

**LIMITED ACCIDENT INVESTIGATION REPORT**

<b>Reference Number</b>	CA18/2/3/10112						
<b>Classification</b>	Accident	<b>Date</b>	8 February 2022	<b>Time</b>	0800Z		
<b>Type of Operation</b>	Aerial Work Operations (Part 137)						
<b>Location</b>							
Place of Departure	Barland Airfield, KwaZulu-Natal Province		Place of Intended Landing	Barland Airfield, KwaZulu-Natal Province			
Place of Accident	1.1 nautical miles (nm) south-east of Howick Airfield (FAHC), KwaZulu-Natal Province						
GPS Co-ordinates	Latitude	S 29° 33' 43"	Longitude	E 30° 13' 55"	Elevation	3703 ft	
<b>Aircraft Information</b>							
Registration	ZS-JDH						
Make/Model	Cessna A188B (Serial Number: 188-02275)						
Damage to Aircraft	Destroyed		Total Aircraft Hours	7 440.0			
<b>Pilot-in-command</b>							
Licence Valid	Yes	Gender	Male	Age	55		
Licence Type	Airline Transport Pilot Licence (ATPL) Aeroplane						
Total Hours on Type	117.2		Total Flying Hours	17 676.5			
People On-board	1 + 0	Injuries	1	Fatalities	0	Other (On Ground)	0
<b>What Happened</b>							
<p>On 8 February 2022, a pilot on-board a Cessna A188B aircraft with registration mark ZS-JDH was engaged in a crop-spraying operation on a maize field near Howick Airfield in KwaZulu-Natal. The pilot took off from Barland Airfield with the intention to land back at the same airfield. The flight was conducted in visual meteorological conditions (VMC) by day and under the provisions of Part 137 of the Civil Aviation Regulations (CAR) 2011 as amended.</p> <p>The pilot stated that he took off earlier that morning to spray field 1; thereafter, he returned to Barland to refill the crop-spraying agent so as to spray field 2 (see Figure 1). He then returned to Barland after spraying field 2 to refill the crop-spraying agent in preparation to spray field 3 (see Figure 1). On his descent to spray field 3, the pilot made a quick assessment and noticed that his south-easterly direction of spray was on a steep uphill which was likely to cause a hazardous situation. He then decided to climb to approximately 150 feet (ft) above ground level (AGL) for a more suitable spray direction (i.e. south-westerly). During a left-side turn towards the intended</p>							

spray area whilst resetting the agricultural navigation computer (AG-NAV), the pilot did not notice a blue gum tree that was 15 metres (m) ahead of the aircraft's flight path. The pilot stated that by the time he noticed the tree, he rolled wings level and, seconds later, the left wing impacted the tree which caused the aircraft to roll to the left and pitch down. The pilot then applied full right rudder and turned the control column to the right whilst applying back pressure with the intention to recover the aircraft, but he was unsuccessful. The aircraft continued to descend and impacted the maize field (field 4) about 200m from the tree. The aircraft skidded on the ground for approximately 40m, turned laterally for 180° and came to rest in that position. The pilot switched off both magnetos and the master switch, then disembarked the aircraft unaided. The aircraft was destroyed by impact force during the accident sequence and there was no post-impact fire. The pilot climbed back into the wreckage after making sure that it was safe to do so to retrieve the aircraft's documents, including the first aid kit. The pilot was later taken to hospital by road ambulance. It was later reported that the pilot had sustained a laceration on his left elbow, which was attended to at the hospital; he was discharged a few hours later.



**Figure 1:** Aerial view of accident site. (Source: Pilot)



**Figure 2:** The aircraft as found on site.

**What was found:**

- The pilot was issued an Airline Transport Pilot Licence (ATPL) Aeroplane on 7 April 2021 with an expiry date of 30 April 2022. An agricultural pilot rating and the aircraft type were both endorsed on his licence. His Class 1 medical certificate was issued on 2 June 2021 with an expiry date of 30 June 2022, and with a corrective lens restriction.
- The mandatory periodic inspection (MPI) carried out on the aircraft prior to the accident was on 22 January 2022 and was certified at 7428.0 airframe hours. The aircraft was issued a Certificate of Release to Service (CRS) on 22 January 2022 with an expiry date of 21 January 2023 or at 7550.8 hours of flight time, whichever occurs first unless the aircraft is involved in an accident or becomes unserviceable.
- The aircraft was initially issued a Certificate of Airworthiness (C of A) on 19 December 2002 with an expiry date of 31 December 2022.
- On-site investigation revealed that the left wing of the aircraft impacted a tree that was 230m south-east of the maize field that the pilot intended to spray. The first point of impact with the ground was 40m south-east of the main wreckage. The left-wing flap and the left wheel assembly detached from their respective attachment points and were found approximately 20m south-east of the main wreckage. All three propeller blades showed that the engine was producing a substantial amount of power prior to impact. The engine was intact and still secured to the cradle with signs of minor damages. The flight control continuity could not be established as some of the control cables in the aft fuselage had snapped due to impact. Both fuel tanks had approximately one-third of fuel remaining, respectively. Examination of fuel indicated no signs of contamination, and that fuel was of the correct grade.



**Figure 3:** The blue gum tree which the left wing impacted.



**Figure 4:** The left-wing flap and the aircraft's first point of impact with the ground.



**Figure 5:** The propeller blades and the spinner showing signs of rotation before impact.

- No prior defects were reported or noted on the aircraft's flight folio.

**Probable cause:**

The pilot did not observe a tree in the aircraft's flight path which caused the aircraft's left wing to impact the tree. The pilot lost control and the aircraft descended and impacted the ground.

**Contributory Factor:**

Lack of situational awareness.

**Safety Action**

None.

**Safety Message**

Safety message: Operators are to ensure that they conduct operational risk assessments and include the findings in their pre-flight planning to ensure that their pilots do not deviate during crop-spraying operation.

**Purpose of the Investigation**

*In terms of Regulation 12.03.1 of the Civil Aviation Regulations (CAR) 2011, this report was compiled in the interest of the promotion of aviation safety and the reduction of the risk of aviation accidents or incidents and **not to apportion blame or liability.***

**About this Report**

*Decisions regarding whether to investigate, 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, no investigation has been conducted, and the Accident and Incident Investigations Division (AIID) has relied on the information submitted by the affected person/s and organisation/s to compile this brief report. The report has been compiled using information supplied in the initial*

*notification, as well as follow-up information to bring awareness of potential safety issues to the industry in respect of this occurrence, as well as possible safety action/s that the industry might want to consider in preventing a recurrence of a similar accident.*

*This report provides an opportunity to share safety message/s in the absence of an investigation.*

*All times given in this report are Co-ordinated Universal Time (UTC) and will be denoted by (Z). South African Standard Time is UTC plus 2 hours.*

**Disclaimer**

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**This report is issued by:**

**Accident and Incident Investigations Division  
South African Civil Aviation Authority  
Republic of South Africa**