

# Learning to Fly Radio Control (RC) planes at HMAAC

Flying RC models is a wonderful hobby and can be enjoyed by almost everyone. If you are thinking about learning to fly RC please drop into our Field and have a chat with some of our very experienced Members. Meanwhile here is an article to help you make some choices with equipment.

## Starting Out



In this modern day and age nearly every person who comes to join our Club has done some research on the World Wide Web. That's fair enough but be warned, you can get some incorrect or misleading information from the Web. Those YouTube videos are fun to look at but there are some traps.

Firstly, you must understand that it is actually a little bit harder to master the art of RC flying than you might think. Somebody said once that it is a bit like "patting your head and rubbing your stomach at the same time". Perhaps that's true. It certainly requires good hand to eye coordination but don't worry, plenty of others have gone before you and succeeded!

While it is possible to teach yourself with some of the modern systems, you will not be permitted to do this at HMAAC Field. We supply Instructors and training radio sets that can link to most RC equipment. Flying Training is done on Sunday Mornings from 1000 to 1230 and you might be able to arrange midweek training too. Free advice and help is available just for the asking at HMAAC. Please talk to Instructors and other Members before you invest in any equipment. HMAAC can offer you three FREE Trial Flights (fully insured) using an electric powered Club Trainer aircraft just so that you can get some feel for RC flying. After the third flight you must join the Club to comply with Club Rules and you will need to buy your own equipment.

HMAAC follows a strict Training Syllabus and rates pilots in accordance with national (MAAA) standards. You will be under the constant supervision of a rated Instructor, usually linked to your transmitter, until such time as you can safely fly alone.

## Choosing the Right Plane and Radio



The best model to start with is a fixed wing aircraft. We do not teach students to fly pure gliders (IE without a motor) and we do not teach helicopter flying. You will see experienced HMAAC Members flying these models but for initial training we recommend a fixed wing, powered aircraft.

The HMAAC recommended training combination is a Boomerang 40 or 60 (glow motor or electric motor) with a Spektrum or JR radio on 2.4 GHz. The radio only needs to have 5-6 channels and it will serve you well in the early stages. The radio must comply with international radio transmission standards. More exotic and expensive model aircraft and radios can certainly come later if you wish but many Club flyers are happy with a relatively simple radio without too many "Bells and Whistles"

The best place to buy your model and RC equipment is at a local Hobby Shop specialising in RC Aircraft. A list of shops is at the end of this article. Feel free to search Australian RC Magazines and interstate suppliers if you wish but it is a lot simpler to buy locally. Do not be tempted to buy cheap models from overseas or even EBay. There will be no back up or after sales support if you do. It is quite likely that cheap radio equipment bought directly from overseas will not be an approved system. HMAAC Instructors will check that your radio complies with MAAA rules. We will also inspect your model and its RC installation for safety before the first flight.

## Mode 1 or Mode 2



This choice must be made before you make your first flight. HMAC teaches primarily Mode 1. (Aileron and Throttle on the right stick, Elevator and Rudder on the left). Having the two primary controls on separate sticks makes it easier to understand the basic functions in the early stages. Once you start on a particular Mode it is very hard to change over to the other Mode. Mode 1 is the way that most people

in our Club fly. It is also the way that most people in Australia fly. This is the way that your radio will be set up when you buy it at the Hobby Shop.

Mode 2 on the other hand has the Aileron and Elevator on the right stick and Throttle and Rudder on the left stick. The intention is to copy the full size aircraft “joystick”. But every time you move the right stick there is a fair chance that you will move both aileron and elevator, causing an unwanted movement of controls. Thousands of people around the world do it like this and it is normal in the USA and parts of Europe. Most YouTube videos will show Mode 2. HMAC Instructors can configure the training radios to allow instruction on Mode 2 but it is generally reserved for learners who insist on this Mode for personal reasons.

## Electric Power or Glow Power

The choice is yours. Electric power is clean and simple but flight times are usually less than 10 minutes. Batteries and dedicated safe chargers are expensive. You will need at least three battery packs. Batteries need replacing regularly. Glow power is more traditional but the engine is noisy, oily and smelly and can be difficult to start and run. Glow fuel with nitro added is expensive. Both Electric and Glow motors drive propellers which can cut you. A well set up Glow motor with a good size tank can stay in the air for 15-20 minutes.

## Making your Purchase

It might surprise you to learn that prices have come down considerably over recent years making the hobby more affordable. No longer do newcomers have to learn to build before they can fly. Models of today are usually Almost Ready to Fly (ARF) which means that they are pre-built and require only simple assembly. Radios are incredibly sophisticated and cheaper than ever before.

You will require some extra equipment at the field depending on the power source.

<b>IC Flight kit</b>	<b>Electric flight kit</b>
12 V battery (lead acid or similar)	Multi chemistry type Battery charger with built in balancer
Glow plug battery or power panel	Battery capacity checker
Glow plug lead and adaptor	Various tools e.g. screwdrivers, long nose pliers, medical forceps (for fishing out servo leads), small adjustable spanner, hobby knife.
Electric starter	There are many different types of connectors. It is a good idea to settle on one or two types, e.g. one for small currents and a larger one for higher currents. This facilitates the interchange of batteries between models.
Spare glow plugs	
Container of fuel	
Fuel pump (manual or electric)	Soldering iron and solder at home
Glow plug spanner	
Frequency key if not 2.4 GHz	
Various tools e.g. screwdrivers, long nose pliers, medical forceps (for fishing out servo leads), small adjustable spanner, hobby knife.	

## Aircraft suitable for beginners.

There are quite likely to be other suitable ARF kits in RC Hobby Shops that could equally well suit your requirements. Use this short list as a guide and discuss your preferences at the Hobby Shop.

<b>Aircraft</b>	<b>Description</b>	<b>Power</b>	<b>Comments</b>	<b>Cost</b>
<b><i>Bixler or Easy Star II</i></b>	Compact, cheap foam, fully setup and ARF. Quite sturdy and tough. Can be bought with or without radio.	Electric (Pusher)	Bixler is a Chinese copy of the German design Easy Star. Lightweight but flies quite well. Comes with or without wheels. Several similar designs in shops and on Web. You will quickly want to progress onto a conventional trainer.	Cheap (Chinese)  Cheap to Moderate (German Multiplex)
<b><i>Radian</i></b>	Foam, powered glider, ARF. Long wings in two parts. Can be bought with or without radio	Electric	Lightweight, very good glider with strong motor. Slow graceful flight. No wheels. You will quickly want to progress onto a conventional trainer	Cheap
<b><i>Apprentice S 15e</i></b>	Small to medium size foam, high wing. Looks like a Cessna. ARF with all equipment installed. Includes radio	Electric	Lightweight, but comes with an electronic stability system called SAFE. Tricycle wheels	Moderate
<b><i>Boomerang 40</i></b>	Medium size, high wing. Looks a bit like a Cessna. ARF but Balsa and Ply construction with plastic covering. Requires purchase and installation of radio and motor	Glow .46 cu-in. Or electric equivalent. Conversion mounts included.	Attractive. Tricycle undercarriage. Excellent and safe flyer. Tricycle or tail dragger wheels. Very popular	Moderate
<b><i>Boomerang 60</i></b>	Larger version of the above. Identical construction. Requires purchase and installation of radio and motor	Glow .55-.60 cu-in size. Could be modified to electric equivalent at some expense.	Attractive, stable and predictable. Solid performer. Tricycle or Tail dragger wheels. Has flaps. Excellent trainer. Good visibility in the air due to large size.	Moderate to Expensive

## Recommended Radio systems suitable for beginners

Manufacturer	Model	Channels	Trainer System	Comments	
<b>Spektrum</b>	DX5E	5	Yes	Basic \$\$	
<b>Spektrum</b>	DX6	6	Yes	Better \$\$\$	
<b>Spektrum</b>	DX7	7	Yes	Advanced \$\$\$	
<b>JR Propo</b>	XG6	6	Yes	Basic \$\$	
<b>HiTec</b>	Optic Sport 6	6	Yes	Basic \$\$	
<b>Multiplex</b>	Smart SX M-Link	6	Yes	Basic \$\$	
<b>Futaba</b>	T6JG	6	Yes	Basic \$\$	

## Glossary of Terms used in RC Modelling.

Term	Meaning
ARF (or ARTF)	Almost Ready to Fly. A pre constructed kit that only requires a few very simple tasks to ready the plane for flight. ARF models have revolutionised Aeromodelling but you can still build from scratch if you want to.
RC	Radio Control (usually on the 2.4GHz band)
Glow Motor	A type of Internal Combustion engine that runs on safe Methanol fuel and uses a device similar to a spark plug that glows continuously for ignition. A low voltage battery is connected just to start the engine. The size of the engine is generally referred to in Imperial terms (.40 - .46 -.60 cubic inches or about 6.5 to 10 cubic centimetres).
MAAA	Model Aeronautical Association of Australia. The National body that represents us all and is charged with managing Model Aircraft in accordance with Civil Aviation Regulations
Tricycle Undercarriage	One nose-wheel and two main-wheels. Easy to steer on the ground and the propeller does not normally come in contact with the ground.
Tail dragger	Two main wheels and a tiny tail wheel. Sturdy, old style undercarriage but has a tendency to nose over
Ailerons	Control surfaces. One on each wing. They move in opposite directions to each other and provide "roll control"
Elevator	One control surface on the tailplane. This provides "pitch control"
Rudder	Single control surface on the vertical tail. This provides "yaw control" but is not used to turn the plane in the air. It is a balancing control for coordinating the ailerons and elevator. Not as difficult as it sounds.
Flaps	One on each side of the wing on some models only. They move together, in the same direction and are used for landing only.

## **Frequently Asked Questions**

1. How long will it take me to learn to fly RC? Anywhere between a few weeks and many months. It depends how often you can get to the field and if the weather is suitable. And it depends on your own skills. Older people take longer than younger people.
2. How much should I spend to get started? A budget of about \$1000 dollars is realistic. That includes your HMAAC Club Membership and all new equipment. Be cautious about second hand equipment and also cheap Internet bargains. RC Receivers can be used in several different models. You only need one Transmitter
3. What happens if I crash the plane? Well, we will take a lot of care for that not to happen but it can do. Fortunately the engine and RC gear is very sturdy and usually survives any impact. The airframe is relatively cheap to replace (around \$140 for a Boomerang 40). Sometimes it is possible to repair or replace components of the airframe.
4. Why are there so many Club Rules? HMAAC is in a very public area with two very busy roads on the boundaries. The Club takes a very serious approach to safety. We have been at the current site for over thirty years and we intend to stay. HMAAC uses the MAAA Wings system as an indication of levels of achievement.
5. Does the Club offer any social activities? Yes. We have monthly meetings in our comfortable Clubrooms and there will be many opportunities to visit other Clubs as your skills improve. We have regular BBQ lunches and flying competitions which are lots of fun. You will be in a group of like-minded people and should enjoy exchanging information at the Field. Some people who have time on their hands spend all day at the field chatting and flying. Our facilities are available 7 days a week.



## **Local Hobby Shops for RC Planes**

1. *Model Flight:* 130 Goodwood Rd Goodwood – [modelflight.com.au](http://modelflight.com.au)
2. *Model Mania:* 4/201 Main South Rd Morphett Vale – Ph (08) 8382 4957
3. *Hobby Habit:* 144 Daws Road Melrose Park - [hobbyhabit.com.au](http://hobbyhabit.com.au)
4. *Supercheap Hobbies:* Shop 3, 2 Old Coach Rd Aldinga Beach – [supercheaphobbies.com.au](http://supercheaphobbies.com.au)