

## Consolidated Drone/Balloon/Model/Unknown Object Summary Sheet for UKAB Meeting on 26<sup>th</sup> May 2021

Total	Risk A	Risk B	Risk C	Risk D	Risk E
10	2	3	5	0	0

Airprox Number	Date Time (UTC)	Aircraft (Operator)	Object	Location <sup>1</sup> Description Altitude	Airspace (Class)	Pilot/Controller Report Reported Separation Reported Risk	Comments/Risk Statement	ICAO Risk
2021021	4 Apr 21 1544	Cessna 406 (Civ Comm)	Balloon	5126N 00243W 3NM N Bristol Airport FL078	Bristol CTR (D)	<p><b>The Cessna 406 pilot</b> reports that whilst on a survey line inside the Bristol CTR, a silver, letter shaped, helium party balloon was seen by the Survey Operator to pass down the left side of the aircraft. The Survey Operator could make out the balloon ribbon and handle and hence estimated that it came within 50-100ft of the aircraft. The incident was reported to Bristol ATC.</p> <p><b>Reported Separation:</b> 0ft V/50-100ft H <b>Reported Risk of Collision:</b> NR</p>	<p>The Board agreed that the pilot's description of the object was sufficient to indicate that it was a balloon.</p> <p><b>Applicable Contributory Factors:</b> 4, 5</p> <p><b>Risk:</b> The Board considered that the pilot's overall account of the incident portrayed a situation where although safety had been reduced, there had been no risk of collision.</p>	C
2021022	3 Mar 21 1255	B787 (CAT)	Unk Obj	5129N 00021W Osterley Park 1800ft	London CTR (D)	<p><b>The B787 pilot</b> reports that whilst on departure from Heathrow RW09R, passing over Osterley Park climbing through 1800ft they saw a black drone with no visible markings or lights. There were no distractions at the time and both pilots spotted the drone at the same time. The drone passed diagonally left-to-right in front of the aircraft 300ft below.</p> <p><b>Reported Separation:</b> 300ftV/ 0M H <b>Reported Risk of Collision:</b> Medium</p> <p><b>The Heathrow Tower controller</b> reported that the B787 pilot reported a drone 3NM north-east of Heathrow. The police were informed.</p>	<p>In the Board's opinion the reported altitude and/or description of the object were such that they were unable to determine the nature of the unknown object.</p> <p><b>Applicable Contributory Factors:</b> 4, 5</p> <p><b>Risk:</b> The Board considered that the pilot's overall account of the incident portrayed a situation where although safety had been reduced, there had been no risk of collision.</p>	C

<sup>1</sup> Latitude and Longitude are usually only estimates that are based on the reported time of occurrence mapped against any available radar data for the aircraft's position at that time. Because such reported times may be inaccurate, the associated latitudes and longitudes should therefore not be relied upon as precise locations of the event.

Airprox Number	Date Time (UTC)	Aircraft (Operator)	Object	Location <sup>1</sup> Description Altitude	Airspace (Class)	Pilot/Controller Report Reported Separation Reported Risk	Comments/Risk Statement	ICAO Risk
2021026	17 Apr 21 1415	EC135 (HEMS)	Drone	5608N 00323W Kelty VRP 1500ft	Scottish FIR (G)	<p><b>The EC135 pilot</b> reports being on the return leg to base from a HEMS task after dropping the patient at hospital. Approaching the Kelty VRP at 1500ft QNH they were talking to Edinburgh Approach when the front seat paramedic gesticulated and pointed out of the pilot's window. The pilot did not see the conflict but both front and rear paramedics confirmed it as a quadcopter-type drone which passed down the right-hand side of the aircraft at between 100m and 150m distance, and only slightly below their level (1500ft altitude – approximately 1000ft agl – at that point). There was no time for avoiding action, the threat had passed before they would have had time to react. The encounter was reported to Edinburgh Approach before leaving the frequency.</p> <p><b>Reported Separation:</b> 50ft V/100-150m H <b>Reported Risk of Collision:</b> Medium</p> <p><b>The Edinburgh ATC investigation</b> found that [the EC135] left the control zone to the north via Kelty at 1100ft. When [the EC145] was abeam Portmoak, the crew requested a frequency change to Perth. In reply, the crew reported a drone in the vicinity of Kelty at a height of 1000ft. The controller acknowledged the drone and [the EC135 pilot] left the frequency. The controller informed the next aircraft that was routing via Kelty of the drone report. On passing Kelty, [the pilot] reported no obvious sign of any drone-type aircraft.</p>	<p>In the Board's opinion the reported altitude and/or description of the object were sufficient to indicate that it could have been a drone.</p> <p><b>Applicable Contributory Factors:</b> 2, 4, 5</p> <p><b>Risk:</b> The Board considered that the pilot's overall account of the incident portrayed a situation where although safety had been reduced, there had been no risk of collision.</p>	C

Airprox Number	Date Time (UTC)	Aircraft (Operator)	Object	Location <sup>1</sup> Description Altitude	Airspace (Class)	Pilot/Controller Report Reported Separation Reported Risk	Comments/Risk Statement	ICAO Risk
2021027	17 Apr 21 1055	TB10 (Civ FW)	Drone	5055N 00125W 2NM SSW SAM 4000ft	Southampton CTR (D)	<p><b>The TB10 pilot</b> reports that they were SSW SAM by 2NM at 4000ft, receiving a Radar Control service from Solent when they saw a grey drone hovering above a housing estate. It was about 30cm in size and passed just below and to the right of their aircraft. By the time they saw the drone it was too late to take any avoiding action. They reported the incident to ATC.</p> <p><b>Reported Separation:</b> 25ft V/25m H <b>Reported Risk of Collision:</b> Medium</p> <p><b>The Solent Radar controller</b> reports that the TB10 was 2NM south west of the overhead when the pilot reported an Airprox with a drone at the same altitude (4000ft). The pilot reported the drone as a grey/green colour, measuring about 30cm. There was no observed radar contact prior to or after the event, so no warning was able to be given. No authorisation to fly a drone in the area had been given by Southampton ATC.</p>	<p>In the Board's opinion the reported altitude and/or description of the object were sufficient to indicate that it could have been a drone.</p> <p><b>Applicable Contributory Factors:</b> 1, 2, 3, 4, 7</p> <p><b>Risk:</b> The Board considered that the pilot's overall account of the incident portrayed a situation where safety had been much reduced below the norm to the extent that safety had not been assured.</p>	B
2021030	12 Apr 21 1558	A319 (CAT)	Drone	5128N 00011W 10NM E LHR 3200ft	London TMA (A)	<p><b>The A319 pilot</b> reports that the crew noticed a large drone on their right side at 10NM on final to RW27L. Their altitude was 3200ft and the drone was at about 3000ft, bright cyan in colour with a wingspan of approximately 0.5m. It was possibly triangular in shape (they could not be sure) and they were unable to identify if it had any rotors. They reported the sighting to Heathrow Tower. There was no impact on the flight.</p> <p><b>Reported Separation:</b> 100-200ft V/&lt;100m H <b>Reported Risk of Collision:</b> Low</p> <p><b>The Heathrow controller</b> reports that the A319 pilot reported a drone 3000 miles below (which they interpreted as 300ft below) at 10 miles on the approach for RW27L. The aircraft was at 3200ft at this time. Subsequent aircraft were informed but no more reports were received. Heathrow police were informed.</p>	<p>In the Board's opinion the reported altitude and/or description of the object were sufficient to indicate that it could have been a drone.</p> <p><b>Applicable Contributory Factors:</b> 1, 2, 3, 4, 5</p> <p><b>Risk:</b> The Board considered that the pilot's overall account of the incident portrayed a situation where although safety had been reduced, there had been no risk of collision.</p>	C

Airprox Number	Date Time (UTC)	Aircraft (Operator)	Object	Location <sup>1</sup> Description Altitude	Airspace (Class)	Pilot/Controller Report Reported Separation Reported Risk	Comments/Risk Statement	ICAO Risk
2021031	29 Mar 21 1812	MD902 (HEMS)	Drone	5131N 00003W Royal London Hospital 500ft	London/City CTR (D)	<p><b>The MD902 pilot</b> reports that one of their doctors, who was standing on the helipad, observed them orbiting the helipad awaiting the departure of another helicopter when a drone came up to meet them whilst east of the Helipad and orbited with them for a quarter turn. It then departed towards the south-east. The drone appeared to be only a few metres below and slightly to the side of the right skid of the aircraft. The pilot did not see the drone at any stage. They did not report the sighting to ATC as they were unaware of the drone's presence until landing, when they were informed by the doctor who witnessed it.</p> <p><b>Reported Separation:</b> NR <b>Reported Risk of Collision:</b> NR</p>	<p>In the Board's opinion the reported altitude and/or description of the object were sufficient to indicate that it could have been a drone.</p> <p><b>Applicable Contributory Factors:</b> 1, 2, 3, 4, 7</p> <p><b>Risk:</b> The Board considered that the pilot's overall account of the incident portrayed a situation where providence had played a major part in the incident and/or a definite risk of collision had existed.</p>	A
2021041	26 Apr 21 1829	PA28 (Civ FW)	Balloon	5149N 00216W 6NM SW Gloucester Airport 2400ft	London FIR (G)	<p><b>The PA28 pilot</b> reports conducting a local flight with a commercially qualified pilot passenger. When south of Gloucester, the passenger brought the pilot's attention to a large silver/blue drone of about 50-70cm diameter at the same level. The drone could clearly be seen; the pilot turned to avoid its path and clear the area. The pilot noted that for them to have sighted the drone at that height against the sun made them feel that it could have been closer than 250m at first point of contact.</p> <p><b>Reported Separation:</b> 100ft V/250m or closer H <b>Reported Risk of Collision:</b> NR</p> <p><b>The London FISO</b> reports that the PA28 pilot reported a near miss with a drone whilst 8NM southwest of Gloucester Airport. The drone was reported as circular in shape, 100ft below and 400m away horizontally.</p>	<p>In the Board's opinion the reported altitude or description of the object were sufficient to indicate that it was probably a balloon.</p> <p><b>Applicable Contributory Factors:</b> 4, 5</p> <p><b>Risk:</b> The Board considered that the pilot's overall account of the incident portrayed a situation where although safety had been reduced, there had been no risk of collision.</p>	C

Airprox Number	Date Time (UTC)	Aircraft (Operator)	Object	Location <sup>1</sup> Description Altitude	Airspace (Class)	Pilot/Controller Report Reported Separation Reported Risk	Comments/Risk Statement	ICAO Risk
2021047	1 May 21 1555	Grumman AA5 (Civ FW)	Unk Obj	5248N 00049W 3NM NE of Melton Mowbray 3600ft	London FIR (G)	<p><b>The Grumman AA5 pilot</b> reports being on a routine cross-country flight when they spotted a drone very close to their aircraft (at a range of approximately 100-300ft) and on a reciprocal track. The drone was black, with possibly green elements and there was no time to take any avoiding action.</p> <p><b>Reported Separation:</b> 0ft V/80m H <b>Reported Risk of Collision:</b> Medium</p> <p><b>The East Midlands Radar controller</b> reports that the AA5 pilot was under a Basic Service, unidentified, and approximately 3 miles WSW of Saltby glider site when they reported spotting a drone over the glider site. At no point did the pilot advise that they had had an Airprox or that the drone had got close to them.</p>	<p>In the Board's opinion the reported altitude and/or description of the object were such that they were unable to determine the nature of the unknown object.</p> <p><b>Applicable Contributory Factors:</b> 2, 4, 6</p> <p><b>Risk:</b> The Board considered that the pilot's overall account of the incident portrayed a situation where safety had been much reduced below the norm to the extent that safety had not been assured.</p>	B

2021049	1 May 21 1730	PA28 (Civ FW)	Drone	5147N 00045W Weston Turville 1000ft	Halton ATZ (G)	<p><b>The PA28 pilot</b> reports that they were on an instructional sortie and had re-joined the Halton circuit via the downwind leg for RW02. After the student had completed the pre-landing checks, both instructor and student noticed something slightly below their height (1000ft) on a relative bearing of approximately 320° and 200m away, on the north western edge of Weston Turville. As the object passed down the left-hand side of the aircraft both instructor and student could clearly identify it as a large-scale drone, bright green or yellow in colour. At the closest point it was about 100ft below and 50m horizontally. There was no time to take avoiding action. The drone was roughly 1m<sup>3</sup> and was made up of two parts, the top main body of the drone and a lower part which looked like a large camera, both parts were bright green/yellow. The speed of the incident meant that they could not be certain how many rotors it had, but a search for a similar looking drone after the event indicated a DJI Matrice type.</p> <p><b>Reported Separation:</b> 100ft V/50m H <b>Reported Risk of Collision:</b> High</p> <p><b>The Halton AGO</b> reports that after receiving and answering all the normal rejoining calls from the PA28 pilot they received a call on Halton Frequency 130.425 from the captain alerting them to an Airprox with a drone on the late downwind leg for RW02 (left hand circuit). They noted the time and acknowledged the call. The pilot described the drone in detail as a <i>“commercial sized drone, bright green/yellow in colour approximately 100 ft below the 1000ft circuit height and passed inside of their flight path down the left-hand side”</i>.</p> <p>From the AGO’s position outside on the aircraft pan, they could not see the drone in question despite the detailed description of where the captain had seen it. They went to meet the captain of the aircraft, at the refuelling point as soon as they had landed and taxied in. This was in order to get more detail and discuss necessary reporting actions required after such an incident. They agreed that the aircraft captain, would report the matter to the local police (Thames Valley Police). This was done and the AGO made an entry in the Airfield’s Operating Log using all the details above. The Airprox was reported it up the chain to the Station Flight Safety Officer who, although off duty at home, responded immediately to and also raised the matter with Wg Cdr Ops who attended within minutes. Information was distributed</p>	<p>In the Board’s opinion the reported altitude and/or description of the object were sufficient to indicate that it could have been a drone.</p> <p><b>Applicable Contributory Factors:</b> 1, 2, 3, 4, 7</p> <p><b>Risk:</b> The Board considered that the pilot’s overall account of the incident portrayed a situation where safety had been much reduced below the norm to the extent that safety had not been assured.</p>	B
---------	------------------	------------------	-------	---	-------------------	--	--	---

Airprox Number	Date Time (UTC)	Aircraft (Operator)	Object	Location <sup>1</sup> Description Altitude	Airspace (Class)	Pilot/Controller Report Reported Separation Reported Risk	Comments/Risk Statement	ICAO Risk
						to each of the clubs at Halton the following day for their awareness.		
2021055	10 May 21 1341	ATR 72 (CAT)	Unk Obj	5601N 00311W EDI 060°/7NM 2200ft	Edinburgh CTR (D)	<p><b>The ATR 72 pilot</b> reports being on the EDI ILS RW24. Both pilots were looking outside, and both saw an object passing on the left side. The FO saw it passing under the wing and the captain saw it passing left of the left wing at a distance of less than 10m. The object was 30-50cm across, according to both pilots, and at a steady altitude while passing them. It was unclear if it was a balloon or a drone and the captain believed that the object was red in colour. It happened at around 7DME at 2200ft on the ILS RW24.</p> <p><b>Reported Separation:</b> 0ft V/3-4m H <b>Reported Risk of Collision:</b> NR</p> <p><b>The Edinburgh ATC investigation</b> reports that [the ATR 72] was on approximately 7NM final for RW24 at Edinburgh and passing 2200ft in the descent. The two flight-deck crew members observed a red/purple balloon-shaped object pass within 3 to 4m of the aircraft, travelling down the left-hand side of the aircraft. Although the object appeared balloon-shaped, the captain stated it looked larger than a normal balloon and could possibly have been a drone. The captain stated their intention to file an Airprox report. The crew of the next aircraft in the approach sequence was warned but did not observe anything unusual during their approach. Edinburgh ATC was operating on secondary radar at the time of the incident as the primary radar was out of service. As a result, any radar data that may have shown the object is not available. Likewise, tracing action was not possible.</p>	<p>In the Board's opinion the reported altitude and/or description of the object were such that they were unable to determine the nature of the unknown object.</p> <p><b>Applicable Contributory Factors:</b> 4, 6</p> <p><b>Risk:</b> The Board considered that the pilot's overall account of the incident portrayed a situation where providence had played a major part in the incident and/or a definite risk of collision had existed.</p>	A

## Relevant Contributory Factor (CF) Table

CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
<b>Flight Elements</b>				
<b>• Regulations, Processes, Procedures and Compliance</b>				
1	Human Factors	• Flight Crew ATM Procedure Deviation	An event involving the drone operator deviating from applicable Air Traffic Management procedures	The drone operator did not comply with regulations by flying above 400ft and/or in controlled airspace/FRZ without clearance
<b>• Tactical Planning and Execution</b>				
2	Human Factors	• Action Performed Incorrectly	Events involving the drone operator performing the selected action incorrectly	The drone operator was flying above 400ft without clearance.
3	Human Factors	• Airspace Infringement	An event involving an infringement / unauthorized penetration of a controlled or restricted airspace	The drone pilot was flying in controlled airspace/FRZ without clearance.
<b>• Situational Awareness of the Conflicting Aircraft and Action</b>				
4	Contextual	• Situational Awareness and Sensory Events	Events involving a flight crew's awareness and perception of situations	Pilot had no, generic, or late Situational Awareness
<b>• See and Avoid</b>				
5	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
<b>• Outcome Events</b>				
6	Contextual	• Near Airborne Collision with Other Airborne Object	An event involving a near collision by an aircraft with an unpiloted airborne object (unknown object or balloon)	
7	Contextual	• Near Airborne Collision with RPAS	An event involving a near collision with a remotely piloted air vehicle (drone or model aircraft)	