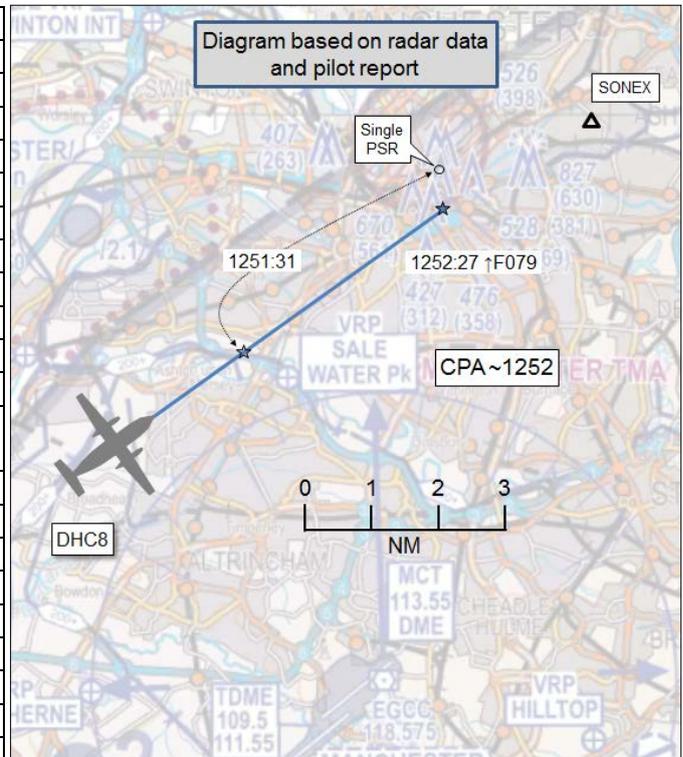


AIRPROX REPORT No 2016266

Date: 18 Dec 2016 Time: 1252Z Position: 5329N 00214W Location: 7nm NNE Manchester

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	DHC8	Drone
Operator	CAT	Unknown
Airspace	Manchester TMA	Manchester TMA
Class	A	A
Rules	IFR	
Service	Radar Control	
Provider	Manchester	
Altitude/FL	FL79	
Transponder	A, C, S	
Reported		Not reported
Colours	Company	
Lighting	Nav, strobes, landing	
Conditions	VMC	
Visibility	>10km	
Altitude/FL	FL80	
Heading	055°	
Speed	210kt	
ACAS/TAS	TCAS II	
Alert	None	
	Separation	
Reported	100ft V/500m H	
Recorded	NK	



THE DHC8 PILOT reports departing Manchester when they were advised by ATC of traffic levelling 1000ft above. The crew checked the TCAS and commenced a visual scan to identify the traffic, which was sighted. During the course of the external scan a dark, multi-rotor drone was also seen in the 10 o'clock position, slightly lower, which passed quickly down the left-hand side. The sighting was reported to ATC.

He assessed the risk of collision as 'Medium'.

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

THE MANCHESTER CONTROLLER reports the DHC8 pilot reported a possible sighting of a drone on his left-hand side around the SONEX area. Subsequent aircraft departing on the same route were given information, although no-one else reported a sighting.

Factual Background

The weather at Manchester was recorded as follows:

METAR COR EGCC 181250Z VRB03KT CAVOK 07/05 Q1035 NOSIG=

Analysis and Investigation

UKAB Secretariat

There are no specific ANO regulations limiting the maximum height for the operation of drones that weigh 7kg or less other than if flown using FPV (with a maximum weight of 3.5kg) when

1000ft is the maximum height. Drones weighing between 7kg and 20kg are limited to 400ft unless in accordance with airspace requirements. Notwithstanding, there remains a requirement to 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. CAP 722 gives guidance that, within the UK, visual line of sight (VLOS) operations are normally accepted to mean a maximum distance of 500m [1640ft] horizontally and 400ft [122m] vertically from the Remote Pilot.

Neither are there any 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 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.

A CAA web site¹ provides information and guidance associated with the operation of Unmanned Aircraft Systems (UASs) and Unmanned Aerial Vehicles (UAVs) and CAP722 (UAS Operations in UK Airspace) provides comprehensive guidance.

Summary

An Airprox was reported when a DHC8 and a drone flew into proximity at about 1252 on Sunday 18th December 2016. The DHC8 pilot was operating under IFR in VMC in receipt of a Radar Control Service from Manchester Radar. The drone operator could not be traced.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of a report from the DHC8 pilot, radar photographs/video recordings and a report from the appropriate ATC authority.

The Board agreed that the altitude of the drone was such that it could not have been operated within VLOS and therefore was flown into conflict with the DHC8. 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 500m horizontally and 100ft vertically. 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 although safety had been degraded, a collision was unlikely; they therefore determined the risk to be Category C.

¹ dronesafe.uk

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The drone was flown into conflict with the DHC8.

Degree of Risk: C.