

AIRPROX REPORT No 2016015

Date: 14 Feb 2016 Time: 1644Z Position: 5124N 00007E Location: 4nm NE Biggin Hill

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	A320	Drone
Operator	CAT	Unknown
Airspace	London TMA	
Class	A	A
Rules	IFR	
Service	Radar Control	
Provider	Swanwick	
Altitude/FL	FL125	
Transponder	A,C,S	
Reported		
Colours	White, red, blue	
Lighting	HISLs, Nav	
Conditions	VMC	
Visibility	30km	
Altitude/FL	FL125	
Altimeter	1013hPa	
Heading	095°	
Speed	300kt	
ACAS/TAS	Unknown	
Separation		
Reported	150ft V/0m H	
Recorded		NK

THE A320 PILOT reports being on climb-out from Heathrow on a DET1J departure and had been given radar vectors and a climb to FL150 by the controller. As they passed 12,500ft, the co-pilot, who was PF, spotted a black drone which appeared to be stationary; it was about 1/4nm ahead and slightly above their level, but there was no time to react. They continued to climb at an estimated 2000fpm and the drone flashed beneath by about 100-150ft and slightly left of the fuselage. It happened too quickly for a detailed description, but from the brief view they could see that the drone was black, with a flashing red strobe on top and a diameter of 2-3ft. The entire event lasted no more than 3 or 4 seconds, making any evasive action virtually impossible. The Captain was changing frequency at the time and did not see the drone. No impact was seen or felt and all indications seemed normal so they reported the incident to ATC and continued with their flight.

He assessed the risk of collision as 'High'.

The drone operator could not be traced.

THE LONDON TCC CONTROLLER reports that the A320 pilot reported an Airprox when 4nm north east of BIG and at 12500ft. The crew reported it as black, 6ft wide and with a red flashing light. They reported missing the drone by 20ft. Other aircraft in the vicinity were warned about the drone, but no-one else reported seeing it. The police were informed.

Factual Background

The weather at Heathrow was recorded as follows:

METAR COR EGLL 141620Z AUTO 02010KT 9999 NCD 05/M05 Q1002 NOSIG=

Analysis and Investigation

UKAB Secretariat

The Air Navigation Order 2009 (as amended), Article 138¹ states:

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 1000ft².

Summary

An Airprox was reported when a A320 and a drone flew into proximity at 1645 on Sunday 14th February 2016. The A320 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 A320 pilot, radar photographs/video recordings and a report from the air traffic controller involved.

The crew of the A320 reported seeing the drone at FL125, whilst in vicinity of Biggin Hill. 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 FL125, 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

¹ 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>.

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

they would not be able to see the drone at that level. At FL125 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.

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. Unsurprisingly, the incident did not show on the NATS radars and, therefore, the exact separation between the two air-systems was not known. However, the Board noted that the A320 pilot estimated the separation to be 100-150ft vertically (but had reported it as 20ft to ATC). Basing the assessment of risk on such estimates is problematic but it was clear that the drone had come very close to the A320 because it had gone from above the aircraft's flight path to below as the A320 flew towards the drone. The Board therefore determined that the risk was Category A, separation had been reduced to the bare minimum and chance had played a major part in events.

PART C: ASSESSMENT OF CAUSE AND RISK

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

Degree of Risk: A.