LIMITED ACCIDENT INVESTIGATION REPORT

Reference Number	CA18/2/3/10141										
Classification	Accident		**Date**	15 February 2022		**Time**	0900Z				
Type of Operation	Training (Part 141)										
Location											
Place of Departure	Wonderboom Airport (FAWB), Gauteng Province			Place of Intended Landing		Wonderboom Airport (FAWB), Gauteng Province					
Place of Accident	Runway 11 FAWB, Gauteng Province										
GPS Co-ordinates	Latitude	S 25° 39’ 11”		Longitude	E 28° 12’ 52”		Elevation	4045 ft			
Aircraft Information											
Registration	ZS-SNS										
Make/Model	Cessna 172M (Serial Number: 17261620)										
Damage to Aircraft	Substantial			Total Aircraft Hours		8740.0					
Pilot-in-command											
Licence Valid	Yes		Gender	Female		Age	20				
Licence Type	Student Pilot Licence (SPL) Aeroplane										
Total Hours on Type	29.8			Total Flying Hours		29.8					
People On-board	1 + 0	Injuries	0	Fatalities	0	Other (On Ground)	0				
What Happened											

On 15 February 2022, a student pilot on-board a Cessna 172M aircraft with registration mark ZS-SNS was conducting her solo consolidation flight at Wonderboom Airport (FAWB) Runway 11 (RWY 11) when the accident occurred. 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 student pilot had flown earlier that day with a Grade 2 instructor on-board. The student pilot then took off at 0840Z on a solo flight and completed two successful circuits. During the third circuit landing, she stated that the aircraft ballooned and began to descend; the aircraft landed hard on its nose gear first before it bounced. She then initiated a go-around by applying full power and took off again for the fourth circuit. This time, the student pilot landed the aircraft safely after completing the circuit on RWY 11. The student pilot vacated the runway and stopped on Taxiway Charlie. Damage

to the nose landing gear, firewall and both propeller blade tips was observed after inspection of the aircraft. The pilot was not injured during the accident.

Figure 1: The damaged propeller tips and the bent nose undercarriage. (Source: Operator)

Figure 2: Damage to the nose wheel hub and the firewall.

What was found:

- The pilot was issued a Student Pilot Licence (SPL) Aeroplane on 27 April 2021 with an expiry date of 26 April 2022. The aircraft type was endorsed on her licence. A Class 2 medical certificate was issued on 8 April 2021 with an expiry date of 30 April 2026, and with corrective lenses restriction. The student pilot was released to fly solo at a total of 23 flight hours and had accumulated a total of 1.7 solo hours.

- The mandatory periodic inspection (MPI) carried out on the aircraft prior to the accident was conducted on 6 January 2022 and was certified at 8647.8 airframe hours. The aircraft was issued a Certificate of Release to Service (CRS) on 6 January 2022 with an expiry date of 28 January 2023 or at 8747.8 hours of flight time, whichever occurs first unless the aircraft is involved in an accident or becomes unserviceable.
- The aircraft was initially issued a Certificate of Airworthiness (C of A) on 22 December 2009 with an expiry date of 31 December 2022.
- The flight school was issued an approved training organisation (ATO) certificate on 6 November 2020 with an expiry date of 30 November 2025.
- The meteorological aerodrome report (METAR) at the time and date of the accident was as follows:

  FAWB 150900Z 09007KT CAVOK 26/14 Q1024

  Wind: 90° at 7 knots, Ceiling and Visibility OK, Temperature: 26°C, Dew Point:14°C and QNH: 1024hPa

  Ballooning During Round Out (Source: Airplane Flying Handbook, Chapter 8)

  If the pilot misjudges the rate of sink during a landing and thinks the airplane is descending faster than it should, there is a tendency to increase the pitch attitude and angle of attack (AOA) too rapidly. This not only stops the descent, but actually starts the airplane climbing. This climbing during the round out is known as ballooning. [Figure 8-35] Ballooning is dangerous because the height above the ground is increasing and the airplane is rapidly approaching a stalled condition. The altitude gained in each instance depends on the airspeed or the speed with which the pitch attitude is increased. Depending on the severity of ballooning, the use of throttle is helpful in cushioning the landing. By adding power, thrust is increased to keep the airspeed from decelerating too rapidly and the wings from suddenly losing lift, but throttle must be closed immediately after touchdown. Remember that torque is created as power is applied, and it is necessary to use rudder pressure to keep the airplane straight as it settles onto the runway. When ballooning is excessive, it is best to execute a go-around immediately; do not attempt to salvage the landing. Power must be applied before the airplane enters a stalled condition.

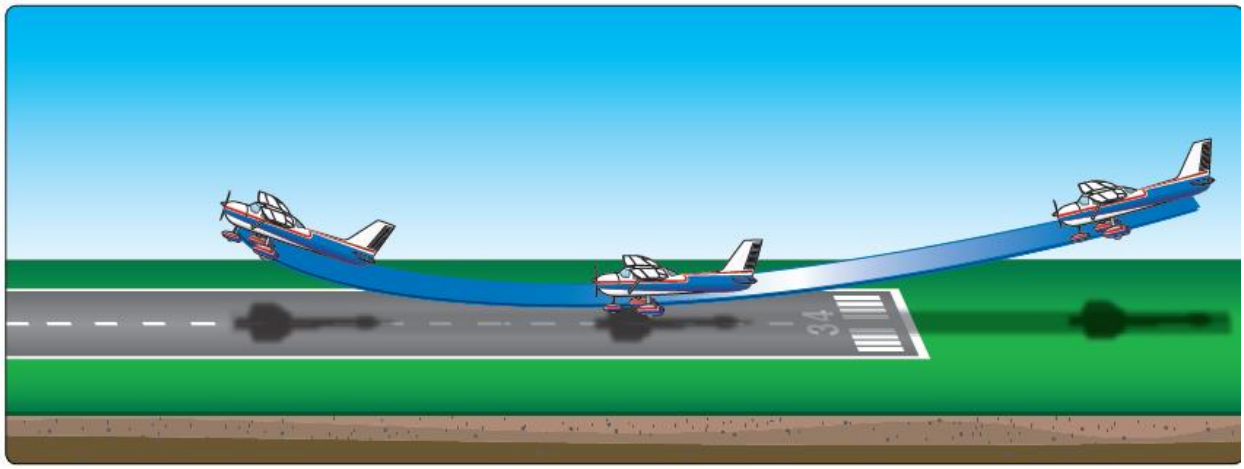

Figure 8-35. *Ballooning during roundout.*

Probable cause:

The aircraft was unstable on approach for landing and it ballooned on touch down before landing on the nose gear first, damaging the nose gear, fire wall and propeller.

Safety Action

The ATO instructed the student pilot to complete a remedial flight with a Grade 2 instructor before continuing with solo flights.

Safety Message and/or Safety Recommendation/s

None.

Purpose of the Investigation

In terms of Regulation 12.03.1 of the Civil Aviation Regulations (CAR) 2011, 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****.*

About this Report

Decisions regarding whether to investigate, and the scope of an investigation are based on many factors, including the level of safety benefit likely to be obtained from an investigation. For this occurrence, no 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 brief report. The report has been compiled using information supplied in the initial notification, as well as follow-up information 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 accident.

This report provides an opportunity to share safety message/s in the absence of an investigation.

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.

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