

LIMITED OCCURRENCE INVESTIGATION REPORT – FINAL

Reference Number	CA18/2/3/10302						
Classification	Accident	Date	05 May 2023		Time	0815Z	
Type of Operation	Private (Part 94)						
Location							
Place of Departure	Wag-n-Bietjie Game Safaris, 22nm south-east of FAKM, Northern Cape Province		Place of Intended Landing		Graaf-Reinet (FAGR) Aerodrome, Eastern Cape Province		
Place of Occurrence	Runway 31, Wag-n-Bietjie Game Safari, 22nm south-east of FAKM, Northern Cape Province						
GPS Co-ordinates	Latitude	29°03'08.9" S	Longitude	025°04'36.8" E	Elevation	3324 ft	
Aircraft Information							
Registration	ZU-EWU						
Make; Model; S/N	Rans; S-6 Coyote II (Serial Number: 02061726)						
Damage to Aircraft	Substantial		Total Aircraft Hours	580.3			
Pilot-in-command							
Licence Type	National Pilot Licence (NPL) A		Gender	Male		Age	73
Licence Valid	Yes	Total Hours	2000		Total Hours on Type	390.3	
Total Hours 30 Days	3.24		Total Flying on Type Past 90 Days		22.0		
People On-board	1 + 1	Injuries	0	Fatalities	0	Other (on ground)	0
What Happened							
<p>On Friday morning, 5 May 2023, a pilot and a passenger on-board a Rans S6S Coyote II aircraft with registration ZU-EWU took off on a private flight from Wag-n-Bietjie Game Safaris, located 22 nautical miles (nm) south-east of Kimberly (FAKM) in the Northern Cape province to Graaf-Reinet (FAGR) Aerodrome in the Eastern Cape 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.</p> <p>In preparation for the flight, the pilot reported that he conducted the pre-flight checks on the aircraft, and no anomalies were noted. The pilot selected one notch of flaps for take-off upon reaching the threshold of Runway (RWY) 31. During the ground roll, the aircraft drifted off to the left of the runway. According to the pilot, the aircraft's airspeed was slow to 'come alive'. After rotation, the pilot was unable to correct or recover the aircraft from drifting due to the crosswind that was gusting at the time. The left wing stalled, and the nose wheel ran into one of the animal burrows on the left side of RWY31. This caused the aircraft to nose over before it came to rest in an inverted attitude on the field of grass. The aircraft sustained substantial damage to the nose gear strut, propeller, vertical stabiliser, and fuselage. The pilot and the passenger disembarked from the aircraft uninjured.</p>							



Figure 1: A view of the accident site. (Source: Google Earth)



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

The weather report below was sourced from the South African Weather Service (SAWS) recorded for FAKM weather station on 5 May 2023 at 0800Z:

- FAKM 050800Z 01007KT CAVOK 21/09 Q1021=

Wind Direction	010	Wind Speed	07 kt	Visibility	10km
Temperature	21°C	Cloud Cover	CAVOK	Cloud Base	CAVOK
Dew Point	09°C	QNH	1021 hPa		

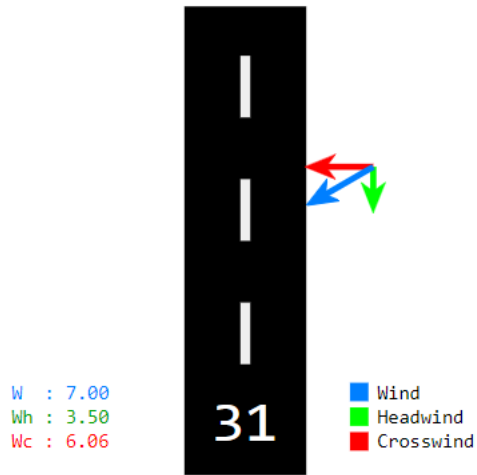


Figure 3: Crosswind component calculation. (Source: E6BX.com)



Figure 4: The animal burrow next to the RWY31.

Airspeeds for normal operations

Unless otherwise noted, the following speeds are based on a maximum weight of 1100 lbs (499 kg) and may be used for any lesser weight.

	IAS
Best Rate of Climb Speed (V_y)	75 MPH (120 km/h)
Best Angle of Climb Speed (V_x)	55 MPH (88 km/h)
Approach Speed:	
Flaps UP	55 MPH (88 km/h)
Flaps DOWN	50 MPH (80 km/h)
Rotation Speeds	35 MPH (56 km/h)
Maximum Demonstrated Crosswind Velocity	20 MPH (32 km/h)
Maximum Flap Speed	65 MPH (105 km/h)

Figure 5: Airspeeds for normal operations. (Pilot's Operating Handbook)

Findings

The Pilot

- The pilot was initially issued a National Pilot Licence (NPL) on 30 April 1990. The licence was reissued on 14 May 2021 with an expiry date of 13 May 2023.
- The pilot had a Class 4 medical certificate that was issued on 23 August 2022 with an expiry date of 31 August 2024 and with a restriction to wear suitable corrective lenses. The pilot was adequately licensed and experienced to conduct the flight.

Aircraft information

- The aircraft had an Authority to Fly (ATF) certificate that was initially issued on 15 July 2019. The ATF was renewed on 5 August 2022 with an expiry date of 31 July 2023. The aircraft's Certificate of Registration (C of R) was issued on 9 October 2018.
- The last annual inspection on the aircraft was certified on 27 June 2022, and the Certificate of Release to Service (CRS) was issued on 27 June 2022 at 507.4 hours with an expiry date of 27 June 2023 or at 607.4 airframe hours, whichever comes first.

- The aircraft was maintained by an approved person (AP) with an AP certificate that was issued by the Regulator (SACAA) on 1 August 2021 with an expiry date of 31 July 2022.
- The aircraft drifted to the left of RWY31 during the take-off run due to the crosswind from the right which was at 6 knots. The nose wheel ran into an animal burrow, which caused the aircraft to nose over before it came to rest in an inverted attitude. The pilot and the passenger were not injured. The aircraft sustained substantial damage to the nose gear strut, propeller, fuselage and vertical stabiliser during the accident sequence.
- The aircraft's maximum demonstrated crosswind component is 17.2786 kt (20 miles per hour).

Runway information

- The runway used was RWY31 which is unpaved (gravel). The runway is 1200 metres long and 13 metres wide.

Probable Cause

The aircraft rotated at low airspeed which led to a stall and, thus, caused the aircraft's nose gear to impact the runway. As a result, the pilot lost directional control; this was followed by the nose wheel which ran into an animal burrow and, thus, the aircraft nosed over.

Contributing Factor

An easterly crosswind.

Safety Action(s)

None.

Safety Message

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

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