

LIMITED ACCIDENT INVESTIGATION REPORT

Reference Number	CA18/2/3/10157						
Classification	Accident	Date	14 May 2022	Time	1530Z		
Type of Operation	Training (Part 141)						
Location							
Place of departure	Wonderboom Aerodrome (FAWB), Gauteng		Place of intended landing		Wonderboom Aerodrome (FAWB), Gauteng		
Place Accident	Middle of Runway 29 at FAWB						
GPS Co-ordinates	Latitude	S 25°39'12.7"	Longitude	E 028°13'16.5"	Altitude	3961.6 feet (ft)	
Aircraft Information							
Registration	ZS-PYT						
Model/Make	Cessna 172N Skyhawk (Serial Number: 172-72851)						
Damage to Aircraft	Substantial		Total Aircraft Hours		9058.2		
Pilot-in-command							
Licence Type	Student Pilot Licence (SPL)	Gender		Female	Age	36	
Licence Valid	Yes						
Total Hours on Type	49.6		Total Flying Hours		49.6		
People On-board	1+0	Injuries	0	Fatalities	0	Other (on ground)	0
What Happened							
<p>On 14 May 2022 at 1130Z, an instructor and a student pilot on-board a Cessna 172N Skyhawk aircraft with registration ZS-PYT were conducting circuit exercises on Runway (RWY) 29 at Wonderboom Aerodrome (FAWB), Gauteng province. The exercises were intended for the student pilot to progress to the solo consolidation practice. The student pilot was the pilot flying (PF) at the time of the accident. 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.</p> <p>The student pilot stated that she completed four circuits and, after the instructor had indicated that he was satisfied with her progress, he requested that she drop him off so that she could continue with her solo practise. The weather conditions were fine with good visibility; the wind was blowing at 330/03 and there were no clouds.</p>							

The student pilot conducted two circuits successfully. On the third and final circuit, she stated that her downwind checks were completed on time with the approach speed on the final leg between 65 and 70 knots (kts), which was within limits as prescribed in the Pilot's Operating Handbook (POH). She then touched down but when she tried to apply brakes, the nose gear broke off and the aircraft scrapped the runway surface with the end of the oleo strut, followed by the propeller strike on the runway several times before the aircraft came to a stop. The student pilot was not injured during the accident sequence; the aircraft sustained damage to the nose gear fork and the propeller.

Findings

- The POH states that the airspeed should be between 60 – 70 knots with flaps down for approach.
- The South African Weather Service supplied terminal area forecast information on 2 June 2022, which was as follows:
FAWB 141300Z 33003KT CAVOK 25/05 Q1022
- The student pilot had a Student Pilot Licence which was issued on 15 November 2021 with an expiry date of 14 November 2022. The student pilot's medical certificate was issued on 10 November 2021 with an expiry date of 10 November 2026, with no restrictions.
- The Approved Training Organisation (ATO no SACAA/0212/ATO) had a valid certificate which was issued on 18 January 2022 with an expiry date of 31 January 2023. The ATO was approved to train pilots on single and multi-engine aircraft (MEA).
- The last maintenance periodic inspection (MPI) (200 hours) carried out on the aircraft prior to the accident flight was on 10 May 2022 at 9046.2 Tacho hours. The aircraft had accumulated a total of 12 hours since the last inspection.



Figure 1: The aircraft on the runway with the broken nose wheel. (Source: Operator)



Figure 2: An image of a complete nosewheel



Figure 3 The break occurred above the nose wheel fork.



Figures 4 and 5: The clean breaks with no signs of pre-existing cracks. (Source: Operator)

AVTECH 1208		ZS-PYT CESSNA 172N (1979) SN:172-72851		SID LIST		2022/05/10 9 046,20							
SID NO	SUBJECT	COMPLIANCE		INTERVAL		NEXT		REMAINING		COMPLIANCE	SIGNATURE		
		DATE	HOURS	DATE	HOURS	DATE	HOURS	DAYS	HOURS				
2A-14-01	27-20-01			2019/12/13	7 949,80	5	3 000	2024/12/13	10 949,80	948	1 903,60	VISUAL INSPECTION	
2A-14-02	27-30-01			2022/02/05	8 946,40	NA	1 000	N/A	9 946,40	N/A	900,20	VISUAL INSPECTION	
2A-14-03	32-13-01			2017/09/20	6 988,00	10	NA	2027/09/20	N/A	1 959	N/A	VISUAL INSPECTION	
2A-14-04	32-13-02			2022/02/05	8 946,40	5	1 000	2027/02/05	9 946,40	1 732	900,20	VISUAL INSPECTION	
2A-14-05	32-13-03			2022/02/05	8 946,40	3	1 000	2025/02/05	9 946,40	1 002	900,20	VISUAL INSPECTION	
2A-14-06	32-20-01			2019/12/13	7 949,80	5	3 000	2024/12/13	10 949,80	948	1 903,60	NDT	
2A-14-07	53-11-01			2014/08/06	5 999,00	10	NA	2024/08/06	N/A	819	N/A	VISUAL INSPECTION	
2A-14-08	53-12-01			2021/04/01	8 349,90	3	1 000	2024/04/01	9 349,90	692	303,70	VISUAL INSPECTION	
2A-14-09	53-12-02			2019/12/13	7 949,80	5	3 000	2024/12/13	10 949,80	948	1 903,60	VISUAL INSPECTION	

Figure 6: Work pack page indicates NDT schedule on the nose wheel fork. (Source: Operator)

- Figure 6 shows a non-destructive testing (NDT) that was conducted on the nose wheel fork on 13 December 2019 at 7949.8 total time (TT) hours, with the next test due on 13 December 2024 or at 10949.8 TT hours, whichever comes first. The results of the NDT indicated that the nose wheel fork was still in good condition. The nose gear had operated for 1108.4 hours since the last NDT.

Probable Cause

It is likely that the aircraft was flared too high, which resulted in the aircraft landing hard with the nose gear assembly, which subsequently failed.

Contributing Factor:

- Lack of experience.

Safety Action/s

None.

Safety Message and/or Safety Recommendation/s	
None.	
Purpose of the Investigation	
<i>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.</i>	
About this Report	
<p><i>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.</i></p> <p><i>This report provides an opportunity to share safety message/s in the absence of an investigation.</i></p> <p><i>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.</i></p>	
Disclaimer	
<i>This report is produced without prejudice to the rights of the AIID, which are reserved.</i>	

This report is issued by:

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