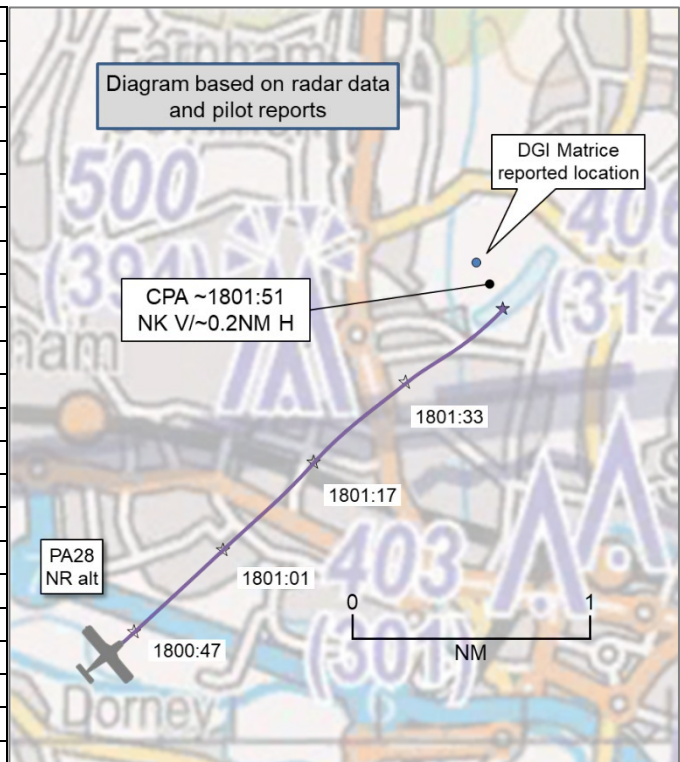


## AIRPROX REPORT No 2022021

Date: 06 Mar 2022 Time: 1802Z Position: 5132N 00036W Location: 1NM N Slough

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

Recorded	Aircraft 1	Aircraft 2
Aircraft	DJI Matrice	PA28
Operator	Civ Comm	Civ FW
Airspace	London CTR	London CTR
Class	D	D
Rules	VLOS	VFR
Service	None	Radar Control
Provider	None	Heathrow Director
Altitude/FL	NR	NR
Transponder	Not fitted	A, C, S
<b>Reported</b>		
Colours	Grey	Blue stripes
Lighting	Yes	Strobe, landing
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	300ft agl	1100ft
Altimeter	agl (NK hPa)	QNH (NK hPa)
Heading	036°	050°
Speed	NK	120kt
ACAS/TAS	Other <sup>1</sup>	Not fitted
Alert	None	N/A
<b>Separation at CPA</b>		
Reported	NK V/200m H	Not seen
Recorded	NK V/~0.2NM H	



**THE DJI MATRICE PILOT** reports that their flight observer notified them that an aircraft was approaching, due to the speed of the aircraft and its altitude there was not much time to react to the situation, they deemed the flight well away from the UAV but at a very low altitude.

The pilot assessed the risk of collision as 'Low'.

**THE PA28 PILOT** reports that they were cleared at not above 1200ft direct Burnham which quickly became direct Denham. They couldn't remember the squawk code. They also remembered the conversation with the Heathrow director was calm and cordial, with no errors, pop-up traffic, repeats or "say-agains", finishing with frequency change to Denham and then Elstree, and Heathrow stating that they had nothing further for them. They maintained a lookout, but due to what would have been Radar Control their focus was on following instructions and altitude, not looking for aviators beneath them. The pilot later reported that they had been unaware that their "Mode C" readout had not been available to the controller and that their electronic chart system had showed them at a steady 1100ft.

**THE HEATHROW SVFR CONTROLLER** reports contributed to the NATS Safety Investigations report which has been summarised below.

### **Factual Background**

The weather at Heathrow was recorded as follows:

METAR COR EGLL 061750Z AUTO 06010KT 9999 BKN033 06/M01 Q1028 NOSIG  
 METAR COR EGLL 061820Z AUTO 06007KT 9999 FEW032 BKN039 06/M00 Q1028 NOSIG

<sup>1</sup> DJI standard air and obstacle avoidance system, auto avoidance of objects up to 40m range.

## Analysis and Investigation

### NATS Safety Investigations.

A Drone was being operated 100m South of Stoke Park mansion in Buckinghamshire and was operating at 300ft (agl) within the London CTR. The drone operator submitted an Airprox report with an aircraft that was described as a low wing single engine aircraft with horizontal separation detailed as 200m and the aircraft was described as low level. [PA28 registration was] routing [departure airfield] to [destination airfield] on SSR code 7032 in contact with Heathrow Special VFR, and was the aircraft potentially identified.

Information available to the investigation included:

- Redacted Airprox report filed by Drone Operator
- UK AIP ENR Section
- Heathrow Tower ATC Logs and TC Ops Log
- Radar and R/T recordings

The pilot of [the PA28] reported onto Heathrow Special VFR (SVFR) frequency at **1748:55** and was instructed to display Mode-A code 7032, the London QNH was 1028hPa and asked to pass their message. The pilot of [the PA28] responded they were a PA28 routeing [from departure airfield] to [destination airfield] and they were looking to cross the London CTR from Burnham to Elstree and that they were at 1800ft. Note: [the PA28] had no associated altitude Mode-C/Mode-S response displayed.

The SVFR controller issued the pilot of [the PA28] with a Basic Service outside controlled airspace, advising that they would call them back as they got closer to the zone.

The pilot of [the PA28] was issued with a clearance to transit the London CTR via Burnham and was given a clearance limit to Burnham, not above 1200ft VFR at **1753:38**. At **1756:04** the pilot of [the PA28] reported level at 1200ft.

Further clearance was issued to [the pilot of the PA28] at **1757:43** by the Heathrow SVFR controller to route Burnham then Denham, coincident with the aircraft entering the London CTR.

At **1801:41** [the pilot of the PA28] was instructed to retain the Mode-A code and to free call Denham. [The PA28 pilot then] left the frequency.

[The PA28] passed the general locality of Stoke Park Mansion at **1802:30**.

Analysis of the radar by Safety Investigations indicated that there were no primary or secondary contacts visible on radar associated with the drone activity.

The pilot of [the PA28] recalled onto the SVFR frequency at **1803:55** stating they were overhead Denham, and Denham had advised they had no traffic to affect. The SVFR controller responded they had nothing further for the pilot of [the PA28], to squawk conspicuity and free call Elstree. The pilot of [the PA28] then left the frequency.

The UK AIP ENR1.1 Section 4.1.8 outlines rules and guidelines with regards to Unmanned Aircraft Systems (UAS). The drone was operating within the London CTR; however, it was outside the Flight Restriction Zone (FRZ) and therefore did not require the ATSU or aerodrome operator permission to be in its location.

UK AIP ENR1.1 4.1.8.6 outlines: Unmanned aircraft flights above 400ft require a CAA authorisation, including those within an FRZ, which will also require permission from the aerodrome. A CAA authorisation to operate above 400ft does not guarantee permission will be given by an aerodrome for the operation.

Further information from the Drone pilot stated: We have been in contact with all aerodromes in our area, also Heathrow who are aware that we are conducting daily drone flights, In the area we are not required to submit NOTAM's, but we do submit flight reports on altitude angel drone safety map.

Safety Investigations liaised the week commencing 22nd April with Heathrow Tower who detailed they no longer held their recorded telephone data for the 6th March 2022. The Heathrow Tower ATC Log and the LTC ATC Watch Log were both checked with neither having any record of the drone operation at Stoke Park Mansion. There was no electronic information held on the SVFR position reference the drone activity.

Given Stoke Park Mansion elevation of 167ft and the drone operator reported 'altitude/height' of 300ft and the [pilot of the PA28] reported an altitude of 1200ft, Safety Investigations assessed a minimum of 733ft had existed between the aircraft and the drone, with [the PA28 pilot] operating in accordance with the issued VFR clearance as per standard procedure.

The Airprox occurred at approximately 18.05 UTC.

[The PA28 pilot] had been issued a VFR clearance to cross the London CTR with the pilot reporting level at 1200ft. A drone operator reported an Airprox with [PA28 registration]. Analysis of the radar by Safety Investigations indicated that there were no primary or secondary contacts associated with the drone visible on radar at the approximate time of the event.

### **UKAB Secretariat**

The DGI Matrice and PA28 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.<sup>2</sup> During the flight, the remote pilot shall keep the unmanned aircraft in VLOS and maintain a thorough visual scan of the airspace surrounding the unmanned aircraft in order to avoid any risk of collision with any manned aircraft. The remote pilot shall discontinue the flight if the operation poses a risk to other aircraft, people, animals, environment or property.<sup>3</sup>

### **Summary**

An Airprox was reported when a DGI Matrice and a PA28 flew into proximity 1NM north of Slough at 1802Z on Sunday 6<sup>th</sup> March 2022. The Drone pilot was operating VLOS in VMC, not in receipt of an ATS. The PA28 pilot was operating under VFR in VMC, in receipt of a Radar Control Service from Heathrow Director.

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

Information available consisted of reports from both pilots, radar photographs/video recordings, and reports from the air traffic controllers involved. Relevant contributory factors mentioned during the Board's discussions are highlighted within the text in bold, with the numbers referring to the Contributory Factors table displayed in Part C.

The Board discussed this event and were satisfied that there had been no risk of collision. Members were encouraged that the DJI Matrice pilot had engaged in the Airprox process and that they had had an observer with them who had visually acquired the PA28 early. Members appreciated the PA28 pilot's focus on flying accurately whilst within controlled airspace however commented that due regard must still be given to maintaining an appropriate lookout for other aircraft, both above and below them. Members' focus then turned to whether or not there had been a degradation in safety and it was agreed that normal safety standards and parameters had pertained and, as such, the Board assigned Risk Category E.

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<sup>2</sup> (UK) SERA.3205 Proximity.

<sup>3</sup> EASA Part UAS.OPEN.060 Responsibilities of the remote pilot (2)(b).

Members agreed on the following contributory factors:

- CF1.** The Heathrow SVFR controller had had no awareness of the presence of the Drone..
- CF2.** Neither pilot had had any awareness regarding the presence of the other.
- CF3.** The PA28 pilot had not become visual with the Drone.
- CF4.** Although normal safety parameters were assessed by the Board to have pertained, the separation between the Drone and the PA28 at CPA was such that it had caused concern to the pilot of the Drone.

## **PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK**

Contributory Factors:

2022021				
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
<b>Ground Elements</b>				
<b>• Situational Awareness and Action</b>				
1	Contextual	• Traffic Management Information Action	An event involving traffic management information actions	The ground element had only generic, late, no or inaccurate Situational Awareness
<b>Flight Elements</b>				
<b>• Situational Awareness of the Conflicting Aircraft and Action</b>				
2	Contextual	• Situational Awareness and Sensory Events	Events involving a flight crew's awareness and perception of situations	Pilot had no, late, inaccurate or only generic, Situational Awareness
<b>• See and Avoid</b>				
3	Human Factors	• Monitoring of Other Aircraft	Events involving flight crew not fully monitoring another aircraft	Non-sighting or effectively a non-sighting by one or both pilots
4	Human Factors	• Perception of Visual Information	Events involving flight crew incorrectly perceiving a situation visually and then taking the wrong course of action or path of movement	Pilot was concerned by the proximity of the other aircraft

Degree of Risk: E

### Safety Barrier Assessment<sup>4</sup>

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

#### **Ground Elements:**

**Situational Awareness of the Conflicting Aircraft and Action** were assessed as **ineffective** because the Heathrow SVFR controller had had no awareness of the presence of the Drone.

#### **Flight Elements:**

**Situational Awareness of the Conflicting Aircraft and Action** were assessed as **ineffective** because the PA28 pilot had not had any awareness of the presence of the Drone and the Drone pilot had had no awareness of the PA28 prior to their observer becoming visual with it.

<sup>4</sup> The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

<b>Airprox Barrier Assessment: 2022021</b>		Within Controlled Airspace						
<b>Barrier</b>		<b>Provision</b>	<b>Application</b>	<b>Effectiveness</b> Barrier Weighting				
				0%	5%	10%	15%	20%
Ground Element	Regulations, Processes, Procedures and Compliance	✓	✓					
	Manning & Equipment	✓	✓					
	Situational Awareness of the Confliction & Action	✗	✗					
	Electronic Warning System Operation and Compliance	○	○					
Flight Element	Regulations, Processes, Procedures and Compliance	✓	✓					
	Tactical Planning and Execution	✓	✓					
	Situational Awareness of the Conflicting Aircraft & Action	✗	✓					
	Electronic Warning System Operation and Compliance	○	○					
	See & Avoid	✓	✓					
<b>Key:</b>		<u>Full</u>	<u>Partial</u>	<u>None</u>	<u>Not Present/Not Assessable</u>	<u>Not Used</u>		
Provision	✓	○	✗	○				
Application	✓	○	✗	○	○			
Effectiveness	■	■	■	■	□			