

LIMITED OCCURRENCE INVESTIGATION REPORT – FINAL

Reference Number	CA18/2/3/10540						
Classification	Accident		Date	30 December 2024		Time	1255Z
Type of Operation	Private (Part 91)						
Location							
Place of Departure	Kareedouw Aerodrome (FAKW), Eastern Cape Province		Place of Intended Landing		Kareedouw Aerodrome (FAKW), Eastern Cape Province		
Place of Occurrence	Runway 28 at Kareedouw Aerodrome (FAKW)						
GPS Co-ordinates	Latitude	33°56'38" S	Longitude	024°17'25" E	Elevation	952 ft	
Aircraft Information							
Registration	ZU-LBD						
Make; Model; S/N	Shadow Lite CC, Jabiru J430 (Serial Number: 940)						
Damage to Aircraft	Substantial			Total Aircraft Hours	352		
Pilot-in-command							
Licence Type	Private Pilot Licence (PPL)		Gender	Male		Age	51
Licence Valid	Yes	Total Hours	141.8		Total Hours on Type	64.9	
Total Hours 30 Days	30.8		Total Flying on Type Past 90 Days		49.5		
People On-board	1+1	Injuries	0	Fatalities	0	Other (on the ground)	0
What Happened							
On Monday, 30 December 2024, a pilot and a passenger on-board a Jabiru J430 aircraft with registration ZU-LBD took off on a private flight from Kareedouw Aerodrome (FAKW) to Jeffreys Bay in the Eastern Cape province. The pair's intention was to fly to Jeffreys Bay without landing and, thereafter, return to FAKW. Visual meteorological conditions (VMC) by day prevailed at the time of the flight which was conducted under the provisions of Part 91 of the Civil Aviation Regulations (CAR) 2011 as amended. The pilot reported that, on their return, the approach for Runway 28 was stable with an indicated airspeed of 70 knots (kts) and flaps set at 30 degrees (°). The weather conditions included a tailwind of approximately 8 kts and a left crosswind of 1 kt. The pilot conducted an unmanned joining procedure; however, during landing, the aircraft was flared too high. Consequently, when the pilot reduced the throttle to idle, the aircraft descended rapidly which resulted in a hard landing on Runway 28 with the main landing gear. The aircraft bounced twice after touchdown, which caused the nose gear strut to bend, the right main gear to collapse, and the propeller blades to strike the ground.							

The pilot lost directional control and the aircraft veered off to the left of the runway before it stopped. The aircraft sustained substantial damage to the nose gear strut, right main gear and propeller blades; the occupants were not injured.

The accident occurred during daylight at Global Positioning System (GPS) co-ordinates determined to be 33°56'38" South 024°17'25" East, at an elevation of 952 feet (ft).

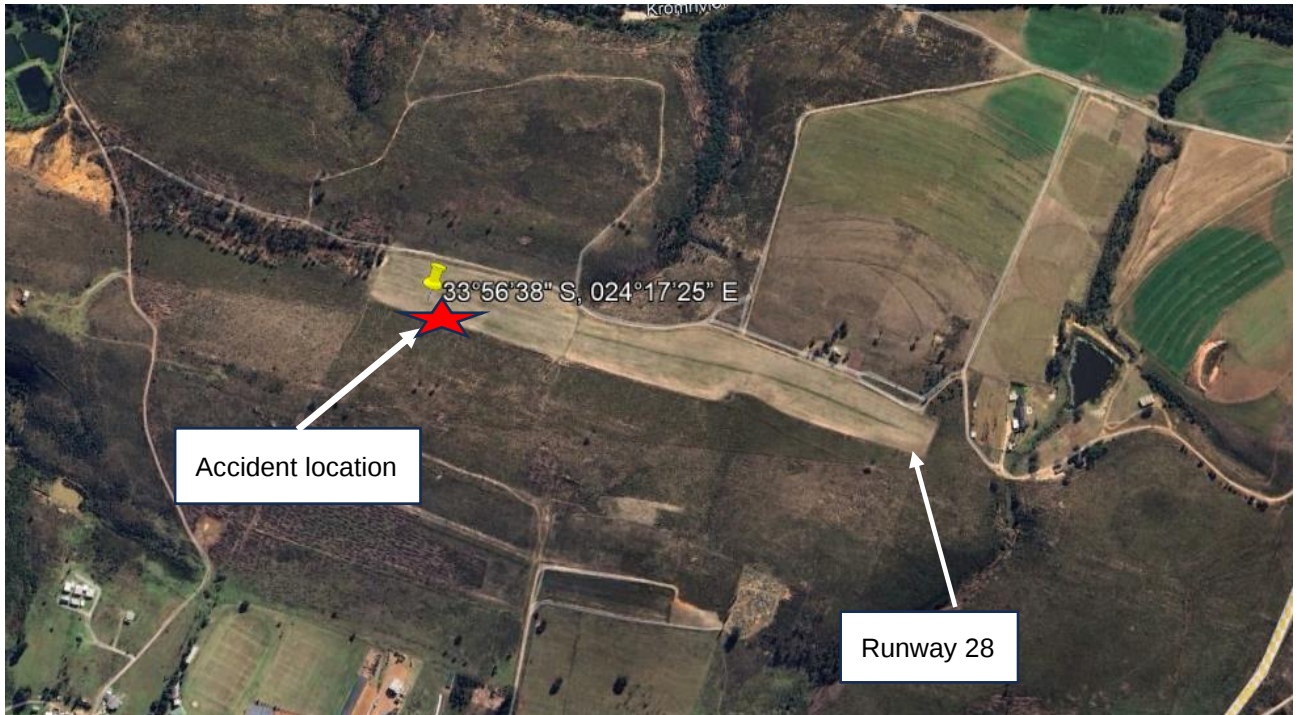


Figure 1: Aerial view of Kareedouw Aerodrome and the accident site. (Source: Google Earth)



Figure 2: The aircraft at the accident site. (Source: Pilot)



Figure 3: The collapsed nose gear strut. (Pilot)



Figure 4: The collapsed right main landing gear. (Pilot)

Runway Information

The runway used was Runway 28 which is unpaved (grass); it is 750 metres long and 13 metres wide. The aerodrome is equipped with a windsock.

On the day of the accident, the grass was dry, which indicated favourable conditions without significant moisture that could affect traction or stability of the aircraft. The overall terrain was flat and even, which provided a suitable runway surface that would not pose challenges to the aircraft during landing or take-off under normal circumstances.



Figure 5: The runway surface condition. (Source: Pilot)

Meteorological Information

The weather information below was obtained from the pilot questionnaire.

Wind Direction	90°	Wind Speed	08 kt	Visibility	9999 m
Temperature	35°C	Cloud Cover	SCT	Cloud Base	7000
Dew Point	1°C	QNH	1017hPa		

The meteorological aerodrome report (METAR) that was issued for Chief Dawid Stuurman International Aerodromes (FAPE) in Gqeberha, Eastern Cape province, located approximately 120 kilometres from FAKW could not be used due to the distance between the two aerodromes.

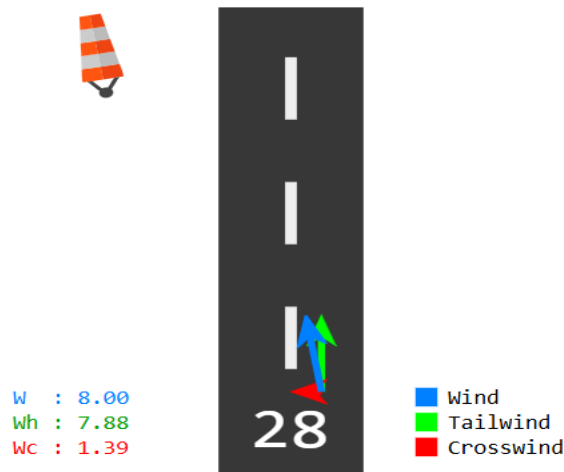


Figure 6: An illustration of wind component during landing. (Source: <https://e6bx.com/wind-components/>)

According to the Federal Aviation Administration (FAA) Airplane Flying Handbook, "flaring too high" means initiating the landing flare manoeuvre at an excessive altitude above the runway, which can lead to a potential stall if not corrected properly, causing a hard landing or loss of control due to excessive angle of attack and a significant loss of airspeed too close to the ground; essentially, the aircraft is "floating" too long before touchdown.

During a high roundout (flare), continuing the round out further reduces the airspeed and increases the AOA to the critical angle. This results in the airplane stalling and dropping hard onto the runway. To prevent this, the pitch attitude is held constant until the airplane decelerates enough to again start descending. Then the round out is continued to establish the proper landing attitude. This procedure is only used when there is adequate air speed. It may be necessary to add a slight amount of power to keep the air speed from decreasing excessively and to avoid losing the lift too rapidly.

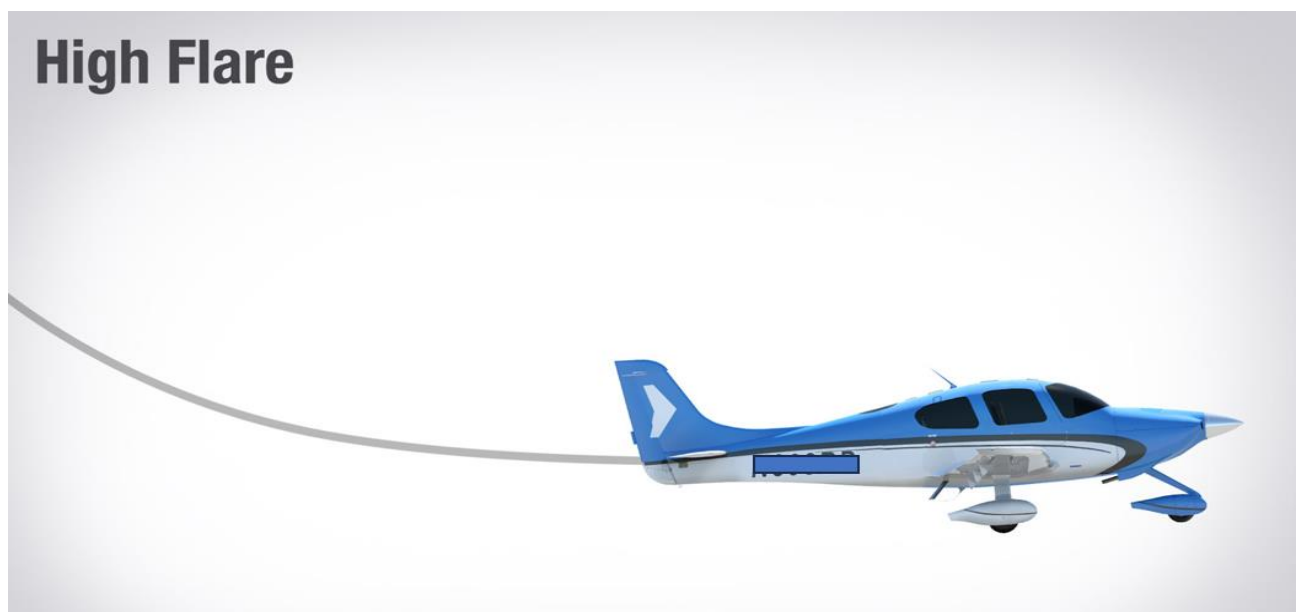


Illustration 1: Illustration of high flaring. (Source: Boldmethod)

Landing (Source: Jabiru 430 Pilot's Operating Handbook)

Normal Landing

1 Airspeed 65 KIAS

2 Wing Flaps FULL DOWN (below 70 KIAS)

3 Touchdown MAIN WHEELS FIRST

4 Landing Roll LOWER NOSE WHEEL GENTLY

5 Braking MINIMUM REQUIRED

The stall speed of the Jabiru J430 with full flaps down (below 70 KIAS) is approximately 40 knots.

Findings

Pilot

1. The pilot was initially issued a Private Pilot Licence (PPL) on 8 August 2024 with an expiry date of 31 July 2025. The aircraft type was endorsed on the pilot's licence. The pilot was issued a Class II aviation medical certificate on 11 April 2024 with an expiry date of 30 April 2025. The pilot was medically fit, qualified and authorised to operate the flight.

Aircraft

2. The aircraft's Certificate of Registration (C of R) was issued to the current owner on 23 August 2023. The Authority-to-fly (ATF) was initially issued on 6 December 2019. The ATF was reissued on 23 October 2023 with an expiry date of 31 December 2024. The aircraft was airworthy when it was dispatched for the flight.
3. The last annual inspection of the aircraft was conducted and certified on 29 November 2024 at 277.5 total airframe hours. At the time of the accident, the aircraft had a total of 352 airframe hours. The aircraft had accrued 74.5 hours since the last inspection.
4. The aircraft was issued a Certificate of Release to Service (CRS) on 29 November 2024 at 277.5 airframe hours with an expiry date of 28 November 2025 or at 377.5 airframe hours, whichever occurs first.
5. The wind component indicated that the aircraft landed tailwind condition, which could have increased the landing speed by 8 kts and affected the pilot's ability to decelerate the aircraft effectively.

6. The pilot stated that the speed was 70 kts during landing, which was higher than the 65 kts for normal landing as per the Jabiru J430 POH. 7. The stall speed of the Jabiru J430 with full flaps down (below 70 KIAS) is approximately 40 kts. 8. The pilot flared the aircraft too high and, after reducing the power lever to idle, the aircraft dropped and touched down hard.
Probable Cause(s)
The aircraft was flared too high during approach for landing and, upon touch down, it landed hard and bounced. This resulted in loss of directional control; consequently, the aircraft veered off to the left side of the runway.
Contributing Factor(s)
Tailwind at the time of landing.
Safety Action(s)
None.
Safety Message and/or Safety Recommendation/s
None.
About this Report
<i>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.</i> <i>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.</i>
Purpose
<i>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.</i>
Disclaimer
<i>This report is produced without prejudice to the rights of the AIID, which are reserved.</i>

This report is issued by:

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