LIMITED OCCURRENCE INVESTIGATION REPORT – FINAL

Reference Number	CA18/2/3/10626					
Classification	Accident	**Date**	29 December 2025	**Time**	0330Z	
Type of Operation	Aerial Work Operations (Part 137)					
Location						
Place of Departure	Spitsbak Citrus Farm near Hankey, Eastern Cape Province	Place of Intended Landing	Spitsbak Citrus Farm near Hankey, Eastern Cape Province			
Place of Occurrence	Spitsbak Citrus Farm near Hankey, Eastern Cape Province					
GPS Co-ordinates	Latitude	33°53'54.21" S	Longitude	024°55'12.38" E	Elevation	82 feet
Aircraft Information						
Registration	ZS-ROM					
Make; Model; S/N	Robinson, R44 Raven II (Serial Number 10093)					
Damage to Aircraft	Substantial	Total Aircraft Hours	1 217.8			
Pilot-in-command						
Licence Type	Commercial Pilot Licence	Gender	Male	Age	50	
Licence Valid	Yes	Total Hours	6 068.3	Total Hours on Type	2 403.2	
Total Hours 30 Days	23.6	Total Flying on Type Past 90 Days	23.6			
People On-board	1 + 0	**Injuries**	1	**Fatalities**	0	**Other (on ground)**	0

What Happened

On Monday morning, 29 December 2025, a pilot on-board a Robinson R44 Raven II helicopter registered ZS-ROM took off on an agricultural spraying operation at Spitsbak Citrus Farm near Hankey in Eastern Cape province with the intention to return to the same farm. The flight was conducted under visual meteorological conditions (VMC) and under the provisions of Part 127 of the Civil Aviation Regulations (CAR) 2011, as amended.

The loading zone for the spray solution was adjacent to the orchard scheduled to be sprayed. The orange trees in the orchard were covered with white netting that were elevated approximately 26 feet (ft) (8m) above ground level (AGL). The pilot was on his seventh spray load of the morning, flying at a height of approximately 30ft AGL when the helicopter impacted three 10-kilovolt (kV) electrical conductors (cables) on its windshield side. Two of the cables were severed; the third cable was thrown upwards, and it entangled around the main rotor mast's bottom part (where it meets the fuselage). Consequently, it restricted control of the helicopter as it jammed the two front-positioned control rods that connect to the lower swash plate assembly. The pilot stated that he still had some control of the helicopter after the wire (cable) strike. However, he lost control of the helicopter because he ran out of cyclic control, which was caused by the jammed control rods, and the helicopter started to roll to the right. He stated that he was unable to stop the roll and it pierced

through the netting in a nose-down attitude. He then pulled his legs up into his stomach and braced for impact. The helicopter came to rest on its right side. The pilot (seated at the right side) was wearing a helmet which prevented him from sustaining head injuries. He sustained laceration to his lower left leg and some other minor cuts and bruises due to the broken Plexiglass windscreen. Farm personnel were quick to respond to the scene; they assisted the pilot who was later taken to a medical facility. The helicopter as well as the spray booms were substantially damaged.

The pilot stated that he was aware of the wires as he had flown six times to spray the orchard without incident. Due to the white colour of the netting and the time of day (early morning), as well as the topography (sloping terrain), it became difficult to see the powerlines, which were grey in colour, above the white netting. The flight was conducted low over the netted area as the spray solution (liquid formula) was meant to drip through the netting and onto the orange trees.

The pilot further stated that he was flying with his right front door removed as he was monitoring the content level of the spray reservoir that was located on the right skid that was closest to him. Since the helicopter came to rest on its right side in a nose-down attitude, the investigator could not assess the gauge or its actual location.

Third party damage was caused to a large area of the netting, as well as to some of the orange trees which were either in direct contact with the helicopter during impact or due to debris that was scattered during the impact sequence.

The accident occurred during daylight at Global Positioning System (GPS) co-ordinates determined to be 33°53’54.21” South 024°55’12.38” East, at an elevation of 82 feet (ft).

Figure 1: An aerial view of the farm and the approximate accident site in the orchard (yellow pin). (Source: Google Earth)

Figure 2: A view of the orchard with netting.

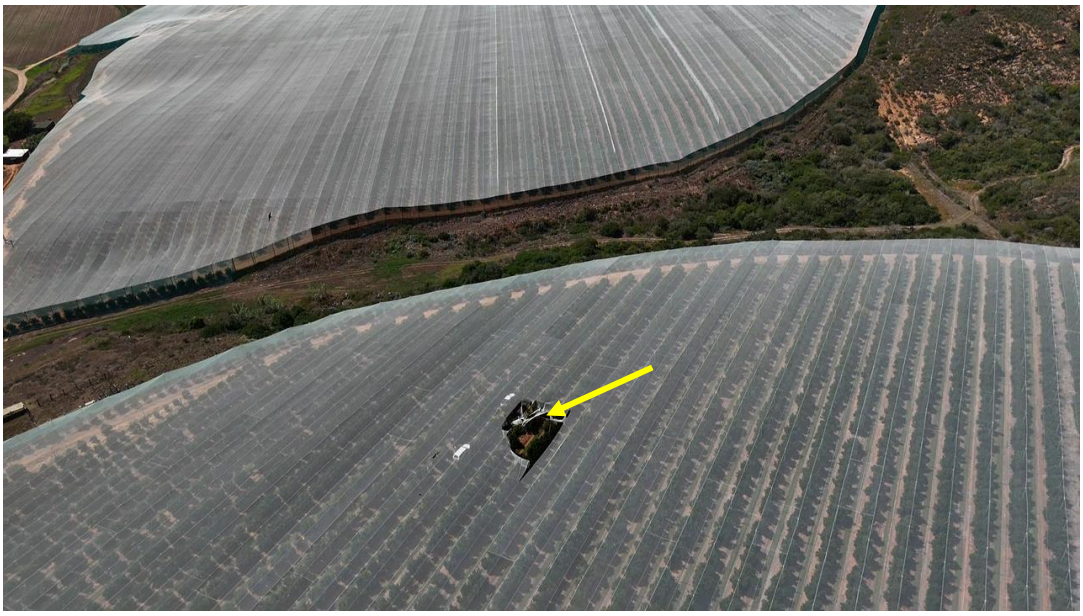

Figure 3: The damaged netting. The yellow arrow points to the helicopter under the netting.

Figure 4: A closer view of the damaged netting and the helicopter.

Figure 5: The helicopter as it came to rest on its right side and nose down.

Figure 6: The cable entangled around the main rotor mast and control rods.

Figure 7: The cable was found hooked over the horizontal stabiliser.

Figure 8: The helicopter resting on its right side.

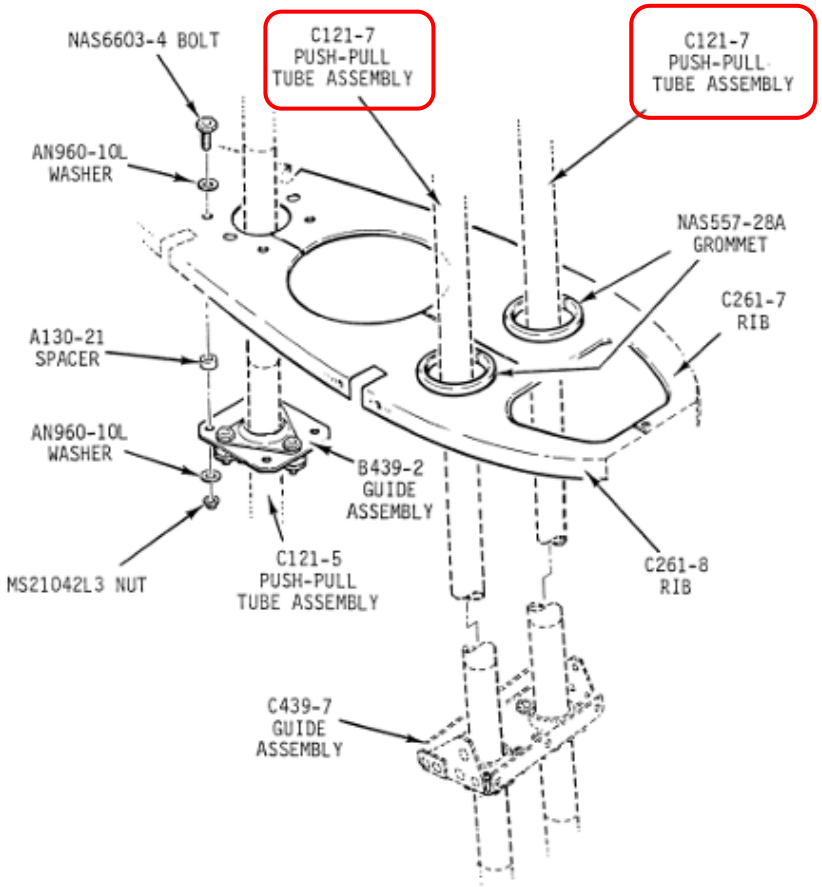

Diagram 1: Illustration of the three control rods (push-pull tubes) positioned next to the main rotor mast, where the cable was entangled (Figure 5). This caused limited (to no) movement of the two front control rods (push-pull tubes) highlighted in red.

Official Sunrise Time

(Source: https://www.timeanddate.com/sun/south-africa/port-elizabeth?month=12&year=2025)

The official sunrise time for Gqeberha was 0307Z on 29 December 2025. The accident site was 35 nautical miles (nm) north-west of the city.

Metrological Information

The weather information below was obtained from the Meteorological Aerodrome Report (METAR) that was issued by the South African Weather Service (SAWS), recorded at Sir Dawid Stuurman International Airport (FAPE) on 29 December 2025 at 0330Z. The accident site was 35nm north-west of FAPE.

FAPE 290330Z 08007KT CAVOK 19/17 Q1018 NOSIG=

Wind Direction	080°	Wind Speed	7kt	Visibility	9999m
Temperature	19°C	Cloud Cover	Nil	Cloud Base	Nil
Dew Point	17°C	QNH	1018hPa		

The weather information entered on the table below was obtained from the pilot via the pilot questionnaire.

Wind Direction	320°	Wind Speed	5kt	Visibility	9999m
Temperature	22°C	Cloud Cover	Nil	Cloud Base	Nil
Dew Point	19°C	QNH	1018hPa		

Safety Notice SN-16 of the Dangers of Wire/Cables and Powerline Strikes
(Source: Pilot's Operating Handbook, Safety Tips and Notices, Section 10

ROBINSON
HELICOPTER COMPANY

Safety Notice SN-16

Issued: Apr 84 Rev: Jun 94

POWER LINES ARE DEADLY

Flying into wires, cables, and other objects is by far the number one cause of fatal accidents in helicopters. Pilots must constantly be on the alert for this very real hazard.

* Watch for the towers; you will not see the wires in time.
* Fly directly over the towers when crossing power lines.
* Allow for the smaller, usually invisible, grounding wire(s) which are well above the larger more visible wires.
* Constantly scan the higher terrain on either side of your flight path for towers.
* Always maintain at least 500 feet AGL except during take-off and landing. By always flying above 500 feet AGL, you can virtually eliminate the primary cause of fatal accidents.

Findings

1. Personnel

1.1 The pilot had a Commercial Pilot Licence (CPL) that was initially issued by the Regulator (SACAA) on 5 August 2010 in accordance with the provisions of Part 61 of the CAR 2011, as amended. His licence was valid until 31 December 2026.

1.2 The pilot was the holder of a Class 1 aviation medical certificate that was issued on 13 October 2025 with an expiry date of 31 October 2026. He had a restriction to wear corrective lenses for defective near vision (VNL).

1.3 The pilot was familiar with the crop-spraying process and the hazards associated with it. He was flying from the right front seat, was properly restrained, and was wearing a helmet.

2. Helicopter

2.1 The last mandatory periodic inspection (MPI) of the helicopter was conducted and certified on 9 December 2025 at 1 192.2 total airframe hours. The helicopter had accumulated 25.6 hours since the last inspection.

2.2 The helicopter was issued a Certificate of Release to Service (CRS) on 9 December 2025. The certificate was valid until 1 292.2 airframe hours or 8 December 2026, whichever occurs first.

2.3 The helicopter had a Certificate of Airworthiness (C of A) that was initially issued on 26 March 2003. The C of A was revalidated with an expiry date of 30 June 2026.

2.4 The Certificate of Registration (C of R) was issued to the present owner on 24 February 2020.

2.5 The helicopter was fitted with an agricultural spray system which could be used for the application of agricultural and insect control products. This system was installed by Supplemental Type Certificate (STC) SR00286BO (spray system).

3. Metrological Information

3.1 Fine weather conditions prevailed at the time of the flight; the weather had no bearing in the accident.

4. Operator

4.1 The helicopter was operated under the provisions of Part 127 of the CAR 2011, as amended.

4.2 The operator had an Air Operator Certificate (AOC) that was issued by the Regulator (SACAA) on 6 May 2025 with an expiry date of 31 May 2026. The helicopter was duly authorised on the operator's Operations Specifications that was issued on 14 May 2025.

4.3 The approved operations manual applicable to this operator did not incorporate a procedure that pilots must follow when spraying orchards/crops that are covered with netting.

4.4 The document containing the Standard Operating Procedures (SOP) for crop spraying (operator's version) was found to be generic and contained little information about what the pilot must do and look out for whilst spraying crops. The document contained a substantial amount of information on logistical support to the helicopter (such as refuelling, landing and loading zone, ground crew responsibilities, preparation of chemicals, etc.). The document does not make any reference to spraying over orchards or vegetation covered with netting.

5. Air Service Licence

5.1 The operator was issued an Air Service Licence No. G1009 with the provision to operate in terms of a Class III (General air service licence). The operator was authorised to operate the type(s) of air service(s) G5, G8, and G10 with the category(ies) of aircraft A3 and H2.

Type of air service	
G5	Agricultural spraying
G8	Fire spotting, control, and fighting
G10	Game and livestock selection, culling, counting, and herding

Category of aircraft	
H2	Any single-engine helicopter
A3	Any aircraft, excluding a helicopter, with a maximum certified mass exceeding 2 700kg but not exceeding 5 700kg

6. Civil Aviation Regulations

6.1 Part 127 (Commercial Helicopter Operations: Passengers, Cargo, and Mail)

The operator of the helicopter was issued an AOC by the Regulator (SACAA) on 6 May 2025. However, the AOC did not indicate which Part(s) of the CAR were applicable. During

consultation with the legal department and other members from the Regulator, the investigator was advised that the AOC was issued under the provisions of Part 127 of the CAR 2011, as amended. They further stated that *"it is common cause that the AOC does not reference any part of the CAR".*

6.2 Part 128 (Helicopter Aerial Work and Certain Other Air Service Operations)

Applicability

128.01.1 (1) This Part applies to—

(a) an operator of a type-certificated helicopter registered in the Republic and operated in terms of a Class III air service licence issued either in terms of the Air Services Licensing Act of 1990

(b) any person on board a helicopter operated under this Part.

(2) Notwithstanding the provision of paragraph (1) (a) certain holders of a Class III air service licence are required to operate under Part 127.

(3) For the purposes of this Part a type-certificated helicopter, registered in another State and operated by a holder of an operating certificate issued in the Republic, shall be deemed to be registered in the Republic.

(4) The provisions of Part 91 apply mutatis mutandis to any helicopter operated under this Part.

(5) Part 137 provides additional regulations in respect of certain aerial work operations.

The operator was issued a Class III Air Service Licence as required in Part 128.01.1(1) - Applicability. The operator was operating a type-certified helicopter at the time of the accident, which was engaged in helicopter aerial work (crop spraying).

Even though Part 128 was promulgated and fully in force for type-certified helicopter aerial work, the Regulator had no systems in place to make Part 128 a standalone Part and, as a result, no operator can make an application to operate under this Part. Therefore, the current practice is that Part 128 only applies by endorsement of the AOC and not as a standalone Part.

Evident from the content of Part 128.01.1(1) to (5) is that several other Parts of the CAR are referenced; 91, 127 and 137 under this Part, which are all standalone Parts.

6.3 Part 137

Operation Over a Non-populous Area

137.02.6 Notwithstanding the provisions of Part 91, a pilot of an aircraft engaged in an agricultural or fire-fighting operation may, during or for the purposes of the operation, fly at any altitude and at any distance from an obstruction if—

(a) the operation is not conducted over a populous area;

(b) the operation is conducted without creating a hazard to persons or property on the ground; and

(c) the altitude and distance for all approaches, turns and departures are necessary for the operation.

This part of the regulation allows pilots to fly as low as they deem necessary whilst engaged in crop-spraying operations. The number one hazard associated with low flying is wires/cables or powerlines. It is, therefore, essential that pilots conduct a proper inspection for any wire/cables or powerlines before commencing with the spraying operation, especially over netted areas.

Probable Cause

The pilot impacted the powerlines during an agricultural spraying operation over a net-covered orchard, which resulted in loss of control and the resultant ground impact.

Contributing Factors

1. The white colour of the netting made it difficult for the pilot to see the grey powerlines that spanned across the netted area that covered the orchards.

2. The powerlines droop between the supporting pylons and close to the netting, which made it difficult for the pilot to see them.

3. The topography of the area where the pilot was spraying was not flat, which made the powerlines blend in.

4. The flight was early in the morning with the sun shining on the netting as it was clear sky conditions at the time, which made it difficult to see the powerlines that were not fitted with hazard identification markers.

5. The pilot's attention was diverted at certain stages during the flight as he was monitoring the spray system reservoir level, which was located on the right skid.

Safety Message

1. The number one hazard associated with low flying is wires/cables or powerlines. It is, therefore, essential that pilots conduct a proper inspection for any wires/cables or powerlines that could be a hazard or risk before commencing with crop-spraying/agricultural operations, especially over netted areas. Pilots need to be vigilant as their lives depend on it, especially when engaged in the crop-spraying operations.

Safety Recommendations

1. It is recommended to the Director of Civil Aviation that the Operations Manual of the operator involved in this accident, as well as all other helicopter operators involved in agricultural spraying operations, be revised accordingly.

   (a) The manual should contain a detailed procedure for pilots who are conducting agricultural spraying over net-covered orchards/crops, as was the case in this accident. This type of spraying is not covered in the operations manual that was approved by the Regulator (SACAA) at the time of this accident.

   (b) This type of spraying brings a new dimension to what is required from the pilot, and with it, potential risks which may not be applicable when spraying over open orchards/crops. The white netting is regarded as limiting the visibility of wires when spanned across a large area as the grey colour of the cable(s) blends in with the white netting, making it difficult for pilots to identify hazards such as wires/cables and powerlines timeously. Wire strikes remain the number one hazard associated with helicopter flying, which might result in serious injury or even death.

2. It is recommended to the Director of Civil Aviation that all AOC issued by the Regulator clearly indicate the relevant Part(s) of the CAR that are relevant to that specific operator to eliminate possible confusion as to the type of operation(s) allowed. The response from the legal department in this regard stated that *"it is common cause that the AOC does not reference any part of the CAR".* The response was not in line with the best international practices and standards.

3. It is recommended to the Director of Civil Aviation that the Regulator (SACAA) implement Part 128 as a fully operational (standalone) part of the Regulations, as it was promulgated to deal specifically with helicopter aerial work operations. Although Subpart 6 under Part 128 refers to an operating certificate, the SACAA has reportedly no systems in place to support Part 128 as a standalone Part.

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.
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This report is issued by:

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