February 2019

CAP 1763 - Air Navigation Order 2018 and 2019 Amendments - Guidance for Small Unmanned Aircraft users

Introduction

On 20 February 2019, the United Kingdom Government published an amendment to the UK Air Navigation Order 2016 (ANO) which contains its changes to the legislation regarding the operation of small unmanned aircraft[1]. The amendment is published as Statutory Instrument (SI) 2019 No. 261 entitled 'The Air Navigation (Amendment) Order 2019'. This can be found at: www.legislation.gov.uk/uksi/2019/261/made. The amendment comes into force on 13 March 2019.

The amendment makes changes to some aspects of the previous amendment to the ANO that was published on 30 May 2018[2]. It should be noted that while some parts of this amendment came into force on 30 July 2018, other parts do not come into force until 30 November 2019.

Purpose of this document

This document covers the small unmanned aircraft related articles within the ANO that will remain relevant after 13 March 2019. It has been written with the aim of providing readers, particularly those who are less familiar with the layout and structure of ANO amendments, with an outline of the revised regulations as they now appear in law; to provide guidance on the cumulative effects of the two recent changes; and how they will be interpreted by the CAA. It replaces CAP 1687.

For simplicity within this document:

- The Air Navigation (Amendment) Order 2018 will be referred to as: 'the 2018 amendment'; and
- The Air Navigation (Amendment) Order 2019 will be referred to as: 'the 2019 amendment'.

Structure of the Amendment

The SI is structured in the form of a series of textual changes that need to be made to the original ANO document. While the amendment has replaced two articles with completely new text, the meaning of some other changes cannot be fully understood by reading the SI on its own. By way of assistance, a consolidated version of the ANO articles that have been affected by this amendment can be found at Annex A.

1 "Small unmanned aircraft" means any unmanned aircraft, other than a balloon or a kite, having a mass of not more than 20kg without its fuel but including any articles or equipment installed in or attached to the aircraft at the commencement of its flight

2 Statutory Instrument (SI) 2018 No. 623, entitled 'The Air Navigation (Amendment) Order 2018'. This can be found at: www.legislation.gov.uk/uksi/2018/623/made .

The areas covered by the amendment are relatively few and can be summarised as:

a. Effective from 13 March 2019 (the 2019 amendment)

- A revised limitation on the closest distance that small unmanned aircraft of any mass may be flown from specific types of aerodrome
- Changes to the dimensions of the 'flight restriction zones' associated with the new distance limitation from these 'protected aerodromes' and the introduction of new definitions in Schedule 1 in order to accommodate these changes.

b. Effective from 30 November 2019 (the 2018 amendment)

- A requirement for the registration of SUA operators
- A requirement for the competency of remote pilots to be tested

New Changes introduced by the 2019 amendment

Article 94 – Small unmanned aircraft: requirements

Paragraphs (4) and (4A) are now deleted completely. The '7kg' differentiation between small unmanned aircraft with regard to the types of airspace that can be flown in has now been removed and a single, simple limitation based on the revised flight restriction zone (as described in the new articles 94A and 94B) now applies.

As a result of the deletion, the numbering of the paragraphs within article 94 now jumps directly from paragraph (3) to paragraph (5). While this numbering may appear to be odd, it has been done intentionally in order to minimise any additional nugatory work that would be created if paragraph (5) were to be renumbered.

Irrespective of all the new aspects within the ANO amendment, it is vital to remember that article 94 sets out the two key principles of small unmanned aircraft flying that must always be applied:

Article 94(2) The remote pilot is directly responsible for ensuring that the aircraft is flown safely

Article 94(3) The remote pilot must not fly the aircraft out of his/her sight in order to ensure that collisions can be avoided

Article 94A- Small unmanned aircraft: permissions for certain flights

This article has been completely rewritten and now combines both the '400 ft height restriction' and the restrictions on flights that are 'over or near aerodromes'.

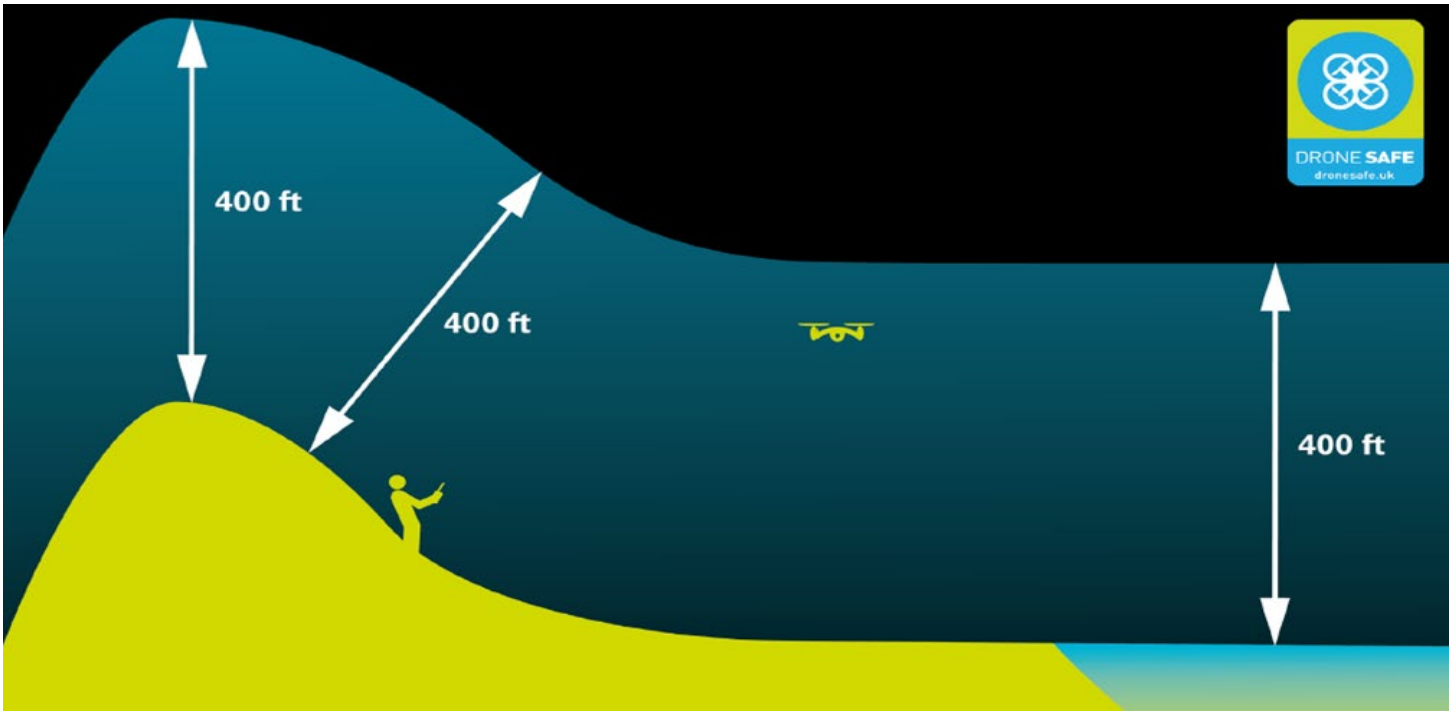
The article starts with a clear statement to explain that if a permission is required in the circumstances listed, then a flight cannot be conducted if that permission has not been obtained by either the remote pilot or the SUA operator.

400ft height limitation

The article retains the legal maximum height restriction of 400 feet above the surface for the flight of any small unmanned aircraft that was introduced in the 2018 amendment, along with providing scope for the CAA to permit flight at a greater height if the CAA is satisfied that this can be achieved safely. However, it also confirms that for flights that take place within a 'flight restriction zone' at a protected aerodrome (see text below) permission to fly above 400ft is only required from the air traffic control unit or the flight information service unit at that protected aerodrome.

This height limitation is intended to contribute to the safety of manned aircraft from the risk of collision with a small unmanned aircraft. With the obvious exception of take-off and landing, the majority of manned aircraft are required by the rules of the air to fly at heights greater than 500ft from the surface. While there are some other exceptions where manned aircraft are permitted to fly at 'low level' (such as Police, Air Ambulance and Search and Rescue helicopters, as well as military aircraft), flying a small unmanned aircraft below 400ft significantly reduces the likelihood of an encounter with a manned aircraft.

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 400ft height above the surface requirement may be interpreted as being a requirement to remain within a 400ft distance from the closest point on the earth's 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. This interpretation is also identical to the one that is being introduced within the forthcoming European regulations for the operation of unmanned aircraft.



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.

Details on how to obtain permissions from the CAA can be found on the CAA's website at www.caa.co.uk/uas and within CAP722 www.caa.co.uk/cap722

Restrictions over or near aerodromes

The remainder of the text within article 94A is a direct replacement of the text introduced within the 2018 amendment (as article 94B). This new text sets out:

- the types of aerodrome where these restrictions apply (protected aerodromes)
- the form that the 'flight restriction zones' around these protected aerodromes will take
- the level of restriction that is introduced
- the relevant 'aerodrome authority' that can issue a permission to enter the flight restriction zone

Protected aerodromes

A protected aerodrome can be one of the following:

- an EASA certified aerodrome (i.e. what we would typically call an Airport)
- a Government aerodrome (i.e. a military airfield)
- a national licensed aerodrome (i.e. most smaller 'General Aviation' airfields, where the CAA has issued a licence to the airfield operator)

Additionally, there is also scope for other aerodromes to be specifically nominated (prescribed) in law as protected aerodromes at a later date should a specific requirement emerge. As yet though, no additional aerodromes have been identified for this classification; any that are prescribed in the future will be identified within the UAS pages of the CAA's website.

In the majority of cases, a 'protected aerodrome' can be readily identified as an aerodrome that has an Aerodrome Traffic Zone (ATZ) established around it, and so it is already recognised in aviation circles as an aircraft operating location that warrants some additional safeguarding. It also makes the identification of the relevant aerodromes easier on aviation charts (although the ATZs are not marked on charts for aerodromes that are completely surrounded by a control zone [CTR]). There are, however, a small number of licensed aerodromes, mostly in northern Scotland, that do not have an established ATZ, but in these cases, a separate volume of airspace is defined as the flight restriction zone and will have the same dimension as a 2nm radius ATZ

Details of the aerodromes that fall into the 'protected' category can be found within the UK Aeronautical Information Publication (UK AIP) at the following links:

- EASA certified and national licensed aerodromes (and RAF Northolt):

UK AIP - Aerodrome Index

- Government aerodromes:

UK AIP - En Route index Select 'ENR 2.2 – other regulated airspace' (pages ENR 2.2-1 to ENR 2.2-6)

Flight restriction zones

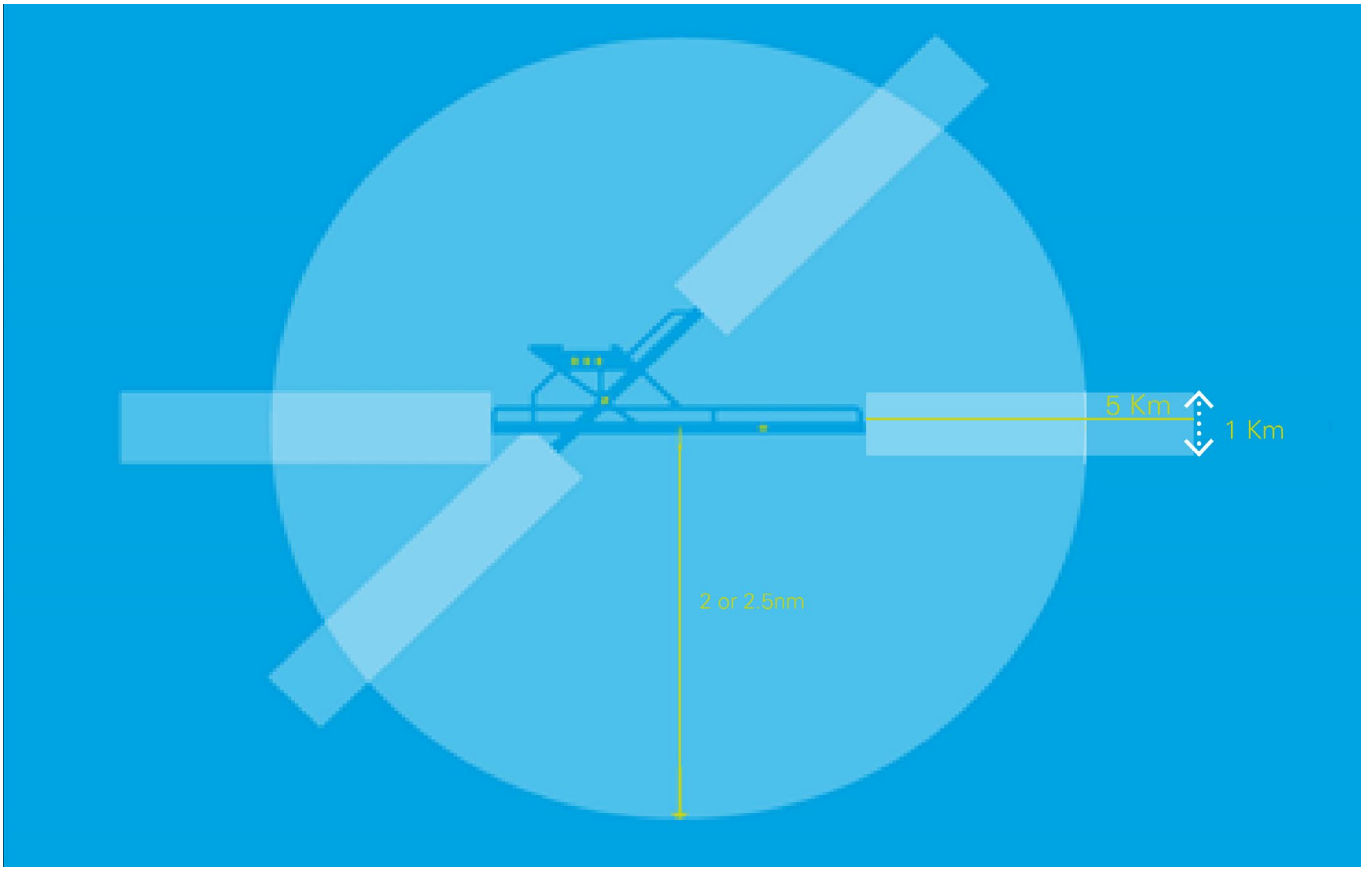
You must not fly a small unmanned aircraft within the flight restriction zone of a protected aerodrome without first ensuring that you have permission to do so. The volume of airspace that comprises a 'flight restriction zone' is outlined in a table at paragraph (7) of article 94A. The flight restriction zone is active at all times and applies to all small unmanned aircraft of any mass (even very small 'toys').

In the vast majority of cases (i.e. aerodromes that have an ATZ), it primarily consists of two separate zones as follows:

- the ATZ[3] at the protected aerodrome
- the runway protection zones[4] at the protected aerodrome

3 ATZs are specifically defined within article 5 of the ANO, but are essentially circular in nature, centred on mid-point of longest runway with a radius of either 2nm or 2.5nm depending on the individual runway length and layout, and extending from the surface up to 2,000ft above the level of the aerodrome

4 Runway protection zones are defined in article 94B, but are essentially zones that measure 5km in length by 1km in width that extend from each runway threshold into the approach to that runway. Their vertical dimensions are the same as the ATZ



The regulation also provides scope for the inclusion of 'additional boundary zones' which allow for cases where an aerodrome has a large land area and the shape of an aerodrome's boundary means that the ATZ boundary falls within 1km of the aerodrome boundary, but is not accommodated by a runway protection zone. These 'additional boundary zones add a small 'bump' to the relevant edge.

If the protected aerodrome is one of the few that do not have an established ATZ, the flight restriction zone takes the form of what is essentially a '2nm ATZ' but without any runway protection zones (i.e. a 2nm circle from the mid point of the longest runway, from the surface up to 2,000 ft above the aerodrome's level).

For aerodromes that have been specifically 'prescribed' as protected aerodromes (i.e. ones that do not fall into the EASA certified, national licensed or Government categories), the dimensions of the applicable flight restriction will be detailed separately at the time within the relevant establishing document.

A map detailing the flight restriction zones at each protected aerodrome in the UK can be found at www.dronesafe.uk

Permission to enter a flight restriction zone

Permission is always required before a small unmanned aircraft is flown within a flight restriction zone. How this permission is obtained varies and depends on the circumstances that apply at the time of the intended flight. While the precise details should always be checked, in very simple terms these can be described as:

- If there is an air traffic control unit (ATC) or a flight information service (FIS) unit in place (ie. there is someone in the 'control tower' at the time of the flight that you can speak to), then this ATC/FIS unit will issue the permission to fly. In this case, it may be possible to also obtain permission to fly above 400ft if the air traffic situation can permit this[5].

5 An Air Traffic unit may only issue permission for a UAS to fly above 400 ft within the flight restriction zone

- If there is 'no one' to contact in the 'control tower' (either because the flight is outside of the operational hours of the ATC/FIS unit or because the aerodrome does not have an ATC/FIS unit in the first place), then you must obtain the permission from the aerodrome operator. The aerodrome operator cannot permit flight above 400 ft.

General details of the aerodromes, and their contact numbers can be found on the individual aerodrome websites. Alternatively, full details of protected aerodromes are contained within the UK Aeronautical Information Publication (UK AIP) and the UK Military Aeronautical Information Publication (UK Mil AIP). These documents can be found at the following links:

- UK AIP (EASA certified and national licenced aerodromes)
  UK AIP - Aerodrome Index select the specific aerodrome and then select 'textual data'. Contact details are at section 2.2 and operating hours are at section 2.3
- UK Mil AIP (Government aerodromes)
  UK Mil AIP-Index select 'AD' from the top row and then 'AD2 Aerodromes' from the column that appears. Select the specific aerodrome from the drop-down list and then select the 'aerodrome name - textual data'. Contact details are at section 2.2 and operating hours are at section 2.3.

Article 94B – Interpretation of expressions used in the definition of "flight restriction zone"

This article has also been completely rewritten from the one that appeared in the 2018 amendment. Its purpose is now to provide descriptions of the terms that have been used in article 94A, as well as highlighting any 'special cases' that have been made. Note also, that the whole article only applies to protected aerodromes that have an ATZ.

The article specifies:

- The dimensions of the runway protection zone – a rectangular portion of airspace measuring 5km long by 1km wide extending from the surface to a height of 2,000ft above the level of the aerodrome. The zone extends away from each runway threshold (which is a surveyed point) on an aerodrome, into the approach 'lane' for that runway.

Note: At Heathrow Airport, each runway protection zone is 1.5km wide – this has been done to ensure that there is no 'gap' between the parallel runway protection zones when they project outside of the ATZ.

- That the London Heliport (Battersea) does not have any runway protection zones. Although the heliport has two notified thresholds, they are only a short distance apart and the use of runway protection zones provides no benefit to the type of operations that take place. As a result, the London Heliport flight restriction zone consists of a 2nm radius ATZ only.
- What an 'additional boundary zone' is and how it is determined. As mentioned earlier, this allows for cases where an aerodrome has a large land area and the shape of an aerodrome's boundary means that the ATZ boundary falls within 1km of the aerodrome boundary but is not accommodated by a runway protection zone. The effect of this zone is to modify the shape of the ATZ boundary so that aerodromes with an unusually large land area do not inadvertently suffer a decrease in protection when compared with the existing 1km flight restriction zone established in the 2018 amendment. To date, no UK aerodromes have been identified as requiring an additional boundary zone.

Residual Changes that are still applicable from the 2018 amendment

Article 7 – Meaning of 'commercial operation'

This article has been adjusted very slightly in order to make it more applicable to small unmanned aircraft than was previously the case. It also relates more specifically to an 'SUA operator', now that this is a distinct term (as opposed to the more generic term 'operator').

The intent of this is unchanged from before. The key elements in understanding the term are '…any flight by a small unmanned aircraft […] in return for remuneration or other valuable consideration.'

The term 'available to the public' within article 7 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).

Article 20 – Application of the Order to the Crown

This is a simple amendment which now includes the term 'SUA operator' within the text.

Article 23 – Exceptions from the provisions of the Order

This is an important article, because it exempts small unmanned aircraft (as well as small balloons, small kites and parachutes) from the majority of the ANO's provisions, and it then specifies those articles which still apply. The articles that still apply are:

- 2 - Interpretation
- 91 - dropping of articles for agriculture etc
- 92 - Mooring, tethering etc (not related to small unmanned aircraft)
- 93 - Release of small balloons (not related to small unmanned aircraft)
- 94 - Small unmanned aircraft: requirements
- 94A - Small unmanned aircraft: permissions for certain flights (new 2019)
- 94B - Interpretations of expressions used in the definition of "flight restriction zone" (new 2019)
- 94C - Small unmanned aircraft: registration of SUA operator (new 2018)
- 94D - Small unmanned aircraft: requirement for registration as SUA operator (new – not applicable until 30 November 2019)
- 94E - Small unmanned aircraft: competency of remote pilots (new 2018)
- 94F - Small unmanned aircraft: requirement for acknowledgement of competency (new – not applicable until 30 November 2019)
- 94G - Meaning of "remote pilot" and "SUA operator" (new 2018)
- 95 - Small unmanned surveillance aircraft
- 239 - Power to prohibit or restrict flying (Prohibited and Restricted Areas)
- 241 - Endangering safety of any person or property
- 257 - CAA's power to prevent aircraft flying (except 257(2)(a)))

In relation to the articles above, these articles also apply:

- 253 - Revocation, suspension, variation of certs, licences or other docs (new to this list)
- 265 - Offences and penalties
- 266 - Exemption from the ANO (new to this list)
- 269 - Certificates, authorisations, approvals and permissions (new to this list)

Article 94C - Certain small unmanned aircraft: registration of SUA operator

This article is simply an 'establishing' article which gives a legal instruction to the CAA to create a scheme for the registration of SUA operators by 1 October 2019. It has no further relevance to people involved in flying small unmanned aircraft until the registration scheme has been created by the CAA. Details of the requirements for operators will be communicated by SkyWise and on the CAA website in due course.

The registration service will be developed and operated by the CAA. A project is underway within the CAA to undertake the relevant analysis, design and development, and will run according to Government Digital Service practices (including procurement where necessary).

Article 94D - Certain small unmanned aircraft: requirement for registration as SUA operator

This article does not come into force until 30 November 2019. From this point, it sets out the requirements that will be in place for registration which are essentially:

- The registration requirements only apply to SUA operators
- SUA operators are only required to be registered if they are operating small unmanned aircraft that have a mass of 250 grams or more
- An SUA operator must have a valid registration when his/her small unmanned aircraft if flown and the registration number must be displayed on the aircraft
- A remote pilot must not fly a small unmanned aircraft unless he/she is happy that the SUA operator has a valid registration and the registration number is displayed on the aircraft

Article 94E - Certain small unmanned aircraft: competency of remote pilots

Like article 94C, this is simply an 'establishing' article which gives a legal instruction to the CAA to create a scheme for the competence testing of remote pilots by 1 October 2019. It has no further relevance to people involved in flying small unmanned aircraft until the competency testing scheme has been created by the CAA. Details of the requirements for remote pilots will be communicated by SkyWise and on the CAA website in due course.

Article 94F - Certain small unmanned aircraft: requirement for acknowledgement of competency

This article does not come into force until 30 November 2019. From this point, it sets out the requirements that will be in place for remote pilot competency testing which are essentially:

- Remote pilots are only required to undertake a competency test if they are flying a small unmanned aircraft that has a mass of 250 grams or more
- A remote pilot must not fly a small unmanned aircraft unless he/she can demonstrate that he/she is competent

- An SUA operator must not allow his/her aircraft to be flown unless satisfied that the remote pilot has passed the appropriate competency test

Article 94G - Meaning of "remote pilot" and "SUA operator"

This article provides the definitions of remote pilot and SUA operator, which replace the previous 'person in charge' term. The separate terms are used to denote the differing levels of responsibility of each position and to also accommodate the November 2019 registration and competency requirements. In many cases of course, it should be noted that the remote pilot and the SUA operator will be the same individual.

Article 95 – Small unmanned surveillance aircraft

In terms of its meaning and intent, this article is essentially unchanged from previously, with the only changes being that the term 'person in charge' has been replaced with either 'remote pilot' or 'SUA operator' as applicable

Further information

For further information, visit www.caa.co.uk/uas and www.dronesafe.uk.

All operators currently holding a permission, exemption or approval relating to small unmanned aircraft will need to update all their Operating Manuals accordingly. This needs to be done prior to any submission of an application to the CAA. Applications made without the necessary changes will be rejected and applicants will be required to reapply.

CAP 722 is currently being revised to accommodate these changes and to provide updated CAA policy and guidance to the UAS community. Once completed, this will be communicated through SkyWise and the CAA website.

Annex to CAP 1763

ANO 2016 Consolidated Small UAS articles - as amended by the Air Navigation (Amendment) Orders 2018 and 2019

Articles are either already in force, or come into force on 13 March 2019 except where otherwise stated

Meaning of "commercial operation"

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

(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.

Application of the Order to the Crown

20. (1) Subject to the provisions of this article and article 22, the provisions of this Order apply to or in relation to aircraft belonging to or exclusively employed in the service of Her Majesty as they apply to or in relation to other aircraft.

(2) For the purposes of such application, the Department or other authority for the time being responsible on behalf of Her Majesty for the management of the aircraft is deemed

to be the operator of the aircraft or, in the case of a small unmanned aircraft, to be the SUA operator and, in the case of an aircraft belonging to Her Majesty, to be the owner of the interest of Her Majesty in the aircraft.

(3)Nothing in this article renders liable to any penalty any Department or other authority responsible on behalf of Her Majesty for the management of any aircraft.

Exceptions from application of provisions of the Order for certain classes of aircraft

23. (1) This article applies to—

(a) any small balloon;

(b) any kite weighing not more than 2kg;

(c) any small unmanned aircraft; and

(d) any parachute including a parascending parachute.

(2) Subject to paragraph (3), nothing in this Order applies to or in relation to an aircraft to which this article applies.

(3) Articles 2, 91, 92, 93, 94, 94A, 94B, 94C, 94D, 94E 94F, 94G, 95, 239, 241 and 257 (except 257(2)(a)) apply to or in relation to an aircraft to which this article applies, and articles 253, 265, 266 and 269 apply in relation to those articles.

Small unmanned aircraft: requirements

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

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

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

(4) Intentionally blank (articles removed)

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

Small unmanned aircraft: permissions for certain flights

94A. (1) If the permission or permissions that are required under this article for a flight, or a part of a flight, by a small unmanned aircraft have not been obtained—

(a) the SUA operator must not cause or permit the small unmanned aircraft to be flown on that flight or that part of the flight; and

(b) the remote pilot must not fly the small unmanned aircraft on that flight or that

part of the flight.

(2) Permission from the CAA is required for a flight, or a part of a flight, by a small unmanned aircraft at a height of more than 400 feet above the surface

(3) But permission from the CAA is not required under paragraph (2) if—

(a) the flight, or the part of the flight, takes place in a flight restriction zone at a protected aerodrome, and

(b) permission for the flight, or the part of the flight, is required under paragraph (4) from an air traffic control unit or a flight information service unit.

(4) Permission for a flight, or a part of a flight, by a small unmanned aircraft in the flight restriction zone of a protected aerodrome is required—

(a) from any air traffic control unit at the protected aerodrome, if the flight, or the part of the flight, takes place during the operational hours of the air traffic control unit;

(b) from any flight information service unit at the protected aerodrome, if the flight, or the part of the flight, takes place during the operational hours of the flight information service unit and either—

(i) there is no air traffic control unit at the protected aerodrome, or

(ii) the flight, or the part of the flight, takes place outside the operational hours of the air traffic control unit at the protected aerodrome;

(c) from the operator of the protected aerodrome, if—

(i) there is neither an air traffic control unit nor a flight information service unit at the protected aerodrome; or

(ii) the flight, or the part of the flight, takes place outside the operational hours of any such unit or units at the protected aerodrome.

(5) In this article, "operational hours", in relation to an air traffic control unit or flight information service unit, means the operational hours—

(a) notified in relation to the unit, or

(b) set out in the UK military AIP in relation to the unit.

(6) In this article and article 94B, "protected aerodrome" means—

(a) an EASA certified aerodrome,

(b) a Government aerodrome,

(c) a national licensed aerodrome, or

(d) an aerodrome that is prescribed, or of a description prescribed, for the purposes of this paragraph.

(7) The "flight restriction zone" of a protected aerodrome is to be determined for the purposes of this article in accordance with the following table—

Type of protected aerodrome	*The 'flight restriction zone'*
A protected aerodrome which is— (a) an EASA certified aerodrome, (b) a Government aerodrome, or (c) a national licensed aerodrome, and which has an aerodrome traffic zone.	The flight restriction zone consists of— (a) the aerodrome traffic zone at the aerodrome, (b) any runway protection zones at the aerodrome, and (c) any additional boundary zones at the aerodrome.
A protected aerodrome which is— (a) an EASA certified aerodrome, (b) a Government aerodrome, or (c) a national licensed aerodrome, but which does not have an aerodrome traffic zone.	The flight restriction zone consists of the airspace extending from the surface to a height of 2,000 feet above the level of the aerodrome within the area bounded by a circle centred on the notified mid-point of the longest runway and having a radius of two nautical miles. But if the longest runway does not have a notified mid-point, the mid-point of that runway is to be used instead for the purposes of determining the flight restriction zone.
A protected aerodrome that is prescribed, or of a description prescribed, under paragraph (6)(d).	The flight restriction zone consists of the zone that is prescribed for the purposes of this paragraph.

Interpretation of expressions used in the definition of "flight restriction zone"

94B. (1) This article makes provision about the meaning of expressions used in the definition of "flight restriction zone" in article 94A that applies in relation to a protected aerodrome which is—

(a) an EASA certified aerodrome,

(b) a Government aerodrome, or

(c) a national licensed aerodrome,

and which has an aerodrome traffic zone.

(2) Subject to paragraph (4), there is one runway protection zone for each runway threshold of each runway at the aerodrome.

(3) A "runway protection zone", in relation to a runway threshold at the aerodrome, is the airspace extending from the surface to a height of 2,000 feet above the level of the aerodrome within the area bounded by a rectangle—

(a) whose longer sides measure 5 km;

(b) whose shorter sides measure—

(i) 1 km (except in the case of Heathrow Airport);

(ii) 1.5 km, in the case of Heathrow Airport; and

(c) which is positioned so that—

(i) one of the shorter sides of the rectangle ("side A") runs across the runway threshold, and

(ii) the two longer sides of the rectangle are parallel to, and equidistant from, the extended runway centre line as it extends from side A out to, and beyond, the runway end to which the runway threshold relates.

(4) There is no runway protection zone—

(a) for any runway threshold at the London Heliport;

(b) for any runway threshold that is prescribed, or of a description prescribed, for the purposes of this paragraph.

(5) The "runway threshold" of a runway at the aerodrome is the location that, for the purpose of demarcating the start of the portion of the runway that is useable for landing, is—

(a) notified as the threshold of the runway, or

(b) set out as the threshold of the runway in the UK military AIP.

(6) The "extended runway centre line", in relation to a runway at the aerodrome, is an imaginary straight line which runs for the length of the runway along its centre and then extends beyond both ends of the runway.

(7) An "additional boundary zone" is the airspace extending from the surface to a height of 2,000 feet above the level of the aerodrome within any part of the area between—

(a) the boundary of the aerodrome, and

(b) a line that is 1 km from the boundary of the aerodrome (the "1 km line"), that is neither within the aerodrome traffic zone nor within any runway protection zone at the aerodrome.

(8) The 1 km line is to be drawn so that the area which is bounded by it includes every location that is 1 km from the boundary of the aerodrome, measured in any direction from any point on the boundary.

Certain small unmanned aircraft: registration of SUA operator

94C. (1) Subject to the following provisions of this article, the CAA must issue a certificate of registration as an SUA operator to a person, or renew that person's certificate of registration as an SUA operator, if the person—

(a) has applied to the CAA, in such manner as the CAA may require, to be registered as an SUA operator,

(b) has supplied such information and evidence as the CAA may require, and

(c) has, in the case of an individual, attained the age (if any) that is prescribed.

(2) Subject to paragraph (3), a certificate of registration may relate—

(a) to a particular description of small unmanned aircraft;

(b) to a particular description of flights by small unmanned aircraft.

(3) No certificate of registration is to be issued in relation to—

(a) small unmanned aircraft with a mass of less than 250 grams without their fuel but including any articles or equipment installed in or attached to the aircraft at the commencement of their flight, or

(b) flights by small unmanned aircraft of that description.

(4) A certificate of registration issued, or renewed, under this article is valid for the period shown on the certificate, subject to—

(a) article 253, or

(b) the SUA operator notifying the CAA, in such manner as the CAA may require, that the SUA operator surrenders the certificate.

(5) The CAA is not required to accept applications for certificates of registration under this article before 1st October 2019.

Certain small unmanned aircraft: requirement for registration as SUA operator (effective 30 November 2019)

94D. (1) This article applies to a flight by a small unmanned aircraft only if it has a mass of 250 grams or more without its fuel but including any articles or equipment installed in or attached to the aircraft at the commencement of its flight.

(2) The SUA operator must not cause or permit the small unmanned aircraft to be flown unless—

(a) the CAA has issued the SUA operator with a certificate of registration which is valid for that flight at the time of the flight, and

(b) the SUA operator's registration number is displayed on the aircraft in the manner (if any) that is prescribed.

(3) The remote pilot of the small unmanned aircraft must not fly it unless the remote pilot has reasonably formed the view that the SUA operator complies with the requirements in paragraph (2) in relation to that flight.

(4) In this article—

"certificate of registration" means a certificate issued under article 94C;

"registration number" means the ten digit registration number assigned by the CAA in relation to an SUA operator's registration under article 94C.

Certain small unmanned aircraft: competency of remote pilots

94E. (1) Subject to the following provisions of this article, the CAA must issue an acknowledgement of competency to an individual, or renew that individual's acknowledgement of competency, if the individual—

(a) has applied to the CAA, in such manner as the CAA may require, for an

acknowledgement of competency,

(b) has supplied such information and evidence as the CAA may require,

(c) has undertaken such training as the CAA may require, and

(d) has undergone such tests as the CAA may require.

(2) That training or those tests may relate to matters which include—

(a) the practical operation of small unmanned aircraft;

(b) matters connected with the operation of small unmanned aircraft (such as respect for privacy, data protection, safety, security and environmental protection).

(3) Subject to paragraph (4), an acknowledgement of competency may relate—

(a) to a particular description of small unmanned aircraft;

(b) to a particular description of flights by small unmanned aircraft.

(4) No acknowledgement of competency is to be issued in relation to—

(a) small unmanned aircraft with a mass of less than 250 grams without their fuel but including any articles or equipment installed in or attached to the aircraft at the commencement of their flight, or

(b) flights by small unmanned aircraft of that description.

(5) An acknowledgement of competency issued, or renewed, under this article is valid for the period shown on the acknowledgement, subject to article 253.

(6) The CAA may issue an acknowledgement of competency subject to such conditions as it deems appropriate.

(7) The CAA is not required to accept applications for acknowledgements of competency under this article before 1st October 2019.

Certain small unmanned aircraft: requirement for acknowledgement of competency (effective 30 November 2019)

94F. (1) This article applies to a flight by a small unmanned aircraft only if it has a mass of 250 grams or more without its fuel but including any articles or equipment installed in or attached to the aircraft at the commencement of its flight.

(2) The remote pilot of the small unmanned aircraft must not fly it unless the CAA has issued the remote pilot with an acknowledgement of competency which is valid for that flight at the time of the flight.

(3) The SUA operator must not cause or permit the small unmanned aircraft to be flown unless the SUA operator has reasonably formed the view that the remote pilot of the aircraft complies with the requirements in paragraph (2) in relation to that flight.

(4) In this article "acknowledgement of competency" means an acknowledgement issued under article 94E.

Meaning of "remote pilot" and "SUA operator"

94G. In this Order—

(a) the "remote pilot", in relation to a small unmanned aircraft, is an individual who—

(i) operates the flight controls of the small unmanned aircraft by manual use of remote controls, or

(ii) when the small unmanned aircraft is flying automatically, monitors its course and is able to intervene and change its course by operating its flight controls;

(b) the "SUA operator", in relation to a small unmanned aircraft, is the person who has the management of the small unmanned aircraft.."

Small unmanned surveillance aircraft

95. (1) The SUA operator must not cause or permit a small unmanned surveillance aircraft to be flown in any of the circumstances described in paragraph (2), and the remote pilot of a small unmanned surveillance aircraft must not fly it in any of those circumstances, 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 SUA operator or the remote pilot of the aircraft; or

(d) subject to paragraphs (3) and (4), within 50 metres of any person.

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

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

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

Schedule 1

"Level", of an aerodrome, means the notified elevation of the aerodrome;" (2019 amendment)

"Remote pilot" has the meaning assigned to it by article 94G(a);"; (2018 amendment)

"SUA operator" has the meaning assigned to it by article 94G(b);". (2019 amendment)

"UK military AIP" means the document published by or on behalf of the Secretary of State entitled "United Kingdom Military Aeronautical Information Publication" and for the time being in force;". (2019 amendment)