

**LIMITED ACCIDENT INVESTIGATION REPORT**

<b>Reference Number</b>	CA18/2/3/10107						
<b>Classification</b>	Accident	<b>Date</b>	25 January 2022	<b>Time</b>	1020Z		
Type of Operation	Aerial Work Operations (Part 137)						
<b>Location</b>							
Place of Departure	Vlakfontein Farm near Sedibeng, Gauteng Province		Place of Intended Landing		Vlakfontein Farm near Sedibeng, Gauteng Province		
Place of Accident	Farm Vlakfontein, near Sedibeng, Gauteng Province						
GPS Co-ordinates	Latitude	26°19'54.63" S	Longitude	028°32'20.44" E	Elevation	5 209 ft	
<b>Aircraft Information</b>							
Registration	ZS-OMK						
Model/Make	Air Tractor AT 502B (Serial Number: 502B-2583)						
Damage to Aircraft	Substantial		Total Aircraft Hours		6 016.8		
<b>Pilot-in-command</b>							
Licence Type	Commercial Pilot Licence (CPL)	Gender	Male		Age: 55		
Licence Valid	Yes						
Total Hours on Type	7 875		Total Flying Hours		16 057		
People On-board	1 + 0	Injuries	0	Fatalities	0	Other (on ground)	0
<b>What Happened</b>							

On 25 January 2022, a pilot on-board an Air Tractor AT502B aircraft with registration ZS-OMK was crop-spraying a maize field with foliar feed (liquid fertiliser applied directly to the leaves of the maize plants) at Vlakfontein Farm near Sedibeng. The flight was conducted under the provisions of Part 137 of the Civil Aviation Regulations (CAR) 2011 as amended. Clear weather conditions prevailed at the time of flight.

The pilot stated that he had conducted several spray runs on the accident day. While he positioned the aircraft for another spray run, he descended, aiming to fly below the high-tension cables when the top section of the vertical stabiliser collided with one of the electrical cables. This caused the rudder to jam (see Figure 1). The pilot was unable to maintain lateral or longitudinal control of the aircraft and opted to reduce the throttle to idle and performed a forced landing on the maize field approximately 600m from where the collision occurred. During an interview with the pilot, he stated that he misjudged the electric cables during a critical phase of the flight as he normally flew the aircraft below the high-tension cables. There was no fault with the aircraft prior to the collision. The aircraft was substantially damaged; the pilot was not injured.



**Figure 1:** The area on the vertical stabiliser where it impacted the electrical cables.





**Figure 2:** The high-tension cables above the maize field that the aircraft collided with during crop-spraying. (Source: Pilot)



**Figure 3:** The aircraft at its resting position post-accident. (Source: Pilot)





**Figure 4:** A similar type of aircraft with the cable deflector in the red window.

**What was found:**

- The pilot was issued an initial Commercial Pilot Licence on 9 May 1986. He had the aircraft type endorsed on his licence. His Class 1 medical certificate was issued on 28 February 2021 with an expiry date of 28 February 2022.
- This was a crop-spraying flight conducted under the provisions of Part 137 of the Civil Aviation Regulations (CAR) 2011 as amended.
- The pilot was the sole occupant on-board; weight and balance were not compromised.
- The ZS-OMK aircraft was factory fitted with a cable deflector (see Figure 4), but it had no effect in deflecting the electrical cable from the high-tension power cables.
- The last maintenance inspection that was carried out on the aircraft prior to the accident flight was certified on 12 January 2022 at 5 975.0 airframe hours. A further 41.8 hours were flown since the last inspection.
- The aircraft was issued a Certificate of Release to Service on 12 January 2022 with an expiry date of 11 January 2023 or at 6 075 airframe hours, whichever comes first.
- The aircraft was issued a Certificate of Registration on 13 April 2012.
- The aircraft was issued a Certificate of Airworthiness on 10 August 2016 with an expiry date of 31 August 2022.
- The operator's application for obtaining an Authority to Fly (AOC) certificate was still being process by the South Africa Civil Aviation Authority (SACAA). The operator was, however, issued an AOC number G273D but was awaiting CAA approval of his Operations Manual.

**An extract from the Civil Aviation Regulations (CAR) of 2011 as amended:**

**Part 137.02.6 Operation over non-populous area**

*Notwithstanding the provisions of Part 91, a pilot of an aircraft engaged in an agricultural or fire-fighting operation may, during or for the purposes of the operation, fly at any altitude and at any distance from an obstruction if—*

- (a) the operation is not conducted over a populous area;*
- (b) the operation is conducted without creating a hazard to persons or property on the ground; and*
- (c) the altitude and distance for all approaches, turns and departures are necessary for the operation.*

**Probable Cause:**

While manoeuvring the aircraft for a spray run, the vertical stabiliser of the aircraft collided with an electrical cable because the pilot misjudged their height (cables). This caused the rudder to jam, resulting in the pilot executing a forced landing.

**Safety Recommendation**

The Director of Civil Aviation to develop flight minimums or limitations for all aerial work operations under CAR 2011, Part 137.

**Safety Message**

Operators are to define the flight minimums for all operations conducted under the provisions of CAR 2011, Part 137.

**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**