

### Consolidated Drone/Balloon/Model/Unknown Object Summary Sheet for UKAB Meeting on 25<sup>th</sup> May 2022

Total	Risk A	Risk B	Risk C	Risk D	Risk E
8	3	1	4	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
2022041	25 Mar 22 1732	A320 (CAT)	Drone	5124N 00011W 8.5NM NW BIG 5500ft	London TMA (A)	<p><b>The A320 pilot</b> reports that on passing 5500ft on the DET1J departure, the first officer observed a large drone passing down the right-hand side of the aircraft, approximately 150-200ft below and at about 200m lateral separation. It was a large drone, not a standard sub-250g, with 4 propellers and a large pale coloured central body, similar to a DJI Inspire.</p> <p><b>Reported Separation:</b> 150-200ft V / 200m H</p> <p><b>The BIG Radar controller</b> reports that the A320 departed Heathrow on a DET SID. At approximately 5500ft the pilot reported having had a drone pass down their right-hand side by about 100m as they passed 5000ft. The drone was described as being white, oval-rectangular shaped and of a decent size.</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

<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.

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2022043	2 Apr 22 1634	PA28 (Civ FW)	Unk Obj	5115N 00248W 2NM S Cheddar VRP 1900	London FIR (G)	<p><b>The PA28 pilot</b> reports that they saw the object very briefly off the port side. It appeared to have a two-tiered structure, which made them immediately think of a drone rather than a bird.</p> <p><b>Reported Separation:</b> 50ft V/100m H <b>Reported Risk of Collision:</b> Medium</p> <p><b>The Bristol Radar controller</b> reports that [the PA28 pilot] was returning to Bristol VFR via Cheddar. While still outside controlled airspace, they recall the pilot reported that they "may have just passed a drone", or similar. There was no confirmation it was a drone, nor any indication that reporting action was going to be taken. The radar controller advised ADC in case the pilot mentioned any further details, which they did not. They cannot recall any other radar returns in the vicinity at the time. No other traffic was in the area.</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
2022046	9 Apr 22 1345	B737 (CAT)	Drone	5327N 00158W Glossop 4000ft	Manchester TMA (A)	<p><b>The B737 pilot</b> reports under radar control vectors in the descent on left base for an approach to RW23L at Manchester when they saw a blue drone pass slightly below and to the left. No avoiding action was taken because it was assessed that their vector would take them clear. The incident was reported to ATC and an Air Safety Report filed.</p> <p><b>Reported Separation:</b> 100ft V/30m H <b>Reported Risk of Collision:</b> Medium</p> <p><b>The Manchester controller</b> reports that the B737 pilot, descending through altitude 4000ft, reported a large drone passing them nose to tail approximately 200ft below. The crew believed the drone to be blue in colour but stated that could be due to the sunlight.</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

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2022054	8 Apr 22 1725	ATR72 (CAT)	Unk Obj	5325N 00254W 2NM N Liverpool 3500ft	Manchester TMA (A)	<p><b>The ATR72 pilot</b> reports that on descending into Liverpool under radar vectors right downwind for RW27, the First Officer, who was the monitoring pilot, observed a small silver coloured object at the 2 o'clock position at same altitude passing by the right wing, within about 10m. No collision risk existed at the point that the object was sighted. As the object was only visible for 3 seconds it was not enough time to determine whether it was a balloon or a drone, but it appeared metallic at first, consequently it was reported to ATC as a possible drone sighting as a precaution.</p> <p><b>Reported Separation:</b> 0ft V/ 10m H <b>Reported Risk of Collision:</b> Low</p> <p><b>The Liverpool controller</b> reports that the ATR72 pilot reported a small silver coloured drone passing down their right wing at the same altitude, which was 3700ft. They could not say if it was hovering or moving in a direction.</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
2022061	25 Apr 22 1326	A319 (CAT)	Drone	5103N 00028W ivo Five Oaks 3700ft	London TMA (A)	<p><b>The A319 pilot</b> reports they had started the turn onto right base for RW08R at Gatwick when the FO saw a white disc shaped drone, about a meter across, pass about 20m from the wing tip and at the same level. The incident was reported to Gatwick Approach and Tower.</p> <p><b>Reported Separation:</b> 0ft V/20m H <b>Reported Risk of Collision:</b> NR</p> <p><b>The Gatwick controller</b> reports the A319 pilot reported on frequency at about 7NM out and was told to continue due to other traffic. Before the landing clearance was issued, the pilot reported details of a white drone seen on their right side at the same level whilst turning on to base leg. They stated it was 'quite close' with no actual distance given. The radar controller was immediately informed so they could alert other traffic. The supervisor was also informed. No subsequent reports were received from radar or from other 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> 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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2022066	30 Apr 22 0959	EMB190 (CAT)	Drone	5126N 00003W 3NM SW Greenwich 2000ft	London/City CTR (D)	<p><b>The EMB190 pilot</b> reports that they were conducting an ODLEG arrival to London City for RW09. At 2NM inbound to TODBI, both flight crew spotted a large drone in very close proximity (vivid blue in colour) passing eastbound at high speed below the right-hand wingtip. The aircraft was at 2000ft, and they estimated the drone to be at 1800ft. No avoiding action was taken. They continued their arrival and immediately reported the drone to ATC. The police took details from the Captain and FO on the ground.</p> <p><b>Reported Separation:</b> 200ft V/30m H <b>Reported Risk of Collision:</b> High</p> <p><b>The Thames Radar controller</b> reports that [the EMB190 pilot] reported a drone passing down the left-hand side of the aircraft [they recall], just below. The pilot deemed the proximity close enough to report an Airprox. On landing the pilot reported it as bright blue and 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, 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
2022067	30 Apr 22 1457	PA25 (Civ FW)	Drone	5414N 00113W Sutton Bank 180ft agl	London FIR (G)	<p><b>The PA25 pilot</b> reports that just after take-off, whilst towing a glider, they glimpsed an object which they thought was a bird, initially dead ahead and close. It went directly overhead with no time to avoid. They noted it to be a 4-rotor drone as it passed. Size of drone was difficult to assess, but small, maybe 1/2 metre. [The gliding instructor's recount was] virtually identical except that the drone passed over their right wing, which suggested it was travelling north.</p> <p><b>Reported Separation:</b> 15ft V / 0m H <b>Reported Risk of Collision:</b> High</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, 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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2022068	30 Apr 22 1115	B787 (CAT)	Drone	5133N 00013W 6NM NE Heathrow 2800ft	London CTR (D)	<p><b>The B787 pilot</b> reports that a small black drone passed approximately 500ft below down the right-hand side of the aircraft (FO side) while departing [departure airfield] at approximately D10 LON climbing through about 3000ft. No avoiding action was taken. They reported it to London ATC.</p> <p><b>Reported Separation:</b> 500ft V / NR H <b>Reported Risk of Collision:</b> NR</p> <p><b>NATS safety investigations</b> found that the B787 pilot submitted an Airprox report in response to the sighting of drone whilst approximately 6NM NE of London Heathrow. It has been estimated that the UAS was at between 2500ft and 2800ft. Safety Investigations reviewed the radar at the time the pilot reported the sighting, however, no radar contacts were visible.</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

## 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)	