

Intro to Small Unmanned Aircraft Systems & Recreational Drones



Where Can You Fly?

Maybe the title should be:
“You Can’t Fly There!”

**There are many places
around the country
where flying a drone is
either illegal or
prohibited!**

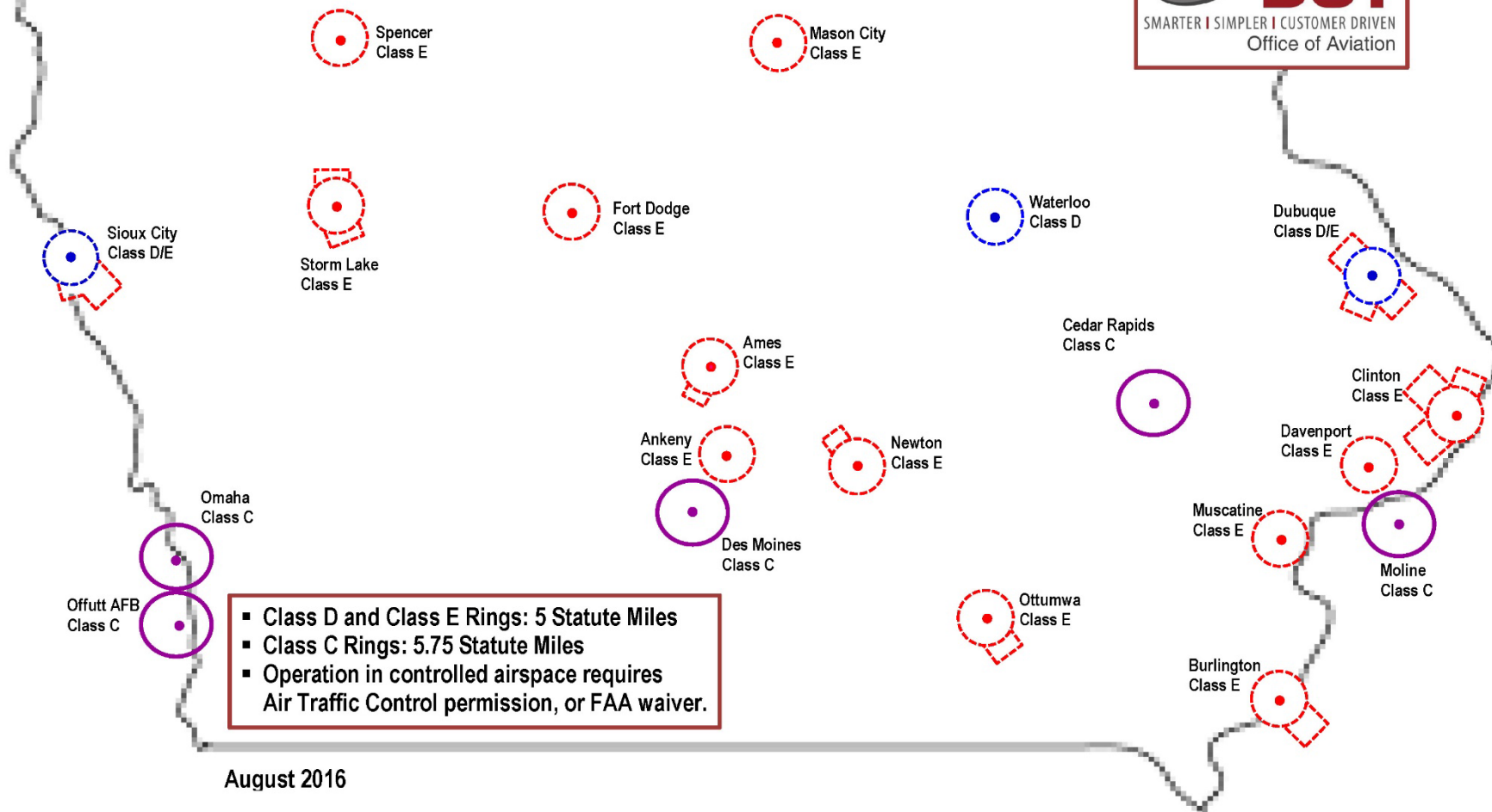


Permission to Fly

You need permission from Air Traffic Control (ATC) to fly within 4 NM or 4.6 statute miles of small airports such as ALO with controlled airspace. Medium and large airports such as CID or DSM require permission to fly within 5 NM or 5.75 statute miles.



Iowa Controlled Airspace (Surface to 400' AGL) for Part 107 Commercial sUAS Operations.



August 2016





Washington DC

Special Flight Rules Area (SFRA)

Washington, DC is governed by a Special Flight Rules Area which restricts all flights within a 30-mile radius of downtown DC.

No Drone Zone

The Washington, DC SFRA is divided into a 15-mile radius inner ring and a 30-mile radius outer ring.

Flying an unmanned aircraft within the inner ring is prohibited without specific **Transportation Security Administration** (TSA) authorization.

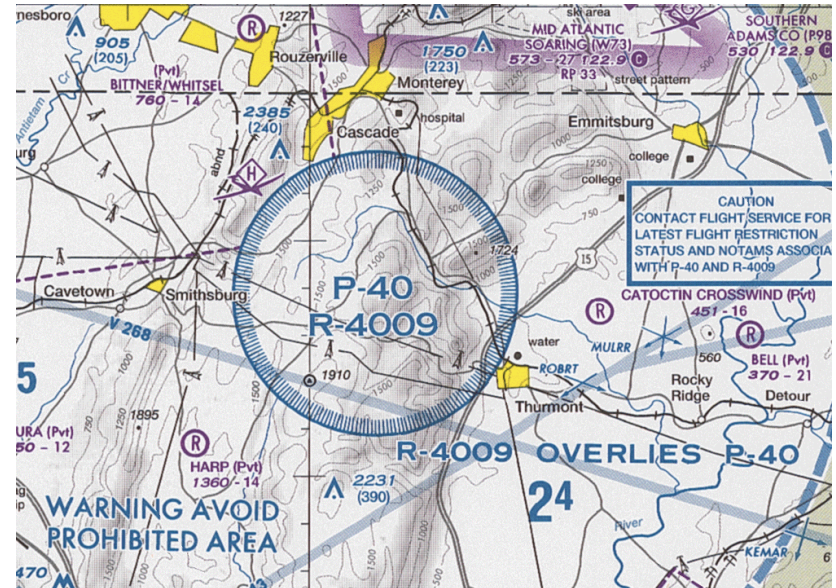
Flying an sUAS for recreational or commercial use between 15 and 30 miles from Washington, DC is allowed with FAA authorization under these conditions:

- Aircraft takeoff weight must be less than 55 lbs.
- Aircraft must be registered with the FAA and marked with an FAA number
- Fly below 400 feet (no exceptions)

Prohibited Areas

Prohibited Areas are the most sensitive airspace areas in the United States, such as the Camp David, Bush Ranch, Mt Vernon and the Boundary Waters Canoe Area Wilderness.

Permission from the authority agency (such as the Secret Service) is required to enter a Prohibited Area and is almost never available.




Permanent Flight Restrictions

- **All National Parks**
- **National Monuments**
 - St Louis Arch in St Louis, MO
 - Mount Rushmore in Rapid City, SD
 - Effigy Mounds in Harpers Ferry, IA
 - Herbert Hoover Home in West Branch, IA
- **Department of Energy (DOE) sites**
- **Disneyland & Disney World**



Temporary Flight Restrictions (TFRs)

Temporary Flight Restrictions (TFRs) – TFRs are issued by the FAA and define a certain area where all air travel is temporarily limited. TFR's may be issued for air shows, space flights, VIP and Presidential visits and natural disasters such as wildfires. TFRs may be listed on B4UFLY.

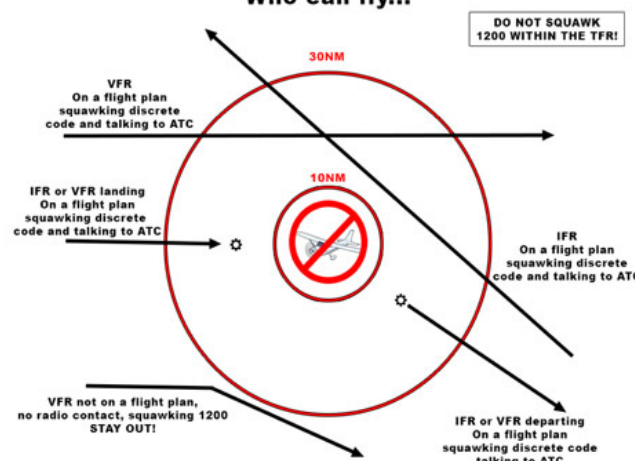

AIR TRAFFIC ORGANIZATION
SYSTEM OPERATIONS SECURITY

TFR ALERT

Southeast Florida

Who can fly...

DO NOT SQUAWK 1200 WITHIN THE TFR!



30NM

10NM

VFR
On a flight plan
squawking discrete
code and talking to ATC


IFR or VFR landing
On a flight plan
squawking discrete
code and talking to ATC

VFR not on a flight plan,
no radio contact, squawking 1200
STAY OUT!

IFR or VFR departing
On a flight plan
squawking discrete code
talking to ATC

March 7-9, 2014
There will be a VIP
Temporary Flight
Restriction (TFR) in
southeast Florida,
including the Miami
area.

FAA PILOTWEB
site for NOTAMS:
[https://pilotweb.nas.faa.gov/
PilotWeb/](https://pilotweb.nas.faa.gov/PilotWeb/)



Active Restricted Areas



Security Sensitive Airspace – 133 military bases and training facilities



Active Restricted Areas

Iowa Army Ammunition Plant in Middletown, IA
(Between Mt. Pleasant and Burlington)





**Stadiums and
sporting events
that seat 30,000
people or more**

- Flying an sUAS in and around stadiums is prohibited starting one hour before and ending one hour after the scheduled time of any event.
- sUAS operations are prohibited within a radius of three nautical miles of stadiums.
- This includes Kinnick Stadium in Iowa City, Jack Trice Stadium in Ames and the Iowa Speedway in Newton.



Drone flights are prohibited around or over sensitive infrastructure or property

- City Halls, County Courthouses
- Power Stations – MidAmerica Energy, Cedar Falls Utilities, Dike Power Station
- Water Treatment Facilities – Waterloo & Cedar Falls
- Correctional Facilities – Black Hawk County Jail, North Iowa Juvenile Detention Facility
- Heavily Traveled Roadways – Interstate highways and limited access roads such as US-20



Drone flights are prohibited in areas that might disturb animals

- Zoos
- Animal Feedlots
- Wildlife Refuge Areas
 - Driftless Area National Wildlife Refuge – McGregor, IA
 - Neal Smith National Wildlife Refuge – Prairie City, IA
 - Union Slough National Wildlife Refuge – Titonka, IA
 - Iowa Wetland Management District – Titonka, IA
 - Upper Mississippi River Wildlife Refuge – Winona, MN
 - Port Louisa National Wildlife Refuge – Wapello, IA
 - Trempealeau National Wildlife Refuge – Trempealeau, WI

Where Can I Fly?

- **Private Property** – either your property or where you have permission to fly
- **Public Property** – city, county & state parks – recreation areas such as baseball, football and soccer fields (but not over people)

Drone flying is prohibited at the University of Northern Iowa

The youth soccer complex on Ridgeway Avenue is private property, and they have a rule against drone flying

Where can you fly?

The FAA's **B4UFLY** app for Android and iPhone shows where recreational flyers can and cannot fly. The service was discontinued on February 1, 2024.





B4UFLY

Four suppliers now provide the free FAA **B4UFLY** service for recreational flyers –

- Airspace Link
- AutoPilot
- Avision
- UASidekick



DJI APPS

The **DJI Go 4** application is compatible with:

- DJI Mavic 2 Series
- DJI Mavic Pro
- DJI Mavic Air
- DJI Spark
- DJI Inspire
- DJI Phantom Series

The **DJI Fly** application is compatible with:

- DJI NEO
- DJI Flip
- DJI Mini 4 Pro
- DJI Air 3

- DJI Mavic 3 Pro
- DJI Mini 2 SE
- DJI Mini 3
- DJI Mavic 3 Classic
- DJI Avata
- DJI Mini 3 Pro
- DJI Mavic 3
- DJI Mini SE
- DJI Air 2S
- DJI FPV
- DJI Mini 2
- Mavic Air 2
- Mavic Mini

DJI apps are no longer on Google Play.
Download from the DJI website.

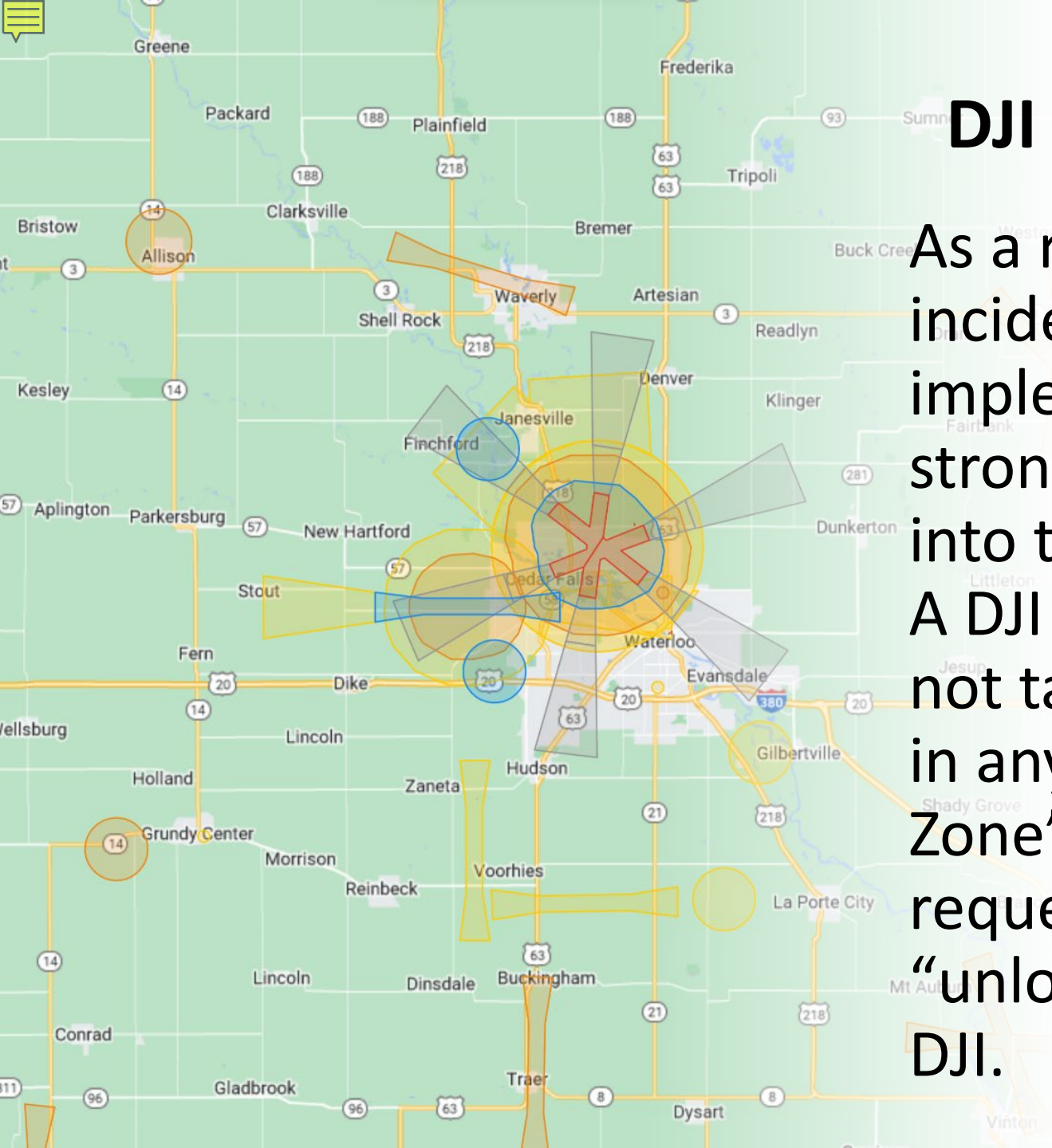


DJI GEO ZONE

On January 26, 2015, 31-year-old Shawn Usman, a scientist at the National Geospatial Intelligence Agency, crashed a DJI Phantom drone on the White House grounds. It was reported that Usman was inebriated at the time and was attempting to impress a date.

DJI GEO ZONE

As a result of that incident, DJI implemented strong geofencing into the DJI apps. A DJI drone could not takeoff or fly in any “No Fly Zone” without requesting “unlocking” from DJI.



DJI GEO ZONE



On January 13, 2025, DJI announced it is changing the geofencing software in all DJI apps to only issue a “dismissible warning” instead of disabling the aircraft in restricted areas.

DJI characterizes this change as “placing control back in the hands of the drone operators.”

DJI said that technologies like Remote ID are “providing authorities with the tools needed to enforce existing FAA rules.”

International Rules

Mexico



- If your drone weighs less than 250 grams (0.55 lbs.), you are allowed to fly for recreational purposes.
- Micro UAV weighing less than 2 kilograms (4.4 lbs.) may be flown, but if used commercially they must have third-party liability insurance.

Canada



- Drones that weigh less than 250 grams (0.55 lbs.) do not require a license or registration.
- Pilots flying drones that weigh between 250 grams and 25 kilograms (55 lbs.) must be registered with Transport Canada, pass a knowledge test, and mark with their drones with a Transport Canada registration number.

International Rules

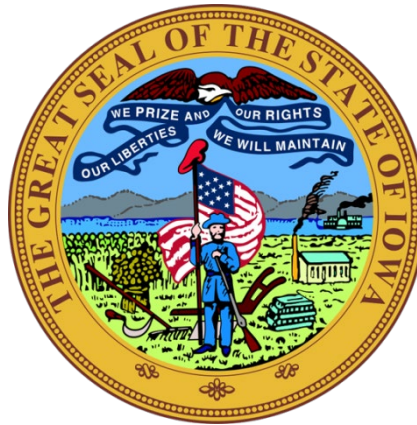


Europe (EU countries)

- Transmitter power in the US is twice what is allowed in the EU. Therefore, **US equipment is illegal in the EU.**
- If you are not an EU resident, you need to register as a drone operator with the National Aviation Authority of the first EU country you intend to operate from. Once you are registered in your host country, your registration will be valid in all other EU countries.
- You also need to pass the drone pilot's certificate online exam and get the European certificate. Some National Aviation Authorities offer the training and exam in English.
- And of course, you need to comply with the European Drone regulations.

Drone Rules & Regulations

- FAA sUAS Rules
- State and Local Privacy Laws
- State and Local Drone Regulations



Drone Privacy



Drones should be operated in a **responsible, ethical and respectful** way.

Drone Privacy

Drone operators should comply with all Federal, State and local laws and regulations.

- Privacy is hard to define, but it is important.
- There is a balance between your rights as a drone user and other people's rights to privacy.
- Always seek a peaceful resolution of any issue.
- Ignorance of the law is not a defense.



Guidelines for Neighborly Drone Use

- Tell other people you'll be taking pictures or video of them before you do so.
- If you think someone has a reasonable expectation of privacy, don't violate that privacy by taking pictures, video, or otherwise gathering sensitive data.
- Don't fly over other people's private property without permission.
- Don't gather personal data for no reason, and don't keep it for longer than you think you have to.





Guidelines for Neighborly Drone Use

- If you keep sensitive data about other people, secure it against loss or theft.
- If someone asks you to delete personal data about him or her that you've gathered, do so, unless you've got a good reason not to.
- If anyone raises privacy, security, or safety concerns with you, try and listen to what they have to say.
- Don't harass people or animals with your drone.



Guidelines for Neighborly Drone Use



Clearly identify yourself and what you are doing.

State Laws

Many states have laws prohibit flying a drone over private property without consent from the property owner.

- Georgia
- Tennessee
- Indiana
- Florida
- Texas
- Michigan
- Ohio
- North Carolina
- South Carolina
- Oklahoma
- Virginia



Invasion of Privacy

Iowa recognizes four common law invasion of privacy claims:

1. Intrusion upon solitude or seclusion;
2. Public disclosure of private facts (e.g., unreasonable publicity given to one's private life);
3. False light privacy (e.g., publicity that normally places people in a false light before the public);
4. Appropriation of one's name or likeness. The harm from an intrusion arises when the plaintiff reasonably believes their privacy has been invaded.

Iowa Drone Laws

- Prohibits law enforcement from using drones for traffic enforcement.
- Prohibits law enforcement from using a drone for a search without a search warrant.
- Prohibits flying a drone over a city or county jail, a juvenile detention facility or state prison.
- Prohibits equipping a drone with a weapon.
- Using a drone while hunting is prohibited.
- It's illegal to use a drone in the commission of a crime.

Agricultural Surveillance

Iowa's "AG-GAG" laws create penalties for individuals who trespass on agricultural property with intent to create financial harm – Alabama, Arkansas, Missouri, Montana & North Dakota also have ag-gag laws.



Iowa Legislation

Rep. Derek Wulf (R-Black Hawk County) sponsored a bill prohibiting the use of remotely piloted aircraft flying over certain property and providing penalties. The bill charges a simple misdemeanor if somebody flies a drone over another person's farm or home outside city limits. The charges become more severe for a repeat offense. A judge can grant an injunction prohibiting somebody from flying a drone over a farm or homestead for two years if the property owner claims harassment. Effective 7-1-2024

"I believe this bill is a step in the right direction to protect Iowa's farmers and ranchers as they work every day to protect the safety and security of their livestock and the operation they take pride in," Wulf said.

Iowa Legislation (cont)

Exceptions to the law include flying a drone:

- 1) for commercial or agricultural use in compliance with FAA regulations
- 2) by any governmental agency
- 3) by a public utility
- 4) by a railroad company
- 5) to collect weather data
- 6) by the owner or lessee of the property or their agents
- 7) higher than 400 feet AGL



Trespass – A person trespasses by entering another's property without consent or permission. Trespassing only becomes a crime if the trespasser knew they didn't have a right to enter or if they remain on the property after learning they're not welcome. So, if you decide to fly a drone over your neighbor's yard and the neighbor tells you not to, another unauthorized flyover could mean criminal trespassing charges should that neighbor contact the police.

PURPLE PAINT LAW

MINIMUM
PAINT
LINE
SIZE

AT LEAST
1"

AT LEAST
8"

MAXIMUM
1,000'
APART
ON OPEN
LAND

BOTTOM
3' TO 5'
FROM THE
GROUND

MAXIMUM
100'
APART
ON FORESTED
LAND

In many states, “Purple Paint”
means “No Trespassing”

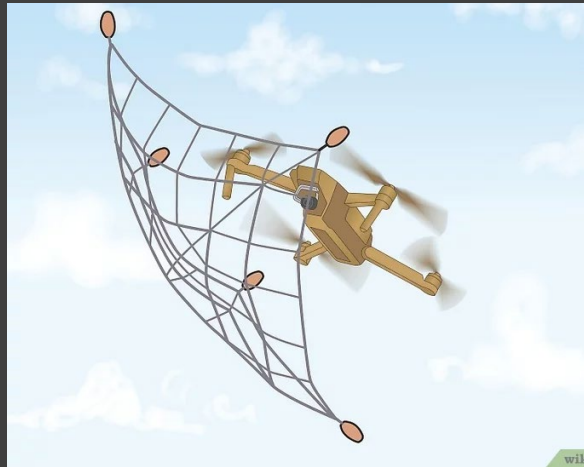
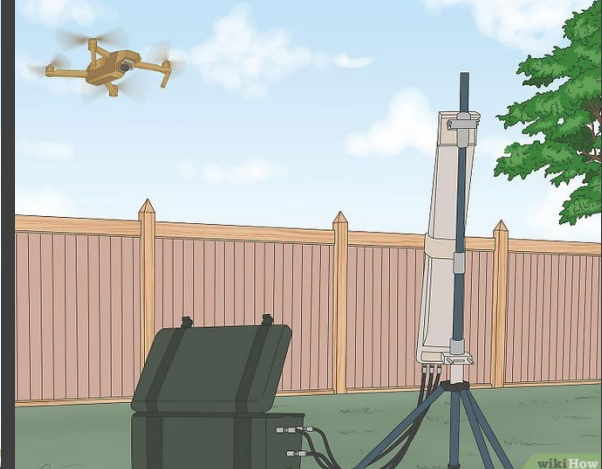
What is Trespassing?



**National Geographic photographer
Showing Animals Respect and Kindness**

It's Illegal To Take Down a Drone

It's illegal to take down a drone by any means when it's flying legally in the National Airspace.



How much airspace do you own?

In 1946 the Supreme Court acknowledged that the air had become a “*public highway*”, but a landowner still had dominion over “*at least as much of the space above the ground as he can occupy or use in connection with the land.*” In that case the court held that a plane flying just **83 feet** in the air was literally scaring the plaintiff’s chickens to death and represented an invasion of property. The justices declined to precisely define the height at which ownership rights end.





Basic Law Enforcement Response **D.R.O.N.E.**

Direct attention outward and upward, attempt to locate and identify individuals operating the drone. (Look at windows/balconies/roof tops).

Report incident to the FAA Regional Operations Center (ROC). Follow-up assistance can be obtained through FAA Law Enforcement Assistance Program special agents.

Observe the UAS and maintain visibility of the device, look for damage or injured individuals.
Note: Battery life is typically 20 to 30 minutes.

Notice features: Identify the type of device (fixed-wing/multi-rotor), its size, shape, color, payload (i.e., video equipment), and activity of device.

Execute appropriate police action: Maintain a safe environment for general public and first responders. Conduct a field interview and document ALL details of the event per the guidance provided by the FAA. www.faa.gov/uas/resources/law_enforcement/

Always follow agency policies – Take appropriate action based on the facts and circumstances of the incident and site/area-specific laws and rules. The FAA's enforcement action does NOT impact ANY enforcement action/s taken by law enforcement.

Local ordinances that may apply include, but are not limited to: Reckless endangerment, criminal mischief, voyeurism, inciting violence.

Any
Questions

