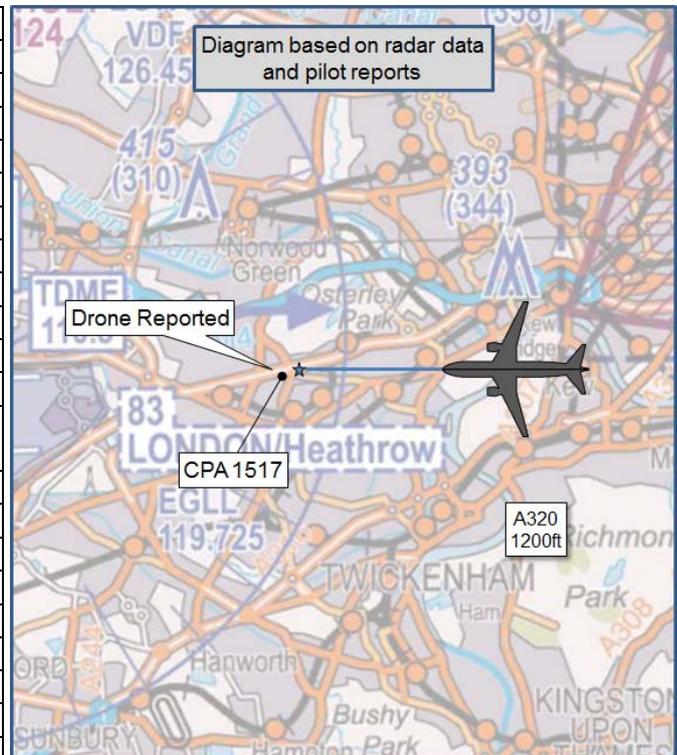


AIRPROX REPORT No 2016062

Date: 01 May 2016 Time: 1517Z Position: 5129N 00022W Location: 3.4nm East Heathrow

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	A320	Drone
Operator	CAT	Unknown
Airspace	London CTR	London CTR
Class	D	D
Rules	IFR	
Service	Aerodrome	
Provider	Heathrow Tower	
Altitude/FL	1200ft	
Transponder	A,C,S	
Reported		Not reported
Colours	White, Red	
Lighting	Strobes, Beacon, Landing, Wing-tip	
Conditions	VMC	
Visibility	>10km	
Altitude/FL	1250ft	
Altimeter	QNH	
Heading	271°	
Speed	150kt	
ACAS/TAS	TCAS II	
Alert	None	
Separation		
Reported	10-20m V/2-4m H	NK
Recorded	NK	



THE A320 PILOT reports that he was passing 4nm on the approach to RW27 at Heathrow, he started reducing speed and configuring the aircraft for landing, which required some concentration within the cockpit. Consequently, as he looked out he saw the drone at the last second as it passed just below the nose and slightly to the left. There was absolutely no time for any avoiding action. The drone was a dark colour with 4 orange propellers, and he noted that its small size made early detection impossible. He reported the incident to ATC and, on arrival at Heathrow, the police were there to take his deposition.

He assessed the risk of collision as ‘High’.

The drone operator could not be traced.

THE HEATHROW VCR SUPERVISOR reports that the A320 pilot advised ATC that a drone had passed beneath him at 3.5nm finals. Subsequent inbounds were warned and the police informed.

Factual Background

The weather at Heathrow was recorded as follows:

METAR COR EGLL 011450Z AUTO 23011KT 200V270 9999 NCD 16/01 Q1026 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 an A320 and a drone flew into proximity at 1517 on Sunday 1st May 2016. The A320 pilot was operating under IFR in VMC, and in receipt of an Aerodrome Service from Heathrow. 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 1250ft, 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 1250ft, 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.

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](#).

At 1250ft, 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 estimated the separation to be only 10m away, and at virtually 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 passed below the aircraft. 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.