

Drones: Love Them or Hate Them?

Could drones be useful to your city? Find out how Florence, SC is already using them.

Presented by Joe Howland & Ray Reich

Session #7

Grand Prizes!

Don't forget to fill out your cards!

Merge VR Headset Amazon Echo



City of Florence Drone Utilization

Our Current Equipment:

Current – DJI Phantom 4 Advanced (First drone was DJI Phantom I)

1-inch 20 megapixel high resolution camera capable of shooting 4K/60 fps video

Infrared sensing obstacle avoidance system

3 speed modes up to 45 mph in sport mode

Ability to track moving object or follow pre-determined route

Maximum flight time – 28 minutes (always buy two batteries!)

Maximum distance – 8 miles (Not FAA authorized)

Maximum flight height – 19, 600 ft (FAA Regulations restrict to 400 feet max)



City of Florence Drone Usage



Capturing Promotional Pictures at our City Events



Aerial Photography for Economic Development



Building & Code Inspections



High Resolution Photography
Enables Zooming During Editing



High Resolution Photography
Enables Zooming During Editing



**Construction Project
Monitoring**



Sporting Events



***The Uses of a Drone Are Only Limited By
Your Imagination
and***

FAA REGULATIONS!!



FAA Regulations

The FAA classifies a drone as an unmanned aircraft system (UAS)

You need to decide if you are going to fly it under commercial or government regulations or under recreational personal use and whether you want to apply for exemptions.

Recreational/Personal Use – You Have Two Options

Option #1 - Fly in accordance with the Special Rule for Model Aircraft

Under this rule, operators must:

- Fly for hobby or recreational purposes only
- Follow a community-based set of safety guidelines
- Fly the UAS within visual line-of-sight
- Give way to manned aircraft
- Provide prior notification to the airport and air traffic control tower, if one is present, when flying within 5 miles of an airport
- Fly UAS that weigh no more than 55 lbs.



FAA Regulations

Recreational/Personal Use

Option #2.

Fly in accordance with the FAA's Small UAS Rule (Part 107). This requires operators to obtain a remote pilot certificate or be under the direct supervision of someone who holds such a certificate.

Register the aircraft as a non-modeler with the FAA.

Follow all the operating rules in accordance with the regulations.



FAA Regulations

You Will Likely Need A Commercial or Government License:

There are three ways to fly a drone for work, business, or non-recreational reasons:

- Following the requirements in the Small UAS rule ([Part 107](#))
- Following the rules in **Section 333** grant of exemption
- Obtain an airworthiness certificate for the aircraft

As a local government you may either operate under the [Part 107 rule](#), or you may be eligible to conduct public aircraft operations for which you would need to apply for a public [Certificate of Waiver or Authorization \(COA\)](#) for certain operations.



FAA Regulations

What is FAA Part 107?

Pilot must be at least 16 years old

Must pass an initial aeronautical knowledge test

Must be vetted by the Transportation Safety Administration (TSA)

Aircraft must weigh less than 55 lbs.

Operating Rules:

Must keep the aircraft in sight (visual line-of-sight)

Must fly under 400 feet

Must fly during the day

Must fly at or below 100 mph

Must yield right of way to manned aircraft

Must NOT fly over people

Must NOT fly from a moving vehicle



FAA Regulations

What Is Section 333 Exemption?

Section 333 of the FAA regulations grants the Secretary of Transportation the authority to determine whether an airworthiness certificate is required for a drone to operate safely in the National Airspace System .

This authority is granted on a case-by-case basis to allow drones to perform commercial operations prior to the finalization of the “Small UAS Rule”, which will be the primary method for authorizing small UAS operations once it is complete.

The Section 333 Exemption process provides operators who wish to pursue safe and legal entry into the air space a competitive advantage in the UAS marketplace, thus discouraging illegal operations and improving safety.



FAA Regulations

Examples of exemptions that have been granted under Section 333:

- Patrolling
- Photography And Videography Of Real Estate
- Weddings
- Photography Of Infrastructure
- Filmmaking, Cinematography
- Precision Agriculture & Insect Control
- Wildlife And Forestry Monitoring
- Aerial Surveying
- Construction Site Inspection
- Public Entity Support Operations
- Security Of Controlled Sites
- Search And Rescue Operations
- Aerial Video And Photography Including Television, Public Events, And Cinematography Live Feed And Live Newsgathering.
- Special Events Including High Schools, Colleges, Professional Sports, Open Air Events And Fairs
- Risk Management And Assessment, Motion Picture Production
- Closed-set Filming
- Disaster And Catastrophe Events



FAA Overview

	Fly for Fun	Fly for Work
Pilot Requirements	No pilot requirements	Must have Remote Pilot Airman Certificate Must be 16 years old Must pass TSA vetting
Aircraft Requirements	Must be registered if over 55 lbs.	Must be less than 55 lbs. Must be registered if over 55 lbs. (online) Must undergo pre-flight check to ensure UAV is in condition for safe operation
Location Requirements	5 miles from airports without prior notification to airport and air traffic control	Class G airspace*
Operating Rules	Must ALWAYS yield right of way to manned aircraft Must keep the aircraft in sight (visual line-of-sight) UAVS must be under 55 lbs. Must follow community-based safety guidelines Must notify airport and air traffic control tower before flying within 5 miles of an airport	Must keep the aircraft in sight (visual line-of-sight) Must fly under 400 feet Must fly during the day Must fly at or below 100 mph Must yield right of way to manned aircraft Must NOT fly over people Must NOT fly from a moving vehicle
Example Applications	Educational or recreational flying only	Flying for commercial use (e.g. providing aerial surveying or photography services) Flying incidental to a business (e.g. doing roof inspections or real estate photography)

* Exemption waiver may be granted by FAA



BIG Controversial Issues Still To Be Addressed

Use of drones by:

- Media
- Law Enforcement
- Government agencies
- And many others

In the absence of federal legislation and regulation, a number of states have leaped into the legal quagmire. 43 different states have considered drone legislation, with many passing laws regulating the use of drones. Many of the states have placed restrictions on the government's use of drones. Almost all of these laws revolve around protecting citizens' privacy, particularly from intrusion by law enforcement.



Final Word of Advice

The FAA takes the UAS (Drone) Regulations seriously.

Failure to register an unmanned aircraft may result in regulatory and criminal penalties.

The FAA may assess civil penalties up to \$27,500.

Criminal penalties include fines of up to \$250,000 and/or imprisonment for up to three years.



Ray Reich
Downtown Development Manager
City of Florence
843-678-5913

rreich@cityofflorence.com



Joe Howland, CSIO
Joe.Howland@vc3.com



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Amazon Echo

