LIMITED OCCURRENCE INVESTIGATION REPORT – FINAL

Reference Number	CA18/2/3/10600								
Classification	Accident			**Date**	27 August 2025			**Time**	1145Z
Type of Operation	Training (Part 141)								
Location									
Place of Departure	Brakpan Airfield (FABB), Gauteng Province			Place of Intended Landing			Brakpan Airfield (FABB), Gauteng Province		
Place of Occurrence	Secunda Airport (FASC), outside the barrier fence between two roads								
GPS Co-ordinates	Latitude	26°31′24.3″ S		Longitude	029°10′47.1″ E		Elevation		5 250 ft
Aircraft Information									
Registration	ZS-EKI								
Make; Model; S/N	Piper Cherokee; PA-28-140 (Serial Number: 28-21124)								
Damage to Aircraft	Substantial					Total Aircraft Hours	6338.09		
Pilot-in-command									
Licence Type	Student Pilot Licence (SPL)			Gender	Female		Age		18
Licence Valid	Yes	Total Hours		56.2		Total Hours on Type	14.1		
Total Hours 30 Days	14.1			Total Flying on Type Past 90 Days			14.1		
People On-board	1+0	**Injuries**	1	**Fatalities**	0		**Other (on ground)**		0

What Happened

On Wednesday, 27 August 2025, a student pilot (SP) on-board a Piper Cherokee PA-28-140 aircraft with registration ZS-EKI took off on a solo navigational training flight from Brakpan Airfield (FABB) in Gauteng province with the intention to return to FABB. A flight plan was filed with Johannesburg (JHB) briefing. The flight was conducted under visual meteorological conditions (VMC) by day and under the provisions of Part 141 of the Civil Aviation Regulations (CAR) 2011 as amended.

The SP was authorised by the flight instructor (FI) to conduct a solo navigational exercise flight after successfully demonstrating her competence during the preceding dual flights. The SP departed from FABB on a planned route to Secunda Airfield (FASC) and Witbank Aerodrome (FAWI), before returning to FABB. Upon her arrival and whilst overhead FASC, she joined the right circuit for a touch-and-go landing on Runway 11 which is 1100 metres long. An eyewitness at the airfield reported that the surface wind at the time was variable between 7 and 8 knots (kts). According to the eyewitness, the aircraft appeared stable on final approach.

The SP stated that shortly after flying over the runway threshold at a speed of 80 miles per hour (mph) and with flaps set at 2 notches, the wind component shifted to a tailwind which resulted in the aircraft floating above the runway surface. The aircraft touched down approximately two-thirds along the runway, and she applied engine power to execute a touch-and-go landing.

The eyewitness reported hearing a high-pitched engine sound which was consistent with a high-power setting. The aircraft rotated but failed to establish a positive rate of climb. It subsequently impacted the perimeter fence on the eastern boundary of the airfield before it struck the ground hard, which resulted in the landing gear detaching from the fuselage. The aircraft slid on its belly over one of the dual lanes on PDP Kruger Street and came to rest on an open area between the two lanes.

The SP sustained serious head injuries whilst the aircraft was substantially damaged. Emergency services, including the South African Police Service (SAPS), Mpumalanga Traffic Police Service, and Mpumalanga Fire and Rescue Service promptly responded to the accident scene. The paramedics administered first aid to the SP before transporting her by ambulance to a nearby hospital. Third-party damage was caused to the airfield perimeter fence (see Figure 4).

Weather Report

There is no weather station at FASC; however, the eyewitness reported variable winds of between 7 and 8 kts. Data from nearby aerodromes confirmed stable, good conditions with the tailwind blowing on Runway 11 (in use) at the time of the accident. The weather conditions from the nearest aerodromes were as follows:

FAWI 271200Z AUTO 34006KT //// // ////// 23/04 Q1027=

FAEO 271200Z 30008KT CAVOK 24/03 Q1028=

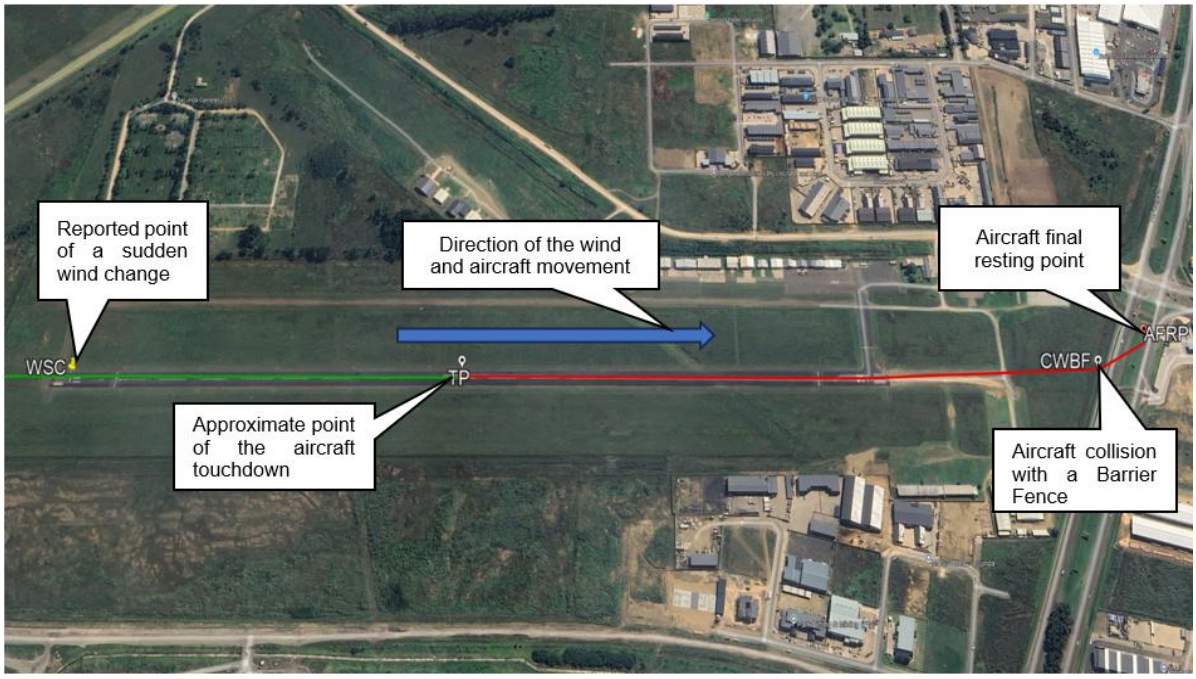

Figure 1: An aerial view of FASC. (Source: Google Earth Maps)

Figure 2: The aircraft as it came to a full stop after the accident.

Figure 3: The scrape marks after ground impact.

Figure 4: The damaged FASC fence.

Aircraft Performance (Source: Aircraft Owner's Handbook)

Approach and Landing

The aircraft should be trimmed to an approach speed of about 85 miles per hour with flaps up. The flaps can be lowered at speeds up to 115 miles per hour, if desired, and if the approach speed is reduced by 3 miles per hour for each additional notch of flap. Since the use of carburettor heat causes a power reduction which may be critical in the case of a go-around, full throttle operation with heat on is likely to cause detonation.

The selection of flaps used during landings and the speed of the aircraft at contact with the runway should be varied according to the landing surface and existing conditions, both wind-wise and load-wise. It is generally good practice to contact the ground at the minimum possible safe speed consistent with existing conditions.

Normally, the best technique for short and slow landings is to use full flaps and enough power to maintain the desired air speed and approach flight path. The mixture should be full-rich, fuel on the fullest tank, carburettor heat off, and electric fuel pump on. Reduce the stalling speed during the flare-out and contact the ground close to the stalling speed (55 to 65 mph). After ground contact, hold the nose wheel off as long as possible. As the airplane slows down, drop the nose and apply the brakes. There will be less chance of skidding the tyres if the flaps are retracted before applying the brakes. The braking is most effective when back pressure is applied to the control wheel, putting most of the aircraft's weight on the main wheels. In high wind conditions, particularly in strong crosswinds, it may be desirable to approach the ground at higher-than-normal speeds with partial or no flaps. To stop the engine after landing, pull the mixture control full back to the idle cut-off. When alternate fuel is used, the engine should be run up to 1200 revolutions per minute (rpm) for one minute

prior to shutdown to clean out any unburned fuel. After the engine stops, turn the magneto and master switches off.

Piper Cherokee 140 Owner's Handbook / Pilot's Operating Handbook (POH)

Take-off Distance (Sea Level, Standard Conditions, Gross Weight ~2,150 lbs, Flaps 0°)

- *Ground roll: ~870 ft (265 m)*
- *Over 50 ft obstacle: ~1,525 ft (465 m)*

With 25° Flaps (Short Field Technique)

- *Ground roll: ~700 ft (213 m)*
- *Over 50 ft obstacle: ~1,350 ft (411 m)*

Effect of Tailwind on Take-off Performance

- *Increases take-off ground roll (aircraft needs more runway to reach flying speed).*
- *Decreases climb angle (reduces obstacle clearance capability).*
- *General planning rule: increase take-off distance by ~10% for every 2 knots of tailwind (up to 10 knots).*

Findings

Pilot

1. The student pilot (SP), an Indian national, had a Student Pilot Licence (SPL) that was issued by the Regulator (SACAA) on 14 November 2024 with an expiry date of 13 November 2025. Her Class 2 medical certificate was issued on 28 October 2024 with an expiry date of 31 November 2029 with no restrictions.

2. The SP had a total of 56.2 hours of which 14.1 hours were accumulated on the aircraft type. The aircraft type was endorsed in her logbook.

3. The SP was initially signed off for solo flying on 27 May 2025 at 30 hours. At the time of the accident, the SP was licensed, qualified and medically fit for the flight; she was signed off by the flight instructor (FI) for a solo cross-country navigational flight on 27 August 2025 at 56.2 hours after a satisfactory dual performance.

Aircraft

4. The aircraft had a Certificate of Airworthiness (C of A) that was issued by the Regulator on 22 November 2024 with an expiry date of 26 September 2025. The aircraft was registered to the owner on 14 November 2024.

5. The aircraft's last maintenance schedule was conducted on 8 October 2024 at 6238.09 airframe hours after which a Certificate of Release to Service (CRS) was issued with an expiry date of 27 October 2025 or at 6338.09 airframe hours, whichever comes first.

6. The aircraft was operated by an approved training organisation (ATO) which had an ATO Certificate that was issued by the Regulator on 1 February 2023 with an expiry date of 31 January 2028. The aircraft was endorsed on the ATO's operational specifications under the provisions of Part 141 of the CAR 2011 as amended.

7. Maintenance of the aircraft was conducted by an aircraft maintenance organisation (AMO) which had a valid AMO Certificate that was issued by the Regulator on 19 December 2024 with an expiry date of 31 January 2026. The aircraft was endorsed on the AMO's operational specifications.

8. The aircraft was licensed and serviceable with no defects noted on any of its maintenance logbooks at the time of the flight and it was operated within the required Regulatory framework.

Environment

9. Good weather conditions prevailed at the time of the flight; however, at the time of the touch-and-go landing at FASC, there was a sudden wind component shift to a tailwind.

Mission

10. The tailwind caused the aircraft to float over the runway, which led to the aircraft touching down approximately two-thirds down the runway, thus, reducing the available runway length.

11. After the late touchdown, the SP attempted a touch-and-go landing with a two-notch flap setting at an approach speed of 80 mph. Thereafter, the SP advanced the engine to full power and the aircraft rotated; however, with limited runway available and the tailwind component at the time, the aircraft had difficulty climbing.

12. The aircraft impacted the perimeter fence and, thereafter, the ground hard beyond the airfield's boundary.

Probable Cause(s)

The student pilot landed the aircraft on Runway 11 with a tailwind and, thereafter, attempted to take-off. However, as the aircraft landed deep, there was insufficient runway remaining; the aircraft failed to achieve a positive rate of climb, and it impacted the airfield's barrier fence.

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 Annexe 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
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This report is issued by:

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