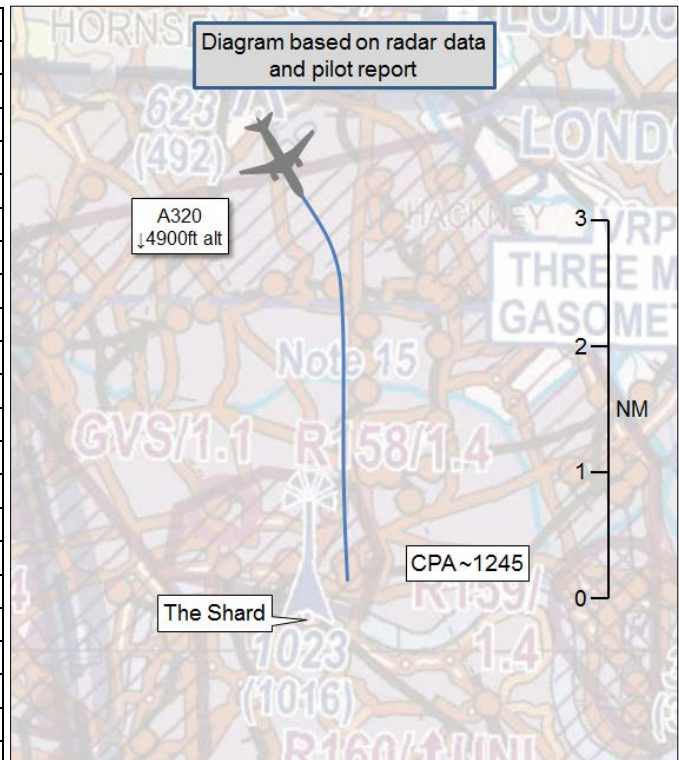


AIRPROX REPORT No 2016139

Date: 18 Jul 2016 Time: 1245Z Position: 5131N 00004W Location: 13nm E Heathrow

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	4900ft	
Transponder	A, C, S	
Reported		Not reported
Colours	Company	
Lighting	All on	
Conditions	VMC	
Visibility	>10km	
Altitude/FL	4900ft	
Altimeter	QNH (NK hPa)	
Heading	180°	
Speed	180kt	
ACAS/TAS	TCAS II	
Alert	None	
Separation		
Reported	2m V/20m H	
Recorded		NK



THE A320 PILOT reports descending on base leg towards an ILS approach to Heathrow RW27L when a black drone, about 50cm across, was sighted out the right flight deck window and reported to ATC. The crew estimated it probably passed above the right wing and horizontal stabiliser.

He assessed the risk of collision as 'High'.

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

Factual Background

The weather at Heathrow was recorded as follows:

METAR COR EGLL 181250Z AUTO 24005KT 140V320 9999 NCD 26/08 Q1022 NOSIG=

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 site¹ 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 Notice² 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'.

Summary

An Airprox was reported when an A320 and a drone flew into proximity at about 1245 on Monday 18th July 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 (which did not show the drone).

Members agreed that this incident appeared to be a very near-miss and that the drone operator should not have been flying in that location at that altitude. Consequently, it was determined that the drone 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 separation to be 20m from the aircraft, at co-altitude, and that there had not been time to take any avoiding action. 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

¹ www.caa.co.uk/uas

² CAP 1202

where a collision had only been narrowly avoided and chance had played a major part; they therefore determined the risk to be Category A.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The drone was flown into conflict with the A320.

Degree of Risk: A