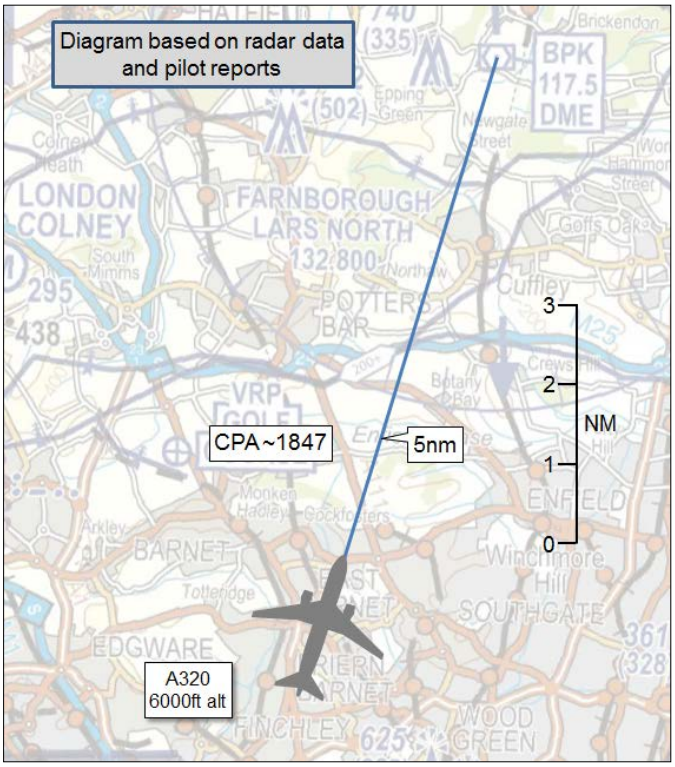
## AIRPROX REPORT No 2016172

Date: 15 Aug 2016 Time: 1847Z Position: 5140N 00009W Location: 5nm south BPK

## 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 | 6000ft | |
| Transponder | A, C, S | |
| **Reported** | | Not reported |
| Colours | Company | |
| Lighting | All on | |
| Conditions | VMC | |
| Visibility | 40km | |
| Altitude/FL | 6000ft | |
| Altimeter | QNH (1022hPa) | |
| Heading | 015° | |
| Speed | 250kt | |
| ACAS/TAS | TCAS II | |
| Alert | None | |
| | **Separation** | |
| Reported | 50ft V/16m H | |
| Recorded | NK | |




**THE A320 PILOT** reports he had levelled off on a SID, 5nm south of Brookmans Park VOR, and was looking out of the DV window when he saw a white quadcopter drone 'flash past'. The quadcopter had red and blue stripes on 2 of the rotor arms. The pilot noted that no avoiding action was possible due to the lack of available time. He reported the occurrence to the controller.

He assessed the risk of collision as 'High'.

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

**THE SWANWICK CONTROLLER** reports the A320 pilot reported that 'something had just gone over the top of him'. He was level at 6000ft and another aircraft had just crossed above him, right to left at FL70. The controller commented that an aircraft had just crossed above but the A320 pilot reported the object was red and white in colour and under a metre in size, most likely a drone.

### Factual Background

The weather at London City and Stansted was recorded as follows:

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METAR EGLC 151850Z 10012KT CAVOK 19/11 Q1023=
METAR EGSS 151850Z AUTO 11009KT 9999 NCD 18/11 Q1023=
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## 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[1] 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.

## Summary

An Airprox was reported when an A320 and a drone flew into proximity at 1847 on Monday 15th August 2016. The A320 pilot was operating under IFR in VMC in receipt of a Radar Control Service from London. 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, radar photographs/video recordings and a report from the air traffic controllers involved.

Board members agreed that the drone had been operated at an altitude that was beyond direct unaided line-of-sight, which was not permitted under current regulation without explicit CAA permission, and that it had therefore been flown into conflict with the A320. Acknowledging the

[1] dronesafe.uk

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.

## PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The drone was flown into conflict with the A320

Degree of Risk: A.