

LIMITED OCCURRENCE INVESTIGATION REPORT – FINAL

Reference Number	CA18/2/3/10234						
Classification	Accident	Date	20 September 2022		Time	0536Z	
Type of Operation	Aerial Survey (Part 101)						
Location							
Place of Departure	Wonderfontien Colliery, Mpumalanga Province		Place of Intended Landing	Wonderfontien Colliery, Mpumalanga Province			
Place of Occurrence	Wonderfontien Colliery, Mpumalanga Province						
GPS Co-ordinates	Latitude	25° 49' 54.56" S	Longitude	029° 52' 56.63" E	Elevation	57211ft	
Aircraft Information							
Registration	ZT-XNG						
Make; Model; S/N	DJI Mavic 2 Pro (Serial Number: 163CHATR0A56BY)						
Damage to Aircraft	Not found			Total Aircraft Hours	61		
Pilot-in-command							
Licence Type	Remote Pilot Licence (RPL)		Gender	Female		Age	33
Licence Valid	Yes	Total Hours	334.09		Total Hours on Type	334.09	
Total Hours 30 Days	40		Total Flying on Type Past 90 Days	40			
People On-board	0	Injuries	0	Fatalities	0	Other (on ground)	0
What Happened							
<p>On 20 September 2022, a pilot operating a DJI Mavic 2 Pro remotely piloted aircraft (RPA) with registration ZT-XNG took off on a surveillance flight from Wonderfontein Colliery in Gauteng province with the intention to land back at the same colliery. The flight was conducted in visual line of sight (VLOS) by day and under the provisions of Part 101 of the Civil Aviation Regulations (CAR) 2011 as amended.</p> <p>The pilot stated that she carried out all the required checks before launching the RPA. She also carried out all the checks required by the survey application DroneDeploy; all system checks were in order. She then launched the RPA to the first check point over the mine as prescribed in the DroneDeploy application. Shortly after launching the RPA, the pilot's controller unit shut off (the screen became dark) and the RPA disconnected. The pilot tried to re-establish connection but was unsuccessful.</p> <p>She then set out to the check point where the surveillance was to be carried out, but was unable to locate the RPA. The RPA is suspected to have been buried under the rocks, possibly after a blast in the mine. The RPA has not been recovered. The operator stated that it is likely that the RPA was</p>							

involved in a bird strike moments before the mine blast, however, there was no evidence to support this theory.



Figure 1: The area where the RPA was last tracked. (Source: Operator)

Findings

- The pilot was issued a Remote Pilot Licence (RPL) on 20 July 2022 with an expiry date of 31 July 2024.
- The pilot had a Class 3 medical certificate that was issued on 1 June 2022 with an expiry date of 1 June 2026 with no restrictions.
- The RPA had flown a total of 61 hours at the time of the accident flight, and had not reached the mandatory inspection.
- The pilot had 334.09 hours of flying experience on the aircraft type.
- A Certificate of Registration (C of R) was issued to the present owner on 13 April 2022.
- The operator had a Remotely Piloted Aircraft Systems (RPAS) Letter of Approval (LOA) which was issued on 23 December 2021 with an expiry date of 16 May 2023.
- The operator had a RPAS Operating Certificate (ROC) that was issued by the Regulator (SACAA) on 31 October 2022 with an expiry date of 31 October 2023.

- There were no injuries reported.
- The RPA is likely buried under the rocks following the mine blast.

Probable Cause(s)

It is likely that the RPA lost Command and Control (C2) connection, which resulted in the loss of control of the RPA. The loss of C2 connection is undetermined.

Contributing Factor(s)

None.

Safety Action(s)

None.

Safety Message and/or Safety Recommendation/s

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

This report is produced without prejudice to the rights of the AIID, which are reserved.

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