Easy Drone Modifications

Optimize your drone to the fullest with cheap, easy tweaks

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INTRODUCTION

There are a ton of different modifications you can do to your drone to make it better. Some of them are harder and costlier than others to pull off. We all want to save time and money.

What are the best drone mods that will give you the most ROI then? Do you want to optimize your drone to the fullest with cheap, easy tweaks? If so, you have downloaded the right piece of information.

Below are 10 hand picked drone modifications that will give you the most ROI and how to go about perfoming them.

MOD 1 : CHANGE THE STOCK PROPELLERS

Changing your drone's existing propeller for lighter, improved ones can boost flight performance, stability and overall flight times. The existing stock propellers can also be replaced for more resilient ones made of carbon fibre. Make sure to pick a propeller that is supported by the motors on your drone.

The easiest way to buy an improved propellers is from the vendor itself. If you are using a DJI phantom for example, a simple amazon search for "DJI phantom propeller" will return a ton of results. Make sure to read the reviews on whether or not they are an actual improvement.

The second, cheaper method is to search for carbon fibre propellers that are of the same size. Make sure they are good quality.

MOD 2 : LANDING GEAR STABILIZERS

Most drones, especially the phantom drones come with landing gear that tends to make the drone tip over during take off and landings. If you are not very careful, this can be hazardous to your drone.

The solution for this is to install landing gear stabilizers onto the landing gear. The easiest way to buy one is to get online on a site like Amazon and search for a landing gear stabilizer for your particular drone.

You should find one for the most popular drones (including the Phantom, Mavic pro etc.).

MOD 3: WATERPROOF THE ELECTRONICS

Water to the electronic components inside your craft is almost like lava to the human body. It can fry it. It is very easy to water damage your quadcopter if you live in a place where it rains often and unexpectedly. It is also pretty easy to do the same if you accidentally crash land into a pond or a lake.

This mod is trickier than others and will require you to disassemble your drone. Experiment on a cheaper quadcopter and then move up slowly. You do not want to mess up your more expensive crafts.

First, disassemble your quadcopter and get the ESC, BEC, LiPo battery, motors and the flight controllers out. This process is different for different quadcopters and its best to search the internet on how to disassemble your particular model, especially if you are using a ready to fly quad.

Second, pour a decent amount of Corrosion X into a pan (1/4th of a normal size pan should do).

Third, Submerge each of the components of the quadcopter into it and make sure that the solution reaches every part of your component and coats it all over. If any of your electronic components are placed inside casings, you might have to uncase it before you submerge it. Servos for example, are a good example for this.

Alternatively, you can spray Corrosion X onto your components, but make sure that it reaches every part and corners of it.

Here is a full guide: http://www.droneybee.com/waterproof-your-quadcopter/

MOD 4: FLOATATION LANDING GEAR

If you are planning on flying above water, attaching floats to it so it can land on water can add an additional layer of protection for your craft, in case of battery or motor failure mid-flight though it will not waterproof your drone.

The way to build these is to cut 4 pieces of polystyrene/styrofoam, sit the drone on 2 pieces and then glue those two pieces onto the other 2 pieces perpendicularly. Attach a rubber band onto the midsection of the drone to this new floatation landing gear for added stability.

Here are some videos you might want to check out:

Video 1

Video 2

Video 3

Do note that if you go too heavy on the material used for the landing gear, it will reduce flight times.

MOD 5: CHANGE THE BATTERY FOR EXTENDED FLIGHT TIMES AND PERFORMANCE.

Different battery brands have different performance, even though the ratings on it remain the same. The stock battery that comes with the DJI isn't the most optimal and so, it is a good idea to swap it for another LiPo battery brand. Do note that you must match the S ratings, C ratings and voltage requirements while aiming for a higher capacity.

Higher capacity batteries are larger in size and in order to have them fit inside your drone, you will need to modify the battery door on your drone. An example of this is a battery door replacement from shapeways (https://www.shapeways.com/product/DHR4QUUK2/dji-phantom-cable-guides-battery-door-upgrade) . (No affiliation)

You can also 3D print one yourself if you have the equipment.

Make sure to read our guide on LiPo batteries before you do this: http://www.droneybee.com/lipo-battery-tutorial/

Here is a guide on picking the right battery brand: http://www.droneybee.com/best-lipo-battery-brand/

MOD 6: INSTALL GIMBAL GUARDS

Gimbal guards are attached to the bottom of your drone and will help keep objects such as grass away from the gimbal motors, giving it an additional layer of protection. It is also great if you are a beginner and haven't mastered proper, smooth landing yet.

What's more – No more error message that says "Gimbals motors are overloaded!". Any additional layer of protection is always good for a drone that you paid a fortune for.

Gimbal guards, like landing gear stabilizers and propellers, can be bought off an online store like Amazon by searching "gimbal guard" + "drone model".

MOD 7: RANGE EXTENSION

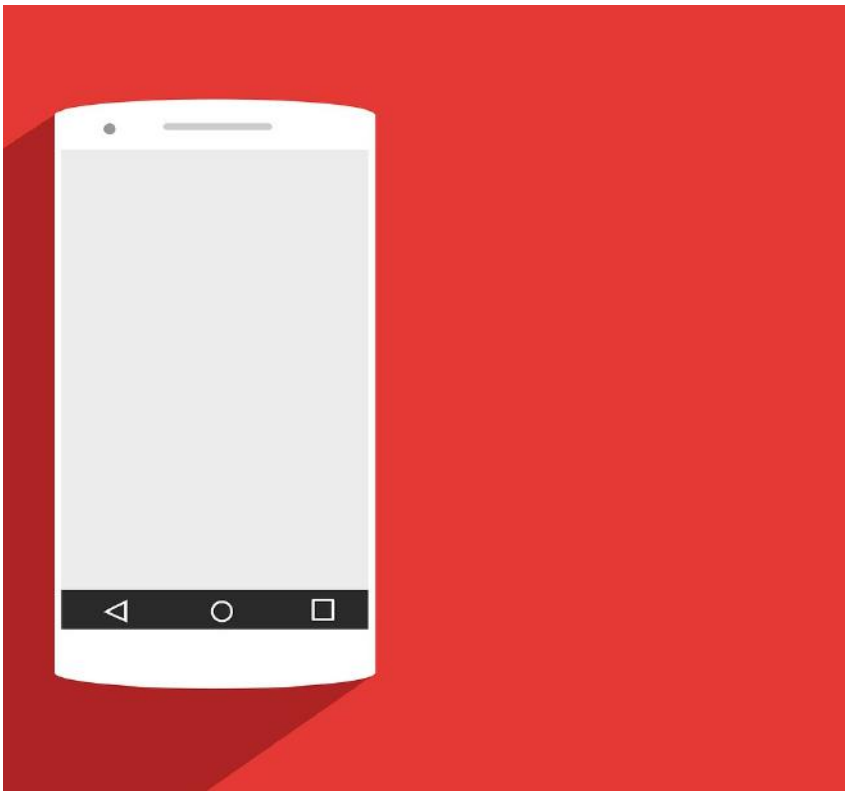
A range extender may not be a must have for all situations. After all, you can only legally fly up to 400 feet and within line of sight (In the US at least). Moreover, flying long distances will ultimately be limited by the amount of charge your battery can hold.

A range extender is however a great add-on to your drone. What's cooler than having a craft which essentially becomes an extension of yourself with FPV and capable of flying long distances?

Search for "range extender" + "drone model" in an online store like Amazon. Another way to extend range is by using an UHF system like DragonLink. This gives you the flexibility to pick lower frequency radio within the UHF range. (Well below the standard 2.4 GHz to about 400 Mhz). Do note that depending on the country you live in, tapping onto certain frequencies may not be legal.

As you may or may not know already, lower frequency radio waves travel longer distances before getting attenuated than their higher frequency counterparts. Lower frequency radio waves also tend to travel through objects better.

Not only this, you get to lower the frequency for your video transmitters and receivers as well without having it interfere with the transmitter radio. This means, longer range for your video signals as well. Be wary though, lower frequency waves like the 400 MHz is littered with interference! You might have to get your hands on a spectrum analyzer to see how much noise output a particular spectrum has.



MOD 8: THIRD PARTY APPS

Using third party apps will give you features that the app with drones like DJI doesn't, like better tracking, better assist modes and setting advanced waypoints. Here are some of the best apps out there:

- Lichi
- Autopilot
- Mission planner from FPV camera
- DJI Ultimate flight
- Aimest

MOD 9: LENS PROTECTION, LENS HOOD AND ND FILTERS

An important accessory you might want to consider is lens protection. Though it might not protect your camera lens from cracking or serious damage if you crash, they will do a pretty good job of making it scratch resilient.

Another accessory to improve your lens is a lens hood. This is one of the best drone accessories, despite being simple and a must have especially because it is a cheap solution for lens flares and propeller shadows.

Another accessory that will come in handy during a sunny summer day is an ND filter. If the amount of light in the environment is too much, the camera will have to increase its shutter speed, causing a "jerky" effect. An ND filter is a workaround for this problem.

Simply put, it will allow your camera to shoot at a slower shutter speed even during bight sun light making it one of the best drone accessories you can get if you are into drone photography.

MOD 10: PROP GUARDS AND PROTECTION SHELLS FOR IMPROVED DURABILITY

One of the quickest ways to mess up your drone is to get your propellers damaged by having it crash onto something. Unless you have extra propellers, you will have to head home. Propeller guards add an added layer of protection to your propellers and can greatly improve the durability of your craft.

Another way to damage your drone is to have it done to the body itself. Most drones are not made of the hardest material and it is very easy to crack the body with a moderate amount of impact.

The best way to improve the body's durability is to install a thickened case protection shell that you can layer on top of the body. You can get these off of Amazon and other online stores.