SOUTH AFRICAN CIVIL AVIATION AUTHORITY

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

LIMITED OCCURRENCE INVESTIGATION REPORT – FINAL

Reference Number	CA18/3/2/1415						
Classification	Serious Incident	**Date**	3 June 2023		**Time**	0900Z	
Type of Operation	Private (Part 94)						
Location							
Place of Departure	Kroon Airfield, Gauteng Province	Place of Intended Landing	Private Airstrip at Plot 42, Mogale, Gauteng Province				
Place of Occurrence	Private Airstrip at Plot 42, Mogale, Gauteng Province						
GPS Co-ordinates	Latitude	25º 58'11"S	Longitude	027º59'39"E	Elevation	4 330 ft	
Aircraft Information							
Registration	ZU-FKA						
Make; Model; S/N	ICP SRL Italy; Savannah HL V6 (Serial Number: 09-12-51-881)						
Damage to Aircraft	Substantial	Total Aircraft Hours	675				
Pilot-in-command							
Licence Type	National Pilot Licence (NPL)	Gender	Male	Age	75		
Licence Valid	Yes	Total Hours	850	Total Hours on Type	675		
Total Hours 30 Days	25	Total Flying on Type Past 90 Days	25				
People On-board	1+0	**Injuries**	0	**Fatalities**	0	**Other (on ground)**	0

What Happened

On Wednesday morning, 3 June 2023 at approximately 0825Z, a pilot on-board a Savannah XL V6 with registration ZU-FKA took off on a private flight from Runway 11 at Kroon Airfield in Gauteng province with the intention to land at Plot 42 private airstrip in Mogale in the same province. Visual meteorological conditions (VMC) by day prevailed at the time of the flight. The flight plan was not filed for this flight. The flight was conducted under the provisions of Part 94 of the Civil Aviation Regulations (CAR) 2011 as amended.

The pilot approached the airstrip from the south at a heading of 05 degrees and at a speed of 50 miles per hour (mph) (80 kilometres per hour (km/h) with full flaps. Whilst approaching the runway threshold, the aircraft sank low towards the electric boundary fence, and thus, the pilot applied power so as to climb to clear the fence; thereafter, he reduced the power again. The aircraft landed hard on the runway and drifted to the left, whereafter, the left wheel ran over a mound (raised ground) which caused the aircraft to bounce. It then careered over a low embankment before it stopped in the bush.

The aircraft was substantially damaged during the serious incident; the pilot was not injured.

Figures 1: The approximate crash site. (Source: Google Earth).

Post-accident examination of the aircraft indicated the following:

- The aircraft had visible damage to the transponder aerial, the main landing gear was slightly bent, the propeller blades were slightly damaged, and there was a slight crease on the right wing leading edge.

Figure 2: The red circles indicate damage on the aircraft after the incident. (Source: Operator)

Figure 3: The circles show the mound (raised surface) on the ground. (Source: Operator)

Figure 4: The private airstrip layout. (Source: Google Earth)

- The airstrip is privately owned; thus, it is not registered with the Regulator (South African Civil Aviation Authority).

- The airstrip comprises a single runway, which is 500 metres (m) long and 30m wide and covered in grass.

- On the day of the serious incident, the grass was dry. The runway was suitable for use.

- The weather information below was obtained from the pilot questionnaire.

Wind Direction	030°	Wind Speed	05 kt	Visibility	9999 m
Temperature	20°C	Cloud Cover	Nil	Cloud Base	Nil
Dew Point	10°C	QNH	Unknown		

- An extract from the International Air Transport Association (IATA) advisory booklet titled *Unstable Approaches* (2nd Edition, 2016)
  https://www.iata.org/contentassets/b6eb2adc248c484192101edd1ed36015/unstable-approaches-2016-2nd-edition.pdf

4.1 What is an Unstabilised Approach?

An unstabilised approach is any approach that does not meet the stabilized approach criteria defined by the operator in its SOPs.

If the stabilised approach criteria are not met or, having been met initially, are subsequently breached, the pilots may correctly initiate a go-around, or they may sometimes continue to land. In the latter case, this may be because they failed to recognise that the approach was unstabilised or alternatively they may have intentionally failed to comply with the stabilised approach policy for emergency or other reasons. In a recent study by IATA, some flight crews were found to be under considerable pressure to continue approaches such as peer pressure, commercial pressure to reduce delays, perceptions about their companies' go-around policies, fatigue, etc.

The continuation of an unstabilised approach to landing, contrary to SOPs, may result in the aircraft touching down too fast, too hard, outside the touchdown zone (long or short), off the runway centreline, in the incorrect attitude or incorrectly configured for landing. These may in turn lead to a 'bounced' landing, aircraft damage, runway excursion or landing short.

An unstabilised approach may have any number of contributing factors (weather, tailwind, fatigue, workload, poor planning, pilot error, ATC interaction, procedures, approach design, etc.), which can be encountered at any stage of the descent, arrival and approach. Effective management process begins in the cruise phase as plans are made and approach briefings delivered.

RECOMMENDATION (9):
4.9.1 Operators to train flight crew to recognise and correct flight parameter deviations before they develop to the extent that a stabilised approach cannot be achieved or maintained. If these corrective actions fail, then the only safe solution is a go-around.

Findings

The Pilot

1. The pilot was initially issued a National Pilot Licence on 6 July 2006. His last validation was conducted on 13 September 2021 with an expiry date of 12 September 2023. The aircraft type was endorsed on the pilot's licence.
2. A Class 4 medical certificate was issued to the pilot on 24 October 2021 with an expiry date of 31 October 2024 and with a restriction to wear corrective lenses.

The Aircraft

3. The aircraft's Certificate of Registration (C of R) was issued to the current owner on 9 June 2021. The Authority to Fly (ATF) was initially issued on 19 November 2019. The latest ATF was reissued on 5 December 2022 with an expiry date of 30 November 2023.

4. According to the aircraft's latest Certificate of Release to Service (CRS) and logbooks, the last 100-hour annual inspection was certified on 20 November 2022 at 650 total airframe hours. The latest CRS had an expiry date of 20 November 2023 or at 750 airframe hours, whichever occurs first. At the time of the serious incident, the aircraft had accumulated 675 airframe hours. The aircraft was flown a further 25 airframe hours since the last annual inspection.
5. The approved person (AP) who certified the last MPI was appropriately qualified to conduct maintenance on the aircraft.
6. The pilot reported that during pre-flight inspection there were no mechanical malfunctions with the aircraft that would have precluded normal operation. The maintenance records indicated that the aircraft was maintained in accordance with (IAW) the regulations and approved procedures.
7. The investigation concluded that the aircraft was airworthy prior to the incident.
8. The runway was not a factor on the day of the incident.
9. Fine weather conditions prevailed at the time of the flight; the weather had no bearing to this incident.
10. The aircraft was unstable on approach, and it landed hard. The pilot lost directional control of the aircraft and it veered off to left of the runway and the left wheel ran over a mound which caused the aircraft to bounce and career over a low embankment before it stopped in the bush.

Probable Cause

The aircraft was unstable on approach, and landed hard; thereafter, the pilot lost directional control.

Contributing Factors

None.

Safety Action(s)

None.

Safety Message

Pilots are advised to always be vigilant during the critical phases of flight, such as take-offs and landings, and to also make timeous decisions to go-around.

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 desktop inquiries to bring awareness of potential safety issues to the industry in respect of this occurrence, as well as 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 apportion blame or liability.
Disclaimer
This report is produced without prejudice to the rights of the AIID, which are reserved.

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