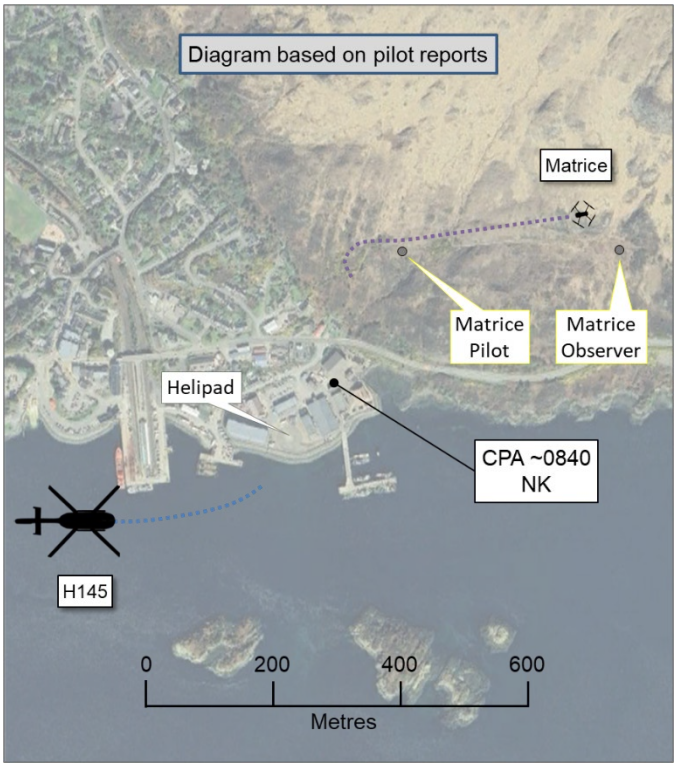
AIRPROX REPORT No 2023268

Date: 11 Dec 2023 Time: ~0840Z Position: 5717N 00542W Location: Kyle of Lockalsh

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	H145	Matrice
Operator	Civ Comm	Civ UAS
Airspace	Scottish FIR	Scottish FIR
Class	G	G
Rules	VFR	VLOS
Service	None	None
Altitude/FL	NK	NK
Transponder	A, C, S	Not fitted
Reported		
Colours	White, blue, red	Black
Lighting	Strobe, nav	Strobe, nav
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	500ft	307ft
Altimeter	QNH	NK
Heading	NK	NK
Speed	80kt	NK
ACAS/TAS	Other	Not fitted
Alert	None	N/A
Separation at CPA		
Reported	100ft V/300m H	200ft V/500m H
Recorded	NK	



THE H145 PILOT reports that, on approach to Kyle of Lochalsh helipad, they spotted a strobe light close to the site. The light was moving towards the landing area. They initiated a go-around and informed Ops on the radio. The movement of the strobe light was monitored to make sure a safe distance was maintained. Once the go-around manoeuvre was completed, and a safe flightpath was established, they saw that the strobe light was a drone that was operated by a person on a hillside location close to the helipad. The person was wearing a high-vis jacket and it was clear that they had seen the helicopter as the drone was on its way down towards them. Once the [pilot of the H145] confirmed visually that the drone was safely on the ground, a second approach for landing was made to the helipad. The go-around manoeuvre added 3min flight time but did not cause any delays to the flying program later on in the day.

[The pilot of the H145 opines that] there are not many tourists around at that time of the year, so it is unlikely the drone was operated by a holidaymaker. The drone operator made an attempt to have the drone on the ground as soon as they were aware there was a helicopter in the area, so possibly an experienced and well-trained operator.

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

THE MATRICE PILOT reports that they and a colleague were conducting a survey on the Balmacara Estate. At approximately 0840, a helicopter flew in the general direction of the drone (although not directly towards it) to land on the Kyle of Lochalsh helipad. On the first instance of hearing and seeing the helicopter, they followed procedure and immediately brought the drone in to land. In their professional experience of flying drones, they do not believe the drone was ever within 500m of the helicopter, and it presented no immediate danger to the helicopter pilot or to the drone. This was confirmed subsequently when they met with the helicopter pilot who [reportedly] confirmed that the drone posed no immediate threat to them or their helicopter, and observed that the drone was brought in to land promptly and safely. All safety procedures were taken before and after the flight, including

checking for NOTAMS pre-flight, producing a risk assessment, observing any FRZs and liaising with the Plockton Airstrip personnel (which was located within the survey boundary) to ensure safe flying.

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

Factual Background

The weather at Oban was recorded as follows:

```
METAR EGEO 110850Z 11006KT 9999 FEW014 01/01 Q1001
```

Analysis and Investigation

UKAB Secretariat

An analysis of the NATS radar replay was undertaken. The H145 could be positively identified from Mode S data but was not observed on radar in the vicinity of the Kyle of Lockalsh. The Matrice was not observed on radar. Neither the H145 nor Matrice were observed in the vicinity of the Kyle of Lockalsh by reference to MLAT and ADS-B data. The diagram was constructed by an integration of the pilots' narrative reports. The separation at CPA could not be determined.

The H145 and Matrice 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] Flights must be conducted within VLOS as per the definition given in UK Regulation (EU) No. 2019/947, Article 2(7) and must not exceed 500m from the Remote Pilot.[2] When operating within VLOS as per the definition given in UK Regulation (EU) No. 2019/947, Article 2(7), the Remote Pilot may be assisted by a competent observer who must be co-located with the Remote Pilot and able to communicate with them clearly and effectively. If present, the observer must maintain VLOS as per the definition given in UK Regulation (EU) No 2019/947, Article 2(7) at all times.[3]

H145 Operator Investigation

Findings and observations:

1. Notes from the discussion with the drone operator by the H145 pilot: The drone operator [had been] conducting a thermal-imaging deer count in the area for the week commencing 11 December 2023. The drone operator explained that they saw the helicopter coming towards the base and reacted by getting their drone on the ground. They also explained that the drone had picked-up the helicopter and was about to take avoiding action itself. The drone was limited to maximum 300ft height above the ground. The drone's flying area was locked to the main road which crosses just behind the [helipad]. [The drone operator's] colleague, further up the hill, had warned them by VHF of an incoming helicopter. The drone operator had therefore followed the Drone Code. There were safety nets in place to avoid the drone from flying over the base. The drone operator also explained that their company had checked the local NOTAMs and had contacted a local onshore helicopter operator to see if there was any planned traffic in the area. They had told them they had not been informed of any traffic.

2. A copy of the UK AIP confirmed that they were not operating in a restricted or prohibited area.

3. A marked-up satellite view of the area was provided as a reference to the locations. Note: The path on which the operator and observer stood is actually in a dip/valley. The operator would not have been able to see the helicopter, but could have heard it coming. It is likely that the observer had seen the helicopter as they warned the operator but this has not been confirmed by the observer. The drone was above the valley/path and was in line of sight with the pilot/helicopter.

[1] (UK) SERA.3205 Proximity.
[2] Operational Authorisation (Specific category) issued to the UAS operator (section 4.6a)
[3] Operational Authorisation (Specific category) issued to the UAS operator (section 4.6b)

Summary

An Airprox was reported when an H145 and a Matrice flew into proximity in the Kyle of Lockalsh at approximately 0840Z on Monday 11th December 2023. The H145 pilot had been operating under VFR in VMC, the Matrice pilot operating under VLOS in VMC, neither in receipt of an ATS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots. 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 considered the actions of the pilot of the H145. Members noted that, during their approach to the helipad, their attention had been drawn to a strobe-light visible nearby. Initially unsure of exactly what they had seen, the H145 pilot initiated a go-around and members applauded the decision to have aborted their landing in the interests of safety. Members agreed that the EC equipment fitted to the H145 would not have been expected to have detected the Matrice, and that the pilot of the H145 had not had situational awareness of the Matrice until it had been visually acquired.

Turning to the actions of the pilot of the Matrice, members were in agreement that they had gathered some situational awareness of the H145, given that they had heard it approaching. Members noted that they had subsequently landed the Matrice.

In conclusion, members were satisfied that the pilot of the Matrice had conducted their flight within the parameters of their Operational Authorisation and had acted swiftly to have landed the Matrice when they had become aware of the approaching helicopter. Members agreed that, although the pilot of the H145 had visually acquired the Matrice during their final approach to the helipad and been concerned by its proximity, normal safety margins had pertained. Members were also in full agreement that, despite being unable to have determined the separation at CPA, there had been no risk of collision. As such, the Board assigned Risk Category E to this event. The following contributory factors were agreed:

CF1. The pilot of the H145 had not had situational awareness of the Matrice until it had been visually acquired. The pilot of the Matrice had had generic situational awareness of the presence of the H145.

CF2. The EC equipment fitted to the H145 would not have been expected to have detected the presence of the Matrice.

CF3. The pilot of the H145 had been concerned at the proximity of the Matrice.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2023268			
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
	• Electronic Warning System Operation and Compliance			
2	Technical	• 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			

3	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.

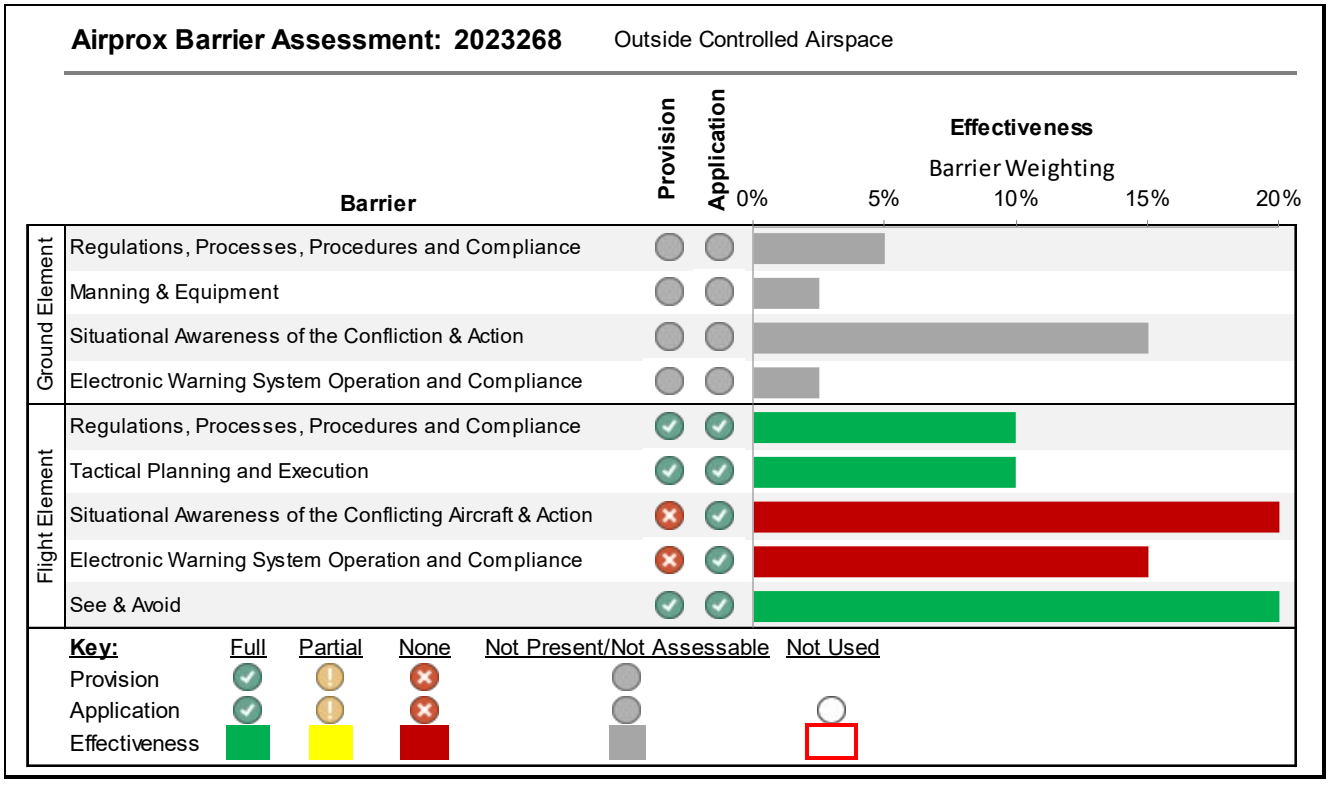
Safety Barrier Assessment[4]

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 pilot of the H145 had not had situational awareness of the presence of the Matrice until it had been visually acquired.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the EC equipment fitted to the H145 would not have been expected to have detected the presence of the Matrice.



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