

LIMITED OCCURRENCE INVESTIGATION REPORT – FINAL

Reference Number	CA18/2/3/10205						
Classification	Accident	Date	11 August 2022		Time	2031Z	
Type of Operation	Training Flight (Part 141)						
Location							
Place of Departure	Beaufort West Aerodrome (FABW), Western Cape Province		Place of Intended Landing		Beaufort West Aerodrome (FABW), Western Cape Province		
Place of Occurrence	On Runway 08 at FABW in the Western Cape Province						
GPS Co-ordinates	Latitude	32° 18' 09.23" S	Longitude	22° 39' 58.61" E	Elevation	2 929 feet	
Aircraft Information							
Registration	ZS-SXS						
Make; Model; S/N	Piper; PA-28-161 Warrior II (Serial Number: 28-42385)						
Damage to Aircraft	Substantial			Total Aircraft Hours	6 226.2		
Pilot-in-command							
Licence Type	Commercial Pilot Licence (CPL)		Gender	Female		Age	26
Licence Valid	Yes	Total Hours	753.8		Total Hours on Type	242.3	
Total Hours 90 Days	113.6		Total Flying on Type Past 90 Days	3.7			
People On-board	2 + 0	Injuries	0	Fatalities	0	Other (on ground)	0
What Happened							
<p>On 11 August 2022, an instructor and a student pilot on-board a Piper PA-28-161 Warrior II with registration ZS-SXS took off on a night circuit training flight from Runway 08 at Beaufort West Aerodrome (FABW) in the Western Cape province. The crew intended to land back at the same take-off aerodrome. Visual meteorological conditions (VMC) by night 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>The instructor stated that the student pilot executed the first touch-and-go and, during the take-off roll, they saw a small antelope on the runway centreline. She (the instructor) immediately took over the control of the aircraft and, at that time, the nose landing gear struck the antelope. The instructor rotated the aircraft for another circuit. She then reported the occurrence to the air traffic control (ATC) whilst she conducted two neutral circuits without landing the aircraft to allow time for runway inspection to be carried out. During the final approach for landing, she reduced the speed by approximately 10 knots (kts), bringing the aircraft's speed to 60kts, which was slower than the recommended speed to allow the control officer on duty to inspect if all three gears were still intact. <i>According to the Pilot's Operating Handbook (POH), the landing speed is approximately 70 Knots-Indicated Air Speed (KIAS).</i> After inspection, the control officer confirmed that all three gears appeared to be intact.</p> <p>The instructor stated that during the landing phase, she switched off the engine to avoid damage to the propeller. The aircraft landed with its main wheels first, followed by the nose wheel which</p>							

collapsed after touchdown. The aircraft veered off to the left of the runway before it came to a stop on the left-side of Runway 08. The aircraft sustained damage to the nose landing gear oleo, torque link and the bottom engine cowling. Both occupants were not injured during the accident sequence.



Figure 1: The file picture of the aircraft. (Source: AIFA website)



Figure 2: The collapsed nose landing gear. (Operator)



Figures 3 and 4: The separated nose gear wheel (left), and the severed oleo and torque link (right)
(Source: Operator)

Findings

- i. The instructor was initially issued a Commercial Pilot Licence (CPL) on 29 May 2019. The instructor undertook the skills test on 5 July 2022, after which the licence was reissued with an expiry date of 31 July 2023. The instructor was issued a Class 1 aviation medical certificate on 20 April 2022 with an expiry date of 30 April 2023.
- 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 instructor had flown 113.6 hours during the past 90 days, including the serious incident flight which was 0.8 hours.
- iv. The aircraft had two occupants on-board at the time of the accident; therefore, weight and balance was not compromised.
- v. No injuries were reported post-accident. Both occupants had made use of the aircraft's safety harnesses which performed optimally.
- vi. The aircraft's last mandatory periodic inspection (MPI) was completed on 30 March 2022. The aircraft was issued the Certificate of Release to Service (CRS) on the same day with an expiry date of 29 March 2023 or at 5 471.9 airframe hours, whichever occurs first unless the aircraft is involved in an accident or becomes unserviceable, in which case the certificate is invalid for the duration of the period.
- vii. The aircraft had accumulated a total of 61.1 airframe hours since the last MPI.
- viii. The Certificate of Airworthiness (CoA) was initially issued on 5 December 2019. The latest CoA was signed on 25 October 2021 with an expiry date of 31 December 2022.
- ix. The small antelope entered the aerodrome perimeter through holes on the fence that were created by porcupines and tortoises. The fence is inspected weekly by the aerodrome personnel, and the holes are fixed as they are identified. The animals bore new holes between inspection periods.
- x. The fence is made of a wire mesh that is approximately 1.2 metres high.

Probable Cause
The aircraft collided with an antelope during take-off, which led to the collapse of the nose landing gear during the landing roll; hence, the subsequent damage to the nose landing gear oleo, torque link and bottom engine cowling.
Contributing Factor
The boundary fence is not strong and high enough to prevent animals from accessing the aerodrome grounds.
Safety Action
The operator is currently investigating the option of installing infrared cameras to assist in spotting animal activity at night.
Safety Message
To avoid occurrences such as this one, Approved Training Organisations (ATOs) are advised to always ensure nighttime training is conducted at aerodromes with properly secured fencing to avoid unauthorised access to the aerodrome.
About this Report
<i>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.</i>
<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>
Purpose
<i>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.</i>
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**