

# TRUST Test

Welcome to The Recreational UAS Safety Test (TRUST). This is the Federal Aviation Administration's course for those who intend to operate Unmanned Aircraft Systems, commonly called "drones", under the [Exception for Limited Recreational Operations of Unmanned Aircraft](#) ( 49 United States Code §44809). For the purpose of this course, the term "drone" includes a variety of aircraft such as remote-controlled (RC) airplanes, RC helicopters, and quadcopters.

Because drones can be very simple to fly, it is easy to think there is little risk in flying one. The reality is that drones have collided with other aircraft, injured people, and caused property damage.

That is why safety is everyone's responsibility. This course is designed to provide you with basic information that will help you fly safely and keep our nation's airspace safe for everyone.

## Understanding the Requirements for Recreational Flyers

The requirements of the [Exception for Limited Recreational Operation of Unmanned Aircraft](#) ("The Exception") can be found in 49 U.S.C. §44809. Those requirements are:

1. Fly for recreational purposes only
2. Follow the safety guidelines of a Community Based Organization
3. Keep your drone in your visual line of sight (VLOS)
4. Always give way and never interfere with manned aircraft
5. Get an airspace authorization before flying in controlled airspace
6. Do not fly higher than 400ft above the ground in uncontrolled airspace
7. Pass an aeronautical knowledge and safety test
8. Register and mark your drone and comply with the associated Remote ID rule, 14 CFR part 89

## Recreational Flying

Flying for recreational purposes means flying only for fun. You may not fly for work, payment, or as part of any business. For example, under the Exception for Recreational Flyers, real estate agents may not take photos of properties that will be used to help sell them.

Remember, flying for any reason other than for fun, is not allowed under the Exception for Recreational Flyers.

If you do not meet all the requirements to fly under the [Exception for Recreational Flyers](#), you must fly under 14 Code of Federal Regulations (CFR) [Part 107](#), also known as the civil small UAS rule.

# Airspace and Restrictions

Before flying a drone, it is important to understand that you are sharing the airspace with a variety of other aircraft. Airspace in the United States is designed to ensure a safe operating environment for everyone. Being able to identify airspace and any restrictions is important for everyone's safety.

Regulated airspace begins at ground level in the United States. Even if you are a long way from a large airport, you may be closer than you realize to seaplane bases, smaller airports, heliports, or agricultural aircraft operations.

Airspace is divided into two main categories: controlled and uncontrolled. Controlled airspace includes areas around most airports. It is designed to protect aircraft arriving at or departing from an airport. The size and shape of the controlled airspace varies depending on airport needs.

Uncontrolled airspace includes most of the airspace starting at ground level and away from airports. Uncontrolled does not mean unregulated. Flying in uncontrolled airspace still requires that you comply with all the rules under the Exception for Recreational Flyers.

**Unless specifically authorized by the FAA, recreational drone flying is limited to no more than 400ft above ground level in uncontrolled airspace and is limited to [UAS Facility Map](#) (UASFM) altitudes in controlled airspace.**

Airspace may also be restricted at certain times, prohibiting any drone flying. These restrictions can happen in both controlled and uncontrolled airspace. [Airspace restrictions](#) can be temporary or permanent, dependent on security or safety needs.

## Where Can You Fly?

Prior to flying your drone, you must know what airspace you will be in and if there are any restrictions or prohibitions. The FAA, working with industry, has developed applications that show the type of airspace you are in, if the airspace is restricted or prohibited, and if you will need an airspace authorization prior to flying.

These applications are:

FAA-approved UAS Service Supplier (USS) of the Low Altitude Authorization and Notification Capability (LAANC; pronounced "lance").

- Provides airspace information and authorizations.
- [Listing of FAA-approved USS](#)

FAA B4UFLy App

- Provides airspace information only.

The applications are available free of charge on most mobile devices.



Regardless of which app you use, before every flight:

- Identify whether you are in controlled or uncontrolled airspace:
  - If you are in controlled airspace, you will most likely need to get an airspace authorization from the FAA before you fly.
  - If you are in uncontrolled airspace, you do not need an airspace authorization to fly at or below 400ft above ground level (AGL)

Also, check for airspace restrictions in your area.

- Certain airspace is permanently restricted or prohibited for recreational drone flyers.
  - Airspace surrounding certain military facilities and national security locations, such as the White House, are prohibited from drone flying.
- At times, it may be necessary for the FAA to temporarily restrict airspace.
  - These restrictions are called Temporary Flight Restrictions (TFRs) and do not allow any drone flying.
  - TFRs may be established days in advance, or with little notice.
- You might find a TFR in your area during a Presidential visit, during major sporting events, or in times of severe weather/natural disasters.
- Unauthorized flying in restricted airspace is a federal crime.
  - Violators can face fines from the FAA and additional prosecution from law enforcement.

## Best Practices: Review airspace requirements in FAA UAS apps before you fly!

The FAA, working with industry, has developed applications that provide increased situational awareness to recreational flyers.

These are:

- [FAA-approved UAS Service Suppliers of the Low Altitude Authorization and Notification Capability \(LAANC\)](#)
- [FAA B4UFLY app](#)

These apps provide:

- A clear "status" indicator that lets you know where you can fly
- Informative, interactive maps with filtering options
- Information about controlled airspace, special use airspace, critical infrastructure, airports, national parks, military training routes and TFRs
- Ability to check whether it is safe to fly in different locations by searching for a location or moving the location pin
- Links to other FAA drone resources and regulatory information
- FAA UAS Service Suppliers of LAANC also provide near real-time airspace authorizations



FAA-approved UAS Service Suppliers of the Low Altitude Authorization and Notification Capability (LAANC)



FAA B4UFLY app

# Requesting Authorization for Controlled Airspace

Controlled airspace is located in areas where there are generally more aircraft flying and are often found near airports, cities, and metropolitan areas. If you will be flying in controlled airspace, you must get an FAA airspace authorization.

**Recreational flyers should not directly contact ATC facilities to request approvals.**

You can request an airspace authorization in two ways:

1. Using an FAA approved LAANC UAS Service Supplier (USS). A listing of USSs are available on the FAA's website: [https://www.faa.gov/uas/programs\\_partnerships/data\\_exchange/](https://www.faa.gov/uas/programs_partnerships/data_exchange/)
2. The FAA's DroneZone website: [www.faa.gov/uas/dronezone](http://www.faa.gov/uas/dronezone)

The airspace authorization alerts FAA Air Traffic Control (ATC) that there are drones in the area.

## UAS Facility Maps (UASFM)

[UAS Facility Maps](#) show the maximum altitudes in controlled airspace where the FAA may authorize drone flights. UASFM *do not* "pre-authorize" drone flights in these areas, they are for informational or planning purposes only.

Recreational flyers who need to request an airspace authorization are encouraged to look at the UASFM prior to submitting their request to ensure their request will be below the UASFM maximum altitude limit.

## Using LAANC

LAANC is an automated application and approval process for airspace authorizations in controlled airspace at or below 400ft.

You can access LAANC through an FAA-approved UAS Service Supplier (USS). The USSs make it easy to request an airspace authorization in near real-time using your computer or smartphone. Requests are checked against UAS Facility Maps, restricted airspace, airports and airspace classes, as well as TFRs.

The LAANC USSs display the maximum available altitudes and show areas where no airspace authorizations will be given.

More information about LAANC, as well as a listing of current UAS Service Suppliers, can be found on the FAA website: [UAS Data Exchange \(LAANC\) \(faa.gov\)](#)

# Using FAADroneZone

LAANC does not cover all controlled airspace. If you need to request an airspace authorization in an area not serviced by LAANC, you can use the [FAADroneZone](#).

To use FAADroneZone, follow the on-screen instructions to create a recreational flyer account and to submit your airspace authorization request.

## Preparing to Fly Your Drone

It is your responsibility to make sure you understand how your drone works and that it is in good working condition before flight. A damaged drone may not fly the way you expect it to. Do not fly your drone too high, beyond your visual line of sight, or in areas that are hazardous. For example, you should know how your drone responds to wind and how to use any automated functions before you fly it.

Before each flight, check yourself, the weather, the area where you plan to fly, and your drone. Make sure everything is in the best possible condition for a safe flight. Think about how you will respond to sudden changes, such as turbulence, signal interference, or loss of power.

**Remember, the person flying the drone is ultimately responsible for all aspects of the flight, including where it flies, how high it flies, and that all rules and regulations are followed.**

## Checking Yourself

Make sure that you are physically and mentally ready to safely operate the drone. Sickness, stress, and medications can affect your ability to fly safely and respond to unplanned situations.

Some of the factors that can affect manned aircraft pilots also can affect your ability to fly your drone safely. Recreational drone flyers need to be aware of how conditions like stress, fatigue, and dehydration can affect their flying abilities.

Additionally, alcohol and drugs (including over-the-counter medication) can have a detrimental effect on decision-making and hand-eye coordination needed to safely fly your drone.

It is **your responsibility** to ensure that you are mentally and physically fit to fly.

# Checking the Weather and Your Surroundings

The environment around you, and the weather itself, may make it harder for you to control your drone. Before you fly you should always:

- Check the weather.
  - High winds, poor visibility, and turbulence can make a drone more difficult to control.
  - In certain conditions, ice can form on your drone which could make your drone heavier or fly in unexpected ways.
  - Cloud cover or the sun's angle may make it harder for you to see your drone.
- Look around.
  - Look around for obstacles like trees, power lines, buildings, and people.
- Avoid distractions and be aware of your surroundings.
  - Other aircraft may appear suddenly.
  - Concentrating on your flight and avoiding distractions will help avoid any collisions.
- Plan a flight path
  - Plan a flight path that will keep your drone in clear areas.

# Checking Your Drone

You should check your drone before *and after* each flight to make sure it's working properly and there isn't any damage:

- Check all parts.
  - Check all parts of the drone: propellers/rotor blades, landing gear, and structure of signs of damage or wear.
  - Replace any damaged parts before flying again.
- Check the battery strength and condition.
  - Do not fly if the battery has nicks in the casing or bulging sides.
  - Damaged batteries can cause fires
  - Do not fly with low battery power as many drones have been lost because they crashed after losing battery power.
- Check the control station.
  - Make sure you have the most current software updates, good command and control signal strength, and adequate Global Positioning Satellite (GPS) coverage.

# Community Based Organization Safety Guidelines

A Community Based Organization (CBO) is an FAA-recognized group that promotes recreational flying and provides safety guidelines to its members. Title 49 U.S.C. §44809(a)(2) requires recreational flyers follow the safety guidelines of a CBO.

CBOs have specific requirements that must be met for official recognition from the FAA. A listing of recognized CBOs can be found on the [FAA's website](#).

CBOs are a great resource for the new recreational flyer. Whether your passion is drones or traditional RC airplanes, CBOs provide their members with safety information and fun events while supporting their hobby.

Remember, flying under the Exception for Recreational Flyers requires that you operate in accordance with an FAA-recognized CBO's safety guidelines.

## Maintaining Visual Line of Sight (VLOS)

You must keep your drone in your visual line of sight (VLOS) at all times. This means that you are able to see the actual drone in flight without the use of binoculars, cameras, or other devices.

If you are using first-person-view (FPV) goggles or expect to be looking at your control station for most of the flight, you must use a visual observer to watch the drone during flight. The visual observer must keep the drone in sight at all times and stand next to the recreational flyer.

Maintaining VLOS is important because it helps you to avoid:



Manned aircraft pilots cannot easily see your drone. This is why you are responsible for maintaining VLOS. It is the recreational flyer's responsibility to see-and-avoid manned aircraft. You are not allowed to interfere with, and must give way to, manned aircraft—not the other way around!

## Getting to Know Your UAS

To help you fly safely and have fun with your drone, you should learn about all its features and limitations. Before you fly your drone, it is a good idea to read the manufacturer's safety information to learn about:

- Maximum altitude, weight, and flight distance
- Automated features: what they do and how to use them.
- Battery duration, signal range, ways of checking battery strength and signal strength before and during flight

# Connection between the Control Station and the Drone

Loss of signal or “control link” is the most common cause of drone incidents, so it is important that you do not fly beyond your signal strength!

- You can lose signal from interference or a weak connection.
- If you lose signal, you may lose control of the drone.
- Understand what will happen if you lose signal.
  - For example, will it land or return to home?
- Plan what you’ll do if you lose signal so that you can keep yourself, your drone, and other people safe.

## Automated Features

A recreational flyer should know how their drone’s automated features work *before* using them. Many drones have automated features that will allow it to be programmed to fly a particular route, pattern, or aerobatic trick without any additional input needed from the person flying it.

Always remember, the person flying the drone is responsible for the drone at all times...even when using its automated features.

Do not rely on automated features to fly the drone for you without knowing what the drone will do!

- Understand how to safely turn automated features on and off.
- Do not rely solely on automated features like geofencing or Global Positioning System (GPS) signals.
- Know when and how to take manual control of the drone.

Some examples of risks from using automated features include:

- **Return to home:** the drone may fly directly back to you and hit an obstacle in its way.
- **Autoland:** a drone may land straight down and could wind up in the trees, water, or power lines.
- **Follow me:** the drone can hit obstacles or people that are near you.

## Practice Flights

On your first flights, or when testing a new feature on your drone, go to an area with very few obstacles and no other people nearby. It is considered a best practice to fly in open, non-populated areas until you feel comfortable flying your drone along predictable flight paths.

Practicing flying your drone and becoming used to the automated features is one of the best ways to gain experience while minimizing the risk of hitting someone or something. All pilots, whether flying manned or unmanned aircraft, should spend considerable time practicing so that they are never surprised by something their aircraft does.

It is also a good idea to get some practice flights in if you haven’t flown your drone in a while because of the seasons or work/life commitments. Flying a drone is a skill, and all skills, if not practiced, diminish over time.



# Remote ID

Remote ID is like a digital license plate for drones. Drones requiring registration must be equipped with Remote ID or fly inside an FAA Recognized Identification Area (FRIA). Drones weighing 0.55 pounds or less and flown under the Exception for Limited Recreational Operations (Section 44809) do not need to be registered and if not registered do not need to be equipped with Remote ID.

For drones that are registered, there are three ways to comply with the Remote ID rule:

1. Fly a standard Remote ID drone. As of September 16, 2022, manufacturers are required to equip any new drones for sale in the United States with standard Remote ID.
2. Fly a drone with a Remote ID broadcast module. If you have an older drone that does not have Remote ID, or made a drone yourself, then you can attach a Remote ID broadcast module to it.
3. Fly within an FAA-Recognized Identification Area (FRIA). Drones without standard Remote ID or broadcast modules may only be flown in a FRIA. FRIAs may be in controlled or uncontrolled airspace. FRIAs only permit you to fly without Remote ID; they are not an airspace authorization. FRIA applications are accepted only from FAA recognized CBOs and educational institutions and are approved through the FAA DroneZone. FRIAs are published on the UAS Facility Maps.

Use the FAA's UAS Declaration of Compliance website to check if your drone or broadcast module is Remote ID compliant. Filter the list by clicking "RID." For additional help, visit the FAA's UAS Remote Identification website.

# Registration

All drones flown under the Exception for Recreational Flyers weighing more than 0.55lbs (250 grams) must be [registered](#) with the FAA. The FAA registration number is required to be displayed or "marked" on the outside surface of the drone.

If you are flying under the Exception for Recreational Flyers, you will be issued one registration number, which you can use for all drones you own and fly recreationally. For example, if you have a quad-copter and two remote controlled airplanes, you may use the same registration number on all three aircraft.

Registration costs \$5, is valid for 3 years, and is available through the [FAA's DroneZone](#) website.

# Documentation

If asked by law enforcement or FAA personnel, a recreational flyer must provide proof of drone registration and that they have completed this course. Both documents may be in paper or electronic format. Recreational flyers must also be able to explain which FAA-recognized CBO safety guidelines they are following.