SOUTH AFRICAN CIVIL AVIATION AUTHORITY

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

LIMITED OCCURRENCE INVESTIGATION REPORT – FINAL

Reference Number	CA18/2/3/10489						
Classification	Accident	**Date**	5 September 2024	**Time**	1237Z		
Type of Operation	Training (Part 141)						
Location							
Place of Departure	Virginia Airport (FAVG), KwaZulu-Natal Province	Place of Intended Landing	Richards Bay Airport (FARB), KwaZulu-Natal Province				
Place of Occurrence	On Runway 05 at Richards Bay Airport (FARB), KwaZulu-Natal Province						
GPS Co-ordinates	Latitude	28°44´13.05" S	Longitude	32°05´37.17" E	Elevation	103 ft	
Aircraft Information							
Registration	ZU-STB						
Make; Model; S/N	The Airplane Factory; Sling 2 (Serial Number: 244)						
Damage to Aircraft	Substantial	Total Aircraft Hours	2795.60				
Pilot-in-command							
Licence Type	Student Pilot Licence (SPL) Aeroplane	Gender	Female	Age	19		
Licence Valid	Yes	Total Hours	70.7	Total Hours on Type	70.7		
Total Hours 30 Days	14.6	Total Flying on Type Past 90 Days	27.9				
People On-board	1+0	**Injuries**	0	**Fatalities**	0	**Other (on ground)**	0

What Happened

On Thursday afternoon, 5 September 2024, a student pilot (SP) on-board a Sling 2 aircraft with registration ZU-STB was on a solo navigational training flight from Virginia Airport (FAVG) to Richards Bay Airport (FARB) in KwaZulu-Natal province, with the intention to land back at FAVG. Visual meteorological conditions (VMC) by day prevailed at the time of the flight which was conducted under the provisions of Part 141 of the Civil Aviation Regulations (CAR) 2011 as amended.

The SP stated that the flight to FARB was uneventful. Upon arrival at FARB, she was cleared to perform a touch-and-go landing on Runway 05. Before touchdown, the SP closed the throttle and pulled back the control yoke to flare the aircraft, but it lost height. The SP felt a gust of wind pushing the aircraft up, and she corrected this by applying full power to execute a go-around. However, instead of achieving a climb, the aircraft porpoised and landed hard with the nose wheel first which caused the strut to collapse and the propeller to strike the runway. The aircraft came to a stop on the runway approximately 490 metres (m) from the threshold of Runway 05. The SP switched off the master switch and disembarked from the aircraft; she was unharmed. The aircraft sustained substantial damage.

On the pilot questionnaire (Civil Aviation Authority [CAA] form number 12-03), the SP stated that the aircraft's speed was between 65 and 70 knots (kts) on final approach.

Figure 1: The aircraft on the runway after the accident. (Source: Owner)

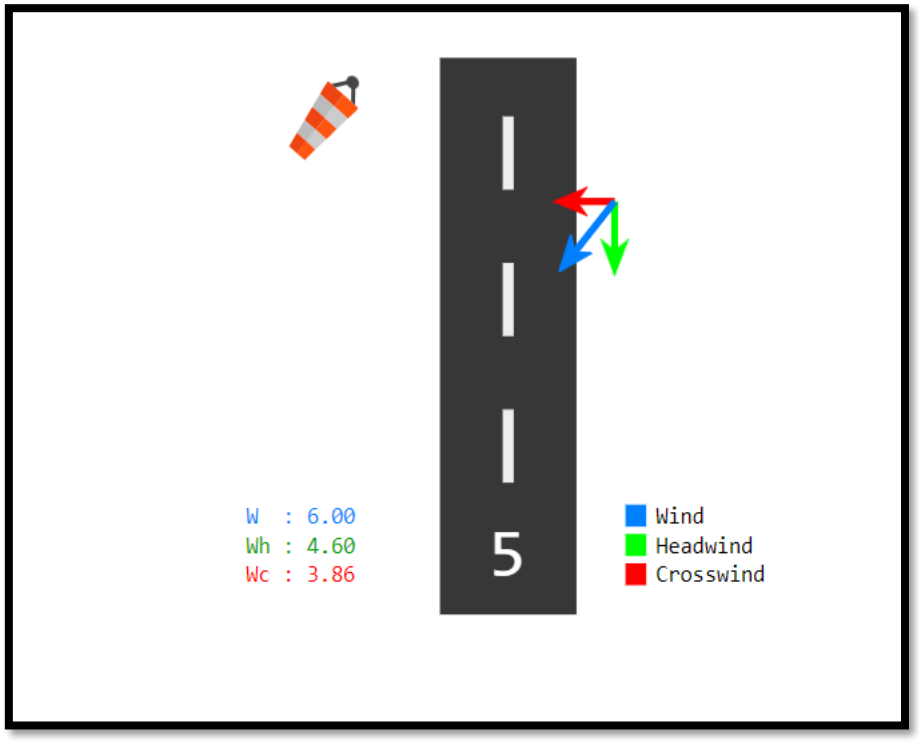

Figure 2: The crosswind was 3.86 knots on Runway 05. (Source: https://e6bx.com/wind)

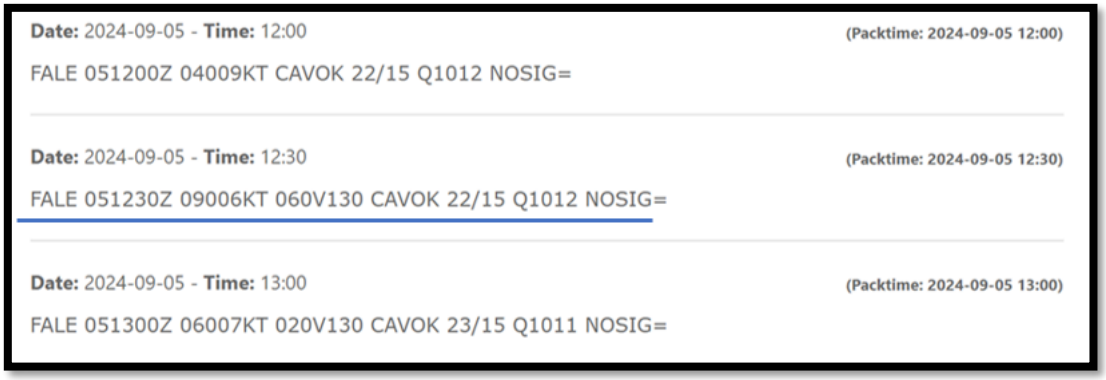

Figure 3: The weather was obtained from the Aerodrome Traffic Information Service (ATIS). (Source: South African Weather Services)

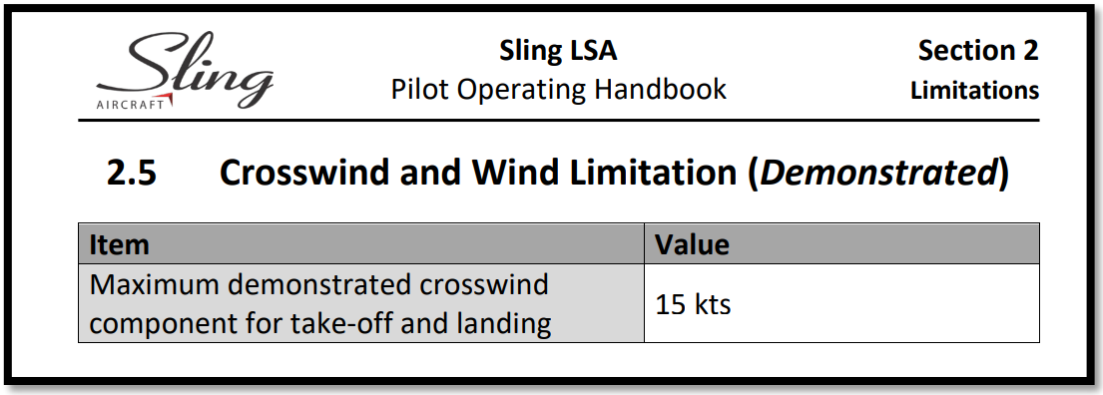

Figure 4: The aircraft could operate at a maximum crosswind of 15 kts. The reported crosswind on the day of the accident was 3.86 knots. (Source: Sling LSA Pilot Operating Handbook)

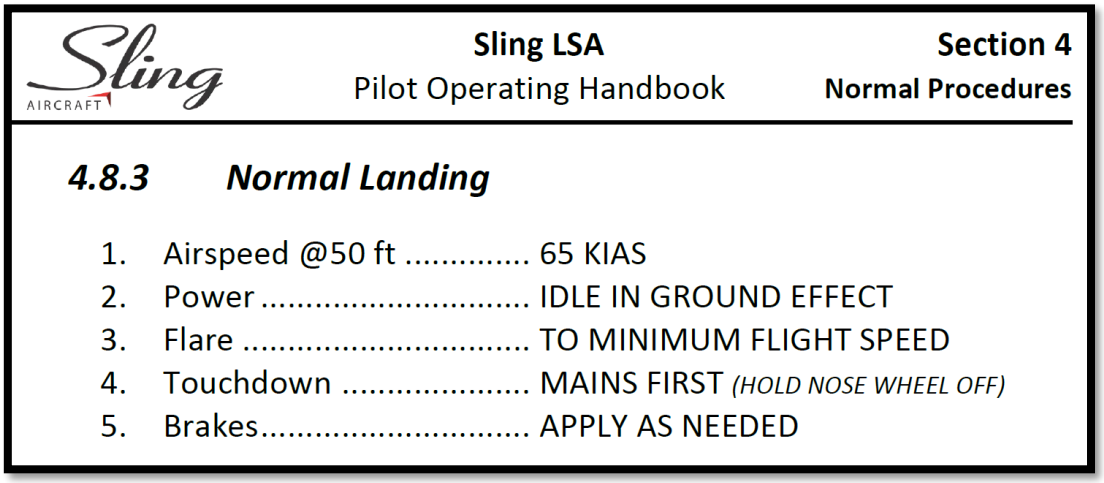

Figure 5: Normal landing speed of the aircraft. (Source: Sling LSA POH)

Porpoising (Source: Federal Aviation Administration [FAA] Airplane Flying Handbook)

In a bounced landing that is improperly recovered, the airplane comes in nose first, setting off a series of motions that imitate the jumps and dives of a porpoise — hence the name (Figure 6). The problem is improper airplane attitude at touchdown, sometimes caused by inattention, not knowing where the ground is, mistiming or forcing the airplane onto the runway.

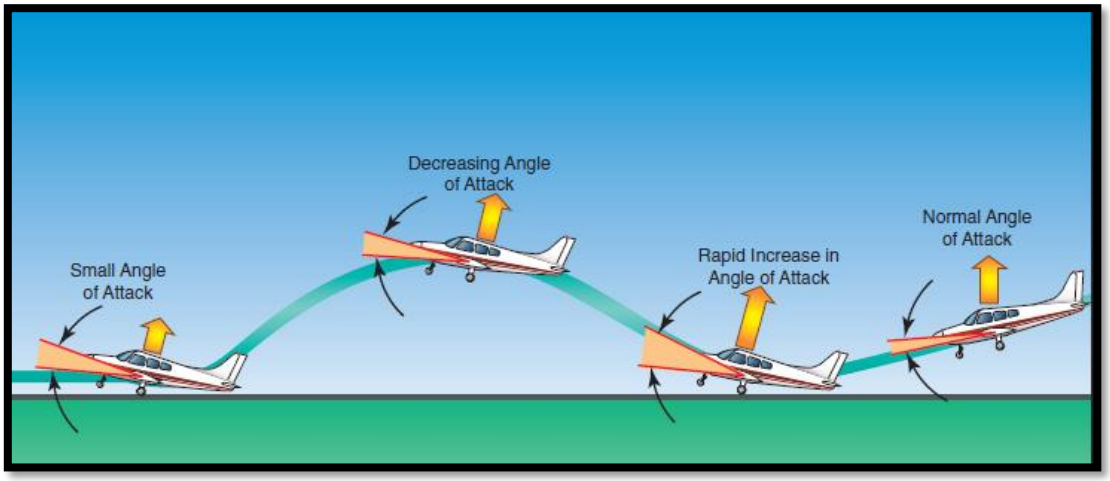

Figure 6: Illustration of porpoising during touchdown. (Source: FAA Airplane Flying Handbook)

Findings

1. Personnel Information

1.1 The SP had a Student Pilot Licence (SPL) that was initially issued on 2 July 2022 with an expiry date of 30 June 2025. The SP flew a total of 70.7 hours.

1.2 The pilot was issued a Class 2 aviation medical certificate on 30 May 2022 with an expiry date of 31 May 2027 with no restrictions.

2. Aircraft Information

2.1 The last 100-hour annual inspection of the aircraft before the accident flight was certified on 19 July 2024 at 2697.4 airframe hours. The accident occurred at 2795.6 airframe hours, meaning that that aircraft had accrued 98.5 hours since the last inspection. The aircraft was issued a Certificate of Release to Service (CRS) on 19 July 2024 at 2697.4 airframe hours with an expiry date of 19 July 2025 or at 2797.4 airframe hours, whichever occurs first.

2.2 The aircraft had a valid Authority to Fly (ATF) Certificate that was issued on 26 July 2024 with an expiry date of 31 August 2025. The aircraft was airworthy when it was dispatched for the flight.

2.3 The aircraft's Certificate of Registration (C of R) was issued to the present owner on 26 January 2018.

2.4 The aircraft maintenance organisation (AMO) which maintained the aircraft had a valid AMO Certificate that was issued on 24 October 2023 with an expiry date of 31 October 2024. The approved training organisation (ATO) had a valid ATO certificate that was issued on 30 June 2021 with an expiry date of 30 June 2026.

2.5 The SP had reached 70.7 hours of training towards her PPL. After the accident, the flying school checked the SP's competency as required by Regulation Part 61.02.7 which states: "*The Director may permanently discontinue the flight training of any student pilot due to safety concerns. The procedure for making a recommendation to the Director for the discontinuance of flight training is prescribed in Document SA-CATS 61.*"
The CFI stated: "*I conducted circuits with the student pilot on 10 October 2024, closely monitoring her response to the demands of flight operations. I am confident in her ability to fly safely and recommend her continued flight activity*."

2.6 The maximum demonstrated crosswind for the aircraft type is 15 kts (Figure 4); on the day of the accident, the reported crosswind was 3.86 kts.

Probable Cause(s)

It is likely that the student pilot flared too early and the aircraft porpoised and landed hard with the nose landing gear first.

Contributing Factor(s)

Failure to go-around after applying full power.

Safety Action(s)

None.

Safety Message and/or Safety Recommendation/s

None.

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

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