent, approach and landing. The PM carries out support duties and monitors the PF's actions and aircraft flight path.

2 An approach directly to the runway from the present position of the aircraft without joining the standard approach circuit or overflying the aerodrome.

As SQT reached Cahill's Crossing, 7 NM south of Oenpelli Airport, the pilot broadcast on Jabiru-Oenpelli CTAF, advising that they would be tracking north via the East Alligator River towards Flying Fox Island and operating not above 800 ft. The pilot did not receive a response to this broadcast.

At 0952, the PF in NKA established the aircraft on a 5 NM final approach leg to the runway at Oenpelli Airport at an altitude of 1,000 ft and configured the aircraft for landing. At the same time, the pilot of SQT continued to follow the East Alligator River north making continuous shallow turns left and right to maximise their passenger's view. As SQT began a right turn, the pilot observed the shadow of another aircraft (subsequently determined to be NKA) tracking towards the shadow of their own aircraft. The pilot of SQT continued the right turn and assessed the position of the sun in relation to the shadow on the ground to establish the position of NKA. The pilot of SQT sighted NKA in close proximity and instinctively descended the aircraft to avoid a collision.

At this time, the PM in NKA, observing the high workload of the PF, elected to broadcast advising they were 4 NM from Oenpelli conducting a straight-in approach for runway 12.

At about the same time, the pilot of SQT broadcast on the CTAF to establish contact with NKA and advise of the near collision. The pilots of each aircraft communicated without difficulty following the incident.

The pilot of SQT estimated that the aircraft passed at the same altitude and a distance less than 100 m at the closest point. The pilots of NKA did not see SQT.

The pilots and passengers of both aircraft were not injured in the incident and the aircraft were not damaged.

Pilot Comment

The pilot of VH-NKA:

The supervising pilot of NKA provided the following comments:

- No radio calls were heard from the pilot in SQT prior to the incident, despite having experienced no communication difficulties prior to, or after the incident.
- Their view of SQT would have been obscured by the aircraft's right wing as SQT approached their aircraft.
- The change to the Jabiru-Oenpelli CTAF was made slightly later than the usual distance of about 70 NM from Oenpelli Airport. This may have led to the pilots missing the departure call from the pilot in SQT.
- The pilot in command expressed concern at the planning of a low-level scenic flight through the extended centreline[3] of an aerodrome at a distance of 3 NM.

The pilot of VH-SQT:

The pilot of SQT provided the following comments:

- No radio calls were heard from the pilots in NKA prior to the incident despite hearing calls from other aircraft. The radio in use was tested immediately afterward and found serviceable.
- The incident occurred at the point they would normally make a radio call for transiting abeam Oenpelli Airport. The pilot spotted the shadow of NKA just as they were about to make the call.
- The avoiding action required was forceful, inducing slight negative 'G'.[4] Had the pilot taken no avoiding action the two aircraft would have collided.

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[3] A theoretical line drawn out from and in line with the runway. The aircraft is required to be aligned along this extended centreline at a point no less than 3 nm from the runway threshold during a straight-in approach.

- The pilot did not expect an aircraft on approach to Oenpelli airport at a distance of 4 NM from the runway to be as low as 800 ft.

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.

Operator of VH-SQT

As a result of this occurrence, the operator of SQT has advised the ATSB that they have taken the following action:

Communications procedure

The communication procedures for scenic flights using this route have been changed. They will now include a broadcast when the aircraft are 3 NM from Oenpelli Airport, stating that the aircraft will be passing through the extended centreline of runway 12, operating at not above 800 ft.

Safety message

This occurrence highlights the importance of effective communications. Where this effectiveness is compromised, pilot lookout becomes increasingly important. The ATSB publication *Limitations of the See-and-Avoid Principle* provides information on developing effective lookout techniques.

The Civil Aviation Safety Authority (CASA) publication *CAAP 166-2(1) Pilots' responsibility for collision avoidance using 'see-and-avoid'* provides information which can increase the probability of sighting traffic.

Fly neighbourly advice

ERSA - GEN - SP contains a fly neighbourly advice for pilots operating in the Kakdau National Park. Pilots intending to fly over Kakadu National Park should obtain, read and comply with the Kakadu *Fly Neighbourly Agreement*.

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[4] The unit of measurement for measuring vertical acceleration within an aircraft. 1 G is equal to the force of gravity at the earth's surface. In flight, g load values represent the combined effects of flight manoeuvring loads and turbulence. This can be a positive or negative value.

General details

Occurrence details

Date and time:	25 May 2016 – 0952 CST	
Occurrence category:	Serious incident	
Primary occurrence type:	Near Collision	
Location:	7 km WNW of Oenpelli Airport, Northern Territory	
	Latitude: 12° 17.92' S	Longitude: 132° 57.14' E

Aircraft details – VH-NKA

Manufacturer and model:	Piper Aircraft Corp – PA-32-301	
Registration:	VH-NKA	
Serial number:	3246164	
Type of operation:	Business	
Persons on board:	Crew – 2	Passengers – 2
Injuries:	Crew – 0	Passengers – 0
Aircraft damage:	Nil	

Aircraft details – VH-SQT

Manufacturer and model:	Cessna Aircraft Company –210M	
Registration:	VH-SQT	
Serial number:	21062874	
Type of operation:	Charter - Passenger	
Persons on board:	Crew – 1	Passengers – 5
Injuries:	Crew – 0	Passengers – 0
Aircraft damage:	Nil	

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 operations involving the travelling public.

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.