

LIMITED OCCURRENCE INVESTIGATION REPORT – FINAL

Reference Number	CA18/2/3/10509						
Classification	Accident		Date	07 October 2024		Time	1030Z
Type of Operation	Private (Part 94)						
Location							
Place of Departure	Kitty Hawk (FAKT) Aerodrome, Gauteng Province		Place of Intended Landing		Rhino Park Aerodrome, Gauteng Province		
Place of Occurrence	On Runway 27 at Rhino Park Aerodrome						
GPS Co-ordinates	Latitude	25°50'00.7"S	Longitude	28°32'25.08"E	Elevation	4640 ft	
Aircraft Information							
Registration	ZU-CMZ						
Make; Model; S/N	Shadow Lite CC; Jabiru 400 (Serial Number: 0006)						
Damage to Aircraft	Minor			Total Aircraft Hours	1291.4		
Pilot-in-command							
Licence Type	Private Pilot Licence (PPL) Aeroplane		Gender	Female		Age	24
Licence Valid	Yes	Total Hours	162.9	Total Hours on Type		78.7	
Total Hours 30 Days	5.9		Total Flying on Type Past 90 Days		16.4		
People On-board	1+1	Injuries	0	Fatalities	0	Other (on ground)	0
What Happened							
On Monday, 7 October 2024, a pilot and a passenger on-board a Jabiru 400 aircraft with registration ZU-CMZ took off on a private flight from Kitty Hawk Aerodrome (FAKT) to Rhino Park Aerodrome, both located in Gauteng 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 stated that the flight from FAKT to Rhino Park Aerodrome was uneventful. At approximately 1030Z, the aircraft approached Runway 27 at a speed of 65 knots (kts) and at full-flap setting. The pilot stated that she flared late which resulted in the aircraft landing hard with the nose gear first and the propeller struck the ground. The aircraft came to a stop on the runway, 300 metres from the threshold. The aircraft sustained damage to the nose gear and propeller; the occupants were uninjured. The pilot questionnaire indicated that the surface wind was 280° at 10 kts with visibility greater than 10 kilometres (km).							



Figure 1: The damaged nose gear. The inset shows an undamaged nose gear. (Source: Owner)



Figure 2: Yellow circles indicate the damaged propeller tips. (Source: Owner)

Publication JP OM15		Jabiru J400 Owners Manual	Section: 4
4.3.11. LANDING			
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	

Figure 3: Landing procedure as per Jabiru owner's manual. (Source: Jabiru J400)

Late or Rapid Round-out (Source: FAA-H-8083-3A)

Starting the round out too late or pulling the elevator control back too rapidly to prevent the airplane from touching down prematurely can impose a heavy load factor on the wing and cause an accelerated stall. Suddenly increasing the angle of attack and stalling the airplane during a round out is a dangerous situation since it may cause the airplane to land extremely hard on the main landing gear and then bounce back into the air. As the airplane contacts the ground, the tail will be forced down very rapidly by the back-elevator pressure and by inertia acting downward on the tail. Recovery from this situation requires prompt and positive application of power prior to occurrence of the stall. This may be followed by a normal landing if sufficient runway is available—otherwise the pilot should EXECUTE A GO-AROUND immediately. If the round out is late, the nose wheel may strike the runway first, causing the nose to bounce upward. No attempt should be made to force the airplane back onto the ground; a GO-AROUND should be executed immediately.

Findings

1. Personnel Information

- 1.1 The pilot had a Private Pilot Licence (PPL) that was initially issued on 20 March 2020. The PPL was renewed on 23 May 2023 with an expiry date of 31 May 2025. The pilot had flown a total of 78.7 hours on this aircraft type.
- 1.2 The pilot was issued a Class 2 aviation medical certificate on 29 January 2024 with an expiry date of 31 January 2029 with no restrictions.

2. Aircraft Information

- 2.1 The last annual inspection of the aircraft was conducted and certified on 29 August 2024 at 1278.4 airframe hours. The accident occurred at 1291.4 airframe hours, which meant that the aircraft had flown a further 13 hours since the last inspection. The aircraft was issued a Certificate of Release to Service (CRS) with an expiry date of 31 October 2025 or at 1378.4 airframe hours, whichever occurs first.

2.2	The aircraft had a valid Authority-to-fly (ATF) Certificate that was issued by the Regulator on 28 August 2024 with an expiry date of 31 October 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 13 January 2010.
2.4	The prevailing weather conditions did not contribute to the accident as the wind was 280° at 10 kts. The pilot stated in the questionnaire that the aircraft's speed was 65 kts and she flared late. The full-flap configuration requires more power to arrest the sink rate of the aircraft during the flare.
Probable Cause(s)	
The pilot flared late during landing which resulted in the nose gear impacting the ground hard, followed by the propeller strikes on the ground.	
Contributing Factor(s)	
None.	
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**