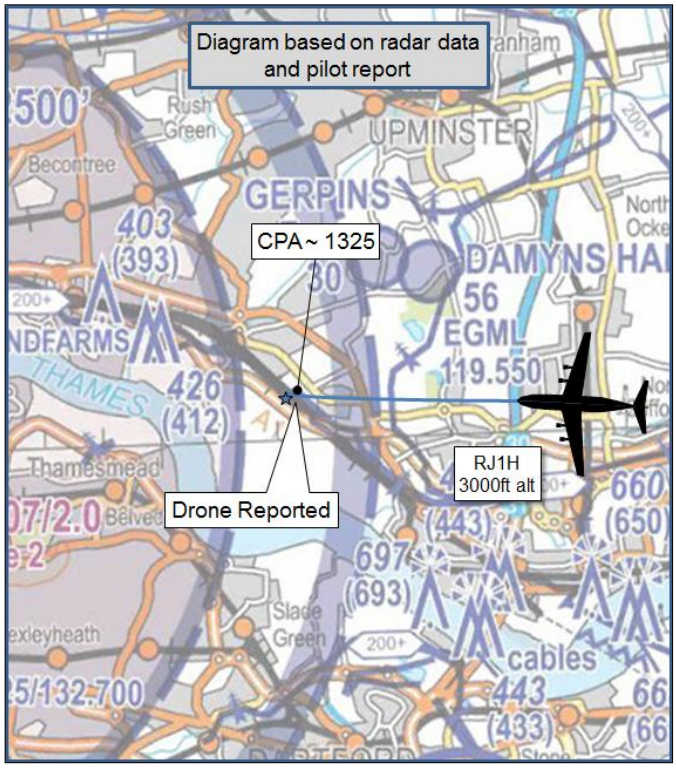
AIRPROX REPORT No 2016107

Date: 19 Jun 2016 Time: 1325Z Position: 5130N 00012E Location: 6nm East London City

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	RJ1H	Drone
Operator	CAT	Unknown
Airspace	LTMA	LTMA
Class	A	A
Rules	IFR	NK
Service	Radar Control	
Provider	Swanwick	
Altitude/FL	3000ft	
Transponder	State/Modes	
Reported		
Colours	White/Red	Yellow
Lighting	NK	NK
Conditions	VMC	
Visibility	NK	
Altitude/FL	3000ft	
Altimeter	NK	
Heading	NK	
Speed	NK	
ACAS/TAS	Unknown	Unknown
Alert	None	Unknown
Separation		
Reported	0nm V/0ft H	NK
Recorded	NK	



THE RJ1H PILOT reports that he was on final approach into LCY RWY 27 at 3000ft on the Localizer 6nm before Touchdown, shortly before intercepting the G/S, when a flying object (for the FO it looked like a drone, coloured yellow) crossed their path approximately at the same altitude and 20 meters in front the aircraft from the right to the left; the wind was coming from the southwest. The FO spotted the object and advised "Look at that!", the Captain couldn`t see it because it had already passed. The F/O thought that the object may have hit the left wing area, according to the observed flight path, there was no evidence of damage from the post flight inspection. The approach and landing were uneventful. The situation happened very quickly therefore an avoidance manoeuvre would not have been possible. The Airport Authorities and the Police were advised on the ground.

He assessed the risk of collision as 'Medium'.

THE DRONE OPERATOR could not be traced.

THE LONDON CITY CONTROLLER reports that ATC received information from the RJ1H Captain of a drone sighting. The incident took place while the aircraft was at 3000ft at 6nm final approach to runway 27. The pilot said the drone was very close, passed right to left, yellow coloured and a drone. The report was received around 40 minutes after the aircraft landed. The information was passed to the Police, the Group Supervisor Airports and Thames Radar.

Factual Background

The weather at London City was recorded as follows:

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METAR EGLC 191220Z 23009KT 200V270 9999 FEW038 20/11 Q1023
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Analysis and Investigation

UKAB Secretariat

The Air Navigation Order 2009 (as amended), Article 138[1] states:

> 'A person must not recklessly or negligently cause or permit an aircraft to endanger any person or property.'

Article 166, paragraphs 2, 3 and 4 state:

> '(2) The person in charge of a small unmanned aircraft may only fly the aircraft if reasonably satisfied that the flight can safely be made.
> (3) The person in charge of a small unmanned aircraft must 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.'
> (4) The person in charge of a small unmanned aircraft which has a mass of more than 7kg excluding its fuel but including any articles or equipment installed in or attached to the aircraft at the commencement of its flight, must not fly the aircraft
> (a) in Class A, C, D or E airspace unless the permission of the appropriate air traffic control unit has been obtained;
> (b) within an aerodrome traffic zone …; or
> (c) at a height of more than 400 feet above the surface unless it is flying in airspace described in sub-paragraph (a) or (b) and in accordance with the requirements for that airspace.'

A CAA web site[2] 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[3] 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 RJ1H and a drone flew into proximity at 1325 on Sunday 19th June 2016. The RJ1H pilot was operating under IFR in VMC, and in receipt of a Radar Control Service from London TCC. The drone operator could not be traced.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of a report from the pilot of the RJ1H, radar photographs/video recordings and a report from the air traffic controller involved.

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,

[1] Article 253 of the ANO details which Articles apply to small unmanned aircraft. Article 255 defines 'small unmanned aircraft'. The ANO is available to view at http://www.legislation.gov.uk.
[2] www.caa.co.uk/uas
[3] CAP 1202

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.

Members noted that the drone was operating at 3000ft and therefore beyond practical VLOS conditions. Also, in flying as it was within Class A airspace without the permission of Swanwick ATC, the Board considered that the drone operator had endangered the RJ1H and its occupants. Therefore, in assessing the cause, the Board agreed that the drone had been flown into conflict with the RJ1H. 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 0ft 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 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 RJ1H.

Degree of Risk: A.