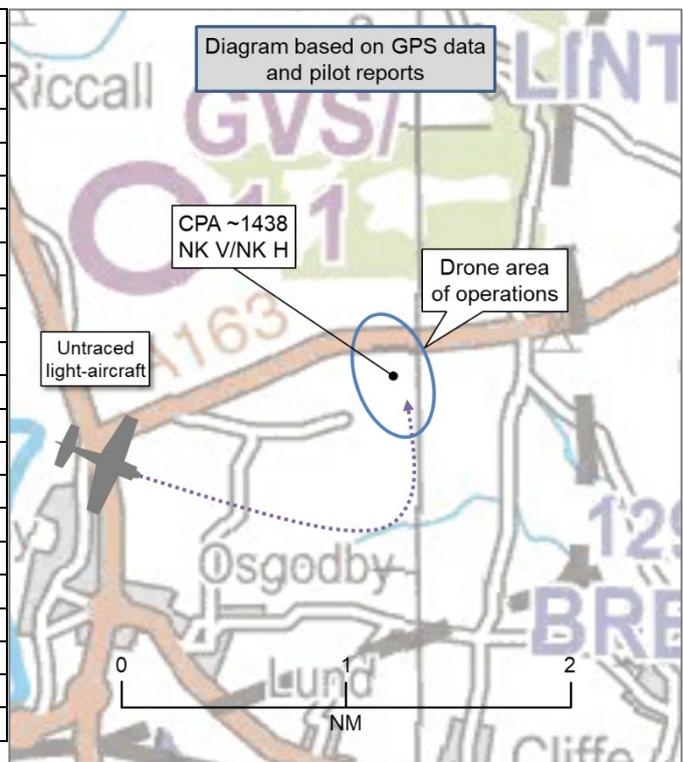


AIRPROX REPORT No 2021210

Date: 07 Oct 2021 Time: ~1438Z Position: 5349N 00100W Location: 3NM NE of Selby

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	DJI Matrice 200 v2	Unk light-aircraft
Operator	Civ UAS	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VLOS	NK
Service	None	None
Altitude/FL	400ft	NK
Transponder	Not fitted	None
Reported		
Colours	Black	NK
Lighting	None	NK
Conditions	VMC	NK
Visibility	>10km	NK
Altitude/FL	120m/400ft	NK
Altimeter	N/A	NK
Heading	160°	NK
Speed	10kt	NK
ACAS/TAS	Not fitted	Unknown
Separation at CPA		
Reported	0ft V/20m H	NK V/NK H
Recorded	NK V/NK H	



THE DJI MATRICE OPERATOR reports that, during a flight using a small unmanned aircraft (SUA), flying a heading of approximately 160° at about 10kt at 400ft AMSL, a light, manned fixed-wing aircraft, which had been flying approximately 500m south of the area of operations on an east-south-easterly heading, made a sudden sharp left banking turn (with 90° of bank) to a northerly heading, flying directly towards the SUA. The remote pilot disengaged the SUA's autopilot and descended as per the operator's emergency procedures, reaching 325ft. As the fixed-wing aircraft approached the SUA's position with wings levelling, it then made a right banking turn to the northeast, continuing that heading for a while before turning left to follow a westerly heading, away from the area of operations and out of sight. The fixed-wing aircraft had been observed a few minutes prior to the occurrence, executing a 'loop-the-loop', steep climbs and descents, but at a distance (5km or more west of the area of operations). Being the only aerobatic manoeuvres observed all day, the remote pilot and observer were particularly wary of this aircraft and monitored its subsequent behaviour but, once they observed it ceasing aerobatic manoeuvres and flying a stable heading and altitude, assumed it was heading towards Brighton for landing. As such, both the remote pilot and the observer had been monitoring the fixed-wing aircraft's approach, and spotted the emerging conflict immediately. Both the remote pilot and the observer had been briefed that GA pilots operate unusual (historical) aircraft out of Brighton airfield to the east of the area of operations, and had spotted low altitude flying in the vicinity during the morning hours while conducting ground operations, but no aircraft conducting aerobatics had been observed all day, and no NOTAMs or other alerts were found in the days prior to the flight in relation to planned aerobatics in the area. The crew had posted an advance flight report for the area of operations through Altitude Angel the day prior to the flight, covering the hours of 0900 to 1630 local time for the operation. On debrief, the remote pilot and the observer agreed that while the fixed-wing aircraft's flying was extreme and unusual, such a manoeuvre could have been expected to occur at any time, based on the behaviour observed a few minutes prior. So the crew could have taken the decision to land the SUA earlier and wait until the fixed-wing aircraft departed the area, but had reasonably decided to continue while monitoring the fixed-wing aircraft's behaviour. Both remote pilot and observer suspected the pilot of the fixed-wing aircraft may have spotted and deliberately flown towards the SUA (or over the ground crew), either for a closer look or to practise tight manoeuvring, though this is speculation and the pilot's

intentions weren't truly known. The right turn made by the fixed-wing aircraft after heading towards the SUA would suggest the pilot either knew of, or became aware of, the SUA's location.

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

THE UNKNOWN LIGHT-AIRCRAFT PILOT could not be traced.

Factual Background

The weather at Doncaster Sheffield and Leeds Bradford Airports was recorded as follows:

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METAR EGCN 071520Z 19009KT 9999 BKN023 19/15 Q1024=
METAR EGNM 071520Z 19009KT 9999 SCT020 18/14 Q1023=
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Analysis and Investigation

UKAB Secretariat

In an effort to identify the unknown light-aircraft, a local airfield was contacted. The resident flying training establishment was discounted, as were 2 of the local pilots that are licensed to conduct aerobatics. A third, non-resident aerobatic pilot was also contacted, but they confirmed that they did not fly on the day of the Airprox. It has therefore not been possible to trace the pilot of the unknown light-aircraft.

The DJI Matrice 200 and untraced light-aircraft pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.¹ 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.²

Summary

An Airprox was reported when a DJI Matrice 200 and an unknown light-aircraft flew into proximity 3NM NE of Selby at approximately 1438Z on Thursday 7th October 2021. The DJI Matrice operator was operating under VLOS and not in receipt of an ATS; the unknown light-aircraft pilot could not be traced.

PART B: SUMMARY OF THE BOARD'S DELIBERATIONS

Information available consisted of a report from the drone operator and radar photographs/video recordings. 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 examined this event and concluded that there was insufficient information available with which to make an assessment of the risk of collision. Accordingly, the Board assigned a Risk Category D to this Airprox. However, from the limited information available, members agreed that the following factors (detailed in Part C) had contributed to this Airprox, but there were likely more contributory factors that could not be identified by the Board:

- CF1. The drone operator did not have any situational awareness regarding the intentions of the light-aircraft pilot to turn towards their area of operation.

¹ (UK) SERA.3205 Proximity.

² EASA Part UAS.OPEN.060 Responsibilities of the remote pilot (2)(b).

CF2. Although the light-aircraft was sighted operating approximately 500m to the south of the drone, the drone operator continued their flight and thus little time was available for avoiding action after the light-aircraft had turned towards them.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

2021210				
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
Flight Elements				
• Situational Awareness of the Conflicting Aircraft and Action				
1	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
• See and Avoid				
2	Human Factors	• Lack of Individual Risk Perception	Events involving flight crew not fully appreciating the risk of a particular course of action	Pilot flew close enough to cause concern

Degree of Risk: D

Safety Barrier Assessment³

In assessing the effectiveness of the safety barriers associated with this incident, the Board noted that many of the barriers were unassessable but, of those that could be assessed, concluded that the key factors had been that:

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the drone operator had no awareness of the likely evolution of the untraced light-aircraft's track.

See and Avoid were assessed as **partially effective** because, by the time the drone operator noticed the light-aircraft flying towards their drone, there was very little time for the drone operator to descend their drone away from the flightpath of the manned aircraft.

³ The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

Airprox Barrier Assessment: 2021210		Outside Controlled Airspace					
Barrier	Provision	Application	Effectiveness				
			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	✔	⚠				
Key:							
	Full	Partial	None	Not Present/Not Assessable	Not Used		
Provision	✔	⚠	✘	●			
Application	✔	⚠	✘	●	○		
Effectiveness	■	■	■	■	□		