

The South African Model Aircraft Association



Standard Operating Procedure

GENERAL RULES FOR THE OPERATION OF MODEL AIRCRAFT

TABLE OF CONTENTS

1. Purpose.....	3
2. Definitions.....	3
3. General.....	3
4. Responsibilities.....	3
5. Rules for the operation of all model aircraft.....	4
6. SAMAA rules, guidelines, and procedures.....	4

1. Purpose

The purpose of this Standard Operating Procedure is to provide a ready reference to all members of the SAMAA of their obligations to the SAMAA (South African Model Aircraft Association) and the SACAA (South African Civil Aviation Authority) of all SAMAA operations at all SAMAA-registered clubs and flying sites.

The order of precedence is: South African law, the SAMAA rules, and MOP. Every member of the SAMAA must ensure that he is aware of the rules and regulations applicable to the flying of model aircraft. The SAMAA cannot accept responsibility for the lack of knowledge by a member with regard to the SAMAA Standard Operating procedures detailing, rules, regulations, guidelines and procedures as well as the SACAA Approved Manual of Procedure

2. Definitions

SAMAA	The South African Model Aircraft Association is the organisation currently authorised to manage all model aircraft flying activities in South Africa.
CAR	Civil Aviation Regulations. Established by the SACAA for the control and management of all civilian aviation activity in South African airspace, which includes the regulations for the management of model aircraft flying activities.
ARO	Aviation Recreation Organisation. Mandated by the SACAA to currently manage the activities of recreational and sporting aviation. The SAMAA is the approved and appointed body for the management of model aircraft flying activities in South Africa.
Member	A paid-up member of the SAMAA, or a member who has been accorded honorary, emeritus, or honorary life membership of the SAMAA.
Registered, approved site	A flying site approved by the SAMAA and the SACAA for SAMAA members to fly model aircraft.
SACAA	The South African Civil Aviation Authority.
Definition of model aircraft	A fixed-wing, rotor-wing, multi-rotor, or model parachute used for the purpose of recreational and sporting model aviation. A craft of limited dimensions, unable to carry a human being.
Solo-rated pilot	A pilot of a model aircraft who has flown and passed a solo test.
Permit to fly	A document issued by a SAMAA inspector or nominated person, following an inspection of any non-standard model aircraft. This permit and certification is applicable to the model aircraft and the pilot, and is not transferable.
Inspector	A SAMAA member with the necessary qualifications, experience, and knowledge, who has been appointed by the SAMAA management committee to carry out inspections of special or non-standard model aircraft.

3. General.

- 3.1 This Standard Operating Procedure is intended to give an overview of the SAMAA regulations, rules, guidelines and operating procedures which manage the responsible use of airspace by SAMAA members when flying their model aircraft.

4. Responsibilities.

The operator of a model aircraft is responsible for compliance to the SACAA Regulations, and with the SAMAA Manual of Procedures and regulations.

5. Rules for the operation of all model aircraft.

5.1 Safety of persons.

There is a general prohibition on endangering safety CAR 91.01.10, in that: 'No person shall endanger the safety of an aircraft or person therein; or cause or permit an aircraft to endanger the safety of any person or property.

This regulation states that any model aircraft must always stay clear of a manned or full-size aircraft under all circumstances. Further, all model aircraft must only be operated in a safe manner to ensure no injury to persons or damage to property.

5.2 Visibility.

A model aircraft may only be flown if the visibility at the time is good enough to see the model aircraft continuously.

5.3 Flying at night.

A model aircraft may not be flown at night, unless permission has been obtained from the SACAA, and then only if complying with the SAMAA Standard Operating Procedures and other rules.

5.4 Flying over public roads.

A model aircraft may not be flown over or from a public road without permission.

5.5 Height limitation.

The SACAA regulations limit the maximum height that a model aircraft may be flown to 150ft AGL. After representation to the SACAA in February 2011, approval was given by the SACAA for model aircraft to be flown to a maximum height of 400ft AGL, at SAMAA-registered flying sites. (currently more than 150 sites). Where there is a requirement for model aircraft to be flown in excess of 400ft, for example for competitions or special events, the SAMAA may request an exemption from the SACAA for this purpose. Park flying activities and other model flying activities are limited to 150ft AGL.

5.6 Non-registered sites.

The operation of model aircraft from non-registered sites is subject to application and approval by the SACAA and the SAMAA, where after temporary site approval may be granted.

5.7 Controlled airspace.

Model aircraft may only be flown in controlled airspace above 150ft if written permission has been obtained from the appropriate Air Traffic Services Unit nearest to the model aircraft operation.

5.8 Within 5NM of aerodromes.

The SACAA will only permit flying of model aircraft at an altitude greater than 150ft within 5NM of an aerodrome, if permission has been obtained from the nearest ATSU, or from the Central Airspace Management Unit.

5.9 Dropping of parts.

It is prohibited to cause any ballast or any heavy part to be intentionally dropped, discharged, or jettisoned from a model aircraft in flight.

5.10 Pyrotechnics.

It is prohibited to discharge pyrotechnics from a model aircraft in flight.

Pyrotechnics at SAMAA events; No person or organisation is allowed to present a fireworks display unless formally authorised to do so by the Municipality (at least 14 days' notice). Authorisation is also required from the Civil Aviation Authority and the Chief Inspector of Explosives. The SAMAA insurance will not cover the event of the duration of the pyrotechnics display.

5.11 Free flight models

Free Flight model aircraft, which are neither line-controlled or radio-controlled, are limited to a maximum weight of 5kgs.

5.12 Sound limits

All model aircraft are subject to a sound limit of 96Db (A scale), measured at 3m from the power source or engine, except large model aircraft (see 6.21).

6. SAMAA rules, guidelines, and procedures

6.1 Registration of clubs and sites.

For a club to register a flying site, the club's officers need to complete and submit an application. After approval, the SAMAA shall request the details of the new club to be published in the AIRAC AIP

Supplement ENR 5.5 (3). The registered club and its members shall then abide by the SAMAA MOP, and other regulations and safety guidelines issued by the SAMAA.

6.2 Flying site layout.

Flying sites must be planned so that all flying activities are conducted in front of the club, at the designated flight areas. If there are multiple runways, then operations may be conducted to the side of the central facilities, provided the activities on two runways do not interfere with each other. The areas behind the flight lines, (the near edge of a runway) are deemed to be NO FLY ZONES, and shall include the pit areas, club house, buildings, spectator areas, car park, etc.

6.3 Model flying at public events (displays, air shows, fly-ins).

It is required for all clubs and groups who intend to hold public events, to apply and obtain permission from the SAMAA, before such an event is held. The guidelines as to how such public events are conducted, fall under the SAMAA's responsibilities. For details, refer to SOP-SAMAA-016, Events.

6.4 Safe distances.

Any person operating a model aircraft, shall ensure that the model in the act of taking-off or landing, does not venture closer than 30 metres to spectators, other persons, buildings, or vehicles. This requirement is not contravened if the pilot stands behind the model aircraft while taking-off. Or, if during a competition, the model aircraft is taking-off or landing within 30 metres from the panel of judges. Or, if the model aircraft is taking-off or landing within 30 metres of other pilots and helpers on the same flight line.

Wherever possible, the pit areas shall be located 20 metres or more behind the flight line.

Model aircraft weighing more than 10kg, and all turbine-powered jet model aircraft, shall fly at least 50 metres from spectators, except when landing or taking-off.

Pylon racing activity shall operate at a distance of 90 metres minimum from spectators.

6.5 Frequency control and compliance.

All clubs/flying sites shall have an effective frequency control method for radio control operations, to differentiate between the older 35MHz transmission frequency, and the modern 2,4GHz frequency. All radio control transmission equipment, shall comply to ICASA specifications. Operators of radio control equipment are entitled to ask from their supplier, for a type-approval sticker.

6.6 Safety Code and safety rules.

The SAMAA National Safety Code and Safety Rules shall be used by all SAMAA members for flying of model aircraft. Clubs shall add their own supplementary field and safety rules, depending on its own requirements and circumstances.

6.7 Incidents and Accidents.

It is the responsibility of each member, and each club, to record and report accidents and incidents to the SAMAA office, to be escalated to the Aero Club of South Africa, and the SA Civil Aviation Authority. This serves the purpose of alerting other members of the Association, helps to promote a culture of safe flying, and to reduce and avoid accidents and incidents.

6.8 Insurance.

The SAMAA insurance policy is limited to paid-up members of the Association. Accidents which involve persons or property, which occur at registered flying sites, must be reported, firstly to the SAPS, and secondly to the SAMAA office. Should there be a claim on the insurance, the SAMAA office shall forward the details to the insurance broker and insurers. The member responsible for the accident is liable for the excess. All details regarding insurance and claims are contained in SOP-SAMAA-PR-14.

6.9 Judgement-impairing substances.

The use of mind-altering substances (drugs, alcohol, and certain medications) is absolutely forbidden before and during flying. Refer to SAMAA-Policy-PO-16.

6.10 Flying site locations.

The SAMAA previously required a 5km separation between flying sites, especially when older frequency bands were popularly used. With the modern 2,4GHz frequency-hopping systems, this requirement is relaxed, but a signed agreement between two clubs closer to each other than 5km is required, stating whether older equipment in circulation could still be used without the dangers of mutual radio interference

6.11 Number of persons on flight line.

Only one helper, instructor, spotter, or caller shall be on the flight line with any one pilot. This measure is designed to limit the number of persons on the flight line, to minimise the risk of accidents or incidents.

The exception to this requirement, is when there is a competition, an air show, or a proficiency test, where judges and officials are supervising or judging the event.

6.12 Code of Ethics.

The conduct and considerate behaviour of fliers at clubs and competitions, is contained in DOC-SAMAA-004. These etiquette guidelines shall be included in each club's safety rules.

6.13 Pilots under instruction.

All pupil pilots, learners, or inexperienced fliers under instruction, shall be briefed on all safety, frequency, and operational requirements of the club. All persons flying at a registered club/field, shall be paid-up SAMAA members.

The qualification of a flier who may teach a beginner or newcomer, has been established to be a SAMAA fixed-wing silver proficiency. The preferred method of instruction is contained in the Fixed-Wing Proficiency Booklet.

6.14 Safety inspection.

It is recommended that a safety inspection is done prior to the first flight of any model aircraft, or after any major repair to a crashed or damaged model aircraft. This inspection may be done by an independent person or an appointed instructor. For larger or specialist model aircraft this is a requirement, and the flier shall be fully *au fait* with the flying characteristics of his model aircraft.

6.15 Flying model aircraft at night.

The SACAA Regulations prohibits the flying of model aircraft at night. However, it was agreed that model aircraft may be flown at night, provided that application has been made to the SAMAA, and that the conditions as stated in SOP-SAMAA-PR-18 are followed.

6.16 Proficiency testing.

The SAMAA has produced a set of proficiency tests for all types of model aircraft activities. A Solo proficiency is deemed to be the minimum requirement for a flier to fly safely and unattended. All clubs are encouraged to promote the proficiency system, to improve pilot skills. The requirements for members to participate in public events, are naturally set at a higher level (minimum silver).

6.17 Mobile telephones.

Mobile telephone equipment may have an effect on radio control transmission equipment, and it is recommended that cell phones not be taken onto the flight line.

6.18 Hearing protection.

It is recommended for hearing protection to be worn by any person conducting a sound test, or where prolonged engine-running or testing is required. In most instances, pit crew at pylon races or control line team racing are required to use noise-limiting hearing protection devices.

6.19 Starting of engines.

It is recommended that hand-starting of engines be done with a chicken stick, glove, or electric starter, when engine capacity is greater than 2,5ccm.

It is recommended to run internal combustion engines (glow or compression-ignition) slightly rich, especially with new engines. All adjustments to running engines shall be done from behind the engine and rotating propeller.

Metal-bladed propellers may not be used on any flying model aircraft. Propellers for engines greater than 2,5ccm shall be fit-for purpose, and the tips should preferably be marked with a contrasting colour, for more easy observation of the spinning disc. Propellers for electric motors, are not suitable for use on internal combustion engines.

It is recommended that all model aircraft be restrained mechanically or physically by a helper during start-up. In the case of model aircraft greater than 10kg, the restraining of a model aircraft during start-up, is mandatory.

6.20 Automated control of model aircraft.

The Civil Aviation Authority does not allow the use of internal navigation systems, or terrestrial devices for the automated control of model aircraft.

6.21 Larger model aircraft of 35kg.

Model aircraft with an all-up-weight of 35kg, are subject to additional regulations.

- Large model aircraft must be flown at least 50 metres from spectators, people, structures, or parked cars.
- Model aircraft must be fitted with heavy-duty servos, switches, batteries, pushrods, control horns, hinges, etc.
- Before its first flight, a model aircraft must be inspected for assembly, structural integrity, and equipment.

- Transmitters must be programmed for fail-safe; flying surfaces to move to neutral and throttle to move to low idle.
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- A spotter or assistant must be present on the flight line when other aircraft are airborne at the same time.
- Model aircraft must conform to the sound limitations set for large model aircraft. The current FAI specification is 96Db measured on the A-scale, at a distance of 7m from the centre-line of the model aircraft.
- Fliers of large model aircraft shall hold a minimum proficiency rating of SAMAA silver, and must be rated and approved by an instructor prior to flying in a public event.
- The practice of dual-redundancy and other accepted safety features is recommended for all large model aircraft in excess of 25kg weight.

6.22 Turbine-powered model aircraft.

The safety rules for turbine-powered models must be followed at all times, especially during start-up. Fliers operating turbine-powered models must hold a minimum of a SAMAA silver rating.

6.23 Large model aircraft up to 35kg.

Larger model aircraft up to 35kg all-up-weight are permitted to fly at registered model flying sites, provided an application for registration of the large model aircraft is made through the SAMAA office.

6.24 Competitions.

Most of the SAMAAs Special Interest Groups (SIGs) conduct their competition activities under the Fédération Aéronautique Internationale (FAI), and the Commission for International Aeromodelling (CIAM). The disciplines with competition activities currently falling under the FAI are Control Line, RC Aerobatics, RC Gliding, RC Helicopter, RC Pylon Racing, Scale, and Multirotor Drone racing. Competitive Scale jet activities resort under the International Jet Model Committee. Regular world championships are organised and conducted by the CIAM and the IJMC, giving opportunity to SAMAA members to test their skills on an international level.

6.25 Park Flying.

Park flying is one of the latest additions to the list of SAMAA activities. These are small, electric-powered model aircraft which are usually flown in parks, sports fields, and other suitable open spaces. A set of guidelines may be found in SOP-SAMAA-017.

6.26 Record attempts.

It is possible for SAMAA members to perform record attempts in many categories of aeromodelling, under the auspices of the FAI and the CIAM.