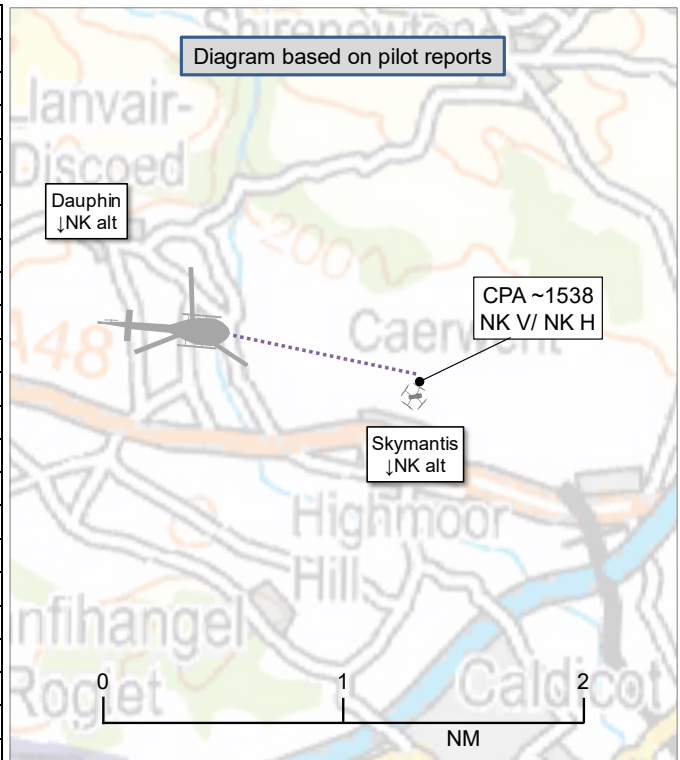


**AIRPROX REPORT No 2023226**

Date: 27 Sep 2023 Time: ~1538Z Position: 5137N 00246W Location: Caerwent Training Area

**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

Recorded	Aircraft 1	Aircraft 2
Aircraft	Skymantis	Dauphin
Operator	Civ UAS	HQ JAC
Airspace	London FIR	London FIR
Class	G	G
Rules	VLOS	VFR
Service	None	None
Provider	N/A	N/A
Altitude/FL	NK	NK
Transponder	Not fitted	A
Reported		
Colours	White	Dark blue
Lighting	Nav and strobes	NR
Conditions	VMC	VMC
Visibility	<5km	>10km
Altitude/FL	160ft	NK
Altimeter	NK	RPS
Heading	Hovering	NK
Speed	0kt	30kt
ACAS/TAS	Not fitted	TAS
Alert	None	None
Separation at CPA		
Reported	65ft V/5m H	0ft V/80ft H
Recorded	NK V/NK H	



**THE SKYMANTIS PILOT** reports they were taking part in an exercise at the Caerwent training grounds where they were tasked to fly overwatch of a location for a regiment. The UAS was operating approximately 40m from their location and at all times remained in visual line of sight. The airspace was booked, cleared and controlled via a ground commander who was in communication with air ops. They took off at approximately 1530. At approximately 1538 they heard a helicopter approaching from the west. From the sound it was clear that it was travelling low. At that point they started to descend as rapidly as possible and 5sec later after first hearing the helicopter it appeared over their left shoulder at an approximate altitude of 70m (230ft) heading directly for their UAS. They continued to descend as fast as possible. The helicopter passed approximately 20m (65ft) to the north of their UAS and about 20m (65ft) above. They believed the helicopter landed about 200m (656ft) from their position and immediately took off again out of sight. They landed the UAV and immediately alerted the ground commander to report to the training authority, MAA and local commanders. This has also been reported via an MAA DASOR.

The pilot later confirmed that the Skymantis drone was tethered throughout the duration of the flight. The cable utilized for tethering purposes measures 2.2mm and is specifically an armoured cable. They reiterated that they operate in the Open A3 category, and on this day they were operating under MAA airspace and following the guidance of the Army JTAC.<sup>1</sup> They were constantly updated about manned aviation and had to land (at least 3 times) due to [other aircraft] overflying/landing on the base. They were given no warning of the Dauphin approaching until it was on top of them and was too late to take evasive manoeuvres.

The pilot assessed the risk of collision as ‘High’

<sup>1</sup> Joint Terminal Attack Controller.

**THE DAUPHIN PILOT** reports a formation of 2x helicopters was booked into Caerwent Training Area and was informed that there were going to be a lot of troops on the ground. They were given a number of targets to the northeast of the area to operate at. As part of the planning/briefing process, there were no NOTAMs identified to affect them operating at Caerwent (especially none to suggest there were drones). Due to the strong southerly winds, they elected to fly tactically along the outskirts of the area from west to east at the northern extremities and approached the target. On 'infil', a tethered drone was sighted by the lead aircraft to their 2 o'clock at approximately 80ft (reported as co-altitude). This was passed to the other aircraft with no further incident. This was not deemed a threat to flight safety.

The pilot assessed the risk of collision as 'None'.

**THE CAERWENT RANGE SAFETY OFFICER** reports a civilian contractor was tasked to launch their drone to collect information on an exercising unit. It was controlled and deconflicted by themselves, and there was no other exercise rotary-wing traffic due into Caerwent. The operator launched their drone and when it was around 100ft agl, 2 Dauphin helicopters overflew the training area at low level.

The controller perceived the severity of the incident as 'Low'.

## **Factual Background**

The weather at Bristol was recorded as follows:

METAR EGGD 271320Z AUTO 15015KT 9999 NCD 16/13 Q1008

## **Analysis and Investigation**

### **Joint Aviation Command**

A summary of the investigation conducted by the Unit concerned was received, but is not included here as its findings are covered by the JAC comment below.

### **UKAB Secretariat**

Radar analysis showed no positive identification of either aircraft.

The Skymantis and Dauphin pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.<sup>2</sup> During the flight, the remote pilot shall keep the unmanned aircraft in VLOS and maintain a thorough visual scan of the airspace surrounding the unmanned aircraft in order to avoid any risk of collision with any manned aircraft. The remote pilot shall discontinue the flight if the operation poses a risk to other aircraft, people, animals, environment or property.<sup>3</sup>

## **Comments**

### **JAC**

The Dauphin pilot was visual with the drone throughout, although the dangers of crewed and uncrewed aviation in close proximity cannot be overstated. Following on from this incident, there have been numerous recommendations, one of which is that all Remotely Piloted Aircraft Systems' (RPAS) activity within Military Training Areas should be NOTAM'd to help avoid further incidents such as this. Another recommendation is daily meetings between Safety Officers for the respective Training Area to ensure deconfliction of aviation assets.

## **Summary**

<sup>2</sup> (UK) SERA.3205 Proximity. MAA RA 2307 paragraphs 1 and 2.

<sup>3</sup> Assimilated Regulation (EU) 2019/947- UAS.OPEN.060 Responsibilities of the remote pilot (2)(b).

An Airprox was reported when a Skymantis drone and a Dauphin helicopter flew into proximity at Caerwent Training Area at ~1538Z on Wednesday 27<sup>th</sup> September 2023. Both pilots were operating under VFR in VMC, and neither pilot was in receipt of an Air Traffic Service.

## **PART B: SUMMARY OF THE BOARD'S DISCUSSIONS**

Information available consisted of reports from both pilots, radar photographs/video recordings, a report from the range safety officer involved and a report from the appropriate operating authority. 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.

The Board first looked at the action of the organisation of the ground operation and agreed that there had been a breakdown in communication due to a lack of procedures in place to capture the activities of all aerial operators in the vicinity (**CF1**).

Members had been concerned about the apparent lack of pre-flight coordination procedures on the day (**CF2**) and the lack of notification of the planned presence of the drone operator or the intended arrival of the Dauphins at the time (**CF3**), but were heartened to learn that safety recommendation had been identified by JAC to minimise the likelihood of a reoccurrence of these factors in future.

Turning their attention to the actions of the pilots, members considered that the previous points had led to a lack of situational awareness for the Dauphin pilot on the operation of the Skymantis drone, but that the Skymantis pilot had gained late situational awareness on the Dauphins when they had heard the helicopters approaching (**CF4**).

The Board also noted that the TAS in the Dauphin had not alerted the pilot to the presence of the Skymantis (**CF5**), thereby not aiding their situational awareness, whereas the initial sound of approaching helicopters had alerted the Skymantis pilot who, on sighting the helicopters, had become immediately concerned by the proximity of the Dauphin (**CF6**).

When considering the risk involved in this event, members agreed that it had been the late situational awareness of the Dauphins by the Skymantis pilot that had alerted them to take last minute avoiding action and increase the separation between the aircraft. The Board agreed that this action on the part of the Skymantis pilot had been sufficient that the risk of collision had been reduced, but not fully averted, and that safety had been reduced much below the norm (**CF7**). Consequently, the Board assigned a Risk Category B to this Airprox.

## **PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK**

### Contributory Factors:

2023226				
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
<b>Ground Elements</b>				
<b>• Regulations, Processes, Procedures and Compliance</b>				
1	Organisational	• Aeronautical Information Services	An event involving the provision of Aeronautical Information	The Ground entity's regulations or procedures were inadequate
<b>Flight Elements</b>				
<b>• Regulations, Processes, Procedures and Compliance</b>				
2	Organisational	• Flight Operations Documentation and Publications	Flight Operations Documentation and Publications	Inadequate regulations or procedures
<b>• Tactical Planning and Execution</b>				
3	Organisational	• Flight Planning Information Sources	An event involving incorrect flight planning sources during the preparation for a flight.	
<b>• Situational Awareness of the Conflicting Aircraft and Action</b>				
4	Contextual	• Situational Awareness and Sensory Events	Events involving a flight crew's awareness and perception of situations	Pilot had no, late, inaccurate or only generic, Situational Awareness

• Electronic Warning System Operation and Compliance				
5	Technical	• ACAS/TCAS System Failure	An event involving the system which provides information to determine aircraft position and is primarily independent of ground installations	Incompatible CWS equipment
• See and Avoid				
6	Human Factors	• Perception of Visual Information	Events involving flight crew incorrectly perceiving a situation visually and then taking the wrong course of action or path of movement	Pilot was concerned by the proximity of the other aircraft
• Outcome Events				
7	Contextual	• Near Airborne Collision with Aircraft	An event involving a near collision by an aircraft with an aircraft, balloon, dirigible or other piloted air vehicles	

Degree of Risk: B.

#### Safety Barrier Assessment<sup>4</sup>

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

#### **Ground Elements:**

**Regulations, Processes, Procedures and Compliance** were assessed as **partially effective** because the ground procedures had not integrated all planned aviation on the day.

#### **Flight Elements:**

**Regulations, Processes, Procedures and Compliance** were assessed as **partially effective** because not all air participants in the exercise had been integrated.

**Tactical Planning and Execution** was assessed as **partially effective** because there had been no information available to either the Dauphin or the Skymantis pilots on the activity of the other.

**Situational Awareness of the Conflicting Aircraft and Action** were assessed as **ineffective** because the Dauphin pilot had no information on the Skymantis, and the Skymantis pilot only became aware of the arriving Dauphins on hearing them approach.

**Electronic Warning System Operation and Compliance** were assessed as **ineffective** because the TAS fitted to the Dauphin would not have been expected to have detected the Skymantis.

<sup>4</sup> 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: 2023226		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	✓	✓					
<b>Key:</b>		Full	Partial	None	Not Present/Not Assessable	Not Used		
Provision	✓	!	✗	●				
Application	✓	!	✗	●				
Effectiveness	■	■	■	■	□			