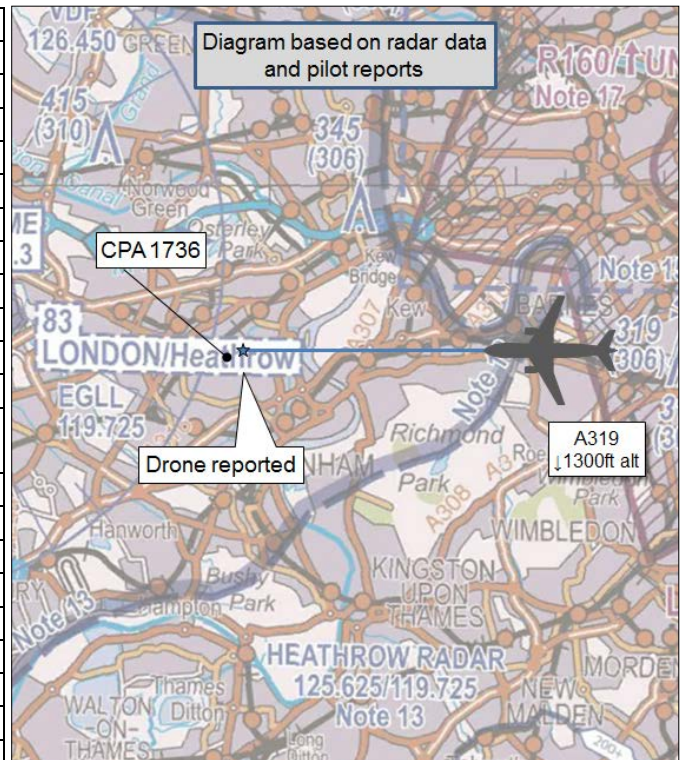


AIRPROX REPORT No 2016137

Date: 17 Jul 2016 Time: 1736Z Position: 5127N 00020W Location: 5nm E Heathrow

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	A319	Drone
Operator	CAT	Unknown
Airspace	LTMA	
Class	A	
Rules	IFR	
Service	Aerodrome	
Provider	Heathrow Tower	
Altitude/FL	1300ft	
Transponder	A, C, S	
Reported		
Colours	Company	White
Lighting	Landing, Nav, Strobes	
Conditions	VMC	
Visibility	>10km	
Altitude/FL	1000ft	
Altimeter	NK	
Heading	271°	
Speed	135kt	
ACAS/TAS	TCAS II	
Alert	None	
Separation		
Reported	100m H	
Recorded		NK



THE A319 PILOT reports that he was making an Approach to RW27R at Heathrow. On passing 1000ft, an object caught his attention and drew his eye to the left of the aircraft. It was a white Quadcopter drone, of the DJI Phantom type. He watched it pass down the left-hand side of the aircraft approximately 100m away. It was stationary and possibly filming aircraft on approach.

He assessed the risk of collision as 'Low'.

The drone operator could not be traced.

THE HEATHROW VCR SUPERVISOR reports that the crew of the A319 reported an encounter with a drone whilst at 1000ft on approach to RW27. He spoke to the pilot later, after he had landed, and he stated it was definitely a drone, white in colour and was a DJI Phantom. He said that he had recognised the drone because his son had the very same model. The appropriate actions were taken and subsequent inbound aircraft were informed, as were the police.

Factual Background

The weather at Heathrow was recorded as follows:

METAR COR EGLL 171720Z AUTO 27014KT 9999 FEW039 26/16 Q1021 NOSIG=

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 regulation 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 A319 and a drone flew into proximity at 1736 on Sunday 17 July 2106. The A319 pilot was operating under IFR in VMC, and in receipt of an Aerodrome Service from Heathrow Tower. The drone operator could not be traced.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of a report from the A319 pilot, radar photographs/video recordings, and a report from the air traffic controller involved.

There are no 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

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 ORS4 No. 1168 Small Unmanned Aircraft – First Person View (FPV) Flying available at: [ORS4 No 1168](#).

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.

Members noted that the drone was operating at 1000ft and therefore at the limits of practical VLOS conditions. Also, in flying as it was within Class A airspace without the permission of ATC, the Board considered that the drone operator had endangered the A319 and its occupants. Therefore, in assessing the cause, the Board agreed that the drone had been flown into conflict with the A319. 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 100m from the aircraft, 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 safety had been much reduced below the norm; they therefore determined the risk to be Category B.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The drone was flown into conflict with the A319.

Degree of Risk: B.