SOUTH AFRICAN CIVIL AVIATION AUTHORITY

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

LIMITED OCCURRENCE INVESTIGATION REPORT – FINAL

Reference Number	CA18/2/3/10454						
Classification	Accident	**Date**	14 May 2024		**Time**	0648Z	
Type of Operation	Training (Part 141)						
Location							
Place of Departure	Port Alfred Aerodrome (FAPA), Eastern Cape Province	Place of Intended Landing	Port Alfred Aerodrome (FAPA), Eastern Cape Province				
Place of Occurrence	Left of Runway 10L at FAPA, Eastern Capen Province						
GPS Co-ordinates	Latitude	33°33´16.38´´ S	Longitude	26°52´29.93´´E	Elevation	319ft	
Aircraft Information							
Registration	ZS-IKJ						
Make; Model; S/N	Piper PA-28 180F (Serial Number: 28-7105145)						
Damage to Aircraft	Substantial	Total Aircraft Hours	18547				
Pilot-in-command							
Licence Type	Student Pilot Licence (SPL)	Gender	Male	Age	28		
Licence Valid	Yes	Total Hours	31.8	Total Hours on Type	31.8		
Total Hours 30 Days	6.5	Total Flying on Type Past 90 Days	28.4				
People On-board	1+1	**Injuries**	0	**Fatalities**	0	**Other (on ground)**	0

What Happened

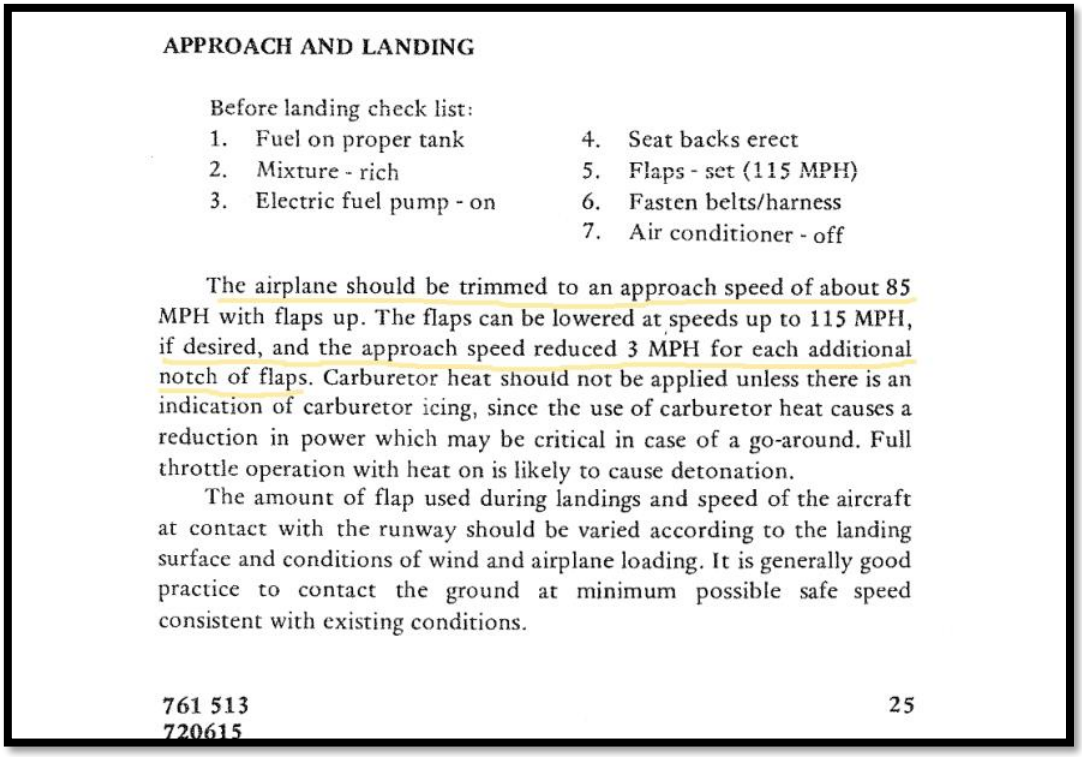
On Tuesday morning, 14 May 2024, a flight instructor and a student pilot on-board a Piper Cherokee 180F with registration ZS-IKJ took off on a training flight from Port Alfred Aerodrome (FAPA) in the Eastern Cape province to conduct circuit-and-landing exercises. Visual meteorological conditions (VMC) by day prevailed at the time of the flight which was conducted under the provisions of Part 141 of the Civil Aviation Regulations (CAR) 2011 as amended.

The crew took off at 0520Z and executed six circuits and landings, thereafter, the flight instructor disembarked from the aircraft and the student pilot continued with the solo consolidation circuits. The flight instructor observed the student pilot's solo exercises on Runway (RWY) 10L from the air traffic control (ATC) tower. During the first circuit whilst on approach for landing, the radio officer in the tower instructed the student pilot to execute a go-around as there was another aircraft on the runway. The student pilot obliged. He then conducted a second circuit, which was uneventful. On the third circuit, the student pilot decided to execute a go-around as he felt the aircraft's approach was too high. During the fourth circuit, the student pilot stated that the aircraft flew past the reference point (240 metres from the threshold) at approximately 290 feet (ft) above ground level (AGL). He further stated that he could not remember the indicated airspeed. The aircraft touched down hard (with the nose gear first) and the student pilot retracted the flaps, thereafter, he lost directional control of the aircraft and it exited the runway; it impacted a bush on the left side of the runway before it stopped. Another flight instructor who was about to depart, taxied to ZS-IKJ, boarded the aircraft (ZS-IKJ) and

turned off the master switch, as well as removed the key from the ignition slot. The aircraft's nose wheel had failed, and the right-wing leading edge and the propeller were damaged. No person was injured.

Figure 1: The aircraft came to rest on the left side of the runway. (Source: Operator)

Figure 2: The nose gear that broke off and the damaged right-side wing. (Source: Operator)



APPROACH AND LANDING

Before landing check list:

1. Fuel on proper tank
2. Mixture - rich
3. Electric fuel pump - on
4. Seat backs erect
5. Flaps - set (115 MPH)
6. Fasten belts/harness
7. Air conditioner - off

The airplane should be trimmed to an approach speed of about 85 MPH with flaps up. The flaps can be lowered at speeds up to 115 MPH, if desired, and the approach speed reduced 3 MPH for each additional notch of flaps. Carburetor heat should not be applied unless there is an indication of carburetor icing, since the use of carburetor heat causes a reduction in power which may be critical in case of a go-around. Full throttle operation with heat on is likely to cause detonation.

The amount of flap used during landings and speed of the aircraft at contact with the runway should be varied according to the landing surface and conditions of wind and airplane loading. It is generally good practice to contact the ground at minimum possible safe speed consistent with existing conditions.

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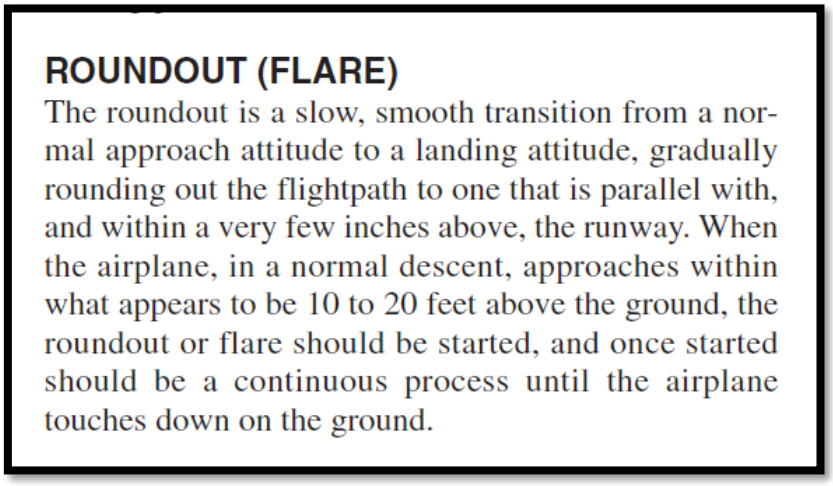
Figure 3: Final approach without flaps is 85MPH; 3 notch of flaps is 76MPH.
(Source: Piper PA28-180F POH)



ROUNDOUT (FLARE)

The roundout is a slow, smooth transition from a normal approach attitude to a landing attitude, gradually rounding out the flightpath to one that is parallel with, and within a very few inches above, the runway. When the airplane, in a normal descent, approaches within what appears to be 10 to 20 feet above the ground, the roundout or flare should be started, and once started should be a continuous process until the airplane touches down on the ground.

Figure 4: Suggested height for flaring. (Source: Federal Aviation Administration (FAA) Flying Handbook 2004)

Findings

1. Personnel Information

1.1 The student pilot had a Student Pilot Licence (SPL) that was initially issued on 2 November 2023 with an expiry date of 5 October 2024. The pilot had flown a total of 31.8 hours on the aircraft type. The aircraft type was endorsed on the pilot's licence.

1.2 The student pilot was issued a Class 2 aviation medical certificate on 28 September 2023 with an expiry date of 28 September 2028 with no restrictions.

2. Aircraft Information

2.1 The last mandatory periodic inspection (MPI) that was conducted on the aircraft before the accident flight was certified on 22 March 2024 at 18 478.0 airframe hours with an expiry date of 21 March 2025 or at 18 578 airframe hours, whichever comes first. The accident occurred at 18 547 total flight hours, which meant that the aircraft had accrued 69 hours since the last inspection.

2.2 The aircraft had a valid Certificate of Airworthiness (C of A) that was initially issued by the Regulator on 3 September 2019. The latest C of A was issued on 15 May 2023 with an expiry date of 10 June 2024. The aircraft was airworthy when it was dispatched for the flight.

2.3 The aircraft's Certificate of Registration (C of R) was issued to the present owner on 19 July 2017.

2.4 The aircraft was issued a Certificate of Release to Service (CRS) on 22 March 2024 with an expiry date of 21 March 2025 or at 18 578 airframe hours, whichever occurs first.

2.5 The aircraft maintenance organisation (AMO) had a valid AMO Certificate that was issued on 4 October 2023 with an expiry date of 30 September 2024. The aircraft maintenance engineer (AME) had a valid AME Certificate that was issued on 21 January 2024 with an expiry date of 21 August 2024. The AME had an airframe rating on the aircraft type.

2.6 The aircraft flew past the reference point (240 metres from the threshold) at a height of approximately 290 ft AGL instead of 10 to 20 ft (as prescribed in the FAA Flying Handbook) AGL for flaring and a smooth landing. The aircraft was flared too high which resulted in a hard landing with the nose gear first. The nose gear failed before the aircraft veered off to the left of the runway.

Probable Cause(s)

The aircraft's height above ground level was too high on the final approach and the pilot flared the aircraft which resulted in a hard landing with the nose gear first which subsequently failed. This led to a runway excursion to the left.

Contributing Factor(s)

Failure to execute a go-around.

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 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