

AIRPROX REPORT No 2016005

Date: 21 Jan 2016 Time: 1154Z Position: 5600N 00235W Location: 2nm W Dunbar

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Tornado	Drone
Operator	HQ Air (Ops)	Unknown
Airspace	LFA 16	
Class	G	G
Rules	VFR	
Service	None	
Provider		
Altitude/FL	FL024	
Transponder	A,C,S	
Reported		
Colours	Grey	
Lighting	NK	
Conditions	VMC	
Visibility	>10km	
Altitude/FL	1000ft	
Altimeter	RPS	
Heading	360°	
Speed	450kt	
ACAS/TAS	TCAS II	
Alert	None	
Separation		
Reported	NK V/500ft H	
Recorded	NK	

Diagram based on radar data and pilot reports

THE TORNADO PILOT reports flying low-level in a formation of 2 Tornados. Whilst coasting out on a northerly track they spotted a UAV passing between the two aircraft at approximately 1500ft AMSL, estimated to be within 500ft laterally from each aircraft. No avoiding action was necessary.

He assessed the risk of collision as ‘Low’.

The Drone operator could not be traced.

Factual Background

The weather at Edinburgh was recorded as follows:

METAR EGPB 211150Z AUTO 05004KT 020V080 9999 NCD 04/00 Q1015=

Analysis and Investigation

UKAB Secretariat

The Air Navigation Order 2009 (as amended), Article 138¹ 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:

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) 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.²

(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:

(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.

In addition, the CAA has published guidance regarding First Person View (FPV) drone operations which limit this activity to drones of less than 3.5kg take-off mass, and to not more than 1000ft².

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. The formal investigation of this Airprox found that the only active barrier to MAC in this case was the use of lookout by the Tornado crews and the SUA operator. The speed of approach of the Tornados would have made it very difficult for the SUA operator to detect and avoid those aircraft, particularly when operating at the heights quoted by the Tornado crews. The Tornado crews only gained visual with the SUA as it passed between the formation; visual detectability of these SUAs might be enhanced if the carriage of high intensity lighting were to be made mandatory.

Summary

An Airprox was reported when a pair of Tornados and a drone flew into proximity at 1154 on Thursday 21 January 2016. The Tornados were operating under VFR in VMC, and were not receiving an ATS. The drone operator could not be traced.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

The Board noted that, as for all other aviators, drone operators are required to avoid collisions with all other aircraft. In this incident the crew of the Tornados reported seeing the drone at a height of 1500ft. At this height, the drone operator would almost certainly be operating on first-person-view (FPV), for which regulation mandates that an additional person must be used as a competent observer who must maintain direct unaided visual contact with the drone in order to monitor its flight path in relation to other aircraft. Furthermore, under FPV operations, for drones of less than 3.5kg, the drone is not permitted to operate above 1000ft agl without CAA approval being gained and a NOTAM being issued. However, assessing the height of drone is notoriously difficult and the Board could not be sure that the drone was indeed operating up to 1500ft illegally, or whether he was in the region of 1000ft and therefore entitled to be there.

In assessing the cause of the Airprox, the Board debated whether they could be sure that the drone operator had been operating illegally at 1500ft, and was therefore responsible for flying into conflict with the Tornados, or legally at 1000ft. However, in the end they decided that because they could not

² ORSA No. 1108 Small Unmanned Aircraft – First Person View (FPV) Flying available at: [ORSA No 1108](#).

be sure that the drone operator was operating illegally, this incident was best described as a conflict in Class G airspace. The Tornado pilot assessed the drone as being 500ft away and, using this as a guide, the Board determined the risk to be Category C.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A conflict in Class G airspace.

Degree of Risk: C.