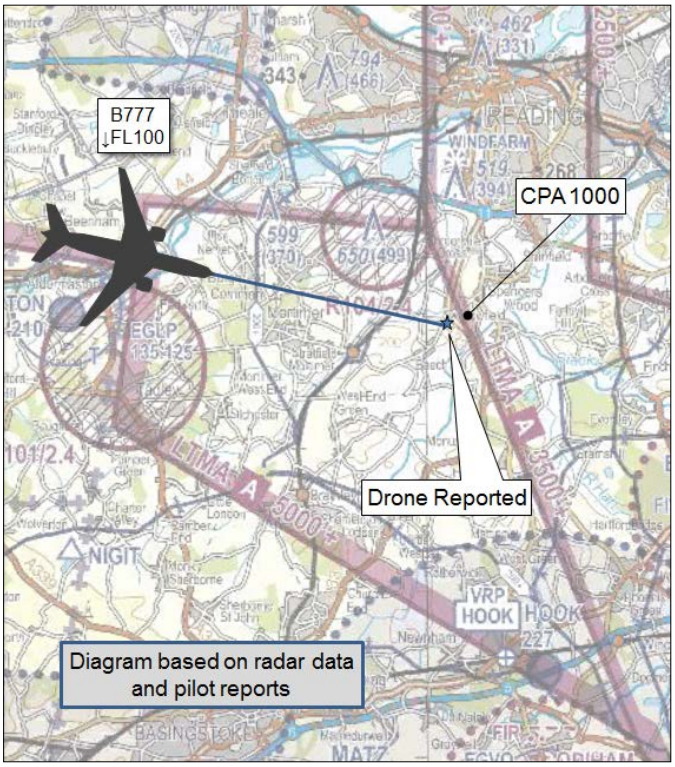
AIRPROX REPORT No 2016194

Date: 29 Aug 2016 Time: 1000Z Position: 5123N 00059W Location: 10nm W Ockham

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	B777	Unknown Object
Operator	CAT	Unknown
Airspace	LTMA	
Class	A	A
Rules	IFR	
Service	Radar Control	
Provider	Swanwick	
Altitude/FL		
Transponder	A, C, S	
Reported		
Colours	Company	Blue
Lighting	Nav, Landing, Strobes	
Conditions	Choose an item.	
Visibility	>10km	
Altitude/FL	FL103	
Altimeter	1013hPa	
Heading	105°	
Speed	250kt	
ACAS/TAS	TCAS II	
Alert	None	
Separation		
Reported	0ft V/30m H	
Recorded	NK	



THE B777 PILOT reports that he was flying an approach to Heathrow and proceeding to the LAM hold, but was then instructed by ATC to leave on heading 105° at 250kts. Whilst descending to FL100 a small object was seen just ahead and slightly to the right. It flashed past by approx 50ft with no impact, but very close. He could see that it was blue in colour but not any other detail, although it was certainly not a balloon. He reported it to ATC at the time.

He assessed the risk of collision as 'High'.

The unknown object could not be traced.

Factual Background

The weather at Heathrow was recorded as follows:

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METAR COR EGLL 290950Z AUTO VRB03KT 9999 SCT018 20/14 Q1022 NOSIG
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Analysis and Investigation

UKAB Secretariat

If the object was considered to be a drone, 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.

At the time of the incident the CAA had published Drone Aware[1] 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'.

However, a new joint CAA/NATS web site[2] now 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 a B777 and an unknown object flew into proximity at 1000 on Monday 29th August 2016. The B777 pilot was operating under IFR in VMC, and in receipt of a Radar Control Service from Swanwick. The unknown object could not be traced.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of a report from the pilot of the B777 aircraft, radar photographs/video recordings and a report from the air traffic controller involved.

The Board could not be certain what the object was that passed so close to the B777 but it was clear to the B777 pilot that it was not a balloon and so it was likely some other form of air vehicle. If it had been a drone, then it was operating at an altitude above that allowed by regulation by either not being in direct line of sight, or if using FPV above 1000ft. Acknowledging the difficulties in judging

[1] CAP 1202
[2] dronesafe.uk

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 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: A conflict in Class A.

Degree of Risk: A.