



This document intended for people interested in RC Flying.

So you want to do RC flying? That is great news and we welcome you into the RC-Flying family!

Like all new things in life, you might have questions and this document is to provide you with the background information that will assist you with choices/options, taking you forward. It would be difficult to get the sequence perfect but let us try to provide you with some guidelines.

You might see some spaces or vague areas but feel free to search for it on the internet. There is an abundance of information available and a good RC pilot is always connected! Being connected means you will be knowledgeable on the latest technologies, product news and the holistic RC world.

What will you gain?

The obvious added skill is to be able to fly a RC craft but that is most probably only 20% of the experience. Let us start from top to bottom in trying to give you the complete picture. Firstly you will be between fellow pilots giving opportunity to mingle and chat which is a very nice social background interacting with others in a non-competitive environment. From there you need to program your radio, built your craft, assembly parts or sections, modify smaller parts to work for your craft. You will learn about different types of glue and what they are good for. How to use the servo's effectively, setting up your engine and adjusting it, re-build after a crash and the list goes on and on. RC flying is a hobby that touches on social, mechanical, electrical, electronic and PC skills. The RC flying beast is like a prostitute requiring various skill sets and providing s growth path with no 19th hole in sight. The average flight is 8 minutes (dependent on plenty other issues) and for 8 minutes, only you and your craft exists. After the landing you will feel a different person, free of all the memories that bugged you before the flight. This required focus and concentration is also very good for kids having difficulty to concentrate.

Structure and position

Like driving, it is crucial to at least know the common vocabulary, abbreviations and structure that affect RC flying. We first need to cover the back ground information.

All sport flying in the world for everything that can fly, from A380 to your model aircraft is controlled by the FAI in France. From there, the rules, regulations and what not are conveyed into the different countries by their own structures. In South Africa, this structure or body is Aeroclub SA. In SA, the Aeroclub controls everything that can fly, not only sport flying. You can find them at <http://www.aeroclub.org.za/> and it might be worth your while to at least check it out. From Aeroclub, we as RC pilots report to, or are covered by SAMAA (South African Model Aircraft Association) As a RC pilot, you need to join SAMAA at a minimal cost but we will come back to that. The SAMAA board is selected by the SAMAA members, that is now you and me. They are not paid and do it for the love of the hobby or sport. Within SAMAA, there is a dedicated Admin person and he is paid for managing the national RC admin. You can imagine that might be a huge job.



What does SAMAA do for the RC pilot?

The SAMAA board gets together on a regular basis and are in contact with Aeroclub to ensure smooth operations nationwide. Once you paid your SAMAA fee(annually) , you will receive a monthly newsletter with useful info about events, activities, etc. You will also receive a membership card stating your proficiency. Not to worry about proficiency, we will get back to it. The hidden benefit in this equation is called insurance. Under SAMAA rules, if you cause damage or perhaps in worst case take a life and you were flying within the rules, the SAMAA insurance will cover that. So part of your annual SAMAA membership goes towards this insurance and let us hope you never need to call on that!

Again there is a web site for SAMAA: <http://www.samaa.org.za/> On this site, you will find all the relevant documents you might require and over time with your growth you will visit this site more regularly (or so we believe , hey?).

When browsing the SAMAA site, you might pick another term called a SIG. No, this is not a signature but means Special Interest Groups.

Special Interest Groups (SIG)

At first, RC pilots fly what we call circuits. That is in essence flying around and around. When you are the boss of that, what is next? Now that is where the SIG kicks in.

SIG groupings are for more advanced pilots, taking it further and migrating from RC flying as a hobby to a sport. Usually there are a selection process where after a team is selected to represent SA internationally and hence gaining Green and Gold. These pilots are practicing at the RC clubs and it is good manners to give them right of way. Stand back and give them opportunity to practice and rather learn from them. They are people like you and me and most of them will gladly watch your flying and assist where they can. Again you will note the emphases on learning from more experienced pilots.

Look at this example. Let us assume you made good progress with your flying skills and that you would like to participate and compete against other pilots in flying a certain schedule accurately. Then you need to investigate and join MAASA. MAASA stands for Model Aerobatics Association of South Africa and this SIG is taking care of the pilots that are flying Aerobatics.

And so it goes on, for each Special Interest, there is a SIG and SIG's are once again controlled by elected members and they are not paid for their task. They meet on a regular basis to maintain the SIG.

Here are some other SIG's.

- [National Model Fun Fly Association.](#)
- [The South African Miniature Pylon Racing Association](#)
- [Model Gliding Association](#)
- [Large Scale Aerobatics](#)
- [Control Line Association of South Africa](#)
- [Model Helicopters of South Africa](#)



- [National Association of Scale Aeromodellers](#)
- [The South African Model Jet Association](#)
- [Model Aerobatic Association of South Africa](#)
- [South African Indoor Electric Association](#)
- [Club Aerobatics](#)

This list can grow or shrink over time, all dependent of international movements, etc. but the naming or groupings will make sense over time. In most cases, to become part of a SIG there is a minimal annual fee to pay. The committee is running and managing the SIG for free but setting up events unfortunately has a cost attached. They need money for a web site to keep supporters informed, they need laptops and inverters for electricity as clubs are usually without electricity and so the list goes on.

RC Clubs

Yet again, search the web or ask SAMAA for a RC club near you. You do not want to join a club that is not practical. There is no use driving 50km just to go flying. You might want to check with SAMAA that the club you plan to join is legal. Amongst all the things SAMAA do, they also approve clubs, making sure they are safe, legal, not in the way of a major airport, etc. There is usually a list available on the SAMAA web. The further away the club is from you, the less flying time you will experience and it is not fun starting a new activity that you can only do once a month.

Each club has its own committee as elected by the members, usually once a year. Yes you got it by now, they do it for free yet again. They also do the meeting thing on a regular basis in managing the facilities, ensuring happiness across the membership and doing the admin.

Membership at the club is usually paid annually in advance. There might also be a joining fee, so the first year it will cost more as you need to pay annual membership and joining fee. (The clubs do not want guys to join and leave, join and leave as the admin becomes a nightmare, hence the joining fee, they want to make sure you stay there for life!) The club might also add your SAMAA fee and pay it over to SAMAA on your behalf, which is nice, then you only pay one place. Once you paid membership, you will receive a membership card and off you go!

Like SAMAA, it is good practice to stay on top of things. Make sure you have a copy of the club rules to ensure you are on the good side of things.

The single biggest benefit of a club is to be able to tap from the experience of others that are more experienced in RC flying. Making friends at the club gives you access to more information and experience than you will ever find anywhere else! You need to protect this and always stay in touch with your new friends at the club.

And worth mentioning...there are many 'un-official' RC pilots that are flying at parks and other spaces. That is highly illegal. They are not covered by law or insurance! And learning to fly by yourself in a park is much more costly in any case. If you learn to fly amongst people that can assist you, it becomes much, much cheaper, believe me on that one.



What to do next?

Maybe a bit late but let us give it a go then. Before you spend any money, make friends with the guys at your local club. Talk to them, tell them what you want to do, tap from their experience.

Once you feel good, the next step is to get yourself a flight simulator. With that, you would need a radio and that is where the plot thickens. The radio is something you are going to use for years to come. From this you need to do some strategic thinking. From this point forward, you will note that some items will break (fairly easy...) whilst others you might purchase for life. Always remember this principle on your journey. When you buy for life, rather wait and spend a bit extra. But let us discuss the radio now. When using a radio, you want to make sure there are others that can help you and the only way to get that right, is to check what your new friends at the club is using. That way, if in doubt, they can help you. Make sure your radio has good memory capability that can store many models.

You might also hear that “somebody must buddy me”. No need to worry, this is not taking personal space. All it means is that your buddy will be flying with you and that again means that his radio will be connected to your radio. While standing next to you, he will witness and assist. The moment you do something that might put your craft at risk; he will take over from his radio. Radios can be connected via a buddy-cable or even blue tooth, dependant of the brand of radio of course. There is very little difference between the connecting method other than practical implications but the core issue is to make sure your new radio can be connected to the radio of one of your new friends. That will save you lots of money over time and makes the experience just more affordable. So, don't be scared to be “buddied”, it just shows you accept assistance from others which will make more people liking you back!

Other than the above, it is not my place to discuss brands, etc as we all have our own preferences.

Another note on radios. You might note some with short antennas and other with long antennas. The older radios worked on 35MHz with the longer antenna. The new models, and the way to go, is 2.4GHz with the shorter antenna. With 35MHz, only one pilot can fly at a time on a specific frequency. With 2.4GHz, many can fly at the same time as the technology includes a smart ID system to ensure one radio only controls one craft.

Ok, so now you have a radio and a simulator and you can start practicing on your PC. Select a trainer model and get going. Take off is fairly simple, give a bit of up elevator and increase power and she goes! The crucial part now is to get used to Left and Right flying away or towards you. Try to use your throttle for flying lower so that can become an active throttle pilot. Some guys set it to full throttle and only adjust it again when they want to land. That is a terrible idea and one needs to be aware of bad habits. Focus on Left and Right flying away or towards yourself. Then work on landings and enjoy the experience. Once again, your new friends at the club can be of assistance letting you know on your progress when chatting to them. You, and they, will know when it is time to move on.

When you feel ready for the next step, it is time to officially join a club. By now you know the guys, you feel comfortable and you are ready to get yourself something you can fly for real!



About aircraft

By now you are a solid simulator pilot and it is time to spend some money. For most people, spending money is not their hobby but something dreadful and we need to make sure you spend money for the right reasons. In doing it wrong, you might become part of the crowd that is telling everybody how expensive RC flying is and that we do not want. Let us cover some basics to help you with the zillion choices ahead of you.

Again, look and ask around at the club. Most of the guys always have some goods to sell at good price. But irrespective, there are some choices to me made.

Electric or Nitro?

Like all things in life, there are good and bad on both sides.

An electric craft runs from batteries. Batteries can be expensive but you buy them once and charge them after each flight. Over a long period and if you take good care of your batteries, they should be the cheaper option. Electric motors also have more immediate power and should be safer as no adjustment near the propeller is needed. But be aware...once you run the motor, it will keep running as long as there are power, irrespective of your fingers. Starting cost is slightly higher as you need the batteries and the charger. If you want to do 5 flights, you need 5 batteries. You can charge at the field from your car battery but that again might provide a new set of problems such as draining your car battery. Again, some items you buy for life and others for as long as they last. In this equation, the battery charger should work for many years. With an electric craft, you need to consider other technicalities such as motor size, kV rating, current usage, Battery ratings, controller size, etc. You would need assistance from your new friends here. These technicalities can be a disadvantage when considering the next paragraph.

A nitro engine runs from Nitro fuel. That you buy from the local shop and prices vary. The advantage is that if you have 10l fuel, you can fly 10l long. No charging issues etc. On the safety side, the engine will almost always need adjustment and for that, take good care of your fingers are the carburetor is usually close to the propeller. So you have more flying time, a bit more risky but a running engine does sound so much nicer than a running electric motor? Over time, the Nitro option might be more expensive but more convenient with respect to hours in the air. For a "newby", this might be the better option to give the pilot more time in the air, getting to grip with the holistic RC flying experience faster. On the technology side, the engine and prop size would be the only issues. By the way, time in the air is referred to as Stick time, the time you spend on the radio sticks flying.

Type of craft

This can be different discussion for helicopters and fixed wing crafts (Erries). In both cases, keep the bravery at home and opt for something that clearly says TRAINER. None of the good looking sporty crafts will do the job. In theory any craft can be used for training but in practice it will just add zeros to your flying budget.



Lately there are many different brands/styles or makes of Helicopters available and the best is to consult with others before you make a decision. Smaller usually means more difficult as the smaller crafts are more sensitive to other factors and your friend the wind.

With erries, there are two basic options. Option 1 is a normal balsa trainer usually called a Stick. A stick is a basic top wing craft. Stick usually runs with a Nitro engine and a very affordable option. Option 2 is what they call “foamies” Foamies are electric and do not get mis-led with the word foam. It is not the foam you use for packaging but high tech foam that can bend and that can be glued back without huge effort. There are excellent foamie trainers available such as the Wing Dragon, Trojan T28 or even a Discovery. The correct choice will be a top winger. The moment the wings move to middle or down, then you have something more advanced. Also look at the moving parts, the bigger they are, the more the skillset required. A craft with a low wing and huge rudder and ailerons is for the advanced and not for training. Most of the op wing crafts can also glide quite a bit. This is important knowing that if your motor/engine stops running; you still have a very good chance to glide it back for a safe landing. The negative on foamies is that they are light weight and more sensitive to your friend the wind. While other might still be able to fly, you might need to sit out as the wind will just take your craft for itself.

But in the end of the day, make sure you are comfortable and don't be brave. You will have more than enough time later to be brave.

Craft Size

Helicopters are specified in the diameter of the rotor blades. Ie, a 700 size means each rotor blade is 700mm. They start from very small indoor type helicopters to 700. There are bigger helicopters and scale helicopters but the ‘normal’ sizes would 400, 450, 500, 600 and 700. As the size goes up, the driving system goes up. If electric, the bigger choppers usually flies with two 6 Cell batteries, delivering anything up to 7kW. These are all dangerous statements as the game, technologies and product offerings are always changing en growing.

For Fixed wing, there are also some basic size groupings. Even if you fly electric, the craft size is still pretty much as per the original nitro or fuel sizes. The first grouping is the Nitro grouping, 40, 60, 90 and 120 size. There are other engine sizes, don't get me wrong, we just want to give you some useful background information!

A 40 size craft might use a 46 size Nitro engine. We are used to referring to engine size in cc's like we do in motor bikes. So what size is a 46 engine then? The 46 is actually .46 Cubic inches and that relates to 7.5 cubic centimeters. The 120 motor is 1.2 cubic inches and that relates to 19.6 cc's. Got it?

The second fuel engine grouping is using normal fuel with two stroke oil and common sizes would be 30cc, 50cc, 100cc, 120cc, 150cc and bigger.

Here is example information on a 120 size stick.

| | |
|-----------------|-------------------------------|
| Wingspan: | 57.75 in (1467 cm) |
| Overall Length: | 51 in (129.5 cm) |
| Wing Area: | 700 sq in (715 w/ quad flaps) |



| | |
|----------------|--|
| Flying Weight: | 5-6 lb (2.3 - 2.7 kg) |
| Engine Size: | .40 - .46 (2-stroke), .56 - .82 (4-stroke) |
| Radio: | 4+ channel |
| Servos: | 5 (standard) or 7 (quad flap) |

Note the mistakes made as 1467cm is 14.67 meter...surely they mean millimeters? Then the craft is 1.4m wide and 1.29m long. Crucial information as you would need to fit this craft in your vehicle at some point on your way to the club? It also clearly shows the expected or allowed engine size.

If you now compare the above with a 50cc craft. A 50cc Edge540 would have a wing span of about 2.2m and about 2m long whilst weighing approximately 8kg.

So now you have some idea on craft engine size. Always be ware between metric and imperial specifications and apply logic if in doubt.

Heli or Errie?

With all the low cost helicopters that are lately available, many RC pilots gets hooked by flying these. This is not a bad thing but when logic prevails, one would suggest starting with an errie and then switch over to heli. Helicopters are high risk and requires solid know-how to repair, to set up and for somebody new, it adds undue pressures on the pilot and the budget. About all trainer erries can glide if something goes wrong. Helicopters become instant bricks. So make sure you exercise the choice that will work for you in making sure you get in the air in a safe affordable way.

Proficiencies

Once you have joined the SAMAA and the club, you will note that the membership card states Student. Within the rules of the game, this means you have no license yet and can only fly if there is a pilot with a silence standing next to you. That is not nice to say the least, so you want to be out of this hole as soon as possible.

With your new friends, make sure you know who is the senior guys that can assist to buddy you. Keep asking them on your progress and when they think it is time, they will suggest you do your Solo. To get your Solo is like getting a drivers license. There are rules but it means that an instructor and another pilot (at least GOLD) will test you. You need to answer some question about the club and safety and fly some prescribes routines. The guys will score you and if you pass, you achieved Solo. This is not as a big deal as it sounds and worth every second of the effort. It gives great pleasure to oneself and you earned the right to fly all by yourself. The core value of the Solo test is to ensure that the RC pilot has full control over his/her craft.

From here you can grow to Bronze, Silver, Gold and instructor level. So, if you hear the word Proficiency, it is not a swear word but merely providing a means to substantiate between the good, the bad and the ugly. Ie, only Gold pilots can perform at a public show/event. So it is all in good spirit and providing an inherent safety check for parties involved.

Cost of RC flying



This can be a tricky question but with the latest technologies and products available, the price came drastically down. Like any other hobby or sport, the initial layout might be heavy but once you are in the air, making sure you use all good practices, the running cost is not that high. There is always the odd one out but in most cases, in a case of a crash, you can use the motor/engine, servo's and received again in the next craft. Averaged out over time, the running cost almost becomes the cost of the frame. In many instances you can also repair a crashed craft as all the parts required are available locally. From this, after the initial set up purchases, the cost comes drastically down.

Shopping

Good RC Pilots never purchase because it looks good. Always go back and do some research. It is always excellent practice to support the local industry. Google or ask around to know where all the local shops are in your region. These guys are doing this for a long time and are knowledgeable and can guide you. Some of them are naughty because they are running a business in real life, so in doubt, ask your friends at the club to get an un-biased opinion. There are also forums available such as SARCOM (www.sarc.co.za) and Avcom (www.avcom.co.za). In these forums people buy and sell all the time and you might be able to pick items at an affordable price. It is reality that no one will always have good money to buy new or the best and that is part of the RC pilot's life. In recent times we also see many importing from suppliers abroad at much better prices. This is always an option but if something goes wrong, you will be on your own! In many cases it is anyway difficult to judge from an internet picture if the product will fit, quality, etc. Sometimes you might swipe the credit card and then wait a very long time before that parcel is delivered if ever. So be aware!

Crashing your craft

At some point this might happen and it is part of RC flying. Accept the crash and make sure you know why it happened so that you do not repeat the same. It is how behave at times like this that will make you mature pilot. Make sure you test the parts that you bought for the long haul properly before you use them again. Make sure others do not hear you when you say "you naughty naughty errie...." Obviously you never laugh at others expense and if you do, you will note how small the circle of friends might become!

References

There are millions of virtual spaces dedicated to RC flying. Most clubs have their own site and most have a Facebook group. There are also other SIG Facebook groups or just guys discussing their special groupings such as Scale flying, etc. Feel free to search the web.

For starters, the following 3 sites might be very useful.

www.samaa.org.za The official caretakers of RC flying

www.sarc.co.za Forum just for RC flying. Many discussion groups including buy and sell.



www.avcom.co.za Forum just for RC flying. Many discussion groups including buy and sell.
Make sure you go to the Model Aircraft section.