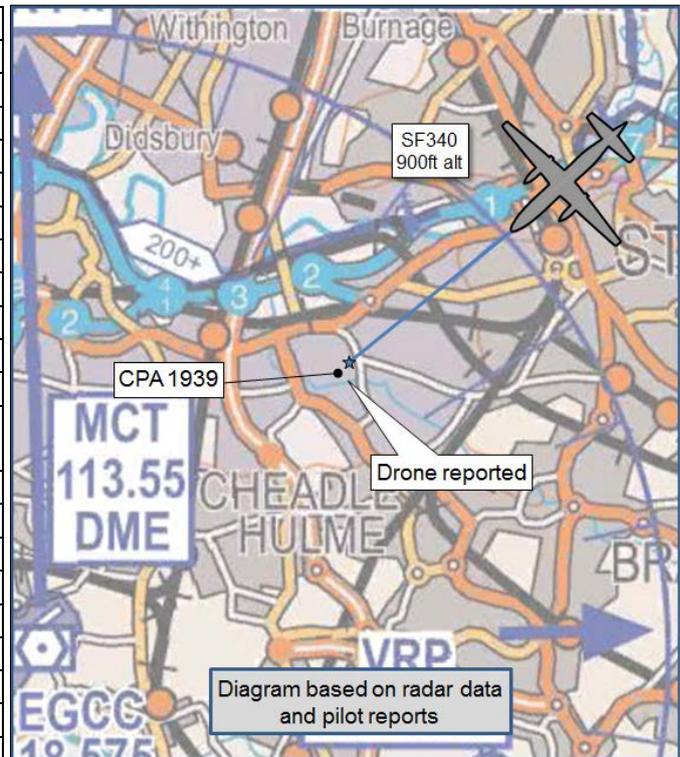


AIRPROX REPORT No 2016079

Date: 15 May 2016 Time: 1939Z Position: 5323N 00212W Location: Manchester

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	SF340	Drone
Operator	CAT	Unknown
Airspace	Manchester CTR	Manchester CTR
Class	D	D
Rules	IFR	
Service	NK	
Provider	Manchester	
Altitude/FL	900ft	
Transponder	A, C, S	
Reported		Not reported
Colours	White	
Lighting	Strobes, beacon, nav, nose, wing	
Conditions	VMC	
Visibility	>10km	
Altitude/FL	900ft	
Altimeter	QNH (1022hPa)	
Heading	280°	
Speed	140kt	
ACAS/TAS	TCAS II	
Alert	None	
Separation		
Reported	0ft V/10m H	
Recorded		NK



THE SF340 PILOT reports descending at 2.7nm DME on the ILS to land on RW23R at Manchester Airport when a drone passed front-left of the aircraft at the same altitude and at a distance of about 10m. The incident was reported to ATC.

He assessed the risk of collision as 'Low'.

THE DRONE OPERATOR: The drone operator could not be traced.

Factual Background

The weather at Manchester was recorded as follows:

METAR COR EGCC 151920Z 29006G19KT 240V320 CAVOK 11/04 Q1022 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.'

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>.

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.²

(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.²

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 an SF340 and a drone flew into proximity at about 1939 on Sunday 15th May 2016. The SF340 pilot was operating under IFR in VMC in receipt of an Air Traffic Service from Manchester. The drone operator could not be traced.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of a report from the SF340 pilot and radar recordings.

The crew of the SF340 reported seeing the drone at about 900ft, whilst descending at 2.7nm DME on the ILS to land on RW23R at Manchester Airport. 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 A airspace without the permission of the appropriate air traffic control unit and therefore the drone operator was not entitled to operate in this location.

Members agreed that the drone operator was probably flying on first-person-view (FPV) and should not have conducted his flight within the Manchester CTR without the permission of Manchester ATC, who confirmed that no such permission had been given. If flying under FPV regulations, 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.

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 SF340. Although the incident did not show on the NATS radars, the Board noted that the pilot had estimated the separation to be 10m from the cockpit, co-altitude, and that; as a result, they opined that there would probably not have 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 a collision had only been narrowly avoided and luck had played a major part; they therefore determined the risk to be Category A.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The drone was flown into conflict with the SF340.

Degree of Risk: A.

² ORS4 No. 1168 Small Unmanned Aircraft – First Person View (FPV) Flying available at: [ORS4 No 1168](#).