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Australian Transport Safety Bureau

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ATSB TRANSPORT SAFETY REPORT
Aviation Occurrence Investigation AO-2010-069
Preliminary

Collision with terrain, VH-KZF 25 km east of Geraldton Aerodrome, Western Australia 14 September 2010

Abstract

On 14 September 2010, the pilot of a Cessna A188B/A1 Agtruck aircraft, registered VH-KZF was conducting aerial spraying operations about 25 km east of Geraldton Aerodrome, Western Australia.

The pilot was taking off from a gravel airstrip on the eleventh of 12 planned flights when the aircraft struck a tree stump that was located in the runway overshoot area, then collided with terrain about 100 m from the departure end of the airstrip.

The pilot was fatally injured and the aircraft was seriously damaged by the impact forces and an intense post-impact fire.

The investigation is continuing.

FACTUAL INFORMATION

The information contained in this preliminary report is derived from the 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 the report.

History of the flight

At about 1000 Western Standard Time[1] on 14 September 2010, the pilot of a Cessna A188B/A1 Agtruck aircraft, registered VH-KZF departed Geraldton Aerodrome, Western Australia for an airstrip located about 25 km to the east. The airstrip was to be the base for aerial spraying operations in the local area.

The pilot was met at the airstrip by an assistant (loader) with a truck that contained the chemical, mixing equipment and refuelling supplies for the planned spraying activities.

The loader reported that during the course of the day, 12 flights were planned to be flown. Each flight required the aircraft's spray tank (hopper) to be loaded with a combined 600 L of water and chemical from the load truck. The load truck was located at a loading point about 50 m along the runway from the take-off threshold (Figure 1).

At about 1100, the loader mixed the required chemical and commenced loading it into the aircraft's hopper in preparation for the first flight. The quantity of chemical loaded into the hopper was monitored by the pilot using a fluid quantity sight gauge that was visible from inside the cockpit.

1 The 24-hour clock is used in this report to describe the local time of day, Western Standard Time (WST), as particular events occurred. Western Standard Time was Coordinated Universal Time + 8 hours.

After loading, the pilot commenced take off from the loading point in a south-easterly direction as the loading point was close to the threshold of runway 13 (Figure 1). Nine subsequent flights were successfully completed using the same runway and procedures.

At about 1515, the aircraft was shut down to enable the pilot to refuel and the loader to replenish the aircraft's hopper. The loader reported that prior to commencing the eleventh flight, the pilot entered the cockpit after he completed refuelling the left wing tank and confirmed the 600 L load.

Shortly after loading, the pilot commenced the takeoff from the runway 13 loading point. Moments later, the loader heard a loud noise followed by smoke that was visible to the right of the extended runway centreline. The loader immediately drove to the departure end of runway 13. On arrival, the loader attempted to extinguish a fire that had engulfed the aircraft in the treed area below the end of the airstrip.

The pilot was fatally injured and the aircraft was seriously damaged[2] by impact forces and an intense post-impact fire.

Aircraft information

The aircraft was a single piston-engine, propeller-driven, low-wing aircraft that had seating for one pilot and was primarily used for aerial spraying activities.

The aircraft, serial number 3279T, was manufactured in the United States in 1978. According to maintenance records, the total aircraft time in service was about 5,200 hours.

An overhauled Teledyne Continental Motors IO-520D engine was installed in May 2010 coincident with a 100-hour inspection. Since that time, the aircraft had been operated for about 50 hours.

Weather information

The airstrip did not have a weather-reporting facility. The nearest aerodrome with recorded observed weather data was Geraldton Aerodrome.

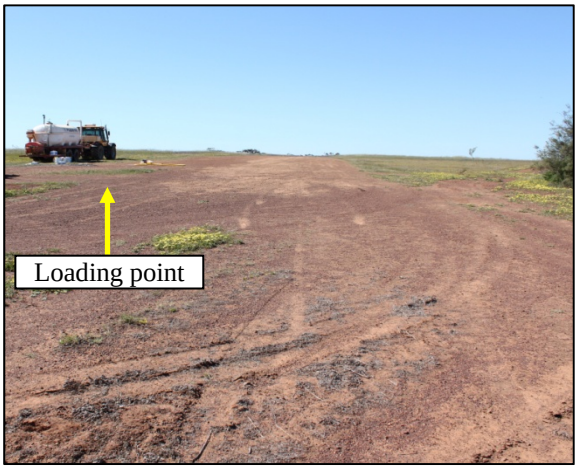
The Bureau of Meteorology weather facility at Geraldton Aerodrome generated routine weather reports (METAR). The 1530 METAR was issued at about the time of the accident and indicated that it was CAVOK[3], the wind was from 170°true at 16 kts and the temperature was 21 °C.

The wind affecting the spraying activities was reported by the loader to have been from the south-east.

Airstrip information

The 700 m gravel airstrip was aligned in a south-east to north-west direction of 130/310°magnetic (M) along a plateau that was elevated about 20 m above the surrounding terrain.

Figure 1: Loading point viewed from the take-off end of runway 13



Runway 13[4] was used for all takeoffs and landings that day.

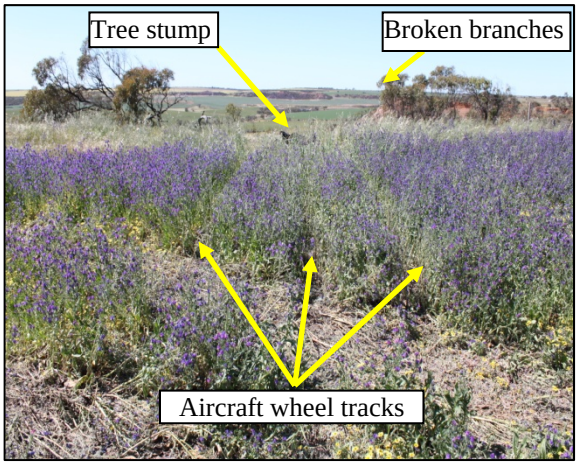
The overshoot area at the departure end of runway 13 was an unprepared surface that showed evidence of wheel tracks, a shattered tree stump and trees at the end of the plateau (Figure 2). The tree to the right of the wheel tracks showed evidence of broken branches with red paint transfer that was consistent with the red paint markings on the aircraft.

2 The *Transport Safety Investigation Regulations 2003* definition of 'seriously damaged' includes the 'destruction of the transport vehicle'.

3 CAVOK indicated that the visibility at Geraldton Aerodrome was 10 km or more and there was no significant cloud below 5,000 ft at the aerodrome.

4 The runway direction was 130°M.

Figure 2: Overshoot area at the departure end of runway 13



Wreckage examination

The wreckage was located in a treed area about 100 m from the departure end of runway 13 and 25° to the right of the extended runway centreline.

An intense fuel-fed fire that followed the collision with the ground destroyed the fuselage and the inboard sections of the left and right wings. The tailplane, which included the vertical and horizontal stabilisers, sustained minimal damage (Figure 3).

Figure 3: Accident site

The aircraft's engine and propeller were removed and transported to a secure facility for further examination. Other items including the aircraft's damaged navigation equipment was recovered to the Australian Transport Safety Bureau in Canberra for technical examination.

FURTHER INVESTIGATION

The investigation is continuing and will include:

- the examination of the aircraft's engine, propeller and other components
- a review of the aircraft's maintenance records
- an examination of the operational procedures affecting the flight
- a review of the operator's pilot training records.