Australian Government
Australian Transport Safety Bureau

# Near collision involving a Diamond DA20, VH-YNB and a Mooney M20, VH-SJT

near Jandakot Airport, Western Australia, 20 February 2015

**ATSB Transport Safety Report**
Aviation Occurrence Investigation
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**Addendum**

| Page | Change | Date |
|---|---|---|
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# Near collision involving a Diamond DA20, VH-YNB and a Mooney M20, VH-SJT

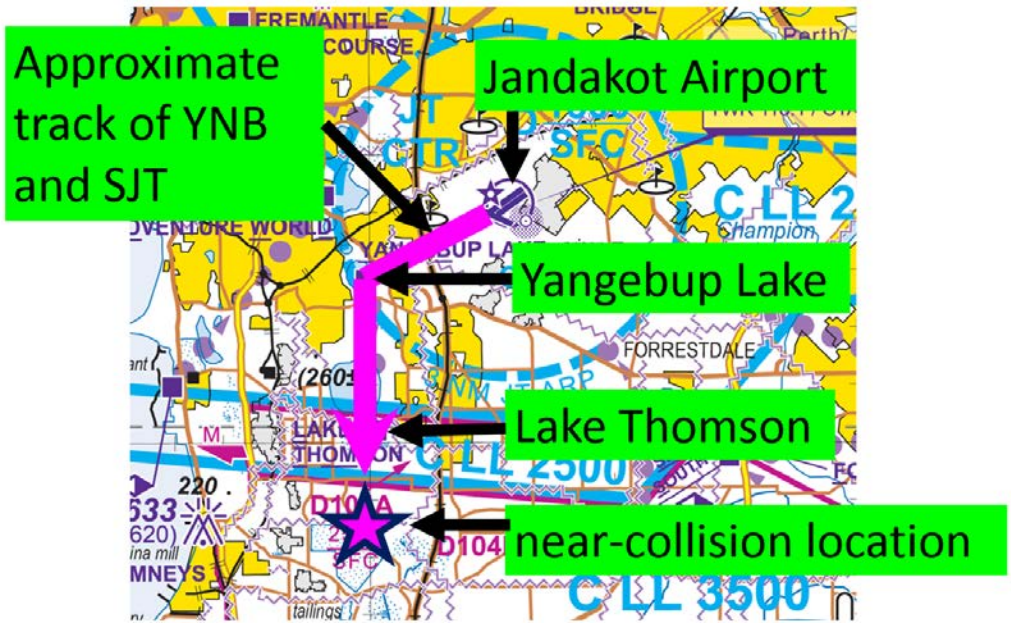
## What happened

On 20 February 2015, at about 1130 Western Standard Time (WST), a Diamond DA20 aircraft, registered VH-YNB (YNB), taxied at Jandakot Airport, Western Australia, for a flight to the training area south of the airport, with a trainee instructor and a flight instructor on board. The instructor was seated in the left seat and acting as a student pilot, with the trainee instructor in the right seat. The sequence to be practiced was climbing and descending, with emphasis on keeping a good lookout and maintaining awareness of other traffic at all times.

At about the same time, the pilot of a Mooney M20 aircraft, registered VH-SJT (SJT), taxied for a private flight to Busselton Airport with three passengers on board. The instructor of YNB observed the Mooney taxiing. During the taxi, the pilot of SJT demonstrated to the front seat passenger, how to close the aircraft door. The pilot then elected to leave the door open to improve comfort in the aircraft as it was a warm day, and planned to have the passenger close the door prior to take-off.

At about 1136, the aerodrome controller (ADC) cleared YNB for take-off from runway 24 Right (24R) and advised the pilot of helicopter traffic ahead, which the trainee instructor reported in sight. About 16 seconds later, the pilot of SJT reported ready at the holding point for runway 24R. The ADC cleared SJT for take-off about 23 seconds later, at 1137, and did not advise of any traffic. The pilot of SJT then commenced the take-off run and directed the front seat passenger to close the door. The front seat passenger was unable to fully close the door, resulting in air flowing in on the passengers seated in the back seat and articles being blown around inside the cabin. The pilot continued with the take-off and asked the passengers to stay calm and silent, and the door was left partially open. Both aircraft departed Jandakot via Yangebup Lake at about 1,000 ft (Figure 1).

**Figure 1: Perth Visual Terminal Chart with relevant points overlaid**




Source: Airservices Australia annotated by the ATSB

After passing Yangebup Lake, the trainee instructor of YNB switched the radio from Jandakot Tower to Perth Centre frequency and changed the transponder code from 3000 to 1200.[1] The pilot of SJT did likewise, and when changing the transponder code, realised that he had departed with the transponder selected to 'Standby' rather than 'Alt'. He observed a high-wing aircraft about 2 NM away in his 2 o'clock position[2] and assumed it was the aircraft that had departed Jandakot ahead of him and assessed that his track to Lake Thomson would be well clear of that aircraft. He then turned onto a heading of 192° and established the aircraft in a climb to 1,500 ft.

When overhead Lake Thomson, the trainee instructor of YNB conducted a climb to 1,500 ft. At 1,500 ft, he lowered the aircraft nose and levelled off to check the area ahead was clear of traffic and both pilots scanned from right to left and did not see any aircraft. The instructor then observed SJT pass diagonally from behind and left to right about 20 ft above YNB. The trainee instructor sighted SJT as it appeared from overhead to pass YNB.

At about 1141, the instructor of YNB called the pilot of SJT on Perth Centre frequency and advised that SJT had just passed straight over the top of them. The pilot of SJT responded and looked behind but did not see YNB. He assumed that it was the pilot of the high-wing aircraft, some distance away, who had contacted him and did not believe there was any risk of collision. SJT continued to Busselton with the door partially open.

At about 1144, the instructor of YNB asked the Tower controller whether SJT had been given YNB as traffic and as the ADC had handed over to another controller, was told they would find out but did not subsequently provide a response.

## *Pilot comments*

The pilot of SJT reported that in future he plans to absolutely identify the type, and maintain visual contact with, aircraft in the control zone. He had misidentified the aircraft he sighted and should have realised it was not the Diamond that had taken off in front of him. In future, he would close the door himself prior to commencing the take-off run. Despite the distraction from the passengers due to the open door, he maintained his focus on the take-off, initial climb and after take-off checks. The distraction may have resulted in his misidentifying the aircraft ahead.

## *Airservices Australia investigation*

Airservices Australia conducted an internal investigation into the incident and found the following:

Both aircraft were operating under the visual flight rules (VFR) and the take-off clearance was issued to SJT about 60 seconds after the clearance was issued to YNB.

The Manual of Air Traffic Services (MATS) Version 30 section 9.1.5 Traffic Information, paragraph 9.1.5.1 stated that in Class D airspace VFR aircraft will be provided traffic information on other VFR aircraft. Section 9.1.6 Traffic information assessment and content, paragraph 9.1.6.2 stated to 'Pass traffic information to qualifying aircraft when data assessment indicates the possibility of conflict'.

No traffic information was passed to SJT on the preceding departure of YNB. The controller assessed that based on the existing separation at departure and the expected speed differential of the aircraft, no possibility of conflict existed inside Class D airspace between YNB and SJT.

The information available suggested that the aircraft came into conflict 2 NM beyond the Jandakot control zone boundary. The absence of secondary surveillance radar data for SJT was consistent with the pilot report that their transponder remained in standby mode until approximately the time of the conflict with YNB. As both aircraft were then outside controlled airspace they were not

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1 3000 is the generic code used for civilian flights in class D airspace and 1200 is the code used for VFR flights in class G (or E) airspace.

2 The clock code is used to denote the direction of an aircraft or surface feature relative to the current heading of the observer's aircraft, expressed in terms of position on an analogue clock face. Twelve o'clock is ahead while an aircraft observed abeam to the left would be said to be at 9 o'clock.

subject to a separation service. Due to the absence of surveillance data for SJT, no opportunity existed for a controller to identify the conflict.

## 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-YNB*

As a result of this occurrence, the operator of YNB has advised the ATSB that they have reminded all students and company pilots to remain vigilant in looking outside for other aircraft.

## Safety message

This incident highlights the importance of being aware of other aircraft operating in the area, particularly around airport departure points. While operating in Class D airspace, pilots and air traffic control have a dual responsibility to maintain situational awareness of other traffic. When departing into Class G airspace it is important for pilots to continue their awareness of other aircraft and to keep a good lookout at all times.

Distractions such as an open door can adversely affect the safety of a flight. The ATSB research report *Dangerous Distraction: An examination of accidents and incident involving pilot distraction in Australia between 1997 and 2004*, www.atsb.gov.au/publications/2005/distraction_report.aspx, stated that the most serious source of pilot distraction occurred as a result of an unexpected equipment malfunction.

Two similar incidents were investigated by the ATSB where an open door resulted in pilot distraction. The reports are available at the following links:

www.atsb.gov.au/media/4532960/ao-2013-191_final.pdf

www.atsb.gov.au/media/4082078/ao-2012-151_final.pdf

## General details

### *Occurrence details*

| | | |
|---|---|---|
| Date and time: | 20 February 2015 – 1150 WST | |
| Occurrence category: | Serious incident | |
| Primary occurrence type: | Near collision | |
| Location: | near Jandakot Airport, Western Australia | |
| | Latitude: 32° 05.85' S | Longitude: 115° 52.87' E |

### *Aircraft details: VH-YNB*

| | | |
|---|---|---|
| Manufacturer and model: | Diamond Aircraft Industries | |
| Registration: | VH-YNB | |
| Serial number: | C0308 | |
| Type of operation: | Flying training – dual | |
| Persons on board: | Crew –2 | Passengers –Nil |
| Injuries: | Crew – Nil | Passengers – Nil |
| Damage: | Nil | |

### *Aircraft details: VH-SJT*

| | | |
|---|---|---|
| Manufacturer and model: | Mooney Aircraft Corporation | |
| Registration: | VH-SJT | |
| Serial number: | 24-1537 | |
| Type of operation: | Private | |
| Persons on board: | Crew – 1 | Passengers – 3 |
| Injuries: | Crew – Nil | Passengers – Nil |
| 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 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.