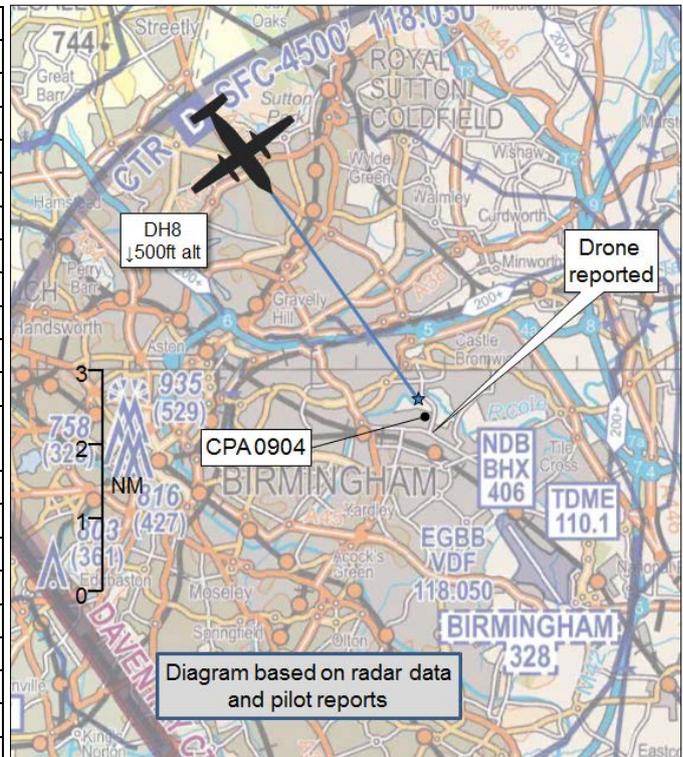


**AIRPROX REPORT No 2016197**

Date: 07 Sep 2016 Time: 0904Z Position: 5228N 00146W Location: NNW Birmingham

**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

Recorded	Aircraft 1	Aircraft 2
Aircraft	DH8	Drone
Operator	CAT	Unknown
Airspace	Birmingham	
Class	D	D
Rules	IFR	
Service	Aerodrome	
Provider	Birmingham	
Altitude/FL		
Transponder	A, C, S	
<b>Reported</b>		
Colours	Company	Grey
Lighting	Nav, Anti-cols, Landing	
Conditions	VMC	
Visibility	>10km	
Altitude/FL	500ft	
Altimeter	Rad Alt	
Heading	147°	
Speed	120kt	
ACAS/TAS	TCAS II	
Alert	None	
<b>Separation</b>		
Reported	0ft V/500m H	
Recorded		NK



**THE DH8 PILOT** reports that he was on final approach to Birmingham, established on the ILS RW15. As he passed through 1.2DME and 500ft, he saw a small UAV-type aircraft immediately abeam on the left-hand-side. The aircraft became visible as they descended through its level, where it had previously been masked by the scenery. At that moment, the aircraft radio altimeter announced '500ft'. The aircraft appeared to be in a stationary hover near a road layout that formed a V shape from their vantage point, he subsequently estimated the position of the aircraft to be overhead a primary school. The immediate risk to the aircraft was low, so the approach was continued, and Birmingham Tower were informed of the presence of the UAV.

He assessed the risk of collision as 'Low'.

**The drone operator could not be traced.**

**THE BIRMINGHAM CONTROLLER** reports that the pilot reported seeing a drone, and the Watch Manager contacted the West Midlands Police. They were unable to locate the drone or its operator. Birmingham Airport and Birmingham ATC were not advised of this drone operation in advance. The primary school concerned was contacted to inform them about the drone above the school.

**Factual Background**

The weather at Birmingham was recorded as follows:

METAR EGBB 070850Z 19005KT 160V230 9999 SCT012 BKN017 19/16 Q1019=

The primary school in question was contacted by the Radar Analysis Cell and confirmed that they do not own a drone, nor have they ever allowed anyone to operate a drone from their premises.

## 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.

At the time of the incident the CAA had published Drone Aware<sup>1</sup> 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).  
..., stay well clear of airports and airfields'.

However, a new joint CAA/NATS web site<sup>2</sup> now 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.

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<sup>1</sup> CAP 1202

<sup>2</sup> [dronesafe.uk](http://dronesafe.uk)

## Summary

An Airprox was reported when a DH8 and a drone flew into proximity at 0904 on Wednesday 7<sup>th</sup> September 2016. The DH8 pilot was operating under IFR in VMC, and in receipt of an Aerodrome Service from Birmingham. The drone operator could not be traced.

## **PART B: SUMMARY OF THE BOARD'S DISCUSSIONS**

Information available consisted of a report from the pilot of the DH8 aircraft, radar photographs/video recordings and a report from the air traffic controller involved.

Members agreed that the drone operator, by operating at that position and altitude on the approach path to Birmingham airport, had flown the drone into conflict and had endangered the DH8 and its passengers. Turning to the risk, although the incident did not show on radar, the Board noted that the pilot had estimated the separation to be 500m from the aircraft, at co-altitude. Notwithstanding the difficulty of range assessment without visual cues, it was agreed that on this occasion the drone had passed sufficiently clear such that there was no risk of collision and so the risk was assessed as Category C.

## **PART C: ASSESSMENT OF CAUSE AND RISK**

Cause: The drone was flown into conflict with the DH8.

Degree of Risk: C.