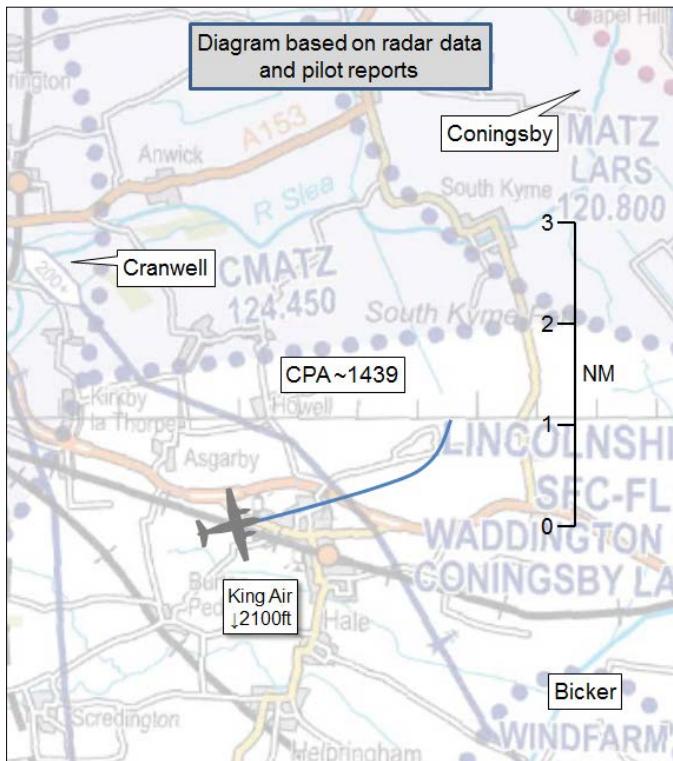


## AIRPROX REPORT No 2016122

Date: 28 Jun 2016 Time: 1416Z Position: 5300N 00015W Location: 10nm SE Cranwell

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

Recorded	Aircraft 1	Aircraft 2
Aircraft	King Air	Drone
Operator	HQ Air (Trg)	Unknown
Airspace	London FIR	London FIR
Class	G	G
Rules	IFR	
Service	Traffic	
Provider	Cranwell App	
Altitude/FL	2100ft	
Transponder	A, C, S	
<b>Reported</b>		Not reported
Colours	White, blue	
Lighting	Nav, beacon, strobes, recognition, taxi, landing	
Conditions	VMC	
Visibility	15km	
Altitude/FL	1800ft	
Altimeter	NK (1024hPa)	
Heading	045°	
Speed	140kt	
ACAS/TAS	TCAS II	
Alert	None	
<b>Separation</b>		
Reported	300ft V/50m H	
Recorded		NK



**THE KING AIR PILOT** reports conducting training, downwind in the radar pattern at RAF Cranwell. He descended to 1800ft on an easterly heading and was in the (left) turn onto base leg when the PM observed a white drone, roughly 2ft x 2ft in size, close by on the left side at about 1500ft and heading south. No avoiding action was required, ATC were informed and the sortie was continued without further incident.

He assessed the risk of collision as 'Medium'.

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

**THE CRANWELL CONTROLLER** reports he was the Approach controller, band boxing Director frequency, whilst vectoring a King Air for GCA to Cranwell RW26. On turning the King Air onto base leg, approaching Bicker wind-farm, the pilot reported a small drone passing down the left hand side at about 1500ft. Nothing was seen on radar. The controller informed the Supervisor and passed information to Coningsby also.

**THE CRANWELL SUPERVISOR** reports the controller informed him that a King Air pilot had reported a drone in the vicinity of Bicker wind-farm. They took an approximate Lat/Long from the King Air's position, informed the civil Police and were given an incident reference number.

## Factual Background

The weather at Cranwell was recorded as follows:

METAR EGYD 231350Z 29004KT 9999 FEW014 OVC023 20/18 Q1015 WHT BECMG SCT025 BLU= METAR EGYD 231450Z 29006KT 9999 FEW018 BKN025 OVC050 21/17 Q1015 BLU TEMPO SCT018 WHT=

## Analysis and Investigation

### UKAB Secretariat

The Air Navigation Order 2016, Article 241<sup>1</sup> states:

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

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.

Article 94, 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 during the notified hours of watch of the air traffic control unit (if any) at that aerodrome unless the permission of any such air traffic control unit has been obtained; 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<sup>2</sup> 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<sup>3</sup> 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.'

<sup>1</sup> Article 23 of the ANO 2016 details which Articles apply to small unmanned aircraft.

<sup>2</sup> [www.caa.co.uk/uas](http://www.caa.co.uk/uas)

<sup>3</sup> CAP 1202

It is illegal to fly your unmanned aircraft over a congested area (streets, towns and cities).  
..., stay well clear of airports and airfields'.

## Comments

### HQ Air Command

The proliferation of SUAs, and the difficulty in policing the regulations in terms of operating areas and altitudes, continues to raise considerable concern within the military flying community. This occurrence was immediately reported to the police by ATC, however, as is often the case, unless the drone operator is found at the time of occurrence, little can be done. The military aviation community actively supports any work being undertaken to reduce the risk of collision with drones and is supporting research in conjunction with Department for Transport to understand the potential consequences of a drone-strike.

## Summary

An Airprox was reported when a King Air and a reported drone flew into proximity at about 1416 on Tuesday 28<sup>th</sup> June 2016. The King Air pilot was operating under IFR in VMC in receipt of a Traffic Service from Cranwell Approach. The drone operator could not be traced.

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

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

Members agreed that the drone was in sufficient proximity to the King Air pilot that he was concerned by its presence, albeit with a vertical separation assessed as 300ft. However, the drone was being flown at a reported height that members felt would not have allowed direct unaided visual contact to be maintained and certainly above the CAA recommended maximum altitude of 400ft. Therefore, it was agreed that the drone was flown into conflict with the King Air, albeit that there was no risk of collision.

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

Cause: The drone was flown into conflict with the King Air.

Degree of Risk: C