

**LIMITED ACCIDENT INVESTIGATION REPORT**

<b>Reference Number</b>	CA18/2/3/10155						
<b>Classification</b>	Accident	<b>Date</b>	31 December 2021	<b>Time</b>	0412Z		
<b>Type of Operation</b>	Agricultural (Part 137)						
<b>Location</b>							
<b>Place of Departure</b>	Hartswater Private Airstrip, Northern Cape Province		<b>Place of Intended Landing</b>	Welkom Aerodrome (FAWM), Free State Province			
<b>Place of Accident</b>	6F12 Private Farm in Hartswater, Northern Cape Province						
<b>GPS Co-ordinates</b>	<b>Latitude</b>	27°48'21.99" S	<b>Longitude</b>	24°44'48.13" E	<b>Elevation</b>	3583 feet	
<b>Aircraft Information</b>							
<b>Registration</b>	ZS-XBX						
<b>Model/Make</b>	Air Tractor 502A (Serial Number: 502A-3309)						
<b>Damage to Aircraft</b>	Substantial		<b>Total Aircraft Hours</b>	146.6			
<b>Pilot-in-command</b>							
<b>Licence Type</b>	Commercial Pilot Licence (A)	<b>Gender</b>	Male	<b>Age</b>	34		
<b>Licence Valid</b>	Yes						
<b>Total Hours on Type</b>	254.4		<b>Total Flying Hours</b>	5 304.3			
<b>People On-board</b>	1 + 0	<b>Injuries</b>	0	<b>Fatalities</b>	0	<b>Other (on ground)</b>	0
<b>What Happened</b>							
<p>On 31 December 2021, a pilot on-board the Air Tractor AT-502A aircraft with registration ZS-XBX took off from Hartswater private airstrip in the Northern Cape province with the intention to conduct a crop-spraying operation at a nearby 6F12 private farm, before proceeding to Welkom in the Free State province. The flight was conducted under visual flight rules (VFR) 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 had planned to complete a crop-spraying application at 6F12 private farm which he had conducted on 29 December 2021, then proceed to another farm in Welkom area where he would conduct another crop-spraying operation before flying to Welkom Aerodrome for a full stop landing. Whilst at 6F12 private farm and during a positioning turn to the right to spray the crops, the aircraft's left wing collided with an 11-kilovolt (kV) powerline which was on his flight path, causing the two conductors of the powerline to break. The powerline was approximately 6.3 metres high.</p> <p>According to the operator, the aircraft was operated in accordance with their operation procedure, which allows flying at any altitude provided:</p> <p>(a) <i>the operation is not conducted over a populous area;</i></p>							

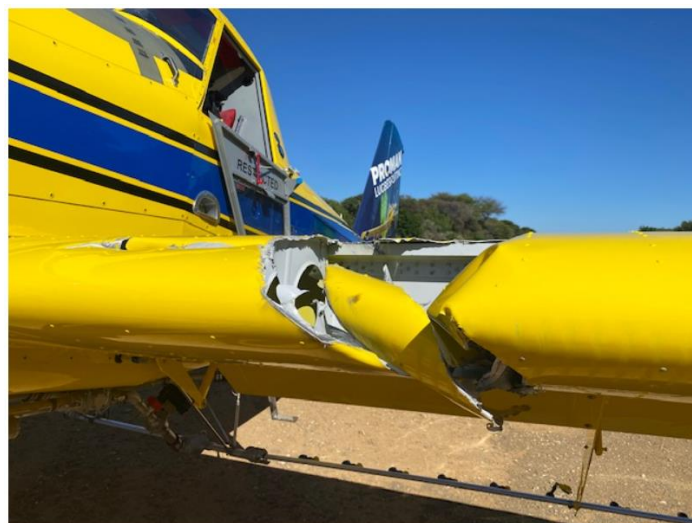
- (b) the operation is conducted without creating a hazard to persons or property on the ground; and
- (c) the altitude and distance for all approaches, turns and departures are necessary for the operation.

Source: Proman Lugbespuiting Operating Procedures, Doc Ref: QCD-3, effective 15 June 2019.

The pilot stated that after the accident, he flew back to Hartswater private airstrip and landed safely on the gravel runway. The aircraft sustained damage to the left-side leading edge, wing spar, windshield and wiper, antennae, and the tail section. The pilot was not injured during the accident. Post-accident examination of the aircraft revealed that the powerline wire had cut the outboard side of the left-wing leading edge through to the inboard leading edge, approximately midway between the fuel cap and the cockpit area.



**Figure 1:** Point of impact with the powerline. The powerline is shaded in blue. (Source: Google/Pilot)



**Figure 2:** Damage to the left-wing leading edge inboard (from the skin to the main spar).  
(Source: Pilot)



**Figure 3:** The broken left-side spray boom and damaged boomhangers. (Source: Pilot)

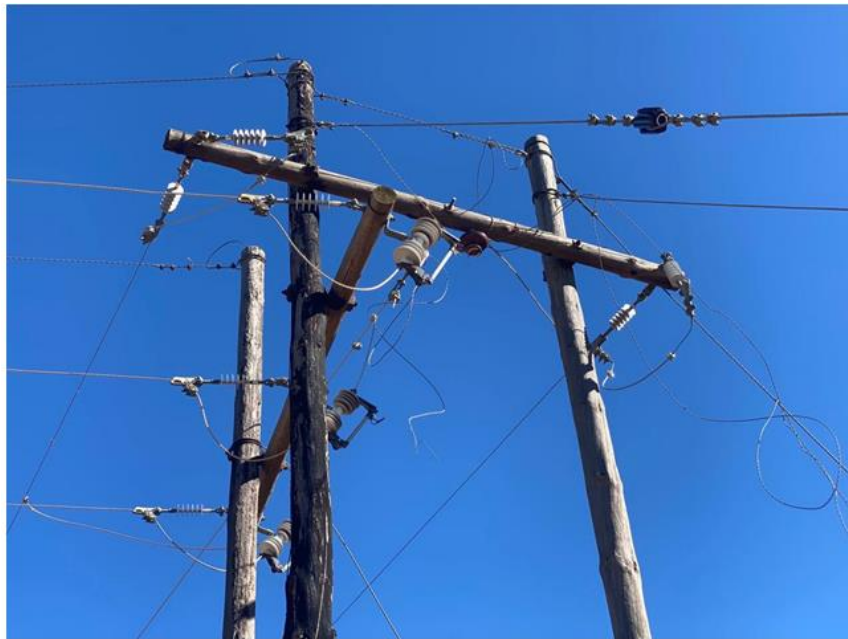


**Figure 4:** The broken emergency locator transmitter (ELT) and very high frequency (VHF) communication antennae. (Source: Pilot)





**Figure 5:** The damaged cockpit windscreen frames. (Source: Pilot)



**Figure 6:** The broken powerline that the aircraft collided with. (Source: Pilot)

#### 10.1.2.6 Operation Over Non-populous Area

(CAR 137.02.6)

*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.*

#### **What was found:**

- The pilot was initially issued a Commercial Pilot Licence (CPL) Aeroplane on 30 October 2016. The licence was renewed on 12 November 2021 with an expiry date of 30 November 2022. The agricultural rating was endorsed on his licence. The pilot was also issued a Class 1 medical certificate on 15 September 2021 with an expiry date of 2 October 2022.
- The pilot was familiar with the layout/surrounds of the farm as he had sprayed the same farm two days prior. On the day of the accident (31 December 2021), he was completing the crop-spraying operation that he was engaged in on 29 December 2021.
- The aircraft was issued a Certificate of Airworthiness (CoA) on 6 October 2021 with an expiry date of 31 October 2022. The operator had an Aircraft Operating Certificate No. CAA/G1446D issued on 3 March 2021 with an expiry date of 28 February 2022. The aircraft owner was issued a Certificate of Registration for Pest Control by the Department of Agriculture, Forestry & Fisheries. The certificate was issued on 24 May 2019 with an expiry date of 30 June 2022.

#### **Probable cause:**

The aircraft collided with a powerline during a crop-spraying operation which was conducted as per the operator's procedure.

#### **Safety Action/s**

None.

#### **Safety Message**

Pilots are encouraged to perform a fly-by/reconnaissance before commencing work that involves low flying to identify obstruction in their flight path to avoid collisions.

#### **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**

*This report is produced without prejudice to the rights of the AIID, which are reserved.*

**This report is issued by:**

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