SOUTH AFRICAN CIVIL AVIATION AUTHORITY

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

LIMITED OCCURRENCE INVESTIGATION REPORT - FINAL

Reference Number	CA18/2/3/10193						
Classification	Accident	**Date**	18 July 2022		**Time**	1540Z	
Type of Operation	Private Non-type Certificated Aircraft (Part 91)						
Location							
Place of Departure	Grand Central Aerodrome (FAGC), Gauteng Province	Place of Intended Landing	Zebula Aerodrome, Limpopo Province				
Place of Occurrence	Left of Runway 26 (RWY26) Zebula Aerodrome						
GPS Co-ordinates	Latitude	25°45'25.01" S	Longitude	027°58'12.99" E	Elevation	4212 ft	
Aircraft Information							
Registration	ZS-PSW						
Make; Model; S/N	Cessna Aircraft Company, C172M (Serial Number: 17261665)						
Damage to Aircraft	Substantial	Total Aircraft Hours	3 234.8				
Pilot-in-command							
Licence Type	Private Pilot Licence (Aeroplane)	Gender	Male	Age	27		
Licence Valid	Yes	Total Hours	121.7	Total Hours on Type	109.1		
Total Hours 30 Days	3.3	Total Flying on Type Past 90 Days	11.8				
People On-board	1 + 1	**Injuries**	0	**Fatalities**	0	**Other (on ground)**	0

What Happened

On Monday afternoon, 18 July 2022 at 1400Z, a pilot and a passenger on-board a Cessna 172M aircraft with registration ZS-PSW took off on an hour building flight from Grand Central Aerodrome (FAGC) in Gauteng province to Zebula Aerodrome in Limpopo province. The flight plan was filed for the flight. Clear weather conditions prevailed at the time of the flight. The flight was conducted under visual flight rules (VFR) by day and under the provisions of Part 91 of the Civil Aviation Regulations (CAR) 2011 as amended.

The pilot reported that the flight to Zebula proceeded as scheduled. Once overhead the aerodrome, the pilot followed the unmanned aerodrome joining procedure at 1000 feet (ft) above circuit altitude. No aircraft or animals in the vicinity of the runway were observed. The pilot then joined the circuit for landing on Runway 26 (RWY26).

Whilst on short final approach, a tower of giraffes was in the process of crossing the runway from the left-side to the right. In response, the pilot applied full power during flare with the intention to perform a go-around, but the aircraft touched down hard on the runway and bounced as it had lost airspeed. As a result, the pilot lost directional control and the aircraft veered off to the left-side of the runway and crashed on the perimeter fence, which was approximately 55 metres from the runway edge before it came to rest. No person was injured during the accident sequence, and the two occupants disembarked the aircraft unaided. The aircraft sustained damage to both wings, propeller and the spinner.

Figure 1: The location of the aircraft as it came to rest, indicated by the yellow pin. (Source: Google Earth)

Figures 2 and 3: The aircraft at the scene of the accident. (Source: Pilot)

Figure 4: A file picture of the view of RWY 26 at Zebula Aerodrome. (Source: www.zebula.co.za)

Findings

The Pilot

- The pilot was initially issued a Private Pilot Licence (PPL) Aeroplane on 10 April 2019. His renewed licence had an expiry date of 31 January 2023. The Cessna 172 aircraft type was endorsed on his licence with a night rating. A Class 2 medical certificate was issued to the pilot on 20 September 2021 with an expiry date of 30 September 2026 with no restrictions.

Aircraft information

- The aircraft had a Certificate of Airworthiness (C of A) which was initially issued on 28 July 2010. The latest C of A had an expiry date of 31 July 2022. The aircraft's Certificate of Registration (C of R) was issued on 8 March 2007.

- The 50-hour mandatory periodic inspection (MPI) was carried out on the aircraft on 13 July 2022 and certified at 3211.7 airframe hours. The aircraft was flown a further 23.1 hours prior to the accident flight. The aircraft was issued a Certificate of Release to Service (CRS) on 13 July 2022 with an expiry date of 12 July 2023 or at 3311.7 hours of flight time, whichever occurs first unless the aircraft is involved in an accident or becomes unserviceable.

- The aircraft was maintained by an aircraft maintenance organisation (AMO) with a certificate issued on 25 July 2022 and valid until 31 July 2023.

- There were no recorded defects or faults with the aircraft before the accident flight, which had a total duration of 1.6 hours.

Aerodrome information

- The pilot reported that he followed the unmanned joining procedure before landing.
- According to the Aeronautical Information Publication (AIP), sunset at Zebula on the day was at 1534Z, which was close to the landing time. This would make spotting wild animals difficult from the air with the approach path in the direction of the setting sun. Zebula aerodrome is not equipped with landing lights.
- See the attachment below from the Zebula Aerodrome website:

Aerodrome Location	Zebula
Aerodrome Status	Unlicensed
Aerodrome GPS coordinates	24°45'22.00" South, 027°58'12.00" East
Aerodrome Elevation	4212 ft
Runway Headings	08/26
Dimensions of Runway Used	1400 x 13 m
Heading of Runway Used	26
Surface of Runway Used	Asphalt
Approach Facilities	None
Radio Frequency	124.8 MHz

Figure 4: Zebula Aerodrome information. (Source: Zebula website)

Call Sign: *Zebula Traffic.* ***Circuits:*** *No defined circuits in use although the preferred circuit is to the south away from the lodge and houses, i.e. 08 RH circuit, 26 LH circuit. Usually a crosswind from 170°.*

NOTES

1. *The airfield is unmanned, so please follow the standard procedures for an unmanned airfield.*
2. *Airfield situated in a Game Reserve. Wild animals can roam on RWY. RWY is not fenced – Exercise caution.*
3. *Unless wind is adverse, preferred take-off is downhill from RWY 08.*
4. *Large hangar situated 200m from threshold RWY 26.*
5. *Trees on THR RWY08.*
6. *Usually more active airfield on weekends. Exercise caution as there is a lot of fixed wing activity here.*

IMPORTANT INFORMATION

The Zebula airstrip is a private, registered airfield and the pilot-in-command needs to assess the safety and take full responsibility for all his actions. The Zebula Governing Body will not be held responsible for any incidents, injuries, or death. Should you damage the airstrip, you will be liable for damages.

Probable Cause

Loss of directional control on the ground during the landing roll after a failed go-around in an attempt to avoid colliding with wildlife on the runway.

Contributing Factors

Improper flight planning.

Safety Action

None.

Safety Message and/or Safety Recommendation/s

None.

About this Report

The decision to conduct a limited investigate 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 issued by:

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

Annexure A

Unmanned Airfields

Transgressions and safety issues at unmanned airfields, the joining procedure by law is: Join overhead the field at 2000 ft AGL and observe the wind conditions. Descend on the "dead" side of the field and join the circuit at 1000 ft AGL. The purpose of the overhead join is to allow either non-radio aircraft, or aircraft arriving at a non-radio airfield, to overfly the airfield at a safe height, to observe, determine the runway in use and circuit direction, and then descend into the circuit pattern. The best course of action when visiting an unmanned aerodrome is:

- *Check the arrival procedures of the next destination first, before leaving.*
- *Effective radio communication and traffic awareness are all-important and will help prevent a collision.*
- *Keep the standard phraseology when communicating.*
- *Report your exact position to avoid confusion.*

PURPOSE
The purpose of this report is to alert the industry (GA-SPORTS) of the transgressions and safety issues raised with the Department of Transport (DoT). The following incident illustrates the dangers posed when pilots neglect to follow the Standard Procedures: A.

- *A pilot radioed overhead on frequency and announced his intentions to descend on the dead side of the airfield and to join on a left-hand crosswind runway XX. He heard another aircraft announce his intentions to route through the unmanned aerodrome and then route onward to his final destination.*
- *On reaching the crosswind position of Rwy XX, he called to announce that he was left-hand crosswind Rwy XX 'full stop'. He was expecting the aircraft to be passing overhead from the right as he called again on downwind and then again on base leg. At that point the other aircraft announced his intentions to do a low level runway inspection of runway YY in an opposite direction at 5300 ft and then route onward to his destination. The aircraft had no intention of actually landing at the aerodrome, despite conducting a runway inspection. The pilot called 'final' and cautioned the approaching aircraft that he was on final for Rwy XX, which was directly opposite to the direction that the other aircraft was approaching; and he realized that they were on a collision course. The other aircraft then called to ask if the pilot was on final Rwy XX, and the pilot confirmed.*
- *Realizing that time had elapsed since the other aircraft had called overhead, he would have most likely been very close to the threshold of the runway, flying straight towards him. Although the pilot considered going around to avoid the dangerous situation that was about to occur, he realized that he had nowhere to go as he could not see the other aircraft, nor did he know from which direction the aircraft would be doing its runway inspection. So he committed to landing. By this time the other aircraft called to say he would fly as if he was on the left downwind of runway XX, but by this time the other pilot was on the flare.*
- *He was therefore forced to land due to the threat of the approaching aircraft. The pilot ended up landing deep on runway XX and this caused him to overshoot the end of the runway. B. When two aircraft were en route from an airport at 0700UTC, another aircraft was already in the circuit at an unmanned aerodrome, intending to land. The two aircraft approaching did not make any effort to join overhead; instead the first one joined final approach Rwy XX and the second one joined downwind Rwy YY. (Rwy XX was in use). The aircraft which had already been in the circuit averted two mid-air collisions from the first and the second aircraft.*