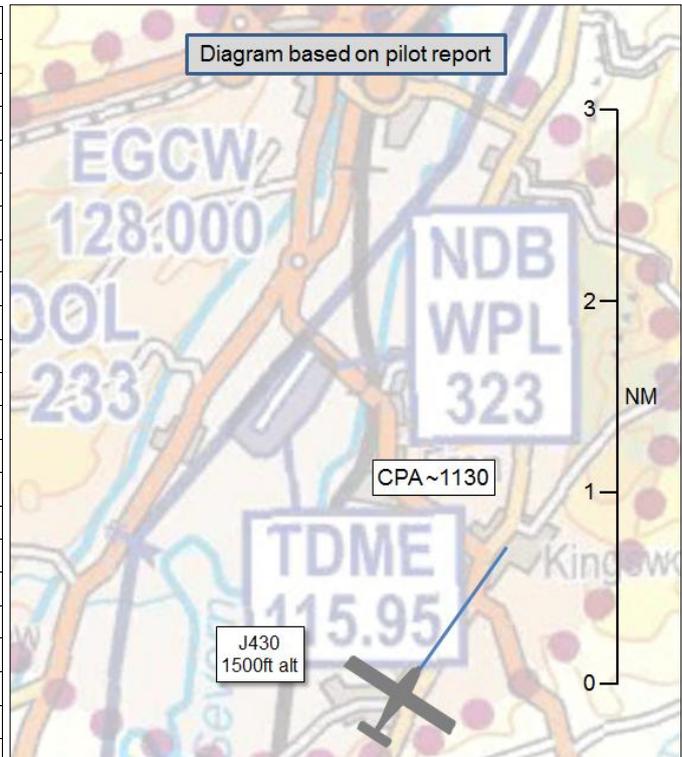


**AIRPROX REPORT No 2016114**

Date: 23 Jun 2016 Time: 1135Z Position: 5237N 00307W Location: Welshpool

**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

Recorded	Aircraft 1	Aircraft 2
Aircraft	Jabiru J430	Drone
Operator	Civ Pte	Unknown
Airspace	Welshpool ATZ	Welshpool ATZ
Class	G	G
Rules	VFR	
Service	AGCS	
Provider	Welshpool	
Altitude/FL	1500ft	
Transponder	A, C, S	
<b>Reported</b>		Not reported
Colours	White, red	
Lighting	Strobes	
Conditions	VMC	
Visibility	>10km	
Altitude/FL	1400ft	
Altimeter	QFE (1009hPa)	
Heading	040°	
Speed	100kt	
ACAS/TAS	Not fitted	
<b>Separation</b>		
Reported	0ft V/150m H	
Recorded		NK



**THE J430 PILOT** reports downwind in the visual circuit for RW22, about 1nm east abeam ‘the 22 numbers’. He saw a white drone in the left 11 o’clock position, about 50m below him, which moved quickly in front of his aircraft and climbed to the 2 o’clock position, about 100ft above, at which point he lost sight of it against the white cloud and behind his wing. He commented that he was well inside the Welshpool ATZ and that the presence of the drone was a needless distraction. He noted that he was surprised at the speed at which the drone moved and the difficulty in judging distance with a small fast-moving object.

He assessed the risk of collision as ‘Low’.

**THE DRONE OPERATOR:** The drone operator could not be traced.

**Factual Background**

The weather at Shawbury was recorded as follows:

METAR EGOS 231150Z 25006KT 9999 FEW030 SCT250 20/12 Q1016 BLU NOSIG=

**Analysis and Investigation**

**UKAB Secretariat**

The Air Navigation Order 2009 (as amended), Article 138<sup>1</sup> states:

<sup>1</sup> 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>.

'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.'

A CAA web site<sup>2</sup> provides information and guidance associated with the operation of Unmanned Aircraft Systems (UASs) and Unmanned Aerial Vehicles (UAVs).

Additionally, the CAA has published a UAV Safety Notice<sup>3</sup> which states the responsibilities for flying unmanned aircraft. This includes:

'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'.

## Summary

An Airprox was reported when a Jabiru J430 and a drone flew into proximity at about 1135 on Thursday 23<sup>rd</sup> June 2016. The Jabiru pilot was operating under VFR in VMC in receipt of an A/G Service from Welshpool Radio.

## **PART B: SUMMARY OF THE BOARD'S DISCUSSIONS**

Information available consisted of a report from the Jabiru pilot and radar photographs/video recordings.

There are no specific ANO regulations limiting the maximum height for the operation of drones that weigh 7kg or less other than if flown using FPV (with a maximum weight of 3.5kg) when 1000ft is the maximum height. Drones weighing between 7kg and 20kg are limited to 400ft unless in accordance with airspace requirements. Notwithstanding, there remains a requirement to 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. CAP 722 gives guidance that, within the UK, visual line of sight (VLOS) operations are normally accepted to mean a maximum distance of 500m [1640ft] horizontally and 400ft [122m] vertically from the Remote Pilot.

Neither are there any specific ANO regulations limiting the operation of drones in controlled airspace if they weigh 7kg or less other than if flown using FPV (with a maximum weight of 3.5kg) when they must not be flown in Class A, C, D or E, or in an ATZ during notified hours, without ATC permission. Drones weighing between 7kg and 20kg must not be flown in Class A, C, D or E, or in an ATZ during notified hours, without ATC permission. CAP722 gives guidance that operators of drones of any

<sup>2</sup> [www.caa.co.uk/uas](http://www.caa.co.uk/uas)

<sup>3</sup> CAP 1202

weight must avoid and give way to manned aircraft at all times in controlled Airspace or ATZ. CAP722 gives further guidance that, in practical terms, drones of any mass could present a particular hazard when operating near an aerodrome or other landing site due to the presence of manned aircraft taking off and landing. Therefore, it strongly recommends that contact with the relevant ATS unit is made prior to conducting such a flight.

Notwithstanding the above, all drone operators are also required to observe ANO 2016 Article 94(2) which requires that the person in charge of a small unmanned aircraft may only fly the aircraft if reasonably satisfied that the flight can safely be made, and the ANO 2016 Article 241 requirement not to recklessly or negligently cause or permit an aircraft to endanger any person or property. Allowing that the term 'endanger' might be open to interpretation, drones of any size that are operated in close proximity to airfield approach, pattern of traffic or departure lanes, or above 1000ft agl (i.e. beyond VLOS (visual line of sight) and FPV (first-person-view) heights), can be considered to have endangered any aircraft that come into proximity. In such circumstances, or if other specific regulations have not been complied with as appropriate above, the drone operator will be judged to have caused the Airprox by having flown their drone into conflict with the aircraft.

Members noted that the drone was operating at 1400ft and therefore around the limit of practical VLOS conditions. Also, in flying as it was within the ATZ without the permission of Welshpool ATC, the Board considered that the drone operator had endangered the J430 and its occupants. Therefore, in assessing the cause, the Board agreed that the drone had been flown into conflict with the J430. Turning to the risk, although the incident did not show on the NATS radars, the Board noted that the pilot had estimated the separation to be between 50m to 100ft from the aircraft, and climbing from below-left to above-right in front of the aircraft. Acknowledging the difficulties in judging separation visually without external references, the Board considered that the pilot's estimate of separation, allied to his overall account of the incident, portrayed a situation where safety had been much reduced below the norm; they therefore determined the risk to be Category B.

Members also noted Airprox 2015096, a previous drone occurrence within the Welshpool ATZ.

### **PART C: ASSESSMENT OF CAUSE AND RISK**

Cause: The drone was flown into conflict with the J430.

Degree of Risk: B.