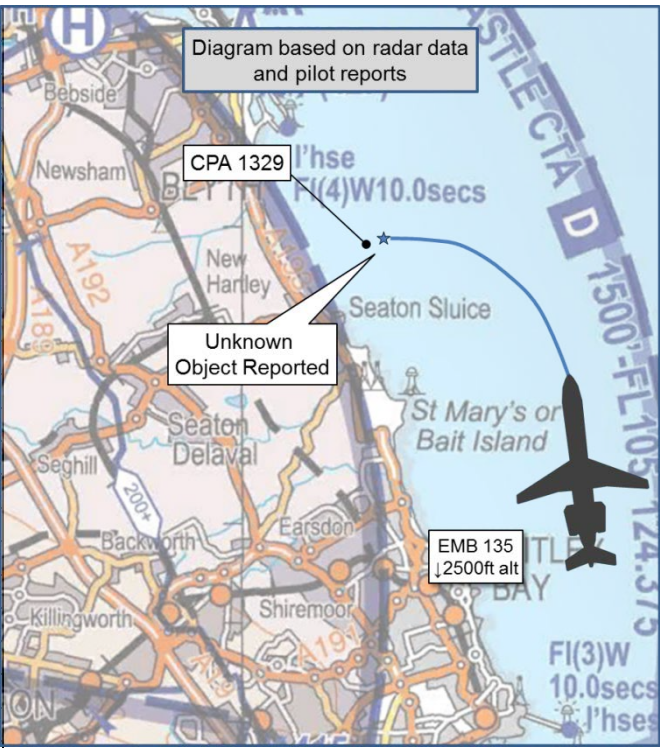


AIRPROX REPORT No 2016019

Date: 16 Feb 2016 Time: 1329Z Position: 5506N 00127W Location: Newcastle Airport

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	EMB135	Drone
Operator	CAT	
Airspace	Newcastle CTA	Newcastle CTA
Class	D	D
Rules	IFR	
Service	Radar Control	
Provider	Newcastle	
Altitude/FL	FL022	
Transponder	A,C,S	
Reported		
Colours		
Lighting	Nav, Strobe	
Conditions	VMC	
Visibility		
Altitude/FL	2500ft	
Altimeter	QNH (1023hPa)	
Heading	290°	
Speed	200kts	
ACAS/TAS	TCAS II	
Alert	Unknown	
Separation		
Reported	200ft V	
Recorded		NK



THE EMB135 PILOT reports that they were approaching Newcastle on an intercept heading for the RW25 ILS, at approximately 2500ft over the sea, when an unidentified object flew 'over their heads'. It was black beneath and red on top, was disc shaped and the size of a large gull. It seemed to be moving with the wind away from the shore. The pilot's first thought was that it was a UAV, although there didn't seem to be any obvious propellers. It did not appear to be making a vertical ascent. He reported it to ATC at the time and, when the pilot spoke to them on the telephone later, they suggested that on reviewing the radar replay there appeared to be a small return on the radar passing above them. Although ATC suggested it may have been a balloon, it did not look like one, and the pilot opined that he would have been very concerned if he had collided with it.

He perceived the severity of the incident as 'Medium'.

THE UNKNOWN OBJECT COULD NOT BE TRACED.

THE NEWCASTLE CONTROLLER reports that as the EMB135 turned onto a closing heading for the ILS RW25, the pilot reported an unknown object which passed approximately 200ft above his aircraft. The pilot stated that he was unsure what the object was, but described it as circular in shape and coloured black and red, he added that it didn't look like a flock of birds, or anything living and it was roughly the size of a seagull. The pilot did not take any avoiding action and the approach continue without any further issues.

Factual Background

The weather at Newcastle was recorded as follows:

METAR EGNT 161320Z 22015G26KT 190V250 CAVOK 05/M02 Q1023=

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:

(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.¹

(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 ...; 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.

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.

Summary

An Airprox was reported when an EMB135 and an unknown object flew into proximity at 1329 on Tuesday 16th February 2016. The EMB135 pilot was operating under IFR in VMC and in receipt of a Radar Control Service from Newcastle. The unknown object could not be traced.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of a report from the EMB135 pilot, radar photographs/video recordings and a report from the air traffic controller involved.

The Board first debated the likely identity of the object. Whilst they couldn't discount that it might have been a balloon, the Board thought the estimated size and appearance of the object made it more likely to have been a drone, corroborated by the fact that the pilot had said it did not look like a balloon. The EMB135 crew reported seeing the object at about 2500ft whilst within the Newcastle CTA, which in this location extends from 1500ft to FL105. The Board noted that, as for other aviators, drone operators are fundamentally required to avoid collisions with all other aircraft. More specifically, drone flight above 400ft is prohibited in Class D airspace without permission from the appropriate air traffic control unit; therefore, the drone was not entitled to operate in this location.

In this incident, operating at levels of 2500ft, 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

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

monitor its flight path in relation to other aircraft. 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. Notwithstanding, even if an observer was being used, the Board thought that they would be unlikely to be able to see the drone at that level.

At 2500ft, the drone operator was flying within the Newcastle CTA Class D airspace without permission and, in his non-compliance, the Board considered that the drone operator was posing a flight safety risk. As such, the Board considered that the cause of the Airprox was that the drone had been flown into conflict with the EMB135. Unsurprisingly, the incident did not show on the NATS radars and therefore the exact separation between the two air-systems was not known. However, the Board noted that the EMB135 pilot estimated the separation to be 200ft vertically, and that he had not been able to see any details such as rotors etc.; both of these indicated that the drone was likely some distance away. The Board therefore determined that the risk was Category C, there had been no risk of collision.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The drone was flown into conflict with the EMB135.

Degree of Risk: C.