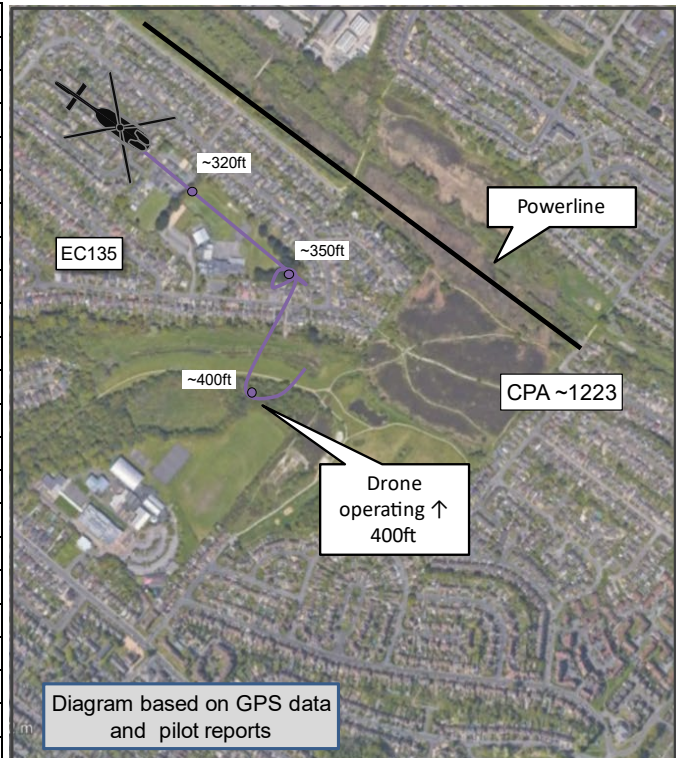


AIRPROX REPORT No 2023119

Date: 02 Jun 2023 Time: ~1223Z Position: 5044N 00155W Location: Alderney, Bournemouth

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	DJI Matrice	EC135
Operator	Civ UAS	Civ Comm
Airspace	Bournemouth CTR	Bournemouth CTR
Class	D	D
Rules	VLOS	VFR
Service	None	Radar Control
Provider		Bournemouth
Altitude/FL	NK	~400ft AGL
Transponder	Not fitted	A, C, S
Reported		
Colours	Grey	Yellow
Lighting	Positional lights	HISL
Conditions	VMC	VMC
Visibility	>10km	NR
Altitude/FL	400ft	200ft
Altimeter	AGL	AGL
Heading	Stationary	NK
Speed	Hovering	0-30kts
ACAS/TAS	Not fitted	TCAS, SkyEcho
Alert	N/A	Unknown
Separation at CPA		
Reported	NR	Not Seen
Recorded	NK	



THE DJI MATRICE OPERATOR reports that they were flying a police drone over a park as part of an operation, flying within normal limits, under 400ft and approximately 120m from the pilot. NPAS, HEMS and Bournemouth ATC were aware. A helicopter could be heard, then a yellow helicopter with electricity written on the side appeared below 400ft. The helicopter was on a rough bearing of 040° from their position. The drone altitude was reduced and it was flown away from the helicopter back towards the pilot until it was hovering just above the building next to the TOLA. The helicopter seemed to follow the drone until this point, then it turned away to the north. There are power lines north of the area but not near to the TOLA.

The Drone Operator noted that depending on where they fly, they call certain bodies before a flight. Always NPAS and HEMS, and then the local ATC if they are in or near to an FRZ. In this case, they would have phoned Bournemouth ATC before the flight and told them the area they were flying in. Their flight this time was within a small area for the whole period but were they to move elsewhere, or need to fly a large distance away in an emergency, they would be able to call the local ATC to update them if necessary. The flight was below 400ft at all times in this instance and they have no authorisation to go above that normally either.

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

THE EC135 PILOT reports that they were on a routine inspection of power lines in the Bournemouth area, operating within Bournemouth's controlled airspace. As they did not visually acquire the drone at any time it was a bit difficult to give any more details but, if it was in the Bourne Valley area, they would probably have been at approximately 200ft AGL and between 0-30kts.

THE BOURNEMOUTH CONTROLLER reports that they were informed about the Airprox some time after the event and had no recollection of an Airprox.

Factual Background

The weather at Bournemouth was recorded as follows:

METAR EGHM 021120Z 04011KT 360V090 9999 FEW038 16/06 Q1024=

METAR EGHM 021150Z 06009KT 010V090 9999 FEW038 17/06 Q1024=

A NOTAM covering Pipeline activity was published as follows:

(H2903/23 NOTAMR H2870/23

Q) EGXX/QWYLW/V /M /W /000/065/5504N00500W999

A) EGTG EGPX B) 2306011010 C) 2306021600

E) PIPELINE INSPECTION NOTIFICATION PROCEDURE SYSTEM (PINS)

WILL TAKE PLACE IN THE FOLLOWING LOW FLYING AREAS -

1, 2, 3, 4, 5, 6, 7N, 7S, 8, 9, 10, 11N, 12 13, 14W,
14E, 16, 17, 18 AND THE THAMES VALLEY AVOIDANCE AREA.

MAX HEIGHT 2000FT AGL. UK AIP ENR 6

(PINS AREAS AND UK DAY LOW FLYING SYSTEM (DLFS)) REFERS.

23/05/307/LFC

F) SFC G) 6500FT AMSL)

Analysis and Investigation

Bournemouth Occurrence Investigation

On the 17th July 2023 notification was received of an alleged Airprox involving a UAV and an EC135 on the 2nd of June 2023. No notification had been received prior to this and, as a result, the R/T and radar data was no longer available. The APS controller submitted a retrospective MOR at the request of the UKAB but had no knowledge of the occurrence.

The UKAB advised that the two aircraft involved were a Police drone operating up to 400ft and EC135 [callsign redacted] and that the incident occurred between 1113 and 1144Z. ATC records confirm that notification had been received of the drone operation which would take place between 1035 and 1600Z and the information was on the ATIS.

Normal procedure would be for controllers to notify relevant aircraft of UAV activity, however it is not possible to check whether this took place. Details regarding proximity of the two aircraft are unknown.

UKAB Secretariat

The NATS radar replay was analysed but, unfortunately, neither the EC135 nor the Matrice displayed on the radar. Figure 1 shows the CAA 1:250,000 VFR chart indicating the area where the drone had been operating and the proximity of the powerlines. The distance between the reported position of the drone and the powerlines was approximately 0.2NM. The position of the Matrice was outside the Bournemouth FRZ.



Figure 1

The EC135 pilot supplied a GPS data file, from which the diagram at the top of the report was compiled.

The Matrice operator and EC135 pilot shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.¹ 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.²

Summary

An Airprox was reported when a DJI Matrice and an EC135 flew into proximity in the vicinity of Alderney, Bournemouth at around 1223Z on Friday 2nd June 2023. The Matrice was being operated under VLOS. The EC135 pilot was operating under VFR in VMC and in receipt of a Radar Control Service from Bournemouth.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, GPS data for the EC135 and a report from the air traffic controller involved. 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 actions of the drone operator. They had reported that they had been operating below 400ft and had informed Bournemouth ATC of their presence prior to take-off. Members briefly discussed whether such operations could be NOTAM'd to warn other airspace users about their position, but were reminded that operating below 400ft would be considered normal operations and, as such, the activity would be unlikely to be accepted to be promulgated as a NOTAM. They noted that the drone operator had heard the EC135 approaching, thereby providing them with generic situational awareness (**CF2**) which had cued the operator to bring the drone back to the TOLA once they had become visual with the helicopter. The Board agreed that the drone operator had been concerned by the positioning of the helicopter (**CF5**), believing that the helicopter pilot had deliberately overflown their area; in fact, the EC135 pilot had not been visual with the drone but had been manoeuvring prior to returning to base.

Turning to the actions of the EC135 pilot, they reported that they had not had any information that the drone had been operating in the area (**CF2**). Some members wondered whether the pilot could have

¹ (UK) SERA.3205 Proximity.

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

listened to the Bournemouth ATIS, on which it was believed ATC had included information about the drone. Others countered that there was so much mandated information on an ATIS message that would not be pertinent to a pilot transiting through the area, that they would not expect pilots to listen to it unless inbound to the airfield. The Board noted that the EC135 had been equipped with CWS, and agreed that this CWS would not have been able to detect the drone (**CF3**). Without any information on the drone from either ATC or the CWS, members agreed that the EC135 pilot had not known that the drone had been in the vicinity and had not seen it (**CF4**). Noting the drone operator's comments about the positioning of the EC135 from the powerlines, members with helicopter experience explained that the equipment used to assess the powerlines needed the helicopter to position offset to parallel the powerline and so they considered the positioning 100-200m from the powerlines to be normal operations.

The Board then discussed the role of ATC. It had been unfortunate that the Bournemouth RT had not been available, because without it there was no information available to the Board on whether the EC135 pilot had been told about the drone or not. Certainly, members thought that ATC was the only party that had possession of all of the information, because they had known about the drone and would have had details about the EC135's routing.

The discussion then moved on to how the information about each flight could have been made available to the other operator. The regular planning tools available to the EC135 pilot would not have provided any information on the drone, although members opined that for pilots flying at such low levels, there was merit in using apps such as Drone Assist. However, it was acknowledged that, with numerous such apps available, this was not guaranteed to show the specific drone activity of interest. Having already discussed that the drone operations could not be NOTAM'd, members then discussed the generic nature of the pipeline/powerline NOTAM. Such generic NOTAMs were frequently seen and members opined that they were of limited value for the mitigation of the mid-air collision risk, in that they did not provide a specific area of operation. Such NOTAMs would not be displayed on any electronic flight bag type applications and therefore would not be easily assimilated by other airspace users. Members therefore resolved to recommend that the CAA reviewed the wording of NOTAMs associated with permissions for aircraft inspecting powerlines/pipelines to operate outside the provisions of ORS4 No.1496 to ensure that sufficient detail regarding the specific areas of operation is included.

When determining the risk of the Airprox, members considered the reports from both pilots together with the GPS data from the EC135. They noted that the drone operator had heard, and then seen, the EC135 and had descended the drone and brought it back to the TOLA, as required by regulation, thus ensuring that there had been no risk of collision. Some members therefore thought that this had been normal operations (Risk Category E). However, others thought that the missed opportunity to inform other airspace users that the lack of a specific powerline NOTAM meant that, although there had been no risk of collision, safety had been degraded. The latter view prevailed and the Board agreed a Risk Category C.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2023119			
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
Flight Elements				
• Regulations, Processes, Procedures and Compliance				
1	Organisational	• Flight Operations Documentation and Publications	Flight Operations Documentation and Publications	Inadequate regulations or procedures
• Situational Awareness of the Conflicting Aircraft and Action				
2	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				

3	Technical	<ul style="list-style-type: none"> 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				
4	Human Factors	<ul style="list-style-type: none"> Monitoring of Other Aircraft 	Events involving flight crew not fully monitoring another aircraft	Non-sighting or effectively a non-sighting by one or both pilots
5	Human Factors	<ul style="list-style-type: none"> 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

Degree of Risk: C.

Recommendation: The CAA reviews the wording of NOTAMs associated with permissions for aircraft inspecting powerlines/pipelines to operate outside the provisions of ORS4 No.1496 to ensure that sufficient detail regarding the specific areas of operation is included.

Safety Barrier Assessment³

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 NOTAM used to inform other airspace users about the powerline inspection was so generic that it provided very little information that would be useful for the mitigation of the mid-air collision risk.

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the EC135 pilot had received no situational awareness that the drone had been operating in the area and the drone operator only had generic situational awareness from hearing the helicopter approaching their position.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the CWS on the EC135 could not detect the drone.

³ 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: 2023119		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 Conflicition & 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:		Full	Partial	None	Not Present/Not Assessable	Not Used	
Provision	✓	⚠	✗	○			
Application	✓	⚠	✗	○	○		
Effectiveness							