



“Ask An Expert” Drones in 2021 – what operators and regulators need to know

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My Perspective on sUAS or “Drones”

- Flying Model Aircraft since 1999
- Admitted to Purdue 2007, College of Technology - Professional Flight Program
- (2015 – Present) Kissinger & Fellman, P.C.)
- 2018 – Remote Pilot Certificate
- (2020 – Present) Private Pilot License Flight Training



Syllabus

- Review of UAS Regulatory Framework
- Roles of Local Government with Concern to UAS
- What You need to Know in 2021 as an Operator
- What You need to Known in 2021 as a Regulator
- What's Next?
- Questions





UAS Terminology (the alphabet soup)

- Drone – Common name for a UAS
- UAS – Unmanned Aircraft System
- ANPRM – Advanced notice of proposed rulemaking
- NPRM – Notice of proposed rulemaking
- COA – Certificate of Authorization, applies for both Public Agencies or Commercial UAS flights
- CFR – Code of Federal Regulation
- FAA – Federal Aviation Administration
- FAR- Federal Aviation Regulations
- FPV – First Person View
- LAANC - Low Altitude Authorization and Notification Capability
- Part 107 – Federal sUAS Regulations for Commercial UAS
- Remote Pilot Certificate – New sUAS RPIC license
- RPIC – Remote pilot in command
- sUAS – Small UAS (under 55 lbs)
- VO – Visual observer
- UTM – Unmanned Traffic Management

DISCLAIMER

This presentation should not be used for specific legal advice.

UAS law is simply too complex and evolving too quickly to fully and 100% accurately summarize during the course of this presentation.

Always consult an attorney licensed in your jurisdiction for specific answers to your specific legal questions!

My perspective is that of an attorney primarily working for state and local governments. Your perspective may differ as an operator, manned aviator, etc.

Review of UAS Regulatory Framework

FAA Regulation of Drone Operations



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The FAA finds its Test Case: UAS are Aircraft

- *Huerta vs. Pirker* (National Transportation Safety Board) 2014
 - Raphael Pirker shoots video for the University of Virginia Medical School
 - Drone racer, member of Team BlackSheep
 - Does a bunch of reckless stuff
<https://www.youtube.com/watch?v=OZnJeuAja-4>
 - FAA issues fine for \$10,000 based on a violation of 14 C.F.R. § 91.13(a) – reckless operation of an aircraft
 - Pirker argues his flight was a “model aircraft” – NTSB ALJ Agrees
 - FAA Appeals to NTSB
 - **NTSB overturns the ALJ decision and unequivocally rules UAS are “aircraft” subject to FAA Regulation.** (NTSB Order No. EA-5730, November 18, 2014)

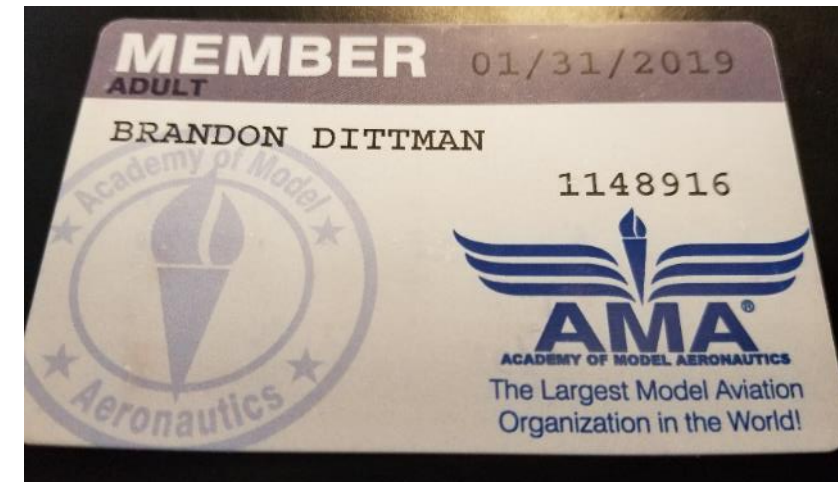


Basic Regulatory Framework: Based on Intent of Flight

- UAS are regulated based on the intent of the flight they are performing .
 - Hobbyists/Recreational users fly “model aircraft” and are *lightly regulated*.
 - “Commercial” flights are regulated under FAR *Part 107* or a *FAR Section 333 exemption*.
 - “Government” flights regulated under a Public Certificate of Authorization(“COA”) (or other FAA authorization)
- Regulatory scheme not based the aircraft but the intent of the flight at the time of flight.

Hobby/Recreational UAS

- “Aircraft is flown strictly for recreational purposes” in NAS – FAR Section 349
 - If you are flying for anything of **value** you are not a hobby UAS
 - Type of Aircraft doesn’t matter
 - Quadcopters
 - Helicopters
 - Airplanes, Gliders
 - All Recreational
- Academy of Model Aeronautics (AMA) big player in recreational UAS
- Formerly voluntary FAA Compliance (FAR 336 or “the Model Rule”)
- After legal hiccups, FAA Reauthorization Act of 2017 requires registration “N-Number”
- Increasing regulatory requirements.



Commercial UAS

- If the intent of the flight has **value** (not necessarily monetary) and not a core government-function, its commercial
- Part 107
 - Bread and butter of UAS regulation
 - Regulates small UAS (sUAS)
 - under 55lbs with all equipment
 - Requires commercial operators to become certified as Remote Pilots in Command (RPIC)
 - Requires an Airman Knowledge Test
 - Numerous restrictions on use.
- Part 333 Exemption
 - UAS over 55lbs
 - Requires Private Pilot License
 - Burdensome Regulatory Process for Approval of Aircraft





Public UAS Regulation

- Public Certificate of Authorization (COA)
 - Whether an operation may be considered public is determined on a flight-by-flight basis, under the terms of the statute 49 U.S.C. 40102 and 49 U.S.C. 40125 and considers aircraft ownership, operator, the purpose of the flight and the persons on board the aircraft
 - **Flight must be for a core government function** 49 U.S.C. § 40125
 - Public Safety
 - Health and Welfare
 - Aeronautical Research
- Public Operators can, and often do, operate under Part 107
 - Some flights do not advance a core government function
 - Operationally, 107 flights can be easier to manage

Local Government Roles in UAS

Operator vs Regulatory



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Your Role as an Operator

- Uses
 - Police and fire
 - Disaster Response
 - Property management
 - GIS
 - Resource Management
 - Code Enforcement
 - Video Programming
 - Utilities
- Regulation
 - Part 107
 - Public COA



Your Role As a Regulator

- UAS are everywhere!
 - 6 times as many UAS in the NAS than manned aircraft at any time.
 - Most legal violations are not reported to FAA and left to local authorities
- Federal Preemption of Local **Operational** Regulations
 - FAA's responsibility to maintain a safe air transportation system, including an airspace "free from inconsistent state and local restrictions[.]" *Montalvo v. Spirit Airlines*, 508 F.3d 464 (9th Cir. 2007)
 - *Singer v. City of Newton*, No. 17-100071-WGY, 2017 WL 4176477 (D. Mass. Sept. 21, 2017)
 - Leading UAS Local Regulation Case
 - Local UAS Regulations Subject to "Conflict Preemption"
- What Can you do?
 - Regulations consistent with FAA Regulations
 - **Traditional Police Powers**
 - Land use, planning and zoning, health, safety, advertising, general welfare.
 - Hunting with UAS, take-off and landing locations, privacy



What You Need to Know in 2021 as an Operator

New FAA Regulations



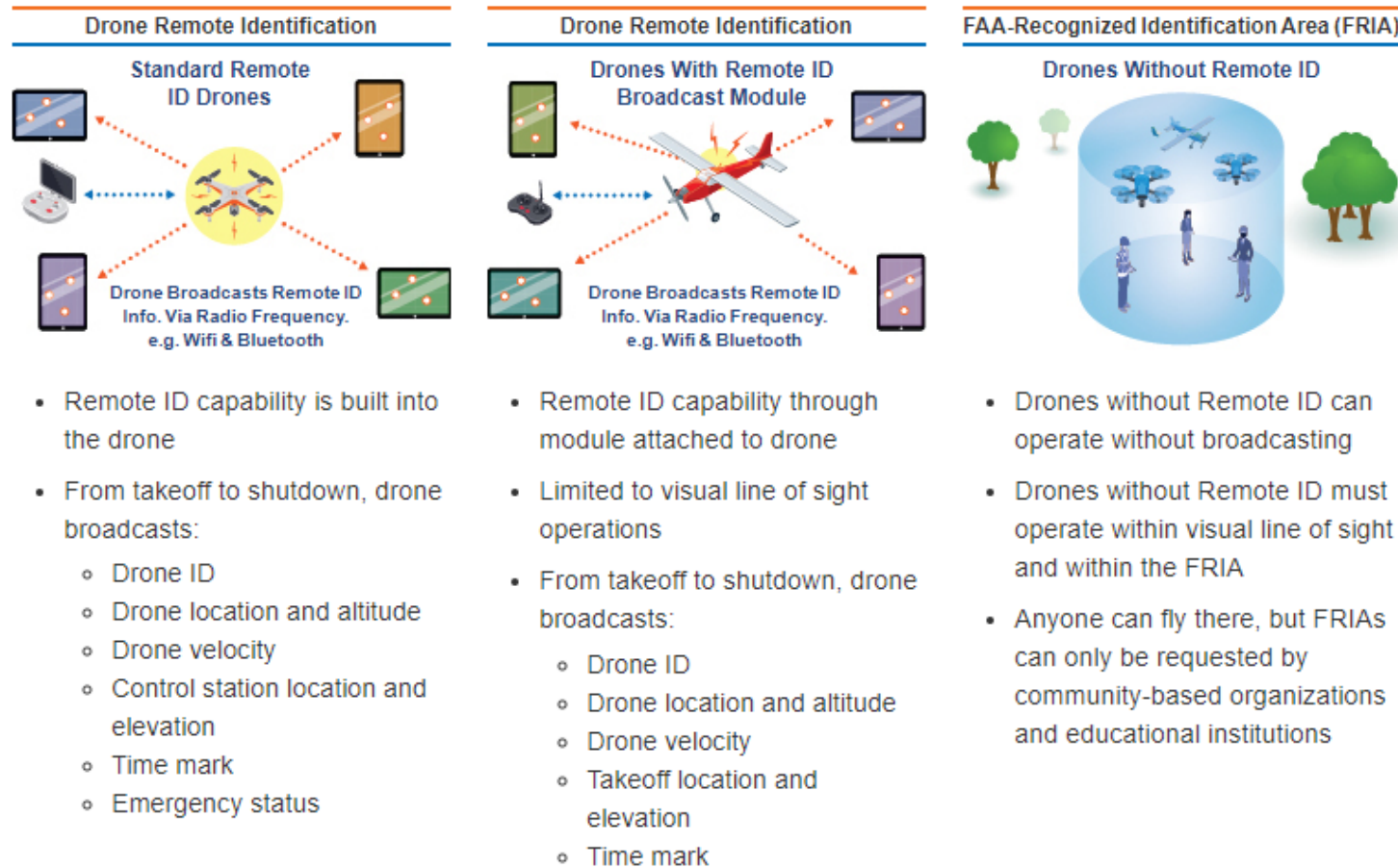


Remote Identification

- How do you know who is operating a UAS and for what purpose?
 - Key issue for local and federal law enforcement
 - Opens ability for BVLOS flight
- FAA Remote Identification of Unmanned Aircraft January 15, 2021 - 86 FR 4390
 - UAS require “remote ID” - wireless transmission of:
 - A unique identifier for the drone;
 - The drone's latitude, longitude, geometric altitude, and velocity;
 - An indication of the latitude, longitude, and geometric altitude of control station (standard) or take-off location (broadcast module);
 - A time mark; and
 - Emergency status (Standard Remote ID Drone only)

Remote Identification (cont.)

3 WAYS DRONE PILOTS CAN MEET REMOTE ID RULE



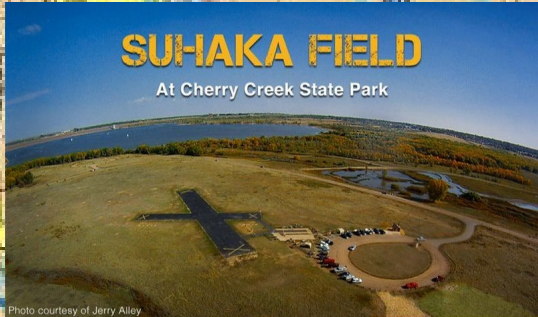


Remote Identification (cont.)

- Key Dates
 - September 16, 2022:
 - Drone manufacturers must comply with the final rule's requirements for them. New drones have remote ID built in.
 - September 16, 2023:
 - All drone pilots must comply with the rule. Mean flying a Standard Remote ID Drone, equipping with a broadcast module, or flying at a FRIA.
- **Why should local governments care?**
 - Your existing drone fleet may not be usable after September 16, 2023
 - Delay purchase of drones until after September 16, 2022 unless equipped with Remote ID capability
 - Personal liability of **PILOTS** if not in compliance post September 16, 2023
 - Public FRIA's must be established by September 16, 2023

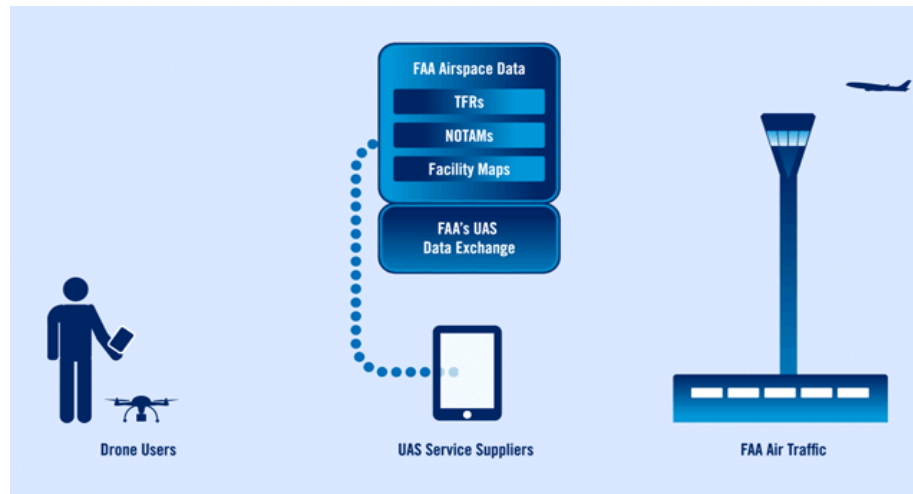
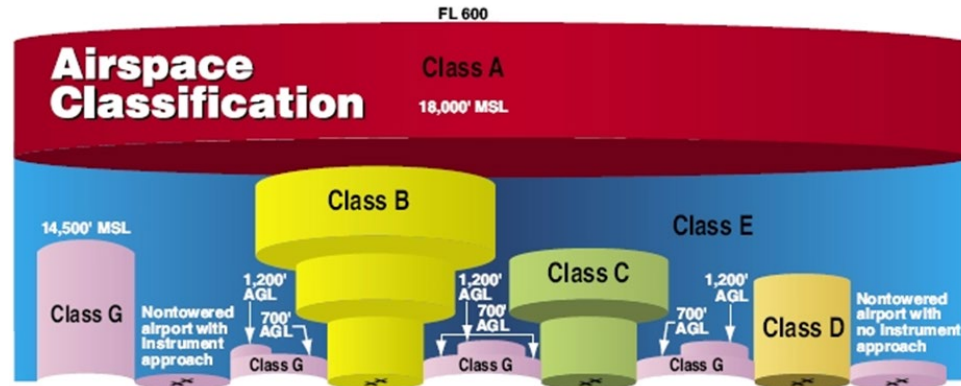


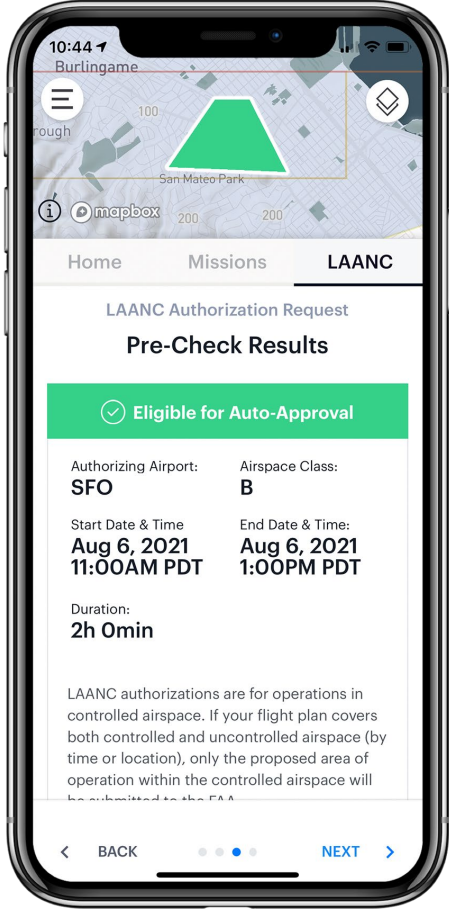
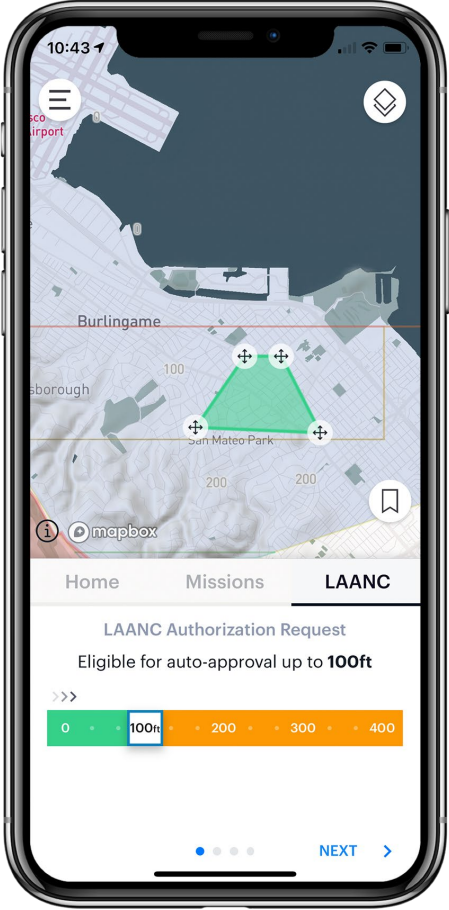
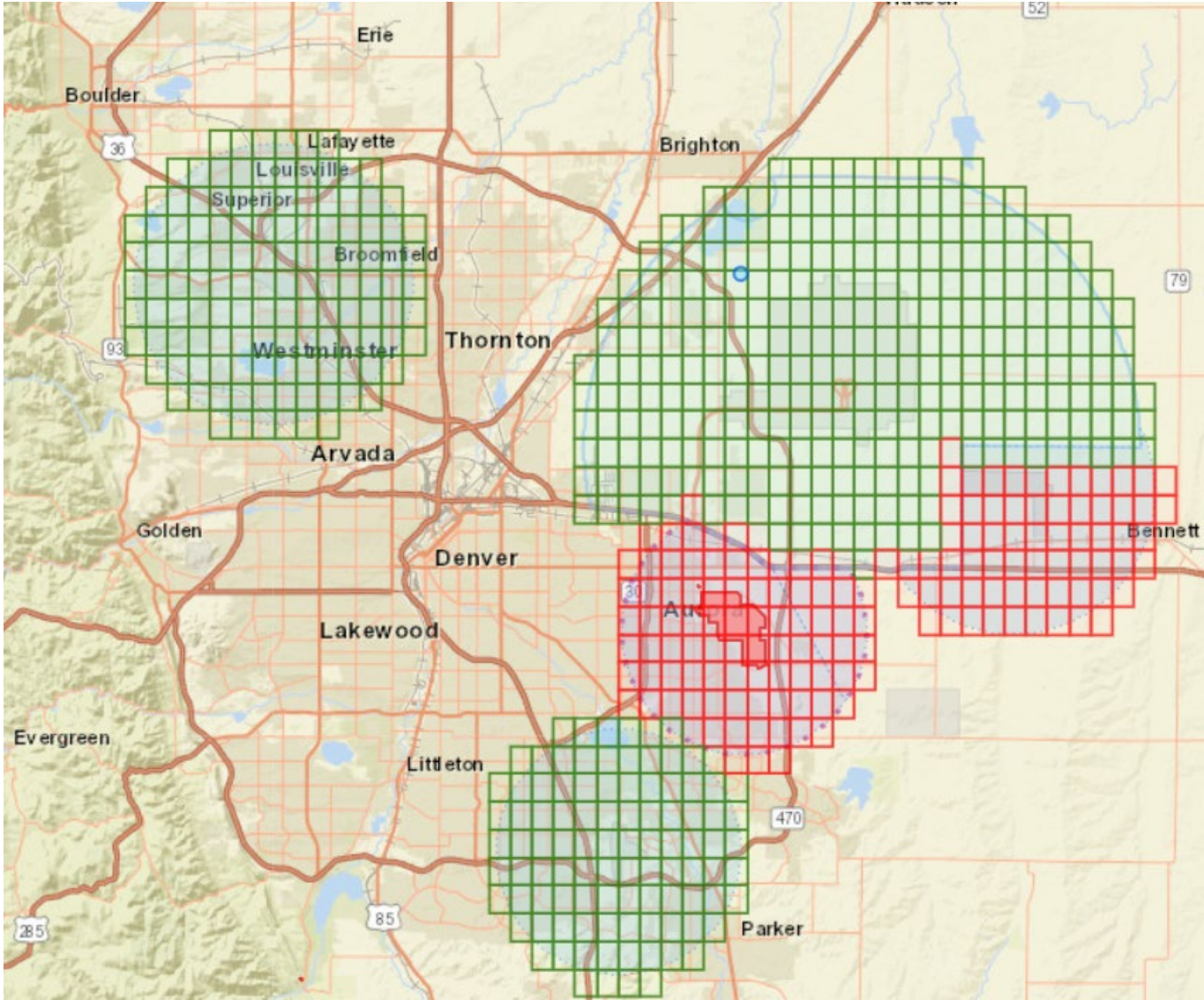
FRIAs must be established in accordance with criteria in NPRM 89.215 by Community Based Organizations



LAANC - Low Altitude Authorization and Notification Capability

- Need ATC or FAA authorization to fly in controlled airspace (B, C, D, E)
 - Used to have to call the physical tower for authorization.
- 2019- Low Altitude Authorization and Notification Capability (LAANC)
 - Offers real-time and usually instantaneous airspace approvals of Recreation and Part 107 UAS
 - Offers Air Traffic Professionals with visibility into where and when drones are operating
- Why should local governments care?
 - Pilots should be using this service now.





Operations over People and At Night

- Part 107 originally prohibited operations over people, from a moving vehicle, and at night.
 - Case by case waiver system adopted later.
- FAA Operation of Small Unmanned Aircraft Systems Over People January 15, 2021 - 86 FR 4314
 - Operations Over People
 - Permitted if drone weights .55 lbs or less and no exposed rotating parts capable of lacerations (Category 1)
 - Performance and Operational Standards for UAS over .55lbs (Category 2 and 3)
 - Part 21 aircraft (Airworthiness Certificate) in accordance with flight manual (Category 4)
 - Operations from a Moving Vehicle
 - Closed or restricted site and all people in the vehicle on notice of the operation.
 - No sustained flight over moving vehicles
 - More capability for Category 4
 - Operations at Night
 - Recurrency Training for Pilot
 - Lighted anti-collision lighting visible for at least three (3) statute miles that has a flash rate sufficient to avoid a collision



Just How Much is .55lbs or 250g?



NewBee Drone: 22g .05lbs



E-Flite UMX Waco: 294g .7lbs

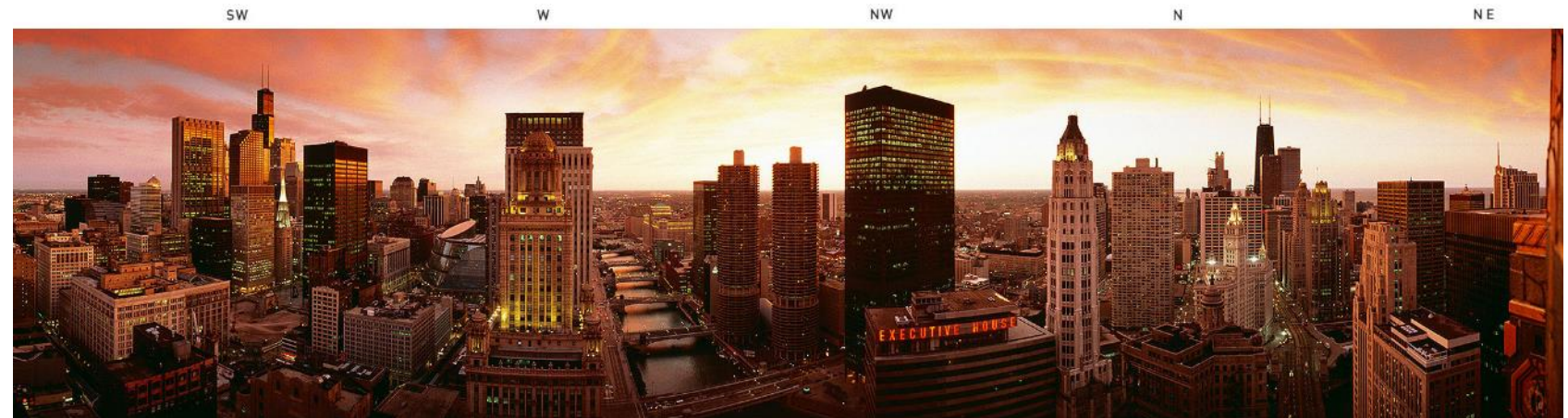


E-Flite Timber: 1400g or aprox 3lbs

Operations over People and At Night: The FAA is Watching

- Why should local governments care?

- Ops over People and moving vehicles is the #1 source of UAS violations
- FAA will take certificate actions against unsafe UAS Operators.
- 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 **for each incident.**
- *Huerta v. SkyPan International* - \$1.9 Million fine for 60 flights in NYC and Chicago 2014-2016.



What You Need to Know in 2021 as a Regulator


New FAA Regulations



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Local Law Enforcement and FAA

- FAA finally recognizing local law enforcement role
 - Encourages local prosecution where the action taken would be a crime with or without a drone
 - If you take the drone out of the incident you can apply already existing law to infractions committed (for example, reckless endangerment, voyeurism, or harassment)?
- 2018 FAA Reauthorization
 - Allows local law enforcement to ask for airman certificate and whether the UAS is operating under any safety standards (i.e. AMA) (84 FR 22552)
 - Can ask for registration and testing status.
- Refer violations to the FAA Law Enforcement Assistance Program (LEAP)
 - LEAP@faa.gov
 - Public Safety and Law Enforcement Toolkit
https://www.faa.gov/uas/public_safety_gov/public_safety_toolkit/
- Counter UAS (C-USA)
 - Hot topic with few answers for state and local authorities
 - Tread very carefully, legal minefield
 - https://www.faa.gov/uas/resources/c_uas/media/Interagency_Legal_Advisory_on_UAS_Detection_and_Mitigation_Technologies.pdf

 Federal Aviation Administration

DRONE Law Enforcement Response

Detect all available elements of the situation; 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 (**LEAP**) 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. [faa.gov/uas/resources/law_enforcement/](https://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.*

 Federal Aviation Administration

FAA Drone Incident Reporting

Document and provide the following information to FAA:

- Identity of operators and witnesses (*name, contact information*)
- Type of operation (*hobby, commercial, public/governmental*)
- Type of device(s) and 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 ROC for assistance:

Western ROC	AK, AZ, CA, CO, HI, ID, MT, NV, OR, UT, WA, WY	206-231-2089	9-WSA-OPSCTR@faa.gov
Central ROC	AR, IA, IL, IN, KS, LA, MI, MN, MO, ND, NE, NM, OH, OK, SD, TX, WI	817-222-5006	9-CSA-ROC@faa.gov
East ROC	AL, CT, FL, GA, KY, MA, ME, MS, NC, NH, PR, RI, SC, TN, VI, VT	404-305-5180	9-ESA-ROC@faa.gov
	DC, DE, MD, NJ, NY, PA, VA, WV	404-305-5150	9-ESA-ROC@faa.gov

Local Law Enforcement and FAA New Rules for Recreational Pilots



**Federal Aviation
Administration**

Small UAS Certificate of Registration

REGISTERED OWNER: **Brandon Dittman**

REGISTRATION NUMBER: **FA3MLHHAW9**

ISSUED: **01/17/2021** EXPIRES: **01/17/2024**

This Small UAS Certificate of Registration is not an authorization to conduct flight operations with an unmanned aircraft. Operators of unmanned aircraft must ensure they comply with the appropriate safety authority from the FAA. To operate as a recreational flyer, a person must meet all of the statutory conditions of the exception for limited recreational operations of unmanned aircraft (49 U.S.C. 44809). Persons who do not meet all of the statutory conditions may not operate under the statutory exception for limited recreational operations of unmanned aircraft.

For U.S. citizens, permanent residents, and certain non-citizen U.S. corporations, this document constitutes a Certificate of Registration. For all others, this document represents a recognition of ownership.

To fly under the exception for recreational flyers you must:

- Have a current registration
- Fly only for recreational purposes
- Follow the safety guidelines of a community-based organization
- Keep your drone within your visual line of sight
- Give Way and do not interfere with any manned aircraft
- Fly at or below 400' in controlled airspace and only with prior authorization
- Fly at or below 400' in uncontrolled airspace
- Comply with all airspace restrictions
- Pass The Recreational UAS Safety Test (Coming Soon)



- Must follow either Part 107 or “Exception for Limited Recreational Operations of Unmanned Aircraft” (84 FR 22552; AC 91-57B)
 - Must comply with safety guidelines of a “community-based organization” i.e. AMA)
 - Must Register with FAA
 - Number of airspace restrictions (similar to Part 107)
 - Flights in Class G (uncontrolled airspace) – stay under 400 feet
 - LAANC Authorization for flights in controlled airspace.
 - All flights must be within line of sight (of PIC or VO)
 - External marking of Registration Required.
- **The Recreational UAS Safety Test (TRUST)**
 - Free, 15-30 minute test required to fly under recreational UAS rule
 - Can re-try test as many times as you want, provided all information to pass
 - https://www.faa.gov/uas/recreational_fliers/knowledge_test_updates/

What's Next?

More rules on the way!





Continued UAS Integration: Integrating UAS into NAS

- “Detect and Avoid Technologies”
 - Mr. David McBride, Director NASA: “The key technology for integrating UAS into the NAS is detect and avoid”
 - NASA: testing sensors on UAS which identify obstacles and automatically avoid them
 - The Northeast UAS Airspace Integration Research Alliance (NUAIR): testing ground-based sensors to aid in detection and avoidance
- Unmanned Traffic Management (UTM)
 - Traffic management ecosystem for uncontrolled operations that is separate from, but complementary to, the FAA's Air Traffic Management (ATM) system
 - NASA/FAA Joint UTM Research Plan
 - Some private quasi-solutions like PercisionHawk's LATAS system
 - Currently have severe limitations - not “real-time,” private controlled
 - DRAFT ANPRM--Safe and Secure Operations of Small Unmanned Aircraft Systems (March 2019)
- Public Unmanned Aircraft Systems
 - Last piece of UAS relatively untouched by FAA rulemaking
- Drone Advisory Committee (DAC) – Next Meeting October 27, 2021

Questions?

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