PRELIMINARY ACCIDENT REPORT

Accident and Incident Investigations Division

Accident
- Preliminary Report -
AIID Ref No: CA18/2/3/10130

Description:

On Wednesday, 2 March 2022 at 0740Z, a pilot accompanied by two passengers boarded an Agusta-Bell 206A helicopter with registration ZS-RVP at Virginia Aerodrome (FAVG) with the intention to return to the same take-off aerodrome. This was a private flight conducted under the provisions of Part 91 of the Civil Aviation Regulations (CAR) 2011 as amended. During transition, the engine spooled down to idle and the pilot was late to react; he allowed the main rotor revolutions per minute (rpm) to decay, and the helicopter impacted the ground hard. The skids broke off during impact and the helicopter rolled over to the left. One of the passengers sustained minor injuries and was taken to hospital; she was discharged later the same day.

Occurrence Details

Reference Number	**:** CA18/2/3/10130
Occurrence Category	**:** Category 1
Type of Operation	**:** Private (Part 91)
Name of Operator	**:** Blue Bird Aviation
Aircraft Registration	**:** ZS-RVP
Aircraft Make and Model	**:** Agusta Bell 206A
Nationality	**:** South African
Place	**:** Open grass area adjacent Runway 05 at Virginia Aerodrome
Date and Time	**:** 2 March 2022 at 0743Z
Injuries	**:** One of the passengers sustained minor injuries
Damage	**:** Substantial

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) of the South African Civil Aviation Authority (SACAA) was notified of the occurrence involving an Agusta-Bell 206A which occurred at Virginia Aerodrome, KwaZulu-Natal province, on 2 March 2022 at 0809Z. The occurrence was classified as an accident according to CAR 2011 Part 12 and ICAO Annex 13 definitions.

The AIID has appointed an investigator-in-charge to conduct a full investigation. The investigators were dispatched to the accident site. Notifications were sent to the State of Registry, Operator, Design and Manufacture and in accordance with CAR 2011 Part 12 and ICAO Annex 13 Chapter 4. The States appointed an accredited representative and advisor. The AIID will lead the investigation and issue the final report in accordance with CAR 2011 Part 12 and 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:
http://www.caa.co.za/Pages/Accidents%20and%20Incidents/Aircraft-accident-reports.aspx

Notes:

1. *Whenever the following words are mentioned in this report, they shall mean the following:*
   Accident — this investigated accident
   Helicopter — an Agusta-Bell 206A 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

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Abbreviation	Description
°	Degrees
°C	Degrees Celsius
AIID	Accident and Incident Investigations Division
AMO	Aircraft Maintenance Organisation
AMSL	Above Mean Sea Level
ARCC	Aeronautical and Rescue Coordination Centre
ARFF	Airport Rescue and Fire Fighting
ASMCC	South African Mission Control Centre
ATC	Air Traffic Controller
ATNS	Air Traffic and Navigation Services
ATZ	Air Traffic Zone
C of R	Certificate of Registration
CCTV	Closed-Circuit Television
C of A	Certificate of Airworthiness
CRMA	Certificate Relating to Maintenance
CRS	Certificate of Release to Service
CVR	Cockpit Voice Recorder
DFE	Designated Flight Examiner
ERPM	Engine Revolution Per Minute
FAVG	Virginia Aerodrome
FDR	Flight Data Recorder
ft	Feet
GPS	Global Position Satellite
hPa	Hectopascal
ICAO	International Civil Aviation Organisation
kt	Knots
m	Metres
METAR	Meteorological Aerodrome Report
MPI	Mandatory Periodic Inspection
NR	Main Rotor Speed
PPL	Private Pilot Licence
PTT	Press-to-Talk
QNH	Barometric Pressure Adjusted to Sea Level
RPM	Revolutions Per Minute
RRPM	Rotor Revolution Per Minute
SACAA	South African Civil Aviation Authority
SAWS	South African Weather Service
Z	Zulu (Term for Universal Co-ordinated Time - Zero Hours Greenwich)

1. FACTUAL INFORMATION

1.1. History of Flight

1.1.1 On Wednesday, 2 March 2022 at approximately 0740Z, a pilot accompanied by two passengers on-board an Agusta-Bell 206A with registration ZS-RVP took off from Virginia Aerodrome (FAVG) in KwaZulu-Natal province with the intention to land back at the same aerodrome. The flight was intended to be a private (pleasure) flight along the north coast. The flight was conducted under the provisions of Part 91 of the Civil Aviation Regulations (CAR) 2011 as amended. Clear weather conditions prevailed at the time leading to the accident.

1.1.2 According to available information (flight folio serial number 52105), the owner of the helicopter conducted a conversion into the helicopter type on 22 December 2021 with a designated flight examiner (DFE). On 21 January 2022, another private flight was conducted with the DFE. According to the DFE, on 23 February 2022 during auto rotation, the rotor revolutions per minute (rpm) were not achieved between the threshold markings (90% to 107%). A defect was reported to the aircraft maintenance organisation (AMO) whereupon the pitch change links were adjusted. A power recovery wash was carried out by an aircraft maintenance engineer (AME); thereafter, the DFE and the owner conducted a post-maintenance flight. During the post-maintenance flight, a power assurance check (PAC) was carried out as well as auto rotation and plotting of the graph. According to the graph, the auto rotation revolutions were at 106%, which was 6% higher than normal. This was recorded in the flight folio and the helicopter was duly signed off by the AME.

1.1.3 On the day of the accident, the pilot met up with the two passengers at approximately 0640Z. The passengers were promised a pleasure flight sponsored by one of their friends. The flight was planned to take approximately 30 minutes along the north coast before returning to FAVG. One passenger was seated on the left front seat and the other was seated in the rear cabin on the right-side seat behind the pilot. The helicopter was fitted with dual flight controls (collective, cyclic and anti-torque pedals).

1.1.4 The pilot stated that on arrival, he familiarised himself with the cockpit, switched on the battery and completed all initial checks. An external power supply was used for the start-up, which was uneventful. During the first start, the pilot had problems transmitting to the tower using the cyclic press-to-talk (PTT) trigger switch. He could hear the tower but was unable to transmit. The pilot then shut down the helicopter and approached another pilot in the nearby hangar who had just landed. After the pilot from the hangar showed him where the other PPT switch was located on the cyclic, the pilot started the helicopter

again and prepared for lift-off to continue with the pleasure flight. The pilot stated that during lift-off whilst in the low hover, the engine revolutions per minute (RPM) were at 100% and torque was indicating 80%, the pressures and temperature indications were in the green. The pilot then transitioned the helicopter into forward flight but the main rotor rpm started to decay. He then checked the throttle, which he found in the open position. The rpm continued to decay. The pilot lowered the collective control stick; however, it had no effect on the engine rpm. The helicopter yawed to the left and the pilot corrected this with a right pedal movement, but the helicopter impacted the ground hard on its skid gear and rolled to the left. Once the helicopter came to rest, the pilot released his safety harness and assisted the passengers out of their harnesses and out of the helicopter. He then went back to the helicopter and closed the fuel valve. One of the people who responded to the scene disconnected the battery.

1.1.5 According to the first eyewitness, *he (eyewitness) was travelling north up the taxiway at the time and the black Bell helicopter, registered ZS-RVP, was on the pad outside Hangar 5 with the engines running. He pulled over to the left, outside Hangar 3 Legend Aviation office with the helicopter in front of him, waiting for them to take-off. The helicopter lifted to low hover and slowly taxied across the grass towards the runway and began to gain altitude. He then proceeded on the taxiway and, as he was driving up to Hangar 7, he saw (from his peripheral view) a tail boom swing up into the air and parts flying in all directions. He did not see completely what had happened, but the aircraft had done a 180 degree rotation and plummeted to the ground. He rushed to the scene to find the passengers and the pilot safely exiting the aircraft*.

1.1.6 According to the another (pilot) eyewitness 2, who assisted with identifying the PTT switch on the cyclic, *he was standing outside the hangar looking at the accident helicopter about to take-off. He stated that the take-off was normal, but during transition, he observed the nose pitching up and the engine noise changing as if the helicopter was going back to idle, the pilot did not recover until the helicopter crashed. During impact, the main rotor blades severed the tail boom. The airport fire and rescue responded to the accident site.*

1.1.7 According to air traffic control (ATC) on duty (eyewitness 3), the *ZS-RVP helicopter was given lift-off clearance on Runway 05. The wind was north-easterly at 19 knots (kts). Visibility was greater than 10 kilometres (km) with broken clouds at 2000 feet (ft). There was no other aircraft in the aerodrome traffic zone (ATZ). The ZS-RVP lifted off normally without any unusual manoeuvres. Once overhead the runway in the initial climb (estimated to be about 50-100 feet from ATC's perspective), the ZS-RVP suddenly started losing altitude and crashed on the grass, west of the runway. The crash alarm was activated immediately. There was no distress call from the ZS-RVP helicopter*.

1.1.8 The Aeronautical and Rescue Coordination Centre (ARCC) located at O.R. Tambo International Aerodrome (FAOR) confirmed that an Emergency Locator Transmitter (ELT) distress signal on frequency 406.0248 Megahertz (MHz) was received by Medium Altitude Earth Orbit Search and Rescue (MEOSAR) at 0903Z, which was unlocated. At 0907Z, a COSPAS SARSAT satellite received a distress signal with ID: HEX ID CB264C7462ABED1. At 0910Z, the South African Mission Control Centre (ASMCC) operations manager called the owner of the aircraft who stated that he had sold the helicopter; he then provided the details of the new owner. The ASMCC operations manager called the new owner but could not reach him. At 0920Z after checking his phone messages, the new owner returned the call to ASMCC and was told about the distress signal that was received. He confirmed that the ZS-RVP had crashed at FAVG and that all occupants were unharmed.

1.1.9 According to the closed-circuit television (CCTV) video footage captured by one of the camera's mounted in the hangar facing towards the south, the helicopter is seen *lifting off in a northerly direction. During transition, the helicopter yaws violently to the left with* a slight *nose up pitch, followed by a sudden loss of height. Thereafter, the main rotor blades lose momentum (increased coning angle) as they were turning very slowly. The helicopter then impacts the ground hard with its skids and the main rotor blades sever the tail boom. The helicopter then rolls to the left. Moments later, the ARFF arrives at the scene, followed by an emergency vehicle.*

1.1.10 The passenger who was seated in the front left seat was recording the pleasure flight using her cellular telephone. The cellular phone was still recording when the accident occurred; the footage was shared with the investigation team. The footage displays *the instrument panel and the left half of the outside of the helicopter. During lift-off, the fuel valve toggle switch is in the off position, the torque indicator needle is at 50%, the dual engine revolution per minute/rotor revolution per minute (ERPM/RRPM) gauge indicator is in the green arch. Moments after, two caution amber lights illuminate on the caution panel, followed by master warning lights when the torque rolls back to zero percent. The ERPM displays 65% while RRPM indicates 70% when the master warning lights illuminate. The engine sound is clearly audible. The engine could be heard spooling down shortly after the helicopter gets airborne. Thirteen seconds into the flight, the ERPM/RRPM needle rolls back, followed by a violent yaw to the left, which is corrected by a right pedal input. The low rotor aural warning sounds, and the footage ends.*

Figure 2: Arrows indicate positions of the fuel valve, torque indicator and dual gauge.

(Source: Video footage from the passenger)

Figure 3: Master warning and caution as well as an additional caution message on the panel.

(Source: Video footage from the passenger)

1.1.11 The accident occurred on the grass 3 metres (m) west of Runway 05 at FAVG in Durban, KwaZulu-Natal at Global Positioning System (GPS) coordinates determined to be 29˚ 46'14" South 031˚03'30" East at elevation of 20 feet.

Figure 4: Overlay of the accident site. (Source: Google Earth)

1.2. Injuries to Persons

Injuries	Pilot	Crew	Pass.	Total On-board	Other
Fatal	-	-	-	-	-
Serious	-	-	-	-	-
Minor	-	-	1	1	-
None	1	-	1	2	-
Total	**1**	**-**	**2**	**3**	**-**

Note: Other means people on ground.

1.2.1. The passenger seated in the rear cabin behind the pilot sustained minor injuries and was taken to hospital for a medical check-up. The passenger was discharged later the same day.

1.3. Damage to Aircraft

1.3.1. The helicopter was substantially damaged.

Figure 5: The helicopter as it came to rest. (Source: Johan Hattingh)

1.4. Other Damage

1.4.1 Small trench on the grass made by the skid gear during impact.

1.5. Personnel Information

Nationality	South African	Gender	Male	Age	54
Licence Type	Private Pilot Licence				
Licence Valid	Yes	Type Endorsed	Yes		
Ratings	None				
Medical Expiry Date	28 February 2023				
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	475.9
Total Past 24 Hours	0
Total Past 7 Days	3.3
Total Past 90 Days	112.9
Total on Type Past 90 Days	0
Total on Type	0

1.5.1. The pilot was issued a Private Pilot Licence (PPL) on 12 November 2021 with an expiry date of 30 November 2023. The pilot was issued a Class 2 medical certificate on 23 February 2022 with an expiry date of 28 February 2023 with no medical restrictions.

1.6. Aircraft Information (Source: Aircraft Flight Manual)

1.6.1. The Agusta Bell 206A model is a single pilot, five place, single turbine engine, light helicopter with two-blade semi-rigid main rotor, and a tail rotor that provides directional control. The airframe consists of semi-monocoque fuselage with a metal and fiberglass covering; an aluminium alloy monocoque tail boom that supports the vertical fin, fixed horizontal stabiliser, tail rotor and tail rotor drivetrain; and aerodynamically shaped coupling and fairings to protect all roof mounted components. The primary load-carrying structures are two built in cabin bulkheads, a vertical control tunnel from the floor to the cabin roof, and a pair of longitudinal beams in the cabin roof. Landing gear is tubular skid type made of aluminium alloy. Optional pop-out or fixed floats are available.

Airframe:

Manufacturer/Model	Agusta-Bell	
Serial Number	8217	
Year of Manufacture	1970	
Total Airframe Hours (At Time of Accident)	2 347.7	
Last Inspection (Date & Hours)	6 December 2021	2 338.1
Hours Since Last Inspection	9.6 Hobbs	
CRS Issue Date	6 December 2021	
C of A (Issue Date & Expiry Date)	16 September 2013	30 September 2022
C of R (Issue Date) (Present Owner)	15 December 2021	
Type of Fuel Used	Jet A1	
Operating Category	Part 91	
Previous Accidents	None	

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

Engine:

Manufacturer/Model	Rolls Royce 250-C20B
Serial Number	CAE-802472
Part Number	6887190
Hours Since New	2176.1
Hours Since Overhaul	Modular Assembly

1.6.2. According to the airframe logbook, the last maintenance inspection that was carried out on the helicopter prior to the accident flight was certified on 6 December 2021 at 2 338.1 airframe hours. Following the maintenance inspection, the AMO issued a Certificate of Release to Service (CRS) at 2 338.1 airframe hours on 6 December 2021, with an expiry date of 5 August 2022 or at 2 438.1 airframe hours, whichever comes first.

1.6.3. The following maintenance and replacements of parts was carried out and recorded in the logbook as part of the inspection.

- Aft and forward pylon mounts rod-end were changed (replaced) with new ones.
- Main rotor hub and tail rotor hub overhaul were carried out (CRMA number J3960-1).
- Mast inspection was carried out (CRMA number J3960-1).
- Main rotor gearbox inspection was carried out (CRMA number J3960-1).
- Tail rotor balancing was carried out, and inches per seconds (IPS) were 0.1.
- Hydraulic pump and reservoir were fitted and topped up with hydraulic fluid.
- New collective lever was fitted.
- Main rotor track and balancing was carried out.
- Pitot, transponder and compass swing checks were carried out.

1.6.4 According to the engine logbook, the last inspection was carried out on 6 December 2021. This was a 100-hour MPI which was carried out in accordance with the South African Civil Aviation Technical Standards (SA-CATS) and Rolls Royce Electronic Manual Schedule Revision 24, dated 1 June 2020.

1.6.5 The following maintenance and replacements of parts were carried out and recorded in the logbook.

- Engine-driven fuel pump (Part number: 23003114, Serial number: PE7774 was removed and replaced with Part number: 23003114, Serial number: 8852).
- Starter generator output shaft seal was replaced, and the new O-ring was fitted on starter generator output shaft.
- Engine mounting nuts were retorqued and new split pin was fitted.
- Throttle fuel control rigging was carried out and idling was adjusted.
- Ground runs were carried out; all jobs are contained under job number J3960-1; the helicopter was declared safe for flight.

1.6.6 According to the flight folio serial number 52106 dated 23 February 2022, there was a defect entered stating “autorotation revolutions need to be adjusted”. The pilot/owner stated that during autorotation, the target main rotor speed (NR) obtained was 92% and the manual states that it should be 100%. The AMO adjusted the length of both pitch

links by shortening them with three full turns. According to the maintenance manual BHT-206A/B-series-MM-3 figures 18 and 19, *one full turn of the coarse threaded clevis of the change pitch link rod will change autorotation RPM about 3%NR*. The manual further states that *if RPM is low, decrease the length of the pitch change assemblies equally. If RPM is high, lengthen the assemblies.* The adjustment of the pitch change links was carried out in accordance with the manual.

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 FAVG on 2 March 2022 at 0940Z.

METAR FAVG 020900Z AUTO 06014KT //// // ////// 30/21 Q1011=

Wind Direction	060°	Wind Speed	14 kt	Visibility	9999m
Temperature	30°C	Cloud Cover	FEW	Cloud Base	3 000ft
Dew Point	21°C	QNH	1011hPa		

1.7.2 The pilot was also given the prevailing wind at the time by ATC, which was 060° at 19 knots.

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 navigation system was unserviceable prior to the accident.

1.9. Communication

1.9.1. The helicopter was equipped with a standard communication system as approved by the Regulator. There was a defect with one of the PTT switches prior to take-off.

1.9.2. At 0728:22Z, the ZS-RVP pilot called the tower and requested a radio check. Tower responded that they were reading strength 5. At 0739:20Z, the ZS-RVP pilot called tower and requested lift-off for a flight to the north, Prince's Grant returning. Lift-off was granted and the pilot was told to report Umhlanga Lagoon at 500ft above ground level (AGL). The runway heading given was 05 with surface wind of 080° at 19 knots. At 0743:23Z, a crash alarm was activated.

1.10. Aerodrome Information

1.10.1 The accident occurred at FAVG.

Aerodrome Location	Durban
Aerodrome Status	Licensed
Aerodrome GPS coordinates	29°46’14.0” South, 031°03’31.0” East
Aerodrome Elevation	20 ft
Runway Headings	05/23
Dimensions of Runway Used	925mx22m
Heading of Runway Used	05
Surface of Runway Used	Asphalt
Approach Facilities	None
Radio Frequency	120.6 MHz

1.11. Flight Recorders

1.11.1. The helicopter was not 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 During transition, the pilot lost main rotor rpm and the helicopter lost height and crashed on the grass, 3m west of Runway 05. The helicopter touched down hard with the skid gears in a near level orientation. After impact, the helicopter rolled to the left with the nose on a heading of 260°. Both skid gears broke off and the front cross tube separated. The main rotor blades severed the tail boom in three parts and the tail boom separated from its attachment points. The tail cone, tail gearbox and tail rotor blades were still attached and were lying near the fuselage. The main rotor blades were still attached to the main rotor hub post-accident.

Figure 6: Main wreckage. (Source: Ronald Collyer)

1.12.2 Tail boom Assembly

When the main rotor blades severed the tail boom, the tail drive shaft separated and broke into pieces which were scattered in different directions. The damage on the fractured skin indicated that the main rotor blades made contact with the tail boom before separating from the fuselage. The piece that was furthest was found approximately 20m east from the runway edge. The horizontal stabiliser and pieces of the control tail rotor tubes were found in the middle of the runway, east of the main wreckage.

The front of the tail boom and front piece of the tail rotor drive shaft were found west of the main wreckage. The furthest part that was found east of the runway was a piece of the tail drive shaft. The tail rotor blades were still attached on the tail rotor hub and their condition was good. The control tube was severed into pieces, which were found in different locations. The continuity of the drive was confirmed between the tail gearbox and the output shaft.

Figure 7: Horizontal stabiliser and control tube. (Source: Ronald Collyer)

Figures 8 and 9: Tail rotor shaft assemblies. (Source: Ronald Collyer)

Figure 10: Tail cone with tail rotor blade attached. (Source: Ronald Collyer)

1.12.3 Main rotor drive system

The main rotor blades were still attached on the hub. One of the blades had a puncture which penetrated the core on the outboard section. The condition of the other blade was fairly good. The pitch change links were both fractured in the middle as a result of impact. The main transmission attachment mount (left) was damaged, causing the bottom of the transmission to collapse and penetrate the roof. The control tubes were still connected between the swashplate (non-rotating) and the servo actuators. All three servo actuators were not damaged. The output shaft failed on the side of the gearbox as a result of impact.

1.12.4 Flight controls

The helicopter was fitted with dual controls. The condition of the dual controls was good. The throttle moved without difficulty. Continuity could not be achieved due to constricted control tubes as a result of impact forces. The tail rotor control tube was broken into pieces as result of impact.

1.12.5 Powerplant

The powerplant was still attached (mounted) and no visible oil or fuel leaks were observed on the platform. The compressor was rotated by hand and the engine turned freely. Pipes and hoses were checked, and no damage was observed.

1.13. Medical and Pathological Information

1.13.1 None.

1.14. Fire

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

1.15. Survival Aspects

1.15.1 The accident was considered survivable as the cabin structure remained intact and all occupants had made use of the safety restrains fitted in the helicopter.

1.16. Tests and Research

1.16.1 To be covered in the final report.

1.17. Organisational and Management Information

1.17.1 This was a private flight conducted under the provisions of Part 91 of the CAR 2011 as amended.

1.17.2 The AMO that conducted the last mandatory periodic inspection (MPI) was issued an AMO certificate on 31 January 2021 with an expiry date of 28 February 2022.

1.17.3 The last MPI prior to the accident was carried out on 6 December 2021 at 2 338.1 airframe hours. Since then, the helicopter had flown 9.6 hours.

1.18. Additional Information

1.18.1 To be covered 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 was issued a Private Pilot Licence (PPL) on 12 November 2021 with an expiry date of 30 November 2023.

2.2.2 The pilot was issued a Class 2 medical certificate on 23 February 2022 with an expiry date of 28 February 2023 with no medical restrictions.

2.2.3 The last MPI prior to the accident flight was conducted by the AMO that issued a Certificate of Release to Service (CRS) at 2 338.1 airframe hours on 6 December 2021 with an expiry date 5 August 2022 or at 2 438.1 airframe hours, whichever comes first.

2.2.4 The helicopter was issued an initial Certificate of Airworthiness (C of A) on 16 September 2013 with an expiry date of 30 September 2022.

2.2.5 The AMO that conducted the last MPI was issued an AMO certificate on 31 January 2021 with an expiry date of 28 February 2022.

2.2.6 The helicopter was registered with the current owner on 15 December 2021.

2.2.7 The passenger sitting on the front left seat was taking a video of the flight with her cellular phone. The footage showed fuel valve toggle switch in the off position, the torque indicator needle was at 50%, the dual (ERPM/RRPM) gauge indicator was in the green arch. There was an amber light in the central alerting auxiliary panel. The engine sound was clearly audible, and the engine was confirmed spooling down.

2.2.8 The engine was removed from the wreckage and was transported to an approved Rolls Royce engine maintenance facility for further examination and testing.

3. ON-GOING INVESTIGATION

3.1. The AIID investigation is on-going and the investigators will be looking into other aspects of this occurrence which may or may not have safety implications.

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