

# AIRPROX *Insight*

DIRECTOR UKAB'S MONTHLY UPDATE

July 2021



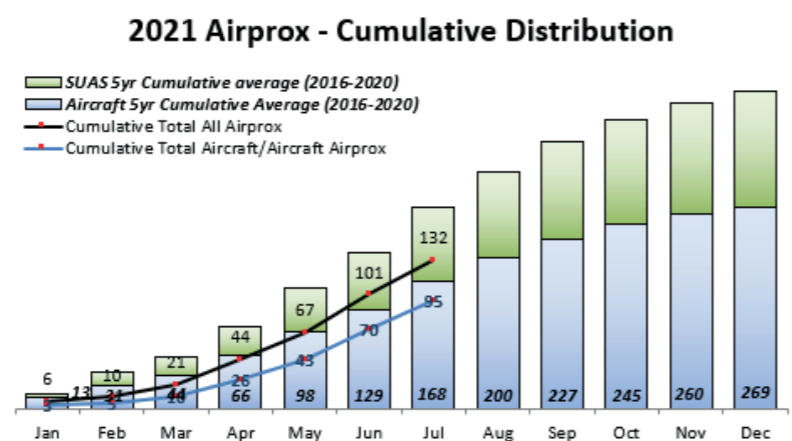
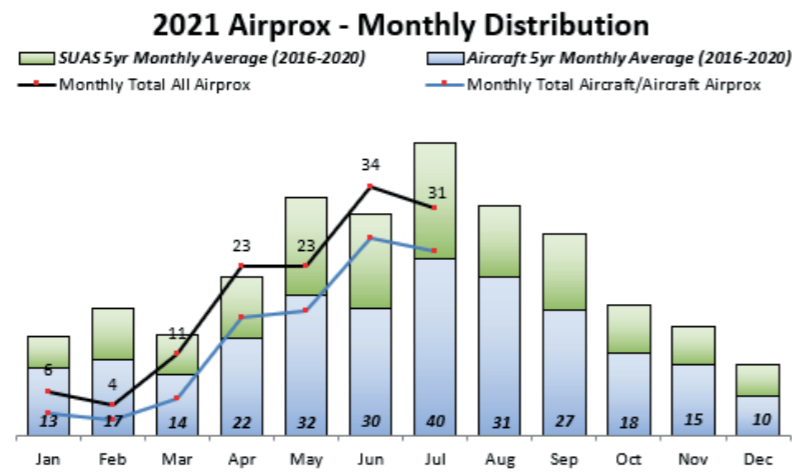
Photo for illustrative purposes only: Shutterstock/ Ivan River

## With light aircraft encounters increasing, it's time to consider the possibility of a drone encounter in Threat & Error management when flight-planning

With the steady and welcome return towards 2019 levels of flying, July was the second consecutive month with the number of occurrences above the five-year average. In cumulative terms we're rapidly approaching the five-year average which I expect will be surpassed as we enter August.

The Board considered 17 Airprox in July, including six SUAS events (one of which was reported by the drone operator). Of the 11 aircraft-to-aircraft Airprox, five were risk-bearing – two were category A and three category B. Five were classified as category C and one as category E.

This month we evaluated another drone reported Airprox, so I thought it useful to share some insights into these occurrences and offer some thoughts on what could be the changing landscape of aviation.



This chart shows the sector risk distribution for all evaluated Airprox involving SUAS to date. As expected, most SUAS encounters occur with commercial air transport (large carriers) who are predominantly in high workload phases of flight and fleeting in duration.

The majority of category A and B tend to be with unknown objects, rather than with drones and I am seeing an increase of drone reported Airprox, including the first Airprox involving two drones. This is encouraging as it points to an increased awareness of drone operators to their responsibilities with other air users.

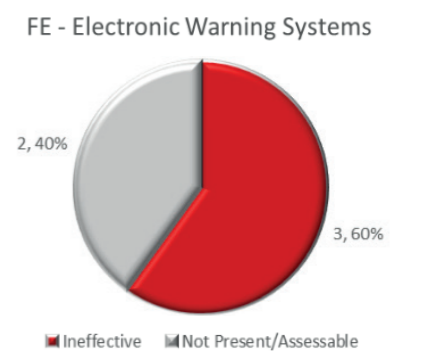
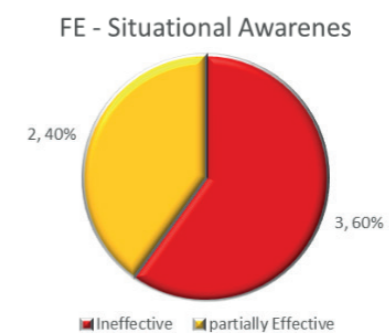
Historically, commercial air transport provides the most SUAS observations, however this year GA is yielding a comparable number which begs the question, is this pointing to a change in the environment? The emerging 'zone of conflict' rests in the 0-400ft band where GA traffic is allowed to operate unrestricted within the rules of the air, and UAS operators have freedom of movement without any requirement to submit a Notam or gain permissions.

The only safety barrier which can function in these encounters is See and Avoid: radio communications and electronic conspicuity are rendered ineffective, although electronic conspicuity systems that may allow UAS to detect and avoid other aircraft are under development and will likely emerge in the future.

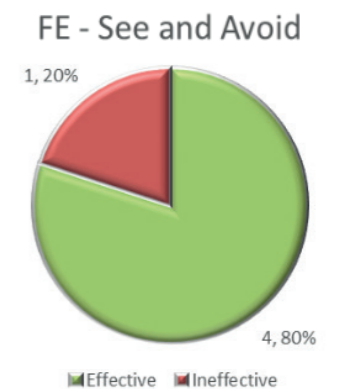
All of this means there is less chance of conventional aircraft pilots to gain any situational awareness at all of the actual presence of a UAS – the minimal feeds into the Situational Awareness barrier means that being almost entirely reliant on the See and Avoid barrier.

We all know how hard it can be to spot other aircraft let alone drones, so with the difficulties in spotting UAS or model aircraft and we must now always consider the possibility of a UAS encounter in our Threat & Error management when we plan our flight.

The two charts below show just how weak these two barriers are; in fact, they have not been evaluated as effective at all in all the drone instances we've examined – this is slightly concerning and is in contrast to the performance of these barriers when dealing with aircraft-to-aircraft Airprox, where although the performance could be better, it is not as bad as shown here!



There is some mitigation though: a UAS operator is likely to be able to hear your aircraft and therefore also likely to see you first and take appropriate avoiding action following the guidance on the CAA website. <https://www.caa.co.uk/Consumers/Unmanned-aircraft-and-drones/>





The pie chart of the See and Avoid barrier (see previous page) describes my point perfectly when one understands that the party responsible for the 80% effectiveness of the See and Avoid barrier was the UAS operator – in all cases (including reaching back to 2018), the pilot of the other aircraft did not see the drone – or saw it too late to change the outcome.

There is one other consideration it's important to highlight: If one does have an encounter with a drone, is it simply the risk of collision that should concern you? In my opinion – no: you must also consider the whereabouts of the UAS operator.

As we all know the UK has some exceptions to the rules for the protection of third parties:

SkywayCode page 55 summarises neatly and they are expanded upon in here in ORS4No1496. For ease I have reproduced the text and highlighted the relevant portion from ORS4No1496:

General (SERA.5005(f)(2)) – Day VFR Flights

a) Except when being flown over the congested areas of cities, towns or settlements or over an open-air assembly of persons, or in a Flying Display, Private Flying Display, aircraft race or contest, The Civil Aviation Authority (CAA) permits, under SERA.5005(f), an aircraft conducting day VFR flight, to be flown at a height of:

- i) less than 500 ft above the ground or water; or
- ii) less than 500 ft above the highest obstacle within a radius of 150m from the aircraft, subject to the condition in subparagraph (b).

2018	2018	2019	2020	2021
<a href="#">2018011</a>	<a href="#">2020008</a>	<a href="#">2019215</a>	<a href="#">2020031</a>	<a href="#">2021001</a>
<a href="#">2018069</a>	<a href="#">2020035</a>		<a href="#">2020039</a>	<a href="#">2021012</a>
<a href="#">2018106</a>	<a href="#">2020064</a>		<a href="#">2020056</a>	<a href="#">2021015</a>
<a href="#">2018118</a>	<a href="#">2020066</a>			<a href="#">2021035</a>
<a href="#">2019199</a>	<a href="#">2020069</a>			

b) The aircraft **must not be flown closer than 500ft to any person**, vessel, vehicle or structure except with the permission of the CAA.

This rule indicates that one can fly below 500ft **as long as** one is not closer than 500ft to any person, vessel, vehicle or structure.

So back to my question – where is the UAS operator? It's highly likely that if you have an Airprox with a UAS below 500ft you are probably also closer than 500ft to the operator. If this is the case, one is inadvertently contravening the regulations and potentially endangering a third party.

The table below contains the links to all the UAS reported Airprox we have evaluated at the UKAB since 2018. It's really worth delving into them to gain an appreciation of the kind of circumstance we are talking about. Some of them are classified as Category E, and some are risk bearing, but all of them will help paint a picture of that changing landscape.

Finally, I thought it useful to include some GA safety promotions and interesting articles and videos produced by Astral

Aviation, a UK consultancy contracted by the CAA to provide a bespoke, targeted safety campaign for the GA community.

[Webinar: Loss of Control](#) presented by Kanchana Gamage, founder of the Aviatrix Project.

[Landings Data](#) on Loss of Control In flight accidents, both fatal and non-fatal, indicate that the second highest number of accidents occur during approach and landing. So what can you do to avoid this happening to you?

[Wheel Spats](#) Are they a part of your pre-flight checks?

[Stalling](#) When was the last time you practiced your stall recovery?

[Further information here](#) on Astral Aviation Consulting.

Download the **new Airprox app**

