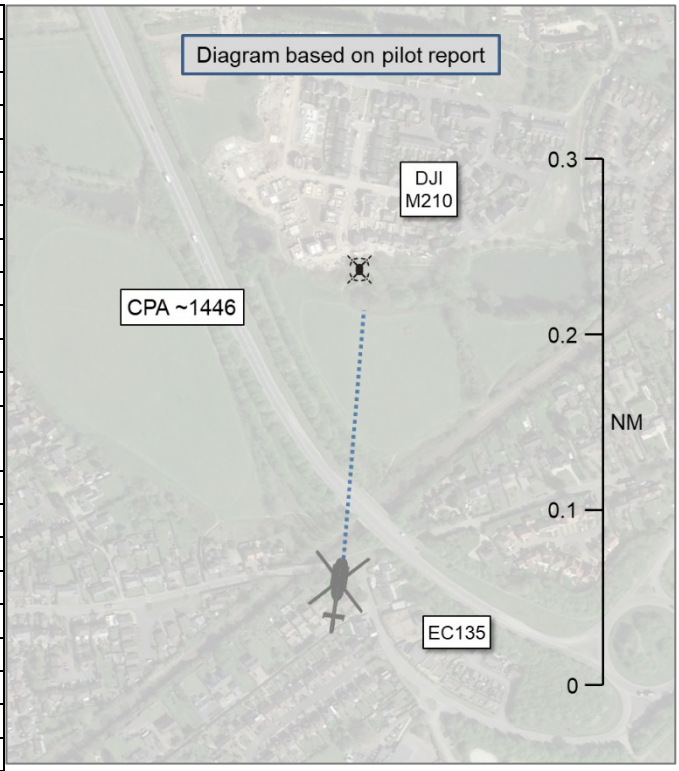
AIRPROX REPORT No 2023011

Date: 24 Jan 2023 Time: 1446Z Position: 5211N 00216W Location: Rushwick

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	EC135	DJI M210
Operator	HEMS	Civ UAS
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VLOS
Service	None	None
Provider	N/A	N/A
Altitude/FL	NK	NK
Transponder	A, C, S	Not fitted
Reported		
Colours	Red, yellow	Black
Lighting	Position, strobe, HISL, landing x 6	Beacon
Conditions	VMC	NR
Visibility	5-10km	NR
Altitude/FL	~70ft	250ft
Altimeter	QNH (NK hPa)	NR
Heading	~025°	NR
Speed	~30kt	NR
ACAS/TAS	SkyEcho	Not fitted
Alert	None	N/A
Separation at CPA		
Reported	0ft V/~55m H	100ft V/300m H
Recorded	NK	



THE EC135 PILOT reports conducting a tasking to the Rushwick area of Worcester. The grid position was seen as a body of water beneath a canopy of trees. The fire service was on scene and was the only emergency service in attendance. The selected landing site was immediately south of the water and trees. The field was large with the only visible obstacles being young trees running along a new path orientated north/south. An approach was made heading north-northeast, facing the scene of the incident. Whilst descending through approximately 60-80ft, a large quadcopter drone was seen hovering above the water, directly in front and at the same level. The estimated separation at that point was 70m and closing. They assessed that no avoiding action was necessary and continued the landing because they were very quickly below the level of the drone. The drone continued to operate above the scene whilst the aircraft was shutdown. They found the drone operator in a park around 200m to the northeast, on the other side of a new housing estate. It was established that the drone operator was with the Fire and Rescue Service. They only had a brief conversation because the drone was still being operated. The drone operator said that they had seen the helicopter orbiting, at which point they moved the drone back towards their location. The drone operator didn't know the helicopter was coming until they saw it and the helicopter crew didn't know that there was a drone in the air [at the tasked site]. The drone had ceased operations by the time they departed at 1528.

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

THE DRONE OPERATOR reports they saw the HEMS helicopter orbit in preparation to land. The drone was in the process of being returned to its take-off location as the helicopter was landing. The drone team contacted the HEMS crew to inform them they were flying in the location. The drone team had contacted the air desk prior to lifting, however, the air desk did not contact them with information regarding the HEMS helicopter.

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

Factual Background

The weather at Birmingham and Gloucester was recorded as follows:

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METAR EGBB 241450Z 33005KT 1100 R33/P1500N HZ NSC 03/03 Q1038=
METAR EGBJ 241450Z 00000KT CAVOK 05/01 Q1038=
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Analysis and Investigation

UKAB Secretariat

The EC135 pilot and DJI M210 operator 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]

EC135 Operating Authority Occurrence Investigation

Cause description

Summary: Drone operating in vicinity of aircraft.

Root Cause: From conversation with the pilot it seems that there are three areas that contributed to this incident: - 1. Poor communication from HEMS desk: once at scene, crew established that [medical attention was not required]. Though this information was available to Police and Fire, the Ambulance service (or the HEMS desk, at least) had not been informed. - 2. The drone operator had not contacted HEMS desk to inform them of their intent to fly in an area where the air ambulance might land. Though it is conceivable that the fire crew did not expect HEMS to arrive, given [that medical attention was not required]. - 3. The pilot also advised that even once the drone operator became aware of the HEMS aircraft, they did not land the drone.

Corrective Preventative Measure: 1. The communication between Hereford & Worcester Fire And Rescue Service (H&W FRS) and [the HEMS organisation] in relation to this tasking was discussed with the Senior Operations Manager. There was no alert passed by H&W FRS that they had launched a drone. [EC135 C/S] was the first clinical asset to attend and so no medical updates were available [redacted]. 2. [The HEMS organisation] Emergency Planning Manager for Herefordshire, Worcestershire and Shropshire and one of the Trust's NILOs (National Interagency Liaison Officers) has been made aware of this incident. There is commitment that this incident will be discussed with relevant colleagues within H&W FRS with a view to ensuring best practice is followed in regard to the use of drones; i.e. informing [the HEMS organisation] that they have a drone in the air. 3. It has been escalated [with] the local Tactical Incident Commander lead who will ensure that any use of drones by partner agencies at incidents that [the HEMS organisation] attends is communicated back to [the HEMS organisation] by on scene commanders.

In addition [the following] actions were carried out as a result of the investigation:

Recommendation #1

Action description- 1. This incident should be fed back to the relevant HEMS despatch desk and they should be encouraged to follow up incidents for clinical updates whilst HEMS are en route to jobs. In this instance, an update would have been available that [medical attention was not required], which would have enabled the team to avoid making a HEMS landing, which always carries an

[1] (UK) SERA.3205 Proximity.
[2] Regulation (EU) 2019/947 as retained (and amended in UK domestic law) Under the European Union (Withdrawal) Act 2018 - UAS.SPEC.060 Responsibilities of the remote pilot (2)(b).

inherent risk. - 2. An SOP should be established between Police/Fire drone operators and local HEMS despatchers &/or [the EC135 AOC holder] so that aircraft commanders are always aware of drone operations when attending scenes. - 3. In addition to the above, SOPs should outline appropriate actions for drone operators in the event of an aircraft landing; specifically, to land the drone a safe distance from the aircraft and wait until the aircraft has completely shut down before taking off again. The responsibility to avoid aircraft should not be with the drone operator - the aircraft commander should be able to satisfy themself that there is no drone activity at time of take-off/landing.

Action taken

The communication between H&W FRS and [the HEMS organisation] in relation to this tasking was discussed with [the] Senior Operations Manager. There was no alert passed by H&W FRS that they had launched a drone. [EC135 C/S] was the first clinical asset to attend and so no medical updates were available [redacted]. With reference to managing the local risk in the future, the Senior Operations Manager spoke with [redacted], the WMAS Emergency Planning Manager, for Herefordshire, Worcestershire and Shropshire as well as one of the Trust's NILOs. [They] will instigate dialogue with relevant colleagues within H&W FRS with a view to ensuring best practice is followed in regard to the use of drones; i.e. informing [the HEMS organisation] that they have a drone in the air. They have also escalated this to [the] Tactical Incident Commander lead who will ensure that any use of drones by partner agencies at incidents that [the HEMS organisation] attends is communicated back to [the HEMS organisation] by on-scene commanders.

Comments

HEREFORD & WORCESTER FIRE AND RESCUE SERVICE

The Watch Commander of the relevant Hereford & Worcester Fire and Rescue Service station commented that established procedure was for a drone operator to contact the Air Ambulance 'air desk' to inform them of operating areas and times and this was the procedure the drone crew followed. The Watch Commander noted that they were in the process of sending out a Joint Operating Learning (JOL) bulletin to all services.

Summary

An Airprox was reported when an EC135 and a DJI M210 flew into proximity on the eastern side of the village of Rushwick at 1446Z on Tuesday 24th January 2023. The EC135 pilot and DJI M210 operator were operating in VMC, neither in receipt of a FIS, the EC135 pilot under VFR and the DJI M210 operator under VLOS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the EC135 pilot and drone operator 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.

The Board was first briefed on the landing profile by a helicopter pilot member and informed that the helicopter pilot was committed to landing because a go-around once the drone had been sighted would have introduced more risk than continuing. Members quickly agreed that the root of this Airprox lay in a lack of coordination between the Fire and Rescue Service and the HEMS operator (**CF2**), in that neither EC135 pilot (**CF5**) nor the drone operator (**CF3**) had been aware of the other's presence until sighted. Due to the lack of coordination, the EC135 pilot had not received information sufficient to conduct their flight safely at the site (**CF4**) and had only seen the drone at a late stage (**CF6**). Board members felt that collision mitigation had existed, because the drone operator had seen the EC135 at an earlier stage and had acted accordingly, and many felt that any risk of collision had been averted. Others argued that although that was the case, separation reported at CPA was such that safety had still been much reduced. The discussion was eventually resolved with a vote, at which the latter view

prevailed by a small margin (**CF7**). Members also agreed that the regulations and procedures concerning HEMS and Fire and Rescue Service coordination had been insufficient (**CF1**) but were heartened by the actions to be taken by the EC135 Operating Authority. They discussed whether a recommendation should be made concerning the coordination of air and ground emergency service assets more generally but agreed that Director UKAB would write to the CAA in order to highlight the lack of coordination in this Airprox.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2023011			
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	Human Factors	• ATM Coordination	Coordination related issues (external as well as internal)	
3	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			
	• Tactical Planning and Execution			
4	Organisational	• Flight Planning Information Sources	An event involving incorrect flight planning sources during the preparation for a flight.	
	• 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
	• See and Avoid			
6	Human Factors	• Identification/ Recognition	Events involving flight crew not fully identifying or recognising the reality of a situation	Late sighting by one or both pilots
	• Outcome Events			
7	Contextual	• Near Airborne Collision with RPAS	An event involving a near collision with a remotely piloted air vehicle	

Degree of Risk: B.

Safety Barrier Assessment[3]

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 EC135 crew and drone operator were not informed of the presence of the other.

Flight Elements:

Tactical Planning and Execution was assessed as **ineffective** because the EC135 crew and drone operator were not in receipt of sufficient information to allow effective planning of their flights.

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

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither the drone operator nor the EC135 pilot were aware of the other's presence.

See and Avoid were assessed as **partially effective** because the EC135 and drone operator both saw the other aircraft at a late stage.