

LIMITED OCCURRENCE INVESTIGATION REPORT – FINAL

Reference Number	CA18/3/2/1400						
Classification	Serious Incident	Date	11 July 2022	Time	0815Z		
Type of Operation	Training Flight (Part 141)						
Location							
Place of Departure	Wonderboom Aerodrome (FAWB), Gauteng Province		Place of Intended Landing	Wonderboom Aerodrome (FAWB), Gauteng Province			
Place of Occurrence	On Runway 11 at Wonderboom Aerodrome (FAWB)						
GPS Co-ordinates	Latitude	S 25°39'12.54"	Longitude	E 028°13'15.05"	Elevation	4 058 feet (ft)	
Aircraft Information							
Registration	ZS-JBO						
Make; Model; S/N	Cessna; 172M (Serial Number: 172-63614)						
Damage to Aircraft	Minor		Total Aircraft Hours (Tacho)	6 644.9			
Pilot-in-command							
Licence Type	Student Pilot Licence (SPL)		Gender	Female		Age	20
Licence Valid	Yes	Total Hours	53.4		Total Hours on Type	32	
Total Hours 90 Days	29.4		Total Flying on Type Past 90 Days	6.7			
People On-board	1 + 0	Injuries	0	Fatalities	0	Other (on ground)	0
What Happened							
<p>On 11 July 2022, a student pilot on-board a Cessna C172M aircraft with registration ZS-JBO was engaged in a solo training flight at Wonderboom Aerodrome (FAWB) general flying area (GFA), Gauteng province. Visual meteorological conditions (VMC) by day prevailed at the time of the flight. The flight was conducted under the provisions of Part 141 of the Civil Aviation Regulations (CAR) 2011 as amended.</p> <p>According to the student pilot, a pre-flight inspection was conducted with no anomalies detected. Take-off was at approximately 0715Z, and it proceeded as planned. The student pilot routed to the GFA for training exercises. She later returned to FAWB for a full stop landing at approximately 0815Z. The student pilot stated that due to traffic, she had an extended downwind, and hence, started descending on base leg at approximately 950 feet (ft) above ground level (AGL). During final approach for landing on Runway 11 at about 500ft AGL, she noticed that the aircraft was high and that the speed was low at approximately 60 knots (kts). According to the aircraft Pilot's Operating Handbook (POH), the speed should be between 65kts and 70kts. The student pilot increased power from approximately 1500 revolutions per minute (RPM) to 1800 RPM. The aircraft landed too deep and hard; it bounced once and, subsequently, the nose landing gear hit the runway first. As a result, the nose landing gear wheel failed. The pilot was able to bring the aircraft to a stop on Runway 11 centreline.</p> <p>The aircraft sustained damages to the nose wheel hubs and the tyre assembly. The pilot was not injured during the serious incident.</p>							



Figure 1: The aircraft after the serious incident. (Source: Operator)



Figures 2 and 3: Left and right nose wheel hub debris. (Source: Operator)

Findings

- i. The student pilot was initially issued the Student Pilot Licence (SPL) on 13 June 2021 with an expiry date of 19 May 2023. The student pilot was issued a Class 2 aviation medical certificate on 28 May 2021 with an expiry date of 31 May 2026.
- ii. The training flight was conducted in accordance with the provisions of Part 141 of the Civil Aviation Regulations (CAR) 2011 as amended.
- iii. The student pilot had flown 29.5 hours during the past 90 days, including the serious incident flight which was approximately 1 hour.

- iv. The aircraft had a single occupant on-board at the time of the accident, therefore, weight and balance was not compromised.
- v. No injuries were reported post-incident; the student pilot had made use of the aircraft's safety harness which performed optimally.
- vi. The aircraft's last mandatory period inspection (MPI) was completed on 29 June 2022 and the aircraft was issued a Certificate of Release to Service (CRS) on the same day with an expiry date of 29 June 2023 or at 6712.2 Tachometer hours, whichever occurs first, unless the aircraft is involved in a serious incident or becomes unserviceable, in which case the certificate is invalid for the duration of the period.
- vii. The aircraft had accumulated a total of 32.7 Tachometer hours since the last MPI.
- viii. The Certificate of Airworthiness (CoA) was initially issued on 29 February 2012. The latest CoA was renewed on 28 February 2022 with an expiry date of 28 February 2023.

Probable Cause

The aircraft was too high on final approach, which resulted in a deep and hard landing before it bounced and touched down with its nose landing gear wheel first. This resulted in damages to the nose wheel hubs and the tyre assembly.

Contributing Factor

The aircraft's airspeed was too low, whilst the approach was too high.

Safety Action(s)

None.

Safety Message

To prevent these types of incidents, pilots are reminded to always be vigilant during the critical stages of flight, such as take-off and landing phases. Also, when in doubt, pilots should opt for the go-around.

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

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This report is issued by:

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