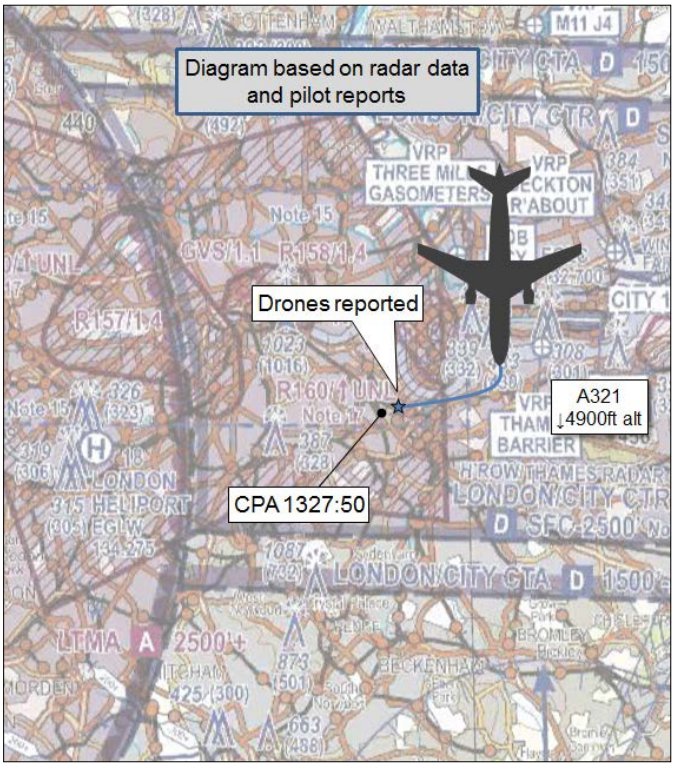
AIRPROX REPORT No 2016246

Date: 20 Nov 2016 Time: 1326Z Position: 5128N 00002W Location: 2nm SW London City

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	A320	Drones x 2
Operator	CAT	Unknown
Airspace	LTMA	
Class	A	A
Rules	IFR	
Service	Radar Control	
Provider	Swanwick	
Altitude/FL	4900ft	
Transponder	A,C,S	
Reported		
Colours	Company	White
Lighting	Strobes, Nav, Landing	
Conditions	VMC	
Visibility	50km	
Altitude/FL	5500ft	
Altimeter	QNH (992hPa)	
Heading	271°	
Speed	180kt	
ACAS/TAS	TCAS I	
Alert	None	
Separation		
Reported	0ft V/500m H	
Recorded	NK	



THE A320 PILOT reports that they were on a base leg, descending through 6200ft to establish on the ILS RW27R. As the aircraft banked right, two white, orb shaped objects, with no lights or visible markings were spotted in the 1-2 o'clock position. The range was uncertain, but they were below the aircraft. At first, the pilot thought they were toy balloons, but they appeared to be twice the size of a standard child's helium balloon. As the turn onto the localiser continued, the objects did not move, despite the wind being 270/30kts, one was estimated to be at 5500ft and the other at 4500ft, both were hovering over the uniform stratus cloud layer, which was at 4000ft. He then thought they might be helicopters, but the size was wrong for the perceived distance. The objects did not match any TCAS targets that were displayed and it became apparent that they were drones. Both objects remained in view and they passed abeam in the 3 o'clock position at an estimated range of between 500-800m, it was difficult to judge exactly. The crew remained in constant visual contact as they passed abeam, at which point they re-focused on the approach. Although avoiding action was unnecessary, the proximity of the drones compromised the safety of the aircraft both due to their proximity but also because of the distraction that they created to ensure there was no collision risk. He opined that if ATC had vectored them onto a shorter approach path, they would have posed a significant risk of collision. ATC and the police were informed.

He assessed the risk of collision as 'None'.

THE DRONE OPERATOR could not be traced.

THE LL FIN CONTROLLER reports that the pilot reported a white drone between 4500 and 5500ft, 1nm south of London City. The report was subsequently confirmed by another aircraft. The Met police were informed.

Factual Background

The weather at London City was recorded as follows:

METAR EGLC 201320Z 25014KT 9999 BKN016 07/04 Q0991=

Analysis and Investigation

UKAB Secretariat

There are no specific ANO regulations limiting the maximum height for the operation of drones that weigh 7kg or less other than if flown using FPV (with a maximum weight of 3.5kg) when 1000ft is the maximum height. Drones weighing between 7kg and 20kg are limited to 400ft unless in accordance with airspace requirements. Notwithstanding, there remains a requirement to maintain direct, unaided visual contact with the aircraft sufficient to monitor its flight path in relation to other aircraft, persons, vehicles, vessels and structures for the purpose of avoiding collisions. CAP 722 gives guidance that, within the UK, visual line of sight (VLOS) operations are normally accepted to mean a maximum distance of 500m [1640ft] horizontally and 400ft [122m] vertically from the Remote Pilot.

Neither are there any specific ANO regulations limiting the operation of drones in controlled airspace if they weigh 7kg or less other than if flown using FPV (with a maximum weight of 3.5kg) when they must not be flown in Class A, C, D or E, or in an ATZ during notified hours, without ATC permission. Drones weighing between 7kg and 20kg must not be flown in Class A, C, D or E, or in an ATZ during notified hours, without ATC permission. CAP722 gives guidance that operators of drones of any weight must avoid and give way to manned aircraft at all times in controlled Airspace or ATZ. CAP722 gives further guidance that, in practical terms, drones of any mass could present a particular hazard when operating near an aerodrome or other landing site due to the presence of manned aircraft taking off and landing. Therefore, it strongly recommends that contact with the relevant ATS unit is made prior to conducting such a flight.

Notwithstanding the above, all drone operators are also required to observe ANO 2016 Article 94(2) which requires that the person in charge of a small unmanned aircraft may only fly the aircraft if reasonably satisfied that the flight can safely be made, and the ANO 2016 Article 241 requirement not to recklessly or negligently cause or permit an aircraft to endanger any person or property. Allowing that the term 'endanger' might be open to interpretation, drones of any size that are operated in close proximity to airfield approach, pattern of traffic or departure lanes, or above 1000ft agl (i.e. beyond VLOS (visual line of sight) and FPV (first-person-view) heights), can be considered to have endangered any aircraft that come into proximity. In such circumstances, or if other specific regulations have not been complied with as appropriate above, the drone operator will be judged to have caused the Airprox by having flown their drone into conflict with the aircraft.

A CAA web site[1] provides information and guidance associated with the operation of Unmanned Aircraft Systems (UASs) and Unmanned Aerial Vehicles (UAVs).

Additionally, the CAA has published a UAV Safety Notice[2] which states the responsibilities for flying unmanned aircraft. This includes:

> 'You are responsible for avoiding collisions with other people or objects - including aircraft.
> Do not fly your unmanned aircraft in any way that could endanger people or property.
> It is illegal to fly your unmanned aircraft over a congested area (streets, towns and cities).
> …, stay well clear of airports and airfields'.

[1] www.caa.co.uk/uas
[2] CAP 1202

Summary

An Airprox was reported when an A320 and a pair of drones flew into proximity at 1326 on Sunday 20th November 2016. The A320 pilot was operating under IFR in VMC, and in receipt of a Radar Control Service from Heathrow Final Approach. The drone operator could not be traced.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of a report from the A320 pilot, radar photographs/video recordings, and reports from the air traffic controllers involved.

Members noted that the drones were operating at an estimated 4500ft and 5500ft and therefore beyond practical VLOS conditions. Also, in flying as they were within Class A airspace without the permission of Swanwick ATC, the Board considered that the drone operator had endangered the A320 and its occupants. Therefore, in assessing the cause, the Board agreed that the drones had been flown into conflict with the A320. Turning to the risk, although the incident did not show on the NATS radars, the Board noted that the pilot had estimated the separation of the nearest drone to be about 500m away. Acknowledging the difficulties in judging separation visually without external references, 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 degraded, a collision was unlikely; they therefore determined the risk to be Category C.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The drones were flown into conflict with the A320.

Degree of Risk: C.