

Consolidated Drone/Balloon/Model/Unknown Object Summary Sheet for UKAB Meeting on 16th September 2020

Total	Risk A	Risk B	Risk C	Risk D	Risk E
9	2	2	5	0	0

Airprox Number	Date Time (UTC)	Aircraft (Operator)	Object	Location ¹ Description Altitude	Airspace (Class)	Pilot/Controller Report Reported Separation Reported Risk	Comments/Risk Statement	ICAO Risk
2020065	30 Jun 20 1434	PA28 (Civ FW)	Drone	5626N 00322W Scone Airfield 1900ft	Perth ATZ (G)	<p>The PA28 pilot reports when deadside descending, the student saw the drone first and told the Instructor that there was a drone at a similar height (1900ft on the QNH, 1500ft agl). Their standard deadside descent took them around the object so there was no avoiding action required other than to observe that there was no change to the drone's position. However, had they not seen it and descended around it, the risk of collision would have been high. The drone was round and red/orange, about 30cm in height and 80cm in diameter. It was stationary and seemed to be 'horizontal' rather than 'vertical' and so did not look like a balloon. Subsequently they reported it to Tower so that other aircraft could be informed.</p> <p>Reported Separation: 0ft V/300m H Reported Risk of Collision: 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>Applicable Contributory Factors: 1, 2, 3, 4, 7</p> <p>Risk: 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
2020071	18 Jul 20 1524	A320 (CAT)	Drone	5129N 00011W 10NM final LHR 27R 3000ft	London TMA (A)	<p>The A320 pilot reports that on approach into Heathrow they were advised by Approach control of drone activity. On passing 10NM at 3000ft ft a red drone was seen passing right-to-left ahead of them and approximately 500ft above their position. [UKAB note: Airprox 2020097 reported drone activity 30min earlier]</p> <p>Reported Separation: 500ft V/NR H Reported Risk of Collision: None</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>Applicable Contributory Factors: 1, 2, 3, 4, 8</p> <p>Risk: 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

¹ 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 ¹ Description Altitude	Airspace (Class)	Pilot/Controller Report Reported Separation Reported Risk	Comments/Risk Statement	ICAO Risk
2020072	27 May 20 1551	B787 (CAT)	Unk Obj	5124N 00032W 5NM SW Heathrow Airport 5100ft	LTMA (A)	<p>The B787 pilot reports that they were on departure from LHR, under radar control climbing through 5100ft to the SW of LHR on a heading of 285°, when the P3 saw a reflective (shiny) black surface of a small object pass very quickly down the left-hand side of the aircraft. It appeared to be “very close” but a detailed identification of size and shape was not possible due to the speed with which it passed.</p> <p>Reported Separation: ‘Very close’. Reported Risk of Collision: Medium.</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>Applicable Contributory Factors: 4, 5</p> <p>Risk: 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
2020073	18 Jul 20 1635	C172 (Civ FW)	Drone	5435N 00554W SW Belfast City Airport 1600ft	Scottish FIR (G) (Belfast City NOTAM’d as closed)	<p>The C172 pilot reports that during a navigation exercise they encountered a drone approximately 2NM from Belfast at 1850ft, level with their aircraft. By altering course to the right, they avoided the drone by approximately 5 metres horizontally. The drone was hovering and remained in position while they passed it; it was light purple in colour and believed to be of the 4-rotor type.</p> <p>They made a radio report to Aldergrove Approach who were providing a Basic Service at the time as Belfast City was closed by NOTAM and the CTR had reverted to class G airspace. Further details were submitted by telephone to Aldergrove Approach after landing at their destination.</p> <p>Reported Separation: 0ft V/5m H Reported Risk of Collision: Not Reported.</p> <p>The Belfast Aldergrove App Controller reports that the C172 was transiting past Belfast City, which was closed, and so the C172 pilot remained on the Aldergrove frequency. As the C172 passed 2NM SW of the airport the pilot reported coming very close to a UAV, which was purple in colour. Other aircraft in the region were warned about the presence of the UAV.</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>Applicable Contributory Factors: 1, 2, 4, 6</p> <p>Risk: 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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2020075	21 Jul 20 1403	B787 (CAT)	Unk Obj	5129N 00023W 2NM E LHR 600ft	London CTR (D)	<p>The B787 pilot reports on final approach to LHR 27R and passing approximately 600ft when the FO (pilot monitoring) saw what looked like a drone pass overhead about 100ft above the cockpit. The suspected drone was black in colour but due to the momentary sighting it was not possible to identify any other characteristics. The possible sighting was reported to Heathrow Tower just prior to vacating the runway. The pilot noted that the risk of collision was likely although it was hard to determine exactly how close it was. He did not recognise the object as a drone seen close up, but it was definitely black in colour and looked solid and had a constant shape unlike a bird. He thought it was rectangular but not completely uniform in shape. The fact that he could pick out in a few seconds that it was not completely uniform made him think that it was probably closer than he first thought which is why he thought the risk of collision was likely.</p> <p>Reported Separation: 100ft V/0m H Reported Risk of Collision: High</p>	<p>In the Board's opinion the reported altitude and/or description of the object were such that they were unable to definitively determine the nature of the unknown object.</p> <p>Applicable Contributory Factors: 4, 5</p> <p>Risk: 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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2020079	27 Jul 20 2019	C560XLS (Civ Comm)	Balloon	5152N 00011E Bishop's Stortford FL91	London TMA (A)	<p>The Citation pilot reports that an unidentified object passed close to their aircraft during descent through FL80 approaching Luton Airport. The object, which was silver in colour and resembled a large partially deflated balloon, appeared to be around 1m in size and passed on the right side of the aircraft at an estimated distance of 10-20m. This was reported to Essex Radar at the time and the flight continued normally.</p> <p>Reported Separation: NK V/10-20m H Reported Risk of Collision: NR</p> <p>Enquiries were made with The Met Office, the outcome of which led to the possibility of the object being a meteorological radiosonde balloon being discounted.</p> <p>The NATS radar replay briefly showed (a single radar sweep) an unidentified primary return near to the location reported by the Citation pilot. The incident estimated altitude is taken from the NATS investigation report, which established that the aircraft was higher at the time of the Airprox than the pilot reported.</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>Applicable Contributory Factors: 4, 5</p> <p>Risk: 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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2020097	18 Jul 20 1453	A320 (CAT)	2 x Drones	5132N 00002E 17NM E H'Row 5400ft	London TMA (A)	<p>The A320 pilot reports that they were on a base leg at 17NM and passing 5400ft when they overflew 2 drones approximately 1000ft below. The FO saw what was initially thought to be a balloon travelling in the opposite direction, as it got closer it looked metallic and did not have the usual movement of a balloon, it was at a constant altitude and not climbing towards them. The estimate was that it was 1000ft below, given that they were at 5000ft and it appeared to be around a quarter of the distance to the ground. Once the Captain was informed about the first drone they looked back to the south and saw a second object on the same course as the first drone, but slightly further west. Both appeared to be black metallic objects moving at a constant altitude, they were more solid than a balloon and smaller than a helicopter, more like the small drones of the type seen in parks. The drones were 1NM apart and travelling in a northerly direction. When they later reported the drones to ATC they were told that other pilots had also reported seeing them.</p> <p>[UKAB note: Airprox 2020071 reported drone activity 30min later]</p> <p>Reported Separation: 1000ft V/ 0m H Reported Risk of Collision: 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>Applicable Contributory Factors: 1, 2, 3, 4, 8</p> <p>Risk: 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

2020098	14 Aug 20 1550	C404 (Civ Comm)	Drone	5245N 00115W Kegworth 3000ft	East Midlands CTR (D)	<p>The C404 pilot reports that they were conducting a survey overhead East Midlands at 3000ft and in a right-hand turn over Kegworth when a drone was spotted off the right-hand P2 window. The drone was a quadcopter with 4 rotors and was a reflective black colour that was shining. It was between 100-200m from the starboard wing and vertically was between 0-500ft separation. Avoiding action was taken and once clear of conflict the pilot reported the sighting to ATC.</p> <p>Reported Separation: 0-500ft V/ 100-200m H Reported Risk of Collision: Medium</p> <p>The East Midlands ATC Investigation At 1549Z the pilot advised radar that they thought they had passed close to a drone operating nearby. The pilot estimated that the altitude of the drone was 2500ft. Based on the pilot's initial reported position, ATC believed the drone to be operating approximately 2.5NM to the south of the airfield, inside the control zone but outside the flight restriction zone. Radar advised ADC and all members of staff present in the VCR attempted to visually acquire the drone in the reported position, all to no avail. Based on the reported position, and the inability to sight the drone from ATC, the ATC supervisor initially decided to carry on with operations. The drone was more than 1000m from the airfield boundary, not believed to be posing a threat and ATC were prepared to pass a warning to other aircraft operating in the vicinity of the reported position of the possibility of a drone. After landing the pilot telephoned the ATC Supervisor to discuss the sighting. The pilot advised that they had definitely sighted something which wasn't a bird. The object had appeared to be reflective and, although not huge, had appeared to be curved as they would expect a quadcopter to look. The object had passed sufficiently close to the aircraft that they intended to report an Airprox on the incident. The pilot was asked to confirm exactly where they believed the drone to have been. They advised they thought it was 1NM south of Kegworth. On the basis of that report, the ATC supervisor then elected to carry out the actions as detailed in the EMA Drone Alert Policy. It was now believed that the drone had been within the FRZ after all, therefore all relevant parties on the policy had been 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>Applicable Contributory Factors: 1, 2, 3, 4, 7</p> <p>Risk: 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
2020100	14 Aug 20 1856	EMB505 (Civ Comm)	Unk Obj	5217N 00134W Warwick 3300ft	Birmingham CTA (D)	<p>The EMB505 pilot reports that they were flying the RNP approach to RW33 positioning to the IAF for the procedure. They were in and out of IMC and,</p>	<p>In the Board's opinion the reported altitude and/or description of the object were such that</p>	C

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						<p>moments before reaching the IAF, a drone rushed by their right-hand side. The captain saw it, but the FO (PF) did not. It was very close, within 200/300ft of their aircraft and they were flying at approximately 200kts at this point. The drone was reported to ATC immediately. After landing, the captain reported to ATC and provided a sketch of the drone's reported position on the approach procedure.</p> <p>Reported Separation: NK V/200-300ft H Reported Risk of Collision: NR</p> <p>The Birmingham ATC investigation found that there were no unidentified radar returns in the immediate vicinity of the reported drone sighting. Reporting action was taken in accordance with extant procedures; there were no further sightings reported.</p>	<p>they were unable to determine the nature of the unknown object.</p> <p>Applicable Contributory Factors: 4, 7</p> <p>Risk: 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>	

Relevant Contributory Factor (CF) Table

CF	Factor	Description	Amplification
	Flight Elements		
	• Regulations, Processes, Procedures and Compliance		
1	Human Factors	• Flight Crew ATM Procedure Deviation	The drone operator did not comply with regulations due to flying above 400ft and/or in controlled airspace/FRZ without clearance
	• Tactical Planning and Execution		
2	Human Factors	• Action Performed Incorrectly	The drone operator was flying above 400ft without clearance.
3	Human Factors	• Airspace Infringement	The drone pilot was flying in controlled airspace/FRZ without clearance.
	• Situational Awareness of the Conflicting Aircraft and Action		
4	Contextual	• Situational Awareness and Sensory Events	Pilot had no, or generic, or late Situational Awareness
	• See and Avoid		
5	Contextual	• Near Airborne Collision with Other Airborne Object	An Airprox involving an unknown object or balloon.
6	Contextual	• Near Airborne Collision with RPAS	An Airprox involving a drone or model aircraft.
7	Human Factors	• Perception of Visual Information	Pilot was concerned by the proximity of the other aircraft
8	Human Factors	• Monitoring of Other Aircraft	Sighting report