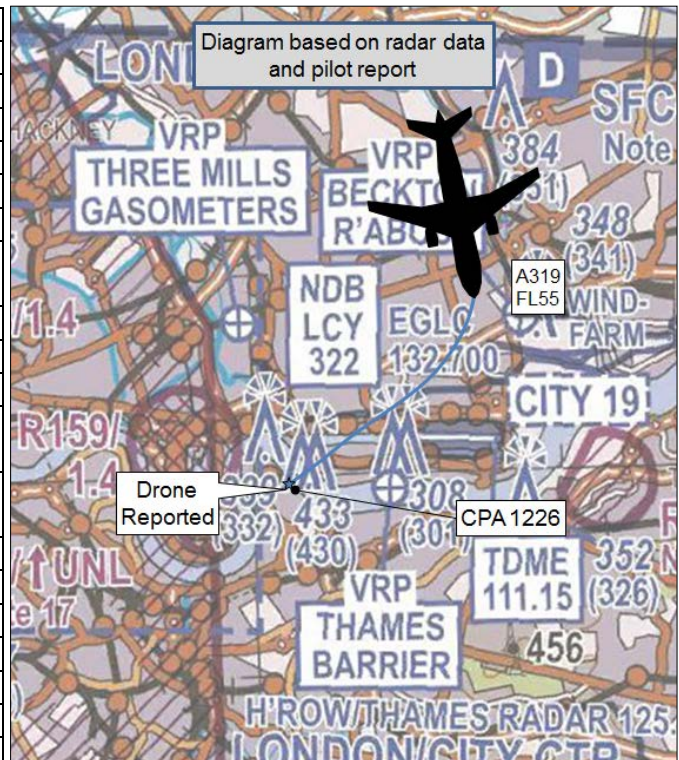


**AIRPROX REPORT No 2016168**

Date: 12 Aug 2016 Time: 1226Z Position: 5130N 00001E Location: London

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

Recorded	Aircraft 1	Aircraft 2
Aircraft	A319	Drone
Operator	CAT	Unknown
Airspace	LTMA	LTMA
Class	A	A
Rules	IFR	IFR
Service	Radar Control	None
Provider	Heathrow Director	N/A
Altitude/FL	5500ft	NK
Transponder	C, S	
Reported		
Colours	Company Colours	Not Reported
Lighting	Strobe, Nav, Landing	
Conditions	VMC	
Visibility	>10km	
Altitude/FL	5500ft	
Altimeter	QNH (1023hPa)	
Heading	180°	
Speed	180kt	
ACAS/TAS	TCAS II	
Alert	None	
Separation		
Reported	0ft V/400m H	Not Reported
Recorded	NK	



**THE A319 PILOT** reports that he was on final descent into LHR in VMC at approximately 5500ft on a 17.5nm base leg for RW 27R the FO reported that she was visual with a 3-rotor drone on her side of the aircraft. She stated that it was roughly level with the aircraft and approximately a few hundred metres away, although due to the small size of the drone it was difficult to judge the distance. This was at exactly the same time as they received instructions from LHR director to turn onto an intercept heading and descend further to capture the localiser. As such, the sighting of the drone came at a very critical time during a period of high workload. By the time it was sighted the drone was no factor as it appeared to be hovering and passed down their right-hand side.

He assessed the risk of collision as 'Low'.

**THE DRONE OPERATOR** could not be traced.

**THE HEATHROW CONTROLLER** reports that the A319 reported a drone on their right-hand side when being vectored on a right-base passing 5,300ft altitude, the position was a point just 2nm north of an 18nm final on the 27R extended centre line.

**Factual Background**

The weather at Heathrow was recorded as follows:

METAR EGLL 121150Z AUTO 24012KT 9999 NCD 24/11 Q1023 NOSIG

## Analysis and Investigation

### UKAB Secretariat

There are no specific ANO regulations limiting the maximum height for the operation of drones that weigh 7kg or less other than if flown using FPV (with a maximum weight of 3.5kg) when 1000ft is the maximum height. Drones weighing between 7kg and 20kg are limited to 400ft unless in accordance with airspace requirements. Notwithstanding, there remains a requirement to 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. CAP 722 gives guidance that, within the UK, visual line of sight (VLOS) operations are normally accepted to mean a maximum distance of 500m [1640ft] horizontally and 400ft [122m] vertically from the Remote Pilot.

Neither are there any specific ANO regulations limiting the operation of drones in controlled airspace if they weigh 7kg or less other than if flown using FPV (with a maximum weight of 3.5kg) when they must not be flown in Class A, C, D or E, or in an ATZ during notified hours, without ATC permission. Drones weighing between 7kg and 20kg must not be flown in Class A, C, D or E, or in an ATZ during notified hours, without ATC permission. CAP722 gives guidance that operators of drones of any weight must avoid and give way to manned aircraft at all times in controlled Airspace or ATZ. CAP722 gives further guidance that, in practical terms, drones of any mass could present a particular hazard when operating near an aerodrome or other landing site due to the presence of manned aircraft taking off and landing. Therefore, it strongly recommends that contact with the relevant ATS unit is made prior to conducting such a flight.

Notwithstanding the above, all drone operators are also required to observe ANO 2016 Article 94(2) which requires that the person in charge of a small unmanned aircraft may only fly the aircraft if reasonably satisfied that the flight can safely be made, and the ANO 2016 Article 241 requirement not to recklessly or negligently cause or permit an aircraft to endanger any person or property. Allowing that the term 'endanger' might be open to interpretation, drones of any size that are operated in close proximity to airfield approach, pattern of traffic or departure lanes, or above 1000ft agl (i.e. beyond VLOS (visual line of sight) and FPV (first-person-view) heights), can be considered to have endangered any aircraft that come into proximity. In such circumstances, or if other specific regulations have not been complied with as appropriate above, the drone operator will be judged to have caused the Airprox by having flown their drone into conflict with the aircraft.

A CAA web site<sup>1</sup> provides information and guidance associated with the operation of Unmanned Aircraft Systems (UASs) and Unmanned Aerial Vehicles (UAVs) and CAP722 (UAS Operations in UK Airspace) provides comprehensive guidance.

Additionally, the CAA has published Drone Aware<sup>2</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'.

This has since been revised as follows:

A joint CAA/NATS web site<sup>3</sup> provides information and guidance associated with the operation of Unmanned Aircraft Systems (UASs) and Unmanned Aerial Vehicles (UAVs) and CAP722 (UAS Operations in UK Airspace) provides comprehensive guidance.

<sup>1</sup> [www.caa.co.uk/uas](http://www.caa.co.uk/uas)

<sup>2</sup> CAP 1202

<sup>3</sup> [dronesafe.uk](http://dronesafe.uk)

## Summary

An Airprox was reported when an A319 and a drone flew into proximity at 1226 on Friday 12<sup>th</sup> August 2016. The A319 pilot were 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 reports from the A319 pilot, radar photographs/video recordings and a report from the appropriate ATC authority.

Members noted that the drone was operating at 5300ft and therefore beyond practical VLOS conditions. Also, in flying as it was within Class A airspace without the permission of Swanwick ATC, the Board considered that the drone operator had endangered the A319 and its occupants. Therefore, in assessing the cause, the Board agreed that the drone had been flown into conflict with the A319. Turning to the risk, although the incident did not show on the NATS radars, the Board noted that the pilot had estimated the separation to be 400m from the aircraft, at co-altitude, and that there had not been time to take any avoiding action. Acknowledging the difficulties in judging separation visually without external references, the Board considered that the drone may have been closer than the pilot's estimate of 400m due to the pilot's ability to give a detailed description of the number of rotors. Allied to his overall account of the incident, the Board considered that this incident portrayed a situation where safety had been degraded; they therefore determined the risk to be Category C.

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

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

Degree of Risk: C.