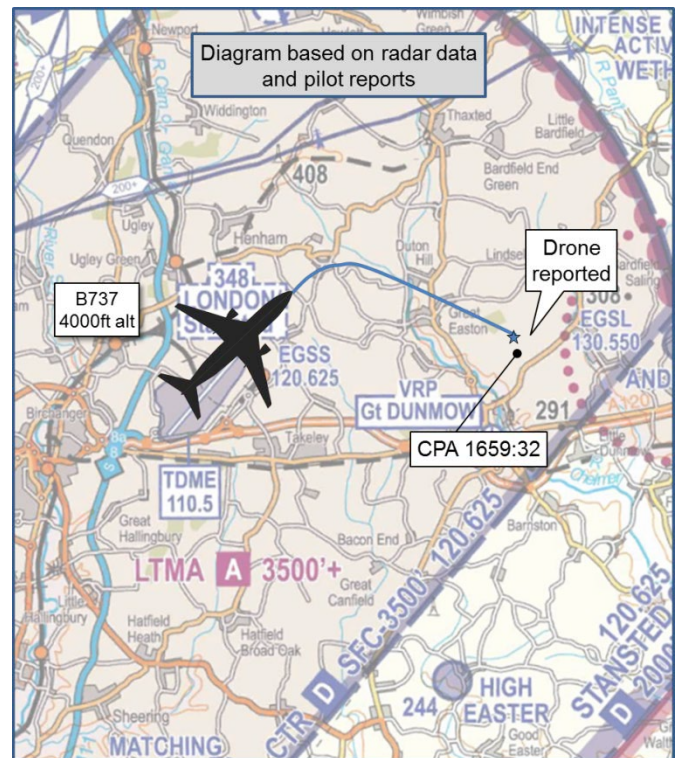


AIRPROX REPORT No 2015155

Date: 13 Sep 2015 (Sunday) Time: 1700Z Position: 5154N 00024E Location: 7nm NE Stansted

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	B737	Drone
Operator	CAT	Unknown
Airspace	London TMA	
Class	D	D
Rules	IFR	
Service	Radar Control	
Provider	Swanwick	
Altitude/FL	4000ft	
Transponder	A,C,S	
Reported		
Colours	Blue, White, Yellow	
Lighting	Beacon, Strobes Landing lights	
Conditions	VMC	
Visibility	>10km	
Altitude/FL	4000ft	
Altimeter	QNH (1002hPa)	
Heading	120°	
Speed	250kt	
ACAS/TAS	Unknown	
Alert	Unknown	
Separation		
Reported	15ft V/50m H	NK
Recorded	NK	



THE B737 PILOT reports passing 4000ft on departure from RW04 at Stansted when the First Officer saw a remotely piloted aircraft pass within 50m and overhead the aircraft by about 5m. The aircraft was purple in colour with a fuselage of about 2m in length, the crew were unable to tell whether it was jet powered or had prop blades. It went from the 12 o'clock position to the 1 o'clock position on a reciprocal track. The incident happened so quickly that there was no time to take avoiding action; however, there was no indication on the flightdeck of an impact. The incident was reported to ATC.

He assessed the risk of collision as 'High'.

THE drone operator could not be traced.

THE LONDON TCC CONTROLLER reports that the B737 was on a Clacton departure from Stansted and passing 4020ft, when the pilot reported seeing a purple drone 3-4m above the aircraft.

Factual Background

The weather at Stansted was recorded as follows:

METAR EGSS 131650Z 11009KT 9999 SCT036 15/08 Q1003

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 B737 and a drone flew into proximity at 1700 on Sunday 18th August 2015. The B737 was operating under IFR in VMC and receiving a Radar Control Service from Swanwick. The incident did not show on the NATS radars and drone operator could not be traced.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of a report from the B737 pilot, radar photographs/video recordings, and a report from the air traffic controller.

The crew of the B737 reported seeing the drone at 4000ft, whilst in the climb after departure from Stansted. 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.

In this incident, operating at levels of 4000ft, 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, the Board thought it unlikely that they would be able to see the drone at that level even if an observer was being used. At 4000ft, the drone operator was flying

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](#).

within the LTMA, 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 B737. 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 B737 pilot had estimated the separation to be 15ft vertically and 50m horizontally. Basing their assessment on this report, the Board determined 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 B737.

Degree of Risk: A.