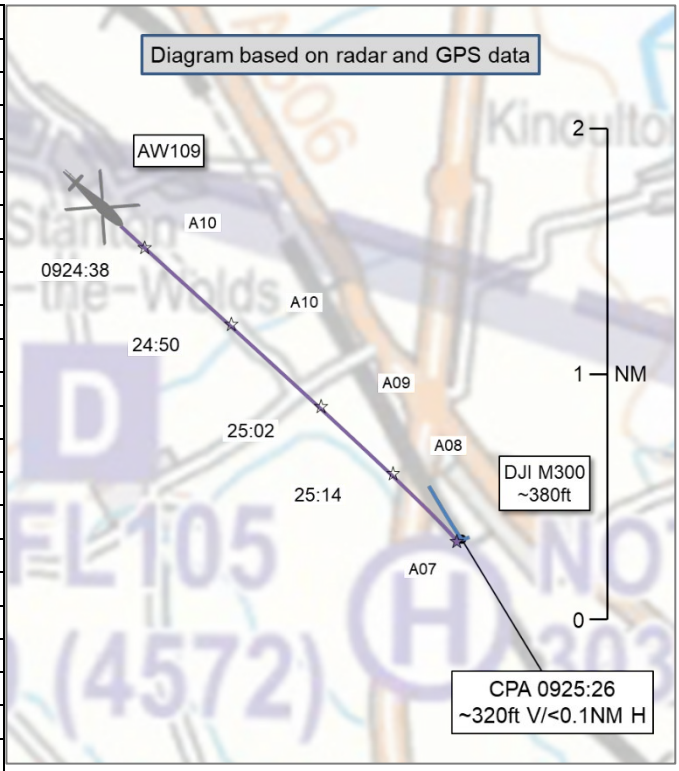
AIRPROX REPORT No 2023176

Date: 06 Aug 2023 Time: 0925Z Position: 5251N 00102W Location: Nottingham Heliport

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	DJI M300	AW109
Operator	Civ UAS	HEMS
Airspace	London FIR	London FIR
Class	G	G
Rules	Specific/BVLOS	VFR
Service	None	None
Provider	N/A	N/A
Altitude/FL	~380ft	700ft
Transponder	Not fitted	A, C, S+
Reported		
Colours	Black	Yellow
Lighting	'strobe'	NR
Conditions	VMC	NR
Visibility	>10km	NR
Altitude/FL	~130ft	NR
Altimeter	AGL	NR
Heading	'southeast'	NR
Speed	~6kt	NR
ACAS/TAS	'ADS-B in'	Unknown
Alert	None	Unknown
Separation at CPA		
Reported	~350-500ft V/230ft H	NR
Recorded	~320ft V/<0.1NM H	



THE DJI M300 OPERATOR reports making an aerial survey of a railway. The flights were noted on the DroneCloud App. They had telephoned Nottingham Heliport to co-ordinate but went straight to voicemail and the operating hours on a Sunday were not particularly clear. Parts of the notified circuit were over the railway. They saw a yellow HEMS helicopter approaching base for RW23 at about 1000ft and took avoiding action by heading east and then descending. They asked Nottingham Heliport if the Helimed [helicopter pilot] reported seeing the drone on base/final to 23 but had no response.

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

THE AW109 PILOT could not be contacted.

Factual Background

The weather at East Midlands Airport was recorded as follows:

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METAR EGNX 060950Z 33008KT 300V360 9999 SCT028 16/09 Q1017=
METAR EGNX 060920Z 32008KT 290V360 9999 SCT029 15/10 Q1016=
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Analysis and Investigation

UKAB Secretariat

The DJI M300 operator and AW109 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 avoid any risk of collision with any manned aircraft and discontinue a flight

[1] UK Reg (EU) SERA.3205 Proximity.

when continuing it may pose a risk to other aircraft, people, animals, environment or property.[2] RPs and UAS Operators are reminded of the difficulty in visually observing UA, and the impact this is likely to have on the ability of other airspace users to avoid a collision with a UA. Therefore, when operating in the vicinity of a Helicopter Landing Site, the UAS Operator should submit a NOTAM request to the Airspace Regulation Unit using the online application form, in order to increase helicopter crew awareness of planned UAS activity. It should be noted, that a NOTAM may not be issued, following such a request. This does not indicate that the UAS Operation should not take place, but that it does not require a NOTAM. Similarly, if a NOTAM is generated, this does not constitute 'permission' for the operation, or mean that the UAS Operator may disregard other restrictions, requirements or regulations that may otherwise apply.[3]

Nottingham Heliport is not a licenced aerodrome and does not appear in the UK AIP. The Nottingham Heliport website[4] 'Pilot Information' section states the following:

ARRIVAL & DEPARTURE PROCEDURES

> The following diagrams show routes and training circuit area for flights to and from Nottingham Heliport. Circuits are to be flown at 1000ft on East Midlands airport QNH and pilots are encouraged to ascend and descend from this height as quickly as is safely possible when departing and approaching the site paying particular attention to the location of public rights of way that surround the heliport.
>
> Pilots should also be aware that the CTA for East Midlands Airport starts 1500ft above the heliport site and radio protocol is to be in accordance with the procedures outlined below – See 'Radio Contact'
>
> All pilots should exercise good airmanship to not unnecessarily overfly inhabited areas and any aircraft leaving and joining the circuit area will be instructed to do so avoiding any of the local villages (shaded in red)

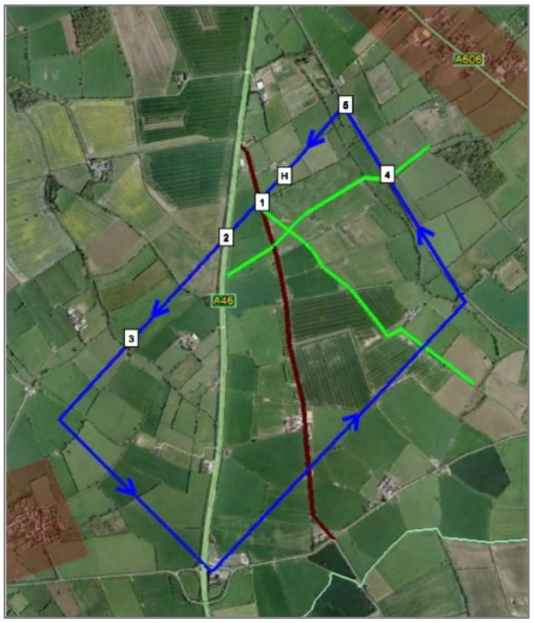


Figure 1 – extract from Nottingham Heliport website Pilot Information

> Noise Abatement Procedures
>
> Visiting aircraft approaching the site from any direction are requested to strictly avoid overflying any of the surrounding villages shaded in red on the circuit diagrams before joining the circuit at 1000ft.

[2] UK Reg (EU) 2019/947 UAS.SPEC.060 Responsibilities of the remote pilot (3)(b).
[3] AMC1 to UAS.SPEC.060(3)(b) Responsibilities of the Remote Pilot
[4] https://nottinghamheliport.co.uk/

Operational Hours

Arrivals & departures may only be made during our operational hours of 9:00am – 6:00pm For arrivals / departures outside of our published hours please contact us for further information.

Radio Contact – 131.950

The heliport operates an air/ground radio system for all aircraft in the immediate vicinity of the site and all radio communications will be in accordance with the written agreement between Nottingham Heliport and East Midlands Airport as below:

All movements into and out of the site shall be conducted in such a way as to avoid penetration of East Midlands Controlled Airspace (CAS).

Radio Telephony transmissions with East Midlands Air Traffic Control shall be kept to a minimum commensurate with the safe operation of the aircraft.

Pilots of visiting aircraft inbound to or outbound from the site shall select SSR Mode 3A code 4572 and maintain a listening watch on East Midlands Approach frequency 134.175MHz.

HEMS Operating Company Occurrence Investigation

Pilot operating from [Nottingham Heliport] didn't see the drone, took off following standard departure paths from [Nottingham Heliport].

Drone operator came into [Nottingham Heliport] to complain that the helicopter got close to their drone and the site was not in their "map" or "app".

Pilot has since left the employ of the company.

Highlights the need for drone FRZs at unlicensed sites.

[UKAB Note: A Robinson R22 helicopter departed from Nottingham Heliport at approximately 0923 and routed to the south.]

Summary

An Airprox was reported when a DJI M300 and an Agusta AW109 flew into proximity near Nottingham Heliport at 0925Z on Sunday 6th August 2023. Both the AW109 pilot and DJI M300 operator were operating in VMC, the AW109 pilot under VFR and DJI M300 operator under VLOS. The AW109 pilot was not in receipt of a FIS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of a report from the DJI M300 operator, radar photographs/video recordings and GPS data. 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 was first briefed by a helicopter member that they had made contact with the AW109 HEMS pilot and that the pilot had stated that they were of the understanding that an Airprox report was only required from the HEMS operator. The helicopter member further briefed that the AW109 HEMS pilot stated they had not sighted (**CF7**) or indeed been aware of a drone operating to the northeast of the Nottingham Heliport. Members discussed the degree to which coordination between the drone operator and Nottingham Heliport should have been achieved and agreed that the drone operator had made a significant effort to do so. It was unfortunate that their attempt at making contact by phone had gone straight to an answer-phone and the Board felt that this reflected a shortfall in the ground procedures at Nottingham Heliport (**CF1**). However, the Board was heartened to hear that the HEMS operation had changed their phone call routeing such that calls at the weekend would be routed to the emergency

room, thereby ensuring that calls would be answered. As a consequence of the lack of coordination, Nottingham Heliport and the HEMS operation had had no situational awareness of the drone operation to the northeast of the Heliport (**CF2**) and consequently could not have informed the HEMS pilot, who also had had no situational awareness (**CF5**) regarding the drone operation. Turning to the drone operation, members agreed that the submission of a NOTAM request was required iaw AMC1 to the relevant regulation (**CF3**) and that this was currently the most effective way of communicating drone activity of this nature to aircraft pilots to improve their situational awareness. Although the drone operator had not done this (**CF4**) the Board commended them for their proactive attitude to EC in that they had fitted ADS-B In to the DJI M300. The Board could not determine definitively why this had not alerted on the approaching AW109 (**CF6**) but in the event, although the drone operator had had no situational awareness of the AW109 (**CF5**), they had seen the approaching HEMS helicopter, had been understandably concerned by its proximity (**CF8**) and had taken avoiding action, albeit later then ideally possible if in possession of a higher degree of situational awareness. The Board felt that although the separation at CPA had been less than desirable, the drone operator had taken sufficient action to avert any risk of collision, Risk C.

Finally, the Board noted that the Nottingham Heliport Arrival and Departure Procedures stated that 'Pilots should also be aware that the CTA for East Midlands Airport starts 1500ft above the heliport site …'. Members agreed that this could be misinterpreted, in that the base of the East Midlands Airport CTA at that location was 1500ft AMSL, some 1197ft above the heliport site's published elevation of 303ft.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2023176			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Ground Elements			
	• Regulations, Processes, Procedures and Compliance			
1	Organisational	• Aeronautical Information Services	An event involving the provision of Aeronautical Information	The Ground entity's regulations or procedures were inadequate
	• Situational Awareness and Action			
2	Contextual	• Traffic Management Information Action	An event involving traffic management information actions	The ground element had only generic, late, no or inaccurate Situational Awareness
	Flight Elements			
	• Regulations, Processes, Procedures and Compliance			
3	Human Factors	• Use of policy/Procedures	Events involving the use of the relevant policy or procedures by flight crew	Regulations and/or procedures not complied with
	• Tactical Planning and Execution			
4	Human Factors	• Pre-flight briefing and flight preparation	An event involving incorrect, poor or insufficient pre-flight briefing	
	• Situational Awareness of the Conflicting Aircraft and Action			
5	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			
6	Human Factors	• Response to Warning System	An event involving the incorrect response of flight crew following the operation of an aircraft warning system	CWS misinterpreted, not optimally actioned or CWS alert expected but none reported
	• See and Avoid			
7	Human Factors	• 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
8	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

Degree of Risk: C.

Safety Barrier Assessment[5]

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 **ineffective** because the Drone operator was unable to establish coordination with Nottingham Heliport.

Situational Awareness of the Confliction and Action were assessed as **ineffective** because Nottingham Heliport had no situational awareness of the drone operations.

Flight Elements:

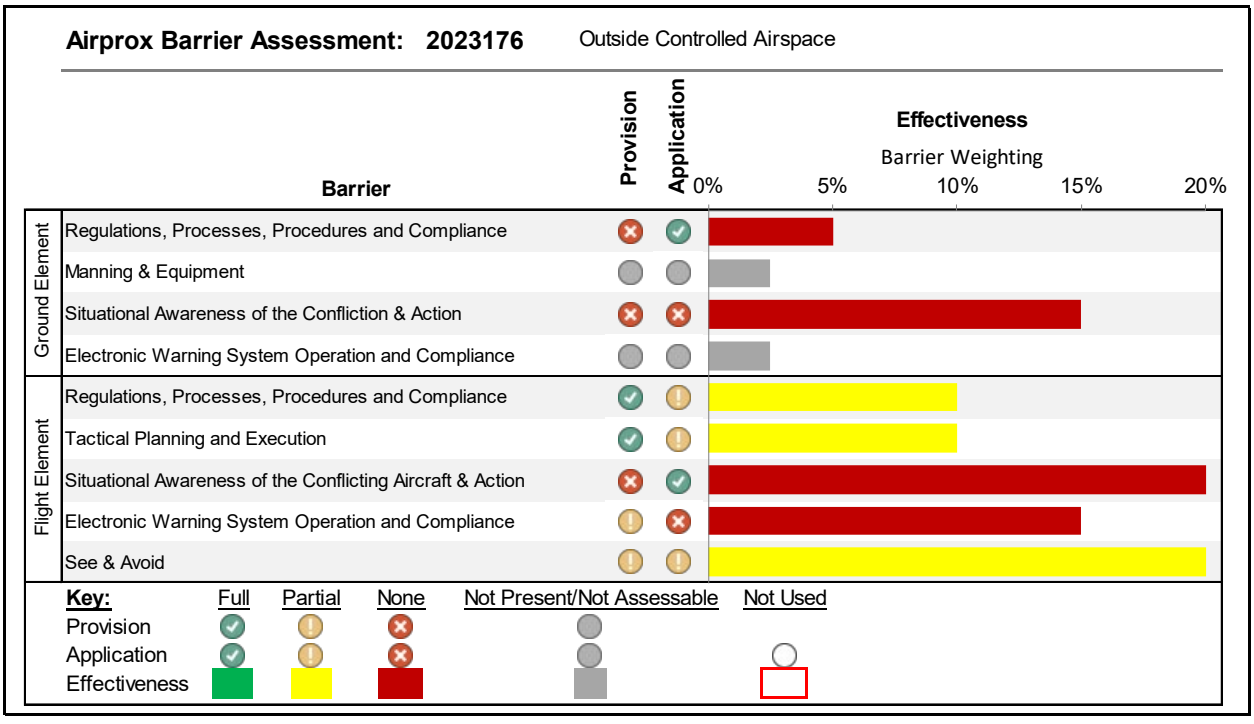
Regulations, Processes, Procedures and Compliance were assessed as **partially effective** because the drone operator did not make a NOTAM submission for their operation in the vicinity of Nottingham Heliport.

Tactical Planning and Execution was assessed as **partially effective** because pre-flight preparation omitted the NOTAM submission.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the drone operator had no situational awareness of the arriving helicopter.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the DJI M300 'ADS-B In' did not detect the approaching AW109.

See and Avoid were assessed as **partially effective** because the AW109 pilot did not see the drone.



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