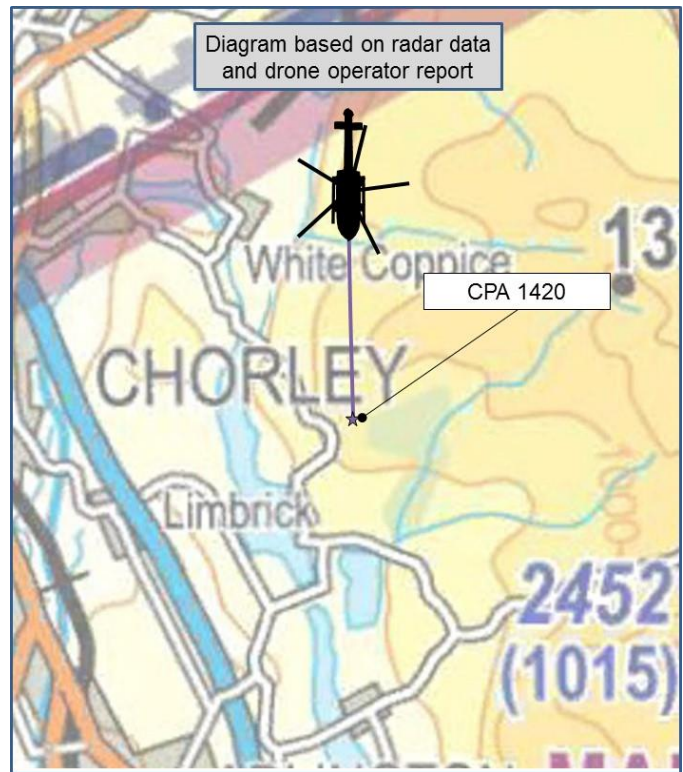


**AIRPROX REPORT No 2016038**

Date: 17 Mar 2016 Time: 1420Z Position: 5339N 00234W Location: 2nm East of Chorley

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

Recorded	Aircraft 1	Aircraft 2
Aircraft	Drone	Helicopter
Operator	Civ Comm	Unknown
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	NK
Service	None	NK
Provider	N/A	NK
Altitude/FL	NK	NK
Transponder	State/Modes	State/Modes
<b>Reported</b>		
Colours	White, Red & Gold	Not Reported
Lighting	Red/Green lights	
Conditions	VMC	
Visibility	NK	
Altitude/FL	130ft	
Altimeter	N/A	
Heading	180°	
Speed	NK	
ACAS/TAS	Not fitted	
Alert	N/A	
<b>Separation</b>		
Reported	200ft V/200-250m H	
Recorded		NK



**THE DRONE OPERATOR** reports flying a sub-7kg SUA on the western side of Angelzarke Moor in the West Pennines, below the summit, taking aerial landscape photographs and video. He heard a helicopter in the distance but could not see it at first because it was obscured by the summit of the hill. As a precaution, and not knowing exactly where the sound of the helicopter had come from, he began to reduce height from about 200ft aiming to hover at around 50ft until the aircraft had passed. However, before he got below about 130ft, a civilian executive-type helicopter suddenly appeared from over the crest of the hill to the north of his location at cruising speed. Due to flying relatively low, the helicopter could not be seen until the last minute. He continued to reduce height and quickly turned the drone to the right (east) to take evasive action, the helicopter being to his north-west at this point. At the closest point, the helicopter appeared to come within 200-250m horizontally of the drone and at a height of little more than 200ft above local ground level. On passing his location, the helicopter carried on in a southerly direction in straight-and-level flight and was picked up on the drone's camera. There was no indication that any evasive action was taken by the helicopter, or that his drone had been seen by the pilot

He assessed the risk of collision as 'Medium'.

**THE HELICOPTER PILOT** could not be traced

**Factual Background**

The weather at Manchester was recorded as follows:

METAR EGCC 171420Z VRB02KT CAVOK 10/00 Q1031 NOSIG

## Analysis and Investigation

### UKAB Secretariat

The Drone and Helicopter 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>1</sup>.

The Air Navigation Order 2009 (as amended), Article 138<sup>2</sup> states:

'A person must not recklessly or negligently cause or permit an aircraft to endanger any person or property.'

Article 166, paragraphs 2, 3 and 4 state:

'(2) The person in charge of a small unmanned aircraft may only fly the aircraft if reasonably satisfied that the flight can safely be made.

(3) The person in charge of a small unmanned aircraft must maintain direct, unaided visual contact with the aircraft sufficient to monitor its flight path in relation to other aircraft, persons, vehicles, vessels and structures for the purpose of avoiding collisions.'

(4) The person in charge of a small unmanned aircraft which has a mass of more than 7kg excluding its fuel but including any articles or equipment installed in or attached to the aircraft at the commencement of its flight, must not fly the aircraft

(a) in Class A, C, D or E airspace unless the permission of the appropriate air traffic control unit has been obtained;

(b) within an aerodrome traffic zone ...; or

(c) at a height of more than 400 feet above the surface unless it is flying in airspace described in sub-paragraph (a) or (b) and in accordance with the requirements for that airspace.'

A CAA web site<sup>3</sup> provides information and guidance associated with the operation of Unmanned Aircraft Systems (UASs) and Unmanned Aerial Vehicles (UAVs).

Additionally, the CAA has published a UAV Safety Notice<sup>4</sup> which states the responsibilities for flying unmanned aircraft. This includes:

'You are responsible for avoiding collisions with other people or objects - including aircraft.

Do not fly your unmanned aircraft in any way that could endanger people or property.

It is illegal to fly your unmanned aircraft over a congested area (streets, towns and cities).

..., stay well clear of airports and airfields'.

## Summary

An Airprox was reported when a Drone and a Helicopter flew into proximity at 1420 on Thursday 17<sup>th</sup> March 2016. The Drone operator was operating under VFR in VMC, the Drone operator was not in receipt of a service and the Helicopter pilot could not be traced.

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

Information available consisted of a report from the drone operator and radar photographs/video recordings.

The Board quickly determined that the drone operator was operating in accordance with all current rules and regulations; they were also encouraged by his willingness to report an Airprox in accordance with current guidelines. The Chairman commented that in his correspondence with the

<sup>1</sup> SERA.3205 Proximity.

<sup>2</sup> Article 253 of the ANO details which Articles apply to small unmanned aircraft. Article 255 defines 'small unmanned aircraft'. The ANO is available to view at <http://www.legislation.gov.uk>.

<sup>3</sup> [www.caa.co.uk/uas](http://www.caa.co.uk/uas)

<sup>4</sup> CAP 1202

drone operator he had demonstrated that he was clearly a competent and qualified operator who had obeyed all the current guidelines for drone flight; he too was heartened that the operator had reported the Airprox as a responsible airspace user who had clear concerns for the safety of the helicopter's occupants. Following this, there was a brief discussion about the classification of drones against manned aircraft, but the Board quickly agreed that they should be treated as a flying machine and subject to the same rules of the air as manned aircraft.

The Board then discussed the helicopter pilot's operating procedures. Although they were unable to fully determine the pilot's operating altitude, some members thought it would have been more prudent to operate at a higher level due to the possibility of encountering drones operating up to 400ft above ground level, paragliders, paramotors and hang-gliders soaring in the region, or perhaps military aircraft at or below 250ft. Some members wondered whether the helicopter may have been departing from a private site and, in those circumstances, the pilot may have been in the process of climbing to a higher altitude. However, without being able to trace the helicopter pilot, this was purely speculation. Nevertheless, Board members felt that this encounter served as a valuable lesson in reinforcing the point that it was prudent to climb to at least 500ft for transits as soon as possible, especially in areas of hilly terrain.

The Board then turned to the cause and risk of the Airprox. They felt that the drone operator had done all that he could to minimise the risk by descending his drone as quickly as possible when he heard the helicopter in the area and, when he realised the helicopter was on a conflicting course with his drone, in turning his drone away from the helicopter. That he was unable to increase separation any further was a reflection of the late unmasking of the helicopter and the fact that drones move relatively slowly compared to a cruising helicopter. Recognising that the helicopter could not be seen due to terrain until it appeared over the ridge, and that the helicopter pilot probably did not see the drone at all given that he had not manoeuvred, the Board determined that the cause of the Airprox was a late-sighting by the drone operator and a probable non-sighting by the helicopter pilot. As for the risk, and acknowledging that the helicopter pilot could not be traced and so they could not give his perception, the Board felt that the drone operator had nonetheless carried out effective and timely actions to prevent the aircraft colliding; therefore, the risk was assessed as Category C.

### **PART C: ASSESSMENT OF CAUSE AND RISK**

Cause: A late-sighting by the drone operator and probably a non-sighting by the helicopter pilot.

Degree of Risk: C.