

From Buying to Flying

I've finished the building – I want to Fly!!

Ok, so you've bought your machine and its now sitting in front of you assembled. Neighbours and friends will now expect to see it flying and you set off into the back garden carrying your new pride and joy. The radio is turned on, the glow is energised and you hit the starter.....SCREEEAAAAM.....BANG!!

It's a sad fact that nearly 50% of model helicopters bought never see daylight for more than a couple of minutes before they are consigned to the loft in bits.

So what did I do wrong you ask? Well a model helicopter is a complex unforgiving beast, which requires careful setting up. The most important aspect of this is to ensure all the servos operate in the correct direction. In the all too common example above the throttle was incorrectly set-up with low stick on the transmitter set to high throttle on the engine. As soon as the starter was applied the engine immediately leapt to full power – ouch!!

We don't mean to put you off but cannot emphasise enough that you will get the initial set-up wrong and if you don't seek the advice of an experienced pilot before even starting the engine, your new machines first flight will end in failure...

So if you are reading this then you are already on the right track as you are obviously doing a bit of research. A model helicopter club is the best place to go, find you're nearest here at the [BMFA Club Finder](#) webpage. If you live near us then you are more than welcome to come down to our field.



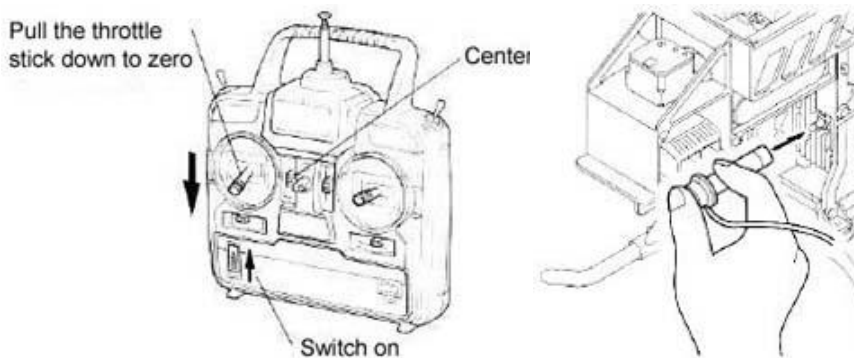
Any model helicopter club will have experienced pilots on hand who will be only too happy to help you out and give your machine a thorough check over and test flight. Don't feel intimidated by your current lack of knowledge and skill and remain isolated and try it on your own, a club is the best place to be. In a club environment you will progress much faster than on your own.

The pits and those ever nagging rules!!

It all starts with good pit area control. First, ensure that your radio frequency channel is free. The club will hopefully have explained how they control radio frequency. There is only one rule to remember here, if you switch on your transmitter with a channel someone else has already reserved then you will be asked to pay for any loss or damage resulting. If that happens to be a £2500 competition specification model helicopter you just brought down then it could be a costly mistake!! Our Radio Channel Frequency page has more detailed information on Bath Model Helicopters frequency control and also includes a list of channels currently in use by our existing club members.



Starting the engine



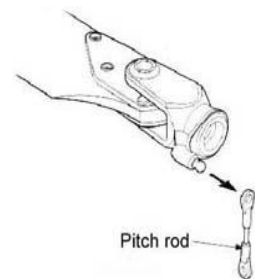
The next rule is to ALWAYS keep one hand on the model rotorhead whenever starting the engine – just in case it's accidentally on full throttle!! When walking with an idling machine always carry it by the rotorhead and NEVER run the helicopter in or near the pits area. Most clubs will have a dedicated ground testing and run-up area if you wish to run-in a new engine without actually hogging the flying area to do it. Its more than likely that who ever is helping you will use this area to set your machine up.

It works!!

Right then, so your new helicopters engine has been started and your new club has directed you to the 'training area'. Hopefully an experienced pilot is walking besides you and is babbling on about "blade tracking" and "it's running a bit lean/rich".



Lets deal with the blade tracking first. This is simply the minor adjustment of the rotor blade grip linkages until the two blades are spinning at the same level. If they are not then the rotor blades when spinning will form two 'disks' and not one. Left in this state and it will cause vibration and make



the
helicopter
unstable.


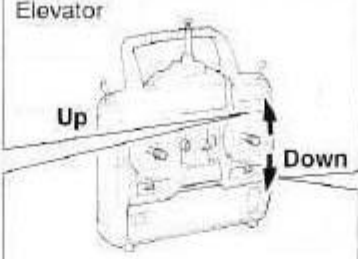

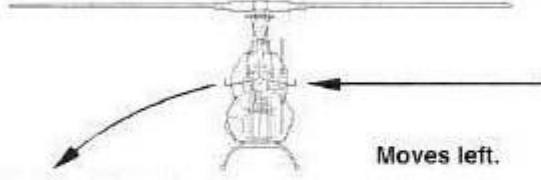
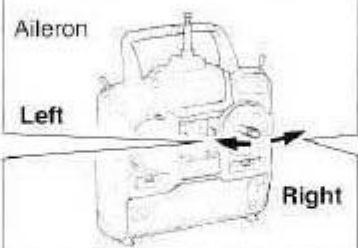
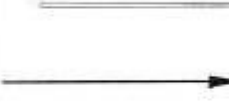

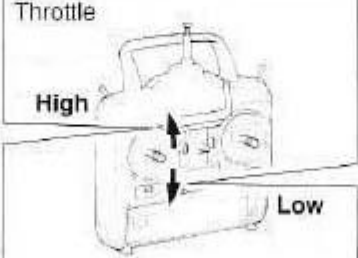

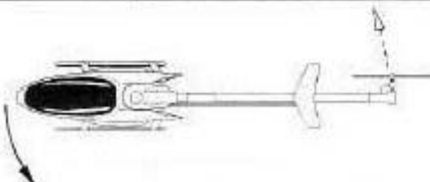
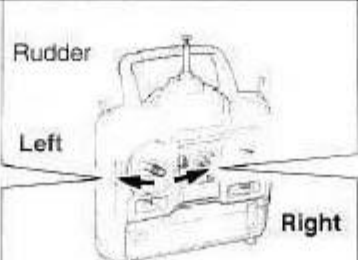

The second point concerns the engine. When new they require a little more attention in order to get the best from them later on. Your helper will run the engine up to speed to check the engines settings. Essentially he will want a nice rich mixture, or to put it technically – a higher proportion of fuel than air mixed in the carburettor. More fuel on a 2 stroke engine means more oil and it's the oil that the new engine will need if the moving parts are to bed in correctly. Other than the increase in smoke being kicked out, the richer setting will also reduce the engines power. However the heli will feel gentler as a result so for you, a beginner, this is more of an advantage than a hindrance.



Ok then, so your helper is satisfied that your helicopter is set-up. Its also more than likely that he will have offered to give it a quick test fly. Do accept this as besides from letting you see your purchase flying around as it is intended, it will put your mind at rest that the machine is 100% set-up and ready to learn to fly on - lets face it, they are hard enough to fly as it is without having the odds stacked up against us from the very start with a machine not willing to fly!!

You Have Control...

Before you take control of your helicopter for the first time make sure to take a look at the chart below to see how the helicopter will respond to your inputs on the radio transmitter. Once you are comfortable with this information it's time to put it into action....

HELICOPTER RESPONSE	CONTROL STICK POSITION	HELICOPTER RESPONSE
 <p>1 Moves forward. 2 With airspeed, the helicopter descends.</p>	<p>Elevator</p> 	 <p>1 Loses airspeed 2 With airspeed</p>
 <p>Tilts left. Moves left.</p>	<p>Aileron</p> 	 <p>Moves right.</p>
 <p>Engine rpm and the main rotor pitch increase. As a result, the helicopter lifts up.</p>	<p>Throttle</p> 	 <p>Engine rpm and the main rotor pitch increase. As a result, the helicopter lifts up.</p>
 <p>By changing the tail rotor pitch, the nose moves left.</p>	<p>Rudder</p> 	 <p>By changing the tail rotor pitch, the nose moves right.</p>

Of course at this point you will have your training undercarriage attached to the helicopter skids and you will be at a safe distance from the helicopter. Make sure that until you have mastered the hover that you point the helicopters nose into wind and stand behind the model. This will help considerably until you get used to what you are doing.



Slowly raise the throttle stick and let the revs and head speed build up

slowly. Don't be tempted to raise the stick fast as this will cause the engine to spin up and possibly cause the blades to fold leading to a boom strike. As you reach the centre with the throttle stick you will see the heli start to become lighter on it's skids. At this point before it leaves the ground you should be able to move the cyclic stick ever so slightly and see the effect this has on the rotor disk. It will want to tip the helicopter in the direction you push the stick. Be careful not to move the stick too far because even at this stage you could tip the model over! Get a feel for this until you are happy with the sound and head speed of the model.

The next step is to gently lift the throttle until the heli just lift's off the ground ever so slightly. Don't aim to get it more than a couple of inches in the air at first as things can get out of hand very rapidly. If you feel it is getting away from you at any point just lower the throttle stick SLOWLY and bring it back to earth. Again, only make slow movements with the throttle stick.

Once it is in the air a few inches you will constantly need to move the cyclic stick SMALL amounts to correct for the model moving. Try to imagine the model is balanced on top of a ball and is constantly wanting to roll off it in any direction. You need to stop this by moving the cyclic in the opposite direction.

You will also need to try to hold the heli straight by using the rudder to turn the nose left and right small amounts. This will probably only need to be small amounts if you have the nose pointed into wind and your model's gyro will also work to keep it pointing in the right direction.

Keep practicing this more and more and over a few flights you will slowly get a feel for the model and become more confident. Take it easy at first stopping at regular intervals for a break. If you find the model getting away from you don't be tempted to 'fly' it back towards you. Land it gently, close the throttle to idle, let the blades slow and then collect the model bringing it back to where you are meant to be hovering.

It WILL take lots of time and practice but you will eventually get the hang of it. Be prepared to put many hours of practice in though as the more time you are at the sticks the quicker you will get the hang of it....

The next stage...

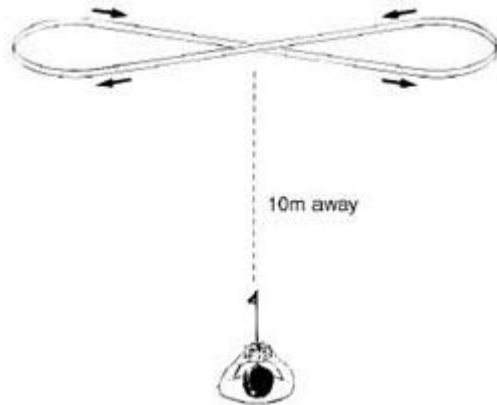
Once you are very comfortable at hovering tail in towards yourself start to move the model rudder turning the helicopter tail to 45° either side and hover at this position. Eventually turn the model to a side on position and get completely comfortable at this with the model pointing both to the left and right. Being able to hover side on to yourself is invaluable as once you are flying circuits you need to set of into and come

out of the circuit from/to a side on hovering position.

The final stage to gain your orientation is to master nose-in hovering. It is a good idea to try to learn this now whilst you still have you're training undercarriage and it will pay off in the long term. The majority of pilots are keen to get into circuits before learning nose-in but try to resist if you can and continue your hovering manoeuvres!

Up, up and away into the blue yonder....

Now that you have mastered hovering and are completely comfortable with the model you can start moving it around slowly and steadily. Keep the helicopter in the hover rather than letting it get into forward flight. The difficulty here is controlling the helicopters speed especially during the turns. Practice slow lazy figure eights turning the model away from you at either end and try to aim to bring the model past yourself side on rather than tail in. Eventually as you become more confident you can let the airspeed increase moving the model from the over and into forward flight. Just keep practicing at this and you will soon find yourself doing circuits that are bigger and faster.



At this point you should be capable of passing the BMFA A Certificate for helicopters. [Qualifacations Page](#)

Congratulations!!

You have taken your first steps learning to fly a radio controlled model helicopter! From this point on you really are on your own. The best way of improving your flying is watching, talking too and copying other fliers at your local club. Don't forget to keep practicing on the simulator between flying and you will slowly get the hang of it.