

### Consolidated Drone/Balloon/Model/Unknown Object Summary Sheet for UKAB Meeting on 14<sup>th</sup> February 2024

Total	Risk A	Risk B	Risk C	Risk D	Risk E
7	2	2	1	1	1

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
2023269	11 Dec 23 1035	S76 (Civ Helo)	Drone	5257N 00151W Rocester 10ft	London FIR (G)	<p><b>The S76 pilot</b> reports that, during the lookout prior to a vertical departure profile, the non-handling pilot noticed a small quadcopter in close proximity. They chose to abort their takeoff and land. The drone held position, airborne, and continued to face [the S76]. After about 3min, the quadcopter was seen to descend towards the ground in proximity to a car park. Having waited a few minutes, [the pilot of the S76] conducted a vertical profile departure with an increased lookout toward the area where the drone had been. Local security were informed over the radio who subsequently attempted to trace the drone pilot.</p> <p><b>Reported Separation:</b> 0ft V/50m H <b>Reported Risk of Collision:</b> Medium</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> 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.

2023270	20 Nov 23 1830	Wildcat (RN)	Unk Obj	5021N 00409W IVO Cremyll, Plymouth 600ft	London FIR (G)	<p><b>The Wildcat pilot</b> reports that after lifting from [departure site] at night, transiting out to sea into the SCXA at 400FT AMSL, at approximately Cremyll the pilot had seen a light through NVD at approximately 600ft and 3 rotor spans from the aircraft with the bearing drawing left to right. The pilot informed the crew of the light, it was discussed, and they assumed it had likely been a drone due to no anti-col lights. No deviation from the aircraft's current flying condition had been needed to avoid, and the light had passed down the stbd side of the aircraft at a safe distance. The aircraft commander called an Airprox to Plymouth Mil by radio of the potential drone and position. The aircraft continued with tasking and recovered to RNAS Yeovilton without further incident.</p> <p><b>Reported Separation:</b> 200ft V/~70ft H <b>Reported Risk of Collision:</b> Low</p> <p><b>The Plymouth controller</b> reports that during a nighttime SURFEX involving a number of fixed wing and rotary wing assets one of the participating Wildcats landed at [HLS] to conduct a rotors running refuel. The aircraft remained at [HLS] to resolve another issue with frequencies being used for the SURFEX.</p> <p>The Wildcat eventually departed [HLS] heading south along the River Tamar to re-join the exercise and called on West UHF. The aircraft had been identified and given a Traffic Service before the controller's attention went back to the two Falcons positioning for a run in to the ships. The Wildcat pilot then made a transmission which had largely been obscured by a simultaneous transmission made by a Falcon on a separate JSATO frequency.</p> <p>The controller had then gone back to the Wildcat pilot and asked them to repeat their transmission. They stated that they had an Airprox with what they believed to have been a drone at about 600 to 700ft (at this time the Wildcat Mode C showed 400ft). They reported the potential drone could only be seen with NVD/IR aids and not visually with the naked eye.</p> <p>The reported position of the drone had been overhead the River Tamar, just north of Southdown and the controller had no radar contact with any object in that area at any time. No drone activity in the area had been approved by Plymouth Mil for this evening. The Wildcat pilot continued with the exercise without further incident.</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 normal procedures and/or safety standards had applied.</p>	E
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2023271	31 Dec 23 1723	B737 (CAT)	Drone	5554N 00333W Livingston 2500ft	Edinburgh CTR (D)	<p><b>The B737 Captain</b> reports that the First Officer (FO) was PF and the Captain (CP) was PM. At 6.3NM on final to RW06 a large drone appeared on the FO's side of the aircraft and moved to the CP's side of the aircraft. It went out of pilots' vision as it passed the left side of the aircraft. The drone's direction of travel was from south to north. Exact size of the drone was not known, but it appeared to be a large industrial size as it had 10-12 high brightness lights on it and was travelling quite fast. Speed of the B737 was ~165kts (until 4NM DME by ATC request). CP advised ATC immediately of the drone and they continued to a normal landing. ATC asked the aircraft behind if they had any drone sightings, but they didn't. On landing, the FO rang engineers and asked them to carry out a drone strike inspection. A tech log entry was completed by the CP. Preliminary drone strike inspection carried out by FO but no damage/evidence noted. After passengers had disembarked and aircraft was closed, the police took a statement from the FO regarding the matter.</p> <p><b>Reported Separation:</b> NK <b>Reported Risk of Collision:</b> High</p> <p><b>The Edinburgh controller</b> reports that [B737 C/S] reported sighting a drone at 6.4NM final to RW06. After landing [B737 C/S] reported that the drone had passed right-to-left in close proximity necessitating an aircraft inspection.</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

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
2024001	6 Jan 24 1241	EMB190 (CAT)	Unk Obj	5539N 00353W 4NM SW Lanark FL060	Scottish TMA (D)	<p><b>The EMB190 pilot</b> reports that when descending through 6500ft and on radar vectors on a NNE heading, the FO spotted a shiny object ahead and pointed it out to the Captain. The closure rate of the object was fast and it passed just to the right and slightly below their aircraft. The weather was clear and good and they both saw the similarities with a drone as it passed quickly beside them. They reported the sighting to ATC.</p> <p><b>Reported Separation:</b> 50ft V/ 30-50m H <b>Reported Risk of Collision:</b> High</p> <p><b>The Glasgow Radar controller</b> reports that the EMB190 was at 6000ft and approximately 3NM south-east of Lanark, when the pilot reported that they had spotted a drone passing around 100ft below them. They described a sliver dome shaped object that looked like a drone.</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 safety had been much reduced below the norm to the extent that safety had not been assured.</p>	B

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2024003	5 Jan 24 0859	A320 (CAT)	Unk Obj	5055N 00026W Storrington FL100	London TMA (A)	<p><b>The A320 pilot</b> reports that when passing overhead the village of Storrington, a drone was observed passing under the aircraft. This was reported to ATC. The distance below was difficult to ascertain due to the perspective, but unless it was a very large drone the fact that it could be seen indicates that it was fairly close.</p> <p><b>Reported Separation:</b> NR <b>Reported Risk of Collision:</b> NR</p> <p><b>The TC South controller</b> reports that the pilot of the A320 reported a drone when approximately 10NM ENE of Goodwood. The pilot reported seeing the drone about 30sec before they reported it to ATC, the aircraft was at approximately FL080 (they recalled) at the time of reporting and the pilot reported that the drone was below the aircraft but couldn't tell how far. They reported that the drone was light in colour, but nothing further could be determined.</p> <p><b>A NATS Safety Investigation</b> reports that the pilot of the A320 reported to the TC South Controller, who was controlling the TC WILLO sector, that they had observed a possible light coloured done, as the aircraft passed FL100, 12NM northeast of Goodwood. The Controller acknowledged the report of the drone and passed Traffic Information to subsequent aircraft on a similar track. Analysis of the radar by Safety Investigations indicated that there were no associated primary or secondary contacts associated with the drone report, visible on radar at the approximate time of the event.</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 there was insufficient information to make a sound judgement of risk.</p>	D

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2024004	3 Jan 24 1624	A321 (CAT)	Drone	5112N 00011E 5NM S Sevenoaks 9600ft	London TMA (A)	<p><b>The A321 pilot</b> reports that, whilst approaching BIG VOR to hold at FL90, they became aware of an object slightly to the right of the nose at same level on a constant bearing with closing distance. It was small but had the distinctive shape of a drone. The object passed down the right-hand side of the aircraft and over their right wing. Details were passed immediately to London ATC who informed the pilot of the aircraft behind them.</p> <p><b>Reported Separation:</b> 5ft V/~10m H <b>Reported Risk of Collision:</b> High</p> <p><b>NATS Safety Investigations</b> report that no description of the UAS was given over the RT. The pilot stated that the UAS "<i>shot down our right hand side</i>" and described it as "<i>extremely close</i>".</p> <p>The pilot of [the A321] submitted an Airprox report in response to the sighting of a drone whilst approximately 4.3NM south-southwest of BIG. It has been estimated that the UAS was at FL90.</p> <p>The controller passed details of the reported UAS to the following arrival. Analysis of the radar by Safety Investigations indicated that there were no primary or secondary contacts associated with the drone report visible on radar at the approximate time of the event.</p> <p><b>UKAB Secretariat</b> notes that a primary-only contact was observed on the NATS radar replay for one sweep at the time and location reported by the pilot of the A321, approximately 10NM SSE of BIG.</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

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2024014	24 Jan 24 1618	Bell 429 (HEMS)	Drone	5123N 00221W Parade Gardens Bath 250ft	London FIR (G)	<p><b>The Bell 429 pilot</b> reports that they departed a HEMS site at the Recreation Ground in the centre of Bath. At 250ft AGL and approximately 50kt, the Technical Crew Member (TCM) in the left seat spotted a drone directly in the 12 o'clock, at the same level, less than 20m away. The pilot spotted the drone immediately following the TCM's target identification and took evasive action with an avoiding right turn. The drone passed down the left side of the aircraft, within 15 to 20m, and was observed to be white in colour, with lighting. Following the near-miss they returned to base without further incident. The incident was reported via the HEMS desk in flight, who passed the information to the Police.</p> <p><b>Reported Separation:</b> 0ft V/15m H <b>Reported Risk of Collision:</b> High</p>	<p>In the Board's opinion the reported altitude and description of the object were sufficient to indicate that it could have been a drone.</p> <p><b>Applicable Contributory Factors:</b> 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

## 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)	