



***The British Model Flying Association***

## **CAA Article 16 Authorisation**

**A guide to the new regulations for model flying**

# A Guide to the New Regulations for Model Flying

## Why are the regulations changing?

The UK adopted the EU regulations for model flying in 2019 and these will come into effect on December 31<sup>st</sup>, 2020. This is the same day that we exit from the EU, but regulations in place at the point of departure will be transferred directly into UK law.

Some requirements of the EU regulations were already in place (such as a height limits, Operator Registration and Competency requirements) following changes to the Air Navigation Order set out in 2018, but the EU regulations introduce further changes. Full details of the regulations for the operation of unmanned aircraft (which includes model aircraft) can be found in CAP 722.

Given the excellent safety record established by model flyers throughout Europe, the EU agreed that model flying conducted within the framework of Associations like the BMFA should be subject to more flexible regulation to allow us to continue largely 'as we do today'. The mechanism to facilitate this is referred to as an 'Article 16 Authorisation' (within the 'Specific Category') and this document provides a guide to how the Authorisation we have negotiated with the CAA applies to our members with effect from December 31<sup>st</sup>, 2020.

The new regulations allow for alternative sets of rules to be applied to unmanned aircraft. The 'Open Category' rules set out in CAP722 can be used by anyone in the UK, regardless of whether they are members of any club or association and, amongst other things, include a ban on flying above 400ft. The Open Category requirements will not apply to BMFA members flying in accordance with the terms and conditions of our Article 16 Authorisation.

Model aircraft below 250g which are operated in accordance with our Authorisation are subject to the terms and conditions of the Authorisation. However, in most circumstances they may also be operated within the Open Category instead and so be flown in accordance with the basic requirements outlined in CAP 722 for an aircraft of less than 250g without a camera (i.e. no registration, competency or age requirements but operation limited to less than 400ft).

This guide explains the meaning of the Article 16 authorisation that the CAA has granted to the BMFA.

## Section A - General Conditions of our Article 16 Authorisation

### 1. What type of unmanned aircraft operations does our Authorisation apply to:

Our Authorisation covers all existing activities including radio-controlled aircraft of all types (including helicopters and multirotor drones), free flight aircraft and physically constrained aircraft (control line and round the pole) up to a Maximum Take Off Mass (MTOM)\*\* of 25Kg.

Aircraft with an MTOM of more than 25Kg will be subject to a separate Authorisation to be held by the Large Model Association (which will replace their over 20Kg scheme).

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\*\* Note: For all practical purposes the Maximum Take Off Mass or MTOM is the weight of your aircraft when it first becomes airborne on each flight. The MTOM now includes everything, including fuel, which is why the 7kg has gone up to 7.5kg and 20kg to 25kg.

Aircraft with an MTOM of less than 250g operated in a manner that uses the privileges within this authorisation (for example, flown above 400ft), are subject to the limitations and conditions described throughout this authorisation. However, in many circumstances they may be easily operated within the Open Category requirements (for an unmanned aircraft with a MTOM less than 250g) as the requirements are not particularly restrictive for these very light aircraft.

The Authorisation does not apply to rockets (which were not included within the EU regulations) and it does not apply to any indoor operations either, as none of the rules apply to unmanned aircraft flown inside buildings.

**1.1 You must operate your aircraft within visual line of sight** The Authorisation retains the long standing requirement for the remote pilot to maintain direct, unaided visual contact with their aircraft sufficient to monitor its flight path in relation to other aircraft, persons, vehicles, vessels and structures for the purpose of avoiding collisions, unless the aircraft is being flown in accordance with the specific conditions detailed in the 'First Person View' section.

**1.2. The purpose of the flight must be Sport, Recreation, Education or Demonstration.** The terms of our Authorisation do not cover any type of commercial operation.

## 2. Minimum Age

The introduction of Operator Registration imposed a minimum age of 18 on Operators and this does not change. Lower age limits apply to 'Remote Pilots' to allow flying by pilots under 18. When models are flown by adults the Operator and Remote Pilot are usually the same person, and this is recognised in the Authorisation.

The minimum age for a remote pilot to fly unsupervised **within the full terms of our Authorisation** is 10. There is no minimum age for a remote pilot operating under the direct supervision of another remote pilot (age 14 or over) provided both have the required evidence of competency. In addition, there must be an adult Operator (when an Operator is mandatory) who complies with the requirements described in section 4.2 below.

There is no minimum age for flying control line or round the pole aircraft.

## 3. Safety Accountability

It remains the case that the remote pilot is directly responsible for the safe operation of their aircraft and should only fly if reasonably satisfied that the flight can be safely made

## 4. Operator Requirements

### 4.1 Operator Registration

The existing requirements for Operator registration remain in place (although now extend to capture operators of control line/round-the-pole aircraft weighing more than 1Kg). It is a legal requirement

that anyone operating an unmanned aircraft outdoors be registered as an Operator with the CAA unless:

- the aircraft weighs 250g or less and is not fitted with a camera; or
- the aircraft is a control line or round-the-pole (tethered) aircraft that weighs 1Kg or less; or
- the aircraft is a 'toy' as defined in the EU Regulations (i.e. a product intended to be played with by children under 14, excluding any product with a combustion engine).

There is no requirement to register as an Operator if you only operate model aircraft indoors.

The BMFA has retained the facility for members to obtain their CAA Operator registration via the BMFA GoMembership system.

The Operator I.D. number must be clearly displayed on the aircraft or within a compartment that can be easily accessed without the use of a tool.

## 4.2 Operator Responsibilities

Our Authorisation includes a requirement for Operators to comply with the following requirements (largely common sense):

- Ensure the remote pilot is in possession of the relevant remote pilot competence requirements
- Ensure that the model aircraft is sufficiently maintained, and that any repairs carried out to it are satisfactorily made, such that it is in a safe condition to be flown;
- Ensure that the remote pilot is aware of the limitations and conditions of this authorisation;
- Ensure that the remote pilot is aware of the rules and procedures of their relevant association;
- Ensure that any necessary additional permissions or authorisations are obtained for any specific flight;
- Ensure the remote pilot is aware of any relevant airspace limitations;

The CAA acknowledges that in many instances, the operator and the remote pilot will be the same person. In such cases, this person must discharge the responsibilities of both the remote pilot (see Section 6), and the UAS Operator.

## 5. Remote Pilot Requirements

### 5.1 Remote Pilot Competence

The existing requirements for Remote Pilot Competence remain in place. It is a legal requirement to have evidence that you are competent to operate your aircraft for anyone who is operating in accordance with our Authorisation except for those who:

- only operate aircraft (without a camera) with an MTOM of less than 250g,
- only operate indoors or only operate a control line or round the pole aircraft; (but operators of control line and round the pole aircraft with an MTOM exceeding 1Kg must now register as Operators).

Acceptable evidence of competency can be achieved by passing one of the CAA recognised online tests (such as the CAA DMARES test or the BMFA Registration Competency Certificate)\*\*.

Members with an existing BMFA Achievement obtained prior to 31/12/2020 (including the BMFA Registration Competency Certificate) will be considered to have acceptable evidence of competency.

From 1<sup>st</sup> January 2021, it will be a requirement for anyone taking a new BMFA Achievement to hold a BMFA Registration Competency Certificate.

An additional requirement is that members will have to confirm that they have read and understood the terms of our Authorisation if they wish to operate within it and this will be built into the GoMembership system.

## 5.2 Remote Pilot Responsibilities

It is a condition of our Authorisation that Remote Pilots comply with the following requirements (largely common sense):

- Be fit to fly. Don't fly under the influence of psychoactive substances or alcohol or when unfit to fly (e.g. due to injury, fatigue, medication, sickness or other causes)
- Have the appropriate competency (and evidence of it such as your membership card/document).
- Be familiar with manufacturer's instructions for your aircraft, if applicable.

Before flying, it is a requirement to:

- Make sure there are no relevant airspace restrictions in place where you intend to fly.
- Ensure that the operating environment is compatible with the limitations and conditions set out within this Authorisation.
- Ensure that your aircraft is in a safe condition to complete the flight safely.
- Ensure that any relevant information about the operation has been made available to the relevant air traffic service (ATS) unit, other airspace users and relevant stakeholders, when required.

During the flight, it is a requirement that you:

- Comply with the limitations and conditions set out within this authorisation;
- Avoid any risk of collision with any manned aircraft and discontinue a flight when it may endanger other aircraft, people, animals, environment or property;
- Comply with any applicable airspace restrictions;
- Comply with the rules and procedures of your Association and/or Club;
- Do not fly close to or inside areas where an emergency response effort is ongoing unless you have permission to do so from the responsible emergency response services.

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*\*\* Note. The BMFA Registration Competency Certificate test will ask you questions relevant to the terms and conditions of the BMFA model flying Authorisation. In contrast the CAA DMARES test will ask you questions about the general rules in CAP 722 that do not apply when flying in accordance with the Authorisation. Whilst passing either test is legally acceptable, it is recommended that members intending to use the Authorisation take the BMFA test, which is directly relevant to their flying activities.*

## 6. Where can I fly?

Essentially, wherever you fly now.

The Authorisation is valid throughout the UK at:

- Any established model flying club site. Clubs operating in a 'built up area' (*This means an area substantially used for industrial, recreational, commercial or residential purposes*) must conduct a risk assessment and have suitable mitigations in place within their 'Field Safety Rules'. The BMFA can assist with this.
- Any other suitable site which is not a 'built-up area'.
- Within a 'built up area' if the flying site is within an area which is only used substantially for recreational purposes (for example playing fields or sports pitches) and a risk assessment has been carried out. Again, the BMFA can assist with this.

## 7. How high can I fly?

The new regulations limit the operation of all unmanned aircraft to 400ft above the surface.

However, our Authorisation permits members to fly above 400ft, subject to:

- The model aircraft is not a multi-rotor.
- The model aircraft is not automated. (*This means a model aircraft with autonomous or automatic flight capability. This does not include systems which are fitted for flight stabilisation purposes or flight termination purposes, such as free-flight termination devices*).
- The model aircraft is not operating within the Flight Restriction Zone of an aerodrome, other than with the written permission/agreement with the aerodrome.
- The model aircraft remains within visual line of sight of the remote pilot.
- The model aircraft has a MTOM below 7.5Kg.
- Model gliders with a MTOM below 14Kg may be flown at a height of 400ft above the remote pilot (which if flying from a slope permits operation at heights exceeding 400ft from the surface beneath the glider).

When operating at heights which may exceed 400ft, it is essential that members maintain a good look out for manned aircraft. If a manned aircraft appears in the vicinity, their model aircraft should be brought down to under 400ft as quickly as is safely practicable.

## 8. Separation Distances from uninvolved persons

The stipulation of separation distances from uninvolved persons is a new requirement (the default distance within the EU regulations for most of our operations being 50m), but we have reached a compromise agreement with the CAA to ensure that the terms of our Authorisation are appropriate for our established operations.

There are no minimum separation distance for model aircraft with an MTOM under 250g.

### 8.1 Model Aircraft with an MTOM between 250g and 7.5Kg

Our Authorisation stipulates that model aircraft (other than free flight aircraft) between 250g and 7.5Kg cannot be operated:

- Within a horizontal distance of 30m of assemblies of people. (*Assemblies of people are gatherings where persons are unable to move away due to the density of the people present*).
- Within 30m of any uninvolved person. (*Uninvolved Persons are those who are not participating in the UAS operation or who are not aware of the instructions and safety precautions given by the UAS operator*). This distance may be reduced to 15m for take-off and landing subject to adequate local mitigations to protect uninvolved persons and the completion of a risk assessment.

### 8.2 Model Aircraft with an MTOM between 7.5Kg and 25Kg

Our Authorisation stipulates that model aircraft with an MTOM between 7.5Kg and 25Kg cannot be operated:

- Within a horizontal distance of 50m of assemblies of people. (*Assemblies of people are gatherings where persons are unable to move away due to the density of the people present*). This distance may be reduced to 30m for take-off and landing subject to adequate local mitigations to protect uninvolved persons and completion of a risk assessment.
- Within 30m of any uninvolved person. (*Uninvolved Persons are those who are not participating in the UAS operation or who are not aware of the instructions and safety precautions given by the UAS operator*).

## 9. Dropping of Articles

The new regulations prohibit the dropping of any materials from a model aircraft, but our Authorisation exempts us from this requirement subject to the following condition - *The remote pilot must not cause or permit any article or animal to be dropped from an unmanned aircraft so as to endanger persons or property.*

## 10. Provisions for 'trial flights'

Our Authorisation permits the continuance of 'trial flights' for non-members.

The non-member may operate the controls of the model aircraft and does not need to comply with the competency requirements whilst under the direct supervision of a member.

The member supervising the flight must be registered as an Operator and display their Operator I.D. on the aircraft.

## 11. Provisions for Overseas Visitors/Competitors

Overseas visitors/competitors are permitted to operate within the terms of our Authorisation provided that they hold a temporary membership of the BMFA and agree to comply with the terms of the Authorisation (including the remote pilot competency requirements).

Overseas visitors/competitors must also carry the Operator I.D. number of a UK 'Host' on their aircraft.

## 12. Provisions for Model Flying Displays

Our Authorisation permits any operator/remote pilot to operate a model aircraft as part of a flying display within the terms set out in the Authorisation plus CAP 403 and CAP 658.

If the flying display height will exceed 400ft, it must be notified to other airspace users through the use of a NOTAM.

If the flying display requires operations which fall outside of our Authorisation (such as a requirement to operate aircraft with a MTOM exceeding 7.5Kg above 400ft), then a separate Authorisation and a specific Model Aircraft Display Authorisation must be obtained directly from the CAA.

## 13. Reporting Requirements

Our Authorisation includes the requirement to report certain accidents, serious incidents and other occurrences. This is an existing requirement and is referred to in the current BMFA Members Handbook (Section 21) and CAP 658 (Chapter 13). However, the CAA are wanting to reinforce the requirements (full details can be found in CAP 722).

Therefore, it is a condition of our Authorisation that correct reporting to the AAIB *and* the CAA **must** be carried out.

### 13.1 AAIB Reporting Requirements

The following **must** be reported to the AAIB if they involve a model aircraft and result in a fatality or serious injury:

- **Accidents**
- **Serious Incidents**

This requirement differs from the requirements outlined in CAP 722 but reflects the current agreement in place between the model flying community and the AAIB.

### 13.2 CAA Reporting Requirements

The following **must** be reported to the CAA:

- **Occurrences** which involve any of the following:
  - Fatality
  - Serious Injury
  - Manned aircraft

The following **must** be reported to the CAA, as a specific condition of this authorisation:

- **Serious Incidents or Other Occurrences** which involve any of the following:
  - Manned aircraft
  - Operating above 400ft
  - Operating less than 50m from uninvolved people
- Instances where aircraft have flown beyond visual line of sight.

## Section B - Aircraft Specific Conditions of our Article 16 Authorisation

Our Article 16 Authorisation includes some provisions for specific types of model flying operations. Some of these directly replace existing permissions/exemptions, such as the operation of control line aircraft within a Flight Restriction Zone and the operation of First Person View aircraft.

### 1. Physically Constrained unmanned aircraft

Our Authorisation defines a physically constrained aircraft as a model aircraft that:

- *is flying within a closed building or other physical construction forming a safely enclosed area; or*
- *is a control-line model aircraft; or*
- *is a round-the-pole aircraft.*

#### 1.1. Operation with an aerodrome Flight Restriction Zone (FRZ)

Permission is not required to operate a control line/round the pole model aircraft within an FRZ, provided that:

- The length of the tether line is less than 25m
- The flight does not take place within the Runway Protection Zone
- The MTOM is less than 7.5Kg
- The flight does not take place over or within the boundary of the protected aerodrome, unless permission has been obtained (in accordance with Article 94A of the ANO).

#### 1.2. Exemption of some control line and round-the-pole model aircraft from the EU regulations.

Control line/round the pole model aircraft are exempted from all of the requirements of the EU regulations including Operator Registration and Remote Pilot Competency, provided that:

- The length of the tether line(s) does not exceed 25m
- The MTOM is less than 1Kg
- The aircraft is not capable of vertical take-off/landing or hovering (such as helicopters or multi rotors).

In addition, our Authorisation exempts Remote Pilots of control line/round the pole aircraft from the competency requirements altogether (even if the MTOM exceeds 1Kg) though they will be still be required to register as an Operator.

## 2. Free Flight Model Aircraft

Our Authorisation defines a free flight model aircraft as follows:

*A free flight model aircraft cannot be remotely piloted and does not have software or systems for autonomous control of the flight path. A flight termination device may be fitted. The aircraft trim is adjusted prior to flight. The aircraft is trimmed (and fuelled if applicable) with the intent that it will follow a substantially circular path relative to the air and ultimately glide to a low velocity landing. A free-flight unmanned aircraft will drift relative to the user depending upon the speed and direction of the wind. The person in charge of the free-flight unmanned aircraft is deemed to be the remote pilot for the purposes of this authorisation.*

Some specific requirements for free flight have been included within our Authorisation. Most of these requirements are not new and generally reflect the requirements of the existing law (and how it should have been being applied already):

- Prior to launching their aircraft, the remote pilot should take into account the expected performance of the aircraft, the weather conditions and the availability of any flight termination device and must be reasonably satisfied that the expected flight path will not infringe an FRZ (unless prior permission has been obtained) or other airspace restriction.
- The operation of a free flight model aircraft must only be carried out within the limits of our Authorisation (or alternatively within the requirements of the Open Category, especially for those aircraft with an MTOM of less than 250g).
- A free flight model should not be deliberately flown beyond visual line of sight.

A free flight model aircraft must only be launched:

- From an area free from uninvolved persons (*Uninvolved persons are those who are not participating in the UAS operation or who are not aware of the instructions and safety precautions given by the UAS operator*).
- When the remote pilot has identified an area (the 'flight volume') within which they believe the aircraft will remain.
- When the remote pilot is reasonably satisfied that the aircraft will remain within the flight volume.
- When the remote pilot is reasonably satisfied at the point of launch that no uninvolved persons will enter the flight volume and be endangered.

Within the terms of our Authorisation, the Operator/Remote Pilot of any free flight aircraft with an MTOM of less than 250g which is likely to operate at a height above 400ft, must be registered as an Operator and have evidence of Competency (such as passing the BMFA online test).

### 3. First Person View (FPV) Model Aircraft

Our Authorisation defines first person view aircraft as follows: *In First Person View operations the remote pilot flies the aircraft using images provided by cameras aboard the aircraft. When flying FPV the remote pilot cannot monitor the flight path in relation to other aircraft, persons, vehicles, vessels and structures for the purpose of avoiding collisions to the same extent as a remote pilot maintaining external direct, unaided visual contact with the aircraft.*

Our Authorisation incorporates the terms of our existing FPV exemption, but also includes specific provision for FPV ‘drone racing’ which the BMFA had been discussing with the CAA for some time.

#### 3.1 FPV Drone Racing

A model aircraft may be flown by a remote pilot using first person view subject to the terms of our Authorisation and provided that the aircraft is operated:

- Within a sterile area – meaning a cordoned off, closed area that uninvolved persons are excluded from. (*Uninvolved persons are those who are not participating in the UAS operation or who are not aware of the instructions and safety precautions given by the UAS operator*).
- The aircraft is not flown in excess of 160ft (50m) above the surface.
- In accordance with procedures set out for the purpose of the event and in accordance with the instructions of the race director or other nominated person, including provision of a ‘terminate race and land immediately instruction.
- Any observers are suitably briefed and aware of their responsibilities, including the monitoring of people or aircraft entering the sterile area.

Individual remote pilots do not require their own ‘competent’ observer when operating under this provision.

#### 3.2 General FPV Flying

A model aircraft may be flown by a remote pilot using first person view subject to the terms of our Authorisation and provided that:

- The remote pilot is accompanied by a competent observer who maintains direct unaided visual contact with the unmanned aircraft sufficient to monitor its flight path in relation to other aircraft, persons, vehicles, vessels and structures for the purpose of avoiding collisions and advises the remote pilot accordingly.
- The MTOM of the aircraft does not exceed 3.5Kg.
- The aircraft is only operated in the areas defined in the ‘Where can I fly’ section (6) above.
- The aircraft is only operated in accordance with the ‘Separation Distances from Uninvolved Persons’ section (8) above. (*Uninvolved persons are those who are not participating in the UAS operation or who are not aware of the instructions and safety precautions given by the UAS operator*).

And the aircraft is not flown:

- Within an aerodrome FRZ, unless appropriate permission has been obtained.

- At a height of more than 1000ft above the surface, unless it is a rotorcraft with more than 1 lift generating rotor or propeller in which case the height shall not exceed 400ft above the surface.
- Over or within 150m of any assemblies of people (*Assemblies of people are gatherings where persons are unable to move away due to the density of the people present*).
- Within 50m of any vessel, vehicle or structure which is not under the control of the remote pilot.