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# 1. Introduction

The Sasol Solar Challenge presents exciting opportunities for multimedia production. From GoPros inside a challenger's cockpit to long lens DSLR's from atop a bridge, and drones following your car on its journey, we've seen some great video productions in the past years.

Like most countries, **South Africa regulates the use of drones** for the safety and privacy of its residents. Should you intend on bringing a drone to the Sasol Solar Challenge, please familiarise yourself with the content of this document, and check the official [SA Civil Aviation Authority's website](#) for more information. **While we share this document as a guide, it is each drone operator's responsibility to read up about drone flight regulations and ensure that they adhere to South African law.**

That said, we're happy to help with advice. Below are a few notes that apply to the SSC specifically<sup>1</sup>:

- All teams are required to inform the Sasol Solar Challenge of their intention to use drones and attend a compulsory safety talk during scrutineering. This includes any external film crews your team may host on the event, such as embedded media or documentary teams.
  - Please note that commercial operators like these require a licence – see below
- Drones are only allowed to be flown during daytime. Any drone flying between sunset and sunrise will be immediately and permanently banned.
- The communication team will monitor the use of drones during the Sasol Solar Challenge event, and will advise of:
  - Nearby airports or parliamentary buildings which prohibit flight of drones within a 10 km radius – whether licenced or privately operated
  - Private property permissions – we ask all accommodation owners for permission to fly drones, and will let you know what each venue allows
  - Crowded skies – if there are too many drones in flight, we will ask that some land
- At each stop, especially daily finish lines and loop stops, we expect crowds of spectators, and these include a high percentage of young children. Please ensure your drone is at a safe height above the crowds, and do not land in crowded areas. Should you need help creating a safe clearing to land your drone, you are welcome to ask the communication team for assistance.
- While drones are harmless when flown responsibly, they do have the potential to cause serious harm. Any drone found to be endangering Sasol Solar Challenge participants or the public will be immediately and permanently banned.

<sup>1</sup> According to regulations as of June 2022



- Do not leave your drone unattended. While spectators are separated from competitors at the Sasol Solar Challenge, there is still a risk of a child picking one up and getting hurt.
- Your drone must always be within the drone operator's eyeline – any drone found out of its operator's sight will be immediately and permanently banned.
- Any drone operator who does not adhere to instructions from Sasol Solar Challenge crew will be banned from further participation in the Sasol Solar Challenge. Banned drones found in flight will be confiscated until the end of the event.

**Should you have any additional questions, please get in touch:**

Yethu Dlamini – Communication Manager  
media@solarchallenge.org.za  
+27 65 998 0097

## 2. Remotely Piloted Aerial Systems Regulations

From technically operating military areas to luring hobbyists throughout the world, drone technology has developed in the last few years, now with increased usage.

To the military, drones are Unmanned Aerial Vehicles (UAVs) or Remotely Piloted Aerial Systems (RPAS), which are piloted from a remote pilot station, excluding model aircraft and toy aircraft.

The South African Civil Aviation Authority (SACAA) describes a toy aircraft as a product falling under the definition of aircraft which is designed or intended for use in play by children. On the other hand, a model aircraft, is defined as a non-human-carrying aircraft capable of sustained flight in the atmosphere and used exclusively for air display, recreational use, sport, or competitions.

The use of RPAS has evolved rapidly - with their vast advanced technology in creative photography - and now includes various types of commercial and non-commercial activities such as conservation assignments, aerial surveillance, scientific research, journalism, capture events moments and many more usages.

But with RPAS having the potential to cause damage to property and contravene private citizens' right to privacy, amongst other things, the SACAA laid out laws for drone use in South Africa. These regulations have been adopted by the Minister of Transport. They can be found in Part 101 of the SACAA regulations. They came into effect on 1 July 2015.

There are also a number of ancillary documents issued in pursuance of the regulations including the directives of the director of Civil Aviation Authority (CAA), Aeronautical Information Circulars and Technical Guidance Materials, which are also applicable. The regulations are to be read together with Civil Aviation Technical Standard 101.

The Civil Aviation regulations apply to what are known as Class-1 and Class-2 RPA and to owners, operators, pilots, and those who maintain such RPA.



RPAS pose risks if not operated in line with applicable laws. They may cause a collision with other aircraft, with possible fatal results. They can also cause damage to property or injury to members of the public.

Moreover, individuals that use RPAS in an irresponsible manner may also face legal liability for breaking laws enforceable by other authorities; for instance, laws pertaining to privacy.

Now, before you venture out with your new gadget, be sure to have a look at the dos and don'ts checklist to avoid any run-ins with the law.

## 3. For Private Operation

### 3.1. General

- The RPAS may only be used for an individual's personal and private purposes where there is no commercial outcome, interest, or gain;
- It is the full responsibility of the remote pilot of the RPAS to fly his or her aircraft safely and not endanger safety of another aircraft, any person or property.
- The pilot must observe all statutory requirements relating to liability, privacy, and any other laws enforceable by any other authorities.
- Private operations do not require approval and registration of an RPA before operation. Personnel licensing requirements, and RPA operator certificate and maintenance requirements do not apply to private operations of RPA.

### 3.2. Limitations and restrictions

- Private operations may only be conducted with a Class-1A RPA (less than 1.5 kg in weight) or Class-1B RPA (less than 7 kg in weight), both of which cannot be flown more than 400 feet above the ground.
- All private operations must be conducted only in restricted visual line of sight (R-VLOS), specifically, within 500 m of the remote pilot and below the height of the highest obstacle within 300 m of the RPA.
- RPA may only be operated over property owned by the operator or other property with the permission of the owner.
- It may not be flown within a 10 km radius of an airfield, within restricted or prohibited airspace, or above or near a sensitive area, including a nuclear power plant, correctional institution, police station, crime scene, or court.
- Not flown on public roads.
- An RPA may not be operated directly overhead of any person or within a lateral distance of 50 m (164 feet) from any person.
- It may not be used for the purpose of releasing, dispensing, dropping, delivering, or deploying of an object or substance.
- It may only be used in daylight and under clear weather conditions.



## 4. For Commercial, Corporate, And Non-Profit Operations

### a. Approval and registration

- An RPA cannot be operated for non-private purposes in South Africa unless the CAA Director has issued the operator an RPA letter of approval and a certificate of registration.

### 4.1. Who may apply for certifications and licences?

The operator of an RPAS must be the holder of a valid RPAS Operators Certificate (ROC), including the operations specifications attached to it.

There are three categories of Remote Pilot Licenses:

- Remote Pilot License (Aeroplane) (RPL (A))
- Remote Pilot License (Helicopter) (RPL (H))
- And Remote Pilot License (Multi-rotor) (RPL (MR))
- RPAS must be operated by duly qualified and licensed pilots who can be any person over the age of 18 years old, who has the relevant medical certificate and has completed a theoretical examination, as well as skills tests and flight training from a training facility authorised by the CAA.
- A domestic air service licence from the Air Service Licensing Council must be obtained, and will be issued where:
- The applicant is a natural person, a resident of the Republic; or
- If the applicant is not a natural person:
  - Is incorporated in the Republic and at least 75% of the voting rights in respect of such person is held by residents of the Republic, and that such will be actively and effectively in control of the air service; and the RPAS that will be used in operating the air service is a South African aircraft.

See links for license applications [here](#) and [here](#).

SACAA works with registered and approved drone operating companies – see list [here](#) for hire.

### 4.2. Registration and marking

#### *Identification plate*

- Every South African-registered RPA must have affixed to it an identification plate (engraved, stamped or etched) with its nationality and registration marks.
- The identification plate must;
  - Be made of fireproof material of suitable physical properties.



- Be affixed to the RPA in a prominent position near the main hatch, entrance or compartment or affixed conspicuously to the exterior of the aircraft.
- Include the registration mark issued by the authority which appears on the RPA's certificate of registration.
- Be commensurate with the size of the RPA.

### *Display of marks*

- The nationality and registration marks must be;
  - Affixed to the RPA by an appropriate means so as to ensure that such marking will not become detached from the RPA in the event of an accident or destruction of the RPA.
  - Legible.
  - Displayed to the best possible advantage having regard to the construction or features of the RPA.
  - Kept clean and visible at all times.
- The registration mark letters, and hyphen must be printed or painted in Roman characters, in black on a yellow background.
- The height of the yellow background shall be at least 120% of the font height.
- The size of the registration mark must be commensurate to the size of the RPA.

### *Location of marks*

- The marks on a fixed wing RPA must appear;
  - On the bottom and top surface of each wing; and
  - On both sides of the fuselage between the wings and tail surfaces, or on the upper halves of the vertical tail surfaces.
- The marks on a single or multi-rotor RPA must appear;
  - For spherical RPA, the marks must be proportional to the surface area in two places diametrically opposite one another.
  - For non-spherical RPA, the marks must be proportional to the surface on each side.

### *Allocation and specification of marks*

- The South African nationality marks are the capital letters ZS, ZT, and ZU.
- The nationality and registration marks must consist of capital letters in Roman characters without ornamentation.
- The width of each letter (except letter "I") and the length of the hyphen must be two-thirds of the height of the letter – where possible.
- Each letter must be separated from the letter which immediately precedes or follows it by a space equal to one-third the height of the individual letters, the hyphen being regarded as a letter for this purpose.



- The lines forming the letters and hyphen must be solid and the thickness of those lines must be one-sixth of the height of the letter.

## 4.3. Limitations and restrictions

- Public roads
  - Use of public roads as a take-off and landing ground is not permitted unless the operator is an ROC holder, and such use has been approved by the Director and the relevant local authority.
- Controlled airspace
  - RPAS may be operated in controlled airspace only by an ROC holder and upon the approval of the Director. The Director may issue such approval only in a visual meteorological condition (VMC) in an airfield traffic zone (ATZ) and control zone (CTR) below 400 feet.
- Objects or substances
  - The Civil Aviation regulations prohibit the use of an RPA for releasing, dispensing, dropping, delivering, or deploying any object or substance unless it is done by an ROC holder and with the Director's approval.
- General restrictions
  - Operators are banned from using RPAS to tow other aircraft, perform aerial or aerobatic displays, or for the purpose of flying them in formation or swarm.
  - Unless done by an ROC holder and with the Directors approval, an RPAS operator is prohibited from flying an RPAS above 400 feet above ground; within a 10 km radius of an airfield; within restricted or prohibited airspace; or near or above sensitive areas, including a nuclear power plant, prison, police station, crime scene, or court.
- Beyond Visual Line of Sight (B-VLOS)
  - A B-VLOS operation is permitted only for ROC holders approved for such operations by the Director. The Director may approve such operations only if the operator meets certain requirements, which vary depending on whether the operation is in or outside of a controlled airspace.
- Operation in vicinity of people, property, or public roads
  - Operating an RPA directly overhead or a lateral distance of 50 meters from any person is permitted only by an ROC holder and with the approval of the Director. The same rule applies to the operation of an RPAS in the vicinity of structures or buildings; however, in this instance it is also possible to operate an RPA by simply obtaining the permission of the owner of the structure or building in question.
- Radio communication requirements
  - All operations of RPAS must be conducted within a radio line of sight (RLOS).



- Sale and labelling
  - The requirements applicable to the sale or resale of RPAS are limited to labelling. The Regulations state that no RPA shall be sold within the Republic unless the seller, by way of a packaging label, or in the case of the resale thereof, by way of written notification, notified the buyer of the requirements as prescribed in Document SACATs101. This is applicable to all RPA regardless of their intended use.

#### 4.4. Use Of RPAS At SANParks

While some parties may allow private operations of drones in their properties, South African National Parks (SANParks) only allow commercial operations provided the approvals process is followed and the operator and pilot comply with both legal and SANParks' requirements.

**For commercial operations and filming at SANParks:**

- The operator or company must apply for a filming permit through the appropriate channels before approvals for the use of the RPA system can be given.
- Operator or company to apply for the use of the drone on a company letterhead stating their intent, area of operation and proposed dates. This letter must be accompanied by the official application form.
- Operator or company to supply copies of the following documents to the SANParks Air Services:
  - Remote Operators' Certificate – issued by the Civil Aviation Authority
  - Air Service Licence (ASL) – issued by the Department of Transport
  - Operation Specification – issued by the Civil Aviation Authority
  - Pilots' licence (RPL) – issued by the Civil Aviation Authority
  - Pilots' radio telephony certificate
  - Pilots' medical certificate
  - Aircraft certificate of registration (CoR)
  - Aircraft authority to fly certificate (ATF)
  - Aircraft proof of insurance (POI)

## 5. Penalties For Non-Compliance With The Laws And Regulations Governing RPAS

Any person who contravenes or commits an offence under the SACAA or the regulations, will be liable on conviction to a fine or to imprisonment for a period not exceeding 10 years or to both such fine and imprisonment. The Director of Civil



Aviation may also impose an administrative penalty on any person for any failure to comply with the Civil Aviation Act.

## 6. Foreign Operators

Foreign operators that wish to conduct commercial operations must also apply for and hold a domestic air services licence issued under the terms of the SA Air Services Licensing Act. It is recommended that foreign operators that wish to conduct commercial operations hire a fully licenced South African company/pilot instead.

## 7. An Operator Or Company Are Responsible For The Operation Of RPAS

The SACAA is the country's RPAS regulatory agency. Its stated objectives include, overseeing the functioning and development of the civil aviation industry and issuing regulations mandated by the Civil Aviation Act.

It does not limit any usage of a RPAS but enforce the regulations – ensures that RPAS are used for intended purpose.

It is the operator or company's responsibility to comply with and observe all statutory requirements relating to liability, privacy, and any other laws enforceable by any other authorities. For example, a permission to film under aged children must be obtained by the operator from relevant parties. Selling of footage, copyright is solely the operator's responsibility.

## 8. Who Approves RPAS Operations?

It must be noted that all drones operated in South Africa undergo an assessment done by the Independent Communications Authority of South Africa (ICASA) for approval. This includes; testing of the performance in accordance with the applicable technical standards, testing of electromagnetic compatibility (EMC) – both emission and immunity measurements and testing of safety [here](#).

For more information on RPAS visit, [www.caa.co.za](http://www.caa.co.za)