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ATSB TRANSPORT SAFETY REPORT
Aviation Occurrence Investigation AO-2008-059
Preliminary

Mid-air collision
VH-UPY Cessna A150, VH-CGT Piper PA-28-161
3 km NW Moorabbin, Vic.
27 August 2008

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Abstract

On 27 August 2008 at 1238 Eastern Standard Time[1], a Cessna Aircraft Company A150M and a Piper PA-28-161 collided 3 km north-west of Moorabbin Airport, Vic. The Cessna impacted the ground following the collision and fatally injured the student pilot. The instructor in the PA-28 was able to land the aircraft at Moorabbin Airport without any further damage.

The investigation is continuing.

FACTUAL INFORMATION

The information contained in this preliminary report is derived from initial investigation of the occurrence. Readers are cautioned that there is the possibility that new evidence may become available that alters the circumstances as depicted in this report.

Sequence of events

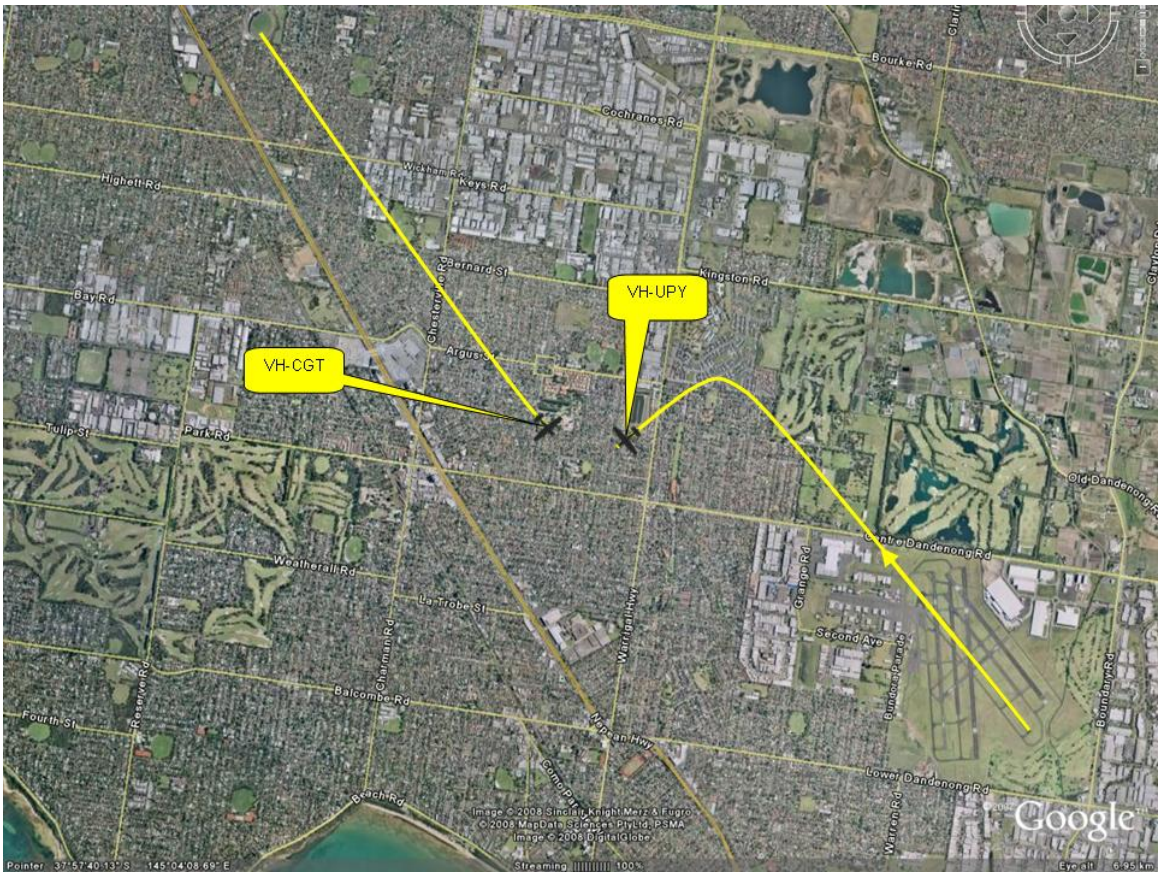
On 27 August 2008 at around 1240, a number of aircraft were operating in the circuit area from runway 31 left (31L) at Moorabbin Airport, Vic. The student pilot of a Cessna Aircraft Company A150M, registered VH-UPY, was flying solo for the third time, and was conducting circuits. A Piper PA-28-161 aircraft, registered VH-CGT, was returning to Moorabbin Airport after a navigation training flight with a student and an instructor on board (Figure 1). Six other aircraft were operating in the airspace in the circuit pattern for runway 31L and two other aircraft were also communicating with the runway 31L air traffic controller as they taxied for take off.

The pilot of VH-UPY conducted a touch and go on runway 31L, but there was no radio communication between the pilot and the control tower.

At the same time, the student pilot flying VH-CGT was entering the control zone at 1,000 ft from the north-west, positioning the aircraft to join the circuit on early left downwind for runway 31L. The student pilot had been monitoring radio broadcasts, and maintaining a lookout for an aircraft expected to be in the vicinity. As VH-CGT approached the circuit pattern, the student pilot saw VH-UPY, very close and climbing from his left on a collision course, and took avoiding action by turning hard right and descending.

1 The 24-hour clock is used in this report to describe the local time of day, Eastern Standard Time (EST), as particular events occurred. Eastern Standard Time was Coordinated Universal Time (UTC) + 10 hours.

Figure1 Position of aircraft shortly before the collision



The left wing of VH-UPY and the left main landing gear, the left wing, flap, and the left rear fuselage of VH-CGT collided. The left tailplane of VH-CGT was struck, detaching the outer section and folding the remainder of the left tailplane upwards and rearwards. The left fin of VH-CGT was also impacted during the collision sequence (Figures 2 and 3).

Figure 2: VH-UPY descending after collision

Figure 3: VH-CGT collision damage

The outer section of the left wing of VH-UPY was crushed at the leading edge. The aircraft descended almost vertically after the collision and was seen to roll at least three times before impacting the ground. The impact was not survivable.

The instructor in VH-CGT took over control of the aircraft from the student pilot, regained directional control and broadcast that he had just been involved in a mid-air collision. The instructor used full power to control the rate of descent, and landed the aircraft on the nearest available runway, 35 Left (35L).

Airspace procedures and ATC information

The mid-air collision occurred in Moorabbin General Aviation Aerodrome Procedures (GAAP) control zone (CTR). GAAP airspace procedures catered for high density operations by day and night in visual meteorological conditions (VMC). Air traffic control (ATC) controlled runway operations by providing landing and take-off clearances to aircraft. ATC also facilitated a high movement rate by providing traffic and sequencing information to pilots operating within the GAAP airspace, to maintain an efficient traffic flow.

In addition, ATC provide an alerting service by prefixing a transmission with the word ALERT. This was normally used when a collision or near collision could be likely unless one or both aircraft adjusted their flight paths.

In VMC, the pilot in command was primarily responsible for separation from other aircraft, requiring good visual lookout and manoeuvring as required to avoid other traffic.

There were six GAAP aerodromes in Australia. Each GAAP aerodrome had its own specific procedures for aircraft operating in the vicinity. Most GAAP aerodrome procedures required arriving aircraft to enter the control zone at 500 ft above the circuit altitude. However, at Moorabbin, arriving aircraft were required to enter the control zone at the circuit altitude of 1,000 ft.

Moorabbin ATC tower was staffed by three air traffic controllers at the time of the collision. One controller was conducting aerodrome control duties for aircraft operating from runway 31 right (31R), in a right circuit pattern from that runway. Another controller was conducting aerodrome control duties for aircraft operating from runway 31L in a left circuit pattern from that runway, and also providing surface movement control for aircraft taxiing on the taxiways or crossing runways, and providing aerodrome coordination between various agencies involved in air traffic control. The third controller was on a scheduled rest break, but had taken over some of the administrative duties associated with aerodrome coordination from the controller who had been providing that function.

Pilot information

The pilot of VH-UPY held a Student Pilot Licence since June 2008. His Class 1 medical certificate was valid until 26 June 2009 and he had accumulated approximately 24 hours aeronautical experience. The student flying VH-CGT held a Private Pilot (Aeroplane) Licence since April 2008. His Class 1 medical certificate was valid until 3 December 2008 and he had accumulated approximately 85 hours aeronautical experience. The instructor in VH-CGT held a Commercial Pilot (Aeroplane) Licence since October 2007 and held a Grade 3 instructor rating since December 2007. His Class 1 medical certificate was valid until 3 October 2008. He had accumulated approximately 750 hours aeronautical experience, including 450 instructional flying hours.

Aircraft information

VH-UPY was an aerobatic category Cessna A150M aircraft, powered by a Teledyne Continental O-200-A engine, driving a fixed pitch propeller. It had been manufactured in 1976, and had been registered to its present owner since 2005. The aircraft had accumulated an estimated 10,923 hours at the time of the accident.

VH-CGT was a utility category Piper PA-28-161 Warrior aircraft, powered by a Textron Lycoming O-320 engine, driving a fixed pitch propeller. It had been manufactured in 1977 and had been registered to its present owner since 2005. The aircraft had accumulated an estimated 12,714 hours at the time of the accident.

Wreckage and accident site information

VH-UPY impacted the front edge of a garage roof beside a house, and continued its descent to the concrete courtyard in front of the garage. Its direction of travel was approximately vertical.

The wing fuel tanks ruptured during the impact sequence and a post accident fuel-fed fire consumed the fuselage, the inner section of the right wing, the mid rear section of the left wing, the right tailplane, fin and rudder. The outer section of the right wing was folded over a wall alongside the courtyard. The left aileron was

found on the roof of the adjoining property. A section of the left outboard tailplane from VH-CGT was found in the vicinity of VH-UPY's left wing.

There was no indication of any unserviceability on either VH-UPY or VH-CGT prior to the collision.

The investigation is continuing and will include examination of the following issues:

- Moorabbin GAAP airspace procedures
- training of student pilots.
- situational awareness.