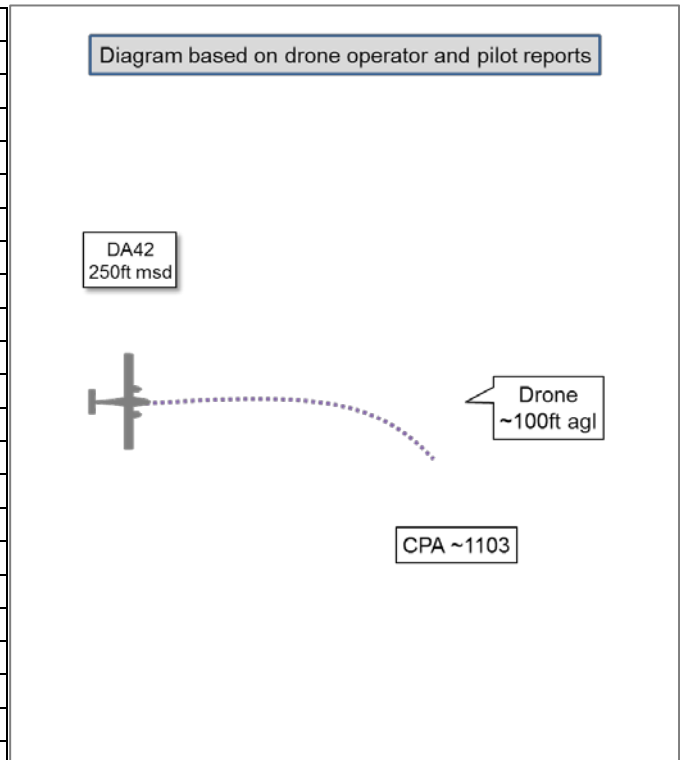


AIRPROX REPORT No 2018164

Date: 04 Jul 2018 Time: 1103Z Position: 5432N 00155W Location: 1nm SE Barnard Castle

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Drone	DA42
Operator	Civ UAS	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	NK
Provider	N/A	NK
Altitude/FL	NK	~300ft agl
Transponder	Not fitted	A, C, S
Reported		
Colours	NK	NK
Lighting	Green, red nav	NK
Conditions	NK	VMC
Visibility	>10km	NK
Altitude/FL	100ft	NK
Altimeter	agl	NK
Heading	N/A	NK
Speed	0kt	NK
ACAS/TAS	Not fitted	NK
Alert	N/A	NK
Separation		
Reported	50ft V/NK H	Not Seen
Recorded	NK	



THE DRONE PILOT reports conducting a training flight with a small unmanned aircraft in a field close to Barnard Castle. The drone was stationary in the air at about 100ft agl when he and a colleague noticed a small twin-engine aircraft appear over the brow of a hill about 250m to the west on an apparent direct course. It appeared to be slightly higher than the drone. The aircraft appeared to take evasive action, banking hard and turning south. The drone operator started to reduce the height of the drone but the aircraft passed very quickly.

He assessed the risk of collision as 'Medium'.

THE DA42 PILOT submitted a narrative report. The sortie was initially flown at low-level due to low cloud in the operating area. Cloud-base was assessed as about 1200ft and was scattered in the vicinity of Barnard Castle. Ingress to and egress from the target was flown close to Barnard Castle at low-level, using 250ft MSD. Visibility was good but at no stage were the crew aware of the presence of a drone, hence no avoiding action was taken.

Factual Background

The weather at Durham Tess Valley (elev 116ft) was recorded as follows:

METAR EGNV 041120Z 10004KT 070V130 9999 BKN016 17/12 Q1016=
 METAR EGNV 041050Z VRB04KT 9999 BKN016 16/11 Q1016=

Analysis and Investigation

UKAB Secretariat

The Drone and DA42 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard¹.

Comments

DA42 Operating Company

The DA42 Operator commented that in this case no NOTAM/CANP appeared to have been filed by the UAS Operator for that area and time, and the UAS operator did not alert Leeming ATC by phone. Therefore, ATC did not (and could not) make the DA42 pilot aware of any such threat in real time. Even if they had done so, it is not known how a pilot might identify a drone/UAS, especially when going about their proper business iaw with all relevant operating procedures during a military Operational Readiness Training task at low-level. Ultimately, some risk will exist even if drones operators do file NOTAMs/CANPs or alert local ATC units (or even carry a transponder) because the majority of drones are so hard to acquire visually. The company already minimise time at low-level (commensurate with the task requirements) to mitigate such risks.

Summary

An Airprox was reported when a drone and a DA42 flew into proximity at 1104hrs on Wednesday 4th July 2018. Both pilots were operating under VFR in VMC but it is not known under which ATS the DA42 pilot was operating.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots and radar photographs/video recordings (which did not show either aircraft's track).

The Board first discussed the operating environment and noted that both parties were entitled airspace users, both were going about their proper business, and that neither had priority of passage over the other, military Operational Readiness Training task or not. Members commented that VLOS drone operation was a normal aviation activity which would not be granted NOTAM status but also noted that the discussion for Airprox 2018160 had resulted in a recommendation that 'HQ Air Command pursue the use of a system for notification of commercial drone operations to pilots operating in the UK Low Flying System'. Members discussed the topic of notification and agreed that with the drone being operated about 20nm from RAF Leeming, notification to that unit would quite reasonably not have been considered. Members also wondered to what extent the DA42 low-level flying was notified to other airspace users, including drone operators. This was especially relevant given that GA aircraft such as the DA42 would normally benefit from the mitigation afforded by the 500ft rule. In this case the aircraft had been operating at 250ft MSD under military regulations with an associated reduction in risk mitigation; a NOTAM to that effect might have alerted the drone operator.

With see-and-avoid being the primary barrier to MAC in this incident, members agreed that the drone operator had seen the DA42 as early as practical (albeit later than desirable) and had reacted appropriately. The Board quickly agreed that the incident was therefore best described as a conflict in Class G resolved by the drone operator. Turning to the risk of collision, members agreed that the DA42 pilot's turn near to the drone was entirely coincidental (but beneficial to increasing separation). Notwithstanding, the drone operator's report and assessment of 'medium' risk indicated that although safety had been reduced, the risk of collision had been averted by both him descending his drone and the DA42 pilot's fortuitous turn away. Accordingly, the Board assessed the risk as Category C.

¹ SERA.3205 Proximity.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A conflict in Class G resolved by the drone pilot.

Degree of Risk: C.

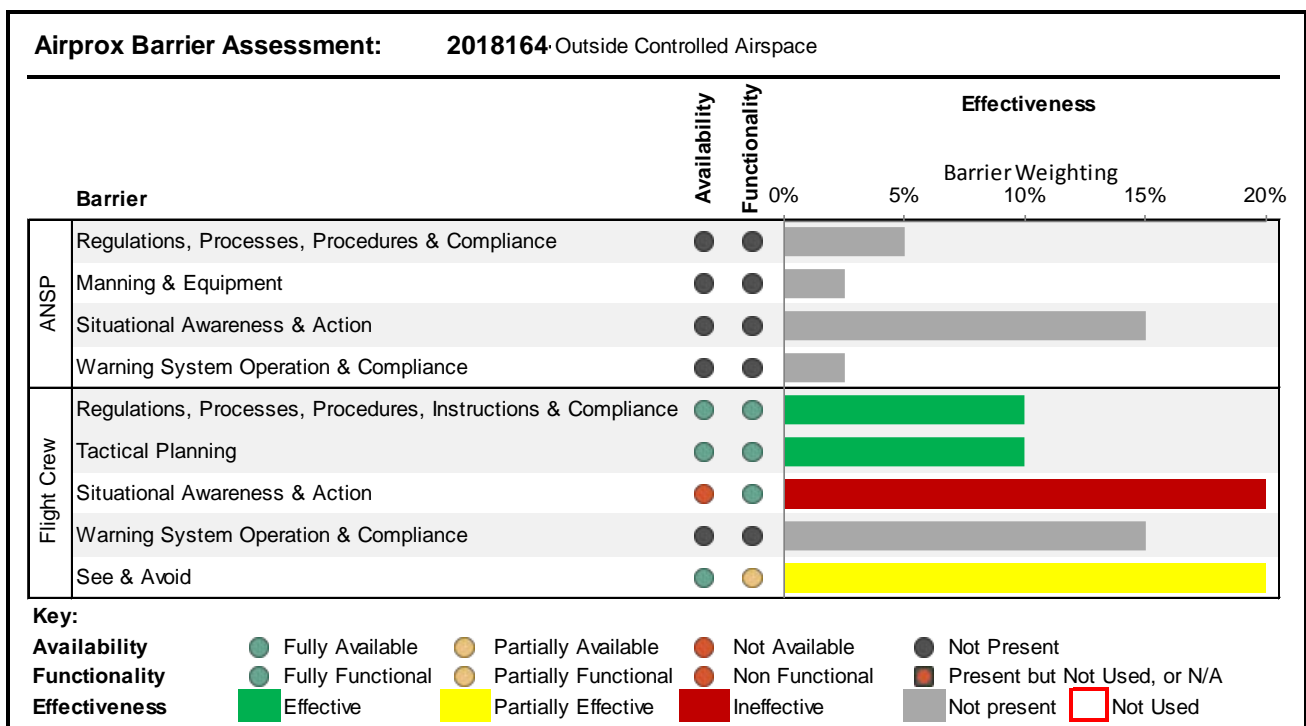
Safety Barrier Assessment²

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 the DA42 crew and drone operator were not aware of the other’s proximity until shortly before CPA.

See and Avoid were assessed as **partially effective** because the drone operator saw the approaching DA42 and was able to increase separation to some degree; the DA42 pilot did not see the drone.



² The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).