

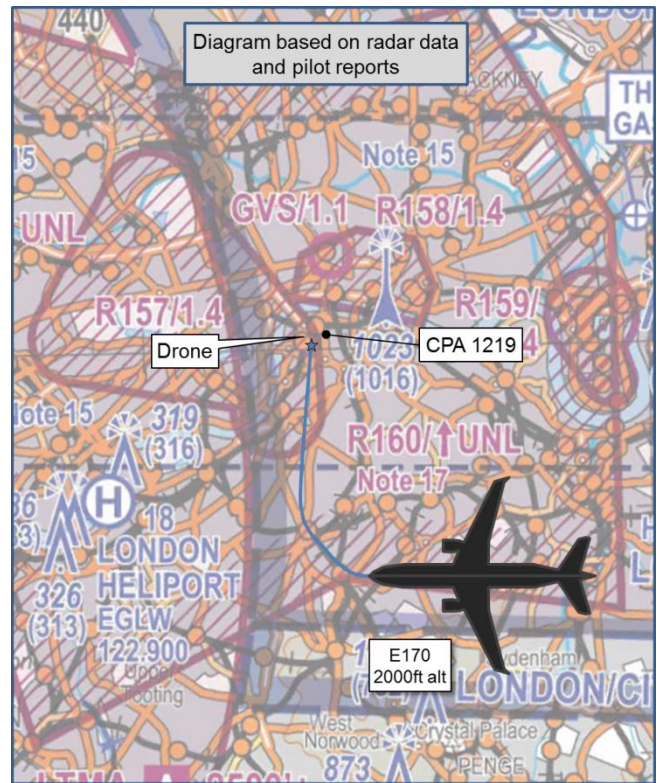
AIRPROX REPORT No 2015157

Date: 13 Sep 2015 (Saturday) Time: 1219Z

Position: 5129N 00006W Location: IVO the Houses of Parliament

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Embraer 170	Drone
Operator	CAT	Unknown
Airspace	London City CTR	
Class	D	D
Rules	IFR	
Service	Radar Control	
Provider	Thames Radar	
Altitude/FL	2000ft	
Transponder	A,C,S	
Reported		
Colours	Red, White, blue	Silver
Lighting	Strobes, HISLs, Nav	
Conditions	VMC	
Visibility	10km	
Altitude/FL	2000ft	
Altimeter	QNH	
Heading	360°	
Speed	160kt	
ACAS/TAS	TCAS II	
Alert	None	
Separation		
Reported	0ft V/20m H	
Recorded	NK	



THE E170 PILOT reports that as they were flying over the Thames during an approach to London City, they were advised of helicopter traffic below that then became a TCAS TA. On sighting this traffic visually, the crew then looked forward and saw a balloon-like object about 1/2 nm away. This passed down the left-hand side of the aircraft. It was initially reported to ATC as a balloon, but as it passed it became apparent that it was a silver drone with a ‘balloon-like’ centre and 4 small rotors on each corner. The pilot reported a high cockpit workload at the time due to the TCAS TA.

He assessed the risk of collision as ‘High’.

THE Drone operator could not be traced.

THE THAMES RADAR CONTROLLER reports that the pilot of the E170 reported a balloon being at a similar level when he was abeam of the Houses of Parliament. Nothing was observed on radar.

Factual Background

The weather at London City was recorded as follows:

METAR EGLC 131220Z 09009KT 9999 SCT028 18/10 Q1006

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.⁷

(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.

A CAA web site² provides information and guidance associated with the operation of Unmanned Aircraft Systems (UASs) and Unmanned Aerial Vehicles (UAVs).

The CAA has published a UAV Safety Notice³ which states the responsibilities for flying unmanned aircraft. This includes:

You are responsible for avoiding collisions with other people or objects - including aircraft.

Do not fly your unmanned aircraft in any way that could endanger people or property.

It is illegal to fly your unmanned aircraft over a congested area (streets, towns and cities).

Also, stay well clear of airports and airfields.

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 1000ft⁴.

Summary

An Airprox was reported when a E170 and a drone flew into proximity at 1219 on Saturday 13th September 2015. The E170 pilot was operating under IFR, in VMC, and in receipt of a Radar Control Service from Thames Radar. The drone operator could not be traced.

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 www.caa.co.uk/uas

³ CAP 1202

⁴ ORSA No. 1108 Small Unmanned Aircraft – First Person View (FPV) Flying available at: [ORSA No 1108](#)

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the pilot of the E170, radar photographs/video recordings and reports from the air traffic controllers involved.

The crew of the E170 reported seeing the drone at 2000ft whilst on the approach to London City Airport. The Board first noted that, as for other aviators, drone operators are fundamentally required to avoid collisions with all 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. Furthermore, there are restrictions on flying drones overhead built-up areas: without permission, drones cannot be operated within 150m of any congested area, or within 50m of any vessel, vehicle or structure. Therefore the drone operator was also not entitled to fly the drone in the location he did over London.

In this incident, operating at levels of 2000ft, the drone operator would almost certainly have been 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. At 2000ft, the drone operator was flying within the London City 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 operator had flown into conflict with the E170. The E170 pilot estimated that the drone came within 20m of his aircraft. Based on this assessment, it was determined therefore that the risk was Category A, separation had been reduced to the 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 E170.

Degree of Risk: A.