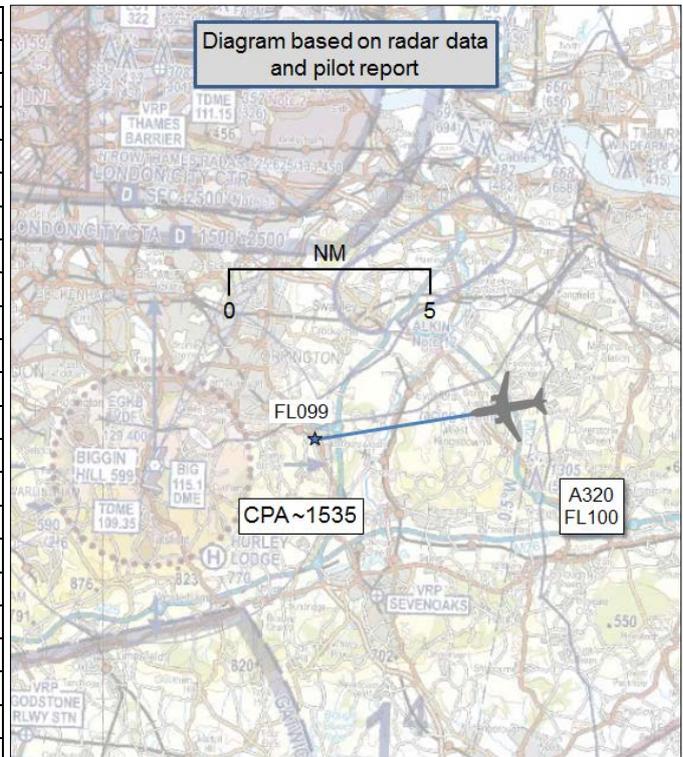


AIRPROX REPORT No 2016239

Date: 11 Nov 2016 Time: 1535Z Position: 5120N 00008E Location: E Biggin Hill

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	FL100	
Transponder	A, C, S	
Reported		Not reported
Colours	Company	
Lighting	All on	
Conditions	VMC	
Visibility	>25km	
Altitude/FL	FL100	
Heading	262°	
Speed	220kt	
ACAS/TAS	TCAS II	
Alert	None	
Separation		
Reported	100ft V/200m H	
Recorded		NK



THE A320 PILOT reports he had just started a descent from FL100 to FL90 to join the Biggin hold when both crew noticed an object in the 1 o'clock position which had no lighting and appeared stationary. They tracked it for about 5sec as it passed down the right side. They both questioned 'Was that a drone? At 10,000ft!'. The pilot stated that it was clearly identifiable as a large drone and not a bird or balloon. It was dark in colour with a T-shape landing frame, with multiple arms and rotors (6-8) and passed just below the right wing. There was no time to react to the drone or to take avoiding action. The occurrence was reported to the Heathrow controller immediately and to Heathrow police on landing.

He assessed the risk of collision as 'Medium'.

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

THE HEATHROW CONTROLLER reports the pilot of a flight inbound to Heathrow reported a drone 200ft below the aircraft when 3nm east of the BIG hold. At this point there was no traffic or returns shown on radar to identify or confirm the presence of an aircraft.

Factual Background

The weather at Biggin Hill was recorded as follows:

METAR EGKB 111520Z 14003KT 9999 FEW025 08/03 Q1023

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.

Nor 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 and Drone Safe App 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 about 1535 on Friday 11th November 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, radar photographs/video recordings and a report from the air traffic controller involved.

Members noted that the drone was operating at 10,000ft and therefore beyond practical VLOS conditions. Also, in flying as it was within Class A airspace without the permission of ATC, the Board considered that the drone operator had endangered the A320 and its occupants. Therefore, in

¹ dronesafe.uk

assessing the cause, the Board agreed that the drone had been flown into conflict with the A320. Turning to the risk, the incident did not show on the NATS radars and the Board noted that the pilot had estimated the separation to be 100ft and 200m. 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 safety was not assured, they therefore determined the risk to be Category B.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The drone was flown into conflict with the A320

Degree of Risk: B.