Unmanned Aircraft Systems (UAS) 101

Presented to: Law Enforcement Webinar

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Date: August 24, 2016
Overview

- What is a UAS
- FAA Authority
- UAS Registration
- Small UAS Rule (Part 107)
- Next Steps in Integration
- Research, Security, & Enforcement
- Outreach Efforts
What is a UAS?

A UAS is a system:
1. Unmanned Aircraft
2. Ground Control Station
3. Command & Control Link(s)

Also known as:
– Unmanned Aerial Vehicle (UAV)
– Remotely Piloted Aircraft System (RPAS)
– RC Model Aircraft
– Drone
Why Use a UAS

• UAS operations are particularly effective for missions that are dangerous or dull
  – Humans are not put at risk
  – Continuous operations are possible

• Operations with UAS often cost less than using manned aircraft
FAA Authority

• U.S. airspace is public space
  – 49 U.S.C. §40103(a)(1)

• UAS are aircraft subject to regulation
  – 49 U.S.C. §40102(a)(6); 14 CFR 1.1; PL 112-95 §331, §336
  – An aircraft is any device used, or intended to be used, for flight

• UAS must comply with FAA regulations
Online UAS Registration

• Applies to small UAS 0.55-55 lbs. flown outside
• Owner must provide name, address, email
  – Non-recreational owners must provide make, model, and serial number (if available) of each sUAS
Hobby/Recreational Aircraft

• Do not need FAA authorization to fly, but they must fly safely at all times:
  – Avoid manned aircraft
  – Maintain visual line-of-sight
  – Strictly hobby/recreation

• Require registration
  – UAS greater than 0.55 pounds
  – Operated outdoors
The Small UAS Rule (Part 107)

- Rules for routine commercial use for small UAS (less than 55 pounds)
- In effect August 29, 2016
- No change for hobby / recreation operations
Becoming a Pilot under Part 107

- Remote Pilot Certificate with sUAS rating
- Must be 16 years old or older
- Must read, write, speak, understand English
- TSA security screening
- Pass knowledge exam at FAA-approved Knowledge Testing Center
  - Airman Certification Standards
  - Study Guide
  - Online Training Course [https://www.faasafety.gov](https://www.faasafety.gov)
Part 107 Operating Rules

- Remote Pilot Certificate
- Visual line-of-sight
- Daylight or civil twilight
- Not directly over people
- Must yield right-of-way to manned aircraft
- One UAS per pilot in command
- Max groundspeed of 100 mph
- Altitude 400’ or 400’ radius
- Airspace authorization for class B, C, D, and E surface areas
Waivable Rules under Part 107

- Operation from a moving vehicle or aircraft (§ 107.25)
- Daylight operation (§ 107.29)
- Visual line of sight aircraft operation (§ 107.31)
- Visual observer (§ 107.33)
- Operation of multiple small unmanned aircraft systems (§ 107.35)
- Yielding the right of way (§ 107.37(a))
- Operation over people (§ 107.39)
- Operation in certain airspace (§ 107.41)
- Operating limitations for small unmanned aircraft (§ 107.51)
Part 107 Airspace Requirements

- Operations in Class G are allowed without air traffic control authorization
- Operations in Class B, C, D airspaces, and Class E airspace designated for airports require authorization from ATC
Operations Over People Rulemaking

• Stakeholder committee recommended regulatory framework for UAS operations over people to FAA on April 1, 2016
• Report outlines four categories of small UAS operations
  – Defined primarily by level of risk of injury posed
• The FAA is considering these recommendations and developing a performance-based rule that would allow operations over people under part 107
Reporting Unsafe UAS Activity

While flying or at the airport:

– Report the sighting to Air Traffic Control

Anywhere else:

– Call local law enforcement

Be as detailed & specific as possible

– Location, altitude, direction, pictures, videos, etc.
Basic Law Enforcement Response D.R.O.N.E.

**Direct attention** outward and upward, attempt to locate and identify individuals who are 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-camera 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. [http://www.faa.gov/uas/law_enforcement/](http://www.faa.gov/uas/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
FAA Drone Incident Reporting

Document and provide the following information to FAA:

- Identity of operators/witnesses (name/contact information)
- Type of operation: hobby, commercial, public/governmental
- Type of device(s) & registration information (number/certificate)
- Event location and incident details (date, time, place)
- Evidence collection (photos, video, device confiscation)

Contact your FAA LEAP agent or an FAA Operations Center for assistance.

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<td>Western ROC</td>
<td>AK, AZ, CA, CO, HI, ID, MT, NV, OR, UT, WA and WY</td>
<td>425-227-1999</td>
<td><a href="mailto:9-WSA-OPSCTR@faa.gov">9-WSA-OPSCTR@faa.gov</a></td>
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<td>Central ROC</td>
<td>AR, IA, IL, IN, KS, LA, MI, MN, MO, ND, NE, NM, OH, OK, SD, TX and WI</td>
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UAS Outreach and Education

I FLY SAFE

All drones are aircraft—even the ones at the toy store. So when I fly a drone I am a pilot. Before I fly I always go through my pre-flight check list. I regularly check the safety guidelines at faa.gov/uas

FLY SMART, FLY SAFE, AND HAVE FUN!

knowbeforeyoufly.org
faa.gov/uas

PRE-FLIGHT CHECKLIST

- I fly below 400 feet
- I always fly within visual line of sight
- I’m aware of FAA airspace requirements: faa.gov/go/uastfr
- I never fly over groups of people
- I never fly over stadiums and sports events
- I never fly within 5 miles of an airport without first contacting air traffic control and airport authorities
- I never fly near emergency response efforts such as fires
- I never fly near other aircraft
- I never fly under the influence

NO DRONE ZONE

KNOW BEFORE YOU FLY

B4UFLY
Questions?

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Aeronautical Knowledge Exam Topics

• Applicable regulations relating to small unmanned aircraft system rating privileges, limitations, and flight operation
• Airspace classification and operating requirements, and flight restrictions affecting small unmanned aircraft operation
• Aviation weather sources and effects of weather on small unmanned aircraft performance
• Small unmanned aircraft loading and performance
• Emergency procedures
• Crew resource management
• Radio communication procedures
• Determining the performance of small unmanned aircraft
• Physiological effects of drugs and alcohol
• Aeronautical decision-making and judgment
• Airport operations
• Maintenance and preflight inspection procedures