

ULTIMATE GUIDE

FOR

DRONES



Mario Poljak



ULTIMATE GUIDE FOR DRONES

By editors of DroneTechPlanet.com

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INTRODUCTION

This ultimate guide is intended to support all drone users regardless of whether you are a beginner or an expert. If you've just purchased a drone and are new to it, this guide is for you.

Here you will find essential information to use your drone safely and with full knowledge of the regulations in force (Keep in mind that all states around the world have different regulations). We invite you to read this manual carefully in order to become a pilot of informed and responsible drone.

Through the 10 elementary rules set out in this guide, you will know how to fly your drone as part of your leisure time without having to request authorization from the prefecture and without special training.

For any other professional use, you will find the existing scenarios as well as the procedures to follow in the part two of this guide.

TYPES OF DRONES ACCORDING TO THEIR USE

There are 5 different types of drones by categories. Here we will briefly describe each of the above categories and what it is most often used for. So let's start!

5 DRONES CATEGORIES:



- **Mini Drones:** Micro or mini quadcopters are small flying devices, that are usually up to 10 cm in diameter, which can be flown even in small spaces. This is a very interesting category of rugged models. Small and safe micro models allow you to fly perfectly from room to room and will bring a lot of fun for all ages.
- **Hobby Drones:** The term "hobby drones" is not an official term used in legislation, but it has entered the current language and refers in particular to devices sold on the shelves of stores or connected objects. Hobby drones are aircrafts that are equipped with or not equipped with a camera, used in recreational or competitive activities.
- **Professional Drones:** As long as a drone is used for activities other than leisure or competition, these are special activities for which flight authorizations and training are required. These drones are mainly used for recording movies, weddings, job projects, and much more.
- **Selfie Drones:** Since 2017, selfie drones have taken an important part in our society thanks to the advent of social networks. Many influencers and people activate on the web who use this style of photos in their publications. Therefore, more and more such models are produced on the market today.
- **Racing Drones:** These drones are designed specifically for racing with a maximum diameter of 30cm from motor to motor. Indeed, their size and their powerful engines offer the perfect characteristics to achieve real big prices, for example in a forest, on a vacant lot or in a parking lot. Available ready to fly or to assemble yourself, the racer drones have an FPV camera for video feedback on FPV goggles or on a screen.

BUYER'S GUIDE

- When you're ready to buy your first drone, there's a lot of things to consider. The first thing is what type of drone works best for you? Every month there's some new drone coming out, with different sets of features and price value, so In this ultimate guide we'll gonna help you find the right drone for your budget.
- First of all, they come in all shapes and sizes from mini drones that cost around \$20 all the way up to high-tech drones that cost above +\$2,000 of dollars. The more money you spend the more features you get and generally the more stable they'll be. Some of them do have cameras but they're not going to have a great quality. Selfie drones are a subset of camera drones and they're mostly designed to catch quick aerial shots of yourself and people around you.
- It all depends on you what budget you have and how much you are willing to set aside for your drone. There are different options and models that are available on the market today and you will decide which drone model is the right for your budget. There are five main categories of drones, as we explained above.
- Remember that is all on you to first determine why you first want the drone and then pick the category. All the features, the price points, pros and cons and see which drone is right for you! Remember, buying a drone is hard!



DRONE FLYING RULES

Owning a drone can be exciting, fun, and even lucrative. But the associated rules and regulations around drone operations can be difficult to interpret. Here are the basic flying rules for drones:

- Fly at or below 400 feet
- Keep your drone within sight
- Don't fly in restricted airspace
- Don't fly near other aircraft, especially near airports
- Don't fly over groups of people
- Don't fly over stadiums or sports events
- Don't fly near emergency response efforts such as fires
- Don't fly under the influence

A lot of these are simply common sense. And that's something you need to use when you are flying with your drone. In addition to the FAA rules, remember that National Parks have banned the use of drones within their confines.

DRONE SAFETY

- No flight above **400ft** from the surface.
- No flight within **150m** of a congested area.
- No flight within **50m** of people, property, vehicles or vessels not under your control.
- No flight further than **500m** from the operator.
- No person inside **30m** on take-off and landing except the drone pilot or people under the pilot's control.
- No flight inside **1km** of the boundary of an aerodrome without permission.
- No drone weighing **7kg** or greater to fly in controlled airspace without permission.
- Never fly unless you are satisfied the flight is safe to be made and always check the weather frequently throughout the day.
- Always **check the controls** for the drone are working before every flight ... even after a short break to change its battery.
- Only look at the screen on the operating controls to frame a shot or check battery power. You should be looking at your drone and scanning for incursions by aircraft **99%** of the time.

DRONE LAWS BY WEIGHT CATEGORIES

Owning a drone is one thing, but knowing all the regulations in place as well as the intricacies of the regulations is another. Indeed, these rules must absolutely be respected to ensure your safety as well as that of the people around you. For leisure or professional use, therefore in the open category, drones are classified according to their weight like this:

- Drones less than 250g
- Drones less than 900g
- Drones under 4kg
- Drones under 25kg

1. Drones Less Than 250g (No need for registration)

This drone category allows you to fly over people (except the grouping of several people). Definition of a group of people is: „a group is characterized when a person cannot easily get out of the group“. This is an advantage for professional pilots who will be able from 2021 to take pictures with an overflight of people, more flexible in the open category with their drone of less than 250g.

2. Drones Less Than 900g

In this drone category your drone must be less than 900g and more than 250g. Your drone must meet the following conditions:

- It has a maximum speed of 19m/s
- It is equipped with a remote identification system and light signals
- It has an integrated NFZ (No Fly Zone) type system
- It produces less than 85dB in flight at noise level

3. Drones Under 4kg

Your drone is less than 4kg but more than 900g? The concept of minimum risk here imposes a flight at a distance of at least 30m from one person (except in slow mode 3 m/s (tripod), flight tolerated up to 5m distance).

- A mandatory RTH system
- A follow Me mode at least 50m from the person
- A battery level warning signal system

This is probably the category for which the legislation becomes the most restrictive!

4. Drones Under 25kg

In this category, these are large professional drones, which can support cameras or equipment of a certain weight. According to the European legislator, these drones represent a sub-category A3 risk, which has the same requirements as the A2 sub-category (previous - of 4kg) and adds the following conditions:

- Category C3 has the same requirements as C2 but in addition has a size limitation set at 3m.
- The C4 category includes drones of less than 25kg which do not have their almost 100% manual.
- DIY or custom drones under 25kg.

MOST COMMON QUESTIONS ABOUT DRONES

1) Can I fly my drone over a city?

Regardless of the size of your drone, you are affected by the ban and therefore do not have the right to fly over public space, which also includes cities and parks. For professionals, it will be necessary to respect certain conditions and obtain authorizations in order to be able to fly over the built-up areas.

2) Can I fly In or above the clouds?

Logically, if you put your drone in a cloud, you lose sight of it. The drone is allowed to fly only 400 feet above the ground and must be in sight. But like I said, it's complicated to see a drone in the clouds, so it's not possible.

3) How high can I fly with my drone? Can I fly over people?

No, you cannot fly over people. As for the height, every country has different regulations. In the US it is allowed to fly to 400 ft above the ground. However, it can be lowered in certain areas near helicopter or aerodrome areas. For airports and aerodromes, you must be careful, the distance to be respected depends on the size of the runways.

4) Are there areas in which it is forbidden to fly?

Yes. There are areas such as: nuclear power plants, military and medical buildings, certain specific factories, schools, emergency establishments, and many other important areas where it is forbidden to fly. It is also forbidden to film in certain places. On the other hand, it is not because it is forbidden to film an area, that you cannot fly over it, even if this remains rare.

5) Can I fly my drone at night?

It's forbidden. Except in your garden or inside your house of course. Make sure to check the law in your country.

6) Can I fly my drone from a moving vehicle?

Using a drone in a car, boat, scooter or motorbike is prohibited according to the FAA regulations.

7) Can I fly in a nature reserve or a national park?

Each national park and nature reserve imposes its own rules in the form of decrees. However, well-known national parks prohibit the use of drones.

8) Are there any rules for flying indoors?

No, the owner of the premises is responsible for everything that happens in his house. The only airspace is subject to regulation.

CONCLUSION

Drones were created more than 100 years ago for military purposes, and today they are rapidly gaining popularity among the population. Today, the scope of use of drones is not limited to military operations: UAVs are used in search and rescue operations, to create maps, design work, and extinguish fires. The devices are also suitable for individual use: as household helpers or as a way of entertainment. I hope this ultimate drone guide has given you a detailed insight into the basic information related to drones and how you should use them.

