

## 12. Safety

Flying of model aircraft or helicopters is a fun activity, but in unskilled hands any model aircraft can be extremely dangerous. We all wish to keep our sport as safe as possible, so it is important to be aware of the following rules:

- ◆ No flying on or over- roads (Gazetted).
- ◆ No flying above 150 feet (approximately 50 meters) (Gazetted).
- ◆ No flying within 5 NM (9.76) km of an aerodrome (Gazetted).
- ◆ Due to possible interference, it is dangerous to fly within 5 km of any other registered venue using radio control equipment.
- ◆ It is dangerous to fly over or within 20 meters of other pilots, spectators, people, buildings, or parked vehicles.
- ◆ To prevent crashing your model aircraft (or someone else's) reserve your radio frequency at the flying site, for example by putting your peg on the board.
- ◆ It is dangerous to fly your model aircraft beyond the bounds of the approved flying area.
- ◆ Do not fly after drinking alcohol or taking inhibiting medication.
- ◆ No flying unless you have written permission to use the land for flying models.
- ◆ Always announce your intentions to other pilots present when you are going to land / take off or do anything unusual.
- ◆ All takeoffs, flying and landings should be done on the far side of the flight line.

Please remember to always keep your model aircraft or helicopter away from people and buildings so that if an emergency does arise and the model aircraft crashes, no one is hurt.

To find out more about model aircraft flying we suggest that you contact SAMAA or visit your nearest Model Flying Club and talk to some of the members; it will be well worth the visit.

Enjoy your flying.



This leaflet is published by:-

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***Why not join one of our 180 SAMAA Registered Model Clubs?***

**Ask your Hobby shop for advice – it is for free!!**

Name: .....

Hobby Shop: .....

If you have not joined an existing club ask your dealer for leaflets 1, 3 and 4 on other aspects of flying.



## Flying Small Electric Powered Aircraft and Helicopters

(Park/Indoor Flying Leaflet 2)

### 1. Introduction

This leaflet is specifically directed to assist you with the necessary information regarding electric powered park flying aircraft and helicopters, which are a very popular segment of our sport and to advise on how to find, set up, and control a site or flying field.

Due to availability of ready to fly model aircraft and helicopters (RTF) and vast changes introduced by aeromodelling technologies and radio control systems, more people are now able to afford and fly electric radio control model aircraft and helicopters than ever before.

People fly them from open spaces in urban areas and some are so small they are flown indoors at sport complexes or recreation halls, leading to the advent of "park" or "indoor" flying.

Model aircraft are generally construed to be toys. Model aircraft are actually fully functioning aircraft in miniature, all the science, and theories of flight applicable to full size aircraft apply similarly to models.

If not used correctly or safely, accidents can happen and bodily harm and damage to property can occur.

### 2. Advantages

Compared to fuel powered aircraft, electric park flying aircraft and helicopters have a number of advantages. They are small, much quieter, need less support equipment on the field and don't require much maintenance or cleaning. Set against this they were generally a little less powerful in the past than fuel powered model aircraft and helicopters of the same weight and average around 8 to 15 minutes of flying before it will be necessary to re-charge the batteries, which usually takes 30 minutes or more.

These aircraft have electronic speed controllers, so once in the air, the power can be reduced to improve duration. Many of these aircraft have high set wings for stability and have the lightest possible wing loading to help with slow flying and easy handling.

It is difficult to learn to fly on your own, and the SAMAA has a dedicated club structure where qualified instructors can assist you in your flying.

### 3. The South African Model Aircraft Association (SAMAA)

The South African Model Aircraft Association (SAMAA) encourages and promotes all facets of model flying in South Africa. It advises on best practices, safety, training, and many other matters relating to the enjoyment of the sport.

The association strives to serve its members in the best interest of aeromodelling in South Africa. Our head office is situated in Bonaero Park and anyone interested in flying model aircraft or helicopters can phone the SAMAA office on land line number 011- 973 3679. The association is a non-profit association of volunteers with a passion for the sport and provides insurance to its members in the event of any unforeseen incidents.

#### 4. Definition of a Small Electric Model Aircraft (Park/Indoor Flyer)

A Park Flyer can be defined as a small, light electric powered model aircraft or helicopter that can be flown in a confined area like a sports field or indoors in a hall that is not necessarily a SAMAA registered site.

#### 5. Specification Suggestions for Electric Powered Model Aircraft

For safety reasons, it is dangerous to exceed the following dimensions when park flying a fixed wing model aircraft or helicopter that can be flown in a confined area such as a sports field or indoors in a hall that is not necessarily a SAMAA registered site.

- ◆ Wingspan: 1,2m maximum.
- ◆ Weight: 1 kilogram maximum, including battery.
- ◆ Propeller speed: 15 000 revolutions per minute maximum.

Similarly, experience has shown that helicopters exceeding the following dimensions are not suitable for park flying:

- ◆ Main rotor diameter: 800mm maximum.
- ◆ Weight: 1 kilogram maximum with battery.

#### 6. Flying Sites

Whilst it is safest to fly any model aircraft at registered SAMAA fields, the following areas have been used safely in the past as long as the small electric model aircraft have not exceeded the dimension expressed above:

- ◆ "Field" size - outdoor, approximately 100m x 50m i.e.: Rugby, Soccer or Hockey type sports fields.
- ◆ "Hall" size - indoor, approximately, 35m x 20m.

Due to the nature of the radio transmission system used for model aircraft flying, park flying sites should be at least 4.2 km apart and at least 5 km from registered Radio controlled flying sites. SAMAA has a full list of these flying fields available through its web site [www.samaa.co.za](http://www.samaa.co.za).

Please notice, that the Civil Aviation Authority (CAA) requires that any model flying sites closer than 9.76 km to a full size aerodrome or flying site must be cleared with themselves through SAMAA.

From a legal perspective, all park flying must be done within the perimeter of the size of the flying site, and only to a maximum height of 50m above ground level.

#### 7. Controlling a Group of Flyers

Experience has shown that it is necessary to have guidelines and a responsible person or group to run and organise any group of people participating in any game or sport. So, model flying is no different and the fliers at a flying field should nominate a representative committee who will be responsible for ensuring that the field is run correctly and safely and the basic guidelines are observed.

##### ***The elected or appointed "Committee" must be responsible to:***

- ◆ Ensure that the owners of the site have provided permission to use the property for small model aircraft flying.
- ◆ Ensure that any requirements of the property owners are complied with.
- ◆ Ensure that appropriate safety guidelines are established for all persons flying at the site.
- ◆ Ensure that a frequency control system is operative.

#### 8. Suggestions for Management and Control:

The CAA requires that all park/indoor flying sites must be registered with SAMAA in time. For further advice on flying sites and safety, SAMAA has a defined set of guidelines which can be used for frequency control, spectator areas, no-fly areas, instructions and proficiency grading, insurance cover, competitions, etc.

#### 9. Locating a Suitable Flying Field

After locating a suitable piece of ground, without structures or obstacles on adjacent land which may cause turbulence, it will be necessary to obtain written permission from the owners of the land giving you the right to fly model aircraft on the property.

Most owners will not give permission without some sort of commitment from the group using the field, wherein they have set out their rules and regulations, operating policies and given a liability commitment to the owner exonerating him/her from **all** responsibilities, liabilities, and consequences arising from any model flying accident.

#### 10. Setting-out the Flying Field

Internationally most flying fields have a standard lay-out (with minor variations due to obstructions) as follows:

- ◆ A flight line must be set out usually a straight line on the nearside of the runway, preferably into the prevailing wind direction.
- ◆ The far side of this line is the flying area.
- ◆ The near side of this line is a NO FLY area and contains the pits, the spectators, the car park area etc.

For safety, communication, and radio signal reasons, all pilots should stand together ( $\pm 2$  metres apart) within 7 metres of the flight line on the **near side** of the flight line. All spectators, persons not actively involved and parking should be a least 20 metres away from the flight line on the **near side**. (Only the pilot and his spotter, helper or the instructor should be near the flight line).

##### **When accommodating helicopters, two alternatives exist:**

- ◆ Fixed wing and helicopter take turns to fly on the same line.
- ◆ A separate area well away to the side of the flight line is established for helicopters.

#### 11. Frequency Control

A frequency control system should be installed at the flying site as the signals from two transmitters on the same frequency would interfere with each other, resulting in a total loss of control and both models crashing.

Fortunately we have over 50 frequencies available to us allowing up to six aircraft to be flown at any time from the same flying site.

At formal flying fields, it is customary to install a "**Frequency Control Board**" to exclusively reserve your transmitter frequency with a correctly marked peg placed on the correct spot on the frequency board.

The peg is removed when you have completed your flight. Please note that only radio equipment operating on 27MHz, 35MHz, 53MHz, and 2.4GHz is legal.

The SAMAA website has a full list of frequencies that may be used safely for model aircraft as well as a suggested layout for a frequency board that can be downloaded.

There is a new-technology equipment on the market, which operates on 2.4 GHz eliminating frequency limitations but we recommend that for proper control and safety, flying on this frequency is not permitted without placing a marked peg on the frequency board.