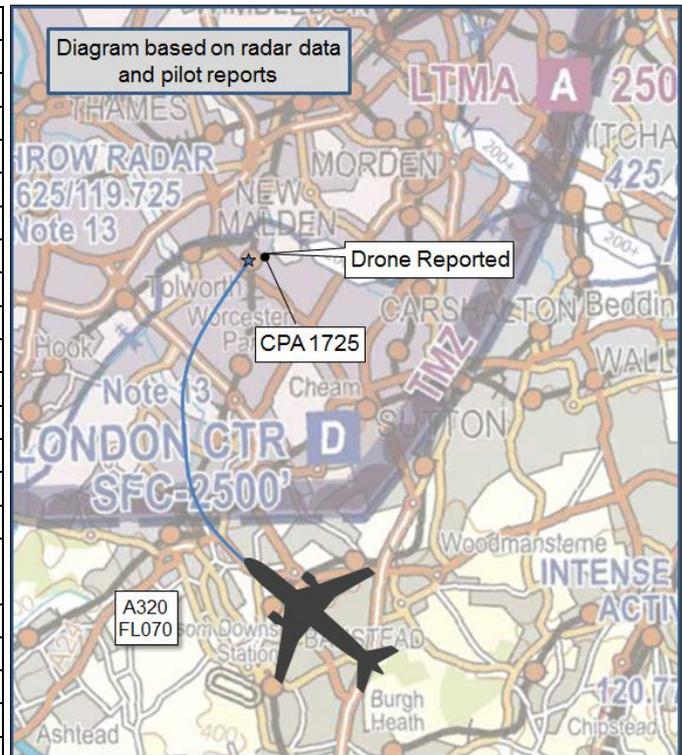


## **AIRPROX REPORT No 2016099**

Date: 07 Jun 2016 Time: 1725Z Position: 5122N 00014W Location: Croydon

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

Recorded	Aircraft 1	Aircraft 2
Aircraft	A320	Drone
Operator	CAT	Unknown
Airspace	LTMA	
Class	A	A
Rules	IFR	
Service	Radar Control	
Provider	Swanwick	
Altitude/FL	FL067	
Transponder	A, C, S	
<b>Reported</b>		
Colours	Company	White
Lighting	NK	
Conditions	VMC	
Visibility	>10km	
Altitude/FL	FL070	
Altimeter	Standard (1013hPa)	
Heading	060°	
Speed	240kt	
ACAS/TAS	TCAS II	
Alert	None	
<b>Separation</b>		
Reported	50ft V/100m H	
Recorded		NK



**THE A320 PILOT** reports that he was on vectors to downwind for the westerly runway at Heathrow. As they were turning, the FO saw a white, twin rotor drone pass by the right wing-tip. It was slightly below and about 100m horizontally separated. There was no time to take any avoiding action.

He assessed the risk of collision as 'High'.

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

### **Factual Background**

The weather at Heathrow was recorded as follows:

METAR COR EGLL 071720Z AUTO VRB03KT 9999 FEW028 22/17 Q1022 NOSIG=

### **Analysis and Investigation**

#### **UKAB Secretariat**

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

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

<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>.

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 regulation 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 an A320 and a drone flew into proximity at 1725 on Tuesday 7<sup>th</sup> June 2016. The A320 pilot was operating under IFR in VMC, and in receipt of a Radar Control Service from Heathrow Director. The drone operator could not be traced.

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

Information available consisted of a report from the A320 pilot and radar photographs/video recordings.

The crew of the A320 reported seeing the drone at about FL070, whilst being vectored for downwind for the Heathrow westerly runway. 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 7000ft, the drone operator would almost certainly have been 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. Notwithstanding, even if an observer was being used, the Board thought that they would certainly not have been able to see the drone clearly at that level. 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. At FL070, the drone operator was flying within the London TMA Class A 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 had been flown into conflict with the A320. Although the incident did not show on the NATS radars, the Board noted that the pilot had estimated the separation to be 100m from the wing-tip and 50ft below the aircraft and that there was no time to take any avoiding action. Acknowledging the difficulties in judging separation visually without external references, the Board considered that the pilot's estimate of separation, allied to his overall account

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<sup>2</sup> ORS4 No. 1168 Small Unmanned Aircraft – First Person View (FPV) Flying available at: [ORS4 No 1168](#).

of the incident and detailed description of the drone, portrayed a situation where safety margins had been much reduced below the norm; they therefore determined the risk to be Category B.

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

Cause: The drone was flown into conflict with the A320.

Degree of Risk: B.