

Learning how to use your first drone



Drones are one of the better technologies to hit the global market in the last few years, but there are a number of rookie errors that can see your multiple thousand dollar investment smashed into pieces in a heap at the bottom of the ocean. Knowing a few things about how to fly a drone is one of the most important aspects of buying one.

For a beginner drone pilot, the best way to make a start with drone flying, is to start with something cheap, and something you can learn with that won't break the bank when it inevitably crashes into the ground or a tree, or flies out of range, never to be seen again.

If there is one thing that is inevitable when flying drones, it is that you will crash...a lot. The most common thing you will struggle with when learning to fly drones is learning to fly "nose in". Flying with the drone pointing away from you is like driving a car, and feels normal, but as soon as you turn it around to come back to you (nose in), that's when problems arise, because the controls are suddenly reversed.

Before you spend thousands of dollars on a camera drone, get yourself a small indoor drone and learn to fly it. Micro drones and Nano drones are perfect for teaching yourself how to manoeuvre, take off and land. They can handle being crashed because of their lighter bodyweight and smaller size. If you can, buy a drone one with propeller guards that is ready-to-fly.

Just remember this fun fact – It costs the same amount of money to crash one hundred \$50 drones as it does to wreck a brand new \$5000 professional quadcopter – so when you consider those numbers, it should be an easy learning curve for you, to start small, and once you have the skills to fly your small, cheaper craft, you can then upgrade.

When it comes to indoor drones and learning to fly, Parrot Mini Drones have a great (and affordable) range of battery powered craft that can be operated by your tablet or smartphone. The best feature of the Parrot Drones is that they have a set of sensors that allows them to hover unassisted. Some of the lower end priced drones have foam construction and propellers that are surrounded and guarded by the drone body, meaning there is less likeliness of damage. For a price tag around \$100.00 you can't really go wrong with these for honing your skills.

From that beginner stage to the next there can be significant jumps in price, depending on how your skills improve, and which path you would like to lead with drones. Racing drones are fast becoming a specialised sport around the world, and it's by far one of the most exciting things to watch. If you want to participate, it can be quite costly if you don't know what you are doing, so it isn't recommended for beginner drone pilots.

Racing Drones:

Race drone prices start around \$300.00 but you really need to know what you are doing to fly one, so beware. Repair costs can far outweigh the original cost of the drone if you don't know how to use it properly. When it comes to drone racing, most people build their own craft, but there are a few new RTF drones being released. If you are pretty handy with tools and soldering, you might benefit from having a go at building your own.

Videography/Photography Drones:

If you are heading down the path of photography or videography with your drone flying, then there are also a number of costs involved that you should know about.

DJI is the leader in flying camera drones, and Mongrel Gear has an excellent range of their craft available. For those looking to get started in aerial photos and video, the more money you spend the better options you get. Some of the newer models are able to evade obstacles by stopping or going around, and the accessories that are available are endless. As a side note, DJI also offers crash insurance for your drone, so when buying, be sure to ask about that.

One thing to consider when choosing a drone is how long you get for your flight time (based on the life of your battery) and you'll benefit from buying a couple of extra batteries, and a quick charger. It will also be a good idea to buy some spare propellers and propeller guards, and finally; find out how easy it is to get replacement parts for your drone before you buy.

Regulations and Legalities:

Once you have the physical side of flying sorted, you need to also look at the regulation side of things. There are laws and regulations that must be followed; and if you aren't 100% knowledgeable about these laws and regulations, you can end up being very out of pocket, in the way of fines, or even more deep in trouble and end up in jail.



From the Civil Aviation Safety Authority (CASA)

Flying drones/remotely piloted aircraft in Australia:

Australia's safety laws for drones, or more technically correct, remotely piloted aircraft (RPA), as defined in the Civil Aviation Safety Regulations Part 101, vary whether you are flying commercially or recreationally/for fun.

From 29 September 2016, if you are flying for fun and not commercially, or for any form of economic gain, then the regulations are less restrictive and allow you to fly an RPA without needing to be certified, providing you follow some simple safety rules. Holders of UAV operator's certificate (UOC) can continue to operate as per their certificate and will only be issued a ReOC from 29 September 2016 if the certificate is varied or renewed.

Knowing your laws and your rights as a drone pilot is as important as knowing the laws while driving a car, and can save you a lot of trouble. Not only are there laws covering where and how you can fly (with or without a licence) but there are laws covering the frequencies that your drone uses for both radio control and video. If you are using your drone overseas, it is very important to know their local laws, as some video frequencies are completely banned in some countries.

Video Control:

There are quite a few different video frequencies that are used by pilots, including 2.4GHz, 5.8GHz and 1.2GHz Many factors should be considered when selecting a video frequency including the type of flying that will be done, along with the rules and regulations surrounding these frequencies in the country you are flying in. Some countries don't allow some of the frequencies to transmit video at all, and some require a license. The ACMA website should be sought out for rules and regulations regarding frequencies in Australia.

Radio Control:

There are also a few different choices when it comes to the frequency used to control the aircraft including 36MHz, 72MHz, 433MHz, 900MHz and 2.4GHz. 36MHz systems work really well as an old analogue frequency but they don't offer as robust a solution as the new digital 2.4GHz systems. The UHF 433MHz Frequency Hopping Systems provide the most robust and reliable systems, and also provide long distance flying using higher power outputs than standard RC radio units. Please ensure you confirm the legal requirements when operating in these frequencies. Common combinations are UHF for RC control, and 5.8GHz Video transmission.

The best piece of advice for new drone pilots we can give, are to speak to the professionals to give you advice, tips and even lessons; don't waste your money on expensive drones when you are learning to fly; and practise, practise, practise, before you upgrade!!