Australian Government
Australian Transport Safety Bureau

Near collision involving Morgan Cheetah, 19-5456, and Grob G115, VH-ZTA

15 km NW of Serpentine (ALA), Western Australia, 15 April 2016

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Aviation Occurrence Investigation
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Published by: Australian Transport Safety Bureau
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

Addendum

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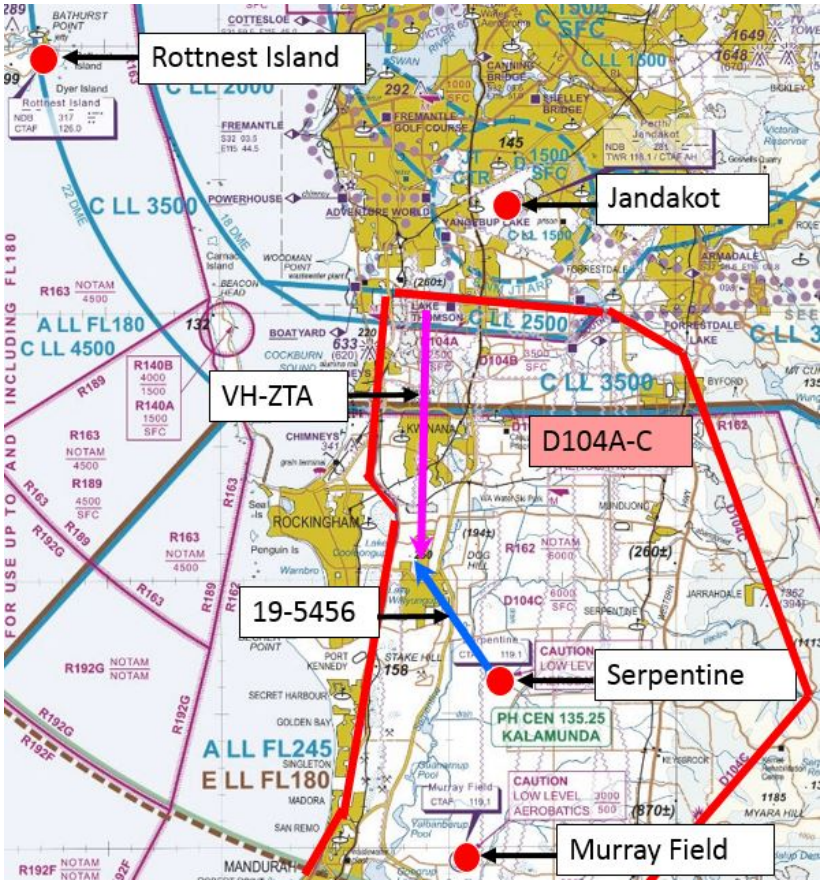
Near collision involving Morgan Cheetah, 19-5456, and Grob G115, VH-ZTA

What happened

On 15 April 2016, an instructor and student of a Grob G115C2 aircraft, registered VH-ZTA (ZTA), were conducting a local training flight in the training area south of Jandakot Airport, Western Australia. The training area was marked as a danger area[1] on the Perth Visual Terminal Chart (Figure 1). It was the student's first flight in the training area, and the instructor was briefing the student and identifying landmarks including the two aerodromes situated in the training area – Serpentine and Murray Field. The two aerodromes shared a common traffic advisory frequency (CTAF), and the instructor advised the student to broadcast on the CTAF stating the aircraft's position and intentions when approaching 10 NM from either aerodrome, again when at 5 NM and also overhead.

Figure 1: Perth Visual Terminal Chart showing approximate aircraft tracks



Source: Airservices Australia – annotated by ATSB

When ZTA was north-west of Serpentine aerodrome and tracking south, the instructor broadcast that they were 10 NM from Serpentine at 2,500 ft and intended to pass abeam the aerodrome tracking south. The instructor then heard the pilot of another aircraft broadcast that they were departing Murray Field tracking north at 3,000 ft, and another pilot broadcast that they were near

[1] Danger areas D104A-C were specified in En Route Supplement Australia due to flying training.

Serpentine conducting airwork. The instructor again broadcast ZTA's position and their intentions, while looking for the aircraft that was departing Murray Field and on a reciprocal track. The instructor did not sight the aircraft.

At about that time, a Morgan Cheetah aircraft, registered 19-5456 (5456), departed Serpentine for a private flight to Rottnest Island with a pilot and one passenger on board. The pilot reported that they made the following broadcasts on the CTAF: taxiing at Serpentine for runway 23; entering and rolling on runway 23 for a departure to Rottnest Island; and when departing overhead the aerodrome at 1,500 ft climbing to 3,000 ft heading to Rottnest via Carnac.

The pilot then changed the aircraft's only VHF radio from the CTAF to the area frequency about 5 NM out from Serpentine. The aircraft was then climbing through about 2,800 ft and tracking north-west when the pilot sighted an aircraft (ZTA) about 10–15 ft above, on a reciprocal track and about 100 m away. The pilot of 5456 immediately turned left and descended.

The student pilot of ZTA sighted an aircraft (5456) in close proximity and alerted the instructor. The instructor saw 5456 making a steep left turn at about the same height as ZTA, took control of the aircraft from the student, and also conducted a left turn to increase separation between the two aircraft. The aircraft passed at the same level and about 20 to 30 m horizontally from each other.

The pilot of 5456 then contacted air traffic control, advised that they had just had a 'close call' with another aircraft and requested any traffic in the area. The air traffic controller responded that they could not verify 5456's position or altitude as it was not equipped with a transponder.

Pilot comments

Instructor of VH-ZTA

The instructor reported that they did not hear any departure call from 5456 on the CTAF. Where possible, ATC will issue safety alerts when they identify the threat of a near collision in the training area. However, as 5456 was not fitted with a transponder, its height and accurate position could not be verified.

ATSB comment

- Civil Aviation Advisory Publication (CAAP) 166-1(3) – *Operations in the vicinity of non-controlled aerodromes*, stated that an aircraft is 'in the vicinity of a non-controlled aerodrome if it is within airspace other than controlled airspace;
- a horizontal distance of 10 NM from the aerodrome (reference point); and
- a height above the aerodrome (reference point) that could result in conflict with operations at the aerodrome.'

The CAAP further stated that when departing or arriving at non-controlled aerodromes, pilots should monitor their radios and broadcast their intentions as necessary on the published frequency.

Safety message

A search for other traffic is eight times more effective when a radio is used in combination with a visual lookout than when no radio is used. In areas outside controlled airspace, it is the pilot's responsibility to maintain separation with other aircraft. For this, it is important that pilots use both alerted and un-alerted see-and-avoid principles.

Pilots are encouraged to 'err on the side of caution' when considering when to make broadcasts and whether specific frequencies should be monitored, particularly noting the fundamental importance of communication in the effective application of the principles of see-and-avoid. The ATSB report *Limitations of the See-and-Avoid Principle* outlines the major factors that limit the effectiveness of un-alerted see-and-avoid.

Insufficient communication between pilots operating in the same area is the most common cause of safety incidents near non-controlled aerodromes. CAAP 166-1(3) provides advice in relation to making radio broadcasts to reduce the risk of coming in close proximity with other aircraft.

General details

Occurrence details

Date and time:	15 April 2016 – 1000 WST	
Occurrence category:	Serious incident	
Primary occurrence type:	Near collision	
Location:	15 km NW of Serpentine (ALA), Western Australia	
	Latitude: 32° 18.22' S	Longitude: 115° 45.52' E

Aircraft details: 19-5456

Manufacturer and model:	Morgan Aero Works Cheetah	
Registration:	19-5456	
Serial number:	06	
Type of operation:	Private – Pleasure/Travel	
Persons on board:	Crew – 1	Passengers – 1
Injuries:	Crew – 0	Passengers – 0
Aircraft damage:	Nil	

Aircraft details: VH-ZTA

Manufacturer and model:	Grob-Burkhart Flugzeugbau G115	
Registration:	VH-ZTA	
Serial number:	82048/C2	
Type of operation:	Flying training - dual	
Persons on board:	Crew – 2	Passengers – 0
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.