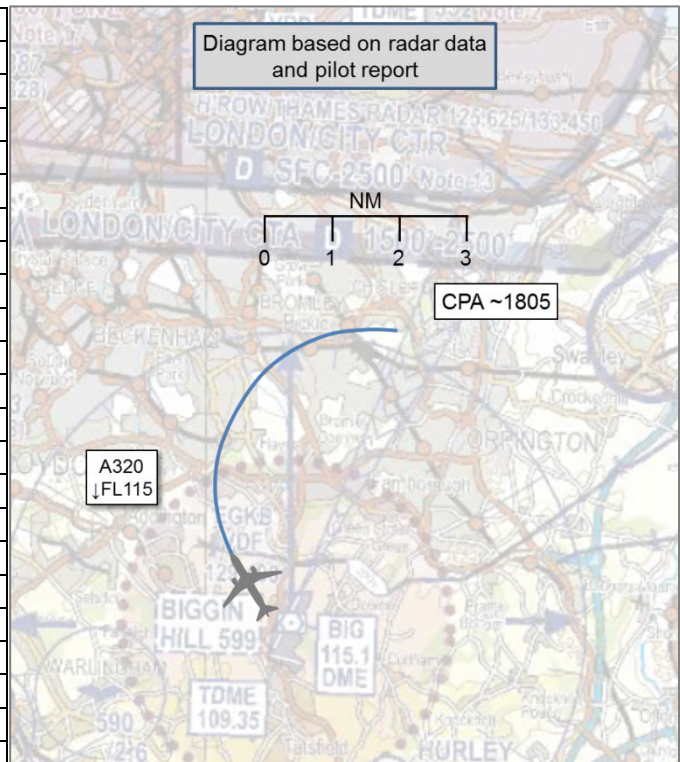


**AIRPROX REPORT No 2016161**

Date: 4 Aug 2016 Time: 1805Z Position: 5124N 00004E Location: BIG Hold

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

Recorded	Aircraft 1	Aircraft 2
Aircraft	A320	Drone
Operator	CAT	Unknown
Airspace	London TMA	London TMA
Class	A	A
Rules	IFR	
Service	Radar Control	
Provider	Swanwick	
Altitude/FL	FL115	
Transponder	A, C, S	
<b>Reported</b>		Not Reported
Colours	Company	
Lighting	All on	
Conditions	VMC	
Visibility	>10km	
Altitude/FL	FL115	
Heading	120°	
Speed	220kt	
ACAS/TAS	TCAS II	
Alert	None	
<b>Separation</b>		
Reported	0ft V/30m H	
Recorded		NK



**THE A320 PILOT** reports being in the Biggin Hold pattern when, on the outbound leg of the hold, and descending from FL120 to FL110, the First Officer (FO) saw a small object in the 1 o'clock position at the same altitude. The object passed very quickly with a lateral distance of about 20-40m. As it passed next to the right wing the FO positively identified it as a drone, about the size of a football with a flashing magenta light. This all occurred within seconds and the only thing the FO could do was shout "Look!". The Captain also saw the drone for a short moment, but there was insufficient time to react or to avoid a potential collision. ATC was informed immediately. About 2min later another aircraft reported the sighting of a drone. On landing, the crew were requested to give a statement to local police.

He assessed the risk of collision as 'High'.

**THE DRONE OPERATOR:** The drone operator could not be traced.

**THE SWANWICK GROUP SUPERVISOR AIRPORTS** reports the A320 pilot reported a possible drone whilst in the BIG hold at FL120. Details were passed to the Metropolitan Police.

**Factual Background**

The weather at Biggin Hill was recorded as follows:

METAR EGKB 041820Z 27008KT 210V320 9999 SCT045 19/11 Q1012=  
 METAR EGKB 041750Z 25007G17KT 220V290 9999 SCT040 20/12 Q1011=

## 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'.

### Summary

An Airprox was reported when an Airbus A320 and a drone flew into proximity at 1805 on Thursday 4<sup>th</sup> August 2016. The A320 pilot was operating under IFR in VMC in receipt of a Radar Control Service from Swanwick. The drone operator could not be traced.

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

<sup>2</sup> CAP 1202

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

Information available consisted of reports from both A320 pilots, radar photographs/video recordings and a report from the appropriate ATC authority.

Members noted that the drone was operating at FL115 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 A320 and its occupants. Therefore, in assessing the cause, the Board agreed that the drone had been flown into conflict with the A320. 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 20-40m 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 pilot's estimate of separation, allied to his overall account of the incident, portrayed a situation where a collision had only been narrowly avoided and chance had played a major part; they therefore determined the risk to be Category A

Members were dismayed that it appeared that a minority of drone operators were flagrantly disregarding regulation and common sense, presumably in the pursuit of ever more spectacular video footage. It was understood that regulation could do little to prevent wilful or negligent behaviour unless the transgressors could be apprehended; notwithstanding, members stressed that such incidents represented unacceptable behaviour in endangering the lives of those who flew in UK's airspace.

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

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

Degree of Risk: A.