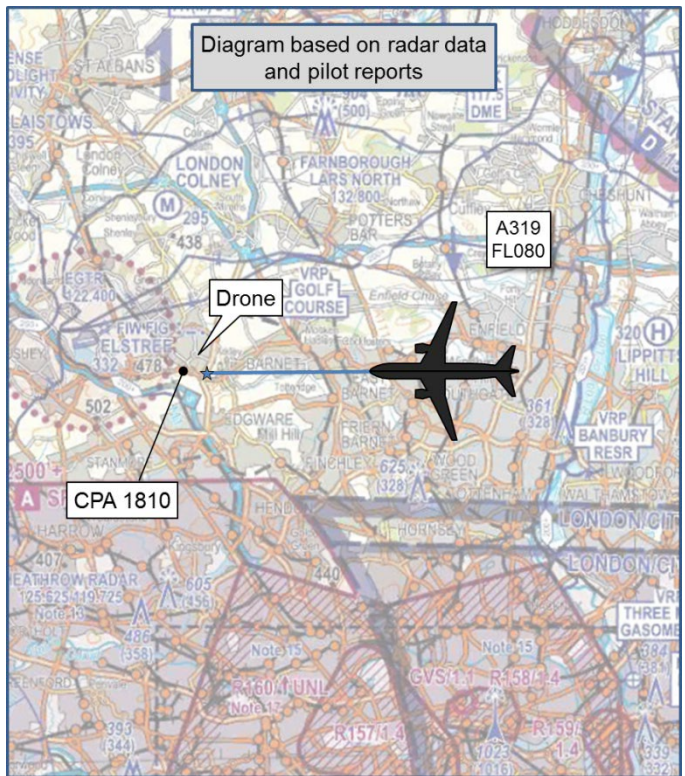


AIRPROX REPORT No 2015163

Date: 25 Sep 2015 Time: 1810Z Position: 5139N 00013W Location: LAM Hold, N Heathrow

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	A319	Drone
Operator	CAT	Unknown
Airspace	London TMA	
Class	D	A
Rules	IFR	
Service	Radar Control	
Provider		
Altitude/FL	FL80	
Transponder	A,C,S	
Reported		
Colours	White	
Lighting	NK	
Conditions	VMC	
Visibility	10km	
Altitude/FL	FL80	
Altimeter	1013 hPa	
Heading	275°	
Speed	220kt	
ACAS/TAS	TCAS II	
Alert	None	
Separation		
Reported	0ft V/50-100m H	NK
Recorded	NK	



THE A319 PILOT reports approaching the LAM hold when ATC advised that a drone had been reported in the vicinity at FL080; consequently, both crew members were looking out for it. Upon leaving the hold, the FO spotted an object on the horizon, approaching them at the same level and in the opposite direction. As the object got closer it became obvious that it was either a drone or a balloon, it then passed between 50-100m off the right wing. As it passed, the FO was able to get a detailed look at it and could clearly see it to be a drone. It was a Quadcopter with two forward/downward looking lights on the central underside; it was of medium size, not a small toy drone. They immediately reported it to ATC with as much information as possible. The pilot noted his concern that a drone could be operating at such an altitude, in such a critically busy piece of airspace; he considered that it presented a serious risk of collision to their own aircraft and the other aircraft in the hold.

He perceived the severity of the incident as 'High'.

The drone operator could not be traced.

THE GS AIRPORTS CONTROLLER reports that he was advised by the LL INT N controller that the A319 pilot had reported a drone abeam the aircraft, 15nm NE Heathrow.

Factual Background

The weather at Heathrow was recorded as follows:

METAR EGLL 251750Z AUTO 36004KT 9999 NCD 16/05 Q1025

Analysis and Investigation

UKAB Secretariat

The Air Navigation Order 2009 (as amended), Article 138¹ 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.¹

(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 site² provides information and guidance associated with the operation of Unmanned Aircraft Systems (UASs) and Unmanned Aerial Vehicles (UAVs).

The CAA has published a UAV Safety Notice³ 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).

Also, stay well clear of airports and airfields.

In addition, the CAA has published guidance regarding First Person View (FPV) drone operations which limit this activity to drones of less than 3.5kg take-off mass, and to not more than 1000ft⁴.

Summary

An Airprox was reported when an A319 and a drone flew into proximity at 1810 on Friday 25th September 2015. The A319 pilot was operating under IFR in VMC, and in receipt of a Radar Control Service from Swanwick. The drone operator could not be traced.

¹ 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>.

² www.caa.co.uk/uas

³ CAP 1202

⁴ ORSA No. 1108 Small Unmanned Aircraft – First Person View (FPV) Flying available at: [ORSA No 1108](#).

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the pilot of the A319, and radar photographs/video recordings.

The crew of the A319 reported seeing the drone at FL080, whilst in LAM hold. The Board first noted that, as for other aviators, drone operators are fundamentally required to avoid collisions with all aircraft. More specifically, drone flight above 400ft is prohibited in Class D airspace without the permission of the appropriate air traffic control unit and, therefore, the drone operator was not entitled to operate in this location.

In this incident, operating at levels of FL080, the drone operator would almost certainly be operating on first-person-view (FPV), for which regulation mandates that an additional person must be used as a competent observer who must maintain direct unaided visual contact with the drone in order to monitor its flight path in relation to other aircraft. Under FPV operations, for drones of less than 3.5kg, the drone is not permitted to operate above 1000ft agl without CAA approval being gained and a NOTAM being issued. Notwithstanding, even if an observer was being used, the Board thought that they would not be able to see the drone at that level. At FL080 the drone operator was flying within the LTMA Class D airspace without permission and, in his non-compliance, the Board considered that the drone operator was posing a flight safety risk.

Operating as he was in airspace within which he was not permitted meant that the Board considered that the cause of the Airprox was that the drone operator had flown into conflict with the A319. Unsurprisingly, the incident did not show on the NATS radars and, therefore, the exact separation between the two air-systems was not known. However, the Board noted that the A319 pilot estimated the separation to be between 50m and 100m horizontally (more than a wingspan away); basing their assessment of risk on this estimate, it was therefore determined that the risk was Category B, safety margins had been much reduced below the normal.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The drone was flown into conflict with the A319.

Degree of Risk: B.