



## LIMITED OCCURRENCE INVESTIGATION REPORT

<b>Reference Number</b>	CA18/2/3/10631						
<b>Classification</b>	Accident		<b>Date</b>	12 January 2026		<b>Time</b>	1030Z
<b>Type of Operation</b>	Aerial Work Operations (Part 137)						
<b>Location</b>							
Place of Departure	Private Farm Airstrip, Verkykerskop, Free State Province		Place of Intended Landing		Private Farm Airstrip, Verkykerskop, Free State Province		
Place of Occurrence	Private Farm Airstrip at Verkykerskop, Free State Province						
GPS Co-ordinates	Latitude	27° 56' 12.85" S	Longitude	29° 11' 33.64" E	Elevation	5 970 ft	
<b>Aircraft Information</b>							
Registration	ZS-NMR						
Make; Model; S/N	Ayres; S2R-T34 Turbo Thrush (Serial Number: 0180 DC)						
Damage to Aircraft	Minor		Total Aircraft Hours	9 483.9			
<b>Pilot-in-command</b>							
Licence Type	Commercial Pilot Licence (CPL)		Gender	Male		Age	29
Licence Valid	Yes	Total Hours	2 546.4		Total Hours on Type	1 638.4	
Total Hours 30 Days	51.5		Total Flying on Type Past 90 Days		111.6		
<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 Monday, 12 January 2026, a pilot on-board an Ayres S2R-T34 Turbo Thrush aircraft registered ZS-NMR took off on a crop-spraying flight from a private farm airstrip at Verkykerskop, Warden, in Free State province with the intention to land at the same airstrip. The flight was conducted under 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 reported that he conducted a pre-flight inspection of the aircraft and no anomalies were noted. The aircraft had 1 000 pounds (lbs) of Jet A1 fuel. Later, the pilot started the engine and took off; he routed to the potato farm approximately 10 kilometres (km) west of Verkykerskop private farm airstrip. Upon landing at the potato farm runway, the ground crew loaded the first load (one bag) of Urea big grain fertiliser into the 400 US Gallons hopper. The fertiliser was packaged in single bags, each weighing 1 000 kilograms (kg). Thereafter, the aircraft took off, and the pilot sprayed the fertiliser on the potato crops. He repeated the process five times (with five loads [bags] of 1 000kg Urea fertiliser loaded and successfully sprayed on the potato crops).</p>							

After spraying the fifth load, the pilot landed the aircraft and the ground crew switched to a different small grain fertiliser, Potassium Sulphate, also packaged in bags and each weighing 1000kg. This time, two bags of Potassium Sulphate fertiliser were loaded in the aircraft. Later, the aircraft commenced with the take-off run and rotated; however, it could not climb. The pilot opened the hopper dump door to dump the fertiliser, thus reducing the weight. However, the dumping process was not executed fast enough; consequently, the aircraft crash-landed on the nearby maize field. The aircraft sustained substantial damage. No injuries were reported.

The accident occurred in Verkykerskop at Global Positioning System (GPS) co-ordinates determined to be 27°56'12.85" South 29°11'33.64" East, at an elevation of 5 970 feet (ft).



**Figure 1:** The aircraft at the accident site. (Source: Pilot)



The last weight and balance calculation of the aircraft was conducted on 12 August 2024; and the aircraft's maximum take-off weight (MTOW) was 6000 lbs.

The investigation revealed that the aircraft's weight and balance conducted for the last flight with the two Potassium Sulphate fertiliser bags on-board and each weighing 1000kg was 9857 lbs, which exceeded its 6000 lbs MTOW. The investigation further revealed that the ground crew loaded the two bags of Potassium Sulphate fertiliser instead of one bag. The ground crew was confused about the different size bags, as the Potassium Sulphate fertiliser bag appeared to contain less content (smaller) than the Urea fertiliser bag; however they both measured the same weight, which was 1000kg.

### **Findings**

1. The pilot had a Commercial Pilot Licence (CPL) that was initially issued by the Regulator (SACAA) on 10 August 2016. The CPL was renewed on 20 May 2025 with an expiry date of 30 June 2026.
2. The pilot had accumulated a total of 2 546.4 flying hours of which 1 638.4 hours were accrued on the aircraft type. The aircraft type was endorsed in his licence.
3. The pilot had a Class 1 aviation medical certificate that was issued on 4 December 2025 with an expiry date of 31 December 2026.
4. The last 100-hour mandatory periodic inspection (MPI) of the aircraft was certified on 23 December 2025 at 9 448.8 total airframe hours.
5. The aircraft was issued a Certificate of Release to Service (CRS) on 23 December 2025 at 9 448.8 hours with an expiry date of 22 December 2026 or at 9 549.8 hours, whichever occurs first. No outstanding defects were recorded in the aircraft's technical documentation.
6. The aircraft Certificate of Registration (C of R) was issued to the present owner on 21 June 2024.
7. The aircraft Certificate of Airworthiness (C of A) was initially issued on 17 August 1994. The C of A was renewed on 30 August 2025 with an expiry date of 31 August 2026.

### **Probable Cause(s)**

The aircraft operated above its maximum certified gross weight; consequently, the take-off performance was degraded, and the aircraft could not climb, rendering ground impact inevitable.

<b>Contributing Factor(s)</b>
Lack of situational awareness by the ground crew.
<b>Safety Action(s)</b>
None.
<b>Safety Message and/or Safety Recommendation/s</b>
None.
<b>About this Report</b>
<p><i>The decision to conduct a limited investigation is based on factors including whether the cause is known and the evidence supporting the cause is clear, the level of safety benefit likely to be obtained from an investigation and that will determine the scope of an investigation. For this occurrence, a limited 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 limited report. The report has been compiled using information supplied in the initial notification, as well as from follow-up desk top enquiries 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 occurrence.</i></p> <p><i>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.</i></p>
<b>Purpose</b>
<i>In terms of Regulation 12.03.1 of the Civil Aviation Regulations (CAR) 2011 and ICAO Annex 13, 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.</i>
<b>Disclaimer</b>
<i>This report is produced without prejudice to the rights of the AIID, which are reserved.</i>

**This report is issued by:**

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