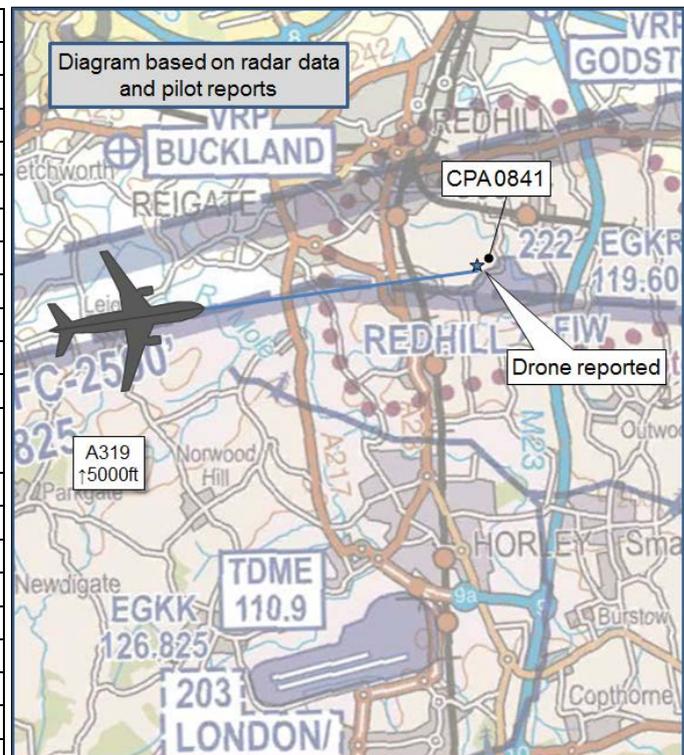


**AIRPROX REPORT No 2016033**

Date: 04 Mar 2016 Time: 0841Z Position: 5113N 00009W Location: Redhill

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

Recorded	Aircraft 1	Aircraft 2
Aircraft	A319	Drone
Operator	CAT	
Airspace	LTMA	LTMA
Class	A	A
Rules	IFR	
Service	Radar Control	
Provider	Swanwick	
Altitude/FL	5000ft	
Transponder	A,C,S	
Reported		
Colours	White, Orange	Blue
Lighting	Beacon, Strobes, Nav	
Conditions	VMC	
Visibility	10km	
Altitude/FL	5000ft	
Altimeter	QNH (991 hPa)	
Heading	090°	
Speed	250kt	
ACAS/TAS	TCAS II	
Alert	None	
Separation		
Reported	100ft V/0m H	
Recorded		NK



**THE A319 PILOT** reports that the aircraft was on an easterly heading on the ADMAG1X departure from Gatwick. On passing about 5000ft, the second officer noticed a small, blue object (which looked like a drone), fly very close to the aircraft. It flew less than 100ft under the wing of the aircraft, its track taking it between the fuselage and the number 2 engine. No avoiding action was taken because the object was not seen until very late. It was reported to ATC immediately.

He assessed the risk of collision as 'High'.

**THE drone operator could not be traced.**

### **Factual Background**

The weather at Gatwick was recorded as follows:

METAR EGKK 040820Z 23006KT 200V260 CAVOK 03/01 Q0992=

### **Analysis and Investigation**

#### **UKAB Secretariat**

The Air Navigation Order 2009 (as amended), Article 138<sup>1</sup> states:

<sup>1</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>.

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.

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 1000ft<sup>2</sup>.

## Summary

An Airprox was reported when a A319 and a drone flew into proximity at 0841 on Friday 4<sup>th</sup> March 2016. 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.

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

Information available consisted of a report from the A319 pilot and radar photographs/video recordings.

The crew of the A319 reported seeing the drone at 5000ft, whilst in vicinity of Redhill. The Board first noted that, as for other aviators, drone operators are fundamentally required to avoid collisions with all other aircraft. More specifically, drone flight above 400ft is prohibited in Class A 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 5000ft, 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 have been able to see the drone at that level. At 5000ft the drone operator was flying within the LTMA Class A airspace without permission and, in his non-compliance, the Board considered that the drone operator was posing a flight safety risk.

As is often the case with drone Airprox, the incident did not show on the NATS radars. The A319 pilot estimated that the drone was 100ft below and under the wing of the A319 when it passed by. Although the Board recognised the difficulties of determining range in dynamic conditions with no

<sup>2</sup> ORSA No. 1108 Small Unmanned Aircraft – First Person View (FPV) Flying available at: [ORSA No 1108](#).

references, using the pilot's estimate as a guide, they determined that the risk was Category B, safety margins had been much reduced below normal.

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

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

Degree of Risk: B.