

PRELIMINARY ACCIDENT REPORT

Accident and Incident Investigations Division

Accident
- Preliminary Report -
AIID Ref No: CA18/2/3/10614



Figure 1: A file picture of the ZS-DLF helicopter. (Source: Operator)

Description:

On Monday, 10 November 2025, a pilot aboard a Robinson R22 Beta II helicopter with registration ZS-DLF took off on a crop-spraying detail from Patensie Farm Airstrip in Eastern Cape province to Roodegrond Citrus Farm in the same province. The pilot was spraying the crops in a south-easterly direction facing the morning sun when the main rotor mast impacted a 1000-Volt electric power line. The helicopter crashed between the rows of citrus bushes. The pilot was fatally injured, and the helicopter was destroyed during the accident sequence.

Occurrence Details

Reference Number : CA18/2/3/10614
Occurrence Category : Accident (Category 2)
Type of Operation : Agricultural Operations (Part 137)
Name of Operator : Rotorworx Aviation
Aircraft Registration : ZS-DLF
Aircraft Make and Model : Robinson R22 Beta II
Nationality : South African
Place : Roodegrond Citrus Farm near Patensie, Eastern Cape Province
Date and Time : 10 November 2025 at 0545Z
Injuries : One fatal
Damage : Destroyed

Purpose of the Investigation

In terms of Regulation 12.03.1 of the Civil Aviation Regulations (CAR) 2011, 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.

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.

Investigation Process

The Accident and Incident Investigations Division (AIID) was notified of the occurrence involving a Robinson R22 Beta II helicopter which occurred at Roodegrond Citrus Farm near Patensie on 10 November 2025 at 0545Z. The occurrence was classified as an accident according to the CAR 2011 Part 12 and the International Civil Aviation Organisation (ICAO) STD Annex 13 definitions.

The AIID has appointed an investigator-in-charge to conduct a full investigation. The investigators were dispatched to the accident site. A notification was sent to the States of Registry, Operator, and Design and Manufacturer in accordance with the CAR 2011 Part 12 and the ICAO Annex 13 Chapter 4. The States did not appoint an accredited representative and/or advisor. The AIID will lead the investigation and issue the final report of this accident in accordance with the CAR 2011 Part 12 and the ICAO Annex 13.

The information contained in this preliminary report is derived from the information gathered during the on-going investigation into the occurrence. Later, an interim or final report may contain altered information in case new evidence is found during the on-going investigation that requires changes to the information depicted in this report.

The AIID reports are made available to the public at:

<https://www.caa.co.za/industry-information/accidents-and-incidents/>

Notes:

- Whenever the following words are mentioned in this report, they shall mean the following:*
Accident — this investigated accident
Helicopter — the Robinson R22 helicopter involved in this accident
Investigation — the investigation into the circumstances of this accident
Pilot — the pilot involved in this accident
Report — this accident report

- 2. Photos and figures used in this report were taken from different sources and may have been adjusted from the original for the sole purpose of improving clarity of the report. Modifications to images used in this report were limited to cropping, magnification, file compression; or enhancement of colour, brightness, contrast; or addition of text boxes, arrows, or lines.*

Disclaimer

This report is produced without prejudice to the rights of the South African Civil Aviation Authority (SACAA), which are reserved.

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Abbreviation	Description
°	Degrees
°C	Degrees Celsius
A/C	Aircraft
ACCID	Accident
AGL	Above Ground Level
AIID	Accident and Incident Investigations Division
AMO	Aircraft Maintenance Organisation
CAA	Civil Aviation Authority
CAR	Civil Aviation Regulations
CAVOK	Ceiling and Visibility OK
CVR	Cockpit Voice Recorder
C of A	Certificate of Airworthiness
C of R	Certificate of Registration
CRS	Certificate of Release to Service
FAPE	Port Elizabeth Airport
FDR	Flight Data Recorder
ft	Feet
GPS	Global Positioning System
hPa	Hectopascal
IIC	Investigator-in-Charge
kt	Knots
Lb	Pounds
L	Litres
m	Metres
METAR	Meteorological Aerodrome Report
MHz	Megahertz
nm	Nautical Mile
POH	Pilot's Operating Handbook
SACAA	South African Civil Aviation Authority
SAWS	South African Weather Service
TBO	Time Between Overhaul
UTC	Co-ordinated Universal Time
VHF	Very High Frequency
VMC	Visual Meteorological Conditions
QNH	Altitude Above Mean Sea Level
Z	Zulu (Term for Universal Co-ordinated Time - Zero Hours Greenwich)

1. FACTUAL INFORMATION

1.1. History of Flight

- 1.1.1. On Monday morning 10 November 2025, a pilot on-board a Robinson R22 Beta II helicopter with registration ZS-DLF was engaged in a pest-control operation flight when the accident occurred. The helicopter took off from Patensie Farm Airstrip, Eastern Cape province, to Roodegrond Citrus Farm in the same province, with the intention to return to the same airstrip. The flight was conducted under visual meteorological conditions (VMC) by day and under the provisions of Part 137 of the Civil Aviation Regulations (CAR) 2011, as amended.
- 1.1.2. The first flight of the day was conducted by a different pilot who reported no anomalies with the helicopter; the flight duration was 1.2 hours. After the first flight, this pilot routed back to Patensie Farm Airstrip to refuel and upload the pest control moths. He stated that he was joined by the accident pilot when conducting a pre-flight check, as well as when refuelling and loading the pest control moths.
- 1.1.3. The accident pilot departed from Patensie Farm Airstrip and routed north-west in the direction of Roodegrond Citrus Farm to commence with the crop-spraying detail. She sprayed a few lines in a north-westerly direction and back (in the opposite direction). At approximately 0615Z during the spray run in a south-easterly direction facing the morning sun, the main rotor mast impacted a 1000-Volt power line that ran across the flight path from a western hill.
- 1.1.4. The main rotor severed the tail boom, and the two main rotor blades detached from the root hub. The helicopter crashed to the ground, left skid first; it came to rest on its right side between the citrus rows, approximately 37 metres (m) from the point of impact with the electric power line. The pilot was fatally injured, and the helicopter was destroyed during the accident sequence.
- 1.1.5. The accident occurred at Roodegrond Citrus Farm near Patensie at Global Positioning System (GPS) co-ordinates determined to be 33°41'1" South 024°44'19" East, at an elevation of 192 feet (ft).



Figure 2: An aerial view of the approximate accident site. (Source: Google Earth)

1.2. Injuries to Persons

Injuries	Pilot	Crew	Pass.	Total On-board	Other
Fatal	1	-	-	1	-
Serious	-	-	-	-	-
Minor	-	-	-	-	-
None	-	-	-	-	-
Total	1	-	-	1	-

Note: Other means people on the ground.

1.2.1. The pilot was fatally injured.

1.3. Damage to Aircraft

1.3.1. The helicopter was destroyed during the accident sequence.



Figure 3: An elevated view of the helicopter at the accident site.

1.4. Other Damage

- 1.4.1. The privately owned overhead 1000V electric power line spanning 7.2m above ground level was damaged. The power line supplied electricity to water pumps at Patensie Citrus Farm.



Figures 4 and 5: The damaged power line.

1.5. **Personnel Information**

Nationality	South African	Gender	Female	Age	43
Licence Type	Commercial Pilot Licence (CPL) Helicopter				
Licence Valid	Yes	Type Endorsed	Yes		
Ratings	Instructor Grade 3, Night, Agricultural ratings				
Medical Expiry Date	30 September 2026				
Restrictions	None				
Previous Accidents	None				

Note: Previous accidents refer to past accidents the pilot was involved in, when relevant to this accident.

Flying Experience:

Total Hours	473.3
Total Past 24 Hours	0.9
Total Past 7 Days	6.6
Total Past 90 Days	35
Total on Type Past 90 Days	35
Total on Type	473.3

1.5.1. The pilot had a Commercial Pilot Licence (CPL) Helicopter that was initially issued on 8 October 2024 in accordance with (IAW) Part 61 of the CAR 2011. The licence was revalidated on 17 October 2025 with an expiry date of 16 October 2026.

1.5.2. The pilot had a Class 1 aviation medical certificate that was issued on 3 September 2025 with an expiry date of 30 September 2026 with no medical restrictions.

1.6. **Helicopter Information** (Source: <https://www.robinsonheli.com/helicopters/r22-beta-ii>)

1.6.1. *The Robinson R22 Beta II is a two-seat, two blades main rotor-equipped helicopter with a piston engine. The R22 Beta II incorporates a Lycoming O-360 four-cylinder, carburetor equipped engine fuelled with 100L grade aviation gasoline. This 145 hp engine is derated to 131 horsepower (hp) for five minutes at take-off and 124 hp for continuous operation. A powerful engine, a lightweight steel-tube airframe, and aerodynamic shape gives the R22 a cruise speed of up to 90 knots (kts) and an average fuel consumption of only 7-10 gallons per hour. The R22 seats two adults and occupants have panoramic views due to R22’s large windows. Acoustical foam lowers cabin noise. A heavy-duty muffler and low tail-rotor tip speed lessen flyover noise.*

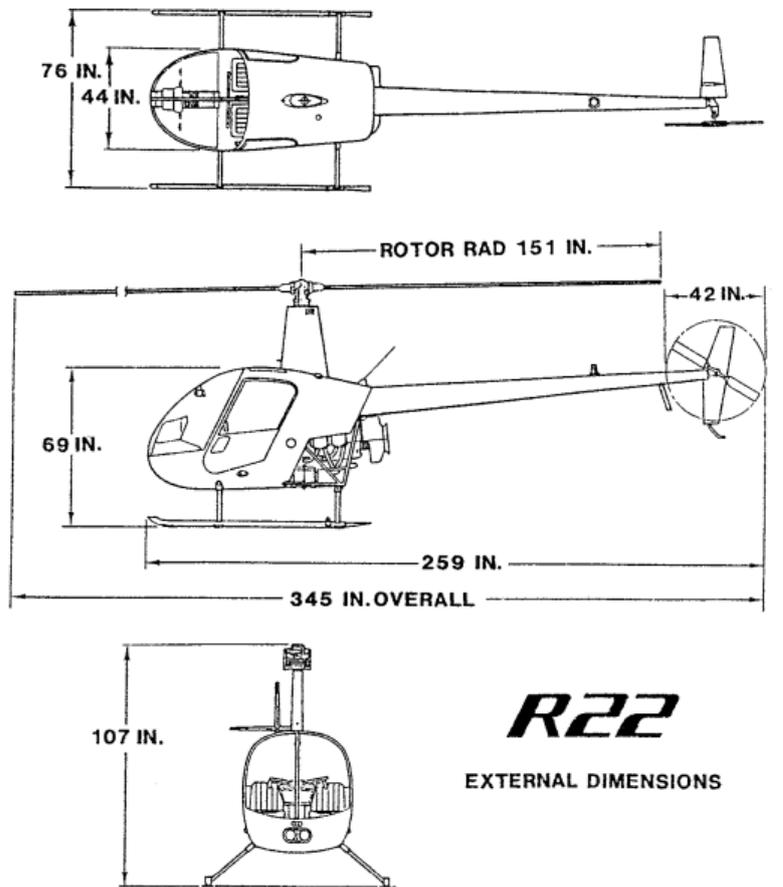


Diagram 1: The Robinson R22 exterior dimensions. (Source: Pilot's Operating Handbook [POH])

Airframe:

Manufacturer/Model	Robinson R22 Beta II	
Serial Number	4149	
Year of Manufacture	2007	
Total Airframe Hours (At Time of Accident)	5 387.2	
Last Inspection (Date & Hours)	7 November 2025	5 384.0
Hours Since Last Inspection	3.2	
CRS Issue Date	29 September 2025	
C of A (Issue Date & Expiry Date)	27 February 2025	28 February 2026
C of R (Issue Date) (Present Owner)	24 June 2019	
Type of Fuel Used	Avgas	
Operating Category	Standard Normal Category (Rotorcraft)	
Previous Accidents	Hard landing on 21 December 2013 at 3314.0 airframe hours	

Note: Previous accidents refer to past accidents the aircraft was involved in, when relevant to this accident.

Engine:

Manufacturer/Model	Lycoming
Serial Number	L-39052-36A
Part Number	O-360-J2A
Hours Since New	5 192.3
Hours Since Overhaul	2 063.5

1.6.2. The helicopter had a Certificate of Release to Service (CRS) that was issued on 29 September 2025 with an expiry date of 28 September 2026 or at 5 390.4, whichever occurs first.

1.7. Meteorological Information

1.7.1. The weather information below was obtained from the Meteorological Aerodrome Report (METAR) that was issued by the South African Weather Service (SAWS), recorded at Port Elizabeth Airport (FAPE) on 10 November 2025 at 0600Z. The accident site is 40 nautical miles (nm) west of FAPE

FAPE 100600Z 07009KT 9999 FEW008 20/19 Q1014 NOSIG=

Wind Direction	070°	Wind Speed	9 kt	Visibility	10 km
Temperature	20°C	Cloud Cover	FEW	Cloud Base	800 ft
Dew Point	19°C	QNH	1014 hPa		

1.8. Aids to Navigation

1.8.1. The helicopter was equipped with standard navigational equipment as approved by the Regulator (SACAA). There were no records indicating that the navigational equipment was unserviceable prior to the flight.

1.9. Communication

1.9.1. The helicopter was equipped with a standard communication system as approved by the Regulator. There were no recorded defects with the communication system prior to the flight.

1.10. **Aerodrome Information**

1.10.1. The accident occurred at Roodegrond Citrus Farm near Patensie, Eastern Cape province. Therefore, it did not occur at an aerodrome.

1.11. **Flight Recorders**

1.11.1. The helicopter was neither equipped with a flight data recorder (FDR) or a cockpit voice recorder (CVR), nor was it required by regulation to be fitted to the helicopter type.

1.12. **Wreckage and Impact Information**

1.12.1. The helicopter's main rotor mast impacted the power line whilst flying in a south-easterly direction. As a result, the main rotor severed the tail boom, and the two main rotor blades detached from the root hub. The helicopter crashed to the ground, left skid first; it came to rest on its right side between rows of citrus bushes, approximately 37m from the point of impact with the electric power line.

1.12.2. The bladder tanks still contained fuel at the accident site although the quantity could not be determined. The fuel was clean and free of contaminants. There were no noted pre-impact anomalies; all fractures were consistent with impact forces. All airframe components and controls were accounted for post-accident.



Figure 6: A frontal view of the helicopter with the tail rotor in the background (yellow arrow).



Figure 7: An elevated view of the accident site.

1.13. Medical and Pathological Information

1.13.1. To be discussed in the final report.

1.14. **Fire**

1.14.1. There was no evidence of a pre- or post-impact fire.

1.15. **Survival Aspects**

1.15.1. The accident was considered not survivable as the cockpit sustained substantial impact damage during the accident sequence.

1.16. **Tests and Research**

1.16.1. To be discussed in the final report.

1.17. **Organisational and Management Information**

1.17.1. The helicopter was operated under the provisions of Part 137 of the Civil Aviation Regulations (CAR) 2011, as amended.

1.17.2. The operator had an Air Operating Certificate (AOC) that was issued by the Regulator on 6 May 2025 with an expiry date of 31 May 2026. The helicopter was included in the operator's Operations Specifications.

1.17.3. The aircraft was maintained by an approved aircraft maintenance organisation (AMO) with an AMO Certificate that was issued by the Regulator on 2 December 2024 and expiring on 31 December 2025.

1.18. **Additional Information**

1.18.1. To be discussed in the final report.

1.19. **Useful or Effective Investigation Techniques**

1.19.1. None.

2. **FINDINGS**

2.1. **General**

From the available evidence, the following preliminary findings were made with respect to this accident. These shall not be read as apportioning blame or liability to any organisation or individual.

To serve the objective of this investigation, the following sections are included in the conclusions heading:

- **Findings** — are statements of all significant conditions, events, or circumstances in this accident. The findings are significant steps in this accident sequence, but they are not always causal or indicate deficiencies.

2.2. Findings

- 2.2.1 The pilot had a Commercial Pilot Licence (CPL) that was initially issued on 8 October 2024 in accordance with (IAW) Part 61 of the CAR 2011. The licence was revalidated on 17 October 2025 with an expiry date of 16 October 2026.
- 2.2.2 The pilot had a Class 1 aviation medical certificate that was issued on 3 September 2025 with an expiry date of 30 September 2026 with no medical restrictions.
- 2.2.3 The helicopter was issued a Certificate of Registration (C of R) on 24 June 2019 under the current owner. The helicopter's Certificate of Airworthiness (C of A) was initially issued on 8 February 2019; the latest C of A had an expiry date of 28 February 2026. The operator had an Air Operating Certificate (AOC) that was issued by the Regulator on 6 May 2025 with an expiry date of 31 May 2026.
- 2.2.4 The helicopter was maintained by an approved aircraft maintenance organisation (AMO) with an AMO Certificate that was issued by the Regulator on 2 December 2024 and expiring on 31 December 2025.
- 2.2.5 The last mandatory periodic inspection (MPI) of the helicopter was conducted on 7 October 2024 at 5 384.0 hours. The Certificate of Release to Service (CRS) was issued on 29 September 2025 with an expiry date of 28 September 2026 or at 5 390.4, whichever occurs first. The helicopter was flown a further 3.2 hours after the latest MPI.
- 2.2.6 The pilot was engaged in a crop-spray detail at Roodegrond Citrus Farm and, during the south-easterly sector run, the main rotor mast impacted a 1000V power line. The main rotor blades severed the tail boom and, subsequently, the helicopter crashed to the ground approximately 37m from the point of impact with the power line. The pilot was fatally injured; the helicopter was destroyed during the accident sequence.

3 ON-GOING INVESTIGATION

- 3.1. The AIID investigation is on-going, and the investigator will investigate other aspects of this accident which may or may not have safety implications.

4 SAFETY RECOMMENDATIONS

4.1. General

The safety recommendations listed in this report are proposed according to paragraph 6.8 of Annex 13 to the Convention on International Civil Aviation and are based on the conclusions listed in heading 3 of this report. The AIID expects that all safety issues identified by the investigation are addressed by the receiving States and organisations.

4.2 Safety Recommendation/s

4.2.1 None.

5 APPENDICES

5.1. None.

This report is issued by:

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