LIMITED OCCURRENCE INVESTIGATION REPORT – FINAL

Reference Number	CA18/2/3/10473						
Classification	Accident	**Date**	28 July 2024		**Time**	0820Z	
Type of Operation	Private (Part 91)						
Location							
Place of Departure	Grand Central Airport (FAGC), Gauteng Province	Place of Intended Landing	Lebenya Farm, Swartruggens, North West Province				
Place of Occurrence	On Runway 15 at Lebenya Farm, North West Province						
GPS Co-ordinates	Latitude	26° 37' 39" S	Longitude	26° 37' 05" E	Elevation	4 386ft	
Aircraft Information							
Registration	ZS-IIL						
Make; Model; S/N	Cessna; C182N (Serial Number: 182-60499)						
Damage to Aircraft	Substantial	Total Aircraft Hours	2 550.7				
Pilot-in-command							
Licence Type	Private Pilot Licence (PPL)	Gender	Male	Age	61		
Licence Valid	Yes	Total Hours	199.4	Total Hours on Type	90.1		
Total Hours 30 Days	10.6	Total Flying on Type Past 90 Days	33.8				
People On-board	1+1	**Injuries**	0	**Fatalities**	0	**Other (on ground)**	0

What Happened

On Sunday morning, 28 July 2024, a pilot and a passenger on-board a Cessna C182N aircraft registered ZS-IIL were conducting a private flight from Grand Central Airport (FAGC) in Gauteng province to Lebenya Farm in Swartruggens, North West province, when the accident occurred. Visual meteorological conditions (VMC) prevailed at the time of the flight which was conducted under the provisions of Part 91 of the Civil Aviation Regulations (CAR) 2011, as amended.

According to the pilot, the aircraft had a total of 40 US Gallons of 100LL Avgas in the tanks during the pre-flight inspection. The aircraft took off from Runway (RWY) 35, and the flight to Lebenya Farm was uneventful. Upon reaching Lebenya Farm, the pilot flew over it (the farm); he noticed that the windsock favoured the gravel-covered RWY 15. A crosswind from the right was prevalent at the time. On final approach, he selected full flaps whilst maintaining a speed of approximately 70 miles per hour (mph); he turned the control column to the right to compensate for the crosswind during landing. After touchdown, the crosswind suddenly stopped, thus, the aircraft veered to the right. The right-wing tip and the elevator impacted the ground; the nose gear oleo strut broke and the propeller struck the ground. The aircraft skidded on its nose gear oleo, exited the runway, and impacted some trees. It came to a stop against a fence on the right side of the runway. The pilot switched off the master

switch and disembarked from the aircraft together with the passenger; they were not injured. The aircraft was substantially damaged.

Figure 1: The orange arrow indicates the landing direction. (Source: Google Earth)

Figure 2: The aircraft on the right side of the runway. (Source: Operator)

Figure 3: The rear view of the aircraft. (Source: Pilot)

The aircraft sustained damage to both the right-side wing tip and the elevator (circled in red); it likely impacted the ground with the right-wing tip and elevator. The pilot stated that he turned the control column to the right during the landing approach to compensate for the crosswind from the right.

Before Landing Procedure (Source: Cessna 182N Pilot's Operating Handbook [POH])

(1) Fuel Selector Valve Handle -- "BOTH."
(2) Mixture -- Rich.
(3) Propeller -- High RPM.
(4) Cowl Flaps -- "CLOSED."
(5) Carburettor Heat -- Apply before closing throttle.
(6) Airspeed -- 80 to 90 MPH (flaps retracted).
(7) Wing Flaps -- 0° to 40° (below 110 MPH).
(8) Airspeed -- 70 to 80 MPH (flaps extended).
(9). Elevator and Rudder Trim -- Adjust.

According to the pilot, the configuration for landing was 69 mph (60 knots) with full flaps. The POH recommended 70-80 mph with flaps extended.

Meteorological Information

The weather information below was obtained from the Meteorological Aerodrome Report (METAR) that was issued by the South African Weather Service (SAWS), recorded at Pilanesberg Aerodrome (FAPN) on 28 July 2024 at 0800Z. The accident site was approximately 37 nautical miles (nm) south-west of FAPN.

Wind Direction	230°	Wind Speed	10 kt	Visibility	9999m
Temperature	19°C	Cloud Cover	None	Cloud Base	CAVOK
Dew Point	9°C	QNH	1021 hPa		

Crosswind Component

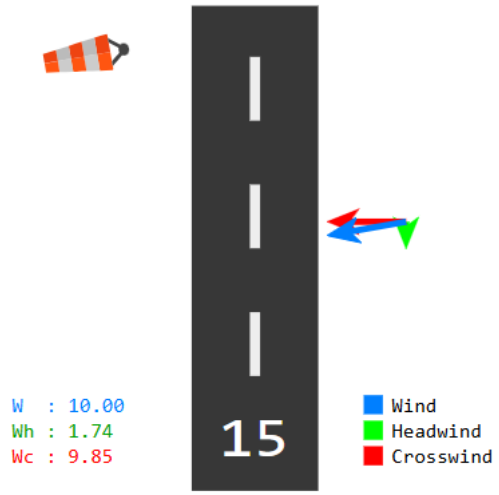

Figure 4: The calculated crosswind component at the time of the accident.
(Source: https://e6bx.com/wind-components/)

The maximum demonstrated crosswind component of the aircraft is 15 knots. The pilot encountered a crosswind of 9.85 knots from the right during landing on RWY 15. The crosswind component was within the maximum demonstrated crosswind component of the aircraft.

Crosswind Landing Techniques (Source: https://www.aopa.org/training-and-safety/students/solo/skills/crosswind-landings)

Wing-low (Sideslip) Method: Ailerons are used to dip the upwind wing to stop drift, while opposite rudder aligns the nose with the runway. This results in a slip. The airplane lands on the upwind main wheel first, then the second main wheel, then the nose wheel.

Crab Method: The aircraft approaches with the nose pointed into the wind to maintain a straight track with the wings level. Just before touchdown, the pilot uses rudder to "decrab" or align the nose with the runway centreline.

The damage to the right-wing tip and elevator indicated that the pilot used the wing-low (sideslip) method.

Findings

Pilot

1. The pilot had a Private Pilot Licence (PPL) that was initially issued by the Regulator (SACAA) on 30 March 2016. The PPL was renewed on 23 January 2024 with an expiry date of 31 January 2026. The pilot's licence was valid at the time of the flight.

2. The pilot had a Class 2 aviation medical certificate that was issued on 7 November 2023 with an expiry date of 30 November 2024. The pilot had a restriction to wear suitable corrective lenses for his vision.

3. The pilot had a total of 199.4 flying hours of which 90.1 were accumulated on the aircraft type. The aircraft type was endorsed in his licence.

Aircraft

4. The last mandatory periodic inspection (MPI) of the aircraft was conducted and certified on 14 May 2024 at 2 518.8 total airframe hours after which a Certificate of Release to Service (CRS) was issued with an expiry date of 25 June 2026 or at 2 568.2 hours, whichever comes first. The aircraft had accrued 31.92 hours since the last MPI.

5. The aircraft maintenance organisation (AMO) which conducted the MPI of the aircraft had an AMO Certificate that was issued by the Regulator on 13 June 2023 with an expiry date of 31 July 2024.

6. The aircraft Certificate of Airworthiness (C of A) was initially issued by the Regulator on 20 May 2019. The latest C of A had an expiry date of 31 May 2025.

7. The Certificate of Registration (C of R) was issued to the current owner on 2 July 2024.

8. It is likely that the pilot lost control of the aircraft during landing. The right-side wing tip and elevator both impacted the ground, the nose gear oleo strut broke, and the propeller struck the ground.

Probable Cause(s)

The pilot lost directional control of the aircraft during landing. The right-side wing tip and elevator both impacted the ground, the nose gear oleo strut broke and the propeller struck the ground; the aircraft exited 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 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.

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 issued by:

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