

**THE SOUTH AFRICAN MODEL AIRCRAFT ASSOCIATION**



**Operations Manual**

**DEFINITION AND SPECIFICATION OF MODEL AIRCRAFT**

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**DEFINITION AND SPECIFICATION OF MODEL AIRCRAFT**

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This document forms part of the SAMAA Manual of Procedures. It is to be used by SAMAA Members and Registered Clubs in all activities associated with the flying of model aircraft in the RSA

**DEFINITION AND  
SPECIFICATION OF MODEL  
AIRCRAFT**

**1. Purpose**

This policy is based on the Technical Specification as recorded in the CAA's Regulation and technical Manuals under the CAT's Section 24.01.2. N.1 titled "General Characteristics of Model Aircraft" and the previously accepted SAMAA Manual of Operations.

As stated in the CAA Technical Specification the limitations on model aircraft is adopted from the FAI (Federation Aeronautique International) documents section 4 of ABR, part 4C, which defines a model aircraft as an aircraft of limited dimensions, with or without a propulsion device, not permitted to carry humans or animals, to be used for competition, sport or recreational purposes.

As one or more anomalies have been found in the latest 2011 FAI update, the matter has been referred to CIAM who will have changes made to the existing document and ensure that the updated reprint, will be available by April 2012. Meanwhile the updated characteristics have been set out below and, unless otherwise agreed by SAMAA in writing, model aircraft being flown in the RSA shall not exceed the general specifications, set out below.

**1.Fixed Wing Model Aircraft**

Fixed wing model aircraft shall not exceed the following general specifications:

- |     |  |                     |
|-----|--|---------------------|
| (a) | Maximum flying weight with fuel          | 25kg                |
| (b) | Maximum wingspan (powered)               | 5m                  |
| (c) | Maximum wingspan (unpowered)             | 6m                  |
| (d) | Maximum surface area                     | 5m <sup>2</sup>     |
| (e) | Maximum wing load                        | 15kg/m <sup>2</sup> |
| (f) | Maximum swept volume of piston motor(s)  | 250 cc              |
| (g) | Electric motors, maximum no load voltage | 72 volts            |
| (h) | Maximum thrust of turbine                | 25Kgs (250 Newtons) |

**2.Model Helicopters**

Model helicopters shall not exceed the following general specifications;

- |     |  |                   |
|-----|--|-------------------|
| (i) | Maximum weight (with fuel) (with batteries)                                      | 6,5 kgs           |
| (j) | Maximum swept area of lifting rotor(s) counting only once any superimposed areas | 2,5m <sup>2</sup> |
- (Provided that in the case of co-axial model helicopters whose rotors are further than one rotor diameter apart, the area of both rotors is counted, and may not exceed 2,5m<sup>2</sup>)  
The tail rotor must be driven by the main rotor and must not be driven by a separate engine/motor.

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- |     |  |          |               |
|-----|--|----------|---------------|
| (k) | Piston motor swept volume  | 2cycle   | maximum 15 cc |
| (l) | Piston motor swept volume  | 4 cycle  | maximum 20 cc |
| (m) | Piston motor swept volume  | gasoline | maximum 25 cc |
| (n) | Electric motors, maximum no load voltage   |          | 51 volts      |
| (o) | Gyros, the use of automatic stabilisation devices that utilise external references is forbidden. The use of pre-programmed flight manoeuvres is forbidden. The use of an electric rate sensor is limited to rotation about the yaw axis. |          |               |
| (p) | Rotor Blades, all metal main or tail rotor blades are prohibited.  |          |               |

**3.Free Flight Models**

Free flying model aircraft which are neither radio nor line controlled, shall not have a mass exceeding - 5 kg

**4. (a)Concessions on present specification on wingspan**

**(b) Information on Larger Models**

Presently Model aircraft exceeding the maximum flying weight stated in the specifications 1 (a) 25kgs for fixed wing models.

2 (a) 6,5kgs for helicopters.

Shall not be flown at any SAMAA Registered Club or field.

- (a) But, for unpowered model aircraft, whose wingspan exceeds the 6 meter span, but whose weight is less than 25kgs, whose wing area is under 5m<sup>2</sup> sq meters specified, a concession request form is available to members owning or intending to build longer wingspan models. This form F19 is available on the SAMAA web site, and requests information relating to the origin and proof of the structural integrity of the model, and pilot ability.
- (b) A Specification and Procedure for has been produced for a class of larger model aircraft, called "Giant" models these will weigh between 25kgs and 45,5 kgs and the limitations and rules are the same as those applicable to the AMA 50 to 100 lb class specification. These models will be subject to design approval, inspections during construction, as well as requiring certification of the pilot with the aircraft, before an "Exemption to Operate Certificate" will be issued by the CAA to allow the model to be flown at any SAMAA Registered Flying field, Club or Display. This procedure is presently with the CAA for approval, and following approval, the amendment of the present insurance policy to include this class of model.

**5.Noise Limits**2. (a) Fixed Wing Models

All powered model aircraft shall be limited to a maximum of 96 db(A) at 3 metres, over a hard surface, unless the class or category of model has specified lower limits. Specific noise measuring procedures are to be developed by the National Controlling body to ensure that all models comply with the above limits.

(b) Helicopters

Noise limitation for helicopters in hovering mode, 2 meters above the Surface, and rotating through 360 degrees, shall not exceed the following values:

- Over hard surface 89 db(A) at 3 metres.
- Over soft surface 87 db(A) at 3 metres.

(b) All Competition Model Aircraft must conform to the Safety Rules and Sporting Code for their particular SIG.

**6. Prohibited**

- (c) The carrying of Pyrotechnics or explosives in, or being dropped from, a model aircraft is prohibited
- (d) The use of nitrous fuels in model aircraft motors is prohibited.
- (e) No object, other than sand or water, may be dropped or discharged from a model aircraft, while in flight.
- (f) Metal bladed propellers may not be used on model aircraft.

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