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trading as the

**SCOTTISH AEROMODELLERS ASSOCIATION**

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# **SAA Members Handbook**

## **Condensed UAS Regulations**





## Change Record

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## 1. Scope

The scope of this document is to explain the various regulations in place effecting model aircraft flown as a hobby or sport rather than for commercial reasons

## 2. CAA Regulation Document

Changes have been made in the last few years and as a result there is little difference in regulations between model aircraft, of all type, flown for leisure and Unmanned aircraft used for commercial purposes. The CAA Cap-722 suit (722A through 722F) contain the main definition of the regulations, but other CAA document also contains regulations and change to regulations.

As a result, the CAA have allowed model organisations in the UK to apply for an “Article 16 Authorisation” which allows “Specific Condition” for model flying in the UK for members of these organisations.

## 3. Model Flying Category

There are three flying categories outline in the regulation but only two are of interest to model flying

- a. The above document allows anyone to fly models in what is called the “Open Category” which is considered a low Risk.
- b. A further “Specific Category” is deemed medium risk. This allows an organisation to apply to the CAA for changes to the basic regulation.
- c. Model flying organisation have traditionally flown some forms of models and certain competitions outside the regulations of the Open Category. The CAA has hence afforded model organisations and its members some flexibility if they apply for changes and issue an “Article 16 Authorisation”. This passes certain authority to the model organisation rather than the CAA and allow members of the model organisation to fly in line with its authority

## 4. Definition of Model Classes

The follow is the definition of model classes in the regulation, and these are outlined below: -

### 4.1. Class C0

- a. These are very small, unmanned aircraft and include toys as defined below:-
  - Are less than 250g maximum mass at take off
  - Have a maximum speed of 19m/s (42.5mph)
  - Are unable to be flown above 120m (400ft) above the take off position



## 4.2. Class C1

a. These are small unmanned aircraft as defined below:-

- Either -- Less than 900g (1.96lb) mass at take-off or
- Are made and perform in a way that if they collide with a human head, the energy transmitted will be less than 80 Joules
- Have a maximum speed of 19m/s (approx. 42.5 mph)
- Are designed and constructed so as to minimise injury to people

## 4.3. Class C2

a. These are unmanned aircraft as designed below:-

- Less than 4kg (8.6lb) mass at take-off
- Designed and constructed to minimise injury to people
- equipped with a low-speed mode' which limits the maximum speed to 3m/s (approx. 6.7 mph) when selected by the remote pilot

## 4.4. Class C3

a. Unmanned aircraft that possess automatic control modes (such as found in typical multi-copter 'drones') as below

- Less than 25kg mass at take-off

This class is typical of medium sized multi rotors

## 4.5. Class C4

a) Unmanned aircraft that possess automatic control modes as below

- less than 25kg maximum take-off mass

This class typical of fixed wing, helicopters etc models flown by SAA members



## 5. Operating Areas

Operating Areas are defined in terms of risk and hence limits what and how models can fly in each area, these are defined as A1 to A3

There are regulations common to all operating areas which are described below unless otherwise stated.

- a. Visual line of sight only (VLOS), but a single 'unmanned aircraft observer' may be used as follows:
  - The remote pilot is still responsible for the safety of the flight.
  - The unmanned aircraft observer must be positioned next to the remote pilot, and they must be able to communicate clearly and effectively with each other.
  - The unmanned aircraft must be in the VLOS of the unmanned observer at all times.
- b. The MTOM, or flying weight if appropriate, of the unmanned aircraft must be less than 25kg additional mass limitations apply for subcategories A1, A2 and A3
- c. The unmanned aircraft must be maintained within 120 metres (400ft) from the closest point of the surface of the earth.
  - **Exceptions:**
    - Obstacles taller than 105m may be overflown by a maximum of 15m provided that:-
      - - The person in charge of the obstacle has requested this; and,
        - The unmanned aircraft must not be flown more than 50m horizontally from the obstruction.
      - Unmanned sailplanes (gliders) may be flown further than 120 metres (400ft) from the closest point of the surface of the earth, but they must not be flown higher than 120 meters (400ft) above the remote pilot.
- d. The dropping of articles is not permitted
- e. Carriage of dangerous goods is not permitted
- f. Insurance for recreational or sports flying is not required but SAA members are covered by a comprehensively by the SAA's insurance as part of their membership



## 5.2. A1 Area

- a. No flights within restricted airspace (Restricted Areas, Danger Areas, FRZs) without relevant permission. Flight permitted within residential, commercial, industrial and recreational areas. (*Flight over a person allowed but ideally should be avoided*)

- Class C0 and UA less than 250g flying weight
  - No flight over assemblies of people.
- Class C1 and 'A1 Transitional':
  - • No intentional flight over uninvolved persons.

*Note1*

*A1 transitional tend to be legacy production drones which are not marked as a C0 to C1 but fall within the C category for mass etc.*

*Note2*

*'Follow-me' mode may be used for flight, up to a maximum distance of 50m from the remote pilot.*

- a. Permitted UA Types

- UA with a flying weight of less than 250g,
  - maximum speed less than 19 m/s.
  - Class C0 UA.
  - Class C1 UA. 'A1
- Transitional' UA (flying weight of less than 500g).
  - *Note:*  
*only until 31 December 2022 and subject to additional remote pilot competency*

## 5.3. A2 Operating Area

- a. No flights within restricted airspace (Restricted Areas, Danger Areas, FRZs) without relevant permission. Flight permitted within residential, commercial, industrial and recreational areas.

- Class C2:
  - No closer than 30m horizontally.
    - If 'low-speed mode' is activated – employ 1:1
    - but never closer than 5m horizontally.
- A2 Transitional':
  - No closer than 50m horizontally.

*Note:-*

*1.1 rule means that if you are 5m away from an uninvolved person you should be 5m above. Hence 10m away should be 10m above etc.*



b. Permitted UA types

- Class C2 UA.
- 'A2 Transitional' UA (flying weight of less than 2kg).
  - *Note: only until 31 December 2022*
- Any UA able to be used in subcategory A1.

## 5.4. A3 Operating Area

- a. No flights within 150m horizontally of residential, commercial, industrial or recreational areas. No flights within restricted airspace (Restricted Areas, Danger Areas, FRZs) without relevant permission.
- No uninvolved persons to be present within the area of the flight. No closer than 50m horizontally at any time.
    - a. Employ 1:1 rule when reacting to unexpected issues

*Note:-*

*1.1 rule means that if you are 5m away from an uninvolved person you should be 5m above. Hence 10m away should be 10m above etc.*

b. Permitted UA types

- UA with a flying weight of less than 25kg.
- Class C3 UA.
- Class C4 UA.
- Any UA able to be used in subcategory A2.

## 6. UAS Operators requirements

The following conditions to be an UAS operator are required

### 6.1. Minimum age

For all categories an operator must be 18 years old





## 6.2. Registration

- a. Registration is required on the CAA website or if model associations have obtained Article 16 authorisation via application with membership

*Note UAS operator registration is subject to a charge as defined in the CAA Scheme of Charges.*

- b. Registration is not required if the UA is in C0 class, is a toy, and /or below 250g provided it cannot capture data (no camera)
- c. All other Classes require registration as an operator

## 6.3. Remote pilot

The following describes what is required to be a remote pilot

- a. For all categories, other, than class C0 or a UA less than 250g with no camera fitted the remote pilot must do DMARES training and test to obtain a “Fliers ID”
- b. Model Association with Article 16 and pilots with previous achievement may register as operators with their membership and or take the associations own test and this forgoes the need the do DMARES.
- c. There is now no minimum age to be a “remote pilot” however there is a need to show competency before flying solo. They can however in then C0 under 250g class fly provided a pilot with the required competency with them who is a minimum of 16 years.
- d. Remote pilots must not fly if under the influence of psychoactive Drugs or alcohol
- e. Remote pilots must not fly when unfit to perform their tasks due to an injury, fatigue, medication, sickness or other causes.

## 7. Article 16 Authorisation “Specific Conditions”

These “specific conditions” apply to the members of the model organisation only which has been given these exemptions. The SAA, BMFA and LMA have applied for exemptions and while the SAA and BMFA operate model aircraft with a mass below 25kg only the LMA are allowed to operate with a MTOM greater than 25kg.

Hence modellers who wish to fly models of MTOM > 25kg must be members of the LMA and abide with the conditions of the LMA’s Article 16 Authorisation.

This is beyond the scope of this document and members requiring such must look at the LMA’s documentation of such regulations



The scope of this document is to explain the “Specific Conditions” afforded to the SAA and BMFA

## 7.1 Physically Constrained Model Aircraft

Control Line aircraft and Round the Pole models

- a. Allows “Control Line” or “Round the Pole” models to operate in an Aerodrome Flight Restricted Zone (FRZ) provide the following conditions are met
  - The tether does not exceed 25m
  - The flight does not take place within the Runway Protecting Zone (RPZ) part of the (FRZ)
  - The MTOM does not exceed 7.5kg
  - The flight does not take place within the boundary of the protected Aerodrome unless proper permission has been granted as required and describes in ANO article 94A

## 7.2 Free Flight Model Aircraft

Free Flight Model Aircraft once launch normally have no direct control from the remote pilot, although, devices may be fitted to cause the model to end its flight either by on board equipment or by the remote pilot via a radio link.

- a. Before the launch of a free flight model the remote pilot must take into account:-
  - The expected performance of the aircraft
  - The weather conditions
  - Any flight termination device fitted
  - Be reasonable sure the flight will not infringe FRZ or other airspace restrictions
- b. The operation of the Free Flight model must be carried out within the limitations of the Article 16 Authorisation or the Open Category
- c. A Free Flight Aircraft must not be: -
  - Launched unless from an area which the remote pilot is able to satisfy themselves is free from uninvolved people
  - Launched until the remote pilot has identified the area in which he or she believes the aircraft will remain throughout the flight (flight volume)
  - Flown unless the remote pilot is satisfied the aircraft will remain within the flight volume



- Flown unless the remote pilot is satisfied that at the point of launch no person will enter the flight area and hence be endangered by the flying model
- d. A free flight model shall not deliberately be flown beyond the visual line of sight of the remote pilot (unless otherwise in accordance with suitable authorisation)

### 7.3 First person View (FPV) model aircraft

A model aircraft may be flown by a remote pilot using first person view (FPV) equipment, subject to the limitations article 16 authority, under the following conditions specified under (a) or (b) one condition being specified for a remote pilot and observer the other being typical of race conditions in a sterile environment

#### a. Condition (a) Typical race

The aircraft is flown in accordance with all the following conditions

- Within a sterile area meaning a cordoned off closed area that uninvolved persons are excluded from: and
- The aircraft is not flown at a height above 160ft (50m) from the surface: and
- In accordance with procedures specifically set out for the purpose of the event, and in accordance with instruction from the race director or other nominated person including any **terminate race and land immediately** instruction and
- Any observer briefed and aware of their responsibilities including monitoring of people or aircraft entering the cordoned off area

#### b. Condition (b) remote pilot plus an observer

- The remote pilot is accompanied by a competent observer who maintains direct unaided visual contact with the UA sufficient to monitor the path of the aircraft, persons, vessels, and structures for the purpose of avoiding collision and advises the pilot accordingly
- The MTOM of the aircraft does not exceed 3.5kg
- 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 a multi-rotor aircraft (more than one lift generator / propeller) which must be limited to a maximum height of 400ft above the surface
  - Over or within 50m of any assembly of people
  - Within 30m of any vessel or structure



- Within 30m of any involved person

## 7.4 Model Aircraft Flying Displays

Under article 16 Authorisation the Authority for model events and displays shall be passed the SAA for events in Scotland. The BMFA and the LMA shall have similar authority

- a. Any operator or remote pilot who wishes to take part in any model display event can do so under this authority (SAA)
- b. Any SAA club wishing to host a model flying display must first obtain a permit from the SAA (See the "SAA members Handbook SAA Model Displays.docx/pdf " for further clarification)
- c. The SAA must assess each request for a model display and where it considers it safe issue a permit for the event. The club must satisfy and be responsible for organising within the conditions of the authority
- d. Any model display which takes place where aircraft may be above 400ft must notify other airspace users with the use of a NOTAM
- e. It is the organisers responsibility to ensure the model display is carried out safely. The SAA shall carry out an assessment and ensure a risk assessment is carried out before the display take place
- f. For the purposes of the display the height limit of 400ft with MTOM of greater than 7.5kg but less than 25kg may be temporary increased provided within the limits of the SAA authorisation, this temporary increase shall be set out within the SAA permit for the display
- g. Aircraft flying in such a model display must fly within the limits of the authorisation and if large models are to be flown as well then there needs to be joint authorisation given by both SAA and LMA
- h. Any pilot flying a jet aircraft must be able to show competency by having flown the intended routine three times within 90 days prior to the display and at least once 30 days prior to the display date on an aircraft representative of the model that will be flown at the display

## 7.5 Operation of model aircraft by non-UK persons

Non-UK residents may operate model aircraft in accordance with all conditions of the authorisation provide they meet the following condition

- a. They hold a temporary or full membership of the SAA
- b. They comply with the rules and practices of the SAA



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## 7.6 Operation of model aircraft by non-members under instruction

For trial flights by a non-member, they may operate the controls of a model aircraft provided they are under direct of a suitable qualified member who has the relevant competency qualifications.

Typically, a SAA bronze pilot as minimum with up-to-date CAA registration. Registered pilots from the BMFA and LMA also apply.

## 7.7 Routine flight above 400ft for aircraft greater than 7.5kg

- a. An SAA club may request that their specific flying site is increased from 7.5kg up to 25kg for flying above 400ft
- b. The club must submit rational and a safety case to the SAA for consideration in line with SAA procedures
- c. The SAA may increase the Mass limit for a suitable flying site where appropriate and safe to do so, up to a maximum of 25kg
- d. Any such permit must be reviewed annually
- e. The risk assessment must be available to any member of the Club and must be fully understood by any member making use of this increased mass provision.