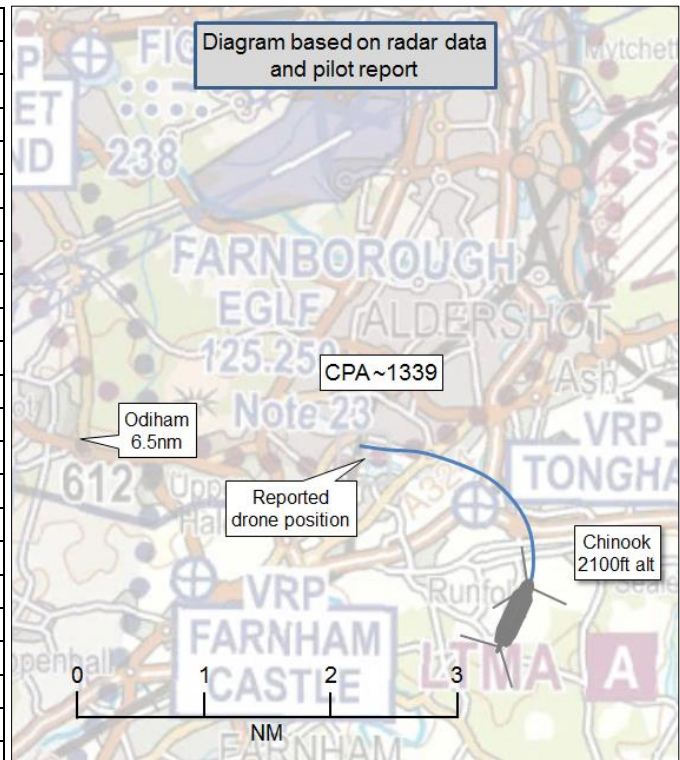


## AIRPROX REPORT No 2016192

Date: 15 Aug 2016 Time: 1339Z Position: 5114N 00046W Location: 2.5nm south Farnborough

### PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Chinook	Drone
Operator	HQ JHC	Unknown
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	
Service	Traffic	
Provider	Odiham	
Altitude/FL	2100ft	
Transponder	A, C, S	
<b>Reported</b>		Not reported
Colours	Green	
Lighting	HISLs, nav	
Conditions	VMC	
Visibility	40km	
Altitude/FL	1700ft	
Altimeter	QFE (1008hPa)	
Heading	265°	
Speed	120kt	
ACAS/TAS	Not fitted	
<b>Separation</b>		
Reported	0ftV/40m H	
Recorded		NK



**THE CHINOOK PILOT** reports he had just been cleared to intercept the localiser when the talkdown controller called an intermittent radar return in the 11:30 position. The non-handling pilot looked towards the reported return and saw a black UAV approximately 40m (2 rotor spans) away at exactly the same level. He immediately took control as the UAV was well within the 'localiser limits' and at the time the handling pilot was correcting towards the UAV. As the UAV passed down the LHS of the aircraft it was assessed to be in the hover and approximately 1m cubed in size. The non-handling pilot reported the UAV to ATC. Upon landing, the Captain discussed the incident with the ATC Supervisor. The pilot noted that whilst subjective and hard to accurately assess, this style of UAV could have caused considerable damage that could have lead to the loss of the aircraft if it had impacted either the transmissions and associated hydraulic pipes, the rotor system or the cockpit.

He assessed the risk of collision as 'High'.

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

**THE ODIHAM APPROACH CONTROLLER** reports vectoring the Chinook for an ILS approach to RW27. There was clutter on the radar map but the controller noticed a very faint contact pop up at 6.25 miles on the ILS approach lane. The Chinook was heading for it so he called the faint contact to the pilot. The talkdown controller commented that he could see a contact in only one aspect of the PAR display [elevation]. The pilot reported the contact as a UAV but did not pass range or height information.

**THE ODIHAM SUPERVISOR** reports he assisted in identification of the contact on PAR. Although similar radar contacts were common due to radar interference, this particular return correlated consistently with the elevation display on PAR and persisted enough to be deemed a potential hazard. Due to the 'noise' of the radar picture, Odiham's radar is often operated suppressed and may

not have detected the UAV in this mode; on this occasion the weather conditions permitted the full operation of the radar to effectively monitor heavy glider/microlight activity in the vicinity.

## **Factual Background**

The weather at Odiham and Farnborough was recorded as follows:

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METAR EGVO 151350Z 08009KT CAVOK 23/10 Q1023 BLU NOSIG  
METAR EGLF 151350Z 08010KT 030V120 CAVOK 24/10 Q1023
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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 regarding minimum separation of drones from people, vessels, vehicles or structures for drones up to 20kg that are not fitted with surveillance or data acquisition systems [i.e. without cameras] other than if flown using FPV (with a maximum weight of 3.5kg) when 50m [164ft] is the minimum distance (or 30m [98ft] when taking off or landing), or 150m [492ft] from any congested area or open-air assembly. For all drones up to 20kg that are fitted with surveillance and data acquisition systems [i.e. with cameras] the minimum separation distances are 50m [164ft] (or 30m [98ft] when taking off or landing) from people or objects that are 'not under the control of the person in charge' (ie. third parties), or 150m [492ft] from any congested area or open-air assembly. Notwithstanding, CAP1202 advice is to never fly any drone within 50m [164ft] of a person, vehicle or building.

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.

## **Comments**

### **JHC**

Again, this is another example of a growing problem throughout the skies in which we operate – inappropriate use of drones leading to potentially dangerous incidents. Due to the height involved and the estimated size of the drone, it could be said that this system was deviating from the CAA regulations contained within CAP722. It was through good evaluation by the controllers and reactions from the aircrew that eliminated the chance of a collision occurring. However, with

publicity increasing as to the dangers involved with the operation of drones alongside manned aircraft, these examples of close calls will hopefully reduce.

## **Summary**

An Airprox was reported when a Chinook and a drone flew into proximity at about 1339 on Monday 15<sup>th</sup> August 2016. The Chinook pilot was operating under IFR in VMC in receipt of a Traffic Service from Odiham Approach; the drone pilot could not be traced.

## **PART B: SUMMARY OF THE BOARD'S DISCUSSIONS**

Information available consisted of a report from the Chinook pilot, radar photographs/video recordings, reports from the air traffic controllers involved and a report from the appropriate operating authority.

Members agreed that although the drone operator may have been able to maintain direct, unaided visual contact with the drone, the reported separation indicated they had not been able to monitor its flight path in relation to other aircraft for the purpose of avoiding collisions. Therefore, the Board considered that the drone had been flown into conflict with the Chinook. Some members considered the separation was such that collision had only been avoided by providence, but the majority felt that the Chinook pilot had seen the drone in time to take control and therefore that some form of avoiding action had been taken, albeit with a significantly reduced margin of safety.

Members agreed that the warning provided by the ATC team at Odiham had been material in the Chinook pilot's visual acquisition and subsequent avoidance of the drone. The Board commended Odiham ATC for their professionalism and pivotal assistance under challenging circumstances.

## **PART C: ASSESSMENT OF CAUSE AND RISK**

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

Degree of Risk: B.