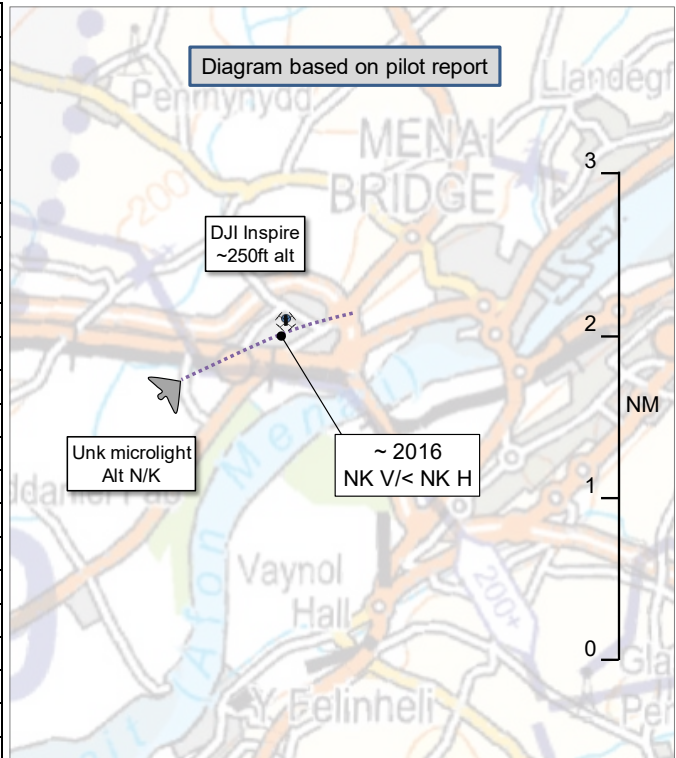


AIRPROX REPORT No 2023120

Date: 15 Jun 2023 Time: ~2016Z Position: 5313N 00412W Location: 1.3NM W Menai Bridge

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

| Recorded | Aircraft 1 | Aircraft 2 |
|--------------------------|------------------|----------------|
| Aircraft | DJI Inspire | Unk microlight |
| Operator | Civ UAS | Unknown |
| Airspace | London FIR | London FIR |
| Class | G | G |
| Rules | VLOS | NR |
| Service | None | Unknown |
| Provider | None | NK |
| Altitude/FL | NK | NK |
| Transponder | Not fitted | None |
| Reported | | Not reported |
| Colours | Grey | |
| Lighting | Front & rear LED | |
| Conditions | VMC | |
| Visibility | >10km | |
| Altitude/FL | 400ft | |
| Altimeter | NK | |
| Heading | Hovering | |
| Speed | 0kt | |
| ACAS/TAS | Not fitted | |
| Separation at CPA | | |
| Reported | 50ft V/40m H | NK V/NK H |
| Recorded | NK V/NK H | |



THE DJI INSPIRE DRONE PILOT reports that they had planned [a ‘specific category’ drone] operation to photograph a [local landmark between] 1930 and 2100 on 15th June 2023 as a Visual Line of Sight (VLOS) flight under a CAA operational authorisation. North Wales Police and the Ministry of Defence (MOD) were informed of the operation.

About 12min into the second flight, [the drone] was hovering about 200m from the take-off and landing site (TOLS) at 250ft on the north side close to the [landmark], taking images of the monument. A microlight aircraft was at first heard, and then seen, flying in an east-northeasterly direction towards the [drone’s] TOLS at an estimated height of 150ft to 200ft, taking it close to the south side of the monument at 60-70MPH. Immediate collision avoidance was taken by [making a] rapid ascent of the [drone] to 350ft.

The pilot assessed the risk of collision as ‘Low’.

THE UNKNOWN MICROLIGHT PILOT could not be traced.

Factual Background

The weather at RAF Valley was recorded as follows:

METAR EGOV 152020Z AUTO 17005KT 9999 NCD 18/13 Q1019=

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and neither aircraft were observed by radar or ADS-B tracker at the reported time, although there had been some primary radar returns to the southeast of the drone operator approximately ten minutes previously. On initial observation it was

estimated that an unidentified aircraft was manoeuvring in the direction of the operator by an initial primary radar observation at 2003:51 (Figure 1) and a second observation at 2005:04 (Figure 2).

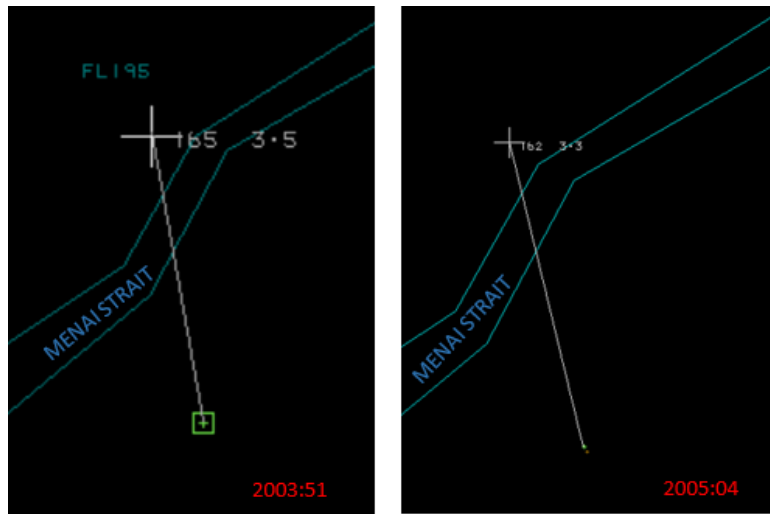


Figure 1

Figure 2

However, there had been two other primary radar returns which may have indicated that either the first contact had circled back to nearby their earlier position at 2007:47 and travelled slightly further southwest at 2011:25. There were no further primary radar contacts after 2011:25 and nothing in the immediate vicinity of the drone operator.

The drone operator assessed the height of the microlight to have been 50ft lower than the drone and had rapidly ascended the drone to 350ft, away from the microlight.

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 avoid any risk of collision with any manned aircraft and discontinue the flight if the operation poses a risk to other aircraft, people, animals, environment or property.¹

Summary

An Airprox was reported when a DJI Inspire drone and an unknown microlight flew into proximity 1.3NM west of the Menai Bridge at around 2016Z on Thursday 15th June 2023. The DJI Inspire drone pilot was operating in visual line of sight (VLOS) and not in receipt of a FIS. The microlight pilot could not be traced.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of a report from the DJI Inspire pilot and radar photographs/video recordings. Relevant contributory factors mentioned during the Board's discussion are highlighted within the text in bold, with the numbers referring to the Contributory Factors table displayed in Part C.

The Board first discussed the actions of the pilot of the DJI Inspire and noted that the operator was in possession of the necessary permissions for an aerial photography flight of a local monument. Members agreed that the drone pilot had not had any situational awareness of the microlight until having heard it, and on having sighted the microlight they had been concerned by its proximity. The Board acknowledged that the drone operator had acted appropriately by manoeuvring the DJI Inspire away from the microlight, which in their judgement had required an immediate ascent.

¹ Regulation (EU) 2019/947 as retained (and amended in UK domestic law) Under the European Union (Withdrawal) Act 2018 – GM2 UAS.SPEC.060 Responsibilities of the remote pilot (3)(b).

Turning their attention to the microlight pilot, members were disappointed that, despite best efforts, the aircraft and pilot could not be traced. The Board studied the radar return images and noted that the primary radar returns to the southeast of the drone operator's position were insufficient to determine that there had been an aircraft in that position or that anything had tracked towards the area of operation of the DJI Inspire. Members opined that the use of electronic conspicuity devices would enable more aircraft operators to be visible on radar or detectable by aircraft EC equipment, but acknowledged that this may only have been helpful to the drone operator if they had had the ability to receive that information. While the incident had likely been startling to the drone operator, it was agreed that an assessment of the risk of collision had not been possible due to the limited information available. As such, the Board assigned Risk Category D to this event and agreed the following contributory factors:

CF1. The pilot of the DJI Inspire had no situational awareness on the unknown microlight.

CF2. The pilot of the DJI Inspire was concerned by the proximity of the unknown microlight.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

| 2023120 | | | | |
|---|---------------|--|---|---|
| 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 | • 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: D.

Safety Barrier Assessment²

In assessing the effectiveness of the safety barriers associated with this incident, the Board 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 pilot had no situational awareness of the presence of the microlight.

² 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: 2023120 | | 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: | | <u>Full</u> | <u>Partial</u> | <u>None</u> | <u>Not Present/Not Assessable</u> | <u>Not Used</u> | | |
| Provision | ● | ● | ⊗ | ● | | | | |
| Application | ● | ● | ⊗ | ● | | | | |
| Effectiveness | ■ | ■ | ■ | ■ | □ | | | |