

An introduction to unmanned aircraft systems

Information about different types of flight and the regulations that apply

Unmanned Aircraft Systems (UAS) are a new and evolutionary component of the aviation system, offering several new and exciting opportunities, as well as a number of challenges.

Unmanned aircraft come in a variety of shapes and sizes, ranging from small handheld types up to large aircraft, potentially a similar size to airliners and, just like manned aircraft, they may be of a fixed wing design, rotary winged, or a combination of both.

Unmanned Aircraft may also be referred to as:

- Drones
- Remotely Piloted Aircraft Systems (RPAS)
- Unmanned Aerial Vehicles (UAV)
- Model Aircraft
- Radio Controlled Aircraft

Regardless of the name used, they all share the common characteristic that the person responsible for piloting the aircraft is not onboard it. Just like any other aircraft however, an unmanned aircraft must always be flown in a safe manner, both with respect to other aircraft in the air and also to people and properties on the ground.

The CAA's primary aim is to enable the full and safe integration of all UAS operations into the UK's total aviation system.

Types of operation

The key first principle when discussing the regulation of any UAS is to determine how it is being operated and what process is being used to avoid it colliding with other aircraft, objects or people, which is the primary responsibility of anyone who flies any aircraft.

UAS are either operated:

Within the Visual Line Of Sight (VLOS) of the person flying the aircraft

This means that the aircraft must be able to be clearly seen by the person flying it at all times when it is airborne. By doing this, the person flying the aircraft is able to monitor

its flight path and so manoeuvre it clear of anything that it may collide with. While corrective spectacles can be used to look at the aircraft, the use of binoculars, telescopes, or any other image enhancing devices are not permitted.

In simple terms, the aircraft must not be flown out of sight of a human eye.

Beyond the Visual Line Of Sight (BVLOS) of the person flying the aircraft

If the person flying the aircraft is unable to maintain direct unaided visual contact with it while it is airborne, then an alternative method of collision avoidance must be employed in order to ensure that it can still be flown safely.

BVLOS flight will normally require either:

- A technical capability which is equivalent to the ability of a pilot of a manned aircraft uses to 'see and avoid' potential conflicts - this is referred to as a Detect and Avoid (DAA) capability
- A block of airspace to operate in which the unmanned aircraft is 'segregated' from other aircraft - because other aircraft are not permitted to enter this airspace block, the unmanned aircraft can operate without the risk of collision, or the need for other collision avoidance capabilities
- Clear evidence that the intended operation will have 'no aviation threat' and that the safety of persons and objects on the ground has been properly addressed.

What is the purpose of your flight?

Your flight will broadly fall into one of three types as follows:

- Recreational - where the flight is being conducted as a pastime purely as an 'enjoyment' or sporting activity
- Commercial - where the flight is being conducted for business purposes in return for specific remuneration or other form of valuable consideration.

(a specific definition of a commercial operation is contained within the 'Commercial Operations with Small Drones' section)

- Private/Non-Commercial - flights that are either:

Not considered to be recreational, or flown for business purposes, but without any remuneration or other valuable consideration being involved

While the regulations are the same for all types of flight, there are some specific additional requirements placed on commercial operations involving small unmanned aircraft.

Within the UK, UAS are currently split into separate categories according to their weight (or mass) as follows:

- 20kg or less - Small Unmanned Aircraft - this class covers all types including traditional remotely controlled model aeroplanes, helicopters or gliders, as well as the increasingly popular multirotor 'drones' and remotely controlled 'toy' aircraft. They normally have a reduced level of regulation imposed on them which is aimed at being proportionate to the risk and complexity of their types of operation.

- >20kg to 150kg - Light Unmanned Aircraft - this class covers the larger and potentially more complex types of unmanned aircraft and large model aircraft. They are subject to all aspects of UK aviation law, although it is accepted that they will require to be exempted from many of the requirements. Approval to operate is normally given following the submission of a Safety Case to the CAA, which is essentially a package of information which demonstrates to us that the unmanned aircraft can be flown safely.

- Over 150kg - UAS - unmanned aircraft within this class will normally be subjected to the same level of regulatory approval requirement as would be used for traditional manned aircraft. They will normally be certificated by the European Aviation Safety Agency (EASA), although there is also scope to make approvals for UK only operations via the same process that is used for Light UAS.

Airspace restrictions for unmanned aircraft and drones

Information about prohibited areas, restricted areas and danger areas

In line with long-standing international agreements, the UK has a well-established system for notifying blocks of airspace where particular limitations are placed on the flight of all aircraft (manned and unmanned). Such areas are typically either: Prohibited Areas, Restricted Areas or Danger Areas (military ranges etc). Other airspace may have temporary restrictions imposed at specific times, either as a result of a longer term pre-planned event, or in reaction to a short notice occurrence, such as an emergency incident.

Permanent Prohibited, Restricted or Danger areas are marked on aviation 'Visual Flight Rules' (VFR) flight charts (maps) which are readily available for purchase online or at local flight schools/clubs. In addition, proprietary VFR flight-planning and navigation

software and apps contain such information in their mapping databases. A free, limited, version of such software is available here: www.skydemonlight.com. Other Apps are also available, such as the 'Drone Assist' App which can be accessed through the Dronesafe website.

It is occasionally necessary to institute temporary restrictions of airspace ('Restricted Area - Temporary'). These are usually shared via Aeronautical Information Circulars or, if done at very short notice, via the Notice to Airmen (NOTAM) system. These temporary restrictions are also listed on the AIS website. It is important to note that these restricted areas apply to all aircraft including drones, regardless of weight or height of operation.

Flight restrictions around aerodromes

Flights of drones around airfields or airports that are designated as 'protected aerodromes' are tightly restricted. Drones of any size must not be flown within the Flight Restriction Zone (FRZ) of a protected aerodrome, without appropriate permission.

The Flight Restriction Zone consists of the following three elements:

-The Aerodrome Traffic Zone: A 2 or 2.5 nautical mile radius 'cylinder' around the aerodrome, extending 2000 ft above ground level, centred on the longest runway.

-Runway Protection Zones: A rectangle extending 5Km from the threshold of the runway away from the aerodrome, along the extended runway centreline, and 500m either side- also to a height of 2000 ft above ground level.

-Additional Zones: In the case where the 1Km boundary of an aerodrome extends beyond the Aerodrome traffic zone, and so would not be protected by it, the flight restriction zone will include a 'bump' (the airfield boundary + 1KM) to protect this part of the aerodrome.

The exact shape of the Flight Restriction Zone varies depending on the specific aerodrome that it protects. Prior to flight, remote pilots should check to ensure that they are operating well outside these areas. This may be obtained from official sources:

- The Dronesafe website
- The UK Aeronautical Information Publication
- The UK Military Aeronautical Information Publication

The Dronesafe website contains an interactive map, which shows the all the Aerodrome FRZs.

Other UAS mapping and planning websites exist, which contain this information as well.

The list of protected aerodromes also includes heliports, these only comprise the ATZ portion of the FRZ (and additional zones where applicable), i.e. do not include runway protection zones.

In the case of a protected aerodrome without an ATZ, the FRZ includes an ATZ shaped FRZ, with a 2nm radius (regardless of the runway length).

Permission must be obtained from the relevant person before a small drone may fly within a Flight Restriction Zone. This person is usually whoever is 'in the Tower' (i.e. an Air Traffic Controller or Airfield Flight Information Service Officer'. If neither of these are available, because the airfield has closed or there was no ATC/AFIS provision in the first place, then permission must be sought from the Aerodrome Operator.

Controlled Airspace and Aerodrome Traffic Zones (ATZ)

There are no separate regulations in place regarding the flight of drones in controlled airspace below 400 ft (Class A,B,C,D,E). Restrictions involving the flight of UAS within Aerodrome Traffic Zones are described in Flight restrictions around aerodromes. Drone pilots are reminded of all other responsibilities, including the Air Navigation Order requirements, that any person in charge of a small drone:

- May only fly the aircraft if reasonably satisfied that the flight can safely be made and;
- Must maintain direct, unaided visual contact with the aircraft ...for the purpose of avoiding collisions. Note: The use of normal corrective spectacles is acceptable within the term 'unaided'

If operating above 400ft within controlled airspace, the permission to do so granted by the CAA will state that appropriate permission from the relevant Air Traffic Service Unit (ATSU) must also be obtained.

Royal helicopter flight airspace

When royal flights in helicopters take place airspace known as a Royal Low-Level Corridor (RLLC) is established between the departure and arrival sites; the details of the flights, including the route and timings, are published by NOTAM and so will also be depicted on airspace mapping apps.

A RLLC encompasses the airspace five nautical miles either side of the intended track of the Royal helicopter, a five nautical mile 'circle' around the departure and arrival sites, and extends from the surface up to 1,000ft above the royal helicopter's highest planned transit altitude. RLLCs are also divided into 20 minute 'sectors', with checkpoint locations nominated at the start and end of each sector.

The key requirements for operators of small unmanned aircraft are to be aware of the flight, keep a good look out and maintain adequate separation from the royal helicopter; however, small unmanned aircraft operators are strongly advised to keep their aircraft at least one nautical mile horizontally clear of the departure and arrival sites during the published active periods (15 minutes before until 30 minutes after the planned departure/arrival time detailed in the NOTAM).

Other considerations to take into account before operating

The role of statutory bodies

The aviation regulations only address the flight safety aspects of the flight and they do not constitute permission to disregard the legitimate interests of other statutory bodies such as the Police and Emergency Services, the Highway Agency, local authorities or any other statutory body. As the range and scale of drone operations continues to grow, statutory bodies are increasingly aware of how drone operations will affect their areas of responsibility and are developing specific policy and guidelines.

In addition to aviation-specific legislation, it is already apparent that drone use, or the effects of drone use, may be construed to be encompassed within the remit of existing national and local legislation (e.g. public-order offences, ensuring pedestrian and vehicle rights-of-way, security and safety in public places and at schools, limits on recreational activities in public parks etc).

Any camera equipped drone operator who does not have an additional permission from the CAA, is restricted to remaining at least 150 metres from congested areas or any organised, open-air assembly of more than 1,000 people. Drone operators must not fly camera fitted drones within a distance of 50 metres of any person, vessel, vehicle or structure that is not under the control of the person in charge of the said aircraft (during take-off and landing this distance may be reduced to 30 metres). This means that each flight will carry a ground 'footprint' below the aircraft, within which there should be no uninvolved members of the public. This is difficult to achieve in a busy urban environment and will likely involve the drone operator making formal

arrangements with the relevant authority to temporarily restrict pedestrian and vehicular access or to restrict access to shops, dwellings and other property.

A congested area means, 'in relation to a city, town or settlement, any area which is substantially used for residential, commercial, industrial or recreational purposes'.

Drone operators should also be mindful of the requirements of Section 76(1) of the Civil Aviation Act 1982 in relation to trespass and nuisance, noting that they must comply, at all times, with the requirements of the Air Navigation Order.

Drones should be flown at a height over the property of another person which is 'reasonable' in all circumstances. Failure to do so could amount to trespass if the flight interferes with another person's ordinary use and enjoyment of land and the structures upon it.

Tethered unmanned aircraft

Guidance for operators

A tethered UAS/drone is one where the unmanned aircraft remains securely attached (tethered) via a physical link to a person, the ground or an object at all times while it is flying. The tether normally takes the form of a flexible wire or a cable and may also include the power supply to the aircraft as well.

Operations with a tethered UAS can be used as an efficient solution in a number of cases, for example where an operating area is restricted, or when the required flight time exceeds the normal endurance of a free flying battery powered aircraft.

Tethered UAS are subject to the same basic operating regulations as all other unmanned aircraft and, where necessary, are subject to the same approvals process, but the fact that the operation is tethered can be used as a significant mitigation factor when applying for an operating approval, thus greatly simplifying the overall process.

Recreational drones and private flights

Recreational drone flights

How the regulations apply to you

- The regulations for recreational drone flights are contained within the Air Navigation Order 2016 (ANO) which is the primary document for all aviation regulations within

the UK. In order to keep the regulations at a proportionate level for these small drones, a set of specific, simpler, regulations apply to aircraft that have a mass of 20kg or less (which are termed 'small unmanned aircraft' within the ANO).

In simple terms, these regulations state that:

- You are responsible for flying your drone in a safe manner
- You must keep the drone in your direct sight at all times while it is flying, so that you can ensure that it does not collide with anything, especially other aircraft
- You must not endanger anyone, or anything with your drone, including any articles that you drop from it
- You must not fly more than 400ft above the surface. If flying over hilly/undulating terrain or close to a cliff edge, this may be interpreted as being a requirement to remain within a distance of 400ft from the surface of the earth, as shown in the picture below
- You must not fly within the Flight Restriction Zone of a protected aerodrome
- If your drone weighs more than 7kg, additional rules apply if you fly in certain types of airspace.

If your drone is fitted with a camera, there are also a number of additional limitations surrounding where you can fly it, and how close you can fly it to other uninvolved people or objects. In order to be able to fly within these areas, or closer than the minimum distances that are in the regulations, you must obtain prior Permission from the CAA to do so.

How to apply for a Permission.

The full regulations are shown below.

- *Article 241 – endangering safety of any person or property*

Article 94 – small unmanned aircraft: requirements

Article 94A – small unmanned aircraft; permissions for certain flights

Article 94B – small unmanned aircraft: Interpretation of expressions used in the definition of “flight restriction zone”

Article 95 – small unmanned surveillance aircraft

- *Article 94A - 400ft height limitation interpretation*

In aviation terms, 'height' means the vertical distance of an object (in this case the small unmanned aircraft) from a specified point of datum (in this case above the surface of the earth). To cater for the few occasions where a small unmanned aircraft is being flown over hilly/undulating terrain or close to a cliff edge, the 400 ft height above the surface requirement may be interpreted as being a requirement to remain within a 400 ft distance from the surface, as shown in the diagram below. For the purposes of Article 94A, this is considered to be an acceptable means of compliance with the legal requirement.

Remember that the limitation applies to 'heights above/distances from' the surface of the earth. It does not automatically apply to heights/distances from tall buildings or other structures: in such cases, an additional permission from the CAA will be required, which will invariably also require permission to operate within a congested area.

First Person View

Drones that are fitted with video cameras often provide an opportunity to downlink 'live' video to the person flying the drone either via a mobile phone, tablet computer or other screen, or even through video goggles - this capability provides the operator with a pseudo 'pilots eye view' from the drone itself and is generally given the term 'First Person view' (FPV).

However, the law [at ANO article 94(3)] requires that the person in charge of a drone must maintain direct unaided visual contact with the aircraft which is sufficient to monitor its flight path so that collisions may be avoided. This is obviously not possible if that person is wearing video goggles or otherwise constantly monitoring a display. Therefore, FPV flight is only permitted if the activity has been approved by the CAA. A General Exemption has been issued which allows an element of 'First Person View' (FPV) flight to be conducted. If you wish to conduct an FPV flight which cannot be accommodated within the terms of this General Exemption, then you will need to apply to the CAA for an Exemption to do so.

Note: Images captured by a camera and displayed on a flat screen afford the pilot little by way of depth perception and no peripheral vision. This can make it difficult for the pilot to accurately judge speed and distance and to maintain sufficient awareness of the area surrounding the aircraft to effectively 'see and avoid' obstacles and other aircraft - as a result, the use of FPV equipment is not an acceptable mitigation for Beyond Visual Line of Sight flight unless the relevant operator has received a specific approval to do so from the CAA.

Indoor use

The applicability of the regulations with regard to flights within buildings has been clarified recently. Under the CAA Act 1982, the Air Navigation Order is made for the purposes of regulating air navigation. Flights inside buildings have nothing to do with air navigation because they can have no effect on flights by aircraft in the open air. As a result, flights within buildings, or within areas where there is no possibility for the unmanned aircraft to 'escape' into the open air (such as a 'closed' netted structure) are not subject to air navigation legislation. Persons intending to operate drones indoors should refer to the appropriate Health and Safety At Work regulations.

Other Legitimate Interests

The CAA regularly receives queries regarding who may impose restrictions on drone use and the land from which they are piloted. The CAA can only provide information on its own regulations and permissions process and not those imposed by other bodies.

As set out in CAP 722, a CAA permission only addresses the flight safety aspects of the flight operation and does not constitute permission to disregard the legitimate interests of other statutory bodies such as the Police and Emergency Services, Highways England, Data Commission, Transport for London or local authorities. It may also be the case that more than one body has an interest in a proposed flight.

The CAA cannot provide advice on what is, or is not, a legitimate interest or whether restrictions or fees are being lawfully imposed by other authorities. However, any authority or regulatory body should be able to identify the specific laws, regulations or bye-laws that empower it to regulate the use of UAS, or more usually, the land from which they are operated, much as the CAA has set out the regulations that it applies, above. We therefore recommend that if you are unsure of whether a restriction imposed by a body legitimately applies to your flight, you request that information from the relevant authority or regulatory body.

UAS operators and remote pilots are also reminded that ANO Article 241 provides that a person must not recklessly or negligently cause or permit an aircraft to endanger any person or property.

Permissions and exemptions for drone flights

Information on when a permission is needed for recreational drone flights

The CAA operates a permissions and exemptions scheme which is designed to enable operations beyond the normal bounds of the regulations laid down within the Air Navigation Order (ANO), provided that the CAA is satisfied that this can be achieved in a safe manner.

Permissions and/or exemptions are valid for up to 12 months and are subject to an annual renewal. The CAA is required to make a charge for these.

A General Exemption has been issued which allows an element of 'First Person View' (FPV) flight to be conducted. The exemption covers the conditions that must be observed while employing this privilege can be found here: ORS4 No. 1274.

Article 95 of the ANO states that, if you wish to fly your camera fitted drone:

- Within 150m of either a congested area or an organized open air crowd of more than 1000 persons and / or
- Within 50m of people or properties/objects that are not under your control

Then you will need to obtain a Permission from the CAA in order to do so legally. Because the Permission will enable you to reduce the normal safety limits that have been set out for drone operations, the CAA must obviously be satisfied that you are able to do this safely.

We do this by:

- Asking you to tell us about your drone and how it works
- Asking you to tell us about how you intend to conduct your flight in a safe manner
- Asking you to provide us with evidence of your competency to fly your drone

The process that we use is the same one that must be followed by drone operators who wish to conduct commercial operations.

To get this Permission, you will need to:

- Demonstrate your piloting competence
- Demonstrate a sufficient understanding of aviation theory (airmanship, airspace, aviation law and good flying practice).
- Pass a practical flight assessment (flight test).

Additional details about pilot competence requirements are provided in the paragraphs below

- Develop basic procedures for conducting the type of flights you want to do and set these out in an Operations Manual.
- In addition, you will also need to provide us with an Operating Safety Case (OSC) to demonstrate that the intended operation is appropriately safe.

Note: An OSC is not normally required if the permission is only required to fly a small drone (20kg or less) within a congested area, but you still need to obtain a permission from the CAA.

Remote pilot competence requirements

Full details are contained within our guidance document CAP 722 including the requirements for pilot competence.

The CAA does not organize or run assessment courses but we approve commercial organizations, known as National Qualified Entities (NQEs) to do this assessment on our behalf.

Anyone interested in getting a CAA Permission should first contact one of the NQEs shown on our guidance for operators page in order to obtain the required proof of remote pilot competence. The NQE will generally help you develop an operations manual and will offer advice on completing the additional paperwork.

Some concessions from the full remote pilot competence requirements are available if you already have suitable aviation (piloting) qualifications such as previous model aircraft flying qualifications or a licence or certificate that allows you to fly in non-segregated UK airspace (PPL, gliding certificate, etc). At the present time suitable British Model Flying Association (BMFA) certificates are accepted and although not listed, equivalents from the Scottish Model Association and Large Model Association will also be accepted. Previous military flying experience may also be accepted, the general requirement being that the pilot already has qualifications or experience in flying an aircraft in non-segregated UK airspace (i.e. not limited to flying only within military ranges, training areas or on active military service overseas).

The full range of available concessions (acceptable alternative evidence of pilot competency) is set out in more detail in CAP 722.

Once you have met the requirements, please follow the guidance on how to apply and submit your application.

Model aircraft

Guidance on the regulations that apply to remote controlled model aircraft

- Remotely controlled model aircraft have been flown for many years in the UK. These models tend to be scaled down versions of real types of aeroplanes and helicopters. Many hobbyists tend to fly from specific, designated sites and as part of a club environment which is clearly the best way to learn and get most out of the hobby. However, 'solo' flight from other locations is also possible provided that the models are operated in accordance with the requirements of the law and are flown with respect to the safety of other people and aircraft.

The regulations for model aircraft flights are contained within the Air Navigation Order 2016 (ANO) which is the primary document for all aviation regulations within the United Kingdom. In order to keep the regulations at a proportionate level for smaller models, a set of specific, simpler, regulations apply to aircraft that have a mass of 20kg or less (which are termed 'small unmanned aircraft' within the ANO).

In simple terms, these regulations state that:

- You are responsible for flying your model aircraft in a safe manner
- You must keep the model aircraft in your direct sight at all times while it is flying, so that you can ensure that it does not collide with anything, especially other aircraft
- You must not endanger anyone, or anything with your model aircraft, including any articles that you drop from it
- You must not fly at a height greater than 400ft above the surface unless permitted to by the CAA - see further details below
- You must not fly within the Flight Restriction Zone of a protected aerodrome
- **Guidance for model aircraft clubs within the vicinity of aerodromes**

It is acknowledged that a number of aero modeller clubs operate within the vicinity of aerodromes, some within the ATZ. As described in the 2019 ANO amendment, the Flight Restriction Zone has been widened to the boundary of the ATZ and Runway Protection Zones. This is likely to now encompass some more clubs, which previously were not contained within FRZs. This now means that in order to operate, model aircraft pilots will require permission from the relevant aerodrome to be able to operate. It should be noted however, that this permission is not necessarily required on a 'per flight' basis, but may be issued on a more general basis by an air traffic service unit or aerodrome operator. This may be agreed by a letter of agreement/MoU or otherwise. The CAA recommends that aero modeller clubs near aerodromes establish a relationship with the aerodrome, with a view to facilitating a positive two-way dialogue.

•**Article 94A - 400ft height limitation interpretation**

In aviation terms, 'height' means the vertical distance of an object (in this case the small unmanned aircraft) from a specified point of datum (in this case above the surface of the earth). To cater for the few occasions where a small unmanned aircraft is being flown over hilly/undulating terrain or close to a cliff edge, the 400 ft height above the surface requirement may be interpreted as being a requirement to remain within a 400 ft distance from the surface, as shown in the diagram below. For the purposes of Article 94A, this is considered to be an acceptable means of compliance with the legal requirement.

Remember that the limitation applies to 'heights above/distances from' the surface of the earth. It does not automatically apply to heights/distances from tall buildings or other structures: in such cases, an additional permission from the CAA will be required, which will invariably also require permission to operate within a congested area.

The CAA recognises that a 400ft height limitation can be difficult to achieve for some aspects of model flying and we also acknowledge the good historical safety record that model aircraft flying has when operated under the 'best practice' offered through established model flying associations. In recognition of this, permission to operate above 400ft, under certain defined circumstances, has been issued to a number of UK Model Aircraft Associations for use by their members. Please contact your association or further details of the conditions within this permission.

Large Model Aircraft

Model aircraft with a mass of more than 20kg are termed 'Large Model Aircraft' - within the UK, large model aircraft may only be flown in accordance with an exemption from the ANO, which must be issued by the CAA. Full details on the process to be followed for Large Model Aircraft can be found in CAP658.

Regulations relating to the commercial use of small drones

A permission from the CAA is required for any commercial work with a drone

- Small unmanned aircraft are now widely available for commercial use. More popularly known as drones, just like many other devices, they can cause injury or damage if they are not used responsibly and so are subject to specific safety rules relating to the way they are operated, which are underpinned by UK law.

The regulations are contained within the Air Navigation Order 2016 (ANO 2016) and there are some specific additional steps that must be taken if a drone is being flown for commercial operations.

Anyone using a small drone needs to be aware of the regulations shown below.

Article 241 – endangering safety of any person or property

Article 94 – small unmanned aircraft: requirements

Article 94A – small unmanned aircraft; permissions for certain flights

Article 94B – small unmanned aircraft: Interpretation of expressions used in the definition of “flight restriction zone”

Article 95 – small unmanned surveillance aircraft

- A small unmanned aircraft is defined as ‘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’.

A commercial operation is defined as: ‘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;

- which is available to the public; or
- which, when not made available to the public,

In the case of a flight by a small unmanned aircraft, is performed under a contract between the SUA operator and a customer, where the latter has no control over the remote pilot

Or

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.'

The key elements in understanding this term are '...any flight by a small unmanned aircraft...in return for remuneration or other valuable consideration'.

The term 'available to the public' should be interpreted as being a service or commodity that any member of the public can make use of, or actively choose to use, (e.g. because it has been advertised or offered to someone).

Examples showing how commercial operations are defined are available in our guidance for small drone operators.

An 'SUA operator', in relation to a small unmanned aircraft, is the person who has the management of the small unmanned aircraft.

A congested area means, 'in relation to a city, town or settlement, any area which is substantially used for residential, commercial, industrial or recreational purposes'.

These rules have been established to provide a safe environment in which small drones can be flown without coming into conflict with manned aircraft and without risk to other people or properties.

You must have a Permission issued by the CAA before you conduct any commercial operations with your drone.

Indoor use - The applicability of the regulations regarding flights within buildings has been clarified recently. Under the CAA Act 1982, the Air Navigation Order is made for the purposes of regulating air navigation. Flights inside buildings have nothing to do with air navigation because they can have no effect on flights by aircraft in the open air. As a result, flights within buildings, or within areas where there is no possibility for the unmanned aircraft to 'escape' into the open air (such as a 'closed' netted structure) are not subject to air navigation legislation. Persons intending to operate drones indoors should refer to the appropriate Health and Safety At Work regulations.

Article 94A - 400ft height limitation interpretation

In aviation terms, 'height' means the vertical distance of an object (in this case the small unmanned aircraft) from a specified point of datum (in this case above the surface of the earth). To cater for the few occasions where a small unmanned aircraft is being flown over hilly/undulating terrain or close to a cliff edge, the 400 ft height above the surface requirement may be interpreted as being a requirement to remain within a 400 ft distance from the surface, as shown in the diagram below. For the purposes of Article 94A, this is considered to be an acceptable means of compliance with the legal requirement.

Remember that the limitation applies to 'heights above/distances from' the surface of the earth. It does not automatically apply to heights/distances from tall buildings or other structures: in such cases, an additional permission from the CAA will be required, which will invariably also require permission to operate within a congested area.

Non UK operators

If you are a drone operator from overseas and want to carry out work in the UK, the CAA will normally be able to grant permissions to foreign operators, on the basis that you are able to satisfy the same basic safety requirements that are required for UK based operators.

This will depend on the evidence of 'remote pilot competency' that the applicant is able to provide and the location(s) where the flying is to take place. Please note that the approvals/qualifications from other nations are not 'automatically' accepted as being valid. In order to fly in the UK, you must be in possession of a valid UK permission if the type of flight that you are conducting requires one. Each application is considered on its own merits, but we will take the details of your own national approval/qualification into account when determining your application and the conditions that are set within the permission.

Once you have met the requirements, please follow the guidance on how to apply and submit your application.

Information should also be supplied about the scope of the operation and where and when it will take place. In the majority of cases, only the 'standard' CAA permission is granted. Any aircraft weighing more than 20kg (44 lbs) is subject to a more involved process and are more difficult to approve.

All applications should be made as far in advance as possible.

Other Legitimate Interests

The CAA regularly receives queries regarding who may impose restrictions on drone use and the land from which they are piloted. The CAA can only provide information on its own regulations and permissions process and not those imposed by other bodies.

As set out in CAP 722, a CAA permission only addresses the flight safety aspects of the flight operation and does not constitute permission to disregard the legitimate interests of other statutory bodies such as the Police and Emergency Services, Highways England, Data Commission, Transport for London or local authorities. It may also be the case that more than one body has an interest in a proposed flight.

The CAA cannot provide advice on what is, or is not, a legitimate interest or whether restrictions or fees are being lawfully imposed by other authorities. However, any authority or regulatory body should be able to identify the specific laws, regulations or bye-laws that empower it to regulate the use of UAS, or more usually, the land from which they are operated, much as the CAA has set out the regulations that it applies, above. We therefore recommend that if you are unsure of whether a restriction imposed by a body legitimately applies to your flight, you request that information from the relevant authority or regulatory body.

UAS operators and remote pilots are also reminded that ANO Article 241 provides that a person must not recklessly or negligently cause or permit an aircraft to endanger any person or property.

Permissions and exemptions for commercial work involving small drones

Guidance on requirements and how to apply

- Permissions and/or exemptions are valid for up to 12 months and are subject to an annual renewal.

They allow flights within the UK subject to the conditions and limitations that are specified within the individual authorization document. However, the greater the amount of ‘freedom of operation’ that you require (in terms of locations, procedures and the duration of the permission), then the greater the amount of information you need to provide us (in terms of demonstrating that you can operate safely).

A permission from the CAA is required to be held if you wish to conduct a commercial operation with your aircraft (iaw ANO 2016 article 94[5]), or if you wish to fly your aircraft:

- At a height of more than 400 ft above the surface (iaw ANO 2016 as amended article 94A),

and/or

- Within 150m of either a congested area or an organised open-air assembly of more than 1000 persons (iaw ANO2016 article 95),

and/or

- Within 50m of people or properties/objects that are not under your control (iaw ANO2016 article 95)

An exemption from the CAA is required if you wish to seek release from any other requirement within ANO 2016

In both cases however, the CAA must still be suitably satisfied that the operation can be conducted safely

Two types of Permission are available;

Standard Permission

This enables a person to conduct commercial operations with a small unmanned aircraft (drone) and also permits operations within a congested area. Potential operators are required to provide evidence of pilot competence and an Operations Manual which details how the flights will be conducted.

Non-Standard Permission

This covers all other types of flight and addresses operations that contain a greater element of operating risk. In addition to the requirements for a Standard Permission, applicants are also required to prepare and submit an Operating Safety Case (OSC) to the CAA.

Full details of the pilot competence requirements and the OSC can be found in our guidance document CAP 722.

Please note that the UK CAA is not currently accepting the SORA methodology as a risk assessment means to obtain an authorisation to operate an Unmanned Aircraft System. This is because the SORA is still under internal consultation within JARUS and has not been published for public use. EASA has also stated that the SORA in its current form is not be used to conduct operational risk assessments, as it is still under review. The SORA will

only be accepted as a methodology once it has been accepted and adopted by EASA within the EU framework, as an acceptable means of compliance.

UAS operators wishing to obtain an authorisation should refer to CAP 722 Appendix D for the risk assessment methodology which is acceptable to the CAA. Should an applicant chose a different methodology, then a robust and reasoned rationale must also be provided

Please note that permissions and exemptions only authorize the commercial use of a drone from a safety perspective. Operators are still subject to rules and regulations imposed by other bodies and organizations. These may include the emergency services, the Highways Agency and local authorities. Before beginning a job in a particular location a permission holder should always check with all relevant bodies to establish what, if any, other restrictions apply.

Operators should also be sure they understand the rules around trespass and nuisance.

•How to apply

Anyone who wants to fly a drone for commercial work (often also referred to as aerial work) needs a Permission from the CAA (take careful note that this is not a licence).

To get this Permission, you will need to:

•Remote Pilot Competence

- Demonstrate a sufficient understanding of aviation theory (airmanship, airspace, aviation law and good flying practice).
- Pass a practical flight assessment (flight test).

•Develop basic procedures for conducting the type of flights you want to do and set these out in an Operations Manual.

•If your intended operation requires an approval with greater privileges than in a Standard Permission, you will also need to provide us with an Operating Safety Case to demonstrate that the intended operation is appropriately safe.

Details are available in our guidance document CAP 722, including the requirements for remote pilot competence.

The CAA does not organize or run assessment courses but we approve commercial organizations, known as National Qualified Entities (NQEs) to do this assessment on our behalf.

Anyone interested in getting a CAA Permission should first contact one of the NQEs shown on our guidance for operators page in order to obtain the required proof of remote pilot competence. The NQE will generally help you develop an operations manual and will offer advice on completing the additional paperwork.

Some concessions from the full remote pilot competence requirements are available if you already have suitable aviation (piloting) qualifications such as previous model aircraft flying qualifications or a licence or certificate that allows you to fly in non-segregated UK airspace (PPL, gliding certificate, etc). At the present time suitable British Model Flying Association (BMFA) certificates are accepted and although not listed, equivalents from the Scottish Model Association and Large Model Association will also be accepted. Previous military flying experience may also be accepted, the general requirement being that the pilot already has qualifications or experience in flying an aircraft in non-segregated UK airspace (i.e. not limited to flying only within military ranges, training areas or on active military service overseas).

The full range of available concessions (acceptable alternative evidence of pilot competency) is set out in more detail in CAP722.

Once you have met the requirements, please follow the guidance on how to apply and submit your application.

Renewals and variations

Permissions and exemptions are issued for a fixed period of time, which can be for up to 12 months in duration. They can be extended for further periods (renewed) or amended (varied) during the validity period. When making an application, the meaning of the terms 'renewal' and 'variation' on the application form are treated as follows:

'Renewal' means an application to extend the validity of an existing Permission, Exemption or other operational authorisation, where there is no change being requested for the class of UAS being used, the operational conditions, or the terms of the current approval.

'Variation' means a request to change the conditions within an already granted Permission, Exemption or other operational authorisation (Eg. a change of, or addition to, the class of UAS being used, a change to the operational parameters that are permitted, or a change to the terms within the current approval).

A variation to a Permission or Exemption is different to a renewal and so must be applied for separately. Please note that a 'Standard' Permission cannot be 'varied' to become a 'Non-Standard' Permission or Exemption due to the additional workload involved; such changes must be regarded as a new 'Non-standard' application.

Insurance

It is each applicant's/operator's responsibility to ensure they have appropriate insurance coverage and this is a condition of each Permission, Exemption or any other form of operational authorisation.

Regulation (EC) 785/2004 requires air carriers and aircraft operators (which includes drone operators) to "...ensure that insurance cover exists for each and every flight...".

- An applicant for a Permission, Exemption or authorisation must therefore have appropriate insurance on/at the date of the issuance of the Permission, Exemption or authorisation (to the satisfaction of the CAA) that meets the requirements of EC Regulation No 785/2004.

Note: Given that it takes time to process an application, insurance should either be in place from the date of application or be post-dated (minimum of 28 working days / 6 weeks). A post-dated approach will restrict the issue date of the Permission, Exemption or authorization, so that it complies with the stated dates.

- An operator must have appropriate insurance in place at the time of exercising the privileges of the Permission, Exemption or authorization, i.e. for each and every flight undertaken.

Note: Insurance for "each and every flight" could be a per flight/daily/weekly/monthly or annual policy so long as it satisfies the requirements of the EC Regulation for the duration of the flight.

If an operator with a Permission, Exemption or authorization conducts a flight without valid insurance, then that Permission, Exemption or authorization would not be valid, and therefore the operation be in breach of the ANO as well as EC785/2004.

Article 2(b) of EC 785/2004 states that the regulation does not apply to 'model aircraft with an MTOM of less than 20kg'. In the absence of any definition of 'model aircraft' within the regulation, the United Kingdom has interpreted 'model aircraft' to mean "Any small unmanned aircraft which is being used for sport or recreational purposes only". Therefore, for all other types of small unmanned aircraft flight, whether

commercial or non-commercial, appropriate cover that meets the requirements of EC 785/2004 is required.

Our charges

The price for Permission depends on the mass of the aircraft.

Details of our charges can be found in the General Aviation Scheme of Charges at paragraph 3.11.

There is no limit on a maximum number of drones. The renewal cost is reduced for subsequent years.

Note that the current turn-around time for a standard permission is 28 Working Days, this time scale applies when the CAA has received all required documentation and payment.

Guidance on using small drones for commercial work

Information for operators on how commercial work is defined and the assessment process for CAA permissions

- The information below explains how 'commercial operations' are defined, how to get assessed for a CAA permission and your responsibilities as a commercial operator.

- **How 'commercial operations' are defined**

The term Commercial Operations allows a broad variety of flight applications, which are mostly based around aerial photography or the operation of sensors and other data-gathering devices.

Commercial operation is given the following meaning within article the Air Navigation Order:

“...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-

(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 the SUA 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.”

The key elements in understanding this term are '...any flight by a small unmanned aircraft...in return for remuneration or other valuable consideration'.

The term 'available to the public' should be interpreted as being a service or commodity that any member of the public can make use of, or actively choose to use, (e.g. because it has been advertised or offered to someone).

The essential question that needs to be asked is “what is the purpose of the (specific) flight?” i.e. “If I were not receiving payment/valuable consideration, would I still be looking to fly?”

Example 1: A drone operator holding a CAA permission for Commercial Operations is contracted by a site owner to film or survey a building development site or infrastructure facility

This is clearly within the remit of the permission and the operation can proceed within the limitations and conditions stated on the operator's permission.

Example 2: An estate agent or builder's firm wants to use a drone for aerial imagery/survey as part of their service

This also would be considered a commercial operation even if it only comprised a small part of the service to the customer, e.g. advertising a customer's house or checking the property for the extent of works required. The operator of the drone would need to have a CAA permission for Commercial Operations. The estate agent or builder's firm should gain a permission or use the services of an existing permission holder.

While every case should be judged on its own merits, some types of arrangements are not generally considered by the CAA to be commercial operations such as:

- Advertising revenue received as a result of persons visiting a website or social media page where video or photographic stills shot from a drone are displayed/posted. This is because these types of web-pages may be legitimately used to post recreational video material that was not commissioned by another party but was conceived and wholly funded by the poster.

Note: This would not apply if the photographic material had been directly commissioned by another party for the purposes of display or marketing on their website.

- Generation of self-marketing material to display an object, event or other activity. An individual or business would not usually be considered to be conducting commercial operations if the flight is provided only for their own use. Example: A charity, educational establishment, local authority or business acquires a drone which is used (and flown by its own staff) to provide aerial imagery for incorporation into its own promotional material.

- Any other imagery or data collection task where the video, photographic stills or other data collected, are used exclusively for the drone operator's own use.

Example: A university research team wants to use a drone to gather survey data or imagery to help with their research project.

This is legitimate as long as the research project was not directly funded by a business that intends to use the results of the data for its own business purposes (including any material or research into its products or services). Clearly university research is funded through a variety of means (grants, charitable and alumni donations, etc) and for varying purposes. The exact arrangements would need to be considered in each case.

Where an academic organisation is openly advertising their capabilities to external organisations and a business relationship is entered into with an external organisation, the use of a drone for that purpose is likely to be construed as commercial operations. In order to alleviate difficulties with varied funding models, universities and other similar organisations should consider applying for permission from the CAA so that their services can be offered without constraint.

Filming in towns and cities

The first thing to note is that in most cases this will not be possible without having at least a standard permission from the CAA which will allow some types of flights within congested areas.

On its own, the standard permission does not give the right to fly unhindered and you will still require permission from the owner, manager or authority for the land from which the drone will be taking off and landing. The conditions of the permission will also require that you 'have control' over the area you intend to use the camera-drone,

and this includes any people or vehicles in the area over which you intend to fly the aircraft. The minimum distances are stated on the permission.

Before filming you need to ensure that you have:

- Permission from the Civil Aviation Authority
- Permission from the owner, manager or authority for the land from which the SUA will be taking off and landing
- Control over the area you intend to use the SUA, including any persons, vessels or vehicles in the area over which you intend to operate the aircraft.

The CAA permission for camera-drone flights only addresses the flight safety aspects of the flight and does not constitute permission to disregard the legitimate interests of other statutory bodies such as the Police and Emergency Services, the Highway Agency, local authorities (and their agents) or any other statutory body.

In order to exercise the necessary 'control' over a nearby public environment, it will often be necessary to contact the local authority to make suitable arrangements such as road-closures or other restrictions of access. This is a normal part of ground-based filming in urban areas and the same procedures should be followed in the case of camera-drones. Due to the lead times advisable for making such arrangements, Location Managers and production staff should start this process as early as possible.

The following guidance is available from the British Film Commission (BFC):

- Filming in public spaces
- Filming support across the UK

Guidance for filming in the UK:

- Northern Ireland: www.northernirelandscreen.co.uk
- Wales: www.walesscreen.com
- Scotland: www.creativescotland.com
- England (outside London): www.creativeengland.co.uk
- London: www.filmlondon.org.uk

London drone-filming information and Borough film offices:

Detailed guidance on drone flying in London and other towns and cities can be found in CAP722.

Guidance on people 'under the control of the SUA operator or the remote pilot'

Due to the large number of possible circumstances, the CAA can only give general guidelines, however a person or people under the control of the SUA operator or remote pilot of a small unmanned aircraft can generally be considered to be:

- Anyone present solely for the purpose of participating in the flight operation.
- Anyone 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 aircraft. Such people 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.

Spectators or other people gathered for sports or other mass public events that have not been specifically established for the purpose of the drone operation are generally not regarded as being 'under the control of the SUA operator or remote pilot'.

In principle, someone who is under the control of the SUA operator or remote pilot at a mass public event must be able to:

- Decide to participate or not to participate;
- Broadly understand the risks involved;
- Have reasonable safeguards established for them by the site manager and SUA operator during the period of drone flight operations;
- Not be restricted from taking part in the event or activity if they decide not to participate with the drone operation.

To use an example: if filming with a drone at a large music festival or public event, it would not be sufficient for the audience/those present to be informed of a drone filming via a public-address system, or in advance by e-mail or text. Those types of communication channels do not satisfy the points above.

Permission has occasionally been granted for drone flights at public events by special arrangement. These permissions have been extremely limited and usually involve a

segregated take-off site with the drone operating only vertically within strict lateral limits. There is no allowance for direct over-flight of persons in these circumstances.

Additional guidance regarding filming in towns and cities can be found in the link above

The remote pilot assessment process

National Qualified Entities (NQE) are established to assess the competence of people operating small unmanned aircraft as part of the CAA's process in granting operating permissions.

Assessment by an NQE is necessary for those with no previous aviation training or qualifications. To achieve this, NQEs may offer a short educational course/programme prior to the competency assessment aimed at bringing an individual's knowledge up to the required level (but please note that these are not CAA approved training courses).

A typical NQE full-course involves:

- pre-entry/online study
- 1-3 days of classroom lessons and exercises
- A written theory test
- A flight assessment

After successfully completing the theory element, applicants will:

- Develop his/her own operations manual
- Practice aircraft operation/flying skills for the practical flight assessment.

Flight assessments are normally arranged and completed at your own pace:

- They are usually arranged separately but may be available on the last day of the course
- They have no structured syllabus or sequence of numbered exercises, but the test will be based on testing the procedures that have been described within the applicant's operations manual

Details of CAA approved assessment organisations (NQEs) are shown below.

CAA approved remote pilot assessment organisations (NQEs)

Restricted

- AJS Support Ltd
- British Antarctic Survey
- CEFAS
- Cyberhawk

Full NQE

- 3iC Ltd
- ACME Helicopters Limited t/a Dragon Drone Training
- Across Safety Development Ltd t/a Across UAVs
- Aerial Exposure Ltd t/a UAV Trade Craft
- Aerial Motion Pictures Ltd
- Airborne Platforms Limited
- ASSD Limited t/a Pigs Can Fly
- ATEC-3D Ltd
- Aviation Systems Group Ltd
- CUAVA Ltd
- Colena Ltd t/a Heliguy
- Commercial Drone Training Education Ltd
- Consortiq Ltd t/a UAV Air
- DAC (UK) Ltd t/a Flyby Technology
- Drone Partners Limited
- Drone Pilot Academy Ltd
- Drone Training Ltd t/a The Aerial Academy
- Eagle Eye Innovations Limited Trading As RUSTA - Remote Unmanned Systems Training Academy

- Eyebot Limited
- Essex Police
- Global Guardian London Limited
- Halo Drones Limited trading as Halo Drones
- Harbour Media Limited trading as Osprey Drone Training
- Hummingbird UAV Ltd
- iRed Limited
- Lancashire Fire Rescue Service (Emergency Services Only)
- Martek Drones Trading Ltd As Coptrz
- NATS RPAS
- Phixos Limited Trading As RUAS
- Professional Drone Training Ltd
- Prodrone Academy Limited
- SalusUAV Ltd
- SkeyePhotography and Surveys Ltd
- Sky-Futures Partners Ltd
- StratAero PLC
- The UAV Academy Ltd
- The Drone College Ltd
- UAVE Limited
- UAV8 Ltd
- Uplift Drone Training Ltd

Applications for unmanned aircraft operational Authorizations

Guidance on the UAS application process

- The process to follow when applying to the CAA for an operational authorization (A permission or an exemption) depends on the relative complexity of the authorization that you are seeking:

Applications for relatively 'simple' operational authorizations, which are commonly referred to as a 'Standard Permission', are addressed via an online application process.

- A 'Standard Permission' enables a person to conduct commercial operations with a small unmanned aircraft (drone) and also permits operations within a congested area.

Applicants will be required to provide all documents and payment online (credit /debit card only) before submitting their application.

Applications for more complex operational authorizations, commonly referred to as 'Non-Standard Permissions', or those that require a specific Exemption from the Air Navigation Order are addressed via a more traditional 'paper based' application form, the SRG 1320.

- These cover all other types of flight and address operations that contain a greater element of operating risk. Applicants are required to provide an Operating Safety Case (OSC) to the CAA as part of their application. Examples of such operations include:

- extended visual line of sight (EVLOS)

- beyond visual line of sight (BVLOS)

- flight within the distances stated within article 95(2) sub paras (b), (c), or (d) – (within 150 metres of organized open-air assemblies, within 50 metres of uninvolved persons/properties)

How to ensure that your application has all the information we need

The application process contains rejection rules for incorrect application submissions. Should an application be rejected the applicant will be notified and will be required to make a fresh application submission.

The sections below give examples of when an application may be rejected and tips for how to avoid that happening.

- Insurance

Ops manual

NQE or equivalent

Logbook

•If your application is accepted it may still be placed on hold pending receipt of further information which will be requested by the CAA. You will be required to respond within time scales specified within the request and if no response is received, the application may be cancelled and a new application required.

How to apply

Applications for a standard permission

Please complete the online application form and submit the following documents:

- Initial application: Ops Manual, Insurance, NQE full recommendation or equivalent qualification
- Renewal application: Ops Manual, Insurance, Flight Logs
- Variation application: Ops Manual, Insurance, NQE recommendation or equivalent qualification if changing weight / class category
- Renewal & Variation application: Ops Manual Insurance, NQE recommendation or equivalent qualification if changing weight / class category, Flight Logs

Applications for a non standard permission / exemption

Please complete the SRG 1320 form and submit the following documents:

- Initial application: Ops Manual Vol 1, 2, & 3, Insurance, NQE full recommendation or equivalent qualification
- Renewal application: Ops Manual Vol 1, 2, & 3, Insurance, Flight Logs
- Variation application:Ops Manual Vol 1, 2, & 3, Insurance, NQE recommendation or equivalent qualification if changing weight / class category
- Renewal & Variation application: Ops Manual Vol 1, 2, & 3 Insurance, NQE recommendation or equivalent qualification if changing weight / class category, Flight Logs

- **How your information is used**

The UK CAA's Consumers and Markets Group collects and stores your name, date of birth, address, email, telephone number and Nationality (not routinely) for the purpose of processing the application for a Foreign Registered Aircraft Permit.

We may also share such information on an adhoc basis with DfT and UK Border Forces for Aviation Security purposes as part of the National Aviation Security Plan.

- **Why we process your personal information**

The processing of your personal information is necessary for the performance of a task we carry out in the public interest or official authority vested in us in accordance with UK/EU law.

Who sees your personal information and why

We need to share your personal data with internal CAA staff, the UK Department for Transport (DfT)'s Aviation Security and the UK Border Force's Carrier Engagement Data Analysis Targeting (CEDAT) who act as joint controllers/processors for information sharing and the purpose of processing the application for a Foreign Registered Aircraft Permit.

Such information is shared on an adhoc basis as part of the National Aviation Security Plan and in accordance of the MoU with DfT under which the CAA administers the Foreign Registered Aircraft Permit.

How long we keep your personal information and why

We will delete all personal information associated with an unsuccessful applicant 5years after the FOP application was made or 10 years after expiry of a granted FOP. The data is held for enforcement, compliance and intelligence purposes.

Your individual rights

You may submit an information enquiry or make a complaint about how we have processed your personal information by emailing FOI.requests@caa.co.uk.

Please be aware that the CAA is subject to the Freedom of Information Act, which means we may need to release information you have supplied to us. However, we would never disclose your personal information without first obtaining your consent.

- **Information about your rights as a data subject.**

- Contact the CAA's Data Protection Officer.
- Information on your right to complain to the ICO about the CAA's processing of personal data.
- Access our general privacy notice.

This privacy notice is subject to change.

Large unmanned aircraft

Guidance on regulations and exemptions for unmanned aircraft with an operating mass over 20kg

How the regulations apply to you

Unlike small drones, unmanned aircraft with an operating mass of more than 20 kg are subject to the whole of the UK Aviation regulations (as listed within the UK Air Navigation Order - ANO), although they may be exempted from certain requirements by the CAA.

Because of this, any person intending to operate an unmanned aircraft with a mass of more than 20kg within the UK must obtain a specific authorization, in the form of an exemption from some of the requirements of the ANO before any flight can take place.

In most cases, an application, along with an appropriate safety case, must be made directly to the CAA. For Large Model Aircraft however (by which we mean those built and used purely for recreational purposes), the Large Model Association (LMA) conducts the initial technical inspection and assessment on our behalf and should be your first point of call.

Due to the greater size and/or capability of the aircraft concerned, there are likely to be additional airspace aspects to be considered, such as the need for segregated airspace (unless the operation is only intended to be within VLOS).

Exemptions

If you are considering operating a UAS with a mass of greater than 20kg within UK airspace, full details and requirements are contained within our UAS guidance document CAP 722. As with the requirements for smaller UAS, the application will need to be accompanied by an Operating Safety Case (OSC), which should demonstrate to us your reasoning as to why the intended operation is safe enough.

Please note that the UK CAA is not currently accepting the SORA methodology as a risk assessment means to obtain an authorisation to operate an Unmanned Aircraft System. This is because the SORA is still under internal consultation within JARUS and has not been published for public use. EASA has also stated that the SORA in its current form is not be used to conduct operational risk assessments, as it is still under review. The SORA will only be accepted as a methodology once it has been accepted and adopted by EASA within the EU framework, as an acceptable means of compliance.

UAS operators wishing to obtain an authorisation should refer to CAP 722 Appendix D for the risk assessment methodology which is acceptable to the CAA. Should an applicant chose a different methodology, then a robust and reasoned rationale must also be provided

For large model aircraft (ie. those being made and flown purely for recreational purposes) see CAP 658.

In some cases, the CAA may publish one or more 'General Exemptions' which authorise certain types of larger UAS operations to be undertaken, under specifically defined circumstances, without the need to make a full application to the CAA. Details of General Exemptions are published in the Official Record Series 4 section of the CAA's website.

How to apply

Please follow the information provided in our guidance on how to apply and submit your application. Details of where to send the application are contained in the SRG 1320 application form.

Applications must also include the appropriate payment as well as full details of the requested operation (in the form of an operations manual) and the Operating Safety Case.

Our charges

Our charges for an exemption under article 266 of the ANO are listed within the CAA Scheme of Charges for General Aviation.

- The charges for Large Model Aircraft can be found at paragraph 3.4
- The charges for all other Unmanned Aircraft over 20kg can be found at paragraph 3.11