

POLICING: MONITORING, INVESTIGATING and PROSECUTING 'Drones'

ABSTRACT

The policing role is constantly changing and becoming more challenging, with the UK seeing reduced numbers and financial cuts. Going forward, it is likely that the police will become more involved in the policing of drones. This research looks at the governance of drones from a top down approach – *international-regional-national*. The legislative complexity is first reviewed before investigating the blurring of roles between Aviation Administration-Authorities and the police. Focus is given regionally to the EU and nationally to the UK with a comparison study of the USA. The research considers the developing remit of the police and who should *police* drones at a national level. The research finds that currently, the police are under-trained in this subject area and there is insufficient coordination with the national Aviation Authorities.

Key words: *Drones; UN-ICAO; EU-UK-CAA; US-FAA; Police; Governance; Enforcement*

'If you have any concerns about drones being used in your area, either from a safety or privacy perspective, contact your local police. The Police often have greater resources, response times and powers of investigation than the CAA..... Police will take the lead in dealing with drone misuse incidents.' (CAA)

1. INTRODUCTION

With the ever-dwindling number of police officers on the street in the United Kingdom (UK)¹, their role, and the model of policing, is changing. Not only are numbers decreasing but the police face constant challenges in terms of expenditure cuts and austerity measures.² This is alongside undertaking more demands,³ particularly a developing social (services) functions (based upon a *citizen-focussed approach*); for example, in response to mental health incidents,⁴ as well as reacting to new trends in crime, and issues affecting civil-societies tolerance (or intolerance)..... *such as the misuse and nuisance of drones.*

The police invariably rely on transport in their role. When responding to all types incidents a classification system is used to determine the urgency of response to call and incidents

¹ See for example the Institute for Government website:

<https://www.instituteforgovernment.org.uk/publication/performance-tracker-autumn-2017/law-and-order/police>

² Adegbola Ojo, Richard Evans, Jay Karecha (2017) Repercussions of the Coalition Governments Austerity Policy on Community Safety across Merseyside, *Policing: A Journal of Policy and Practice*, pax093, <https://doi.org/10.1093/police/pax093>

³ College of Police Publication - College of Policing analysis: Estimating demand on the police service (2015). http://www.college.police.uk/News/College-news/Documents/Demand%20Report%2023_1_15_noBleed.pdf

⁴ An estimated that around 40% of police work involves some form of Mental Health (UK).

<https://www.theguardian.com/uk-news/2016/jan/27/mental-health-crisis-huge-increasing-share-police-time-40>

received,⁵ (although the terminology varies across the police services in England and Wales) the underlying factor is based upon a risk assessment.

Transport remains key to society's existence. It *'is vital to the quality of life of citizens as they enjoy their freedom to travel.'*⁶ Transport is *'fundamental to our economy and society. [t]ransport enables economic growth and job creation.'*⁷ And, today, more than ever, it has a direct synergy to the work of the police, including being used by perpetrators of crime.⁸ Some transport modes even having their own police force, (normally privately funded) – such as the British Transport Police⁹) who, by enlarge, police the railway system across the UK.

It has been a recognised fact, that historically, in the United States of America¹⁰ and the UK, the public have been most likely to come into contact with the police as a motorist, whether as a result of a traffic violation, due to an accident/collision, or as part of a police stop. The police both utilise road transport and enforce its use. Road transport infringements, certainly for the everyday driver, use to sit extensively within the remit of the police. Many police forces have also had traditionally a dedicated (specialist) traffic unit, which have policed major trunk roads (particularly the motorways and A routes) and investigated serious and fatal collisions. This has seen them also determining and proposing blame and culpability. However, in more recent times, many of the former activities¹¹ of the police, concerning transport and traffic, have been passed to other bodies – such as (within the UK) the Highways Agency (which saw the establishment of Highways Agency Traffic Officers¹²) and civil enforcement bodies; and, road traffic stops are (arguably) less frequently undertaken - predominately due to other police commitments taking precedence.

That said, the police have also utilised other transport modes to aid them in their duties, particularly air support, which, from a police perspective has existed in various arrangements in the UK since the 1980's, with the latest transport mode – *the drone*, now seeing widespread use.¹³ Yet, historically, the police do not enforce air transport, and have had little involvement (save in rare circumstances), this responsibility falling within the scope of a States' Civil Aviation Authority (CAA).

⁵ See the reports and work from the following sources:

ACPO report: http://library.college.police.uk/docs/homeoffice/call_handling_standards.pdf

⁶ Fox, S. J. (2017) "Mobility and Movement Are 'Our' Fundamental Rights". . . Safety & Security – Risk, Choice & Conflict! *Issues in Aviation Law and Policy*. Volume 17 No. 1. Autumn, 2017, pp 7-43

And COM(2011)144 (final) 'Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system.' Brussels, 28.3.2011.

⁷ COM(2011)144 (final) 'Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system.' Brussels, 28.3.2011.

⁸ Fox, S. J. (2018) Policing - the technological revolution: *Opportunities & Challenges! Technology in Society* <https://doi.org/10.1016/j.techsoc.2018.09.006>.

⁹ British Transport Police (BTP) http://www.btp.police.uk/about_us.aspx

¹⁰ (Herein referred to as the US). Christine Eith and Matthew R. Durose (2011) Contact between Police and the Public, 2008. U.S Department of Justice, Special Report. October, 2011.

<https://www.bjs.gov/content/pub/pdf/cpp08.pdf>

¹¹ Extending to other agencies, for example in the UK to the Department of Transport and its executive agency - the DVSA (the Driver and Vehicle Safety Agency) which incorporates the former Vehicle and Operator Services Agency (VOSA) and provides a range of licensing, testing and enforcement services with the aim of improving the roadworthiness standards of vehicles, ensuring the compliance of operators and drivers.

<https://www.gov.uk/government/organisations/driver-and-vehicle-standards-agency>.

¹² Under the Traffic Management Act 2004, c18.

<https://www.legislation.gov.uk/ukpga/2004/18/introduction>

¹³ Fox, S. J. (2018) Policing - the technological revolution: *Opportunities & Challenges! Technology in Society* <https://doi.org/10.1016/j.techsoc.2018.09.006> (which features a case study of UK police forces).

Going forward it is increasingly likely that borders may be blurring between the role of the CAA and the police in terms of ‘drones’ – an air transport ‘mode’ and who *police*’s the industry at a national level. With the drone sector set to grow substantially over the next decade¹⁴ this is a matter that requires coordination as it is increasingly likely that the police will be called upon to respond to incidents involving drones, with the ever thinner blue line being stretched further with yet another ‘new’ remit being added. However, it would have to be questioned as to whether the police are (1) aware of this new role and (2) additionally trained to take on this in what is becoming an increasing complex area with new legislation being added this year at an EU and UK level.

- *Will there inevitably be a need for the British Drone Police?*
- *Ultimately; where does/should regulation and governance of drones sit in terms of enforcement?*

This said, as it stands, the international community is far from coordinated in the approach to regulate their use, let alone in defining what a drone actually is.¹⁵ While their increased use has been identified and is clearly anticipated, the ability to coordinate data and to police this growing sector remains fragmented. However, as Fox discusses this will be a difficult area to manage for both the CAA and the respective police services; and as yet, their respective roles are far from confirmed.¹⁶ *‘In England and Wales, for example, rather than being proactive and ensuring that systems are in place to either use them in a policing role or to monitor their use from an enforcement perspective, there remains a variance of approaches by the police services.’*¹⁷

The focus of this research paper is to explore the positioning of drones within the national CAA/police remit and the respective governance/compliance structure – whereby specific focus is given to the *policing* of drones – the monitoring, investigation and prosecution of offenders.

The approach and scope of the paper, in order to provide contextualisation, is by way of a top down approach. Therefore, firstly considered is the International level and United Nations (UN) dimension, followed by the EU positioning on drones (within an aviation and police context). This includes an overview of governance and legislation relating to drones. Attention is then turned to the State perspective, which is largely confined to the UK (England and Wales); and, wherein, a study as to the current position is provided in terms of the CAA and the police.¹⁸ However, a US-FAA (United States-Federation Aviation

¹⁴ It is forecast that global expenditure on the acquisition of drones is expected to double to \$91bn in the 10 years period - 2014 to 2024, and that the drone sector will therefore be the most dynamic component of the global aviation industry (As explained: Fox, S. J. (2017) THE RISE OF THE DRONES: *Framework and Governance – Why risk it!* 82 *J. Air L. & Com.* 683-715).

Teal Group Corporation, 2014. Teal Group predicts worldwide UAV market will total \$91 billion in its 2014 UAV Market Profile and Forecast, 17 July, 2014 [online]. www.tealgroup.com/index.php/about-teal-group-corporation/press-releases/118-2014-uav-press-release.

¹⁵ As explained: Fox, S. J. (2017) THE RISE OF THE DRONES: *Framework and Governance – Why risk it!* 82 *J. Air L. & Com.* 683-715. (See Section 3 of this paper).

¹⁶ Note: this is a follow-on paper to the 2017 publication, (Fox, S. J. (2017) THE RISE OF THE DRONES: *Framework and Governance – Why risk it!* 82 *J. Air L. & Com.* 683-715) which links to the below Fox, S. J. (2018) *Policing - the technological revolution: Opportunities & Challenges! Technology in Society* <https://doi.org/10.1016/j.techsoc.2018.09.006> which considers the acceptance of the public of police use of drones (in press).

¹⁷ *Ibid.*

¹⁸ Note: This includes only brief reference to the Crown Prosecution Service – CPS.

Administration¹⁹) comparison is also provided so as to consider best practices and approaches by other countries.

The paper is presented from a law-legal (social-inquiry) perspective and is supported by primary data to give substance and meaning and to reinforce the current position in respect to the UK (England and Wales).

2. Drones: a growing sector

Drones are by no means new technology. In 1946, the American magazine Popular Science said that “[d]rones, as the radio-controlled craft are called, have many potentialities, civilian and military.”²⁰ Up until recent times, drones have been associated with the latter role - military use; however, border authorities²¹ have also long been using unmanned aerial vehicles (UAV’s), unmanned combat aerial vehicles (UCAV), and drone aircraft in their role also, that is, to police and secure boundaries and borders.²² From this perspective there is an obvious role to be played in terms of protection roles to society. Given this, there is also a key role for drones within a wider policing remit. There is no doubt that they are capable of saving lives and aiding society.²³

There is little doubting that there is a part to be played by drones in terms of various other roles associated with safety and security too - for example, inspections of critical infrastructure, such as rail tracks, or power grids, or in emergency relief and other disaster situations, such as fighting forest fires or surveying developing situations and providing welcome aid. Indeed, the worth of such drones is already being recognised,²⁴ for example to prevent crimes – such as poaching in Kenya,²⁵ or to protect crops,²⁶ as well as for humanitarian aid.²⁷

¹⁹ The FAA is a comparative body to the CAA (in the UK).

²⁰ Grumman Hatches a Mallard, Popular Science, Nov. 1946, at 121, 122, https://books.google.com/books?id=_CADAAAAMBAJ&lpg=PA121&dq=Grumman%20Hatches%20a%20Mallard&pg=PA121#v=onepage&q&f=false [https://perma.cc/6MW8-QC7H].

²¹ For example, drones patrolling the US borders with Mexico and Canada have long been credited as a major contribution to border security. B. Orr, 2010. Predator Drones Shift from Battle Field to Border, 9 November, CBS News [online]. Available from: www.cbsnews.com/news/predator-drones-shift-from-battlefield-to-border/

²² Fox, S. J. (2017) THE RISE OF THE DRONES: *Framework and Governance – Why risk it!* 82 *J. Air L. & Com.* 683-715.

²³ Fox, S. J. (2018) Policing - the technological revolution: *Opportunities & Challenges! Technology in Society* <https://doi.org/10.1016/j.techsoc.2018.09.006>

²⁴ See the Testimony - Statement of Michael G. Whitaker, 7 October, 2015

https://www.faa.gov/news/testimony/news_story.cfm?newsid=19558

Fox, S. J. (2017) THE RISE OF THE DRONES: *Framework and Governance – Why risk it!* 82 *J. Air L. & Com.* 683-715.

²⁵ G. Njeru, 2014. Kenya to deploy drones in all national parks in bid to tackle poaching, 25 April, 2014. *The Guardian* [online]. Available from: www.theguardian.com/environment/2014/apr/25/kenya-drones-national-parks-poaching

²⁶ In Japan, around 40% of the rice crop is sprayed using drones, with over 2,400 drones estimated to now in service. Terrapinn, 2015. *Commercial UAV Applications in Asia* [online]. Available from: www.terrapinn.com/template/Live/documents/7036/15870#sthash.KjR5wlJF.dpbs

Also see Kenzo Nonami (2007) Prospect and Recent Research & Development for Civil Use Autonomous Unmanned Aircraft as UAV and MAV. *Journal of System Design and Dynamics*. Vol 1, No. 2 (2007) pp 120-128.

²⁷ See the EU use of drones for humanitarian aid- http://ec.europa.eu/echo/field-blogs/stories/how-drones-can-help-humanitarian-crises_en

There are obviously immense opportunities for drone utilisation. Over the next 20-years, the EU foresees that the drone sector (within the EU) will directly employ more than 100,000 people and have an economic impact exceeding 10 billion Euros per year – which, for the most part is directly to be associated with the service sector.²⁸ However, this fails to take into account the huge developing market for ‘*hobbyists*’ too and those that will use drones outside of a commercial purpose – including with criminal intent. Given this growth there are likely to be a number of challenges to address, in terms of their use too, not least in relation to safety, security and privacy matters and determining responsibility.²⁹ Going hand-in-hand with this is the question as to the governance and compliancy structure for drone usage – which includes the role of monitoring and enforcement for offenders and violators at a national level.

3. Positioning the drone: *what do you mean?*

*To define a drone*³⁰: Drones are a transport vehicle (currently, mostly electrically propelled by means of a battery) – capable of moving from A-to-B (and further - depending upon the ability to ‘charge’). However, commercial drones and those used in a policing/emergency service remit, will at the most, carry a small payload and therefore do not transport people. The majority will, generally, also have some-type of camera (surveillance device fitted) – not dissimilar to a motor-vehicle with a dash-cam fitted. From this perspective they could be viewed as a type of goods-service (motor) vehicle,³¹ albeit with one important difference – *they fly*.

²⁸ The EU “anticipates that in the next twenty years, the drone industry will directly employ over 100,000 people and will impact the economy in excess of 10 billion euros per year—which will mostly be associated with the service sector.”

ec.europa.eu/growth/sectors/aeronautics/rpas_en (last updated Oct. 23, 2017)

ec.europa.eu/growth/sectors/aeronautics_en – the Internal Market, Industry, Entrepreneurship and SMEs [Accessed July 2017].

Also see: Fox, S. J. (2018) Policing - the technological *revolution: Opportunities & Challenges! Technology in Society*

<https://doi.org/10.1016/j.techsoc.2018.09.006>.

²⁹ These facts, particularly, privacy considerations, are largely outside the scope of this research paper.

³⁰ As explained: Fox, S. J. (2017) THE RISE OF THE DRONES: *Framework and Governance – Why risk it!* 82 *J. Air L. & Com.* 683-715.

There are two broad categories:

1. fixed wing; and
2. rotary wing.

Although they can come in a variety of shapes and sizes.

The below provides the commonly used words and abbreviations for drones;

- Drone (much favoured by the French, for example, see the French Directorate for Civil Aviation (DGAC)),
- RPA/S (Remotely Piloted Aircraft or Remotely Piloted Aircraft System) – used mostly by International and National Aviation Agencies
- UAS (Unmanned Aerial System) – still largely used by the US (and UK)
- UA (unmanned aircraft) cited within EU (proposed) legislation
- UAV (the Unmanned Aerial Vehicle) – mostly used as a general reference (alongside drone) by the general population.
- SUA/SUSA’s: Small Unmanned Aircraft and Small Unmanned ‘Surveillance’ Aircraft (UK).

³¹ The term ‘motor vehicle’ is defined in section 185(1) of the Road Traffic Act 1988 c. 52 and section 136(1) of the Road Traffic Regulation Act 1984 c.27 as “*a mechanically propelled vehicle, intended or adapted for use on roads*”. Although this is the legal definition, ultimately it is a matter of fact and degree for a court to interpret as to whether or not a vehicle is a motor vehicle at the time of any incident.

Are they an aircraft? Villasenor provided a simplistic definition that ‘a drone is an unmanned aircraft that can fly autonomously.’³² In terms of defining autonomous, he added, ‘without a human in control.’³³ However, this could also imply an AI (artificial intelligence) having control, which would fit the non-human remit. Going forward there are likely to be questions raised (particularly in litigation) concerning the degree of control and location of the person who ultimately needs to assume responsibilities for the action, purpose and inevitably the consequence of the drone.

Therefore, as said, ‘categorising drones and determining responsibility is engulfed in a myriad of different opinions and perspectives.... *not least starting with what to refer to the ‘machine’ as in the first place!*’³⁴

Given this, the brevity in providing a definition is set to remain contentious. Taking the first part of Villasenor in isolation, there remains an incredible range in terms of shapes, sizes, weight and capabilities that could characterise a drone.³⁵ The EU has acknowledged that there are more than 1,700 different types of drones produced by official manufacturers (with approximately one third made in the EU) but this fails therefore also to account of drones which are personally made or made by unregistered and unrecognised sources, and, undoubtedly, this number is set to rise.³⁶

Accepting the current volume and variances, and the anticipated growth of the industry, there are certain to be challenges in respect of categorising drones going ahead, let alone legislating for their use and importantly prosecuting offenders.³⁷

3.1. An International Perspective

The term mechanically propelled vehicle is not defined in the Road Traffic Acts (UK). Again, it remains for the court to determine. At its most basic level it is a vehicle which can be propelled by mechanical means. It can include both electrically and steam powered vehicles.

³² John Villasenor is a non-resident senior fellow at the Brookings Institution and a professor of electrical engineering at UCLA. His quote is taken from the Scientific American online platform <https://blogs.scientificamerican.com/guest-blog/what-is-a-drone-anyway/>

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³⁴ Fox, S. J. (2017) THE RISE OF THE DRONES: *Framework and Governance – Why risk it!* 82 *J. Air L. & Com.* 683-715.

The European Commission generally uses the term “remotely piloted aircraft systems” (RPAS) whilst the European Aviation Safety Agency (EASA) seems to prefer the terms “unmanned aircraft” or “drones” (the latter is most commonly used in documents intended for the public).

³⁵ Whilst drones come in a variety of formats, but there are two broad categories as above:

1. fixed wing; and
3. rotary wing.

Most light drones are of the rotary-wing type, with four, six or eight sets of rotors, with a common format being the quadcopter, a helicopter that is lifted and propelled by four rotors. The quadcopter can be used to carry a camera (which may have a wireless data link to the ground. This would allow real-time surveillance to be carried out at minimum cost.)

³⁶ EC (2014) Remotely Piloted Aviation Systems (RPAS) Frequently Asked Questions. Memo 14/259. Brussels, 8 April, 2014.

³⁷ See later discussions as within Section 3.2.1. of this paper, where some clarity now exists in respect to the EU.

The current International Convention, which relates to the operations of civil aircraft, is the 1944 – Chicago Convention.³⁸ Within the EU each Member State is a signatory to the Convention. The EU is not - since the EU did not exist at the time. Given the date, it is certainly conceivable that little to no consideration was given to the development of drones and their use. That said, there is some brief reference to ‘pilot aircrafts’ within – which states (Article 8):

‘No aircraft capable of being flown without a pilot shall be flown without a pilot over the territory of a contracting State without special authorization by that State and in accordance with the terms of such authorization.’

As it stands today this ‘may’ be an aspect for consideration cross-border drone ‘services’ within the EU (or across other countries borders).

The second part of this paragraph then states that, *‘Each contracting State undertakes to insure that the flight of such aircraft without a pilot in regions open to civil aircraft shall be controlled as to obviate danger to civil aircraft.’*³⁹

The reference to ‘insure’ could mean the physical insurance for drones being flown – given that it is a vehicle. And certainly, it would not be unrealistic to expect all drone ‘users’ to have insurance, much in the same way it is a given ‘necessity’ for most motor vehicles used in a public space to have a type of insurance policy in effect at the time of operation. That said, the obligation tends to imply a State requirement, for ‘ensuring’ (giving assurance - rather than insuring) safe operations for all civilian aircraft that would be endanger from some unmanned aircraft.⁴⁰ And, even in this respect, defining an aircraft actually is not a straight forward process.⁴¹ Professor Marsh has said that the Chicago Convention, through the mechanism of the International Civil Aviation Organisation (ICAO)⁴² clearly provides for ‘... definitions of aircraft that are the subject to its Articles, Annexes and Supplementary Agreements [and that these] include any man-made contrivance that is capable of sustained flight above the immediate surface level of the Earth....’⁴³ Indeed, accordingly, therefore, an *‘[a]ircraft is any machine that can derive support in the atmosphere from the reactions of the air.’*⁴⁴

Certainly, there have been increased discussions from an international perspective, concerning drones – no doubt because there remain many questions unanswered in terms of their use and the possible implications of such, particularly in a shared airspace. ICAO’s remit, is to work with the 192-contracting Member States and industry groups to reach

³⁸ Convention on International Civil Aviation, Chicago, 1944. Opened for signatories – 4 December 1944, 61 Stat. 1180, 15 U.N.T.S. 295 (entering into force on 4 April, 1947).

³⁹ Emphasis added.

⁴⁰ As per Article 1 of the Chicago Convention – the Sovereignty element lies exclusively with each contracting State to ensure that any civil aircraft flying in a States does so with the reassurance that it remains safe from the dangers that such unmanned craft could cause.

⁴¹ Fox, S. J. (2017) THE RISE OF THE DRONES: *Framework and Governance – Why risk it!* 82 *J. Air L. & Com.* 683-715.

⁴² The International Civil Aviation Organization (ICAO) is a UN specialised agency, established by States to manage the administration and governance of the Convention on International Civil Aviation (Chicago Convention).

⁴³ Douglas Marsh, *International Regulations of Unmanned Aircraft Operations in Offshore and International Airspace*, 8 *ISSUES AVIATION L. & POL’Y* 87, 93 (2008)

⁴⁴ On November 6 1967 the International Civil Aviation Organization issued a new definition: *‘Aircraft is any machine than can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth’s surface.’*

consensus on international civil aviation Standards and Recommended Practices (SARPs) and policies in support of a safe, efficient, secure, economically sustainable and environmentally responsible civil aviation sector. It therefore audits States' civil aviation oversight capabilities in the areas of safety and security so as to that the 100,000 daily flights in aviation's global network are operated safely and reliably across the world.⁴⁵ Yet, given this remit, it could be argued that it has been slow to respond to what was known to be a growing development of the aviation sector (drones) and the risk they possess to manned flights.⁴⁶

Only in 2018 did ICAO state, '[d]rone deliveries, drone inspections and even autonomous flying taxis are near term realities, and to make these services safe and efficient ICAO has begun the *consultative work* needed to establish low-altitude traffic management guidance for domestic unmanned aircraft systems (UAS).'⁴⁷ This said, drones are being flown today and these machines have been shown to compromise the safety (and security) of commercial aircraft plus infrastructure and persons on the ground. Given this delay, it has largely been left to individual countries to respond at a national level, which has created substantially difficult approaches and responsive (legislative) mechanisms. A fact emphasised only too clearly by the UAS Toolkit (hosted by ICAO) which clearly identifies the differences on a country-by-country basis concerning requirements relating to UAS's.⁴⁸

Going forward it would surely be reasonable to propose that, in the event of an incident, recognising that these are aircraft (albeit unmanned-drones) there should be some-type of standardised approach much as occurs with aviation and with regards to accidents and incidents, which comes within the remit of ICAO.⁴⁹ However, noticeably, distinctive from

⁴⁵ Sarah Jane Fox, (2016) A 'risky business' – aviation safety, within *Legal Risk Management, Governance and Compliance*. Interdisciplinary Case Studies from Leading Experts, Consulting Editors Stuart Weinstein and Charles Wild, Globe Law and Business (2016).

⁴⁶ In October 2016, during ICAO's 39th Assembly, world governments requested that it develop a practical regulatory framework for national UAS activities, in addition to the standards it was already developing for international operations.

Reported incidents prior to 2016:

7 December 2014, The Guardian, Drone 'near miss' with passenger plane close to Heathrow airport investigated <http://www.theguardian.com/world/2014/dec/07/drone-near-miss-passenger-plane-heathrow>

20 April 2015, The Telegraph, Flights diverted at Manchester airport as drone sighted over runway, <http://www.telegraph.co.uk/news/aviation/11549760/Flights-diverted-at-Manchester-airport-as-drone-sighted-over-runway.html>

⁴⁷ Montréal, 9 April 2018 – <https://www.icao.int/Newsroom/Pages/ICAO-issues-call-for-innovative-solutions-for-drone-airspace-management.aspx>

The ICAO announcement continues:

"Recognizing that an agreed global approach will greatly assist businesses and others in launching their UAS services with suitable levels of investment confidence and operational safety, ICAO is now convening its second DRONE ENABLE event for 13-14 September [2018] in Chengdu, China. Its focus will be on exploring new solutions with experts and innovators from industry, academia and other areas to help globally coordinate the development of UAS activities, and safely integrate UAS traffic management systems and existing conventional air traffic management systems." (Note: The first Drone Enable event was in 2017).

⁴⁸ ICAO - <https://www4.icao.int/uastoolkit/Home/BestPractices>

'ICAO launches unmanned aircraft systems toolkit' Montréal, 13 December 2016.

<http://www.icao.int/Newsroom/Pages/icao-launches-unmanned-aircraft-systems-toolkit.aspx>

⁴⁹ See in particular the supporting Annex's to the Chicago Convention (in particular Annex 13: Aircraft Accident Investigation & Annex 19).

Annex 13 of the Chicago Convention of 1944 states that the sole purpose of an air accident investigation is to prevent future accidents.⁴⁹ This is echoed in EU Regulation 996/2010.

(Council Regulation 996/2010, Investigation and Prevention of Accidents and Incidents in Civil Aviation and Repealing Directive 94/56/EC, 2010 O.J. (L 295) 35.)

police traffic collision investigations, the remit of these (air accident) inquiries is not to apportion blame or liability.

Therefore, linked to this there is also arguably a need for an international standardised approach relating to an oversight mechanism to ensure compliancy with legislative requirements – much in the same way as occurs not only in aviation but with motor vehicles used on public roads.

Even accepting the late developing role of ICAO in regards to drones, it has also identified the potential for limitations of governance, particularly in respect to ‘model aircraft,’ which are intended for recreational/hobbyist purposes and which lies outside the provisions of the Chicago Convention.⁵⁰ This said, there remains a fine-line between the hobbyists, recreational drones and commercial users,⁵¹ not least regarding the classifications in the first instance of the drone they use or are able to access. There remain ‘risks’ associated with the use of any transport mode – whether for commercial or personal use, and this remains the same in respect of the drone.⁵² Given this, there is a need to consider the whole remit and use of drones (at an international level) as occurs with the use of road vehicles in terms of categorisation of user and their associated licence groups.

From an EU perspective it was acknowledged in 2014 that ‘the rules covering drones are currently set at UN level, by the International Civil Aviation Organisation (ICAO),’⁵³ adding, in this respect, that in general, this extends to forbidding ‘unmanned aircraft to fly unless the national competent authorities issue a specific individual authorisation.’⁵⁴ Based upon this it could be concluded that the EU has had (until now) a limited role to play, selecting to see this as requiring an international direction plus a national response.

3.2. The EU: *Transport and the Police*

The transport chapter⁵⁵ has played a fundamental part within the development of the EU – it was part of the original Rome Treaty and a founding cornerstone, facilitating the ease of movement intra (as well as inter) the Union.⁵⁶ By, enlarge, the EU has shared competence in this area.⁵⁷ For example, across the EU there is a general harmonised approach to road transport – certainly from the perspective of driver training and licensing and the requirements for maintenance of road (motorised) vehicles, a potential comparator to the drone.

⁵⁰ ICAO Unmanned Aircraft Systems (UAS). Cir 328, AN/190 (2011)

⁵¹ Fox, S. J. (2017) THE RISE OF THE DRONES: *Framework and Governance – Why risk it!* 82 *J. Air L. & Com.* 683-715.

⁵² Fox, S. J. (2017) “Mobility and Movement Are ‘Our’ Fundamental Rights”. . . Safety & Security – Risk, Choice & Conflict! *Issues in Aviation Law and Policy*. Volume 17 No. 1. Autumn, 2017, pp 7-43

⁵³ EC (2014) Remotely Piloted Aviation Systems (RPAS) Frequently Asked Questions. Memo 14/259. Brussels, 8 April, 2014.

⁵⁴ COM(2014) 207 final. ‘A new era for aviation – Opening the aviation market to the civil use of remotely piloted aircraft systems in a safe and sustainable manner.’ Brussels, 8 April, 2014.

⁵⁵ Art. 90-100 TFEU - Consolidated Version of the Treaty on the Functioning of the European Union Oct. 26, 2012, O.J. (C 326) 47 [hereinafter TFEU]. (Also referred to as the Lisbon Treaty)

⁵⁶ Fox, S. J. (2014) ‘Safety & Security: *The influence of 9/11 to the EU Framework.*’ Research in Transportation Economics – Special Edition DOI: 10.1016/j.retrec.2014.07.004 Vol. 45 (2014), pp. 24–33

⁵⁷ Lisbon Treaty. Article 4 TFEU.

See discussions also in Fox, S. J. (2016) BREXIT: A bolt from the blue! – *Red sky in the morning?* *Issues in Aviation Law and Policy*. Volume 16, No. 1. Autumn, 2016, pp 83-119.

In contrast, police and judicial enforcement has historically remained largely within the sovereignty (and competence) of the respective Member States.⁵⁸ Instead, the mechanism for policing across borders,⁵⁹ within the EU, is built upon cooperation in order to prevent and combat cross-border serious crimes and terrorism.⁶⁰ This sees Member States cooperating on an ad-hoc basis, bilaterally or multilaterally. Therefore, the Commission and the specialised EU law enforcement agencies, such as Europol, do not have autonomous investigative capabilities and are not in charge of operational law enforcement activities, which remains the responsibility of EU Member States. That said, because of this, it has been necessary to turn to the transport chapter during times of national security – specifically when terrorism has involved transport.⁶¹

Ironically, there remains a synergy and linkage between these policy areas as transports allows people to travel and hence provides for the movement of crime. Transport has also been the target of criminal attacks⁶² (Lockerbie⁶³ for example) and has increasingly been used, as a weapon, to perpetrate terrorist attacks.⁶⁴ So going forward, there is likely to remain this linkage between drones, the policing of them and, hence the police. Given the use of transport modes by criminals, this is likely to continue with the use of drone⁶⁵; however, it is

⁵⁸ Fox, S. J. (20xx) *Transporting Intelligence ILP moves to Intelligence-Fed Security!* (Lessons from aviation). Craig, P and De Búrca, G. (2011) *EU Law: Text, Cases and Materials*. 5th Edition. Oxford Press.

The Area of Freedom, Security and Justice (AFSJ) – Title V of Part Three of the TFEU.

Prior to the Lisbon Treaty it was divided between Title VI EU-Third Pillar and Title IV-EC.

⁵⁹ Primarily relating to the police and customs authorities of EU Member States.

⁶⁰ The Area of Freedom, Security and Justice (AFSJ) – Title V of Part Three of the TFEU.

⁶¹ Fox, S. J. (2015) ‘To practice justice and right’ – international aviation liability: have lessons been learnt? *International Journal of Public Law and Policy*, (2015) Vol. 5, No. 2, pp. 162-182. DOI: 10.1504/IJPLAP.2015.071027

Fox, S. J. (2017) “Mobility and Movement Are ‘Our’ Fundamental Rights”. . . Safety & Security – Risk, Choice & Conflict! *Issues in Aviation Law and Policy*. Volume 17 No. 1. Autumn, 2017, pp 7-43

⁶² Fox, S. J. (2016) *Flying challenges for the future: Aviation preparedness – in the face of cyber-terrorism*. *Journal of Transportation Security*. (Part delivered to UN – see below): First published online Sept. 2016. December 2016, Volume 9, Issue 3, pp 191–218.

Argomaniz, J., Bures, O. & Kaunert C. (2014): A Decade of EU Counter-Terrorism and Intelligence: A Critical Assessment, Intelligence and National Security, DOI: 10.1080/02684527.2014.988445

S. J. (2017) “Mobility and Movement Are ‘Our’ Fundamental Rights”. . . Safety & Security – Risk, Choice & Conflict! *Issues in Aviation Law and Policy*. Volume 17 No. 1. Autumn, 2017, pp 7-43.

Fox, S. J. (expected 2018/19) Book Chapter - Future Trends: Preventative Security. Within Edward Elgar Law/Legal Reference Series (Edited by Brian Havel).

⁶³ The bombing of Pan American flight (Pan-Am) 103 over Lockerbie in 1988. On December 21, 1988 Pan Am flight 103 exploded over the Scottish town of Lockerbie. See Fox, S. J. (2015) ‘CONTEST’ing Chicago. Origins and Reflections: *Lest we forget!* *International Journal of Private Law*, (2015) Vol. 8, No. 1, pp. 73-98 and Sarah Jane Fox in Fox, S. J. (2016) *Flying challenges for the future: Aviation preparedness – in the face of cyber-terrorism*. *Journal of Transportation Security*. (Part delivered to UN – see below): First published online Sept. 2016. December 2016, Volume 9, [Issue 3](#), pp 191–218 for further comments.

⁶⁴ Within Fox, S. J. (2017) “Mobility and Movement Are ‘Our’ Fundamental Rights”. . . Safety & Security – Risk, Choice & Conflict! *Issues in Aviation Law and Policy*. Volume 17 No. 1. Autumn, 2017, pp 7-43.

Who refers to the following as examples: *Brussels Attacks: Europe Confronts Transport Security Challenge*, FIN. TIMES (Mar. 22, 2016), <https://www.ft.com/content/092a305c-f040-11e5-9f20-c3a047354386>. See also Luz Lazo, *Vehicles as Weapons of Terror: U.S. Cities on Alert as Attacks Hit the West*, CHI. TRIB. (July 9, 2017, 11:39 PM), <http://www.chicagotribune.com/news/nationworld/ct-vehicles-weapons-cities-alert-20170709-story.html>.

⁶⁵ Fox makes reference to examples, in respect to current and past use of drones, in

Fox, S. J. (2017) THE RISE OF THE DRONES: *Framework and Governance – Why risk it!* 82 *J. Air L. & Com.* 683-715.

Fox, S. J. (2018) Policing - the technological revolution: *Opportunities & Challenges! Technology in Society* <https://doi.org/10.1016/j.techsoc.2018.09.006>

set to be an even greater challenge unless systems and procedures are put in place now that recognise this, and the potential risk that drones could present, alongside the identified advantages.

3.2.1. EASA

The European Aviation Safety Agency (EASA) works closely with the CAA's in each Member State. The overall remit, summarised, relates to aviation safety (not security) and complies with the requirement set by ICAO, although of late it has arguably lead, going beyond what has been set an international level.⁶⁶

EASA was established under Regulation (EC) No 216/2008⁶⁷ which set common rules for 'civil' aviation. One of the barriers at an EU level with regards to regulating drones has arisen due to compliance with ICAO (and the Chicago Convention) and its limited scope to act (as per the establishing Regulation). There have long been calls to amend the Regulation, as the EU legislation had applicability only to unmanned aircraft weighing more than 150 kg⁶⁸ with the regulation of lighter drones being largely left to the Member States.

This has also led to a distinction between lighter and heavier unmanned aircraft and presented a significant regulatory barrier. Indeed, a 2015 report commissioned by the European Parliament emphasised the need to '*modify EC Regulation 216/2008 [...] which currently limits the scope of EU action to RPAS weighing more than 150 kg*' and to shift the regulatory regime of drones towards a new '*proportionate to the risk*' approach.⁶⁹

⁶⁶ As per the website: the EASA – the Mission and Tasks are to: (<https://www.easa.europa.eu>)

Mission

- Ensure the highest common level of safety protection for EU citizens
- Ensure the highest common level of environmental protection
- Single regulatory and certification process among Member States
- Facilitate the internal aviation single market & create a level playing field
- Work with other international aviation organisations & regulators

Tasks:

- Draft implementing rules in all fields pertinent to the EASA mission
- Certify & approve products and organisations, in fields where EASA has exclusive competence (e.g. airworthiness)
- Provide oversight and support to Member States in fields where EASA has shared competence (e.g. Air Operations, Air Traffic Management)
- Promote the use of European and worldwide standards
- Cooperate with international actors in order to achieve the highest safety level for EU citizens globally (e.g. EU safety list, Third Country Operators authorisations)

See also Sarah Jane Fox (2016) A 'risky business' – aviation safety, within *Legal Risk Management, Governance and Compliance*. Interdisciplinary Case Studies from Leading Experts, Consulting Editors Stuart Weinstein and Charles Wild, Globe Law and Business (2016).

⁶⁷ Regulation (EC) No 216/2008. of the European Parliament and of the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, and repealing Council Directive 91/670/EEC, Regulation (EC) No 1592/2002 and Directive 2004/36/EC (Text with EEA relevance). OJ L 79, 19.3.2008, p. 1–49.

⁶⁸ "Article 4(1), (2) and (3) do not apply to aircraft falling in one or more of the categories set out below: [...] (i) unmanned aircraft with an operating mass of no more than 150 kg", Annex II, Regulation (EC) No 216/2008.

⁶⁹ European Parliament, Directorate-General for Internal Policies, Privacy and Data Protection Implications of the civil use of drones, 2015, available at: [http://www.europarl.europa.eu/RegData/etudes/IDAN/2015/519221/IPOL_ID A\(2015\)519221_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/IDAN/2015/519221/IPOL_ID A(2015)519221_EN.pdf).

Due to this, a fragmented regulatory framework has developed across the EU, although national safety rules are applied, they differ across the EU and therefore a number of key safeguards have not been addressed in a coherent way.

In June, 2018, the EU Council adopted updated aviation safety rules,⁷⁰ *the new Regulation* (this will repeal Reg. 216/2008) includes a revised mandate for the European Aviation Safety Agency (EASA) and the first ever EU-wide rules for civil drones of all sizes.⁷¹ In other words, this introduces proportionate and risk-based rules, as well as establishes the registration threshold for drone operators: operators must be registered if their drones are capable of transferring more than 80 Joules of kinetic energy upon impact with a person.

The new Regulation also clarifies the definition of an ‘aircraft’ which ‘*means any machine that can derive support in the atmosphere from the reactions of the air other than reactions of the air against the earth’s surface.*’⁷² Whilst an ‘unmanned aircraft’ ‘*means any aircraft operating or designed to operate autonomously or to be piloted remotely without a pilot on board.*’⁷³ And, remote pilot ‘*means a natural person responsible for safely conducting the flight of an unmanned aircraft by operating its flight controls, either manually or, when the unmanned aircraft flies automatically, by monitoring its course and remaining able to intervene and change the course at any time.*’ A further definition is provided in respect to the equipment to support unmanned aircraft.⁷⁴

It is also stated that model aircraft do fall within the remit of this Regulation⁷⁵ and, Section VII, exclusively related to unmanned aircraft with Article 56 relating specifically to the compliance of unmanned aircraft.

The ‘national competent authority’ means ‘*one or more entities designated by a Member State and having the necessary powers and allocated responsibilities for performing the tasks related to certification, oversight and enforcement in accordance with this Regulation and with the delegated and implementing acts adopted on the basis thereof, and with Regulation (EC) No 549/2004.*’⁷⁶ This potentially leaves the way open for police to be recognised as an

⁷⁰ This is likely to enter force by the end of the summer of 2018. The press release (26.6.18) stating; ‘The regulation will be signed by both institutions and published in the EU Official Journal, probably by the end of July. It will enter into force 20 days after publication.’ <http://www.consilium.europa.eu/en/press/press-releases/2018/06/26/ensuring-aviation-safety-and-safe-use-of-drones-council-signs-off-on-easa-reform/> REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency, and amending Regulations (EC) No 2111/2005, (EC) No 1008/2008, (EU) No 996/2010, (EU) No 376/2014 and Directives 2014/30/EU and 2014/53/EU of the European Parliament and of the Council, and repealing Regulations (EC) No 552/2004 and (EC) No 216/2008 of the European Parliament and of the Council and Council Regulation (EEC) No 3922/91 <http://data.consilium.europa.eu/doc/document/PE-2-2018-INIT/en/pdf>

⁷¹ The Riga Declaration (at 3.2.2) had appreciating the risk of drones identifying that the “*new types of aircraft, [should have] proportionate rules based on the risk of each operation.*”

⁷² Article 3 Definitions as at (28).

⁷³ Article 3 Definitions as at (30).

⁷⁴ Article 3 Definitions as at (31):

‘equipment to control unmanned aircraft remotely’ means any instrument, equipment, mechanism, apparatus, appurtenance, software or accessory that is necessary for the safe operation of an unmanned aircraft, which is not a part, and which is not carried on board of that unmanned aircraft.’

⁷⁵ At 34 of the preamble.

⁷⁶ Regulation (EC) No 549/2004 of the European Parliament and of the Council of 10 March 2004 laying down the framework for the creation of the single European sky (the framework Regulation) (Text with EEA relevance) - Statement by the Member States on military issues related to the single European sky. OJ L 96, 31.3.2004, p. 1–9.

entity involved in enforcement of drones (and criminal-justice agencies) no doubt working collaboratively with the national CAA.

In respect of police use, it is specifically stated within that:

'This Regulation shall not apply to:

*(a) aircraft, and their engines, propellers, parts, non-installed equipment and equipment to control aircraft remotely, while carrying out military, customs, police, search and rescue, firefighting, border control, coastguard or similar activities or services under the control and responsibility of a Member State, undertaken in the public interest by or on behalf of a body vested with the powers of a public authority, and the personnel and organisations involved in the activities and services performed by those aircraft.'*⁷⁷

3.2.2. The Riga Declaration

The aviation community, previously, in 2015, at Riga, stressed that there was a need for European regulators to ensure that all the conditions for the safe and sustainable emergence of innovative drone services were in position. The Riga Declaration⁷⁸ also added that there was a need for regulations to help the industry thrive but also to adequately deal with citizens' concerns.⁷⁹ As part of the Declaration it also foresaw a need for the police to become involved, whereby it was stated:

*'the malicious use of drones cannot be entirely prevented by design or operational restrictions. It is the task of the **national police** and justice systems to address those risks.'*

Given this, there are obviously questions as to the respective roles to be undertaken at a State level, particularly between the CAA and the police.

4. The CAA and the Police – a UK study (with comparison study of the US)

4.1. The CAA (UK): UK legislation for drones

Each Member State is required to establish and maintain a State safety programme for the management of civil aviation safety in relation to the aviation activities under its responsibility (the 'State Safety Programme'). This falls within the remit of the CAA.⁸⁰ Specific requirements are set down by EASA in respect to the whole area of safety in air operations – including aircraft, aerodromes, air traffic controller, pilots, etc., which the CAA has always taken responsibility for. Up until this point, the CAA have had little direction from the EU in respect to drones and so have developed their own direction and guidance.⁸¹

⁷⁷ Article 2 (3)(a) Scope.

⁷⁸ This was followed up with the Warsaw Declaration – which was built on the guiding principles given in the Riga Declaration and aimed by 2019 to develop a drone ecosystem.

“Drones as a leverage for jobs and new business opportunities” Warsaw - 24 November 2016

⁷⁹ Riga Declaration on remotely piloted aircraft (drones) "Framing the Future of Aviation" – Riga, 6 March 2015.

⁸⁰ Part III of the Civil Aviation Act 1982 provides for the regulation of civil aviation in the United Kingdom. This confers power on Her Majesty to make by Order in Council provision for regulating air navigation including (but not limited to) registration of aircraft, airworthiness, regulation of aerodromes and licensing of pilots.

⁸¹ Noting as above the *new Regulation* – which is set to change this going forward.

Perhaps to coincide with the *new (EU) Regulation*, as of 30 July 2018, the UK Air Navigation Order (ANO) 2016⁸² has also been amended.⁸³ Within this, the definition for ‘small unmanned aircraft [SUA] [is provided, which] means any unmanned aircraft, other than a balloon or a kite, having a mass of not more than 20 kg without its fuel but including any articles or equipment installed in or attached to the aircraft at the commencement of its flight.’

This reference to a specific weight is very telling in respect to assigning a categorisation based upon weight as opposed to risk (arguably recognising that there is a synergy between the two nonetheless – but that said, a motor vehicle is not distinguished by its weight in terms of risk to other motorists, infrastructure of to the public).

The amendment sees a change of terminology throughout with the introduction of the terms ‘remote pilot’⁸⁴ and ‘SUA operator’⁸⁵ in place of the previously-used term ‘person in charge.’

Article 7 confirms the position (with a slight amendment⁸⁶) in respects to commercial operations (which will be as follows):

‘For the purposes of this Order, “commercial operation” means any flight by a small unmanned aircraft except a flight for public transport, or any operation of any other aircraft except an operation for public transport—

1. (a) which is available to the public; or
- (b) which, when not made available to the public—
 - (i) in the case of a flight by a small unmanned aircraft, is performed under a contract between an *operator* and a customer, where the latter has no control over the remote pilot; or
 - (ii) in any other case is performed under a contract between an *operator* and a customer, where the latter has no control over the operator,in return for remuneration or other valuable consideration.’

It should be noted that (in the UK) commercial users have always needed to register and undertake training for this purpose to date.

However, also effective from 30 November 2019 will be a requirement for the registration of all SUA operators and a requirement for the competency of remote pilots to be tested.

Article 94 and 95 of the ANO 2016 relate to the flying of small unmanned aircraft per se (regardless of commercial activity). Article 94 has been significantly developed in terms of

⁸² Statutory Instrument (SI) c765 – (CAP393 – CAA Publication refers).

<http://www.legislation.gov.uk/ukxi/2018/623/made>

(See also the Air Navigation (Amendment) Order 2017 which came into force on 14th December 2017).

Remembering this is largely applicable to aircraft operations with the new amendments adding more clarity in respect to UAV’s/SUA’s (drones).

⁸³ The Air Navigation (Amendment) Order 2018 (SI. c623).

Some articles of the amendment come into force on 30 July 2018, but others take a further 16 months, coming into force on 30 November 2019.

⁸⁴ Defined as an individual who remotely operates the aircraft’s flight controls, or who monitors its course while it is flying automatically and is able to intervene by operating the flight controls.

⁸⁵ Defined as the person who has the management of the aircraft.

⁸⁶ Effective from 30 November 2019.

adding seven subsections (A-G⁸⁷) whilst Article 95 provides additional requirements for SUA's with surveillance equipment (cameras, etc).

Article 94 has always set our clear requirements, although some clarity and changes have now occurred (as highlighted in bold-italics) in terms of the 'unmanned aircraft: requirements':

'(1) A person must not cause or permit any article or animal (whether or not attached to a parachute) to be dropped from a small unmanned aircraft so as to endanger persons or property.

(2) ***The remote pilot*** of a small unmanned aircraft may only fly the aircraft if reasonably satisfied that the flight can safely be made.

(3) ***The remote pilot*** 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) ***If a small unmanned aircraft has a mass of more than 7 kg excluding its fuel but including any articles or equipment installed in or attached to the aircraft at the commencement of its flight, the SUA operator must not cause or permit the aircraft to be flown, and the remote pilot in charge of the aircraft must not fly it -***

(a) in Class A, C, D or E airspace unless the permission of the appropriate air traffic control unit has been obtained; or

(b) within an aerodrome traffic zone during the notified hours of watch of the air traffic control unit (if any) at that aerodrome unless the permission of any such air traffic control unit has been obtained

(4A) Paragraph (4) does not apply to any flight within the flight restriction zone of a protected aerodrome (within the meaning given in article 94B).

(5) The SUA operator must not cause or permit a small unmanned aircraft to be flown for the purposes of commercial operations, and the remote pilot of a small unmanned aircraft must not fly it for the purposes of commercial operations, except in accordance with a permission granted by the CAA.

However, these new requirements will add to the complexity for drone users (particularly – hobbyists: what is deemed 'sports and/or recreational' users) but has, nevertheless, made remote pilots and operators more accountable and, ideally more professional – or at least responsible, whereby they will be subject to more requirements in terms of meeting criteria and flying within certain areas, or more specifically, away from areas. The amendment crucially implements new height and airport boundary restrictions.⁸⁸

⁸⁷ Article 94: Small unmanned aircraft: requirements

94A - Small unmanned aircraft: height restrictions on flights (new)

94B - Small unmanned aircraft: height restrictions on flights over or near aerodromes (new)

94C - Small unmanned aircraft: registration of SUA operator (new)

(*This Article is simply an 'establishing' article which gives a legal instruction to the CAA to create a scheme for the registration of SUA operators by 1 October 2019.)

94D - Small unmanned aircraft: requirement for registration as SUA operator (new - not applicable until 30 November 2019)

94E - Small unmanned aircraft: competency of remote pilots (new)

(* Like Article 94C, this is simply an 'establishing' article which gives a legal instruction to the CAA to create a scheme for the competence testing of remote pilots by 1 October 2019.)

94F - Small unmanned aircraft: requirement for acknowledgement of competency (new - not applicable until 30 November 2019)

⁸⁸ Effective from 31 July, 2018:

- A 400 ft operating height limitation for all small unmanned aircraft (94A).

That said, this is only effective if an appropriate mechanism is in place to monitor, enforce and prosecute offenders for non-compliance and/or, for abuse. But it remains improbable that those that purposely seek to use a drone for a criminal intention (including potential acts of terrorism/security breaches) will actually take any note of these requirements; whilst other hobbyists may remain oblivious to the (*new and incoming*) requirements. Currently, there is also a whole-host of misinformation circulating for drone users too and it is unlikely that the number of hobbyist drone users is actually known (so it would be difficult to have the assurance that a retrospective recording system actually captures owners/operators/pilots). Whilst accurately defining the pilot may be an easier area to apply, the owner/operator remains slightly more in need of clarity – as the management of the drone could apply to the owner or to an operator standing near to the operating ‘remote pilot.’ Again, lucidity will be required in this respect, no doubt emanating from court jurisprudence or at least guidance from the CAA and Government.

Article 240 of the ANO refers to ‘*Endangering safety of an aircraft*’ and states;

‘A person must not recklessly or negligently act in a manner likely to endanger an aircraft, or any person in an aircraft.’

Whilst this is not specific to a drone/SUA it is interesting from two perspectives:

- (i) It has significance to drone users from the viewpoint that the pilot/operator has a responsibility not to act either recklessly or negligently (which was always the intention in terms of any activity which could endanger either an aircraft or persons within. Failure to do so – will result in an offence;

But

- (ii) With the recognition that an SUA/drone is an aircraft, it could potentially equally apply to that drone being flown, in terms of other actions which could recklessly or negligently endanger (that drone).

Additionally, Article 241 is a particularly significant article for drone (SUA) pilots/operators to be aware of. It is entitled, ‘*Endangering safety of any person or property;*’ and states;

‘A person must not recklessly or negligently cause or permit an aircraft to endanger any person or property.’

Article 10 of the amendment Order amends Schedule 13 of the 2016 ANO so as to include the new prohibitions affecting SUA operators and remote pilots in the list of provisions which, if breached, give rise to an offence under article 265 of the 2016 Order.

Penalties range from, on summary conviction, a fine (*levels 3 and 4*⁸⁹) and for conviction on indictment to potential imprisonment of 2-5 years (see Table 1: Schedule 13 applicable to SUA’s).

Article 94A introduces a legal maximum height restriction of 400 feet above the surface for the flight of any small unmanned aircraft. (Previously, this height restriction only applied to small unmanned aircraft with a mass greater than 7 kg.) Note: there is scope within the article for the CAA to permit flight at a greater height if the CAA is satisfied that this can be achieved safely.

- A new limitation on the closest distance that small unmanned aircraft weighing 7 kg or less may be flown near specific types of aerodromes (94B).

⁸⁹ Criminal Justice Act 1982 SI. c42.
Level 3 - £1,000

Part	Article	Penalty
1	<p>94D: Requirement for SUA operator of certain small unmanned aircraft to be registered <i>* An SUA operator must have a valid registration when his/her small unmanned aircraft is flown and the registration number must be displayed on the aircraft</i></p> <p>94F: Requirement for remote pilot of certain small unmanned aircraft to have acknowledgement of competency. <i>* This article applies to a flight by a small unmanned aircraft only if it has a mass of 250 grams or more without its fuel but including any articles or equipment installed in or attached to the aircraft at the commencement of its flight.</i></p>	- liable on summary conviction to a fine not exceeding level 3 on the standard scale
2	<p>94: Requirements for small unmanned aircraft -</p> <p>94A: Height restrictions on flights by small unmanned aircraft</p> <p>94B: Restrictions on flights by small unmanned aircraft over or near aerodromes</p> <p>95: Requirements for small unmanned surveillance aircraft</p> <p>1. (1) The SUA operator must not cause or permit a small unmanned surveillance aircraft to be flown in any of the circumstances described in paragraph 2⁹⁰, and the remote pilot of a small unmanned surveillance aircraft must not fly it in</p>	- liable on summary conviction to a fine not exceeding level 4 on the standard scale

Level 4 - £2,500

⁹⁰ (2) The circumstances referred to in paragraph (1) are —

1. (a) over or within 150 metres of any congested area;
2. (b) over or within 150 metres of an organised open-air assembly of more than 1,000 persons;
- (c) within 50 metres of any vessel, vehicle or structure which is not under the control of the SUA operator or the remote pilot of the aircraft; or
- (d) subject to paragraphs (3) and (4), within 50 metres of any person.

(3) Subject to paragraph (4), during take-off or landing, a small unmanned surveillance aircraft must not be flown within 30 metres of any person.

(4) Paragraphs (2)(d) and (3) do not apply to the remote pilot of the small unmanned surveillance aircraft or a person under the control of the remote pilot of the aircraft.

(5) In this article, “a small unmanned surveillance aircraft” means a small unmanned aircraft which is equipped to undertake any form of surveillance or data acquisition.’

	any of those circumstances, except in accordance with a permission issued by the CAA.	
3	241: Endangering safety of any person or property	<ol style="list-style-type: none"> 1. (a) on summary conviction— <ol style="list-style-type: none"> (i) in England and Wales by a fine; or (ii) in Scotland or Northern Ireland by a fine not exceeding the statutory maximum; or 2. (b) on conviction on indictment by a fine or by imprisonment for a term not exceeding two years, or to both.
4	240: Endangering safety of an aircraft	<ol style="list-style-type: none"> 1. (a) on summary conviction— <ol style="list-style-type: none"> (i) in England and Wales by a fine; or (ii) in Scotland or Northern Ireland by a fine not exceeding the statutory maximum; or 2. (b) on conviction on indictment by a fine or by imprisonment for a term not exceeding five years, or to both.

Table 1: Schedule 13 of the ANO (2016)

Source: authors based upon the ANO

Whilst the police are specifically mentioned a number of times throughout the ANO this relates to the role of the police as air users/air operators (aircraft and helicopters).

Over the last few years many of the police services/police forces in the UK have increasingly turned to using drones in their policing role.⁹¹ Essex Police were one of the early users of drones in the UK⁹² – which interestingly they describe as ‘*essentially flying robots* -’ whereby, they state that they are an ‘aircraft can be remotely controlled or can fly autonomously using inbuilt software controlled flight plans.’⁹³ Certainly, in terms of the second definition – this is not currently in compliance with the line of sight requirement of the ANO.

As useful as drones may be to the police they are increasing being used for nefarious motives. Earlier this year Elon Musk's warned that drones could be turned into weaponised AI-

⁹¹ Fox, S. J. (2018) Policing - the technological *revolution: Opportunities & Challenges! Technology in Society* <https://doi.org/10.1016/j.techsoc.2018.09.006>

⁹² Ibid.

⁹³ <https://www.essex.police.uk/ask-the-police/question/923/> [Accessed 10 August, 2018].

controlled swarms if left unregulated.⁹⁴ And as early as 2015 the Telegraph reported that burglars were using drones to case houses prior to committing burglaries.⁹⁵ Drones have also been used to transport and smuggle drugs and phones across borders and into prisons, and in the UK, this has already led to counter-drone work being developed.⁹⁶

4.1.1 The US-FAA

By way of a comparison-study approach, the US, currently, already implements a system requiring registration of drones. Drones 55 pounds and over must be registered by post (paper – ‘N’ number registration system), whilst if the drone weighs more than 0.55 lbs. (250 grams) and less than 55 lbs. (25 kg) it is able to be registered online.⁹⁷ Registration costs \$5 *per aircraft* and is valid for 3 years, and, in order to register, the person must be:

- 13 years of age or older⁹⁸;
- A US citizen or legal permanent resident.

In January, 2018 the FAA’s national drone registry had surpassed 1 million recreational and commercial small unmanned aircraft users.⁹⁹

That said it is not without controversy. In May 2017, a federal appellate court declared that rule unlawful,¹⁰⁰ but the ‘National Defense Authorization Act’ signed by President Trump in December, 2017, reinstated the registry requirement.¹⁰¹

Further requirements relate to the need to obtain a Remote Pilot Certification, which necessitates that the pilot is:

- At least 16 years old;
- Passes an aeronautical knowledge test at a FAA-approved knowledge testing centre;
- And,
- Undergoes Transportation Safety Administration (TSA) security screening.

⁹⁴ <https://www.techradar.com/news/world-of-tech/elon-musk-others-just-opened-an-artificial-intelligence-research-group-1311036> [Accessed 10 August, 2018].

Also see Fox, S. J. (2017) THE RISE OF THE DRONES: *Framework and Governance – Why risk it!* 82 *J. Air L. & Com.* 683-715.

⁹⁵ <https://www.telegraph.co.uk/news/uknews/crime/11613568/Burglars-use-drone-helicopters-to-identify-target-homes.html> [10 August, 2018].

⁹⁶ Fox, S. J. (2018) Policing - the technological *revolution: Opportunities & Challenges! Technology in Society* <https://doi.org/10.1016/j.techsoc.2018.09.006>

UK Government update on drones: [Accessed 1 May, 2018]

<https://www.gov.uk/government/news/major-investigation-smashes-nationwide-prison-drone-gang>

⁹⁷ Registering a small (s)UAS is contained in 49 U.S.C. 44101–44106 and 44110–44113 which require aircraft to be registered as a condition of operation and establish the requirements for registration and registration processes. Pursuant to Pub. L. 112-95 Section 333 and 14 C.F.R. § 107.13, sUAS operators operating under 14 C.F.R. Part 107 must comply with the registration requirements.

The default operating rules for UAS weighing less than 55 lbs. (sUAS) are contained in 14 C.F.R. part 107. The rules contain operational limitations, such as restricting flights.

See the following website for information: <https://faadronezone.faa.gov/#/>

⁹⁸ If the owner is less than 13 years of age, a person, 13 years of age or older, must register the (model) aircraft.

⁹⁹ As stated by the US Transportation Secretary Elaine Chao, (10 Jan. 2018 during an appearance at the Consumer Electronics Show (CES) in Las Vegas).

The web-based registry at that time contained 878,000 hobbyists and 122,000 commercial, public and other drones, which must be individually registered.

¹⁰⁰ See <http://atwonline.com/regulation/us-district-court-strikes-down-faa-recreational-drone-registry> [Accessed 08 August, 2018].

¹⁰¹ See <http://atwonline.com/regulation/dot-establish-pilot-program-shape-local-uav-regulations> [Accessed 08 August 2018].

It should be noted that nothing in the UK ANO, and amendment, specifically refers to vetting of anyone applying to register their drone or in respect to their competency (pilot) test (the contents of which is potentially still being considered). Neither are minimum age limits referred to and neither is there further information regarding residency requirements. Both would seem logical elements to implement, given that drones are a form of transport (with the associated risk elements relating to safety and security). This would parallel that found within driving licence requirements for instance – in terms of a minimum age (in the UK 17-years) for what is said as road ‘safety’ reasons; and, being a resident in the country i.e. ‘normal residence’ which is deemed to be ‘where a person usually lives, that is for at least 185 days in each calendar year.’¹⁰² For enforcement purposes this would provide clear boundaries for compliancy.

On the 14 August 2018 the FAA issued revised guidance for Law Enforcement Agencies in respect to ‘*Suspected Unauthorized UAS Operations.*’ This commenced with the following introduction (entitled *Goals*):

‘The Federal Aviation Administration (FAA) values its partnerships with law enforcement agencies (LEAs). By working together, we can help protect the safety of people on airplanes and on the ground from unsafe and unauthorized Unmanned Aircraft Systems (UAS), otherwise known as “drones.” Data collection and sharing during first response and early reporting among federal, state, and local agencies helps protect public safety. The expertise of FAA aviation safety inspectors and Law Enforcement Assistance Program (LEAP) special agents can help LEAs who are engaged with an unsafe drone operator.’¹⁰³

Clearly the US recognises the need to work in partnership with Law Enforcement Agencies (LEA’s) and there are potential best practices to be learnt from the US approach in this regard.

The guidance document goes onto summarise the respective roles and expertise of the FAA and LEA’s, identifying that the FAA is responsible for the safety of US airspace and enforces Federal Aviation Regulations, which includes regulating UAS operations.¹⁰⁴ The FAA states that a primary role is to educate the public, but that said, they identify that they do take civil administrative enforcement action against UAS pilots who operate in a careless or reckless manner so as to endanger life or property.

In many ways the US legislation is similar to the UK, which arguably it has mirrored (in line also with the EU direction) and it could be concluded that by enlarge there is synergy in the

¹⁰² ‘because of personal and occupational ties, or, in the case of a person with no occupational ties, because of personal ties which show close links between that person and the place where he is living.’ (Article 12 - Directive 2006/126/EC of the European Parliament and of the Council of 20 December 2006 on driving licences - Recast). OJ L 403, 30.12.2006, p. 18–60.

¹⁰³ Emphasis added.

¹⁰⁴ FAA identifies that this is a partnership operation, supported and informed by interagency partners: the national defense, homeland security, and Law Enforcement who have their statutory responsibilities. The Legal basis for the FAA’s safety mandate comes from 49 U.S.C. § 40103, which requires it to regulate aircraft operations conducted in the National Airspace System (NAS), which include UAS operations, and similar to the UK – ANO is ‘to protect persons and property on the ground, and to prevent collisions between aircraft or between aircraft and other objects.’

The NAS is “the common network of U.S. airspace; air navigation facilities, equipment and services, airports or landing areas Included are system components shared jointly with the military.” See FAA Pilot/Controller Glossary (Apr. 3, 2014), available at http://www.faa.gov/air_traffic/publications/media/pcg_4-03-14.pdf.

approach taken in respect to the requirements of the drone operator. That said, there appears to be wider guidance emanating from the US.

Additionally, the FAA states that it clearly recognises LEAs are often, *‘in the best position to deter, detect, immediately investigate, and, as appropriate, pursue enforcement actions in response to unauthorized or unsafe UAS operations.’*¹⁰⁵

As part of the Registration requirement, the FAA issues a unique registration number, beginning with either an “N” or “FA.” It is said that these numbers must be placed on the unmanned aircraft and be readily visible, or they may be inside a battery compartment or other place in the aircraft, provided no tools are needed to open the compartment. Whilst the UK stipulates that the requirement is for the number to be visible. The (US) registration number system is unique to the operator, and, the operator in the UAS must carry a Certificate of Aircraft Registration in either paper or electronic format. This must be made available to law enforcement officials for inspection upon request.¹⁰⁶

In comparison with the UK penalties - failure to register a UAS in accordance with the rules may result in regulatory and criminal sanctions; whereby, the FAA may assess civil penalties up to \$32,666 and criminal penalties including fines of up to \$250,000 and/or imprisonment for up to three years.

Section 2 of the ‘Law Enforcement Guidance for Suspected Unauthorized UAS Operations’¹⁰⁷ relates specifically to the role of law enforcement. Within this section it is stated that there is a distinction between the FAA’s civil administrative safety enforcement function and the role of criminal law enforcement agencies and that *‘the public interest is best served by coordinating and fostering mutual understanding and cooperation between governmental entities with enforcement responsibilities.’*

Whilst guidance is given based upon a D-R-O-N-E (acronym - see Table 2) action plan, in reality it will be difficult for the LEA’s to, on many occasions, locate the drone user, particularly when the drone was being used for a criminal purpose, and given the height that they can operate up to (fly at or below 400 feet – the same as the UK) it would be virtually impossible to read the *‘registration number,’* if, indeed, the drone has been registered.

D	<i>irect</i>	attention outward and upward, attempt to locate and identify individuals operating the UAS. Look at windows/balconies/rooftops. Identifying that <i>‘law enforcement is in the best position to locate the suspected operator of the aircraft, and any participants or personnel supporting the operation.’</i>
R	<i>eport</i>	the incident to the FAA Regional Operations Center (ROC), whereby follow-up assistance can be obtained through FAA Law Enforcement Assistance Program (LEAP) special agents. Identifying - that immediate notification of an incident, accident, or other suspected violation is essential for the timely initiation of the FAA’s investigation.
O	<i>bserve</i>	the UAS and maintain visibility of the device (identifying that the battery life of a UAS is typically 20 to 30 minutes).

¹⁰⁵ Ibid.

¹⁰⁶ Pursuant to 49 U.S.C. § 44103(d).

¹⁰⁷ Version 5 – Issued 14 August, 2018.

		Guidance - look for damaged property or injured individuals, identify potential witnesses and conduct initial interviews, documenting what they observed while the event is still fresh in their minds.
N	otice	features. Identify - the type of device, whether it is fixed wing or multi-rotor, its size, shape, colour, and payload, such as video equipment, and the activity of the device. Guidance - take photos, record the event. Including, describing light and weather conditions, any damage or injuries, and the number and density of people, particularly at public events or in densely populated areas.
E	xecute	appropriate action. Follow LEA policies and procedures for handling an investigation and securing a safe environment for the public and first responders.

Table 2: Guidance for dealing with an incident (FAA to US LEA's)
Summarised from the FAA's 'Law Enforcement Guidance for Suspected Unauthorized UAS Operations'

Nevertheless, this guidance does serve as a means to collect and collate information and produce evidence – for later – meaning, 'should' the offender be located.

4.2. CAA and the Police (England and Wales)

The CAA states (under the headline) '*[i]f you have any concerns about drones being used in your area, either from a safety or privacy perspective, contact your local police on 101...*'
Reassuring – yes; but what exactly will the police do? What can they do? And, what do they know about drones and drone law exactly?

The CAA's website, similar to the US-FAA states the following:

*'Our enforcement strategy **has recently changed** to better reflect the balance of capabilities between the CAA and local Police services.*

The Police often have greater resources, response times and powers of investigation than the CAA. To support this, the CAA has now agreed with the Police, in a signed Memorandum of Understanding that the Police will take the lead in dealing with drone misuse incidents, particularly at public events, that may contravene aviation safety legislation or other relevant criminal legislation.¹⁰⁸

From this perspective the police are said to be more actively involved in enforcement and the investigation of drone incidents, in fact *taking the lead* on such reports.

In many ways, whilst this adheres to the direction advocated within the Riga Declaration, there are concerns that this system of changing (or evolving) governance, and, therefore, the required knowledge to comply with it, has not been conveyed from the top down - i.e. to operational police officers.¹⁰⁹

There is no doubt that the role of policing has and is continuing to change but there are certainly questions to be asked in terms of the role of the police with regards to drone enforcement, and if they are to be more actively engaged in such, the required knowledge to

¹⁰⁸ <https://www.caa.co.uk/Consumers/Unmanned-aircraft/General-guidance/Reporting-misuse-of-a-drone/>

¹⁰⁹ Fox, S. J. (2018) Policing - the technological revolution: Opportunities & Challenges! *Technology in Society* <https://doi.org/10.1016/j.techsoc.2018.09.006>

be able to be affective. However, unlike road transport where the police have both the knowledge and the means to enforce breaches – such as, for example careless driving, and with specialist officer being trained in speed detection and enforcement - i.e. through the use of calibrated devices; it is doubtful whether the police would be able to actually gauge when a height has been reached in excess of the permitted limit, or the distance from a congested area or open-air assembly (including counting whether there are more than 1,000 persons present) or from the boundaries of an airport,¹¹⁰ etc. Of course, this assumes that the police have the legislative knowledge and training in the first instance to know the list of offences that could be committed.

A recent Freedom of Information request (2018) to two forces, Thames Valley and Hampshire Constabulary, identified that forces are not providing officers with any training on drones, and, as of 2016, the College of Policing also acknowledged that they were also not providing guidance to officers in this respect, including training packages.¹¹¹

Likewise, unlike the access to PNC (the Police National Computer) which contains a whole-array of valuable information relating to vehicles and persons, it is unlikely that this partnership working (or arguably, work undertaken on behalf of the CAA – in terms of aviation safety) would allow them the same access to the CAA databases. These are the databases that will contain information which is to be recorded concerning the requirements of SUA operators of certain small unmanned aircraft to be registered (and therefore the confirmation that the operator has valid registration when his/her small unmanned aircraft is flown plus the associated registration number, which is required to be displayed on the drone – as per 94 B above). This includes also, whether the remote pilot (of certain small unmanned aircraft) has undertaken an acknowledgement of competency.

In May, 2018, commenting on the introduction of the new amendment to the ANO, the UK minister for aviation, Baroness Sugg said, '[w]e are seeing fast growth in the numbers of drones being used, both commercially and for fun,' (adding) 'These new laws will help ensure drones are used safely and responsibly.' However, there seems to be a divide in the way this has been conveyed to the police (in England and Wales) and their readiness for a bigger involvement in policing drones going ahead.¹¹²

The Police 2025 Vision document on preparation and needs for policing over the next 10-years, did specifically identify some of the challenges for policing. The Association of Police and Crime Commissioners Chair Vera Baird QC echoing, in 2016, that the "*Vision sets out how the service needs to use technology how it needs to attract and retain a confident and professional workforce and how much [the police] intend to work with other agencies to work together to ensure that people are kept safe.*"¹¹³ However, there is clear evidence that,

¹¹⁰ There has been a report steady increase in the number of UAV incidents with aircraft—89 were recorded in 2017 compared to 71 in 2016 (source: Report by Alan Dron 'UK introduces laws to target reckless UAV users' ATW online - Wed, 2018-05-30 12:36).

¹¹¹ See the publication: Fox, S. J. (2018) Policing - the technological *revolution: Opportunities & Challenges! Technology in Society* <https://doi.org/10.1016/j.techsoc.2018.09.006> in relation to the 2018, FOI data on this matter.

¹¹² Ibid.

¹¹³ See: The National Police Chiefs' Council website and specifically: <https://news.npcc.police.uk/releases/police-chiefs-and-pccs-set-out-a-vision-for-policing-in-2025>

despite the CAA’s reference to the police role in regards to the policing of drones that, the police are unable currently to address the associated challenges – with the obvious starting point needing to be acquiring adequate training and knowledge.

Furthermore, for a start, police forces/services are not actually aware of the number of complaints they are receiving concerning drones and are certainly not recording these in a measurable and/or consistent way (for example, against the existing legislation – the 2016-ANO). Freedom of Information requests (responses June 2018) by the paper’s author confirmed the inconsistencies in this respect (see Tables 3: Thames Valley Police (TVP) and Hampshire Constabulary (HC): Recording of drone/UAV incidents¹¹⁴).

REQUEST	RESPONSE: TVP	RESPONSE: HC
<p>Period: Jan. 2017 – to the current period: Within your force TVP/HC Nature: And relates to calls/responses received by the police concerning drones (UAV’s) - 'air borne transport incidents' within this period: as above.</p> <p>(1) During the above period please indicate how many calls were received to TVP/HC relating to drone (air borne) incidents (2) The nature of the call (how it was reported* and recorded±) (3) The response and consequences of such (including any disposal method – i.e. was advice given, prosecution – if so for what/by whom)</p> <p>Please indicate where drone (air borne) incidents were specifically identified to be within a congested area (i.e. a city, town, settlement etc.,) or open-air public assembly town/city during the above period (such as MK; Oxford; Reading; etc. - within the respective LPA also) and the nature of the incident (how it was recorded*).</p> <p>*Whilst I note your previous response: "Thames Valley Police’s incident reporting system has no classification for "drone involved:"</p>	<p>This request is being refused under Section 12(1) of the FOIA.</p> <p>Section 12 of the FOIA allows that public authorities do not have to comply with section 1(1) of the Act if the cost of complying would exceed the appropriate limit. In accordance with the Freedom of Information Act, this letter represents a Refusal Notice for this request.</p> <p>This information is not held in an easily retrievable format. Thames Valley Police’s incident reporting system has no classification for ‘drone involved’ and therefore, for elements (1)-(3) of the request, we would have to manually review all records (electronic and hard copy, many of which will have been archived) for every incident in the given timescale to determine if a drone was recorded as being involved. This will exceed the appropriate 18 hour time and £450 cost limit.</p> <p>Section 16:- Further advice & assistance</p>	<p>Hampshire Constabulary does not hold this information in a retrievable format. The cost of determining if the information is held, locating and retrieving the information exceeds the ‘appropriate level’ as stated in the Freedom of Information (Fees and Appropriate Limit) Regulations 2004. It is estimated that it would cost more than £450 to comply with your request.</p> <p>All incidents are recorded onto the force’s call management system (Altaris). There is no specific incident type for drone related incidents, meaning these would be recorded under numerous incident types, such as 'Prevent the breach of peace, ‘Crime Other Incident, ‘Nuisance Related Incident, or ‘Suspicious Incident'. To determine the number of these in which a drone was involved, a huge manual review would be required.</p> <p>For July, 2017 alone, there are thousands of ‘Nuisance Related’ and ‘Suspicious’ incidents recorded, meaning each record would need reviewing to determine the nature, location, date and outcome. Additionally, outcome information is not recorded on the incident log, therefore each record would need to be found on a</p>

See further discussions within Fox, S. J. (2018) Policing - the technological *revolution: Opportunities & Challenges! Technology in Society*

<https://doi.org/10.1016/j.techsoc.2018.09.006>

¹¹⁴ Responses are as received back from the respective police force(s).

<p>(4) Please would you confirm whether – TVP/HC adhere to the National Standards for Incident Reporting? (NSIR) : Yes/No</p> <p>As I note this clearly has a classification for ‘air’ – which maybe a logical first approach given that it an air borne transport system and the advice is that "many crimes are initially recorded as incidents. Incident recording is set out in that national standards for Incident Recording." Namely: Transport: Rail/Air/Marine Incident Not Recorded Elsewhere</p> <p>(5) ± Recording of crimes: can you inform me whether any incidents relating to "air" resulted in a recordable crime and what was the classification system used.</p>	<p>(4) Our current systems do not meet all the standards, but we are in the process of changing our Contact Management Platform, which will meet the NSIR standard as you have listed.</p> <p>(5) Using the ‘miscellaneous/air incident’ classification, there were two recorded calls involving drones. Neither of these resulted in recordable crimes. Using the ‘miscellaneous/air crash’ classification, there were no recorded calls regarding drones.</p>	<p>separate crime recording system (RMS) to ascertain whether a person was prosecuted in relation to a drone incident.</p> <p>Furthermore, using a keyword of ‘drone’ would not retrieve accurate results, as the drug ‘methadrone’ or a ‘drone’ of noise report within the MO wording would bring back inaccurate results.</p> <p>You may wish to refine your request by narrowing down the search parameters – for example, allowing 10 incidents selected at random to be reviewed, thereby significantly reducing the number of records that would need to be manually searched to retrieve the information you are seeking.</p> <p>In accordance with the Freedom of Information Act 2000, if one element of a request exceeds the statutory cost limit, the whole request may be refused on grounds of cost. As such, this letter acts as a Refusal Notice in respect of your whole request.</p>
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Tables 3: Thames Valley Police & Hampshire Constabulary - Recording of drone/UAV incidents
(FOI request – response, June, 2018)

Essex Police was also sent a FOI, one month before (April, 2018) which was responded to in August, 2018.¹¹⁵ Whilst Essex Police stated that they ‘have produced drone training involving the basic offences which has been delivered to control room and call handling staff,’ their response referred to the previous Air Navigation Order (from 2009) and therefore the associated articles are out of date, being replaced by the *newer* 2016 Order (and amendments).¹¹⁶

Similar to TVP and HC, Essex Police provided a refusal notice in respect to specific drone data from their ‘Command and Control Call tasking system’(STORM). Although there was a facility to record where (and when) a drone ‘*incident*’¹¹⁷ had occurred, it necessitated a manual examination of each incident to ‘*establish if an offence has occurred and cross referral onto the Police National Computer to establish prosecution details.*’ [As] [‘d]etails are not kept in a manner that identifies if the drone incident has occurred in a congested area, although this may be mentioned in the free text of the call.’

¹¹⁵ Outside the 20-day period under the legislation.

¹¹⁶ Small unmanned aircraft – Article 166 of the ANO – 2009.

Small unmanned surveillance aircraft – Article 167 of the ANO - 2009

¹¹⁷ Note: It does not refer to the number of call received to Essex Police, but refers to incidents as identified (and is not reflective of calls received to Essex Police - for crimes, traffic offences and other matters). For the purpose of this research other ‘incidents’ have been removed from this table where it is deemed they would not likely be related to drone incidents (i.e. domestics, unauthorised encampments, etc).

However, Essex Police were able to provide information of how many calls were registered against incidents (Table 4: Essex Police response).

Incident: Call¹¹⁸ Description	Month & YEAR¹¹⁹	1	2	3	4	5	6	7	8	9	10	11	12	Total
Abandoned 999 call	2017	-	-	-	-	-	-	-	-	1	-	-	-	1
	2018	-	-	-	-	-	-	-	-	-	-	-	-	0
Concern for Safety	2017	-	-	-	-	-	-	-	-	-	-	-	-	0
	2018	-	-	-	-	1	-	-	-	-	-	-	-	1
Drone Incident	2017	-	-	-	-	-	-	-	-	-	-	-	-	0
	2018	-	1	1	9	12	4	-	-	-	-	-	-	27
Nuisance neighbour	2017	-	-	-	-	-	1	-	1	-	-	-	-	2
	2018	-	-	-	-	-	-	-	-	-	-	-	-	0
Nuisance Other	2017	1	-	-	1	3	2	2	-	3	1	-	2	15
	2018	1	-	-	-	-	-	-	-	-	-	-	-	1
Suspicious Circumstances	2017	-	-	1	-	2	4	3	4	3	1	1	3	22
	2018	1	1	-	-	3	-	-	-	-	-	-	-	5
U.F.O.	2017	-	-	-	-	1	-	-	-	-	-	-	-	1
	2018	-	-	-	-	-	-	-	-	-	-	-	-	0

Table 4: Incidents recorded in an 18-month period (2017-2018)
(Source: authors - Based upon data provided by Essex Police)

As can be seen, the number of directly cited incidents relating to drones had increased, with the number in the first half of 2018 exceeding those reported in 2017. There is the possibility, due to the recording system, that some of the other incidents listed also involved drones but are not recorded in this manner (for example, the reference to a U.F.O). However, it should also be recalled that Essex Police do use drones in their role and are one of the leading forces in this respect;¹²⁰ and, hence, there may also be a possibility that some of these incidents could relate to the police use of drones. What is not known is whether the ANO articles were breached and whether any criminal offences were recorded. This clearly remains one of the issues with regards to the inconsistency of recording such incidents across the 43-police forces and building up a clear picture – so as to be informed as to the current position with regards to drone nuisance, concerns, or offences in England and Wales.

4.2.1. National Standards for Incident Recording & Home Office rules for Recording Crimes
Police forces have a legal duty under the Police Act 1996 which is further strengthened by the Police and Social responsibility Act 2011 to provide the Home Office and the Police & Crime Commissioner with data including notifiable crime figures for the Home Office Annual Data Return (ADR). These are understood by the police to be important figures.¹²¹ The Home Office sets Counting Rules for Recorded Crime. Guidance is given also in relation to the National Crime Recording Standard (NCRS) with aims and principles also

¹¹⁸ Alphabetically listed (as provided by Essex Police).

¹¹⁹ All months are identified through their respective number in the calendar (i.e. January = 1; February = 2, etc). NOTE: the data in 2018 relates to the first 6 months only.

¹²⁰ Fox, S. J. (2018) Policing - the technological revolution: *Opportunities & Challenges! Technology in Society* <https://doi.org/10.1016/j.techsoc.2018.09.006>

¹²¹ As identified by Essex Police - in their policy for Recording of Incidents and Crimes Number: B 0100 Date Published: 22 June 2017

<https://www.essex.police.uk/getmedia/e593fe73-2749-4d82-8821-131edd2aa859/B0100-Policy-Recording-of-Incidents-and-Crimes.pdf>

underpinning the recording of incidents in accordance with National Standard for Incident Recording (NSIR).¹²² In this respect, the intention is for an accurate, *consistent* and ethical record to be made. ‘*Consistency*’ here is a key aspect for recording incidents (and indeed crimes) however what is apparent is that reports relating to drones are not being recorded in a consistent manner across forces in England and Wales.¹²³ The NSIR was said to ‘have been introduced to replace the wide variety of incident recording (and non-recording) that differed from force to force so that common understanding and recording practices would result in effective data provision and use.’¹²⁴ Chapter two of the National Standard for Incident Recording (NSIR) provides a National Incident Category List (NICL) and whilst drones (UAV’s/SUA’s or otherwise named) are not specifically listed, it should have been relatively easy to have determined an agreed category for all forces to apply. For example, one possibility could have been to utilise the transport category, namely in respect to ‘transport modes’; wherein, it is said that, ‘for the purposes of NSIR, a vehicle is defined as a *device, structure or contrivance for carrying or conveying persons or objects especially over land or in space and includes a means of conveyance or transport moving on wheels, runners or tracks such as cars, sleds, tanks, etc.*’

Whilst there is also the opportunity to use the ‘Rail/Air/Marine Incident’ categories, there is a possible second alternative in regards to anti-social behaviour listing. However, as Thames Valley Police have identified, their current system fails to fully meet the requirements for the NSIR, whilst Hampshire Constabulary have identified identification parameters they use away from the more obvious transport mode determinant.

Within the Home Office Counting (HOC) Rules for Recorded Crime, specific reference is made to the Air Navigation Act for example the offences of: recklessly/negligently act in manner likely to endanger aircraft / person in an aircraft - under the Air Navigation Order 2016, Articles 240 and 265 which has a CJS Code: AN16286. This appear under the code 99: Other Notifiable Offences Classification / Counting Rule. Yet it could be concluded that police officers and staff are not being trained in this regard, which ultimately is affecting the ability to record both incidents and crimes correctly.

In 2015 the National Police Chiefs Officer Council (NPCC) issued guidance within the document entitled: Guidance to Officers on Drones: Legislation and dealing with misuse.¹²⁵ Whilst this predates the more recent ANO (2016 and subsequent amendments) the guidance was said to be issued with ‘the intention to address the *negligent, reckless or malicious* use of this technology.’ It was also acknowledged, that at that time, HM Government were currently considering their response to the growth in the civilian and criminal use of drones with work then underway through a cross cutting Governmental working group led by the Department for Transport (DfT).

¹²² See the Home Office Link: <https://data.gov.uk/dataset/recorded-crime-counting-rules/resource/7c211a9a-3efd-4537-89e6-fda7d8837f82>

¹²³ As identified by Essex Police - in their policy for Recording of Incidents and Crimes Number: B 0100 Date Published: 22 June 2017
<https://www.essex.police.uk/getmedia/e593fe73-2749-4d82-8821-131edd2aa859/B0100-Policy-Recording-of-Incidents-and-Crimes.pdf>

See: The National Standard for Incident Recording (NSIR)

<https://www.gov.uk/government/publications/the-national-standard-for-incident-recording-nsir-counting-rules>

¹²⁴ Ibid.

¹²⁵ <http://www.npcc.police.uk/Publication/NPCC%20FOI/Operations/175%2015%20NPCC%20Response%20At%2001%20of%2001%2026102015.pdf>

Hence reference within the guidance document is made to the earlier ANO (2009) as Essex Police still use to train staff, as cited in their FOI to the author of this paper.

Within the guidance document it is stated that,

‘In all cases, offences involving the use of a drone must be notified using an *intelligence report*. ... it is necessary for an accurate report to be submitted in order that patterns of offending can be developed. Offences¹²⁶ ***other than those in the Air Navigation Order (ANO)*** are likely to be very familiar to officers and staff.’

It is stated that ‘Offences under Articles 166 and 167 of the Air Navigation Order [2009¹²⁷] are non notifiable. As such a crime is not recorded. ***However they must be recorded as a Crime Related Incident.*** Article 138 of the Air Navigation Order (Cause or permit endangerment¹²⁸) requires a crime report. Officers should record offences under HOC 099/80.’¹²⁹

It does not appear that this guidance has been updated to reflect either the new ANO, the subsequent amendments or the recording of crime codes, however the general basics have obviously existed since 2015. However, this does not seem to have been widely relayed back to police forces or officers on the streets and the recommendations to officers is perhaps not sufficiently developed (particularly in comparison with the FAA assistance document to LEA’s).

4.4.2. CAA and Police coordination

In a Freedom of Information request to the CAA by the author, the CAA confirmed the following:¹³⁰ Namely, that it had,

- ‘not [been] informed of prosecutions under the ANO by the police or CPS’ (Crown Prosecution Service).

Whilst additionally, in relation to other offences where a drone had been involved, the response was that the CAA

- ‘are not informed of such prosecutions by the police or CPS.’

Asked if they had produced information to assist the police the response was that the CAA had,

- ‘not produced specific guidance for police forces,’ adding,

‘The CAA provides guidance to UAS operators in our publication CAP722’¹³¹

Asked if the police had shared the intelligence reports on drones the response was

¹²⁶ Examples listed are:

- ‘Public Order Act, 1988 (section 4 and section 5) (– note this act is also wrongly cited in the document as it should be the Public Order Act, 1986).
- Protection From Harassment Act 1997 (section 2)
- Sexual Offences Act 2003 (section 67)
- Terrorism Act 2000 (section 58...and others)
- Likely to lead to a Breach of the Peace
- Public Nuisance’

¹²⁷ The equivalent of what is now Article 94 and 95 (before amendment) within the later 2016 ANO.

¹²⁸ The equivalent of what is now 241 (and 240 Article) of the later ANO (2016).

¹²⁹ Emphasis added:

<http://www.npcc.police.uk/Publication/NPCC%20FOI/Operations/175%2015%20NPCC%20Response%20Att%2001%20of%2001%2026102015.pdf>

¹³⁰ Reference: F0003746. 29 June 2018.

¹³¹ www.caa.co.uk/cap722

- ‘We have not received any police intelligence reports in relation to SUAs/SUSAs in 2016, 2017 or 2018.’

The CAA also confirmed that:

- ‘There have been no CAA prosecutions in 2016, 2017 or 2018 relating to SUA/SUSA usage.’

4.4.3. Memorandum of Understanding

In 2016 a Memorandum of Understanding (MoU) was signed between the following parties: the NPCC, CAA, the Home Office and the DfT.¹³² The purpose of such was to:

‘clearly identify the roles and responsibilities of each participant as they relate to:

- Investigation and prosecution of drone offences set out in the Air Navigation Order 2009.
- Information sharing for the purpose of developing Government strategy and legislation in respect of drones.
- Engagement with the media in respect of drones
- Education the public in respect of drone use and misuse.’

Taking the above in to account, firstly it would have to be identified that the last signature to the MoU was added on 1 June, 2016 and given this, it is perhaps surprising to see that no mention was made to the newer (then incoming) Air Navigation Order (ANO) of 2016, which came into force on 25 August, 2016.¹³³ In effect, when the MoU came into play it was arguably out of date less than two months later, although the basic principles are essentially the same, regardless of the newer ANO. That said, the provision as contained within part VII, clearly states that the MoU will be reviewed by all parties, and given this, it would have to be concluded that amendments and clarity should have been added, before now, not least in respect of citing the 2016 ANO.

In a recent FOI request sent to both the CAA and NPCC both refer to this MoU. The NPCC¹³⁴ when asked, ‘what liaison is being undertaken with the CAA in order to coordinate the monitoring and enforcement of civilian drones and those being used for commercial purposes?’ Responded that ‘The NPCC does not hold information captured by your request. There is currently no specific liaison taking place. The portfolio are currently working to a previously agreed MOU’ (sic! - citing the above).

¹³² What is referred to in the document as Participant A-D respectively.

¹³³ See comments applicable to the newer Order and the rationale for the introduction of it:

<https://www.caa.co.uk/Blog-Posts/The-revised-Air-Navigation-Order/>

¹³⁴ Freedom of Information response reference: 00095/18, dated 26 June 2018.

Note: the NPCC is not subject to the FOIA as explained in the reply back:

‘Following the dissolution of the Association of Police Chief Officers (ACPO), designation under the Freedom of Information Act did not automatically transfer across to the National Police Chiefs’ Council (NPCC). The NPCC, as the new coordinating body, should clearly be open to the same level of scrutiny and transparency as its predecessor and it is anticipated that an Order to bring the NPCC under the auspices of FOIA will be forthcoming. This is currently the responsibility of the Cabinet Office and the NPCC is supporting the Cabinet Office in bringing forward the Order.

In the meantime, the NPCC will comply with the spirit of the Freedom of Information Act and will respond to all requests received as if it were still subject to FOIA. Applicants should note, however, that until the formal designation is in place and the legislation is amended to include the NPCC, the Internal Review process will remain in place but there is no legal basis to pursue complaints to the Information Commissioner’s Office.’

Whilst the CAA stated, ‘We work together with the police under a Memorandum of Understanding.’

Within the MoU it is furthermore stated that the intention is to:

- *‘Clarify the investigation and prosecution responsibilities between the parties*
- *Establish share communications lines*
- *Outline the scope of information sharing between parties*
- *Establish agreement to develop a join Education package*
- *Enhance co-ordination of media engagement.’*

However, it would seem that essential information, so as to build a clear picture of drone use and misuse is not being shared between the police and the CAA.

The introduction to the MoU states the role of each party. The CAA are said to have ‘the powers to enforce rules applicable to civil aviation..... to enhance aviation safety which it does through setting and enforcing regulations and rules in respect of aircraft, airspace....’

It is identified that the HO works to ‘ensure visible responsive and accountable policing in the UK.’ Whilst, the NPCC brings together ‘Chief Constable and Chief Officers teams to co-ordinate national operational policing.’

The responsibility of the police as presented via the NPCC is that ‘the Police Service will assess **all** drone misuse.’

Decisions to investigate will be taken based upon a ‘Threat, Risk and Harm’ threshold, acknowledging that the Police Service does not have the resources to investigate all reports, with the assessment allowing resources to concentrate on the most serious misuse.

It is moreover acknowledged within the MoU that many of the offences within the ANO (the then 2009) version are non-recordable crimes, nevertheless it is said it is for Forces to determine whether or not a recordable crime has been committed (under other legislation). Emphasis is accorded to the need to ‘share information in respect of investigations/prosecutions...’ yet, this has clearly not been occurring.

In respect of the role of the CAA, it is stated that their primary activity will be to ‘investigate and prosecute’ – particularly in relation to:

- (a) Breaches of permission for aerial work or where no permission has been granted;
- (b) Drone misuse: where aircraft or people are endangered; drone flights in controlled airspace (without permission), within aerodrome traffic zones or other restricted airspaces or technical/geographical limits.

The difference is said to be that the CAA will be supported by the Police Service to ‘investigate and prosecute drone misuse which endangers aviation safety.’ However, ‘where the risk to aviation safety also endangers or represents a significant risk to public safety the Police Service will lead investigations support by the Civil Aviation Authority.’ The rationale for this approach is that, ‘[t]he Civil Aviation Authority does not have the resources to investigate all reports of the above offences and will concentrate its resources on investigating the most serious allegations.’

Taking these statements into account it is interesting to compare the current guidelines issued by the CAA, as per the lead-in to this paper, namely:

'If you have any concerns about drones being used in your area, either from a safety or privacy perspective, contact your local police. The Police often have greater resources, response times and powers of investigation than the CAA..... Police will take the lead in dealing with drone misuse incidents.' (CAA¹³⁵)

With the continuing cut-back to policing and the struggle to recruit officers, it is difficult to see how the police, going forward, will be able to lead in this area, which is likely to become more demanding in the next few years. Coupled with this is the lack of training and knowledge relating to drones and drone offences – when it has been provided to the police and police staff, it has arguably been out of date.

In April, 2018 it was reported that the 'number of police officers in England and Wales is the lowest recorded level since the late 1980s.'¹³⁶ Since the 2009 ANO there are 14% fewer police officers, with day-to-day spending on the police decreasing £13bn in 2009/10 to £10.9bn in 2016/17.¹³⁷ In 2017, after the terrorist attacks the Metropolitan Police Commissioner warned that the service is being "stretched" as it tries to respond to a broader range of crime and it would appear that drone incidents is now set to exacerbate this further – so is there, or will there be a need for a specialist (private) British Drone Police service?

The drone incidents that are reported tend to indicate issues relating to civil-societies tolerance (or intolerance)..... for example, the misuse and nuisance of drones. This potentially also indicates a lack of education and knowledge of the wider public also, as to the use of drones and the action that police are able to take. *But the main question remains, should the police service in England and Wales be expected to pick up this area because the CAA cannot?* After all, the British Transport Police is privately funded, primarily by the companies that provide passenger, freight and infrastructure services on railways across England, Scotland and Wales (i.e. the train operating companies, freight companies, Network Rail and London Underground). Based on this, if the use of drones is set to rise and be utilised by businesses, is there not the need for a similar infrastructure to be put in place regarding the monitoring and policing of such? For example, with specially trained officers (or officers attached to one of the H.O. forces) receiving funding from the businesses and the registration process undertaken through the CAA. In many ways, with the demise of specialist traffic officers (and traffic units) across England and Wales and the outsourcing of some of their previous functions (such as abnormal loads) and the transferral of responsibilities to other agencies – such as the Highways agency, it seems absurd to expect underfunded and under resourced police forces to pick-up this 'transport' albeit, air-borne task.

On 26 July, 2018 to potentially add to this new police role even more, the UK Government launched a consultation as part of a wider programme of new drone legislation that, is said, 'will shape the content of a draft Drones Bill' due to be published at the end of 2018 early

¹³⁵ 'Reporting misuse of drones:' <https://www.caa.co.uk/Consumers/Unmanned-aircraft/General-guidance/Reporting-misuse-of-a-drone/>

¹³⁶ <https://fullfact.org/crime/police-numbers/>

Also see: <https://www.instituteforgovernment.org.uk/publication/performance-tracker-autumn-2017/law-and-order/police>

¹³⁷ Ibid. This is said to, 'represents the lowest number of officers at the end of a financial year since comparable records began in 1996.'

<https://www.instituteforgovernment.org.uk/publication/performance-tracker-autumn-2017/law-and-order/police>

2019.¹³⁸ Part of the initiative being consulted on relates to on-the-spot fines and the ability to seize drones. Whilst the likelihood of seizing drones (particularly used for criminal purposes) seems low-to improbable, and the ability to impose an on-the-spot fine even more unlikely – the fact remains that it is being advocated that this is yet another task the police should be able to fulfil in their already (over) stretched duties.

The consultation launch made reference to the fact that the ‘*industry has the potential to be worth billions to the UK economy*’¹³⁹ and so from this perspective it seems logical that funding should be set aside (contributed back) to *policing*: and the enforcement process (namely, *monitoring, investigating and prosecuting*) of drones.

5. CONCLUSION

Whilst, at an international level, ICAO, an UN-specialised agency, has been somewhat reluctant to develop a drone strategy up until this point in time and take the lead on this front, the EU, equally as a regional player, has also, arguably, been slow off the blocks too. This has led to a fragmented regulatory framework with substantial differences in policies, governance and approaches across, the globe, including within the EU-bloc of States. However, 2018 marks a year that sees a concerted move, which not only recognises this, but is set to bring the area of drones under the umbrella of existing structures (namely EASA). In this respect, EASA has amended its establishing Regulation¹⁴⁰ to drive this forward, in a bid to influencing (or directing) Member States national aviation bodies and ‘other entities’ – which according to the Riga Declaration – necessitates ‘national police’ involvement too.

From a UK-British perspective this could be seen as somewhat ironic – with the UK set to leave the EU in 2019 and with no clear strategy in place to retain existing EU policies and legislation, this creates considerable uncertainty, particularly in respect to transport – including aviation safety. Unless resolved, this would have a catastrophic consequence to aviation,¹⁴¹ with the UK becoming a ‘third country.’ As at the present time¹⁴² the UK is still said to be exploring the possibility of continuing participation in EASA. And, perhaps somewhat hopefully, the UK continues to change its existing 2016 ANO in-line with the developments taking place in the EU. However, that said, at an EU level, no guidance is provided in terms of the role to be undertaken by the police.

Should the UK leave the EU without retaining involvement and membership of EASA the guidance from ICAO, regarding drones (as well as general aviation safety) will be even more important.

There is no denying that there remains existing lacunae - internationally, regionally and nationally in terms of the governance structure for drones – which extends to the enforcement for offences involving the use and misuse of drones. With the UK set to implement the

¹³⁸ Extra powers to prevent the misuse of drones - <https://www.gov.uk/government/news/extra-powers-to-prevent-the-misuse-of-drones>

¹³⁹ Ibid.

¹⁴⁰ Regulation (EC) No 216/2008 (as above discussions)/

¹⁴¹ Fox, S. J. (2016) BREXIT: A bolt from the blue! – *Red sky in the morning? Issues in Aviation Law and Policy*. Volume 16, No. 1. Autumn, 2016, pp 83-119.

¹⁴² September 2018.

registration systems for drones and the competency for pilot with effect from 2019 the scope and complexity for the *policing* of drones is set to substantially increase.

The consultation launched in July 2018, referred to the fact that it is '*vital* that it develops a strong framework to encourage innovation and growth [for drones] while keeping people safe' and this invariably means having appropriate systems in place. 'If' the police are to play an increasing role in ensuring safety for drones (alongside a security and public order role – i.e. nuisance to and intolerance by society) of these transport modes that will increasingly fly above us, it is *essential* that they are fully informed.

This means having 'full' legislation in place and issuing up to date guidance documents. At the moment this is not the case – currently there is out of date guidance issued by the NPCC together with an outdated MoU, that is evidently not readily shared amongst police officers and staff.

The new amendment (2018) to the ANO (2016) left many questions unanswered – for example, in terms of identifying a minimum age for registering drones and becoming a pilot, checks on pilots (suitability – i.e. vetting) as well as what is entailed in the pilot testing process, pilot medicals and residency requirement. For the hobbyist user, there is also the aspect of insurance for public liability and associated risks. As well as the role to be undertaken by the police – should a collision/accident occur: for example, can blame worthiness be considered, in the same way it is for road traffic collisions, or will the approach mirror that currently in place in terms of only reporting on lessons to be learnt for aviation accidents?

There is no doubt that comprehensive training needs to be provided for the police contact management staff (– in the control room - including call handlers and controllers) as well as for officers patrolling and responding to drone reports. The offences have to be clearly known and understood and the information has to be collected and handled in a consistent manner. Whilst hands are being rubbed together in anticipation of the increase to the GDP, that is, *billions to the UK economy*, there remains a need to ensure education of the police and the public and a more coordinated approach being adopted between the police and the CAA. Information has to be shared now. Without this, a true picture cannot be built of the challenges and opportunities for drones and only then, when this is being undertaken, will a more defined governance system exist for the *policing of drones* – which *may or may not see* this becoming a growing role for the police.