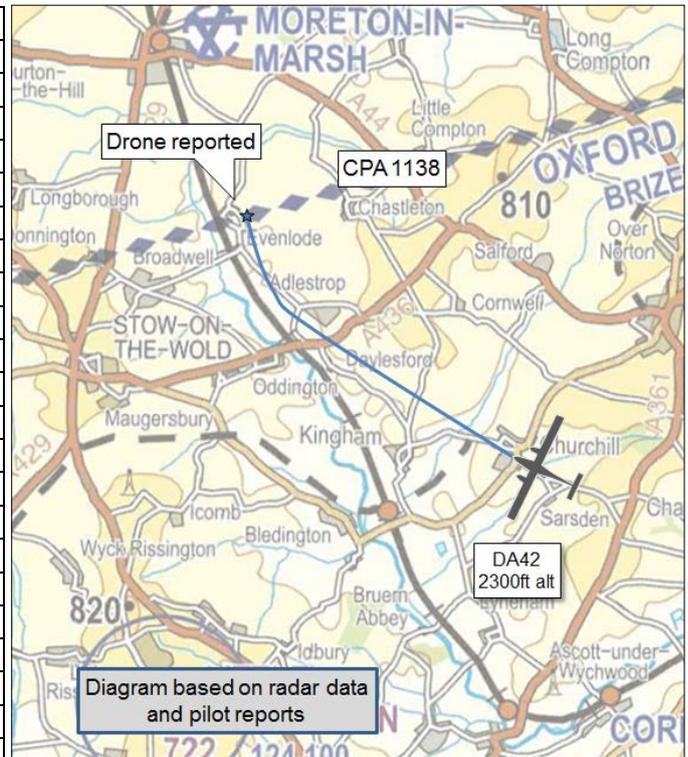


## AIRPROX REPORT No 2016138

Date: 18 Jul 2016 Time: 1138Z Position: 5158N 00140W Location: 2nm se Morton in Marsh

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

Recorded	Aircraft 1	Aircraft 2
Aircraft	DA42	Drone
Operator	Civ Trg	Unknown
Airspace	Lon FIR	
Class	G	G
Rules	VFR	
Service	Basic	
Provider	Oxford	
Altitude/FL	2400ft	
Transponder	A, C, S	
<b>Reported</b>		
Colours	White	Black
Lighting	NR	
Conditions	VMC	
Visibility	>10km	
Altitude/FL	2300ft	
Altimeter	QNH (1022hPa)	
Heading	330°	
Speed	120kt	
ACAS/TAS	Not fitted	
<b>Separation</b>		
Reported	100ft V/50m H	
Recorded		NK



**THE DA42 PILOT** reports he was flying at 2300ft when he spotted a four-prop drone, black in colour and square design flying straight-and-level in the opposite direction. He took avoiding action by banking left 30°.

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

### **Factual Background**

The weather at Oxford was recorded as follows:

METAR EGTK 181050Z 16003KT 9999 FEW025 24/17 Q1022=

### **UKAB Secretariat**

The Air Navigation Order 2009 (as amended), Article 138<sup>1</sup> 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.

<sup>1</sup> 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>.

(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 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 1000ft<sup>2</sup>.

## Summary

An Airprox was reported when a DA42 and a drone flew into proximity at 1138 on Monday 18<sup>th</sup> July 2016. The DA42 pilots was operating under VFR in VMC, and in receipt of a Basic Service from Oxford. The drone operator could not be traced.

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

Information available consisted of a report from the DA42 pilot and radar photographs/video recordings.

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.

All drone operators are 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.

Members noted that the drone was operating at 2300ft and therefore beyond practical VLOS conditions. Therefore, in assessing the cause, the Board agreed that the drone had been flown into conflict with the DA42. 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 100ft vertically and 50m horizontally from the aircraft. 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 safety had been much reduced below the norm; they therefore determined the risk to be Category B.

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

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

Cause:                      The drone was flown into conflict with the DA42.

Risk:                        B.