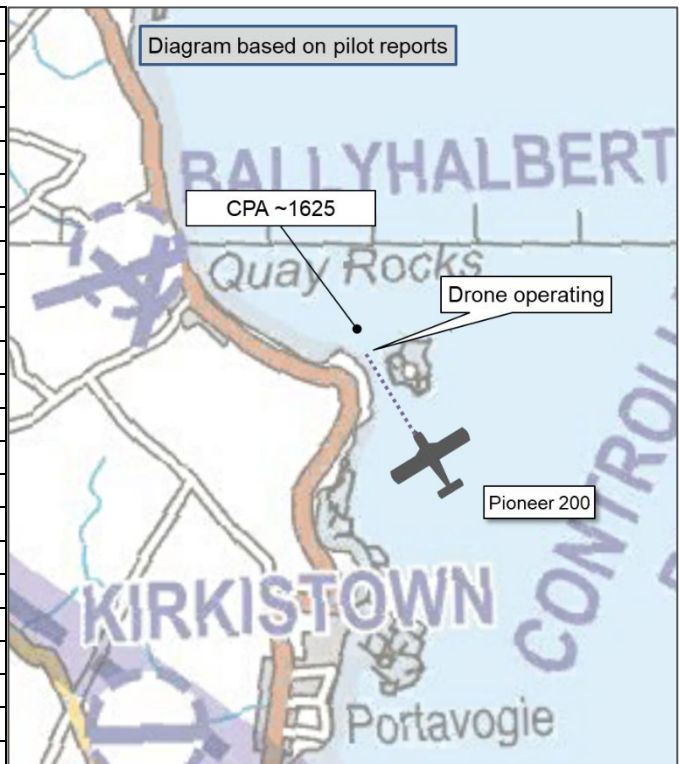


AIRPROX REPORT No 2021042

Date: 25 Apr 2021 Time: 1625Z Position: 5429N 00526W Location: Burr Point, Northern Ireland

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	DJI drone	Pioneer 200
Operator	Civ UAS	Civ FW
Airspace	Scottish FIR	Scottish FIR
Class	G	G
Rules	VFR	VFR
Service	None	None
Provider	NA	NA
Altitude/FL	NK	NK
Transponder	Not fitted	Not fitted
Reported		
Colours	Grey	White, Blue
Lighting	Flashing LEDs	
Conditions	VMC	VMC
Visibility	>10km	NR
Altitude/FL	56m (~183ft)	50-200ft
Altimeter	NA	NK
Heading	NNW	NR
Speed	NK	NK
ACAS/TAS	Not fitted	Not fitted
Separation		
Reported	60ft V/5m H	NK
Recorded	NK	



THE DJI DRONE OPERATOR reports that they initially heard the plane before they saw it on the drone controller screen, they took an initial photo of the plane when they first saw it, whilst deciding what to do, given that the plane was already below the drone’s current altitude. They took the decision to ignore their training and guidance and climb to increase the separation, whilst tracking the plane on screen with the camera as they felt this gave them a more relative view. The plane flew underneath the drone. They had also instructed their spotter to take a video of the plane as it passed their location. Once the plane had passed, they then landed the SUAS.

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

THE PIONEER 200 PILOT reports that they regularly fly along that particular stretch of coastline, using the 500ft rule from the shoreline. They did not see a drone and noted that they hadn’t considered drones as a factor before, most are small and very hard to spot, but in future will be more aware of their presence.

THE BELFAST CITY CONTROLLER reports that the operator of a drone telephoned to report an Airprox with a light aircraft. The drone operator reported that the drone was stationary at around 46m and taking photographs over Burial Island, just off the Ards Peninsula. The drone operator reported seeing a light aircraft via the UAV camera, which flew towards and underneath the UAV, so the operator climbed the UAV to 56m to remain clear. Belfast City were not providing an ATS to the light aircraft.

Factual Background

The weather at Belfast City was recorded as follows:

METAR EGAC 251620Z AUTO VRB04KT 9999 NCD 13/02 Q1029=

Analysis and Investigation

UKAB Secretariat

General (SERA.5005(f)(2)) – Day VFR Flights a) The Civil Aviation Authority (CAA) permits, under SERA.5005(f), an aircraft conducting day VFR flight elsewhere than over the congested areas of cities, towns or settlements or over an open-air assembly of persons, 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 CAA¹.

The drone operator and Pioneer 200 pilot shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.² 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 drone and a Pioneer 200 flew into proximity in the vicinity of Burr Point at 1625Z on Sunday 25th April 2021. Both pilots were operating under VFR in VMC, neither were in receipt of an ATS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of a report and photographs from the drone operator and a report from the Pioneer 200 pilot. 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.

Due to the exceptional circumstances presented by the coronavirus pandemic, this incident was assessed as part of a 'virtual' UK Airprox Board meeting where members provided a combination of written contributions and dial-in/VTC comments.

The Board first looked at the actions of the drone operator; they were operating with a spotter and with their drone out over the sea. They had no prior information that the Pioneer 200 was approaching until they saw it on the drone's camera (**CF1**). However, once they saw the aircraft, realising that it was below their drone, they were able to take action and effect a climb. Members noted that the photographs supplied indicated that the drone was well above the aircraft as it went underneath and thought that the drone operator was probably not expecting that an aircraft would be operating in the area and was therefore concerned that the aircraft was lower than the drone (**CF3**). Some members wondered whether the drone operator could have increased the horizontal separation as well as the vertical separation, but a CAA adviser, familiar with drone operations, offered that the easier and quickest option was to manoeuvre vertically. Additionally, drone operators were generally advised to do this because it could be difficult to assess horizontal separation when situated away from the drone.

Turning to the Pioneer pilot, they were entitled to fly at low-level over the sea, providing they were clear of people, vessels, vehicles and structures. The pilot had no prior knowledge that the drone was operating in the area (**CF1**) and did not see it as they flew beneath it (**CF2**). Members were heartened to hear that the pilot recognised that in future they would need to factor in drones to their planning.

¹ ORS4 No1479

² (UK) SERA.3205 Proximity.

³ EASA Part UAS.OPEN.060 Responsibilities of the remote pilot (2)(b).

Members noted that both parties were entitled to operate as they were, but that neither had had any knowledge that the other had been operating in the same area. They thought that more encounters like this were likely as drone operations become more commonplace, and that pilots should factor in the possibility of drones when flying at lower levels but also that drone operators should be aware of the possibility of encountering aircraft at low levels. Members also noted that electronic conspicuity devices were available to both piloted and remotely piloted vehicles and all parties should consider the benefits of fitting appropriate devices to their aircraft as it could help to reduce the likelihood of such encounters.

Finally, in assessing the risk, members quickly agreed that the actions of the drone operator meant that there had been no risk of collision. There followed a discussion where some members wondered whether the drone operator expected more separation and was therefore concerned by the proximity of the PA28. In the end, members agreed that whilst all the criteria for reporting an Airprox had been met, on this occasion normal safety standards had pertained; Risk Category E.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2021042			
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 or only generic, Situational Awareness
• See and Avoid				
2	Human Factors	• Monitoring of Other Aircraft	Events involving flight crew not fully monitoring another aircraft	Non-sighting or effectively a non-sighting by one or both pilots
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 Assessment⁴

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 neither the drone operator, nor the Pioneer 200 pilot knew about the other operating in the vicinity.

⁴ 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: 2021042 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	█	█	█	█		□			