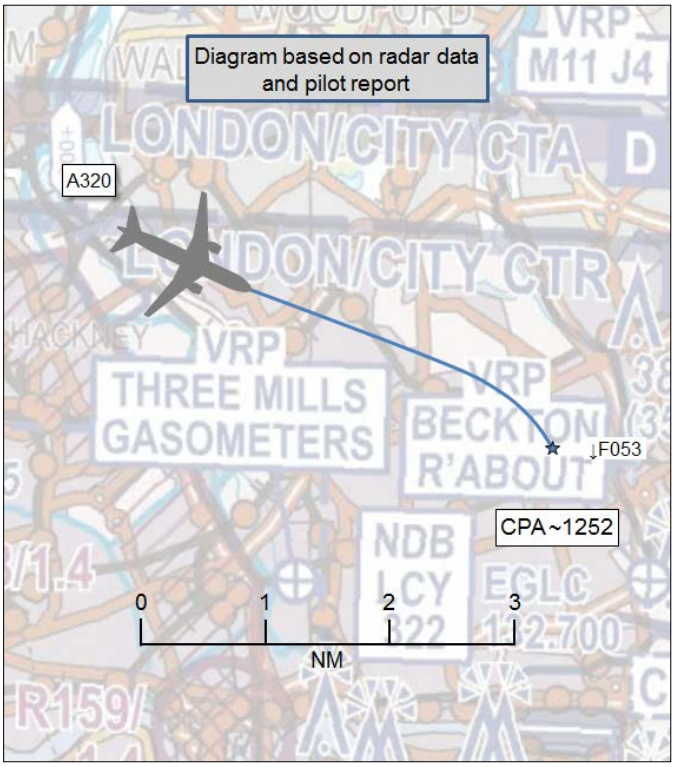
AIRPROX REPORT No 2016257

Date: 7 Dec 2016 Time: 1252Z Position: 5133N 00003E Location: East Ham

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	A320	Drone
Operator	CAT	Unknown
Airspace	London TMA	London TMA
Class	A	A
Rules	IFR	
Service	Radar Control	
Provider	Heathrow	
Altitude/FL	5300ft	
Transponder	A, C, S	
Reported		Not reported
Colours	Company	
Lighting	Strobes, beacon, nav	
Conditions	VMC	
Visibility	>10km	
Altitude/FL	5300ft	
Altimeter	QNH (NK hPa)	
Heading	120°	
Speed	~200kt	
ACAS/TAS	TCAS II	
Alert	None	
	Separation	
Reported	200ft V/0m H	
Recorded	NK	



THE A320 PILOT reports being at the end of the 'downwind leg' for Heathrow RW27. The First Officer (FO) was looking out of the right DV window when he noticed an object pass under the aircraft. The object was in sight for an estimated 2 seconds and appeared to be square in shape, about 1ft x 1ft, with a bright yellow upper side with a darker band across the centre. The FO believed the object to be a drone. The pilot noted that there was insufficient time to take avoiding action. The incident was reported on the radio.

He assessed the risk of collision as 'Medium'.

THE DRONE OPERATOR: The drone operator could not be traced.

THE HEATHROW CONTROLLER did not submit a report to the UK Airprox Board.

Factual Background

The weather at Heathrow and London/City was recorded as follows:

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METAR COR EGLL 071250Z AUTO 21010KT 170V250 9999 NCD 13/11 Q1025 NOSIG=
METAR EGLC 071250Z 22010KT 190V250 CAVOK 14/10 Q1025=
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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) and CAP722 (UAS Operations in UK Airspace) provides comprehensive guidance.

Summary

An Airprox was reported when an A320 and a drone flew into proximity at 1252 on Wednesday 7th December 2016. The A320 pilot was operating under IFR in VMC in receipt of a Radar Control Service from Heathrow Director. 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 and radar photographs/video recordings.

The altitude at which the drone was sighted was sufficient that the Board agreed it had been operated beyond VLOS and therefore was 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

[1] dronesafe.uk

separation to be 200ft vertically. 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 drone was flown into conflict with the A320.

Degree of Risk: C.