



Information Sheet – UAS Operations (Commercial) in London

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Introduction

This is an overview of the nature and scope of UK UAS laws. The law is stated as at September 2015. This document is intended to accompany the following:

- Application Form – UAS Operations (Commercial) in London
- Guidance Notes – UAS Operations (Commercial) in London

Terminology

In this document we use the term “UAS” (meaning Unmanned Aerial Systems) to describe unmanned flying aircraft often carrying data collection instruments such as cameras. Unmanned flying machines are variously known as Remotely Piloted Air Systems (RPAS), Unmanned Aerial Vehicles (UAV) or drones.

The acronym “MTOM” stands for Maximum Take Off Mass. This is an important measurement because many of the current regulations governing the use of UAS distinguish between categories of UAS according to weight. MTOM includes the weight of the UAS’ batteries, the CAA states *“for electrically propelled aircraft, the battery itself is considered to be a part of the aircraft - it is the battery's charge that is the fuel. The logic for this is that the battery is basically the “fuel tank” or, in other words, when the battery has run out of fuel, it still weighs the same”*¹.

Small UAS operations in the UK

The Air Navigation Order 2009 (ANO) is the principal piece of legislation governing aircraft, including UAS, in the UK. Key ANO articles for UAS operations include:

- Article 138²: this article sets out an overriding principle that applies to all aviation activity at all times, namely: *“[a] person must not recklessly or negligently cause or permit an aircraft to endanger any person or property.”*
- Articles 166³ and 167⁴: these articles cover flight and operational restrictions for UAS. The text of these articles is set out in the box below.

ANO, articles 166 and 167

166 Small unmanned aircraft

¹ <https://www.caa.co.uk/default.aspx?catid=1995&pageid=16011>

² <http://www.legislation.gov.uk/ukxi/2009/3015/article/138/made>

³ <http://www.legislation.gov.uk/ukxi/2009/3015/article/166/made>

⁴ <http://www.legislation.gov.uk/ukxi/2009/3015/article/167/made>

(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 person in charge of a small unmanned aircraft may only fly the aircraft if reasonably satisfied that the flight can safely be made.

(3) The person in charge of a small unmanned aircraft must maintain direct, unaided visual contact with the aircraft sufficient to monitor its flight path in relation to other aircraft, persons, vehicles, vessels and structures for the purpose of avoiding collisions.

(4) The person in charge of a small unmanned aircraft which has a mass of more than 7kg excluding its fuel but including any articles or equipment installed in or attached to the aircraft at the commencement of its flight, must not fly the aircraft:

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

(b) within an aerodrome traffic zone 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; or

(c) at a height of more than 400 feet above the surface unless it is flying in airspace described in sub-paragraph (a) or (b) and in accordance with the requirements for that airspace.

(5) The person in charge of a small unmanned aircraft must not fly the aircraft for the purposes of aerial work except in accordance with a permission granted by the CAA.

167 Small unmanned surveillance aircraft

(1) The person in charge of a small unmanned surveillance aircraft must not fly the aircraft in any of the circumstances described in paragraph (2) except in accordance with a permission issued by the CAA.

(2) The circumstances referred to in paragraph (1) are:

(a) over or within 150 metres of any congested area;

(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 person in charge 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 person in charge of the small unmanned surveillance aircraft or a person under the control of the person in charge 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.

The application of the ANO to UAS operations is explained in a guidance document written by the CAA called *CAP 722, Unmanned Aircraft System Operations in UK Airspace*⁵. CAP 722 describes the airworthiness and operational standards for UAS operations in the UK.

Aviators, including UAS operators, need to comply with the Standardised European Rules of the Air (SERA) Regulation (EU) 923/2012⁶ and the supplementary Rules of the Air Regulations 2015⁷.

Permission for Aerial Work

A person wishing to operate a UAS for non-commercial or hobby purposes within the restriction of Articles 166 and 167 does not require a specific licence or authorisation. In accordance with Articles 166 and 167, a UAS operator must however request a “Permission for Aerial Work” (PFAW) from the CAA if it plans to:

- fly the aircraft on a commercial basis (i.e. conducting “Aerial Work”); or
- fly a camera/surveillance fitted aircraft within Congested Areas or closer than the distances listed within Article 167 to people or properties (vehicles, vessels or structures) that are not under its control.

Thus, the CAA issue a “permission” for UAS use, not a “licence”.

The definition of “Aerial Work” should be construed widely. The ANO defines Aerial Work as “*any purpose... for which an aircraft is flown if valuable consideration is given or promised in respect of the purpose of the flight*”⁸ and defines “valuable consideration” as “*any right, interest, profit or benefit, forbearance, detriment, loss or responsibility accruing, given, suffered or undertaken under an agreement, which is of more than a nominal nature*”⁹. The Summary of the Meaning of Commercial Air Transport, Public Transport & Aerial Work states that valuable consideration “*has a very wide meaning, including the provision of goods and services*”¹⁰. There are some limited exemptions for “in house” research or development flights but these should be construed narrowly.

Obtaining a Permission for Aerial Work

As noted above, at the present time there are no UAS pilot licences recognised in aviation law. In the UK, the CAA requires each potential UAS operator that will be conducting Aerial Work to demonstrate pilot competence before issuing a PFAW (see IN–2015/008 “UK National Qualified Entity Approvals and Pilot Competency Requirements”¹¹).

A PFAW must be renewed annually. There is no requirement to renew a pilot qualification annually so long as the pilot’s flight experience is up-to-date (generally considered to be at least two hours’ flying every three months).

If an operator wishes to fly outside the restrictions of a standard PFAW, particularly if it wishes to fly a UAS with a MTOM of 7-20Kg in Congested Areas or for flight at greater heights or closer than standard distances, the operator must obtain an Operational Safety Case (OSC) formerly called a “CAOSC” permission from the CAA. The OSC process can be time consuming and relatively expensive (depending on the permissions required), an extended documentation manual must be drafted with evidence of pilot experience and detailing the enhanced safety elements on the UAS platform. OSC is a relatively new procedure that was launched by the CAA in early 2015 under IN–2014/184¹² (Small Unmanned Aircraft: Congested Areas Operating Safety Case (CAOSC)). A handful of OSC have been issued; one UK-based company has recently been granted an extraordinary permission under an OSC to fly in built up areas, to within 10m of the public, to 600ft day and night.

⁵ <https://www.caa.co.uk/application.aspx?catid=33&pagetype=65&appid=11&mode=detail&id=415>

⁶ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:281:0001:0066:EN:PDF>

⁷ <http://www.legislation.gov.uk/uksi/2015/840/made>

⁸ <http://www.legislation.gov.uk/uksi/2009/3015/article/259/made>

⁹ <http://www.legislation.gov.uk/uksi/2009/3015/article/255/made>

¹⁰ <https://www.caa.co.uk/default.aspx?pageid=8791>

¹¹ <http://www.caa.co.uk/docs/33/InformationNotice%20V12015008.pdf>

¹² <https://www.caa.co.uk/application.aspx?catid=33&pagetype=65&appid=11&mode=detail&id=6497>

UAS in Congested Areas

Under Article 138 of the ANO, operators of UAS must not recklessly or negligently cause or permit their aircraft to endanger any person or property. Article 255 of the ANO defines the meaning of “Congested Area” as any area in relation to a city, town or settlement that is substantially used for residential, industrial, commercial or recreational purposes.

Small UAS do not currently have any recognised design, certification or other airworthiness standards and therefore operational restrictions have been established that limit the circumstances in and locations at which the aircraft can be operated. Each specific limitation can only be varied or exempted in accordance with a permission or exemption granted by the CAA. For operations in Congested Areas, an operator should apply to the CAA for permission to fly a camera-equipped UAS:

- over or within 150 metres of any Congested Area;
- over or within 150 metres of an organised open-air assembly of more than 1,000 persons; and/or
- when not engaged in take-off or landing, within 50 metres of any person, vessel, vehicle or structure which is not under the control of the person in charge of the aircraft (during take-off or landing this may be reduced to 30 metres or less if attendant persons are under the control of the person in charge of the aircraft).

The “standard” CAA permission for UAS with MTOM of 7 kg or less gives an automatic exemption that allows flight within Congested Areas to within 50 metres of persons, structures etc. (or within 30 metres if the persons are under the control of the person in charge of the aircraft). This category cannot fly within 150 metres of open-air assemblies of 1,000 people or more.

Flights directly overhead persons and vehicles will not be allowed at any height in a Congested Area, or otherwise, unless these vehicles and persons are under the control of the person in charge of the UAS. Persons under the control of the person in charge of the aircraft can generally be defined as persons:

- solely present for the purpose of participating in the UAS flight operation; or
- under the control of the event or site manager who can reasonably be expected to follow directions and safety precautions to avoid unplanned interactions with the UAS. This could include building-site or other industrial workers, film and TV production staff and any other pre-briefed, nominated individuals with an essential task to perform in relation to the event.

The procedures adopted by UAS operators should address all relevant aspects of the Congested Areas they intend to operate within, taking into account any special circumstances or local conditions. The CAA Information Notice Number: IN-2014/190¹³ states that such measures may include but not be limited to:

- **Segregation.** Segregating the activities from public interference by placing physical barriers and cordons, or using other built/natural features that effectively separate the UAS operation from the general public.
- **Crowd control.** Marshalling or other active crowd control measures that restrict access to the area within which the UAS is operating.
- **Utilisation of other agencies.** Liaising with the Police, local authorities and other controlling agencies/organisation to gain official road closures, traffic cessation or site access restrictions.

Note: These measures should ideally be proportionate to the risk posed by the UAS, bearing in mind the limited flight times and size and weight of the aircraft. Temporary restrictions may suffice in some cases. Restrictions that would be suitable for a full-size aircraft such as a helicopter in most cases would not be applicable to a UAS.

¹³ www.caa.co.uk/docs/33/InformationNotice2014184.pdf

- **Wind and turbulence.** Taking account of changes of wind strength and direction at varying heights above the surface. Windshear, 'rotor' and 'curl-over' effects may be present at any point on the planned flight path caused by interactions between buildings and strong winds or when transitioning from flight over a land to a water surface.
- **Radio Frequency (RF) interference.** Pilots should take account of the possible reduction in operating range in an urban environment due to the heavy use of communications (mobile telephone, WiFi etc.) equipment and other sources of electromagnetic spectrum/RF interference. Mitigation for the consequences of weak or lost GPS signal due to masking by buildings should be considered along with the general RF saturation level. The use of a spectrum analyser is recommended to assist in assessing the level of local electromagnetic and RF congestion in the 2.4 GHz or 35 MHz frequency range.
- **Emergency procedures.** UAS emergency procedures planned to be implemented during controller/transmitter/loss of GPS guidance failure modes should be able to be put into effect without breaching the minimum separation distances or flying directly overhead persons/vehicles. An automatic 'Return-to-Base' feature should not cause a hazard to anyone off the nominal flight path; this may limit the UAS to mainly vertical flight paths directly above the launch point.
- **Test flights.** It is desirable to conduct limited test flights (hover controllability check) and other systems tests at the launch point before committing to the full flight profile. The integration and correct set-up of the camera and gimballed-mount should also be checked at this time to avoid unnecessary calibration flights.

The procedures and limitations on the use of the UAS that will be used to establish these control measures should be stated in the UAS operators' operations manual.

Small Unmanned Aircraft Operations within London

The CAA issued Information Notice Number: IN-2014/190¹⁴ on 21 November 2014. The Information Notice sets out matters relating to London Controlled Airspace, Aerodrome Traffic Zones and Restricted Areas EG R157, R158 and R159:

- London Heathrow and London City airports exert a major influence over the characteristics of London airspace and often require that any aircraft operating low-level Visual Flight Rules (VFR) flights adhere to notified routes and procedures to avoid traffic conflict. This is particularly true of VFR helicopter flights in and around London, which are often under active control and confined to a route-structure with changing altitude limitations. Information on this low-level VFR helicopter route structure is provided in the London Heathrow (EGLL) entry in the AD section of the Integrated Aeronautical Information Publication (IAIP) and portrayed on Helicopter Routes in the London Control Zone chart (Scale 1: 50,000, Series GSGS 5542). Operators are strongly advised to have a current copy of this chart available when on-site.
- In addition to the helicopter route structure and information on London Heathrow and London City, the AD3 section of the IAIP also includes data and charts for London Heliport (EGLW). The London Heliport Aerodrome Traffic Zone (ATZ) comprises a 2 NM circle from the surface to 2,000 feet and has an associated Local Flying Area (LFA) to the south from the surface up to 1,000 feet. The airspace dedicated to London Heliport may well cover areas where SUA wish to fly including the River Thames and riverside developments. UAS should fly no higher than 300 feet when operating directly below the London Helicopter routes, whether on land or over the River Thames.
- London also has several unlicensed helicopter landing sites including hospital helipads, the Vanguard helipad at the Isle of Dogs, as well as numerous Police helicopter and air ambulance flights, aircraft of which may loiter at low-level or land and take off from any of the Capital's streets or parks. All of these types of helicopter operations may therefore be affected by UAS operations particularly when approaching to land or departing from a site; UAS operators must take active precautionary measures to avoid creating a collision risk.
- The Air Navigation (Restriction of Flying) (Hyde Park) Regulations 2004, Air Navigation (Restriction of Flying) (City of London) Regulations 2004 and Air Navigation (Restriction of Flying) (Isle of Dogs)

¹⁴ www.caa.co.uk/docs/33/InformationNotice2014184.pdf

Regulations 2004 within CAP 393 lay down restrictions on aircraft operations (which include SUA) within three defined airspace areas: EG R157 (vicinity of Hyde Park), EG R158 (vicinity of the City of London) and EG R159 (vicinity of the Isle of Dogs). These Restricted Areas are described in the IAIP at ENR 5.1 and are marked on current VFR charts. The restrictions require, with certain exceptions, that no aircraft shall fly below 1,400 feet Above Means Sea Level (AMSL) within these areas unless in accordance with an Enhanced Non-Standard Flight (ENSF) clearance issued by the appropriate ATC unit.

The procedure for gaining an ENSF clearance for these Restricted Areas is described at IAIP ENR 1.1, paragraph 4.1.6 and the clearance is initially granted by NATS. Operators can utilise the web-based application process at the NATS website as above and will then need to comply with any conditions imposed by the clearance. Operators should note that the ENSF process also involves security considerations that would apply to any flight by a UAS whether or not engaged in aerial work or equipped for surveillance or data acquisition. The ENSF process may take up to 28 days before the grant of an approval.

Liability

Section 76 of the UK Civil Aviation Act 1982¹⁵ provides for strict owner or operator liability for surface damage (such as injury to an individual or damage to property) caused by manned aircraft (strict liability is the imposition of liability on a party without needing to find fault and where the claimant need only prove that the wrong occurred and that the defendant was responsible). This regime can be extended to cover remotely piloted UAS use. This means that in the event of a UAS accident causing loss or injury on the ground, liability is channelled through the owner or operator of the UAS and the victim will be compensated by the operator (assuming the operator can be identified and it has sufficient insurance or assets).

Despite this principle, the injured party still has the ability to bring an action against any other parties who may be responsible under, for instance, ordinary principles of tort law or product liability. Equally the owner or operator of the UAS may seek recourse against any other party responsible for the incident.

The European Product Liability Directive (1999/34/EC)¹⁶ applies to manufacturers and importers of UAS. This Directive establishes the principle of liability without fault applicable to European producers. Where a defective product causes damage to a consumer, the manufacturer or importer may be liable.

In the event of an air-to-air incident the established principle in aviation law is not to apportion blame on a strict liability basis but to deal with such incidents on the basis of fault.

These principles can be confidently extrapolated from manned aviation practices when dealing with UAS that are remotely piloted and within visual line of sight.

Insurance obligations

In Europe, Regulation (EC) No 785/2004 of the European Parliament and of the Council of 21 April 2004 on insurance requirements for air carriers and aircraft operators¹⁷ sets out the insurance obligations for all aircraft operators (including UAS). It requires that all commercial UAS operations purchase third party liability insurance.

Regulation (EC) 785/2004 defines limits for the minimum amount of third party liability insurance required by an operator based on the mass of the aircraft on take-off. For UAS weighing less than 500kg the minimum cover required is SDR 750,000 third party liability insurance (SDR means "Special Drawing Rights", which are supplementary foreign exchange reserve assets defined and maintained by the International Monetary Fund). In the event of an accident this level of cover is likely to be too low to cover significant losses and therefore typically commercial UAS insurance policies provide cover of £10 million. Such insurance is available through several specialist brokers.

Under Regulation (EC) 785/2004, persons operating model aircraft hobby UAS weighing less than 20kg are not required to have third party liability insurance.

Data protection and privacy

¹⁵ <http://www.legislation.gov.uk/ukpga/1982/16/section/76>

¹⁶ <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:l32012>

¹⁷ <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32004R0785>

There is no specific legislation in European Member States on the data protection implications of UAS use. The relevant legal framework is the Data Protection Directive 95/46/EC and a patchwork of other laws such as national legal provisions applicable to CCTV systems. The right to privacy and the right to freedom of expression are both considered fundamental to a democratic society. These rights are both enshrined in the European Convention on Human Rights (ECHR) and incorporated into UK law via the Human Rights Act 1998. The Information Commissioner¹⁸, the UK data protection regulator, has stated that UAS use may infringe a citizen's right to privacy and a private life if the UAS is used intrusively.

In the UK, the Data Protection Act 1998 (the "DPA") protects peoples' information privacy but also recognises the importance of freedom of expression, aiming to strike a fair balance. The DPA focuses on an individual's right to privacy and is concerned with processing of information from which a living individual can be identified ("personal data"). The DPA has 8 key data protection principles. These principles apply to all processing of personal data (unless an exemption or derogation is available, such as the "household exemption" where personal data is processed by an individual for the purposes of that individual's personal, family or household affairs only, including recreational purposes (section 36 of the DPA) and the "journalistic exemption" under sections 32(1) and (2) of the DPA which provides that organisations that process personal data may be exempt from many of the obligations under the DPA if personal data is processed for the special purposes of journalism, literature and art). In certain circumstances, photographs and film may constitute personal data, particularly if they are held along with other personal data about the individual, and may even be said to constitute sensitive personal data.

The UK Information Commissioner's Office (the "ICO") issued guidance on UAS use in a document called "In the picture: A data protection code of practice for surveillance cameras and personal information"¹⁹, it also has a dedicated page on its website for UAS use²⁰. The report acknowledges the potential privacy and data protection risk posed by UAS use and provides guidance to operators, manufacturers, policy makers, regulators and others about how to comply with the law. It includes practical precautions such as conducting Privacy Impact Assessments (see below), informing the public when flying and establishing procedures for the safe processing of data that is captured or recorded by UAS use.

Police forces are also starting to consider how to deal with a rise in complaints they are receiving from the public about small UAS use over residential areas. During the recent inquiry into the civil use of UAS by the House of Lords' Internal Market, Infrastructure and Employment EU Sub Committee, Chief Inspector Nick Aldworth of the Metropolitan Police gave oral evidence that "*the law of privacy clearly does not exist in criminal terms, but there are specific offences under the Sexual Offences Act, for example, which we could overlay if it was used in that context for voyeurism specifically. There are other offences that we are looking at to see whether we could overlay them*"²¹.

Privacy Impact Assessments (PIA)

A PIA is a process for evaluating a proposal to identify its potential effects upon privacy and data protection compliance, to examine how any detrimental effects might be overcome and to ensure that new projects comply with data protection principles. In the UK, the DPA does not oblige organisations to conduct PIAs, but the ICO has said they are useful tools for organisations to use in order to help them comply with the requirements set out in the DPA. Conducting a PIA is a good practice way for a UAS operator to help flag issues that may otherwise have been missed and allow it to make changes to the way it intends to process or otherwise handle personal data to reduce or manage any risks to privacy. It is possible that organisations who undertake PIAs can also hope to be treated more leniently by regulators (such as the ICO) if they experience a data protection breach and are subject to enforcement action. There is an understanding by the regulator that not all data breaches are preventable. It is possible to show by a PIA that an organisation assessed the risks of processing personal data, took measures to mitigate those risks, or otherwise identified the reasons why it decided to proceed with certain projects - despite data protection risks being present. Looking forward, the new General Data Protection Regulation²² (still in discussions, and due to come into effect around 2016/17) looks set to require many organisations to undertake PIAs by law.

Spectrum

¹⁸ <http://www.publications.parliament.uk/pa/ld201415/ldselect/lddeucom/122/12209.htm>

¹⁹ <https://ico.org.uk/media/for-organisations/documents/1542/cctv-code-of-practice.pdf>

²⁰ <https://ico.org.uk/for-the-public/UAS/>

²¹ <http://www.parliament.uk/documents/lords-committees/eu-sub-com-b/CiviluseofRPAS/EU-Sub-Committee-B-Civil-use-of-Remotely-Piloted-Aircraft-Systems.pdf>

²² http://ec.europa.eu/justice/data-protection/document/review2012/com_2012_11_en.pdf

The wireless or radio frequency spectrum is the range of frequencies within the electromagnetic spectrum, above the audio range and below visible light, which can be used to transmit voice, video and data, that is, 3kHz to 300GHz. Radio frequency spectrum is used for communication between a UAS's ground control station and the UAS platform and also to transmit data between the instruments on the UAS, such as cameras, and the data receiver on the ground. Most civilian UAS operators currently use the already congested industrial, scientific and medical (ISM) radio bands 2.4Ghz and 5.8Ghz frequencies designated for amateur radio. Unencrypted data links are particularly vulnerable to jamming, interception and manipulation. There are clear cyber security risks that may arise because a UAS could be hacked, its data link or live feed intercepted, or the aircraft could be "spoofed" during flight.

Trespass and nuisance

It is easy to fly and for a UAS to hover over someone's property. The question of whether this might amount to trespass or nuisance is complex.

Pickering v Rudd (1815) 4 Camp. 219 gave an early insight into what may or may not constitute trespass of airspace. Lord Ellenborough expressed the opinion that it would not be a trespass to pass over a man's land in a balloon and that it was not a trespass to fire a bullet across a field but if that bullet were to fall on the ground in the field then it would be trespass; also that "Whether the action may be maintained cannot depend upon the length of time for which the superincumbent air is invaded".

Bernstein of Leigh v Skyviews & General Ltd, [1978] 1 QB 479 is perhaps the most relevant case that could be cited to allow UAS operators to fly over another's property. A photography company used manned aircraft to take pictures of peoples' houses and then sell them those photos. The judgement overturned the ancient 13th century Latin maxim *Cujus est solum ejus est usque ad coelum et ad inferos* (for whoever owns the soil, it is theirs up to heaven and down to hell) in relation to airspace. It established that the rights of a property owner are restricted in relation to the airspace above his land to such a height as is necessary for the ordinary use and enjoyment of his land and therefore the actions of the photography company did not constitute a trespass. It also held that the actions of the photography company did not constitute a nuisance as only a single photo was taken; however, the court warned that if a claimant was subjected to the harassment of constant surveillance from the air, accompanied by the photographing of his every activity then this would amount to a "monstrous invasion of privacy" and an actionable nuisance for which relief would be given.

Anchor Brewhouse Developments Ltd v Berkley House (Docklands Developments) Ltd (1987) 284 E.G 625 can be contrasted to *Skyviews* as in this instance the court held that the booms of cranes that swung over the claimant's property did in fact constitute a trespass for which they were entitled to injunctive relief. Scott J did not wish to dissent from *Skyviews* but instead differentiated the case as in his opinion certainty is or ought to be one of the common law characteristics of trespass and while it can be achieved for invasion of airspace by tower cranes and other structures this is not the case for overflying objects and, arguably, therefore UAS.

Based on the existing case law, it may be argued that flying a UAS above another's property at a height so as to not interfere with that party's ordinary use of the land is unlikely to constitute a trespass. In addition to this, photographing of that person's property on occasion is unlikely to constitute nuisance. Matters do become more complex and less certain however where a UAS is flying over another's property on multiple occasions or even hovering in one place and taking multiple pictures. The courts have not drawn a line as to what exactly will constitute trespass or nuisance by UAS in these instances and therefore best practice is to ensure that the landowner's permission is obtained.

The position in relation to take off and landing is clearer; CAP 722 states that it is important for UAS operators to have permission from the owner of the land where a UAS takes off and lands²³.

Enforcement, penalties and sanctions

Breach of the ANO is a criminal offence in the UK. Until recently the majority of prosecutions against errant UAS operators in the UK had been conducted by the CAA. The Metropolitan Police Service has been charged with enforcing legislation against the misuse of UAS in London and has stated that the following sets of legislation may be relevant for pursuing criminal prosecutions:

- Breach of Article 166 of the Air Navigation Order 2009 - Legal outcome: Arrest, prosecution and fine up to £5,000.

²³ <https://www.caa.co.uk/application.aspx?catid=33&pagetype=65&appid=11&mode=detail&id=415>

- Breach of Article 167 of the Air Navigation Order 2009 - Legal outcome: Arrest, prosecution and fine up to £5,000.
- Aggravated trespass under Section 68 of the Criminal Justice and Public Order Act 1994²⁴ - Legal outcome: Arrest, prosecution and three months imprisonment or a fine of £2,500.

The Metropolitan Police Service has stated that there are also aggravating factors that the courts may consider when sentencing, these include:

- Results in injury.
- Results in damage.
- Persistent offending.
- Flown in the Government Security Zone (GSZ) - the area of central London containing major government and public buildings.
- Flown inside a public building.
- Within or proximate to aviation assets.
- Flown over state or ceremonial event.
- Obtains private information.
- Flown under a helicopter flight path.

The first successful prosecution by the CAA for the dangerous and illegal flying of an unmanned aircraft was *Civil Aviation Authority v Robert Knowles*²⁵. Knowles was found to have flown a UAS in restricted airspace over a nuclear submarine facility, as well as allowing the device to fly too close to a vehicle bridge. Both offences breached the UK's Air Navigation Order ("Flying a small unmanned surveillance aircraft within 50 metres of a structure" (Article 167 of the Air Navigation Order 2009) and "Flying over a nuclear installation" (Regulation 3(2) of the Air Navigation (Restriction of Flying)(Nuclear Installations) Regulations 2007)). Knowles was found guilty on Tuesday 1 April 2014 and fined £800 at Furness and District Magistrate Court. The CAA was also awarded costs of £3,500.

The police have now taken more of an active role in prosecutions and there have been a handful of prosecutions for illegal UAS use. One of the most recent cases is that of Mr Wilson in relation to 17 UAS offences under the ANO relating to flying a small UAS over a number of Premier League football grounds, the Houses of Parliament, the Queen Victoria Memorial at Buckingham Palace and along the North Bank of the River Thames in London. Specifically the charges relate to breaches of Articles 166 (3) and 167(1) & (2)(a) of the Air Navigation Order 2009.

Article 166(3) requires a UAS pilot to "maintain direct, unaided visual contact with the aircraft sufficient to monitor its flight path in relation to other aircraft, persons, vehicles, vessels and structures for the purpose of avoiding collisions" i.e. maintain visual line of sight (VLOS) with the UAS. Articles 167(1) & (2)(a) say that a UAS pilot must not fly over or within 150 metres of any Congested Area except with a permission issued by the CAA. As noted above, a "Congested Area" "in relation to a city, town or settlement, means any area which is substantially used for residential, industrial, commercial or recreational purposes" (Article 255 of the Air Navigation Order 2009).

If a UAS operator contravenes the Data Protection Act 1998, the Commissioner has the power to impose a fine of up to a maximum of £500,000 (section 55A of the Act); additionally such action may also result in damaging adverse publicity for the operator.

Contact
Barking and Dagenham Film Office

²⁴ <http://www.legislation.gov.uk/ukpga/1994/33/part/V/crossheading/disruptive-trespassers>

²⁵ <http://www.caa.co.uk/application.aspx?appid=7&mode=detail&nid=2348>

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