香港特別行政區政府
民航處
Civil Aviation Department
The Government of the Hong Kong Special Administrative Region

Small Unmanned Aircraft Advisory Circular No. AC-011

Date: 18 July 2025

Guidelines and Permission for Drone Racing Event

1. Background

1.1 The Small Unmanned Aircraft Order ("SUA Order"), Chapter 448G of the Laws of Hong Kong, came into operation on 1 June 2022. Under the SUA Order, small unmanned aircraft ("SUA") operations are regulated under a risk-based approach and classified according to the weight of the SUA and the operational risk level. The SUA Order is a piece of subsidiary legislation made under the Civil Aviation Ordinance that aims to provide a flexible and forward-looking regime for the regulation and development of SUA operations in Hong Kong.

1.2 "**Drone racing**" has been gaining popularity in Hong Kong and worldwide. Drone racing commonly refers to competitions with SUA which may be operated by remote pilots with a first-person view ("FPV"). The Civil Aviation Department ("CAD") is cognizant of the development of drone sports and is keen to provide advice and support from the aviation safety perspective.

1.3 Due to their competitive nature, drone racing events often involve the flying of SUA at high speed and may be required to pass through different obstacles along the race-course set by the organiser. Sometimes, the drone racing events may also be organised at night. As drone racing will require the operations of SUA in circumstances where the following operating requirements cannot be met, a permission under section 37 of the SUA Order will be required from the CAD:

- The flying speed of the aircraft does not exceed the specified flying speed *[section 16(1)(d)[1]]*;

[1] The flying speed as specified in the Gazette Notice issued under section 17(2) of the SUA Order is 20 km/hr for Category A1 Aircraft, and 50 km/hr for Category A2 Aircraft.

- The distance between the aircraft and any vehicle, vessel or structure that is not under the control of the remote pilot of the aircraft for the flight, measured horizontally and at any altitude, is not less than the specified distance *[section 16(1)(f)[2]]*;
- The aircraft is not operated for the flight at the specified hours of a day *[section 16(1)(a)[3]]* (if applicable);

Pursuant to section 15 of the SUA order, the mentioned operating requirement does not apply if the flight is wholly within an enclosed area[4] (see paragraph 3.5).

1.4 This Advisory Circular ("AC") aims to provide guidance applicable for all drone racing events in Hong Kong regardless of whether such events are organised in an enclosed area, considering the potential risks posed by such operations to participants and the general public. It also provides information on the application required for obtaining permission from the CAD for conducting drone racing events other than within an enclosed area.

1.5 The AC is also applicable to any form of drone sports and training in which the SUA are operated at a speed that exceeds the operating requirement as mentioned in paragraph 1.3. Unless the conditions for school operations or enclosed area can be fulfilled, prior CAD permission will be required for conducting such operations.

Note: Please refer to AC-009 for Guidelines for Small Unmanned Aircraft Operations within School Premises.

2. Responsibilities of the Drone Racing Event Organiser (the "organiser")

2.1 The organiser should be competent and experienced in conducting drone racing events.

2.2 The organiser has the overall responsibility for ensuring the safe operations of the drone racing event. Amongst others, the organiser shall be responsible for setting up the venue, rules and procedures, and implementing any arrangements necessary for conducting the drone racing event in a safe and coordinated manner, and for ensuring that no person or property would be endangered by the SUA at all times.

2.3 The organiser must make available a team of supporting personnel and crew members and be satisfied that the team is competent and fit to support the conduct of the drone racing event safely. More information is provided in paragraph 4.

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[2] The minimum distance as specified in the Gazette Notice issued under section 17(2) of the SUA Order is 10m.
[3] The hours of a day as specified in the Gazette Notice issued under section 17(2) of the SUA Order are hours other than daylight hours. In this regard, daylight hours mean the time from half an hour before sunrise until half an hour after sunset (both points of time exclusive). Sunrise and sunset are determined at surface level.
[4] A flight of SUA is within an **enclosed area** if the area is surrounded on all sides by fixed or movable walls, ceiling, structures or other barriers that effectively prevent the aircraft from leaving the area during the flight.

2.4 The organiser shall ensure the safety guidelines provided in this AC, which comprise operating conditions (paragraph 3), personnel qualification and responsibilities (paragraph 4), aircraft specifications (paragraph 5) as well as the requirement for aircraft registration and labelling (paragraph 6) are observed for the conduct of the drone racing event. All relevant records shall be retained for a minimum of **two (2) years** after the date of event.

3. Operating Conditions

3.1 The drone racing event shall be conducted in accordance with the site plan, operational control procedures, emergency procedures, risk assessment and safety mitigation measures documented in the Operations Manual ("OM"). Details are provided in the ensuing paragraphs.

3.2 Unless otherwise specified, the applicable operating requirements under section 16 of the SUA Order, including but not limited to maintaining the flying altitude at 300 feet above ground level or below, the maximum dimension of SUA, and that the flight is wholly within Hong Kong, etc. shall be observed. Other applicable requirements, including SUA registration and labelling, shall also be observed. More details are available in the Safety Requirements Document ("SRD") published by the CAD.

3.3 The permission of the land / property owner on whose land / property the drone racing event is intended must be obtained.

3.4 The drone racing area, including the race course area (and the air space involved), areas of participants, judges and audience, shall be under the full and proper control of the organiser, and shall be set up in accordance with the OM.

3.5 The race course shall be segregated from the judges, audience, participants in the waiting area, other staff and uninvolved people, structures, vehicles or vessels by:

a) a closed cage or safety net covering all sides of the race course including the top that effectively prevent the aircraft from leaving the area during the flight from any side or from the top; or

b) a safety net that surrounds the race course on lateral sides only, with a height that is at least 2 meters higher than the maximum flying height of the SUAs allowed in the race or the maximum height of the race course settings (e.g. obstacles for the SUAs to pass through), whichever is higher.

The race course with all sides covered as described in paragraph 3.5 a) above will be considered as an **enclosed area**.

3.6 Barriers, with at least 1 m height, is placed alongside the safety net or cage to keep anyone at a safe distance from the safety net or cage.

3.7 The flights shall take place only within the race course. The maximum flight height and flight route are defined in such way that the safety net is sufficiently high to prevent the SUA from flying out of the net (for non-enclosed race course).

3.8 Access to the race course by uninvolved people shall be blocked.

3.9 The drone racing shall be carried out within Visual Line of Sight ("VLOS") of the remote pilot or the visual observer for a FPV race. During the flight, the remote pilots and visual observers shall stay in a segregated zone in which they are not distracted or disturbed by surrounding factors, including the audience.

3.10 The operation shall not involve any carriage of dangerous goods by the SUA.

3.11 Nothing to be dropped from the SUA during the operation.

3.12 A risk assessment must be conducted prior to the drone racing event, and the risk mitigation and emergency procedures must be established and adhered to during operation.

3.13 For the conduct of a drone racing in a **non-enclosed race course** (refer to paragraph 3.5), a valid insurance policy must be in force that insures against third-party liability (for bodily injury and/or death) arising out of or caused by the drone racing event. Organisers of drone racing events in an enclosed race course are also advised to obtain adequate insurance coverage.

3.14 Depending on the scale and nature of the event, agreement / permission / license from relevant Government Bureaux / Departments (such as Police) may be required. The organiser shall ensure all necessary permissions from relevant authorities are obtained before conducting the racing event. The organiser must ensure that all relevant requirements by the relevant authorities are observed for the conduct of the drone racing event.

3.15 If the drone racing event will be operated at night, the race course shall be sufficiently illuminated. The SUA shall also be equipped with appropriate lighting visible to the remote pilot and/or visual observer, supporting crew and judges at all times during the flight in the race-course to ensure safe operations.

4. Personnel Qualifications & Responsibilities

4.1 The remote pilots (participants) must possess the necessary skills for conducting safe operation of the SUA.

4.2 If the SUA are operated with FPV, the pilot must be assisted by a visual observer staying by his/her side during the flight to keep the operation within the visual observer's visual line of sight. Effective communication shall also be maintained. In case of emergency, the visual observer shall be authorized and shall be equipped to shut off the transmitter in order to trigger the fail-safe device.

4.3 The supporting crew must be competent to perform their duties they are responsible for.

4.4 The remote pilot, visual observer and supporting crew must be familiar with the standard and emergency procedures as defined in the OM.

5. Aircraft Specifications

5.1 The rotor blades are not made from metal.

5.2 The SUA are equipped with a fail-safe mode which can immediately and effectively stop the motors under emergency situations.

5.3 Considering the competitive nature and the high speed of the SUA during the drone racing event, the organiser shall define aircraft specifications allowed in the race in the OM, including but not limited to the weight, size, materials of the SUA, battery requirements, etc. Relevant sporting codes and international safety guidelines applicable to drone racing events should be followed.

5.4 The operations must comply with the regulations and directives set by Office of the Communications Authority ("OFCA") on the use of telecommunications apparatus. The organiser shall ensure that all necessary permission or licence from OFCA are obtained before conducting the operation and ensure that all relevant requirements are observed for the conduct of the drone racing event.

Note 1: Refer Schedule 2 of Telecommunications (Telecommunications Apparatus) (Exemption from Licensing) Order (Cap. 106Z) for the frequency band, limits on output level and limits on spurious emission level for which the telecommunication apparatus shall operate within which the exemption from licensing applies.

Note 2: Attention is drawn to provisions under the Telecommunications Ordinance (Cap. 106) against the usage of radio jammers to interfere or block radiocommunications by emitting radio waves at the same operating frequency as the targeted radio apparatus.

6. Application Procedures for Permission

6.1 A prior permission from the CAD is required for conducting a drone racing event that is not in an enclosed area (refer to paragraph 3.5).

6.2 The applicant should be the organiser of the drone racing event. A dedicated contact point shall be provided by the applicant to the CAD, who shall be responsible for the whole application process, and any necessary coordination and liaison among the venue manager, event participants, and all relevant parties.

6.3 The application form can be downloaded from the electronic portal for small unmanned aircraft, "eSUA", at https://esua.cad.gov.hk/. The completed form shall be submitted to the CAD by email to sua@cad.gov.hk, accompanied by relevant application fee.[5]

6.4 The applicant is required to submit the following documents **at least 28 calendar days** before the date of the drone racing event :

a) A completed application form (available at https://esua.cad.gov.hk/);
b) A site plan (see paragraph 6.10);
c) An OM (see paragraph 6.11 and **Appendix A**);
d) A safety risk assessment (see paragraph 6.12 and **Appendix B**).

6.5 As the time required for the processing of the application would depend on the **completeness** and **readiness** of the submission, applicants should ensure that the submissions are in order to facilitate the processing of applications. The CAD can only process the application with all required information; whilst application with insufficient details may lengthen the application process.

6.6 Subject to the complexity of the proposed operation, the CAD may require the organiser to arrange an on-site assessment, flight demonstration and/or rehearsal regarding the setup of the race course and cordoning arrangement in considering the application (see paragraph 6.10).

6.7 If the operation is within a Restricted Flying Zone ("RFZ") except wholly within an enclosed area, a separate application for operations within RFZ shall be submitted simultaneously unless the relevant permission has already been obtained.

6.8 The CAD may refuse to grant the permission if the applicant cannot demonstrate the compliance with the guidelines and requirements set out in this AC.

[5] The application fee relating to the permission will be waived until further notice.

6.9 Exemption from Specific Requirements under the SUA Order

6.9.1 SUA registration, labelling and safety system requirements

a) Noting the dedicated purpose of the SUA to be operated in a drone racing event and the competitive nature of the event which may easily cause damage to the SUA in the race, the applicant may coordinate for its participants and apply on their behalf for exemption from the specific requirements for SUA registration, labelling and safety system requirements (for geo-awareness and flight log) under section 11 of the SUA Order as necessary, along with the application for permission for conducting the drone racing event. The applicant shall indicate on the application form and provide justification and the required information in an organised manner.

b) In making the application, the applicant should provide information and requirements on how the organiser will ensure that the SUA can be identified and are safe for operations. The organiser will also be required to retain the pre-flight and post-flight checklists, along with all other documents required in this AC for a minimum of two (2) years after the date of event.

c) The event shall be conducted in accordance with the conditions stated in the exemption, as well as in the relevant permission for the drone racing event.

6.9.2 Remote pilot registration and advanced rating

a) Noting participants of drone racing events may not be up to the minimum age for registering as a remote pilot, or necessarily be qualified for obtaining advanced rating, the applicant may coordinate for its participants, and apply on their behalf for exemption from the specific requirements for remote pilot registration and remote pilot's rating for the type of operation, along with the drone racing permission application. The applicant shall indicate on the application form and provide justification and the required information in an organised manner.

b) To substantiate the application for exemption, justification of the competency of the participants (the racers, trainers or trainees) including the qualification and training requirements, such as the minimum hours of flying experience with SUA or on a simulator, shall be provided to substantiate that he / she is familiar with the stability and performance of the SUA. The organiser will also be required to retain the list and information of remote pilots enrolled and SUA operated for a minimum of two (2) years after the date of event.

c) The event shall be conducted in accordance with the conditions stated in the exemption, as well as in the relevant permission for the drone racing event.

6.10 Site Plan

6.10.1 The site plan shall include (but is not limited to) the following details. Any information that is subject to further changes should be clearly indicated.

a) The race course and the surrounding safety net;
b) The locations of the access / exit points to the race course;
c) The flight route, including the starting and finishing points and any obstacles along the flight route;
d) The locations of the barrier as required in paragraph 3.6 and their separation from the safety net;
e) The location of the remote pilots and visual observers during the race; and
f) The locations of the audience, judges, and the remote pilots and visual observers standing by; and
g) The height of the obstacles and the safety net.

6.11 Operations Manual (OM)

6.11.1 The application shall include an OM that consists of information and procedures necessary to enable the operating staff to perform their duties safely and effective, in accordance with the requirements of the SUA Order and in this AC. An outline of the OM is provided at **Appendix A**.

6.12 Safety Risk Assessment

6.12.1 The applicant must conduct and submit a Safety Risk Assessment with the application. The assessment should identify any hazards and failure modes, the associated safety risks as well as the mitigations to bring the risks to a tolerable or acceptable level.

6.12.2 The Safety Risk Assessment must include the following failure modes or scenarios:

a) An SUA flies away from the race course;
b) An SUA takes off before the supporting crew are 'evacuated' from the race course;
c) Any incoming air traffic is observed;
d) An SUA catches fire;
e) A spectator gets inside the race course; and
f) Any other single points of failure.

The Safety Risk Assessment Template is provided in **Appendix B**.

6.13 On-site Assessment

6.13.1 During the application process, the applicant may be required to arrange an on-site assessment for the CAD to verify the setup of the race course and cordoning arrangement.

6.13.2 The applicant is responsible to make the necessary arrangement to satisfy the following requirements:

a) The race course is effectively fenced by safety net and barriers;
b) The access / exit points to the race course can be blocked from unauthorized entry into the race course; and
c) The audience, judges, remote pilots and public are sufficiently protected during the racing event.

7. Enquiries

7.1 This AC will be subject to review and update from time to time in the light of the advancement of technology and increasing popular use of SUA in different professional applications. It should also be noted that the safety requirements provided above are not meant to be exhaustive. It shall be the responsibility of the organiser of a drone racing event to comply with all applicable regulatory requirements, put in place appropriate safety precautions and risk mitigating measures for the subject SUA operation, as well as to follow the requirements and guidelines set out by any property owner and/or manager to ensure the safe operations of SUA at all times.

7.2 This AC should be read in conjunction with the SUA Order, SRD and other SUA related documents published by the CAD.

7.3 For enquiries, please contact the Unmanned Aircraft Office of the CAD at sua@cad.gov.hk.

8. Notes

8.1 This AC supersedes the version dated 31 August 2023.

Appendix A – Outline of Operations Manual for Drone Racing

Table A.1 provides an outline of the areas and details that should be included in an Operations Manual (OM) for conducting a drone racing event. The template is not exhaustive and may be adjusted as necessary to suit the particular arrangements of an individual organiser.

A sample OM for SUA advanced operations is also available on the CAD website (https://esua.cad.gov.hk/) for reference.

Table A.1 – Outline of an OM for Drone Racing

Part A – Organisational Procedures		
1	**Introduction**	
1.1	Contents	Brief list of OM contents
1.2	Introductory statement and applicability	State the applicability of this OM to whom and when (rehearsal / setup of venue / event) the contents within this OM must be adhered to.
1.3	Definitions	Include any common acronyms, if necessary
1.4	Document control and amendment process	To ensure the OM remains in date that different versions are not being used. Amendments should be sent to the CAD. Suggest including a version number and date on the cover of the OM.
2	**Organisation**	
2.1	Structure of organisation and management lines	Organogram with brief description.
2.2	Key personnel and responsibilities	(i) State the accountable person for the operation. (ii) Specify the responsibilities of each key position, such as Event Manager, Safety Manager, Communication Manager.
2.3	Requirements for the remote pilots (competitors, trainers or trainees)	(i) State the qualification / training requirements for the pilot, such as minimum hours of flying experience with SUA or on a simulator, to ensure he/she is familiar with the stability and performance of the SUA. (ii) State the requirements for the pilots to be familiar with the standard and emergency procedures. Note: (i) & (ii) are required to justify the application for exemption from the requirement of remote pilot's rating under the

		SUA Order.
2.4	Responsibilities and duties of supporting crew	List the composition of the supporting crew, which should include visual observers and other staff with supporting roles to ensure the operation is successful, such as checking of the SUA weight and features.
2.5	Competency of the supporting crew	Detail any qualification, experience or training requirements for each of the supporting roles.
3	**Overview of the SUA and its Fail-safe Function**	
3.1	Technical specifications of the SUA acceptable for the drone racing event	(i) Specify the SUA specifications, including the size, take-off weight (battery inclusive), type of motor, battery and voltage limit, propeller design and material, LED lighting, radio control equipment's frequency / output level / emission power. (ii) Full technical specifications can be supplemented in the Appendix or a separate technical manual.
3.2	Fail-safe Function	Describe the fail-safe function required which would activated automatically when (i) in the event of loss of the control link for more than one second; and (ii) when the pilot station is switched off. The fail-safe mode can also be activated manually at any time.
3.3	Registration Label	State the requirement for the CAD registration label to be displayed on the external surface of the aircraft. Provide details of exemptions obtained, if applicable.
3.4	Operating limitations and conditions	(i) State the operating conditions, including operating within VLOS and the weather (wind, rain, temperature) limits. (ii) Explain how the weather will be monitored prior to and during the operation.
4	**Operational Control**	
4.1	Monitoring of SUA operation	Describe how the racing event will be monitored to ensure immediate actions could be taken in case of any emergency situation.
4.2	Communication	(i) Describe the coordination between the

		race manager, judges, pilots and visual observers. (ii) Describe the communication channel between the race manager, judges, pilots and visual observers for immediate aborting the flight under any emergency situation.
4.3	Management of cordon-off area	Describe how the cordoning measures are maintained and the access control is exercised.
4.4	FPV Operation	State the arrangement and the coordination between the visual observers, the judges and the remote pilots.
4.5	Crew health	A statement and any guidance to ensure that the crew are appropriately fit before conducting any operations.
4.6	Go / no-go criteria	(i) Define the go / no-go criteria for the drone racing event. (ii) State who is responsible to make the decision and when the decision must be made (i.e. XX min prior to the operation).
4.7	Emergency abort criteria	(i) State the abort conditions which, if reached, would lead to an immediate and safe termination of the operation. (ii) State who is responsible to make real-time decision to abort the operation.
4.8	Records	(i) State the requirements to keep the list of remote pilots enrolled and the aircraft registration. (ii) Records shall be retained for a period of 2 years after the date of event. (iii)All the forms / checklists involved should be attached in the Appendix. Note: Remote pilots and aircraft registration records are required to justify for exemption from the requirements of remote pilot registration, as well as SUA registration and labelling under the SUA Order.
4.9	Aerial Shooting during Event	(i) State the conditions for any aerial shooting to be carried out during the drone racing event. (ii) Describe the necessary coordination to be established with the remote pilot(s) for the aerial shooting.

Part B - Operating Procedures		
1	**Flight planning / preparation**	
1.1	On-site survey and assessment	The followings should be identified: (i) if the operation would fall into the Restricted Flying Zone (RFZ); (ii) any other aircraft operations or other airspace users within the operating site; (iii) any potential hazards to operation due to activities nearby, such as live firing, fuel tank, high tension cables, high-intensity radio transmissions; (iv) any obstructions to operation and radio frequency transmission; (v) any obstructions to installation of safety net and barriers; (vi) for drone racing at night, the race course are sufficiently illuminated to ensure safe operation.
1.2	Safety risk management	Describe how the safety risks specific to the operation would be identified and mitigated to an acceptable level. **Note: A safety risk assessment report must be submitted with the application.**
1.3	Liaison with other Government Bureaux / Department	State whether any additional permission / license / authorisation from other Government Bureau / Departments is required and the timeline to obtain such permission / license / authorisation.
1.4	Cordoning measures	Explain how the access to the race course would be controlled to ensure no unauthorised entry into the operating area.
2	**Pre-flight check**	
2.1	Operating area	(i) No potential hazards or obstructions to the operation. (ii) The race course is sufficiently illuminated to ensure safe operation of SUA.
2.2	Cordoning / security measures	The cordoning arrangement adheres to that depicted in the site plan and the OM.
2.3	Weather checks	The operating conditions are fulfilled.
2.4	Briefing to pilots & crew	Describe the briefing before flight to ensure all pilots and supporting crew would have sufficient knowledge on the race rules, safety arrangement and emergency procedures.

2.5	SUA Conditions	(i) Pre-flight check on the SUA size, weight, type of motor, battery packs, propeller design and material, LED, radio control equipment's frequency / output level / emission power, fail-safe function and registration label according to the standards defined in the OM. (ii) Check for the proper assembly of the SUA and ensure anything attached to the SUA is secured.
2.6	Pre-flight Checklist	(i) All the check items must be recorded in the pre-flight checklist, with the signatory of the authorised person. (ii) The go / no-go criteria and decision is documented. Note: The pre-flight checklist is required to justify for exemption from the requirements of safety system under the SUA Order.
3	**Normal operating procedures**	
3.1	Staging	These procedures may be contained in the Operations Manual or equivalent but should cover all necessary matters including safety. Critical information that would affect the normal operation should be specified.
3.2	Start of the race	
3.3	In flight	
3.4	Landing	
3.5	Shutdown	
4.	**Emergency procedures**	
4.1	Emergency procedures for different scenarios	Should specify the emergency procedures in response to situations: (i) SUA mechanical failure; (ii) SUA low battery; (iii) Loss of control link; (iv) Loss of FPV signal; (v) Fire, etc.
5.	**Accident / incident reporting and investigation**	
5.1	Accident or incident reporting timeframe	State the following reporting sequence: (i) Notify Police by phone immediately and an email notification to the CAD at sua@cad.gov.hk, if the operation has caused any damage to property or injury to person; (ii) Within 24 hours of any incident or accident (whether or not there was damage to third party property or injury),

		provide full details of the circumstances in writing to the CAD by email to sua@cad.gov.hk; (iii) Within 3 calendar days, provide additional details and/or investigation findings by email to sua@cad.gov.hk.
5.2	Investigation policy	Include the responsible person for conducting the investigation. The root cause must be identified.
Part C – Appendices		
1	SUA technical specifications	Full technical specifications of the SUA.
2	Forms and records	Include, but not limited to, the followings: (i) On-site survey and assessment record; (ii) The list of participating remote pilots and aircraft registration. (iii) Pre-flight checklist; (iv) Post-flight checklist. Note: The pre-flight and post-flight checklists are required to justify for exemption from the requirements of safety system under the SUA Order.

Appendix B – Safety Risk Assessment Template

The applicant shall identify risks specific to the proposed drone racing event and propose effective risk mitigation measures so that the risks are mitigated to an acceptable level. A template of risk assessment is available in the sample of Operations Manual available at https://esua.cad.gov.hk/. The following is an example of safety risk assessment for a drone racing event and some anticipated risks to be addressed. Applicant should note that the list is not exhaustive. Any other risks associated with the proposed operation shall be identified and addressed.

Risk No.	Identified Hazard	Associated Risk (What & How)	Existing Mitigation	Current Risk Rating	Further Mitigation	Revised Risk Rating
1.	*SUA flies away from the race course*	*The SUA overflies the audience*	*Safety net set up on lateral sides of the race course*	*3B*	*Lower the height of obstacles*	*2B*
2.	*SUA takes off before the supporting crew are 'evacuated' from the race course*					
3.	*Any incoming air traffic is observed*					
4.	*SUA catches fire*					
5.	*A spectator gets inside the race course*					

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