

AIRPROX REPORT No 2023174

Date: 08 Aug 2023 Time: ~1930Z Position: 5512N 00638W Location: East Strand Beach, Portrush

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	DJI Mavic	Unknown Microlight
Operator	Civ UAS	Civ FW
Airspace	Scottish FIR	Scottish FIR
Class	G	G
Rules	VLOS	NK
Service	None	Unknown
Altitude/FL	NK	NK
Transponder	Not fitted	NK
Reported		
Colours	Grey	White
Lighting	'Collision lighting'	NK
Conditions	VMC	NK
Visibility	>10km	NR
Altitude/FL	5m	NK
Altimeter	AGL	NK
Heading	NR	NK
Speed	Hovering	NK
ACAS/TAS	Other	Unknown
Alert	Information	Unknown
Separation at CPA		
Reported	5m V/3m H	NK
Recorded	NK	



THE DJI MAVIC OPERATOR reports that they are a commercial UAS operator and were filming footage for a documentary film at East Strand Beach, Portrush. The flight was properly planned and publicly listed as an active flight on the Drone Assist application (by AltitudeAngel). They began operations from 1900 with excellent conditions and visibility, conducting very low altitude filming of an (involved) surfer featured in the film approximately 20m offshore maximum. They had received several PUSH notifications to their mobile phone from Drone Assist about [C/S redacted, a non-Airprox aircraft] a flight operating in the area 10NM west, 8NM west, and finally 6NM west from their flight. This was an acceptable separation distance so they continued their flight as planned. They received no further proximity notifications for this aircraft or any other aircraft entering potentially risky distances for the remainder of the flight. Then, at approximately 1930-1945 while filming a take of the surfer in the water (with their drone less than 5m from the water), they were verbally warned by a nearby person of another aircraft inbound and very low in altitude. They were positioned about 50m away from the drone, adjacent to the surf with excellent VLOS to their aircraft so they looked to the left and spotted an open cockpit microlight flying below 10m ASL along the water line of the beach - buzzing directly over the talent they had in the water as well as momentarily occluding their VLOS to the drone. They were already dealing with ground proximity warnings from the drone so could not safely reduce their altitude further without losing the drone to the water. When the microlight aircraft passed the drone, it occluded their line of sight to their drone, so the other pilot was dangerously low. Initially, they assumed [the other aircraft] was performing an emergency landing on the beach, however, after buzzing them, it climbed and left the area. The drone operator, the talent being filmed in the water and passers-by felt that it was a dangerous moment; had the other pilot lost control or collided with the drone that they clearly had no awareness of. There was little [the drone operator] could do beyond crashing the drone to avoid the other aircraft's low pass so unfortunately could only try and maintain as low an altitude as was safe. After the flight they searched the radar history for the aircraft that they had previously seen and could confirm that the other aircraft was not that aircraft, but was a white, open-cockpit microlight. The incident happened very quickly so they did not get a chance to identify the other craft accurately.

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

THE MICROLIGHT PILOT could not be traced.

Factual Background

The weather at Londonderry was recorded as follows:

METAR EGAE 081920Z 35006KT 9999 FEW040 16/11 Q1014=

Analysis and Investigation

UKAB Secretariat

An analysis of both the NATS radar replay and ADS-B data was undertaken. Unsurprisingly, the drone could not be seen and, unfortunately, no other aircraft could be seen in the vicinity either. Although the local microlight airfields and clubs were contacted, the microlight pilot could not be traced.

The DJI Mavic and unknown microlight 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

Permissions and Authorisations²

5) General (SERA.5005(f)(2)) – Day VFR Flights

a) Except when being flown over the congested areas of cities, towns or settlements or over an open-air assembly of persons, or in a Flying Display, Private Flying Display, aircraft race or contest, The Civil Aviation Authority (CAA) permits, under SERA.5005(f), an aircraft conducting day VFR flight, to be flown at a height of:

- i) less than 500 ft above the ground or water; or
- ii) less than 500 ft above the highest obstacle within a radius of 150 m from the aircraft, subject to the condition in subparagraph (b).

b) The aircraft must not be flown closer than 500 ft to any person, vessel, vehicle or structure except with the permission of the CAA.

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.³

Summary

An Airprox was reported when a DJI Mavic and an unknown microlight flew into proximity at East Strand Beach, Portrush at around 1930Z on Tuesday 8th August 2023. The DJI Mavic operator was operating under VLOS; the microlight pilot could not be traced.

¹ UK Reg (EU) SERA.3205 Proximity.

² CAA ORS4 No.1496 Permissions and Authorisations

³ UK Reg (EU) 2019/947 as retained (and amended in UK domestic law) Under the European Union (Withdrawal) Act 2018 - UAS.SPEC.060 Responsibilities of the remote pilot (2)(b).

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of a report from the DJI Mavic operator. 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 first looked at the actions of the drone operator. They had been filming at low-level over the sea and although the Drone Assist on the drone equipment had alerted them to other aircraft in the area, it had not alerted them to the microlight (**CF4**). The drone operator had therefore not been expecting to see the low-level microlight fly along the beach (**CF3**) and, because of its proximity to the drone, had been concerned (**CF5**). Members noted that it had been for the drone operator to keep clear of any aircraft in the vicinity, but agreed that the operator could not have foreseen that another aircraft would operate so low. It was clear to the Board that the drone operator had been placed in an invidious position, they were already operating very close to the water and could not have descended further without losing the drone in the sea.

Turning to the actions of the microlight pilot, members were disappointed that the pilot could not be traced, because without their report it could not be known whether the pilot had been visual with the drone operator or not. Members noted that drones are notoriously difficult to see from the air and recalled that previous reports in similar circumstances had revealed that the drone had not been sighted.⁴ However, still members thought that the surfer and the people on the beach should have been visible to the pilot and, assuming that the drone operator's assessment of altitude had been accurate, the pilot had probably not been flying in accordance with ORS4 permissions to fly below 500ft (**CF1, CF2**).

Members noted that the drone's operation had been below 400ft, so not suitable for a NOTAM, but that the operator had displayed the flight on Drone Assist. Members thought that it was unlikely that many pilots would be aware of this App and recalled that they had previously made a recommendation to the CAA and MAA to consider a coherent means by which non-recreational drone activity could be promulgated to other air users (Airprox 2022024); both the CAA and MAA had agreed to undertake work to consider how this could be achieved.

When determining the risk, the Board had only the drone operator's report to consider. After a lengthy discussion, members were split, with some believing that the geometry and apparent lack of action from the microlight pilot meant there had been a risk of collision and others that there was not enough information to make a proper assessment. In the end the Chair put it to a vote and by a majority members agreed on Risk Category D.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

2023174				
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
Flight Elements				
• Regulations, Processes, Procedures and Compliance				
1	Human Factors	• Use of policy/Procedures	Events involving the use of the relevant policy or procedures by flight crew	Regulations and/or procedures not complied with
• Tactical Planning and Execution				
2	Human Factors	• Action Performed Incorrectly	Events involving flight crew performing the selected action incorrectly	Incorrect or ineffective execution
• Situational Awareness of the Conflicting Aircraft and Action				
3	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
• Electronic Warning System Operation and Compliance				

⁴ Airprox 2020056 and 2021035

4	Technical	<ul style="list-style-type: none"> ACAS/TCAS System Failure 	An event involving the system which provides information to determine aircraft position and is primarily independent of ground installations	Incompatible CWS equipment
• See and Avoid				
5	Human Factors	<ul style="list-style-type: none"> 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 Assessment⁵

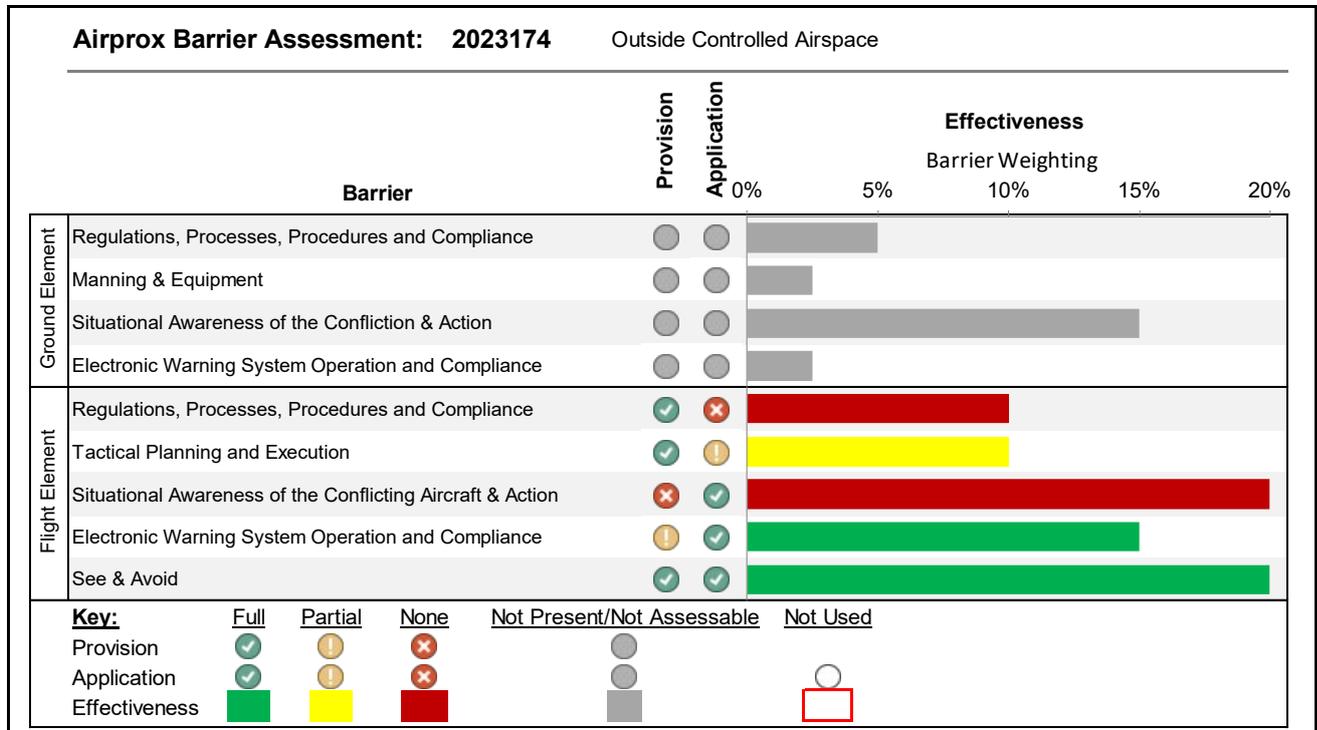
In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

Flight Elements:

Regulations, Processes, Procedures and Compliance were assessed as **ineffective** because it had been likely that the microlight pilot had flown within 500ft of the drone operator and people on the beach.

Tactical Planning and Execution was assessed as **partially effective** because if the microlight pilot had seen people on the beach they should have climbed.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the drone operator had received no prior situational awareness that the microlight had been approaching.



⁵ The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).