

LIMITED OCCURRENCE INVESTIGATION REPORT – FINAL

Reference Number	CA18/2/3/10402						
Classification	Accident	Date	20 December 2023		Time	1533Z	
Type of Operation	Aerial Work Operations (Part 137)						
Location							
Place of Departure	Noods Hulp Private Farm, Ottosdal, North West Province		Place of Intended Landing			Noods Hulp Private Farm, Ottosdal, North West Province	
Place of Occurrence	On the prepared runway strip						
GPS Co-ordinates	Latitude	26°41'37.38"S	Longitude	025°51'29.56"E	Elevation	4 595 ft	
Aircraft Information							
Registration	ZS-FDT						
Make; Model; S/N	Piper Aircraft Corporation; PA25-235 (Serial Number: 25-4429)						
Damage to Aircraft	Substantial			Total Aircraft Hours	10 545.9		
Pilot-in-command							
Licence Type	Commercial Pilot Licence (CPL)		Gender	Male	Age	43	
Licence Valid	Yes	Total Hours	545.7	Total Hours on Type	64.5		
Total Hours 30 Days	17.6		Total Flying on Type Past 90 Days			30.7	
People On-board	1+0	Injuries	0	Fatalities	0	Other (on ground)	0
What Happened							
<p>On Wednesday, 20 December 2023, a pilot on-board a Piper PA 25-235 with registration ZS-FDT was engaged in an agricultural crop-spraying operation at Noods Hulp farm, 10 nautical miles (nm) north-west of Ottosdal in the North West province when the accident occurred. 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>According to the pilot's report, the aircraft deployed to the farm on 19 December 2023, and the pilot commenced with the crop-spraying operation on the same day. The following morning on 20 December 2023, the pilot had planned to commence at 0400Z to complete the crop-spraying operation he started the day before and, thereafter, proceed to the next farm which is situated approximately 50 kilometres (km) from Noods Hulp. According to the pilot, the operation was postponed due to the prevailing strong winds on the day, and ground crew had to wait until the weather conditions had improved. There was about 65 litres of Avgas in the fuel tank for the operation, which was sufficient.</p> <p>After the weather had cleared at around 1500Z, the pilot conducted the pre-flight checks on the aircraft and, thereafter, took off from the prepared runway strip and repositioned overhead the farm to commence with the first crop-spray run, which was uneventful. The aircraft returned to the airstrip to load the spraying solution in preparation for the second spray run. During the take-off roll at approximately 1533Z, the aircraft's right main</p>							

landing gear came into contact with the soft sand and the aircraft veered off to the right of the runway. The pilot attempted to steer the aircraft to the left and was unsuccessful. The aircraft pivoted 180 degrees and skidded sideways towards the left of the runway, which exacerbated the damage to the main landing gears which broke off. In addition, whilst the aircraft skidded, it impacted the perimeter fence which led to damage to both wings and the propeller blades.

After the aircraft had come to a stop, the pilot disembarked unassisted and with no injuries. The aircraft sustained substantial damage to the main landing gears that broke off, both wings' leading edges, and the propeller blades. Also, the crop-spraying apparatus was destroyed.

According to the pilot, the following weather conditions prevailed at the time of the flight: wind direction: north-west; wind speed: 8-10 knots (kt); visibility: 9999 metres (m); cloud base: 8000 - 15000 feet (ft); cloud cover: 2/8

The meteorological aerodrome report (METAR) for Klerksdorp Airport (FAKD), which is situated approximately 80 kilometres (km) south-east of Noods Hulp farm and the closest weather station to the accident site, reported the weather conditions as follows: wind direction: 30; wind speed: 02; air temperature: 30C. The indicated weather conditions were constant throughout the day.

The aircraft's operation handbook states 15 kts as the limit to the weather condition at which the aircraft can be operated.



Figure 1: Overlay of the accident location. (Source: Google Earth)



Figure 2: The aircraft after the accident. (Source: The pilot)



Figure 3: Damage on the right side of the aircraft and the severed undercarriage.



Figure 4: Damage to the propeller and the right wing.

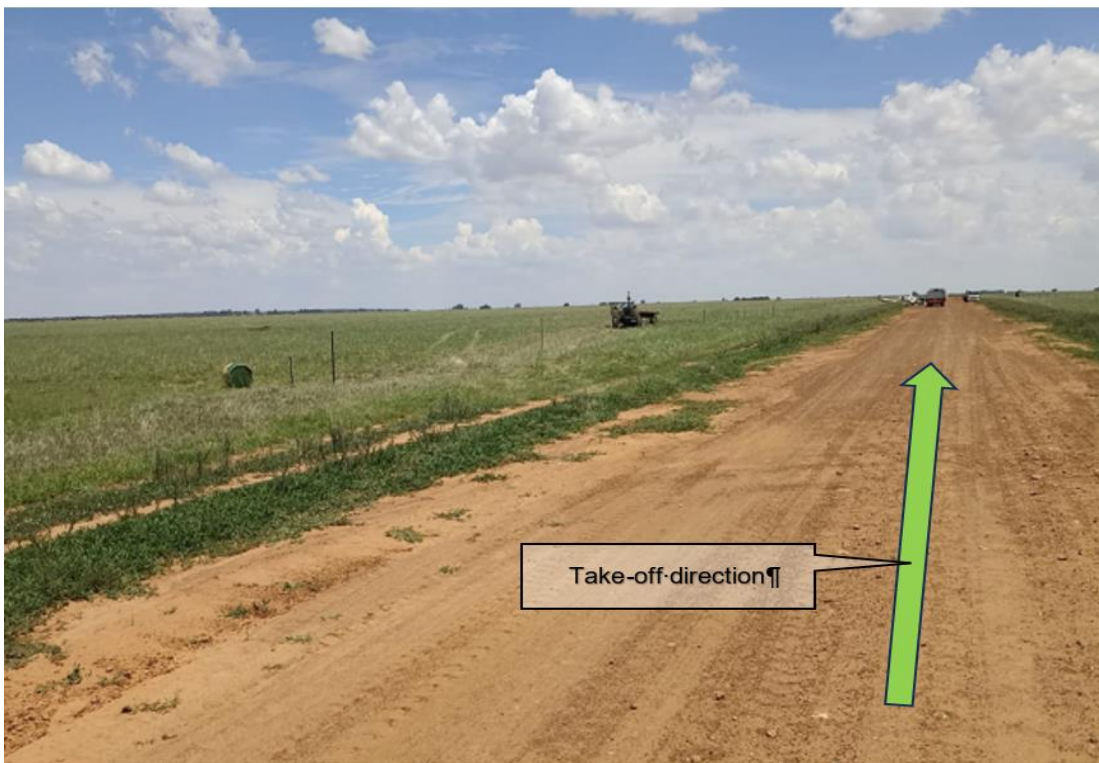


Figure 5: The green arrow shows the direction of flight.

Findings		
1.	The pilot had a Commercial Pilot Licence (CPL) which was initially issued by the Regulator on 30 May 2019. His licence revalidation was issued on 17 August 2023 with an expiry date of 31 August 2024. The aircraft type was endorsed on his licence. The pilot had accrued a total of 64.5 flying hours on the aircraft type at the time of the accident.	
2.	The pilot's Class 1 aviation medical certificate was issued on 3 August 2023 with an expiry date of 3 August 2024 with no restrictions.	
3.	The aircraft had a valid Certificate of Airworthiness (C of A) that was issued by the Regulator on 3 February 2023 with an expiry date of 28 February 2024.	
4.	The last mandatory periodic inspection (MPI) on the aircraft was conducted on 29 August 2023 and the Certificate of Release to Service (CRS) was issued at 9 882.16 airframe hours with an expiry date of 28 August 2024 or at 9 982.16 airframe hours, whichever comes first. The aircraft had a total of 9 980.46 airframe hours at the time of the accident. This meant that the aircraft accrued 98.3 hours since the last MPI.	
5.	The aircraft maintenance organisation (AMO) that serviced the aircraft had an AMO certificate that was issued by the Regulator on 3 April 2023 with an expiry date of 31 March 2024.	
6.	The Regulator issued the Certificate of Registration (C of A) to the current owner on 13 December 2023.	
7.	The Regulator issued the Air Operator Certificate (AOC) to the operator on 8 December 2023 with an expiry date of 31 December 2024. The aircraft type is endorsed on the operator's operation specifications (Ops Spec) under the provisions of Part 135 and 137 of the CARs 2011 as amended.	
8.	No mechanical or aircraft system defects were recorded on the aircraft's logbooks at the time of the flight.	
9.	There was no evidence of soft sand on the runway. The weather conditions submitted by the pilot upon request indicated clear weather.	
Probable Cause		
The pilot lost direction control of the aircraft during take-off, and it veered off to the right of the runway and impacted the barrier fence.		
Contributing Factor(s)		
None.		
Safety Action(s)		
None.		

Safety Message and/or Safety Recommendation/s
None.
About this Report
<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 desktop inquiries 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>
Purpose
<p><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></p>
Disclaimer
<p><i>This report is produced without prejudice to the rights of the AIID, which are reserved.</i></p>

**This report is issued by:
Accident and Incident Investigations Division
South African Civil Aviation Authority
Republic of South Africa**