

## Consolidated Drone/Balloon/Model/Unknown Object Report Sheet for UKAB Meeting on 13<sup>th</sup> September 2017

Total	Risk A	Risk B	Risk C	Risk D	Risk E
18	7	3	8	0	0

Airprox Number	Date Time (UTC)	Aircraft (Operator)	Object	Location Description Altitude	Airspace (Class)	Pilot/Controller Report Reported Separation Reported Risk	Cause/Risk Statement	ICAO Risk
2017100	31 May 17 1519	AW189 (Coastguard)	Drone	5048N 00130W Beaulieu 500ft	London FIR (G)	<p><b>The drone operator</b> reports that he was flying his drone at Beaulieu aerodrome (with the radio control flying club) when a red and white helicopter passed overhead the airfield at low level. His drone was hovering at 26m above the ground when he became aware of the helicopter travelling directly towards him at speed and only 2-3 times the height of his aircraft, and well below 500ft. Upon spotting the helicopter he descended his drone as fast as possible (4m/s). Shortly afterwards the helicopter banked hard to the starboard, but still came almost overhead and within 200-300m of the drone.</p> <p><b>The AW189 pilot</b> reports that he was flying at 500ft and was conducting a NVG route recce to check for obstructions along the route. The intended route was over the disused Beaulieu aerodrome in the New Forest. The weather was CAVOK. The drone in question was not seen.</p>	<p>Members noted that the former Beaulieu airfield is a VRP and has a recognised and active model aircraft site and as such, the AW189 operating authority may wish to take this into account.</p> <p><b>Cause:</b> The drone was entitled to operate at that location and altitude, and the AW189 pilot was also entitled to fly overhead the disused airfield, and so the Board agreed that the incident was therefore best described as a conflict in Class G resolved by the drone pilot.</p> <p><b>Risk:</b> The Board considered that the drone operator's estimate of separation, allied to his overall account of the incident and together with the fact that the AW189 pilot had not seen the drone meant that although safety had been reduced, there had been no risk of collision.</p>	C
2017125	15 Jun 17 1140	A320 (CAT)	Drone	5109N 00007W 2nm E Gatwick 650ft	Gatwick CTZ (D)	<p><b>The A320 pilot</b> reports that during final descent, just inside 2nm from RW26L at Gatwick, a shiny hovering object was seen about 1nm south of the approach and passed down the port side at a similar level. It was a Quadcopter and appeared to be black and shiny; it was glinting in the sunlight.</p> <p><b>Reported Separation:</b> 0ft V/1nm H <b>Reported Risk of Collision:</b> None</p>	<p>Members discussed whether the proximity of the drone constituted endangerment and whilst some felt it did not, all agreed that this was an unwise location at which to operate a drone.</p> <p><b>Cause:</b> Although the drone was being flown in the vicinity of an airfield approach path, such that it may have endangered other aircraft at that location and altitude, given the reported range, the Board agreed that the incident was best described as a sighting report.</p> <p><b>Risk:</b> The Board considered that the pilot's estimate of separation, allied to his 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 Description Altitude	Airspace (Class)	Pilot/Controller Report Reported Separation Reported Risk	Cause/Risk Statement	ICAO Risk
2017137	02 Jul 17 1348	T67 Firefly (Civ Pte)	Drone	5113N 00010E 1.5nm NE Bough Beech Reservoir 1500ft	London FIR (G)	<p><b>The Firefly pilot</b> reports he was levelling from a descent to remain outside CAS when he spotted a small white cross-shaped object on his left and slightly below. It appeared to be stationary. Suspecting it was a drone he commenced an orbit to identify it, whereupon it descended sharply and tracked southeast. He kept the drone in sight for about a minute before losing sight of it. A second white object was seen heading in the same direction, which he believed was another drone, but because this one was further away it wasn't possible to make a positive ID.</p> <p><b>Reported Separation:</b> 200ft V/150m H <b>Reported Risk of Collision:</b> None</p>	<p><b>Cause:</b> The Board agreed that although the drone was being flown near the practical VLOS limit, it was entitled to be there and that the incident was best described as a conflict in Class G.</p> <p><b>Risk:</b> The Board considered that the pilot's estimate of separation, allied to his overall account of the incident and his ability to avoid the object portrayed a situation where although safety had been reduced, there had been no risk of collision.</p>	C
2017138	2 Jul 17 1300	A320 (CAT)	Drone	5129N 00010W Abeam Hyde Park 3000ft	London CTR (D)	<p><b>The A320 pilot</b> reports abeam Hyde Park on approach to RW27R at Heathrow when a small 'orangey/bronze' drone was observed to pass down the right side of the aircraft, slightly above. It appeared to be maintaining altitude and position and not drifting as a balloon would.</p> <p><b>Reported Separation:</b> 100ft V/100m H <b>Reported Risk of Collision:</b> No risk reported.</p>	<p><b>Cause:</b> The drone was being flown beyond practical VLOS limits and in the vicinity of an airfield approach path such that it was endangering other aircraft at that location and altitude. The Board agreed that the incident was therefore best described as the drone was flown into conflict with the A320.</p> <p><b>Risk:</b> The Board considered that the pilot's estimate of separation, allied to his overall account of the incident and his inability to avoid the object portrayed a situation where safety had been much reduced below the norm to the extent that safety had not been assured.</p>	B
2017141	2 Jul 17 0922	B777 (CAT)	Drone	5109N 00005W 3.5nm SW Gatwick 1100ft	Gatwick CTR (D)	<p><b>The B777 pilot</b> reports that he was on the ILS for Gatwick RW26 when the non-handling pilot called 'drone 11 o'clock' the handling pilot looked up from the instruments and saw a dark coloured drone pass by the wing at the same level. An additional crew member also saw the drone from the centre jump-seat. The incident was reported to ATC.</p> <p><b>Reported Separation:</b> 0ft V/20m H <b>Reported Risk of Collision:</b> Medium</p>	<p><b>Cause:</b> The drone was being flown in the vicinity of an airfield approach path such that it was endangering other aircraft at that location and altitude. The Board agreed that the incident was therefore best described as the drone was flown into conflict with the B777.</p> <p><b>Risk:</b> The Board considered that the pilot's estimate of separation, allied to his overall account of the incident and his inability to avoid the object 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 Description Altitude	Airspace (Class)	Pilot/Controller Report Reported Separation Reported Risk	Cause/Risk Statement	ICAO Risk
2017146	9 Jul 17 2035	A319 (CAT)	Drone	5110N 00000W 6.3nm SW Gatwick 2100ft	Gatwick CTR (D)	<p><b>The A319 pilot</b> reports that he was on an ILS approach to RW26 and 6.3nm from touchdown when the first officer noticed a small black object close to the right side of the aircraft's path and on a converging vector. At first it was thought to be a bird, but it became apparent it was a drone. The automatics were left in, although the first officer admitted that the startle factor of the drone's proximity nearly caused him to disconnect the autopilot for avoiding action. The twilight conditions meant that the drone appeared black, or dark in colour and at its closest point it passed between the wing-tip and the fuselage, above the right wing. A successful landing was completed and the drone reported to ATC. The police attended once the aircraft was on the stand. The drone was very large, certainly not a toy, estimated diameter was about 1m and it had 4 blades. A larger aircraft might not have missed it, and in the Captain's opinion it had put 130 lives at risk.</p> <p><b>Reported Separation:</b> 50ft V/10m H <b>Reported Risk of Collision:</b> High</p> <p><b>The Gatwick Controller</b> reports that the A319 pilot reported a drone passing close to the aircraft when at 6.3nm final. The report was passed on to Gatwick Police.</p>	<p><b>Cause:</b> The drone was being flown in the vicinity of an airfield approach path such that it was endangering other aircraft at that location and altitude. The Board agreed that the incident was therefore best described as the drone was flown into conflict with the A319.</p> <p><b>Risk:</b> The Board considered that the pilot's estimate of separation, allied to his overall account of the incident and his inability to avoid the object portrayed a situation where providence had played a major part in the incident and/or a definite risk of collision had existed.</p>	A
2017149	7 Jul 17 1308	PA28 (Civ Trg)	Drone	5141N 00033E East Hanningfield 1800ft	London FIR (G)	<p><b>The PA28 Instructor</b> reports demonstrating a right-hand level turn when the student saw a predominantly white quadcopter below them in the 7 o'clock position. The instructor rolled out of the turn, climbed and flew to a new area for general handling whilst informing Southend Radar of the Airprox. The instructor noted that the drone was close enough that they could clearly see black stripes on the side of its body and that no relevant NOTAMs were observed before or after flight.</p> <p><b>Reported Separation:</b> 200ft V/5m H <b>Reported Risk of Collision:</b> Medium</p>	<p><b>Cause:</b> The drone was entitled to operate at that location and altitude albeit at the limit of VLOS, and was not endangering other aircraft by being flown in proximity to airfield approach paths. The Board agreed that the incident was therefore best described as a conflict in Class G.</p> <p><b>Risk:</b> The Board considered that the pilot's estimate of vertical separation, allied to his 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 Description Altitude	Airspace (Class)	Pilot/Controller Report Reported Separation Reported Risk	Cause/Risk Statement	ICAO Risk
2017150	05 Jul 17 1245	C177 (Civ Pte)	Drone	5305N 00002W 2nm E Coningsby ATZ 2000ft	London FIR (G)	<p><b>The C177 pilot</b> reports that he was in straight and level flight at 2000ft on the Barnsley QNH. He had just received MATZ penetration approval from Coningsby and whilst passing a settlement on the left, a drone was observed passing north to south (i.e. opposite direction) and 50-100ft below, just under the left wing. No avoidance action could be taken as it was not observed until he became aware of it in his peripheral vision and was alongside the aircraft. It was close enough to make out the design (4 rotors encased in the body and a black/white body design). An Airprox was immediately reported on frequency to Coningsby. The drone appeared to be turning to the left (a curved path was observed) so it is likely it had seen his aircraft and was taking action to avoid. It was likely it would have passed very near to the elevator given the flight path.</p> <p><b>Reported Separation:</b> 50ft V/5m H <b>Reported Risk of Collision:</b> Medium</p>	<p><b>Cause:</b> The drone was being flown beyond practical VLOS limits and was endangering other aircraft at that location and altitude. The Board agreed that the incident was therefore best described as the drone was flown into conflict with the C177.</p> <p><b>Risk:</b> The Board considered that the pilot's estimate of separation, allied to his overall account of the incident and his inability to avoid the object portrayed a situation where providence had played a major part in the incident and/or a definite risk of collision had existed.</p>	A
2017151	21 Jul 17 1815	G550 (Civ Comm)	Drone	5133N 00022W 1.5nm NE Northolt 300ft	London CTR (D)	<p><b>The G550 pilot</b> reports that he was on a flight into Northolt. He spotted 2 black stationary shapes just ahead of the aircraft, while on short final on the ILS for RW25. They passed on the right hand side of the aircraft, so he saw them very clearly just above at about 300ft altitude, just a few meters away from the wing. One rotated around its axes while they passed. After landing he reported it on the radio to ATC.</p> <p><b>The NORTHOLT CONTROLLER</b> reports that a commercial aircraft reported sighting 2 drones on finals. The drones were reported as being between 1-1.5miles finals, north of the centreline, approximately 30ft above the aircraft. Subsequent aircraft making approaches were warned of the drone sighting.</p> <p><b>Reported Separation:</b> 30ft V/NK H</p>	<p><b>Cause:</b> The drone was being flown in the vicinity of an airfield approach path such that it was endangering other aircraft at that location and altitude. The Board agreed that the incident was therefore best described as the drone was flown into conflict with the G550.</p> <p><b>Risk:</b> The Board considered that the pilot's estimate of separation, allied to his overall account of the incident and his inability to avoid the object 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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2017152	8 Jul 17 0955	B787 (CAT)	Drone	5108N 00018W Gatwick RW26L Departure 6000ft	London TMA (A)	<p><b>The B787 pilot</b> reports that he was on a Lambourne right departure from RW26L. He had been cleared to climb above the profile and had just levelled at 6000ft. The F/O said "something passing down our left hand side" and he saw a small black spiky object flash past about 30ft below and inside the wing tip. He would guess it was about 18 inches to two feet in length. The F/O (PM) recorded the position shortly after the event which he passed to ATC with the description of the object as red and black and probably a drone.</p> <p><b>Reported Separation:</b> 30ft V/NK H</p>	<p><b>Cause:</b> The drone was being flown beyond practical VLOS limits and was endangering other aircraft at that location and altitude. The Board agreed that the incident was therefore best described as the drone was flown into conflict with the B787.</p> <p><b>Risk:</b> The Board considered that the pilot's estimate of separation, allied to his overall account of the incident and his inability to avoid the object portrayed a situation where providence had played a major part in the incident and/or a definite risk of collision had existed.</p>	A
2017153	10 Jul 17 1635	EMB170 (CAT)	Drone	5130N 00007E 3nm E London City 1000ft	London City CTR (D)	<p><b>The EMB170 pilot</b> reports that whilst established on short finals at London City and passing 1000ft a drone passed below and to the left-hand-side of the aircraft in the opposite direction. No avoiding action was taken. Once on the ground ATC were informed. He noted that there were a number of NOTAMs concerning UAVs around London City.</p> <p><b>UKAB Secretariat:</b> There were 9 NOTAMs in effect concerning UAVs around London City, all but 1 were not above 400ft. The remaining one was up to 650ft but west of London City in the Bishopsgate area and therefore not in the vicinity of the EMB170.</p> <p><b>Reported Separation:</b> 200ft V/0.5km H <b>Reported Risk of Collision:</b> Medium</p>	<p><b>Cause:</b> The drone was being flown in the vicinity of an airfield approach path such that it was endangering other aircraft at that location and altitude. The Board agreed that the incident was therefore best described as the drone was flown into conflict with the EMB170.</p> <p><b>Risk:</b> The Board considered that the pilot's estimate of separation, allied to his overall account of the incident and his inability to avoid the object portrayed a situation where although safety had been reduced, there had been no risk of collision.</p>	C
2017163	16 Jul 17 1713	EMB190 (CAT)	Unk Obj	5135N 00006E 5nm NNE London City 3000ft	London TMA (A)	<p><b>The EMB190 pilot</b> reports departing London City airport when he saw an object approaching in the right 1 o'clock position. He first thought it was a kite but as separation reduced he thought it might be a drone or remote controlled aircraft model. The object appeared triangular in shape, about 0.5-1m across and red and white in colour. The co-pilot assessed that it was in the 12 o'clock position, moving slowly left to right and climbing. Both pilots assessed that the object was not on a collision course but that it was dangerously close.</p> <p><b>Reported Separation:</b> 100ft V/30m H <b>Reported Risk of Collision:</b> High</p>	<p><b>Cause:</b> The unknown object was being flown beyond practical VLOS limits and was endangering other aircraft at that location and altitude. The Board agreed that the incident was therefore best described as the object was flown into conflict with the EMB190.</p> <p><b>Risk:</b> The Board considered that the pilot's estimate of separation, allied to his overall account of the object not being on a collision course 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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2017164	12 Jul 17 1909	Saab 340 (CAT)	Drone	5343N 00205W 2.3nm SSE POL FL140	London FIR (A)	<p><b>The Saab 340 pilot</b> reports in the cruise at FL140 when the crew saw a black object ahead. They first thought it was a fast jet but as separation reduced it became apparent that it was a drone, which passed directly beneath them.</p> <p><b>Reported Separation:</b> 150ft V/0m H <b>Reported Risk of Collision:</b> Medium</p>	<p><b>Cause:</b> The drone was being flown beyond practical VLOS limits and was endangering other aircraft at that location and altitude. The Board agreed that the incident was therefore best described as the drone was flown into conflict with the Saab 340.</p> <p><b>Risk:</b> The Board considered that the pilot's estimate of separation, allied to his overall account of the incident and his inability to avoid the object portrayed a situation where safety had been much reduced below the norm to the extent that safety had not been assured.</p>	B
2017167	18 Jul 17 0915	C404 (Civ Comm)	Drone	5507N 00148W 5nm E Bolam Lake VRP FL60	London FIR (G)	<p><b>The C404 pilot</b> reports that he was in the vicinity of Bolam Lake VRP transiting north when he saw a large blue object slightly to the left of his aircraft's nose at exactly the same level. He was startled and it took him a few seconds to realise that it was a drone. He had no time to react and the drone passed down his left hand side, missing the wing tip by about 6-8ft. Although the incident only lasted 5-6 seconds he estimates that the drone was one metre in length and half a metre wide. It was dark blue and either stationary or slow moving.</p> <p><b>The Newcastle Controller</b> reports that at about 0915 the C404 had passed west abeam the airport and was warned that he would be leaving controlled airspace in about 5 miles and at that point he would be given a Traffic Service. At about 0917 the C404 pilot, at a position 340° at 7.7nm, about 3nm west of the Morpeth VRP, reported that they had just passed very very close to a drone at the same level as themselves, about 6 to 8 feet off their port wing. The pilot did not report any intention to file an Airprox.</p> <p><b>Reported Separation:</b> 0ft V/6-8ft H</p>	<p><b>Cause:</b> The drone was being flown beyond practical VLOS limits and was endangering other aircraft at that location and altitude. The Board agreed that the incident was therefore best described as the drone was flown into conflict with the C404.</p> <p><b>Risk:</b> The Board considered that the pilot's estimate of separation, allied to his overall account of the incident and his inability to avoid the object 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 Description Altitude	Airspace (Class)	Pilot/Controller Report Reported Separation Reported Risk	Cause/Risk Statement	ICAO Risk
2017168	1 May 17 1230	PA28 (Civ Club)	Drone	5236N 00102W Leicester airfield 1800ft	Leicester ATZ (G)	<p><b>The PA28 pilot</b> reports descending on the deadside in the visual circuit at Leicester when a drone was seen to pass the left wing in very close proximity. The pilot noted that he had no time to react to the drone's presence before passing it.</p> <p><b>Reported Separation:</b> 0ft V/20ft H <b>Reported Risk of Collision:</b> High</p>	<p><b>Cause:</b> The drone was endangering other aircraft at that location and altitude in the vicinity of the visual circuit. The Board agreed that the incident was therefore best described as the drone was flown into conflict with the PA28.</p> <p><b>Risk:</b> The Board considered that the pilot's estimate of separation, allied to his overall account of the incident and his inability to avoid the object portrayed a situation where providence had played a major part in the incident and/or a definite risk of collision had existed.</p>	A
2017170	24 Jul 17 1150	PA28 (Civ Club)	Drone	5118N 00235W ivo Chew Valley VRP 1700ft	London FIR (G)	<p><b>The PA28 pilot</b> reports seeing an object in the left 11 o'clock at a range of about ½nm which appeared to be on a reciprocal course. As the object passed abeam on the left side he identified a large white and orange quadcopter. The pilot noted that although he turned 10° to the right just before the drone came abeam, avoiding action was not required as there had not been a risk of collision provided the drone maintained its course.</p> <p><b>Reported Separation:</b> 200ft V/200m H <b>Reported Risk of Collision:</b> Low</p>	<p><b>Cause:</b> The Board noted that the local terrain altitude placed the drone near the practical VLOS limit but that the drone was entitled to operate at that location. The incident was therefore best described as a conflict in Class G.</p> <p><b>Risk:</b> The Board considered that the pilot's estimate of separation, allied to his overall account of the incident portrayed a situation where although safety had been reduced, there had been no risk of collision.</p>	C

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2017171	22 Jul 17 1125	B737 (CAT)	Unk Obj	5106N 00001W 1nm SW East Grinstead 6000ft	London TMA (A)	<p><b>The B737 pilot</b> reports that he was under Radar vectors downwind for RW26L heading 070° in between showers and cumulus clouds. He observed a black object approximately ½-1nm in the 9 o'clock position level as he passed 6000ft in the descent. It was a black object that appeared tall and flat twisting around the vertical axis. Although it seemed likely a balloon in terms of shape and movement, it was up at 6000ft and thus as there was a chance of it being a drone he reported it to Gatwick Director. The approximate position was somewhere between East Grinstead, Forest Row and Turners Hill.</p> <p><b>The Gatwick Controller</b> reports that she received a report of a 'small black object, possibly a balloon at 6000ft'. She passed the information on to the Group Supervisor.</p> <p><b>Reported Separation:</b> 0ft V/0.5nm H</p>	<p><b>Cause:</b> Being an unknown object, the Board agreed that it was probably not under direct control and that the incident was therefore best described as a sighting report.</p> <p><b>Risk:</b> The Board considered that the pilot's estimate of separation portrayed a situation where although safety had been reduced, there had been no risk of collision.</p>	C
2017172	22 Jul 17 1900	ATR75 (CAT)	Unk Obj	5101N 00123W 4nm N Eastleigh FL075	London FIR (D)	<p><b>The ATR75 pilot</b> reports that they were flying late downwind, in a right-hand circuit to avoid some large CB cloud and being radar vectored by Southampton, when both crew members saw an object ahead and to the right. The PF pointed it out as a bird to start with, the object passed 100-200m to their right. Due to its size they couldn't tell whether it was travelling at speed or not, it looked too large for a bird and appeared to be silver, or metal reflecting the sun. It could have been a large balloon, but it looked too stable, so they guessed it was a drone. It passed in a matter of seconds, but they did not assess there to be a risk of collision. They reported it to ATC.</p> <p><b>Reported Separation:</b> 0ft V/100-200m H <b>Reported Risk of Collision:</b> Low</p>	<p><b>Cause:</b> Being an unknown object, the Board agreed that it was probably not under direct control and that the incident was therefore best described as a conflict in Class A.</p> <p><b>Risk:</b> The Board considered that the pilot's estimate of separation, allied to his overall account of the incident portrayed a situation where although safety had been reduced, there had been no risk of collision.</p>	C