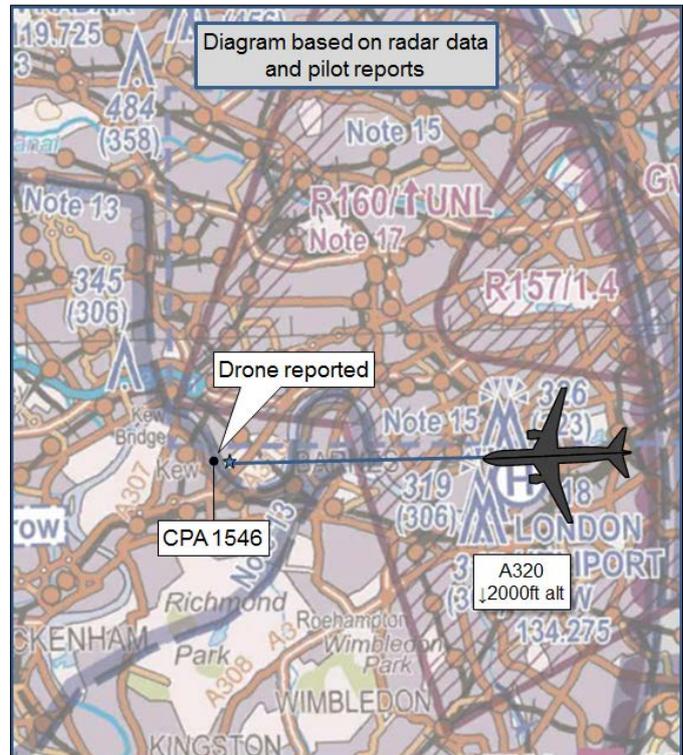


AIRPROX REPORT No 2016050

Date: 13 Apr 2016 Time: 1546Z Position: 5128N 00016W Location: 6.5nm E Heathrow

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	A320	Drone
Operator	CAT	
Airspace	London CTR	London CTR
Class	D	D
Rules	IFR	
Service	Radar Control	
Provider	Heathrow	
Altitude/FL	2000ft	
Transponder	A,C,S	
Reported		
Colours	White, Red, Blue	
Lighting	NK	
Conditions	VMC	
Visibility	10km	
Altitude/FL	2000ft	
Altimeter	QNH (1008hPa)	
Heading	270°	
Speed	NK	
ACAS/TAS	TCAS II	
Alert	None	
Separation		
Reported	0ft V/10m H	
Recorded		NK



THE A320 PILOT reports the he was at 6.5nm final on the MLS for Heathrow RW27 when he observed an object at the same altitude, but displaced laterally by about 10m. The object was roughly square in shape with a width of 1m. It appeared to be a drone and was holding position, but the encounter was brief and it was difficult to determine the trajectory. There was no time for any avoiding action, but the aircraft was not affected by the object and continued with a normal landing once it had passed, the pilot reported the encounter to ATC and, upon landing, a statement was given to the police.

He assessed the risk of collision as 'Medium'.

The drone operator could not be traced.

Factual Background

The weather at Heathrow was recorded as follows:

METAR COR EGLL 131520Z AUTO 30007KT 9999 NCD 16/03 Q1008 NOSIG=

Analysis and Investigation

UKAB Secretariat

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

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>.

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 an A320 and a drone flew into proximity at 1546 on Wednesday 13th April 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 and radar photographs/video recordings.

The crew of the A320 reported seeing the drone at 2000ft, whilst on final approach to Heathrow. 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 D 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 2000ft, 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 they would not have been able to see the drone clearly at that level. At 2000ft, the drone operator was flying within the London CTR Class D 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

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

estimated separation to be only 10m and at the same level. Basing the assessment of risk on such estimates is problematic but it was clear to the Board that the drone had come extremely close to the A320 as it had crossed the A320's flightpath. 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 A319.

Degree of Risk: A.