SOUTH AFRICAN CIVIL AVIATION AUTHORITY

Section/division **Accident and Incident Investigations Division** Form Number: CA 12-57

LIMITED OCCURRENCE INVESTIGATION REPORT – FINAL

Reference Number	CA18/2/3/10574								
Classification	Accident			**Date**	26 March 2025			**Time**	0700Z
Type of Operation	Private (Part 91)								
Location									
Place of Departure	Unregistered Private Airstrip (Alma, Waterberg), Limpopo Province			Place of Intended Landing			New Tempe Aerodrome (FATP), Free State Province		
Place of Occurrence	Unregistered airstrip runway in Alma, Waterberg, Limpopo Province								
GPS Co-ordinates	Latitude	24° 35' 39.00" S		Longitude	28° 06' 25.00" E		Elevation	4477 feet	
Aircraft Information									
Registration	ZS-KTA								
Make; Model; S/N	Piper; PA28 RT-201T (Serial Number: 28R-8031163)								
Damage to Aircraft	Substantial			Total Aircraft Hours	7351.64				
Pilot-in-command									
Licence Type	Private Pilot Licence (PPL)			Gender	Male		Age	72	
Licence Valid	Yes	Total Hours		3594	Total Hours on Type		4.25		
Total Hours 30 Days	4.25			Total Flying on Type Past 90 Days	4.25				
People On-board	1+1	**Injuries**	0	**Fatalities**	0	**Other (on ground)**	0		

What happened:

On Wednesday, 26 March 2025 at approximately 0700Z, a pilot and a passenger on-board a Piper PA-28RT-201T aircraft with registration ZS-KTA took off from an unregistered private airstrip at Alma Private Game Farm in Waterberg, Limpopo province, with the intention to land at New Tempe Aerodrome (FATP) in Free State province. The flight was conducted under visual meteorological conditions (VMC) by day and under the provisions of Part 91 of the Civil Aviation Regulations (CAR) 2011 as amended.

The pilot stated that he conducted a pre-flight inspection of the aircraft, and no anomalies were noted. The aircraft was fuelled to 75% with Aviation Gasoline 100 Low Lead (AVGAS 100LL) before take-off on the 800-metre soft sand-covered runway. *A perimeter fence and a line of trees at the end of the runway demarcated the area.* The pilot configured the aircraft for a short field take-off with the engine power set to 2 550 revolutions per minute (RPM) and flaps set to first notch (10 degrees). All engine parameters were normal at take-off. The pilot initiated the rotation of the aircraft 560m into the ground roll at a speed of 75 Knots Indicated Air Speed (KIAS).

Due to a lack of height to clear the perimeter fence and the trees at the end of the runway, the pilot decided to reduce the throttle power and lower the aircraft's nose to abort take-off and land back on the remaining runway surface.

The pilot stated that during the landing roll, he applied aggressive braking to avoid impacting the obstacles ahead of the aircraft's path; the aircraft decelerated rapidly but he lost directional control. The nose landing gear pivoted on the ground which caused the aircraft's tail to swing sharply to the left. This motion caused the left main landing gear to pull inward and collapse (see Figure 3), whilst the right main landing gear was forced outward, damaging the oleo strut attachment points (see Figure 4). The aircraft came to rest with its left wing touching the ground.

The aircraft sustained damage to the propeller, main landing gear and the underbelly. Both occupants disembarked from the aircraft uninjured.

Figure 1: Overview of the accident site. (Source: Google Map)

Figure 2: The collapsed landing gear on the soft sand-covered runway. (Source: Pilot)

Figure 3: The left wing and the aft fuselage resting on the runway post-accident. (Source: Pilot)

Figure 4: The bent oleo after the accident. (Source: Pilot)

Aircraft Performance

Soft Fields Take-off Procedures (Source: Pilot's Operating Handbook [POH]

- *Flaps: Set to 25° (second notch)*
- *Accelerate on the ground roll to 53–64 KIAS (depending on aircraft weight)*
- *Rotate to climb at minimum flying speed.*
- *After lift-off, maintain ground effect and accelerate to 59–68 KIAS (depending on weight)*
- *Gear: Retract (if override is engaged on aircraft equipped with backup gear extender)*
- *Flaps: Retract slowly after a positive rate of climb is established*
- *Accelerate to best rate of climb (flaps up) speed: 97 KIAS.*
- *Use gentle back pressure on the control wheel to maintain soft field technique.*

The information below is an extract from the FAA-H-8083-3A, Airplane Flying Handbook:

Short Field Take-off and Maximum Performance Climb

In all cases, the power setting, flap setting, airspeed, and procedures prescribed by the airplane's manufacturer should be followed. The speed for V_X is that which will result in the greatest gain in altitude for a given distance

over the ground. It is usually slightly less than V_Y which provides the greatest gain in altitude per unit of time. The specific speeds to be used for a given airplane are stated in the FAA-approved AFM/POH.

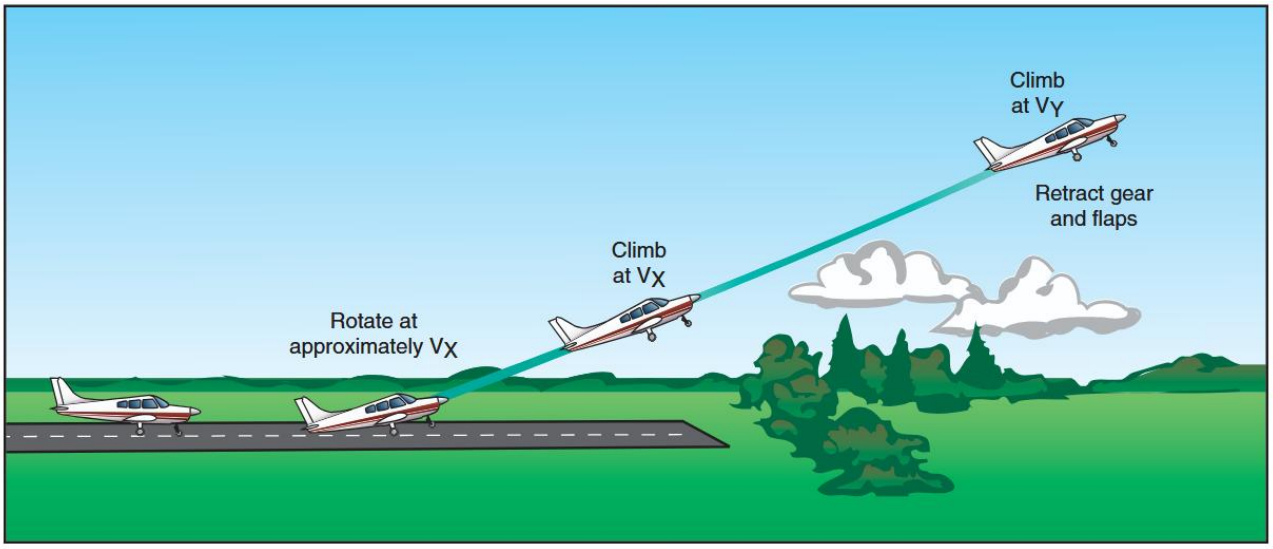

Illustration 1: Short-field take-off. (Source: FAA-H-8083-3A, Airplane Flying Handbook)

Findings

1. Pilot

1.1. The pilot had a Private Pilot Licence (PPL) that was initially issued by the Regulator (SACAA) on 25 August 1976. The PPL was reissued on 16 January 2025 with an expiry date of 31 January 2027. The pilot's Class 2 aviation medical certificate was issued on 16 January 2025 with an expiry date of 31 January 2026 with a medical restriction to wear corrective spectacles, as well as carry a spare pair in the aircraft.

1.2. The pilot had a total of 3 594 flying hours of which 4.25 were accumulated on the aircraft type. The aircraft type was endorsed on his licence.

2. Aircraft

2.1. The aircraft had a valid Certificate of Airworthiness (C of A) that was reissued by the Regulator on 3 December 2024 with an expiry date of 13 January 2026. The initial C of A was issued to the current owner on 22 November 1994.

2.2. The latest mandatory periodic inspection (MPI) of the aircraft was conducted and certified on 3 October 2024 at 7 345.1 airframe hours after which a Certificate of Release to Service (CRS) was issued with an expiry date of 2 October 2025 or at 7447.12 hours, whichever comes first. The aircraft had a total of 7 351.64 hours at the time of the accident; it had accumulated 6.54 since the last MPI.

2.3. The aircraft maintenance organisation (AMO) which conducted the MPI of the aircraft had an AMO Certificate that was issued on 1 October 2024 with an expiry date of 30 September 2025. The aircraft type was endorsed on the AMO's operational specifications.

2.4 At the time of the flight, the aircraft was reported to be airworthy, and all systems were functioning normally prior to take-off.

3 Environment

3.1 Fine weather conditions prevailed at the time of the flight; the weather could not be attributed to the cause of the accident.

3.2 The area had obstacles (a perimeter fence and a line of trees) beyond the end of the runway-in-use.

4 Mission

4.1 The pilot had set the take-off power to 2 550 RPM with the flaps selected to 10°. The POH indicates a power selection of 2 575 RPM with a flap configuration of 25° for short field take-offs.

4.2 The pilot rotated the aircraft at 75 KIAS instead of the required 53 to 64 KIAS for the best angle of climb speed to clear obstacles.

Probable Cause(s)

Rejected take-off following an incorrect short field take-off technique on soft sand with obstacle at the end of the runway.

Contributing Factor(s)

None.

Safety Action(s)

None.

Safety Message and/or Safety Recommendation/s

None.

About this Report

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 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.

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.

Purpose
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.
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