

LIMITED OCCURRENCE INVESTIGATION REPORT – FINAL

Reference Number	CA18/3/2/1443						
Classification	Serious Incident	Date	25 March 2024	Time	1200Z		
Type of Operation	Training (Part 141)						
Location							
Place of Departure	Private Farm, East of Khowa (Elliot), Eastern Cape Province		Place of Intended Landing	Private Farm, East of Khowa (Elliot), Eastern Cape Province			
Place of Occurrence	Private farm approximately 11 nautical miles east of Khowa (Elliot), Eastern Cape Province						
GPS Co-ordinates	Latitude	31° 22'56.8" S	Longitude	028° 03'25" E	Elevation	5 065 feet	
Aircraft Information							
Registration	ZS-JDB						
Make; Model; S/N	Robinson; R44 Raven II (Serial Number: 11881)						
Damage to Aircraft	Minor		Total Aircraft Hours	3938.0			
Pilot-in-command							
Licence Type	Commercial Pilot Licence (CPL) Helicopter		Gender	Male		Age	23
Licence Valid	Yes	Total Hours	1 400		Total Hours on Type	700	
Total Hours 30 Days	65.4		Total Flying on Type Past 90 Days	150.3			
People On-board	2 + 1	Injuries	0	Fatalities	0	Other (on ground)	0
What Happened							
<p>On Monday, 25 March 2024, two pilots (Instructor and pilot) and a passenger on-board a Robinson R44 helicopter with registration ZS-JDB took off from a private farm, 11 nautical miles east of Khowa (Elliot) in Eastern Cape province, with the intention to land back at the same farm. Visual meteorological conditions (VMC) by day prevailed at the time of the flight which was conducted under the provisions of Part 141 of the Civil Aviation Regulations (CAR) 2011 as amended.</p> <p>The instructor reported that after the pilot landed the helicopter at the landing zone (LZ) to pick-up the passenger, he noticed that the helicopter rotor downwash created dust, and the main rotor made contact with bushes in the proximity. The instructor took over the control of the helicopter from the pilot and lifted off. Once established in the hover, he raised the collective to move away from the dusty zone. During the slow forward transition, the low rotor RPM aural warning horn sounded. Thereafter, the instructor elected to land the helicopter on the road ahead of the helicopter path and instructed the passenger to disembark for a better balance to manoeuvre out of a confined space and move to a more suitable take-off area. After repositioning to a better pick-up area, the passenger boarded the helicopter again and they took off to their destination. During a post-flight inspection,</p>							

the pilots realised that the main rotor blades sustained damage after impacting some shrubs (in the bush) during the first transition and no person was injured.

The incident occurred during day light at Global Positioning System (GPS) co-ordinates determined to be 31°22'56.8" S 028°03'25" E, at an elevation of 5 065 feet (ft).



Figure 1: A view of the incident site. (Source: Pilot)



Figure 2: A file picture of ZS-JDB aircraft. (Source: Pilot)

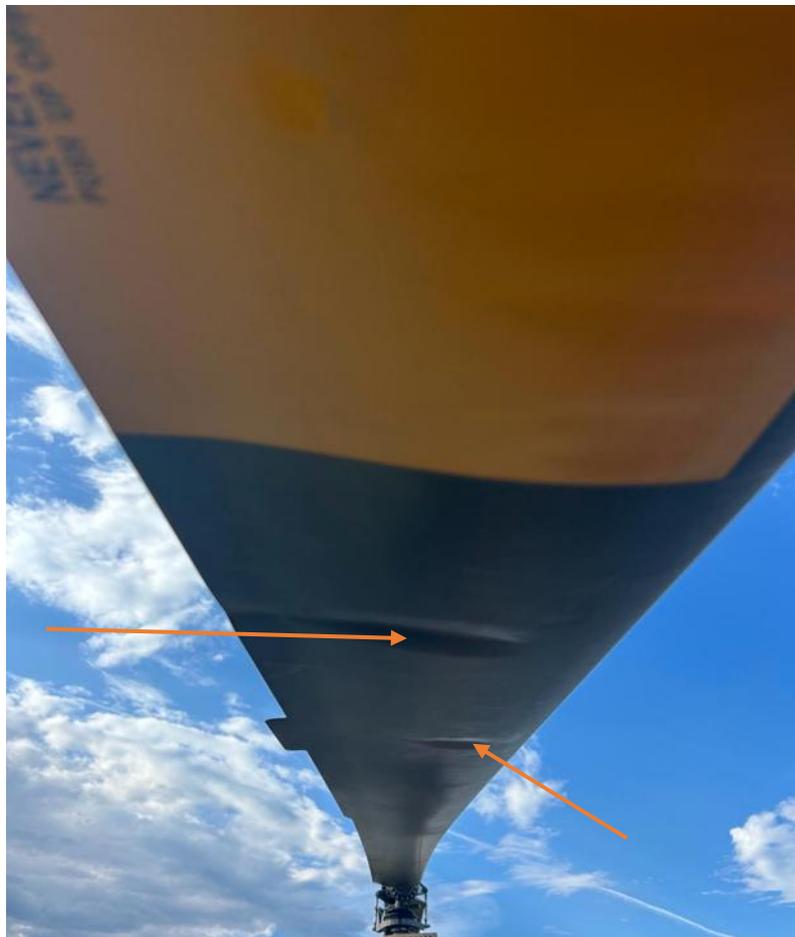


Figure 3: Orange arrows showing damage to the main rotor. (Source: Pilot)

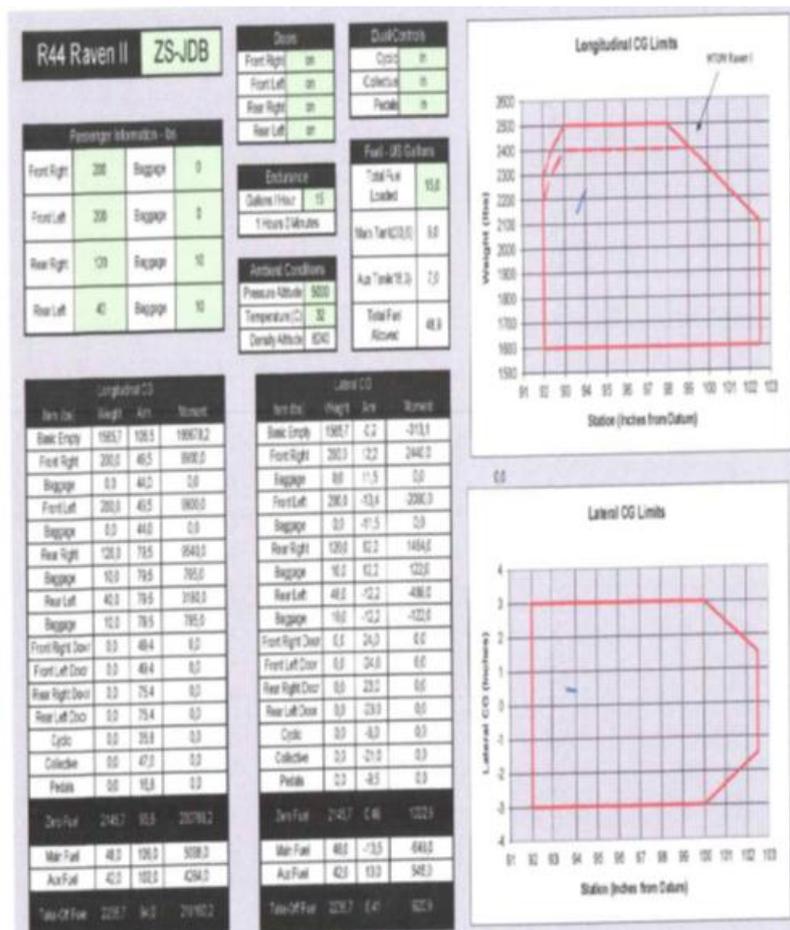


Figure 4: The mass and balance calculations at the time of the incident. (Source: Pilot)

Findings

Personnel Information

1. The pilot had a Commercial Pilot Licence (CPL) that was initially issued on 13 December 2021. The licence was reissued on 7 November 2023 with an expiry date of 31 December 2024. The pilot had a Class 2 test pilot rating and a Grade 2 instructor rating. The helicopter type was endorsed on the pilot's licence.
2. The pilot had a Class 1 aviation medical certificate that was issued on 5 January 2024 with an expiry date of 31 January 2025 and with no restrictions. The pilot was adequately licensed to conduct the flight.

3. The pilot undergoing training had a Private Pilot Licence (PPL) that was initially issued on 23 November 2022. The licence was reissued on 8 September 2023 with an expiry date of 30 November 2025. The helicopter type was endorsed on his licence.
4. The pilot had a Class 2 aviation medical certificate that was issued on 8 June 2021 with an expiry date of 30 June 2026 and with no restrictions.

Aircraft information

5. The aircraft had a valid Certificate of Airworthiness (C of A) that was initially issued on 18 November 2021. The C of A was renewed on 5 November 2023 with an expiry date of 17 November 2024. The aircraft's Certificate of Registration (C of R) was issued to the present owner on 1 December 2020.
6. The last mandatory periodic inspection of the aircraft was conducted and certified on 5 February 2024. The Certificate of Release to Service (CRS) was issued on 23 February 2024 at 3924.5 airframe hours with an expiry date of 22 February 2025 or at 4024.5 airframe hours, whichever comes first.
7. The aircraft was maintained by an approved aircraft maintenance organisation (AMO) with an AMO Certificate that was issued by the Regulator (SACAA) on 20 November 2023 with an expiry date of 30 November 2024.
8. The training organisation was issued an Approved Training Organisation (ATO) Certificate by the Regulator on 18 December 2023 with an expiry date of 30 September 2024.
9. The main rotor impacted a bush near the landing zone and no person on was injured during the incident.

Probable Cause

The main rotor blades impacted a bush near the landing zone.

Contributing Factors

Inadequate or no pre-flight planning.

Safety Action(s)

None.

Safety Message

In the interest of safety and to avoid injury or damage to property, pilots are advised to always conduct thorough pre-flight planning and identify all possible flight hazards and obstacles.

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**