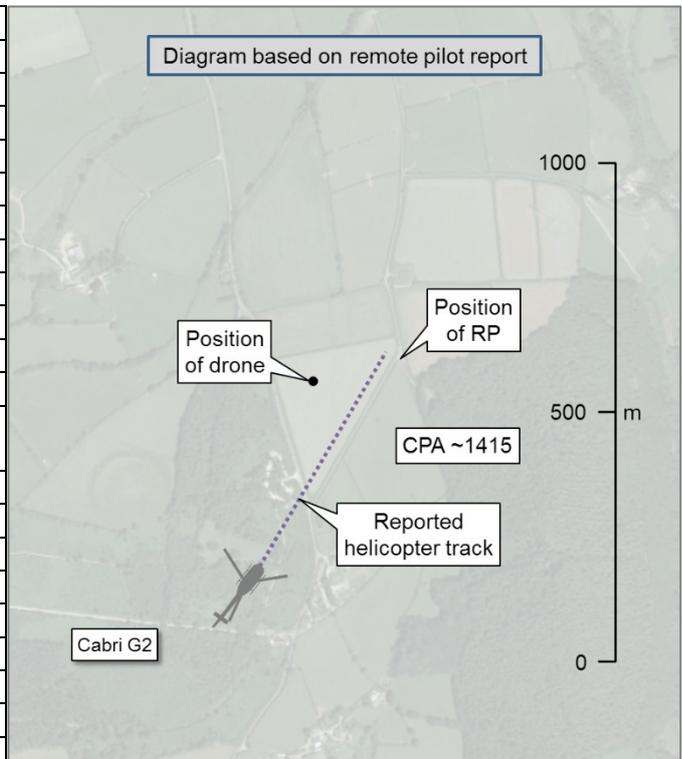


AIRPROX REPORT No 2020031

Date: 16 Mar 2020 Time: 1415Z Position: 5025N 00403W Location: 2NM N Plympton

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	DJI Mavic 2	Cabri G2
Operator	Civ UAS	Civ Helo
Airspace	London FIR	London FIR
Class	G	G
Rules	VLOS	VFR
Service	None	Listening Out
Provider	N/A	(Plymouth Mil E)
Altitude/FL	125ft agl	NK
Transponder	Not fitted	A, C, S
Reported		
Colours	Black	Black, blue
Lighting	Not fitted	Strobe, nav, landing
Conditions	VMC	VMC
Visibility	NK	NK
Altitude/FL	300ft	1000ft
Altimeter	agl	NK
Heading	Stationary	041°
Speed	Stationary	84kt
ACAS/TAS	Not fitted	NK
Alert	N/A	NK
Separation		
Reported	50-100ft V/ 250-300m H	Not seen
Recorded	NK	



THE MAVIC REMOTE PILOT reports that he was conducting a planned police training flight at a regularly used training venue on the outskirts of Plymouth. The remote pilot (RP) had checked NOTAMS and completed a planned risk assessment, in line with their UAS Operations Manual. About 4 minutes into the flight, whilst climbing to approximately 300ft agl and 130m horizontally from the take-off point, the remote pilot could hear a helicopter nearby (at the same time as seeing an ADS-B warning on the ground control station screen). He and the observer immediately started searching the sky for an aircraft. They then noticed a dark grey/black helicopter, much lower than expected, approaching from the southwest towards their location. The two police officers were both experienced police UAS operators and had used the training venue many times before. The RP knew that the helicopter was not NPAS or Air Ambulance (both are always contacted prior to police deployments of UAS) and thought that it was not military because it was an unmarked dark grey/black helicopter and no registration number could be seen from the ground. The RP believed the approaching helicopter was lower than the height of the UAS, which was operating at approximately 300ft. Once he determined that the helicopter was around 200m away horizontally from the UAS, the RP descended to around 120ft agl and then shortly after returned to the take-off point and landed safely. The remote pilot believed the unknown helicopter was much lower than 400ft, so much so that he thought the helicopter was below his UAS, which was very unusual for that location.

The pilot assessed the risk of collision as 'Low'.

THE CABRI PILOT reports that he was in straight climbing cruise at the time and position of the reported Airprox but that he did not see a drone.

Factual Background

The weather at Newquay and Exeter was recorded as follows:

METAR EGHQ 161420Z 27009KT 9999 FEW020 09/04 Q1024=
 METAR EGTE 161420Z 28006KT 240V320 9999 FEW035 12/03 Q1023=

Analysis and Investigation

UKAB Secretariat

The Mavic remote pilot and Cabri pilot shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard¹. Neither the Mavic nor Cabri appeared on area radar replay in the area of the reported Airprox.

Devon and Cornwall Police Investigation

The investigation found:

1. Pilot training records and authorities in date.
2. Electronic flight logs show the RP's actions at the time were consistent with the safety report and clearly show that he was operating in accordance with the ANO and Ops Manual.
3. CADS check shows no indication of any military planned aviation activity.
4. Flight planning forms reviewed and planned risk assessment found to be less detailed than would have been expected for a regular training venue.
5. Confirmed Airprox has been submitted.

Summary

An Airprox was reported when a DJI Mavic and a Cabri G2 flew into proximity 2NM north of Plympton at about 1415Z on Monday 16th March 2020. The Mavic remote pilot was operating under the terms of drone VLOS and the Cabri pilot was operating under VFR in VMC, listening out on the Plymouth Mil East frequency.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate operating authorities. Relevant contributory factors mentioned during the Board's discussions are highlighted within the text in bold, with the numbers referring to the Contributory Factors table displayed in Part C.

Due to the exceptional circumstances presented by the coronavirus pandemic, this incident was assessed as part of a 'virtual' UK Airprox Board meeting where members provided a combination of written contributions and dial-in/VTC comments. Although not all Board members were present for the entirety of the meeting and, as a result, the usual wide-ranging discussions involving all Board members were more limited, sufficient engagement was achieved to enable a formal assessment to be agreed along with the following associated comments.

The Board first discussed the drone operator and G2 pilot's reports. The drone operator stated that he believed the G2 appeared to pass by at a height below 300ft agl. The G2 pilot stated that he was operating at '1000ft', which the Board assumed to be 1000ft amsl and which would have placed the G2 at a height of about 550ft agl in the vicinity of the Airprox location. The Board agreed that neither the drone operator nor the G2 pilot had had any situational awareness of the presence of the other (**CF1**) but that the drone operator had heard the approaching G2, had seen it as soon as was practicable and had been able to take timely and effective action to mitigate collision risk (**CF2**). However, without additional radar or GPS data, members were not able definitively to assess the other Flight Elements barriers or other contributory factors. Some members were of the opinion that timely and effective action

¹ SERA.3205 Proximity.

had been taken by the drone operator, risk C, and others that the G2 was probably above 500ft agl with no risk of conflict, risk E. After much further discussion the Board reluctantly agreed that the conflicting information was such that the risk could not definitively be determined.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

2020031			
CF	Factor	Description	Amplification
Flight Elements			
• Situational Awareness of the Conflicting Aircraft and Action			
1	Contextual	• Situational Awareness and Sensory Events	Pilot had no, late or only generic, Situational Awareness
• See and Avoid			
2	Human Factors	• Perception of Visual Information	Pilot was concerned by the proximity of the other aircraft

Degree of Risk: D.

Recommendation: Nil.

Safety Barrier Assessment²

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the paucity of information available only allowed an assessment of 2 of the Flight Elements factors:

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action was assessed as **ineffective** because neither the drone operator nor the G2 pilot were aware of the other's proximity prior to the Airprox.

² The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

Airprox Barrier Assessment: 2020031 Outside Controlled Airspace

Barrier		Provision	Application	Effectiveness				
				Barrier Weighting				
				0%	5%	10%	15%	20%
Ground Element	Regulations, Processes, Procedures and Compliance							
	Manning & Equipment							
	Situational Awareness of the Confliction & Action							
	Electronic Warning System Operation and Compliance							
Flight Element	Regulations, Processes, Procedures and Compliance							
	Tactical Planning and Execution							
	Situational Awareness of the Conflicting Aircraft & Action							
	Electronic Warning System Operation and Compliance							
	See & Avoid							
Key:		<u>Full</u>	<u>Partial</u>	<u>None</u>	<u>Not Present/Not Assessable</u>	<u>Not Used</u>		
Provision								
Application								
Effectiveness								