SOUTH AFRICAN CIVIL AVIATION AUTHORITY

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

LIMITED OCCURRENCE INVESTIGATION REPORT – FINAL

Reference Number	CA18/2/3/10168						
Classification	Accident	**Date**	3 June 2022		**Time**	0925Z	
Type of Operation	Private (Part 91)						
Location							
Place of Departure	Hoedspruit Civil Aerodrome (FAHT), Limpopo Province	Place of Intended Landing	Ximuwu Private Airstrip, Klaserie, Mpumalanga Province				
Place of Occurrence	Ximuwu Private Airstrip in Klaserie, Mpumalanga Province						
GPS Co-ordinates	Latitude	S24°17'56.44"	Longitude	E31°05'29.07"	Elevation	1581.24ft	
Aircraft Information							
Registration	2-ELLY						
Make; Model; S/N	Cessna T206H (Serial Number: T20608576)						
Damage to Aircraft	Substantial	Total Aircraft Hours	801.3				
Pilot-in-command							
Licence Type	Private Pilot Licence (Aeroplane)	Gender	Female	Age	31		
Licence Valid	Yes	Total Hours	641.1	Total Hours on Type	467.1		
Total Hours 30 Days	4.7	Total Flying on Type Past 90 Days	18.50				
People On-board	1 + 1	**Injuries**	0	**Fatalities**	0	**Other (on ground)**	0

What Happened

On 3 June 2022, a pilot on-board a Cessna T206H aircraft with registration 2-ELLY took off on a private flight from Hoedspruit Civil Aerodrome (FAHT) in Limpopo province with the intention to land at Ximuwu Private Airstrip in Klaserie, Mpumalanga province. Visual meteorological conditions (VMC) by day prevailed at the time of the flight. The flight was conducted under the provisions of Part 91 of the Civil Aviation Regulations (CAR) 2011 as amended.

Upon arrival at Ximuwu Private Airstrip, the pilot stated that she commenced with the preparation for landing, including testing the footbrakes and feeling for pressure, and all the results were satisfactory. She then joined the traffic pattern for a full stop landing on Runway 09. After touchdown and whilst travelling at 70 knots ground speed, she applied the brakes to slow down the aircraft, but the brakes did not respond. Consequently, the aircraft overshot the runway threshold and came to a stop against a large shrub on the eastern side of the airstrip.

The aircraft sustained substantial damage to the right wing and the propeller. The pilot and the passenger were not injured during the accident sequence.

Figure 1: The aircraft at its resting position post-accident. (Source: Owner)

Figure 2: The aircraft with its nose section against the shrub. (Source: Owner)

LANDING

NORMAL LANDING

1. Airspeed - 80 - 90 KIAS (Flaps UP)
2. Wing Flaps - AS DESIRED (UP - 10° below 140 KIAS)
   (10° - 20° below 120 KIAS)
   (20° - FULL below 100 KIAS)
3. Airspeed - 70 - 80 KIAS (Flaps FULL)
4. Elevator and Rudder Trim Controls - ADJUST
5. Touchdown - MAIN WHEELS FIRST
6. Landing Roll - LOWER NOSEWHEEL GENTLY
7. Braking - MINIMUM REQUIRED

Figure 3: Landing checklist. (Source: POH 206H)

Findings

- The flight was conducted under the provisions of Part 91 of the Civil Aviation Regulations (CAR) 2011 as amended.
- This aircraft is registered in Bailiwick of Guernsey.
- The last 50-hour oil inspection prior to the accident flight was carried out on 7 March 2022 at 3596.10 Hobbs hours. The aircraft was issued a Certificate of Release to Service (CRS) on 7 March 2022 with an expiry date of 7 March 2023 or at 3646.1 Hobbs hours, whichever occurs first. The aircraft had 5 Hobbs hours remaining before the next (MPI). During the last MPI, all three wheel assemblies were replaced.
- The pilot had 641.1 total hours and 467.1 hours on type.
- The aircraft was recovered to the owner's hangar where the brakes were examined. Upon inspecting the aircraft, the aircraft maintenance engineers (AMEs) discovered that the right-side brake line/pipe from the cylinder that connects to the brake caliper had snapped; the left-side brake line was found still intact.
- The Cessna T206H aircraft and systems description states that "*If one brake becomes weak or fails, use the other brake sparingly while using opposite rudder; this is required to offset the good brake*."
- The private airstrip length is 947 metres, and the required landing distance for a Cessna T206H is 224 metres. The accident aircraft touched down 415 metres beyond the runway threshold, and the remaining distance was 532 metres, which was sufficient to land the aircraft.
- According to the aircraft Pilot's Operating Handbook (POH), the recommended approach speed with flaps is between 70 and 80 knots (kts).
- The accident aircraft's approach speed was approximately 70 kts. This is unlikely as the aircraft landed deep.

- The aircraft landed deep and the pilot was unable to bring the aircraft to a stop. This resulted in the aircraft overshooting the runway. It could not be determined why the aircraft could not stop on the runway.
- The damage to the brake line was attributed to the aircraft overshooting the runway.

Figure 4: Overview of the accident site. (Source: Google Earth)

Figure 5: Damage to the right-side wing leading edge outboard. (Source: Owner)

Figure 6: The aircraft post-accident. (Source: Pilot)

Probable Cause

The aircraft landed deep and overshot the runway, and subsequently collided with a tree. The damage to the brake line was attributed to the aircraft overshooting the runway.

Contributing Factor(s)

None.

Safety Action(s)

None.

Safety Message and/or Safety Recommendation/s

None.

About this Report

Decisions 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