SOUTH AFRICAN CIVIL AVIATION AUTHORITY

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

LIMITED OCCURRENCE INVESTIGATION REPORT – FINAL

Reference Number	CA18/2/3/10388					
Classification	Accident	**Date**	10 November 2023	**Time**	1315Z	
Type of Operation	Private (Part 94)					
Location						
Place of Departure	Private airstrip near Pilanesberg, North West Province	Place of Intended Landing	Hoedspruit Civil Airfield (FAHT), Limpopo Province			
Place of Occurrence	On the left of Runway 17 at Hoedspruit Civil Airfield (FAHT)					
GPS Co-ordinates	Latitude	24° 20' 57.39" S	Longitude	030° 56' 50.37" E	Elevation	1766 ft
Aircraft Information						
Registration	ZU-TAE					
Make; Model; S/N	Airplane Factory; Sling II (Serial Number: 004)					
Damage to Aircraft	Substantial	Total Aircraft Hours	1800.3			
Pilot-in-command						
Licence Type	Private Pilot Licence (PPL)	Gender	Male	Age	67	
Licence Valid	Yes	Total Hours	27 700	Total Hours on Type	74	
Total Hours 30 Days	5.5	Total Flying on Type Past 90 Days	5.5			
People On-board	1+1	**Injuries**	0	**Fatalities**	0	**Other (on ground)** 0

What Happened

On Friday afternoon, 10 November 2023, a pilot and a passenger on-board a Sling II aircraft were on a private flight from a private farm near Pilanesberg Airport (FAPN) in the North West province to Hoedspruit Civil Airfield (FAHT) in Limpopo province. The flight was conducted under visual meteorological conditions (VMC) by day and under the provisions of Part 94 of the Civil Aviation Regulations (CAR) 2011 as amended.

The pilot indicated that on the day of the flight, the aircraft initially took off on a private cross-country flight from Tedderfield Air Park (FATA) in Gauteng province. According to the pilot, during their earlier (first) stops at Mangina, situated north of Pretoria, and Pilanesberg, the pilot did not experience any difficulties with the aircraft's braking system. Later, the aircraft took off from the private farm to FAHT. The pilot contacted the Hoedspruit Military Base (FAHS) Air Traffic Control (ATC) and was cleared to proceed to FAHT. The pilot had planned to land on Runway 17 which is 1200 metres (m) long. The aircraft landed deep with touchdown halfway through the runway. After the nose landing gear wheel touched down, the pilot applied the brakes, but they did not respond. He applied brakes a few more times, however, he realised that there was limited runway surface remaining to safely bring the aircraft to a halt. Due to the limited runway surface available, the pilot turned the aircraft aggressively to the left towards the apron. During the turn, the nose landing gear collapsed, and the propeller contacted the runway, whereafter one of the three propeller blades broke off and the other two sustained substantial damage.

The aircraft came to a stop after the collapse of the nose landing gear. The close circuit television (CCTV) footage at the airfield showed that the aircraft landed deep and at a high speed; it travelled at that speed towards the end of the runway which was marked by a barrier fence.

After the aircraft had come to a stop, the pilot and the passenger disembarked from the aircraft unassisted, they were not injured. The nose landing gear, right wing tip (that scrapped the runway) and the propeller were damaged.

The pilot reported the weather conditions on the pilot questionnaire as follows:
Wind direction: Variable; Wind Speed: 2 knots; Visibility: CAVOK; Temperature: 23°C; Cloud Cover: None.

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

Figure 2: The aircraft with the collapsed nose gear after the accident.

Figure 3: The right and left main landing gear brake pipelines showed no leakage. (Source: AMO)

Post-accident Findings:

The aircraft's brake system was tested, and no anomalies were found. There was no brake fluid leakage, and the brake linings and disc were still within limits.

According to the pilot questionnaire, the aircraft was landed at 70 knots (kt) on Runway 17.

Normal Landing Procedure (Source: Pilot's Operating Handbook [POH])

Approach Speed

1. *Approach speed long finals - 65 to 75 KIAS.*
2. *Short finals - ≥ 55 KIAS.*

Before landing
1. Throttle - As required
2. Airspeed - 60 KIAS
3. Wing flaps - Extend as required
4. Trim - As required

Landing
1. Throttle - Idle
2. Controls - Flare to minimum flying speed
3. Touch-down on main wheels
3. Apply brakes - As needed (after the nose wheel touch-down)

After landing
1. Engine speed - Set as required for taxiing
2. Wing flaps – Retract

Findings

1. The pilot, a German national, had a Private Pilot Licence (PPL) that was issued by the Regulator (SACAA) on 16 March 2023 with an expiry date of 29 February 2028. The pilot's Class 2 aviation medical certificate was issued in Germany on 8 August 2023 with an expiry date of 24 February 2024. The pilot accumulated a total of 74 flying hours on the aircraft type. The aircraft type was endorsed on the pilot's licence. According to available information, the pilot also had an Airline Transport Pilot Licence (ATPL) that was issued in Germany and had more than 27 000 flying hours as an airline transport pilot.

2. The aircraft had a valid Authority to Fly (ATF) Certificate that was issued by the Regulator on 8 March 2023 with an expiry date of 29 February 2024. The Certificate of Release to Service (CRS) was issued on 16 February 2023 at 1791.6 hours with an expiry date of 15 February 2023 or at 1891.6 hours, whichever comes first. The current owner was issued a Certificate of Registration (C of R) by the Regulator on 29 November 2022.

3. The aircraft maintenance organisation (AMO) which conducted maintenance on the aircraft had an AMO certificate that was issued by the Regulator on 21 December 2022 with an expiry date of 31 December 2023.

4. The aircraft was operated privately as a hire-and-fly under the provisions of Part 94 of the CAR 2011 as amended.

5. According to the pilot, he landed the aircraft halfway through the runway at a speed of 70 kt (indicated air speed [KIAS]), which was above the manufacturer's recommended landing speed of 60 KIAS. The aircraft's brakes did not respond when the pilot engaged them given the speed as well as the pilot's attempt to brake immediately after touch down.

6. To avoid overshooting the runway and subsequently impacting the parameter fence, the pilot turned the aircraft to the left; as a result, the nose landing gear collapsed which brought the aircraft to a stop. During the nose landing gear collapse, the propeller contacted the runway surface whilst the engine was still running at high speed. Thus, the propeller was damaged, and one of the three blades broke off.

Probable Cause(s)

The aircraft touched down deep at 70 KIAS and the brakes did not respond to bring the aircraft to a stop on the remaining runway. As a result, the pilot turned the aircraft to the left to avoid overshooting the runway and impacting the parameter fence which led to the nose landing gear collapse.

Contributing Factor(s)

None.

Safety Action(s)

None.

Safety Message

In the interest of safety, pilots are advised to be vigilant in critical phases of flight such as take-offs and landings to prevent injuries and/or damage to property.

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.
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This report is issued by:
Accident and Incident Investigations Division
South African Civil Aviation Authority
Republic of South Africa