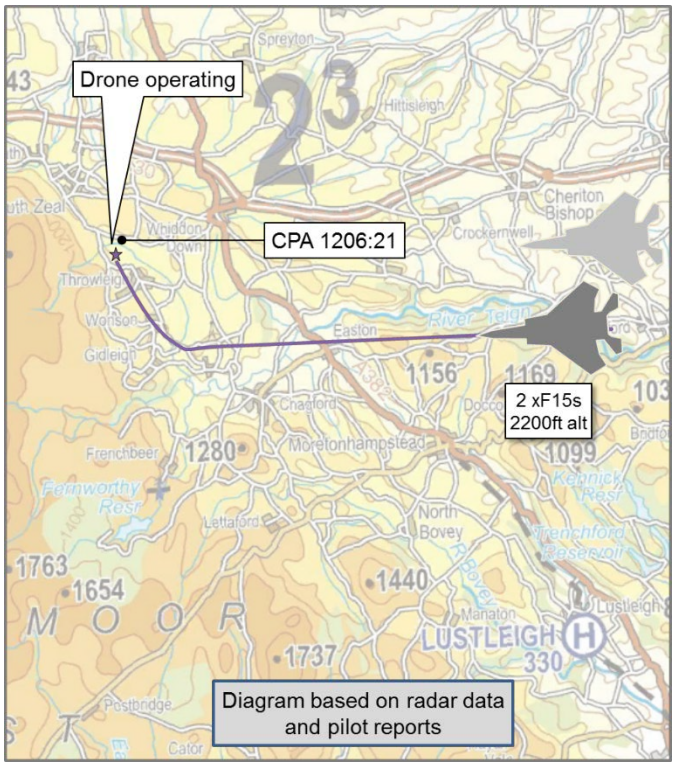
AIRPROX REPORT No 2018011

Date: 16 Jan 2018 Time: 1206Z Position: 5042N 00353W Location: Throwleigh, Devon

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Drone	F15
Operator	Police	Foreign Mil
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	None
Provider		
Altitude/FL		
Transponder	Not Fitted	A, C, S
Reported		
Colours	Black	
Lighting	LEDs	
Conditions		VMC
Visibility		
Altitude/FL	300ft	500ft
Altimeter	agl	agl
Heading		NK
Speed		450kt
ACAS/TAS	Not fitted	Not fitted
Separation		
Reported	200m H	Not seen
Recorded	NK	



THE DRONE OPERATOR reports that he is a Police UAS Operator. He had completed a task and was returning to the landing site. When the drone was approximately 250m from his position and at an altitude of 250-300ft, he heard a fast-jet approaching from an unknown direction. He descended the drone as quickly as possible. The jet came into view from right-to-left and seemed to pass by the drone at the same altitude; it looked like the jet was within 200m laterally of the drone. Once the jet was in view it started banking to the right and he honestly believed it was going to collide with the drone. The jet continued, and was followed a few seconds later by a second jet. He noted that as Police Officers they have a stringent set of procedures prior to every flight, he had checked NOTAMs, checked the airspace, informed NPAS and Air Ambulance and used the Drone Assist App from NATS. For background information, much of their work is spontaneous and they could be asked to attend any location in Devon, Cornwall or Dorset at a moment's notice, often driving there using 'blue lights' and deploying the drone straight away. He commented that over half of the 42 police forces are now deploying drones, and in his constabulary they have been using drones for 2 years (with 34 police officers trained to use 12 drones, all of which are sub-7kgs). On this day he was using a DJI Matrice, which weighs 6kgs and has four rotor arms.

He assessed the risk of collision as 'High'.

THE F15 PILOT reports that he was the lead aircraft in a pair of F15s conducting a low-flying mission in LFA2 in accordance with all known governing directives. NOTAMs were checked and the mission was booked through the CADS system, which showed no conflicts. Neither pilot, nor the weapons system operators saw the drone.

Factual Background

The weather at Exeter was recorded as follows:

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METAR EGTE 161150Z 28013KT 9999 VCSH FEW015CB 07/02 Q1000=
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Analysis and Investigation

UKAB Secretariat

At Figure 1 is a radar screenshot, taken from the NATS radar, showing the F15s prior to turning back onto east in the vicinity of the drone operator. Although the radar indicated height is 2200ft, the QNH was 997hPa and the ground in the area is approx 1280ft, therefore the F15s were at around 500ft agl. The drone could not be identified on the radar screenshot.

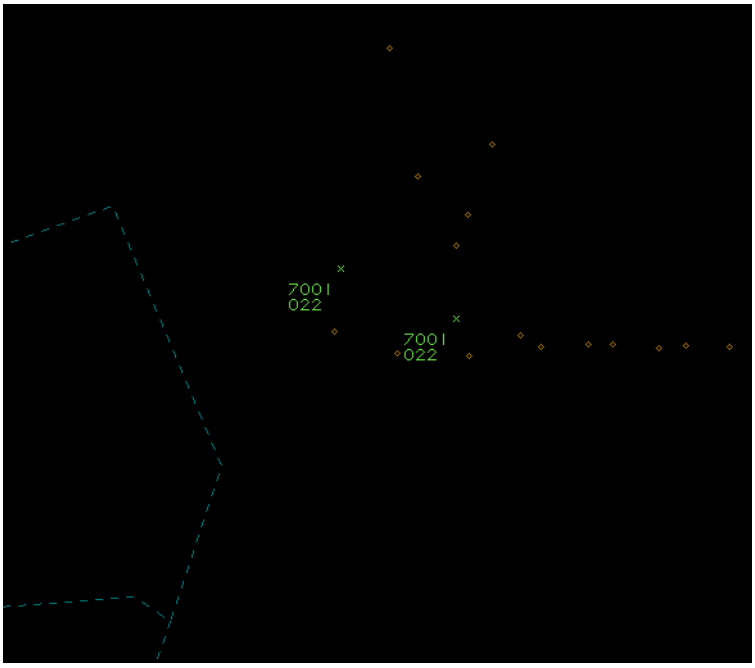


Figure 1: 1206:21, F15s squawking 7001

The drone operator was entitled to operate in that position at that height, as were the F15s who were low-flying in LFA2.

A CAA web site[1] provides information and guidance associated with the operation of Unmanned Aircraft Systems (UASs) and Unmanned Aerial Vehicles (UAVs). As part of this information, CAP722 (UAS Operations in UK Airspace) and CAP658 (Model Aircraft: A Guide to Safe Flying) provide comprehensive guidance. Additionally, the CAA has published Drone Aware[2] which states the responsibilities for flying unmanned aircraft. This includes the following comment:

> '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'.

The drone operator reported operating his drone below 400ft, and complying with all the requirements above.

[1] www.caa.co.uk/uas
[2] CAP 1202

Comments

USAFE

The Airprox occurred on the northern edge of Dartmoor some distance from any notable habitation and therefore in an area where military aircraft can operate to their minimums. Both the drone operator and the F-15E pilot were operating within their regulations which, in the case of the F-15E, was not below 500ft agl. Nevertheless, it is of note that within the UKLFS RAF fast-jets can use a minimum of 250ft MSD.

Summary

An Airprox was reported when a drone and a pair of F15s flew into proximity at 1206hrs on Tuesday 16th January 2018. The drone operator was on police operations, flying the drone at approximately 300ft in the Throwleigh area. The F15s were VFR in VMC, in LFA2 and not in receipt of an ATS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the pilots of both aircraft and radar photographs/video recordings.

The Board first looked at the actions of the drone operator. Noting that NPAs and other emergency services operators have access to CADS, some members wondered if this was the case for the police drone operators. Although they acknowledged that it was unlikely that the drone operators would be able to input information in sufficient time to be useful to the fast-jet crews before they got airborne, CADS might be a useful source of information to the drone operators about potential conflicts in the locations they deployed to. Acknowledging that they are often called to an area under 'blue light' conditions, the Board thought that someone on the team (whether in police operations or through use of a 3G/4G enabled laptop in their vehicle en-route) could potentially interrogate CADS; especially bearing in mind that they had had time to inform NPAS and the Air Ambulance service of their operation in this instance. Members were told that, as part of the police force, it should be possible for the drone team to have access to CADS should they require it. That said, unlike NPAS, it was acknowledged that there were a number of different police forces operating drones around the country, and that it might be difficult to come up with a solution that they could all adhere to. Turning again to the incident in question, members noted that although the F15s had been at 500ft, RAF fast-jets were able to fly down to 250ft in the low-flying system and so, potentially could have been closer to the drone than the F15s were. Nevertheless, although the drone operator perceived that the F15s were extremely close to his drone, in actuality they appeared to have had sufficient separation.

The F15 pilots were operating low-level not below 500ft in accordance with their regulations and, unsurprisingly, they did not see the drone or its operator. The Board briefly discussed how the information flow could be improved such that fast-jet crews could be warned about drones operating. They were informed that the military is currently investigating whether the replacement for CADS could incorporate information from the NATS DroneAssist App in order to contribute to a unified traffic management system. Although this was still in its infancy, the Board were heartened to hear that such discussions were taking place.

Turning to the cause of the Airprox, some members wondered whether the incident was close enough that it was best described as the drone operator being concerned by the proximity of the F15s. However, after discussion about the likely separation between the two air systems, it was agreed that the circumstances were probably best described as a sighting report, with the risk assessed as Category E, normal safety standards and procedures had pertained. Nevertheless, the Board agreed that the drone operator had been right to raise a report with his concerns and thanked him for doing so because it had provided useful discussion points about the integration of drones and military fast-jets.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A Sighting Report.

Degree of Risk: E.

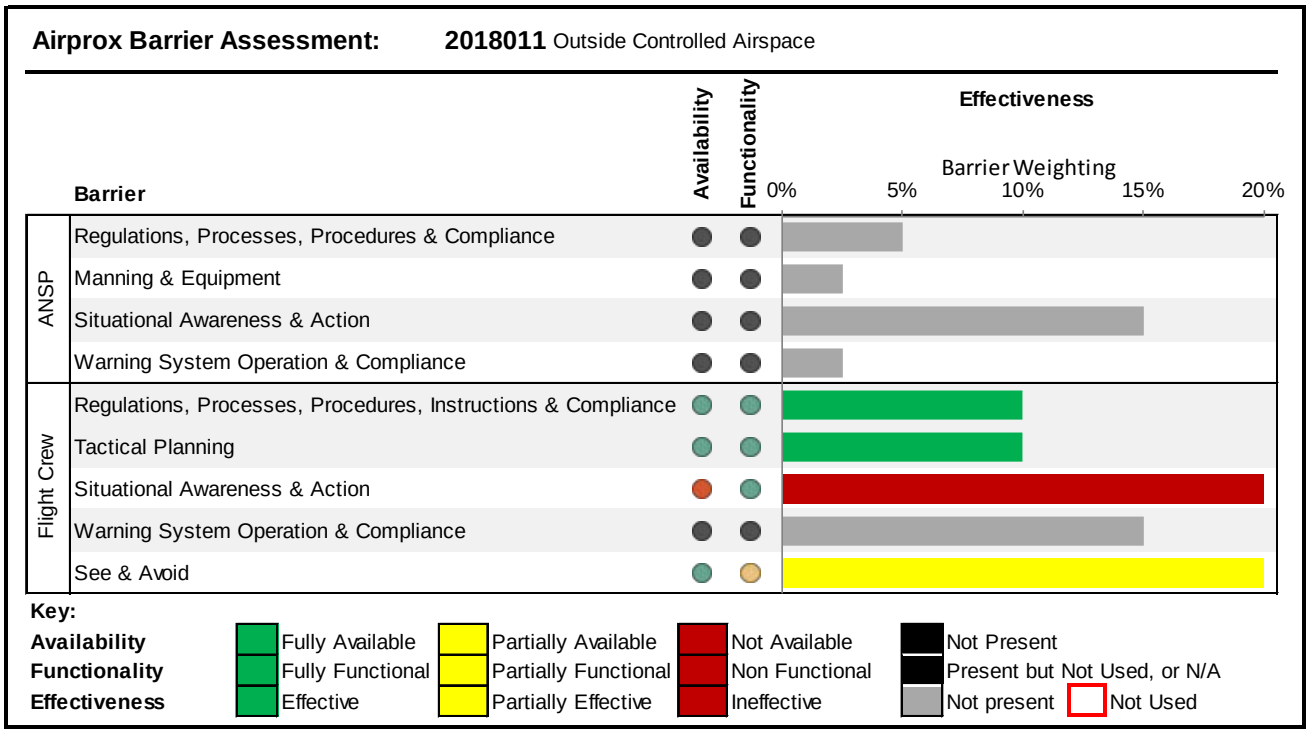
Safety Barrier Assessment[3]

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

Flight Crew:

Situational Awareness and Action were assessed as **ineffective** because neither operator had knowledge of the other prior to the Airprox.

See and Avoid were assessed as **partially effective** because the drone operator saw and was able to initiate a descent to get out of the way of the F15s, albeit later than he would have liked.



[3] The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the UKAB Website.