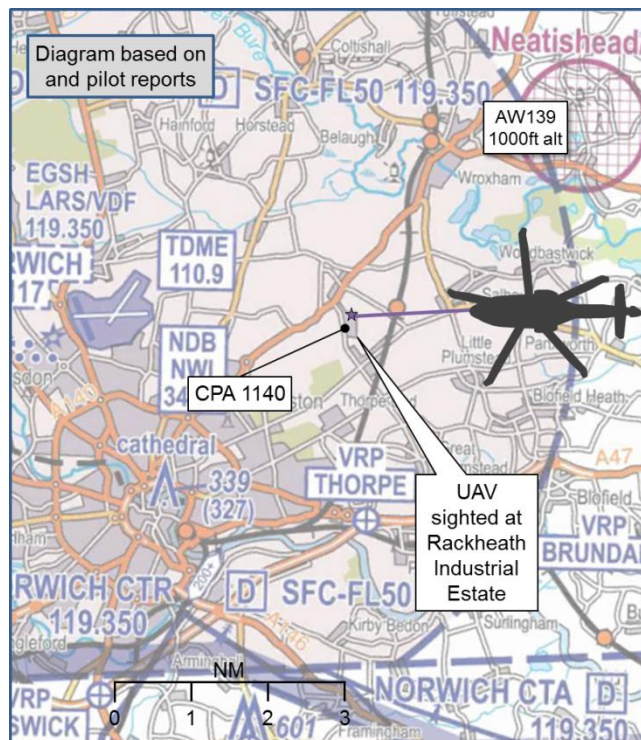


AIRPROX REPORT No 2014194**Date/Time:** 30 Sep 2014 1140Z**Position:** 5240N 00122E
(IVO Norwich)**Airspace:** Norwich CTR (Class: D)**Aircraft 1** **Aircraft 2****Type:** AW139 Unknown UAV**Operator:** CAT Unknown**Alt/FL:** 1000ft NK
NK (1023hPa)**Conditions:** VMC NK**Visibility:** 10km**Reported Separation:**

0ft V/50m H

Recorded Separation: NK**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

THE AW139 PILOT reports flying a red aircraft with all lights illuminated and transponder selected on with Modes 3A, C and S. The aircraft was fitted with a TCAS I. He was flying the ILS into Norwich and was just above the Rackheath Industrial estate at 1000ft when the crew saw a UAV very close to the aircraft. Although it was difficult to judge distance due to not knowing the actual size of the UAV, the crew estimated that it was level with their aircraft, in the 10 o'clock position and 50m away, almost perfectly on the ILS glideslope. The incident happened very quickly but, from the brief glimpse they had of the UAV, it was a type of quadcopter with rotors on the corners. They immediately broke off the ILS and continued with a visual approach.

He assessed the risk of collision as 'Medium'.

THE UAV PILOT could not be traced; however, the company Safety Officer of the AW139 spoke to members of the local RC model aircraft club who believed the UAV was being flown by a worker from the nearby industrial estate in their lunch-hour. This information could not be corroborated.

Factual Background

The weather at Norwich was reported as:

METAR EGSN 301120Z 24010KT 9999 FEW015 18/14 Q1023 NOSIG

Analysis and Investigation**CAA ATSI**

The AW139 was receiving an Aerodrome Control Service from Norwich. The pilot reported breaking off the ILS approach at 2.9DME at 1000ft and continuing visually due to a UAV coming close to the aircraft. The AW139 subsequently advised that the conflicting UAV was the type with rotors on the corner. The aerodrome controller did not see anything and nothing was observed on area or local radar recordings. Nothing had been reported to the ATC unit prior to the incident.

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.’

(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.’

Summary

An Airprox was reported on 30th September 2104 at 1140 when an AW139 came into close proximity with a UAV on the Norwich ILS glideslope. The incident did not show on the radar, but the crew estimated the separation to be 50m horizontally.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the pilots of the AW139 and reports from the appropriate ATC and operating authorities.

The Board first discussed the actions of the AW139 pilot. They noted that the conflicting Quadcopter was not showing on the radar, and therefore the pilot did not receive any warning of it from ATC. He would have been concentrating on flying the ILS at this point, and would not have expected to come into contact with anything at that height. Having seen the Quadcopter, the Board noted that the AW139 pilot considered it to be a sufficiently close threat that he elected to break off his approach.

The Quadcopter operator was not traced, and so the Board were unable to determine whether the operator was aware of the danger that they had posed. The Board commented that they were seeing more and more incidents involving Quadcopters or similar and, with the advent of many devices being sold to the general public, they were concerned that this would pose a genuine risk to flight safety. They wondered whether non-aviation-trained people operating Quadcopters were aware of the potential consequences of their actions, or that they were breaking CAA rules by flying in proximity to other aircraft and by operating close to airfields. The Board noted that work had been undertaken by the CAA to bring the issue of remotely piloted aircraft operations to wider public attention, an excellent example of which being the recent issue of CAP1202² which gives easily digestible advice for the conduct of such operations. The UKAB Secretariat also pointed out that a link to ‘CAA UAS/UAV Information and Guidance’ could be found on the Airprox Board website³, along with a link to ARPAS⁴, but that these were unlikely to be common knowledge to those not aware of aviation issues.

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 <http://www.caa.co.uk/docs/1995/CAP%201202UAVsafetyrules.pdf>

³ <http://www.airproxboard.org.uk/>

⁴ Association of Remotely Piloted Aircraft Systems at www.arpas.uk.

In determining the cause of the Airprox, the Board agreed that the Quadcopter had been flown into conflict with the AW139, and that a contributory factor had been that the Quadcopter had been flown in the Norwich approach path. The Board noted the AW139's estimate of proximity, and that he had to manoeuvre to avoid the Quadcopter; they therefore assessed the risk as Category B, safety margins had been much reduced below the normal.

PART C: ASSESSMENT OF CAUSE AND RISK

<u>Cause:</u>	The Quadcopter was flown into conflict with the AW139.
<u>Contributory Factor:</u>	The Quadcopter was flown in the Norwich approach path.
<u>Degree of Risk:</u>	B.
<u>ERC Score⁵:</u>	20.

⁵ Although the Event Risk Classification (ERC) trial had been formally terminated for future development at the time of the Board, for data continuity and consistency purposes, Director UKAB and the UKAB Secretariat provided a shadow assessment of ERC.