

## 9. Modes of flying model aircraft

Model Aircraft transmitters have become standardise over the years in the layout of the control sticks on the front of the hand held box. For a typical 4-channel model airplane, here is how it works:

**Mode-One** Right stick operates the ailerons and throttle.  
Left stick operates the rudder and elevator.

**Mode-Two** Right stick operates the ailerons and elevator.  
Left stick operates the rudder and throttle.



The throttle makes the aircraft go faster while the elevator makes the aircraft go up or down. The ailerons and rudder make the aircraft turn.

## 10. Safety

Any model flown in unskilled hands is extremely dangerous and we all wish to keep our sport as safe as possible.

Flying model airplanes is an enjoyable way to spend your spare time, however things do not always go according to plan and crashes occasionally happen.

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

We suggest that you do 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.



## 1. Introduction

If you are interested in making model aircraft flying your sport this leaflet will assist you with the necessary information to get involved.

The building and flying of miniature aircraft is linked irretrievably with humankind's urge to master the mysteries of flight. Many of us, since childhood have yearned to be a pilot, to own or fly a certain kind of aircraft but never had the opportunity to make our dreams reality.

Today, model aircraft provides in its infinite variety for the needs of sport and recreation for countless enthusiasts the world over. The sport is growing as model equipment is becoming cheaper, more reliable and user-friendly.

These vast improvements in all aspects of our sport from hardware to radio control systems have been motivated by the demands of competition flying at all levels, which is promoted and protected by the South African Model Aircraft Association (SAMAA).

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

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

Our head office is situated in Bonaero Park and anyone interested in flying model aircraft can phone the SAMAA office on landline 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.

## 3. Model aircraft are not toys

Model aircraft, are generally construed to be toys. This is far from the actual truth, which is that model aircraft are fully functioning aircraft in miniature, all the science and theories of flight applicable to full size aircraft apply to models.

If misused, accidents can happen and serious bodily harm and damage to property can occur.

The safety of spectators and other pilots should always be of utmost importance whenever you fly. For this reason the South African Model Aircraft Association has more than 180 registered model flying clubs spread around South Africa, each of which is an approved flying site subjected to a set of International Safety Guidelines and Rules. These rules have been developed since the first regular monthly aero-modeling magazine was published in 1928.

#### 4. Learning to fly

Almost anyone can learn to fly a radio controlled model aircraft and if you believe that you want to get involved in this sport then you should follow some of the guidelines set out below to ensure your success in learning to fly.

Much like learning to play a musical instrument, success in this pastime sport will only be truly realised by commitment, dedication and practice.

Even with the finest equipment available, on your first radio control flight you are going to find that things happen real fast and if you are trying to teach yourself it is likely that the time taken for your wheels to leave the ground till you crash is going to be very short.

#### 5. Club structures

From reading the leaflet thus far, you will notice that the majority of model flying in South Africa takes place at clubs where proper flying sites, safety measures, competent pilots and more often than not, a SAMAA training scheme is available to members throughout the year.

Benefits of club membership are considerable. For example, most clubs offer free training by volunteer Club-instructors. Most club members will be too happy to welcome and encourage you through all stages of your training.

A Club-instructor will completely inspect your model airplane before attempting to try to fly it. Through considerable experience these instructors have the ability to fly an untrimmed model airplane safely, which creates a serious problem for the less experienced beginner.

When you join a flying club you will build life long friends and you will enjoy rewarding companionship only experienced when flying a model aircraft alongside like-minded enthusiasts.

#### 6. Choosing a model aircraft

For your first model aircraft you must select a trainer type of model. This is a high wing model with a flat bottom wing section with a low wing loading and slow landing speed. The ideal model to learn to fly with as it is forgiving and gives you time to think and correct your mistakes.

#### 7. Radio Control Systems

Radio control systems are sold in complete sets, ready for installation in almost any model aircraft. All you have to do is to plug the connectors together, charge

the batteries and it will operate according to the manufacturer's specifications. SAMAA ensures that all equipment, which displays the SAMAA sticker, complies with appropriate legislation.

A typical radio control system consists of four major components; a transmitter, receiver, servos and battery.

The **transmitter** is the hand held control box with control sticks that the pilot uses to fly the model airplane. It transmits a coded radio signal to the receiver in the model, which interprets the signal and then triggers the actions of the servos, which in turn move the flying control surfaces.

The **receiver** is the part mounted in the aircraft, which receives and decodes the signal from the transmitter, telling the servos what you want the aircraft to do.

The **servos** are small electric motors installed in the airplane that actually move the control surfaces, which in turn affect the flight of the model aircraft. The servos take their signal from the receiver and move in proportion to the stick movement on the transmitter.

The **battery** in the airplane provides power to the receiver and servos. Almost all batteries are rechargeable. It is important to follow the instructions included with the radio system in terms of charging, installation and use.

Most radio control systems transmits radio signals at a specific **frequency** range and only one model aircraft can be flown at a time on the same frequency.

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.

There is a new transmitter on the market, which operates on 2.4 GHz eliminating frequency limitations. Please ask you local dealer to explain the merits of the system before buying a new radio control system.

#### 8. Trimming and balancing a model aircraft

A lot of things have to be right the first time. The model aircraft has to be balanced both front to back and from side to side. All the flight control surfaces have to be adjusted and all must move the right amount in the right direction.

The way the radio equipment is installed in the model aircraft needs to be checked. If the radio equipment is installed incorrectly it will stop working or will fly out of radio range very quickly.

A model aircraft has to be trimmed in flight to fly straight and level. If a model aircraft has a tendency to turn, climb or dive by itself it is very difficult to fly. If you do not know how to fly a model airplane you will not know what is wrong. So having your model aircraft set up correctly before the first flight is important.