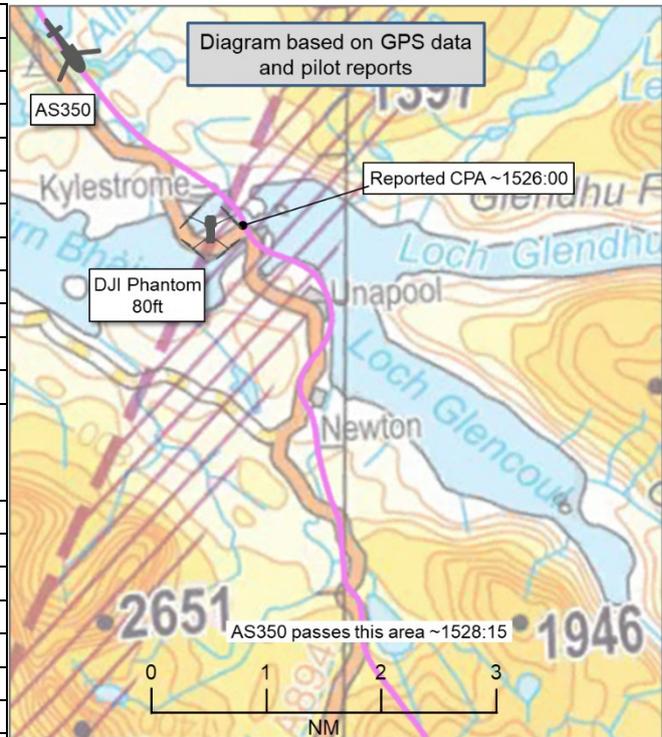


AIRPROX REPORT No 2024049

Date: 29 Mar 2024 Time: ~1526Z Position: 5815N 00501W Location: Kylesku Bridge

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	DJI Phantom	AS350
Operator	Civ UAS	Civ Helo
Airspace	Scottish FIR	Scottish FIR
Class	G	G
Rules	VLOS	VFR
Service	None	None
Provider	N/A	N/A
Altitude/FL	Not recorded	Not recorded
Transponder	Not fitted	A, C, S
Reported		
Colours	White	Maroon
Lighting	Red flashing	Navigation, anti-collision, HISL, strobes
Conditions	VMC	VMC
Visibility	>10km	NR
Altitude/FL	~80ft	470ft
Altimeter	Not fitted	NK
Heading	Not reported	N/R
Speed	5.5m/s (~11kts)	N/R
ACAS/TAS	Not fitted	Not fitted
Separation at CPA		
Reported	164ft V/50m H	500ft V/200m H
Recorded	Not recorded	



THE PHANTOM REMOTE PILOT reports that on Friday 29th March 2024 at roughly 1510 they had been flying a DJI Phantom 4 drone in the vicinity of the Kylesku Bridge [in the] Highlands. They had been flying the drone for work purposes. At roughly 1526 the drone had been situated to the southwest corner of Kylesku bridge and flying at 70m altitude from the take-off point travelling at a constant speed of 5.5m/sec. The drone had been in continuous flight on hearing the approach of a helicopter. At this time the remote pilot had been facing the drone from the northern side of the bridge. On hearing the sound of a helicopter they paused the drone and ended the mapping mission. They had then reduced the altitude so that it was hovering just to the southwest corner at the start of the bridge on the south side. The drone had been level with the bridge [~80ft] but offset to the west side of it. By this time the helicopter had approached from the north-eastern side of the bridge and had been roughly 40-50m above the bridge to the remote pilot's left and roughly 40-50m in front of them. At this point [they believe] the helicopter pilot had seemed to notice either the remote pilot or the drone and veered off left and flew directly southeast over Kylesku village. [There had been] a NOTAM in place (H1450/24) in relation to the movement of salmon to different hatcheries across the highlands. The remote pilot had made contact with [the telephone number on the NOTAM] on the 28th of March at 1010. They had confirmed that there had been no movements planned near to Kylesku and that they would contact the remote pilot prior to any movements [in that area]. The helicopter had been matt black and had white letters on the rear quarter [they recall]. The remote pilot cannot remember what the letters were. The helicopter looked as though it had room for passengers behind the pilot's seat. As part of their pre-flight planning, the remote pilot had also contacted the UKLFBC and made them aware of flight timings, flight altitude and location so that military aircraft would be notified of the drone operation. On hearing the helicopter approaching, the remote pilot had paused and ended the drone flight mission and reduced altitude so that the drone had been approximately level with Kylesku Bridge.

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

THE AS350 PILOT reports that they were unaware of this Airprox

The pilot assessed the risk of collision as 'None'.

Factual Background

The weather at Stornoway was recorded as follows:

METAR EGPO 291520Z 20010KT 9999 VCSH FEW011 FEW018CB SCT023 09/05 Q0978=

Analysis and Investigation

UKAB Secretariat

The NOTAM referenced by the Phantom remote pilot is copied below:

(H1450/24 NOTAMN

Q) EGPX/QWELW/IV/BO /W /000/017/5817N00504W003

A) EGPX B) 2403250800 C) 2403291830

D) 0800-1830

E) CIVIL AIRCRAFT NOTIFICATION PROCEDURE - UNDERSLUNG LOADS WILL OPERATE LOW FLYING AREA 14 AND 14T WI 2NM RADIUS OF PSN 581714N 0050426W, (DUARTMORE HATCHERY, HIGHLANDS). MAX HEIGHT 500FT AGL. ACFT MAY BE RESTRICTED IN ABILITY TO MANOEUVRE AND UNABLE TO COMPLY WITH RAC OPS CTC 01667 464404. 24/03/165/LFC
F) SFC G) 1700FT AMSL)

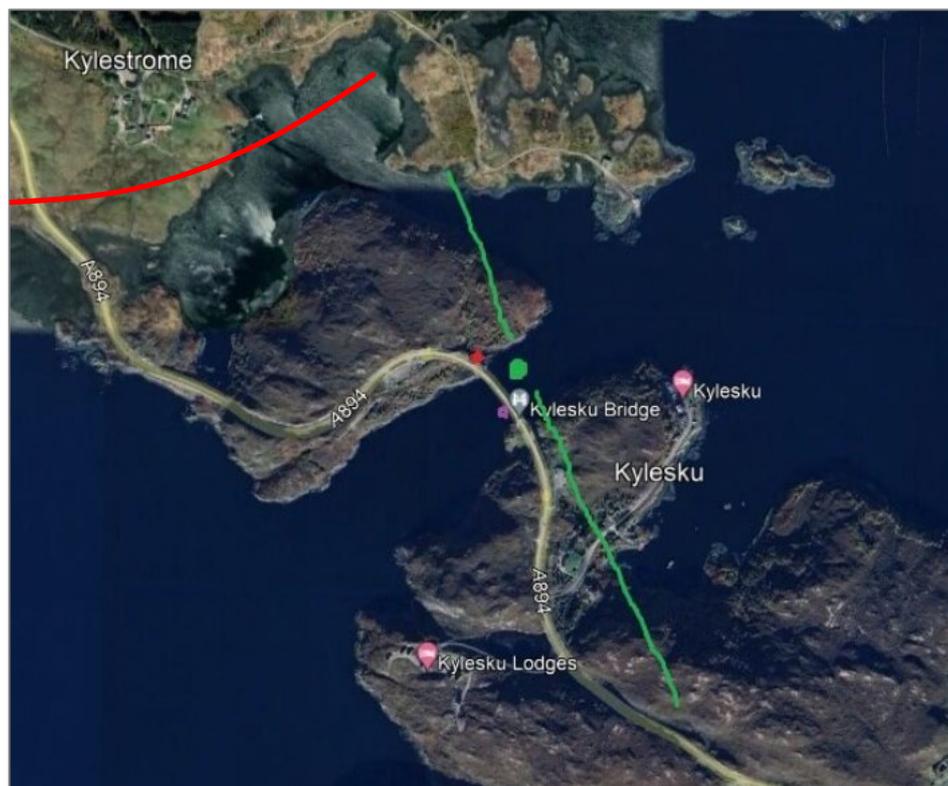


Figure 1: Picture provided by the Phantom remote pilot - red dot = drone pilot location; green dot = helicopter location at closest point to drone; green line = aircraft flight path; purple dot = drone location; red line (UKAB addition) = lateral limit of NOTAM H1450/24.

The Phantom and AS350 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 Phantom drone and an AS350 flew into proximity at Kylesku Bridge at approximately 1526Z on Friday 29th March 2024. The Phantom remote pilot was operating under VLOS in VMC and the AS350 pilot was operating under VFR in VMC, neither pilot was in receipt of an Air Traffic Service.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots and GPS data. 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 the actions of both pilots and agreed that both had followed normal procedures. They noted that the AS350 pilot had not had any awareness of this Airprox but had been operating VFR in Class G airspace. They had not had any situational awareness of the presence of the Phantom (**CF1**). The Phantom pilot reported having heard the approaching AS350 and had used that generic situational awareness (**CF1**) to halt their operation and move the aircraft to a safe position, ensuring limited opportunity for interaction between the 2 aircraft. The Board agreed that the remote Phantom pilot had been concerned by the proximity of the AS350 as it had passed (**CF2**), but Board members were satisfied that there had been sufficient separation between the aircraft and that there had been no risk of collision. It was therefore agreed that normal safety parameters had pertained and, as such, the Board assigned Risk Category E to this event. Members agreed the following factors (detailed in Part C) had contributed to this Airprox:

CF1: The Phantom remote pilot had only generic situational awareness of the AS350 and the AS350 pilot had no situational awareness of the Phantom.

CF2: The Phantom remote pilot had been concerned by the proximity of the AS350.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024049			
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

¹ (UK) SERA.3205 Proximity.

² Assimilated Regulation (EU) 2019/947- UAS.OPEN.060 Responsibilities of the remote pilot (2)(b).

Degree of Risk: E.

Safety Barrier Assessment³

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 Phantom remote pilot had only generic situational awareness of the presence of the AS350 and the AS350 pilot had no situational awareness of the presence of the Phantom.

Airprox Barrier Assessment: 2024049		Outside Controlled Airspace					
Barrier	Provision	Application	Effectiveness				
			Barrier Weighting				
			0%	5%	10%	15%	20%
Ground Element	Regulations, Processes, Procedures and Compliance	○	○	[0% to 5%]			
	Manning & Equipment	○	○	[0% to 2.5%]			
	Situational Awareness of the Conflicting Aircraft & Action	○	○	[0% to 15%]			
	Electronic Warning System Operation and Compliance	○	○	[0% to 2.5%]			
Flight Element	Regulations, Processes, Procedures and Compliance	●	●	[0% to 10%]			
	Tactical Planning and Execution	●	●	[0% to 10%]			
	Situational Awareness of the Conflicting Aircraft & Action	⊗	●	[0% to 20%]			
	Electronic Warning System Operation and Compliance	○	○	[0% to 15%]			
	See & Avoid	●	●	[0% to 20%]			
Key:			Full	Partial	None	Not Present/Not Assessable	Not Used
Provision	●	●	⊗	○			
Application	●	●	⊗	○		○	
Effectiveness	■	■	■	■		□	

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