

DRONE LAW FOR GEOSPATIAL PROFESSIONALS AND EDUCATORS

(Present and Future Considerations)



Rupperecht Law P. A.

ABOUT ME

- Attorney Who Focuses on Drone Law.
- Commercial Pilot Certificate (AMEL & ASEL) and Two Current Flight Instructor Certificates (CFI & CFII)
- My law firm was ranked 2nd in the US with the number of 333 client exemptions on 12/31/2015.
- Embry-Riddle Aeronautical University for B.S. (*Magna cum Laude*). Florida International University for J.D.
- I Wrote a Book Called *Drones: Their Many Civilian Uses and the U.S. Laws Surrounding Them*. (on Amazon)
- Co-authored *Unmanned Aircraft in the National Airspace: Critical Issues, Technology, & the Law* that is published by the American Bar Association.

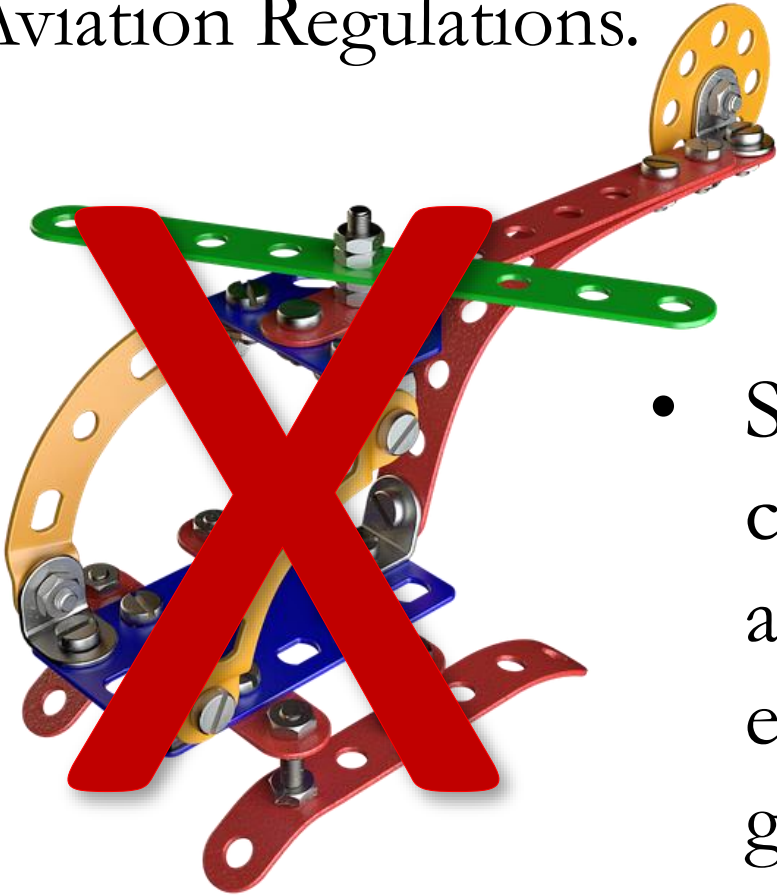


OUTLINE

1. The different types of aircraft and what is legally required for each to fly.
2. The operational problems that public and commercial drone operations have under the Federal Aviation Regulations.
3. The legal issues from a state and local level that can affect your operations.
4. What the future holds.
5. What you can now do to successfully position yourself for the future.

HOW ARE DRONES REGULATED?

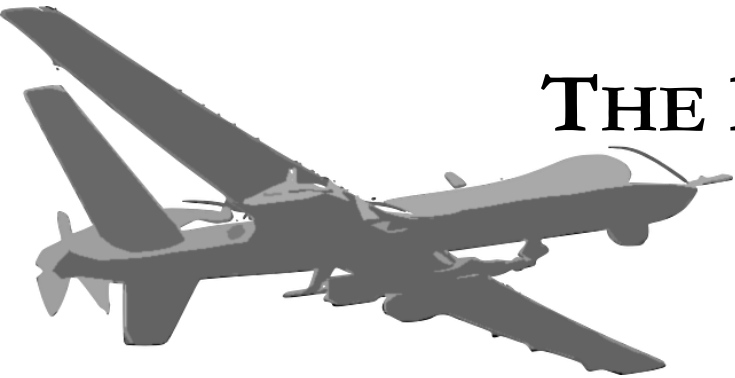
- Drones are aircraft, not toys, and subject to *ALL* the Federal Aviation Regulations.



- Some of the regulations are burdensome to comply with. Depending on which type of aircraft you are, the FAA handles this by exercising discretion regarding enforcement, granting exemptions, and granting waivers.

THE DIFFERENT STATUSES OF AIRCRAFT

Public Aircraft



Civil Aircraft



HOW THE FAA MAINTAINS



- The FAA considers **all** aircraft to be civil by default, and **all** the regulations apply to civil aircraft.
 - The FAA exercises discretion in not applying the regs to recreational drones.
- If you can obtain public aircraft status, then **some** of the regulations apply to public aircraft.
 - Public aircraft operations determine their own pilot, medical, and aircraft standards. (i.e. self-certify)



PUBLIC AIRCRAFT QUALIFICATIONS

49 U.S.C. 40125

1. Government function. “**such as** national defense, intelligence missions, firefighting, search and rescue, law enforcement (including transport of prisoners, detainees, and illegal aliens), aeronautical research, or biological or geological resource management.”

- “[E]ducation is not a valid governmental function[.]” No UAS flight school.
- Aeronautical research for government function.
- There is possibility for some intrastate agency/government contracting.
- Native American tribes cannot get public aircraft status.
- Public works projects such as the inspection and maintenance of dams, waterways, bridges, and roads may all be characterized as PAO provided they are government funded and non commercial.

2. There can be no type of reimbursement to government (one exemption), but this does not prohibit civilian contractors from being paid for by the government to fulfil public aircraft operations. (One way street with the \$\$\$)

DEFINITION OF PUBLIC AIRCRAFT

49 U.S.C. 40102(41)

(41) “public aircraft” means any of the following:

(A) Except with respect to an aircraft described in subparagraph (E), an **aircraft used only for the United States Government**, except as provided in section [40125 \(b\)](#).

(B) An aircraft **owned** by the Government and **operated by any person** for purposes related to **crew training, equipment development, or demonstration**, except as provided in section [40125\(b\)](#).

(C) An aircraft **owned and operated** by the government of a **State, the District of Columbia, or a territory** or possession of the United States or a **political subdivision** of one of these governments, except as provided in section [40125 \(b\)](#).

(D) **An aircraft exclusively leased for at least 90 continuous days** by the government of a State, the District of Columbia, or a territory or possession of the United States or a political subdivision of one of these governments, except as provided in section [40125 \(b\)](#).

49 U.S.C. 40125 (D)
90 DAY LEASE EXCEPTION

(d) Search and Rescue Purposes.— An aircraft described in section [40102 \(a\)\(41\)\(D\)](#) that is not **exclusively leased** for at **least 90** continuous days by the government of a State, the District of Columbia, or a territory or possession of the United States or a political subdivision of 1 of those governments, qualifies as a public aircraft if the Administrator determines that—

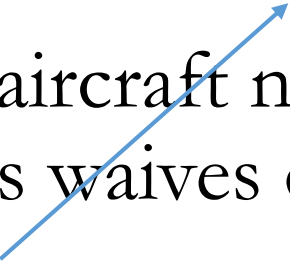
- (1) there are **extraordinary circumstances**;
- (2) the aircraft will be used for the performance of **search and rescue** missions;
- (3) a community would **not otherwise have access** to search and rescue services; and
- (4) a government entity demonstrates that granting the waiver is necessary to prevent an **undue economic burden** on that government.

PUBLIC AIRCRAFT

- FAA only regulates the operation of the public aircraft. (Part 91, 133, 137, etc.)

§ 91.7 Civil aircraft airworthiness. (a) No person may operate a **civil aircraft** unless it is in an airworthy condition.

§91.113 Right-of-way rules: Except water operations. . . .
[V]igilance shall be maintained by each person operating an **aircraft** so as to see and avoid other aircraft.

- To fly legally, public aircraft need a certificate of authorization or waiver (“COA”). This waives certain regulations you cannot comply with such as 91.113. 

Public Aircraft

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 - §91.113 Right-of-way rules: Except water operations. . . . [V]igilance shall be maintained by each person operating an **aircraft** so as to see and avoid other aircraft.
 - Public Aircraft need a COA. Public COA's are site specific for a specific aircraft. It is best to get a COA before you need one. If you don't have a COA for an aircraft or location, you can apply for an emergency COA.
 - ECOA's go faster if you already have a COA because you are only changing the LOCATION or aircraft.

RECAP

- Government – (1) owned, used, or leased within definition; (2) must be fulfilling core function; and (3) making no \$.
- You can “switch hats” between public aircraft operations and civil.
- Benefit is you set your own standards for pilot certification, medical certification, and aircraft certification.

QUESTIONS?

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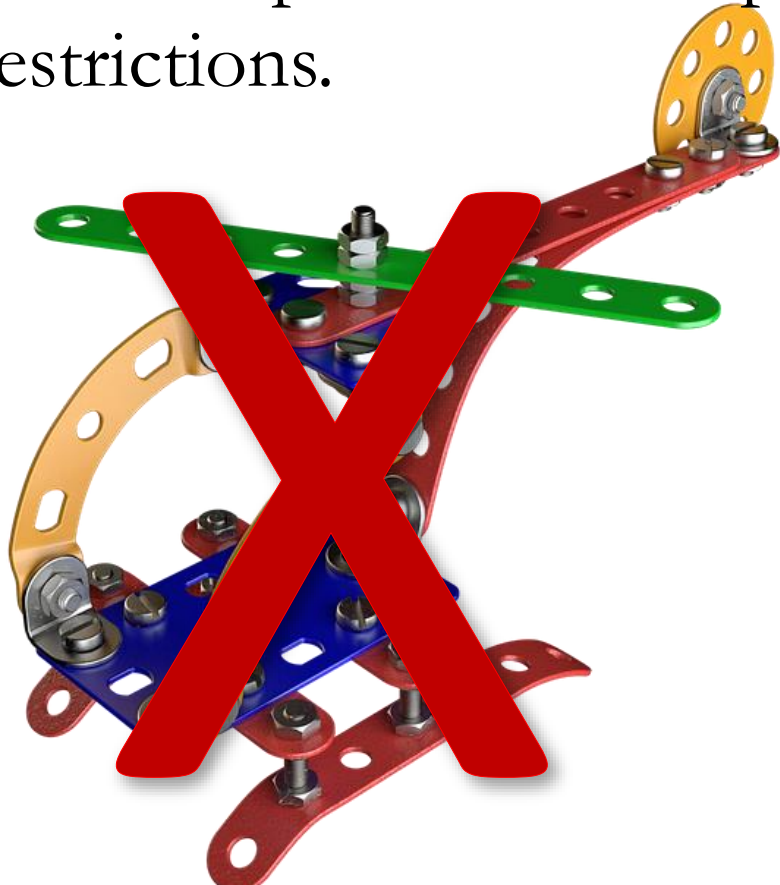
CIVIL UNMANNED AIRCRAFT

- Recreational = Only an individual flying purely for fun with no direct or incidental benefit.
 - The terms model aircraft and recreational aircraft are used interchangeably, even though most drones are not “models” of anything.
- Non-recreational = (1) individual or business flying for direct or indirect benefit or (2) organization flying for their purpose.



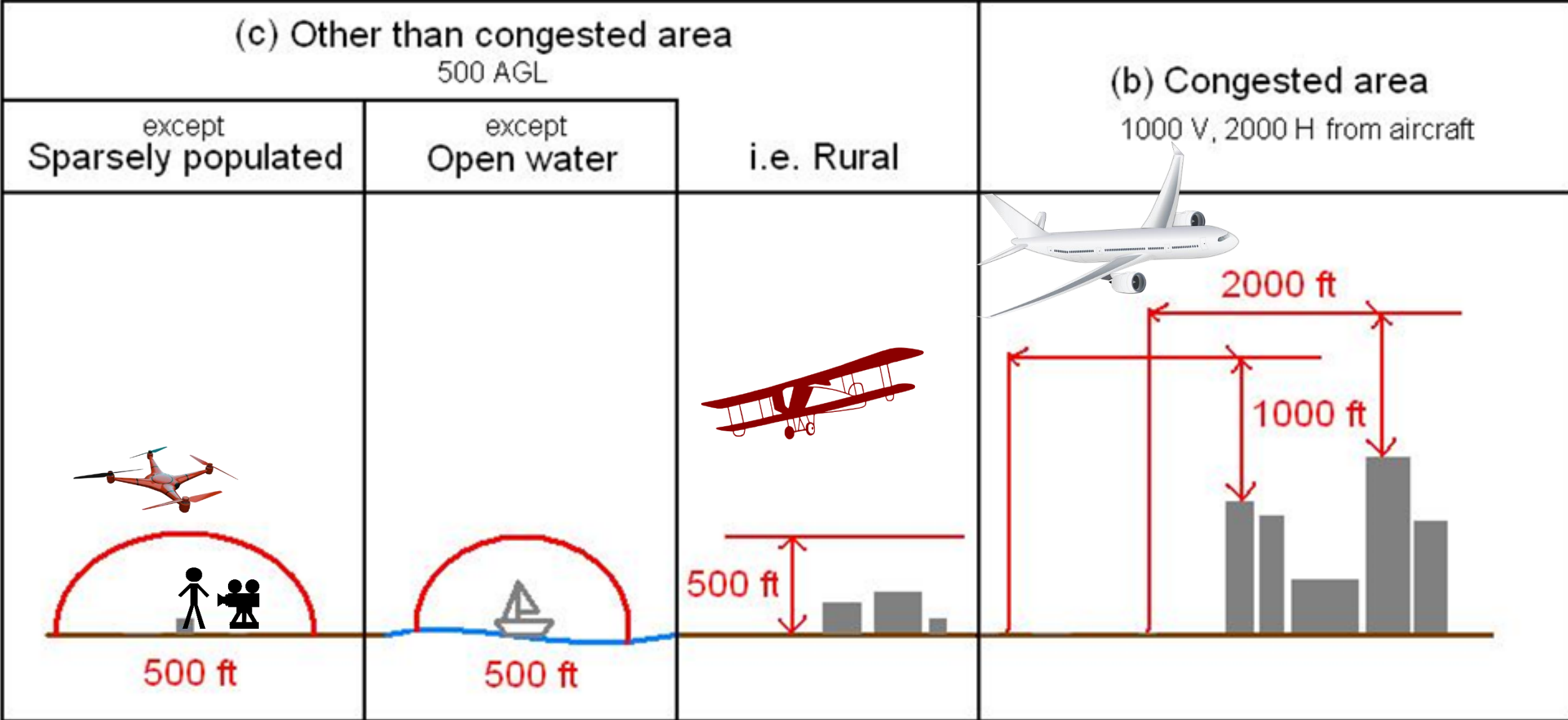
HOW DO PEOPLE COMMERCIALY OPERATE DRONES?

- The FAA allows commercial drone operations if the operator has a Section 333 exemption and complies with the restrictions.



- Drones are aircraft, not toys, and subject to all the Federal Aviation Regulations. Some are burdensome to comply with; therefore, an exemption from them is needed.

EXAMPLE OF A BURDENSOME REGULATION (14 CFR § 91.119)



MORE ABOUT SECTION 333

- Section 333 of the FAA Modernization and Reform Act of 2012. (not yet codified in the United States Code).
- Misnomer - Section 333 does NOT provide exemption powers.
- It allows the FAA to determine “whether a certificate of waiver, certificate of authorization, or airworthiness certification will be required.”

WHY DO I NEED A 333 EXEMPTION?

- Section 333 allows the FAA to determine if you need an airworthiness certificate or not.
- A COA waives 3 regulations
- Exemption under Part 11 allows you to get out of the burdensome regulations and follow alternative restrictions with an equivalent level of safety.



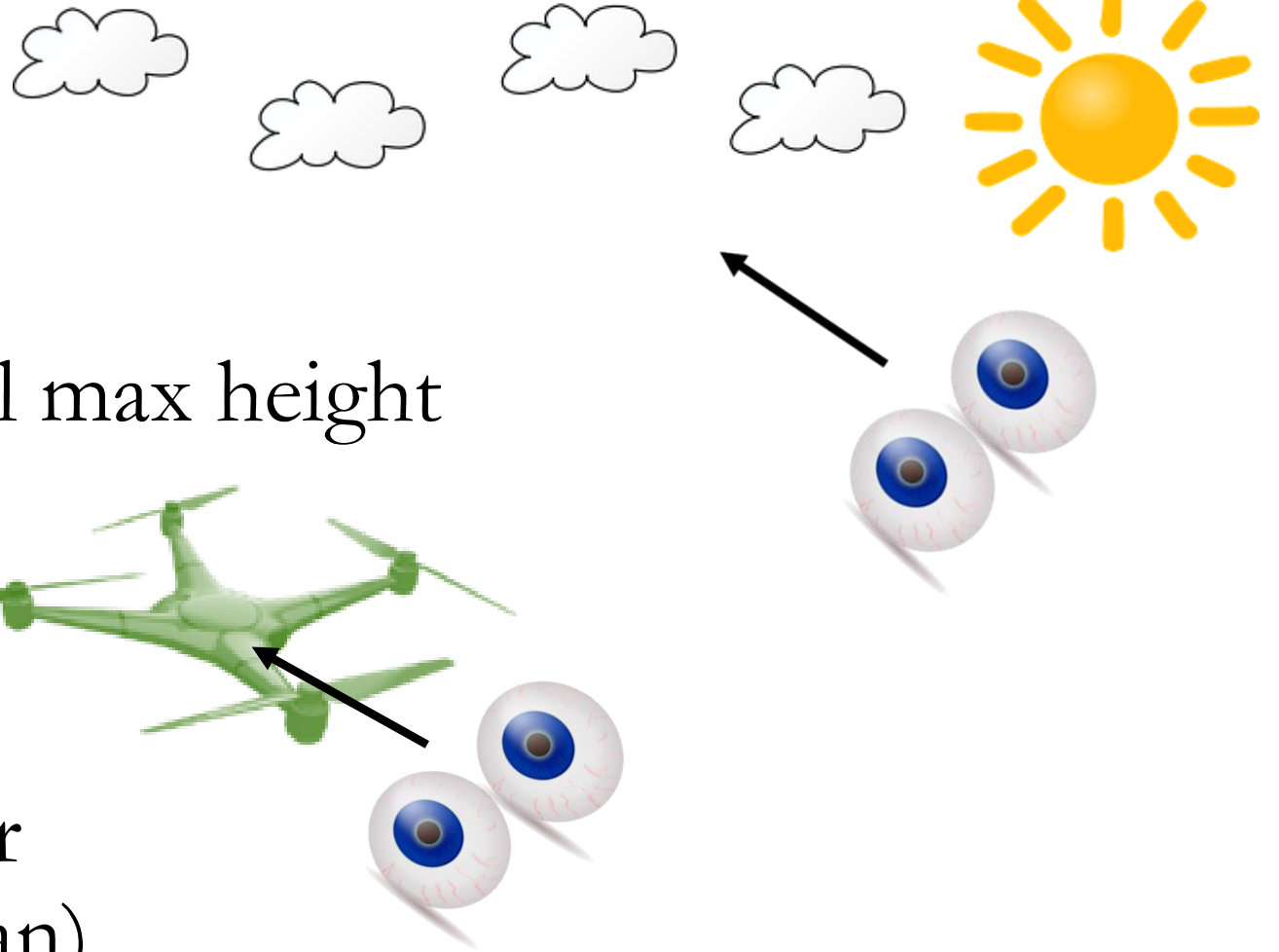
**LEGAL
COCKTAIL**

SECTION 333 CONT.

- The exemption lists specifically:
 - Who is the operator.
 - What regulations the operator is being exempted from.
 - What the restrictions are to comply with instead of the specifically exempted regulations.
 - What type of operations the operator is approved for.
 - Aerial data collection. “Aerial data collection includes any remote sensing and measuring by an instrument(s) aboard the UA. Examples include imagery (photography, video, infrared, etc.), electronic measurement (precision surveying, RF analysis, etc.), chemical measurement (particulate measurement, etc.), or any other gathering of data by instruments aboard the UA.”
 - Closed-set TV/film (Allows operations within 500ft of people). Requires Motion Picture and TV Operating Manual to exempt 91.119(c).

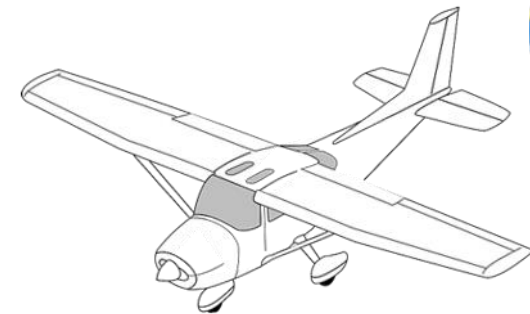
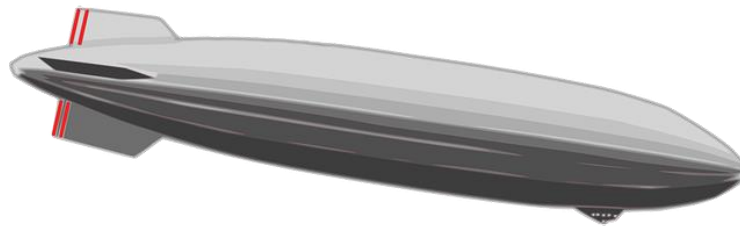
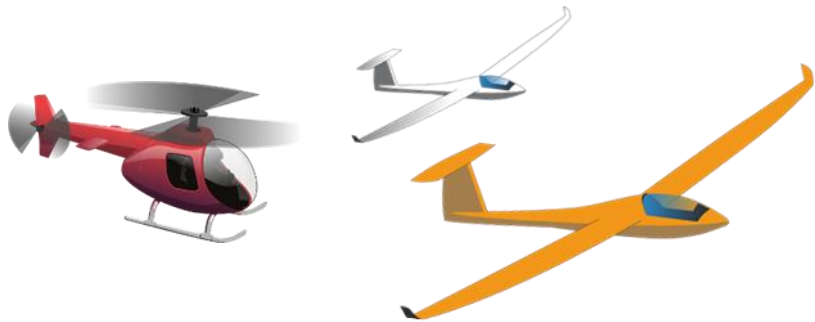
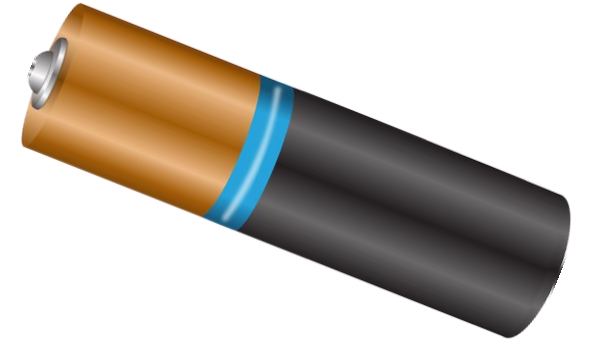
333 RESTRICTIONS

- 100MPH max speed
- 400ft Above **Ground** Level max height
- Visual line of sight only
- Must have a visual observer
(You might need cameraman)
- Cannot be operated by the PIC from any moving device or vehicle.



333 RESTRICTIONS CONTINUED

- Complete mission with 5 min. of battery reserve.
- Aircraft must be registered and marked as best as possible.
- 0 below and 2000 horizontal of clouds with 3 SM of visibility.
- PIC must have Sport pilot certificate in any category and class and driver's license or 3rd class medical. See 14 C.F.R. 61.313.



PROBLEMATIC 333 RESTRICTIONS

- Problems for Geospatial Professionals:
 1. 200 ft. Blanket COA and 400ft exemption.
 2. Cannot operate within 5 miles of an airport unless the operator has a COA allowing it.
 3. Operations must be conducted at least 500 feet from all non-participating persons, vessels, vehicles, and structures unless they are protected.
 4. Flight Instruction Operations

1. ALTITUDE PROBLEM

- The Blanket COA limits the flights to 200ft above the ground. (You can get a 400ft COA).
- The 333 exemption limits the altitude to 400ft.
- Under the future regulations, 500ft is the max altitude.
- Anything above that is going to need a special COA & Exemption.

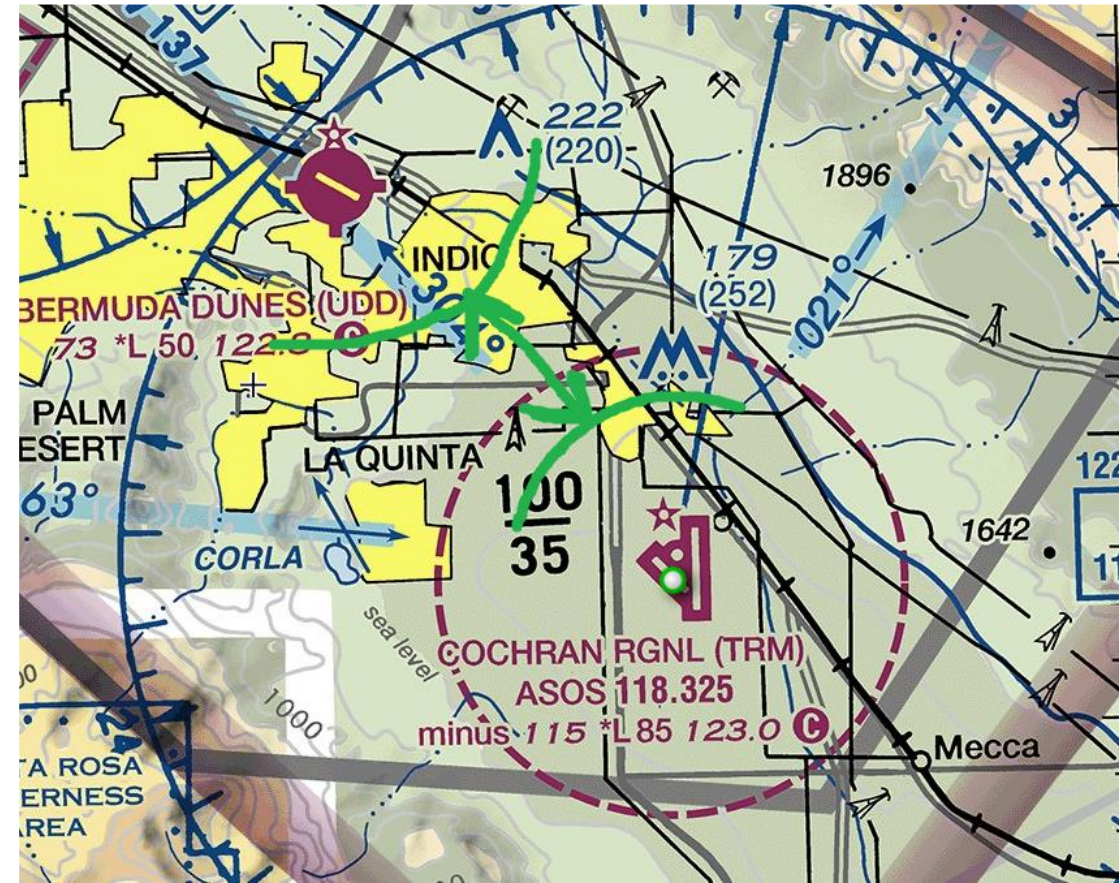
2. COA'S NEAR AIRPORTS

- Cannot operate within 5 miles of an airport unless the operator has a COA allowing it.
- Problem is most blanket COA's say:
 - 5 NM of a towered airport.
 - 3 NM of a non-towered airport with an instrument approach
 - 2 NM of heliport, gliderport, airport without instrument approach.
- Remember that you CAN fly in these locations but you must have a COA for that location. Processing times on these COA's is between 1.5 months-6 months.

AIRPORT EXAMPLES

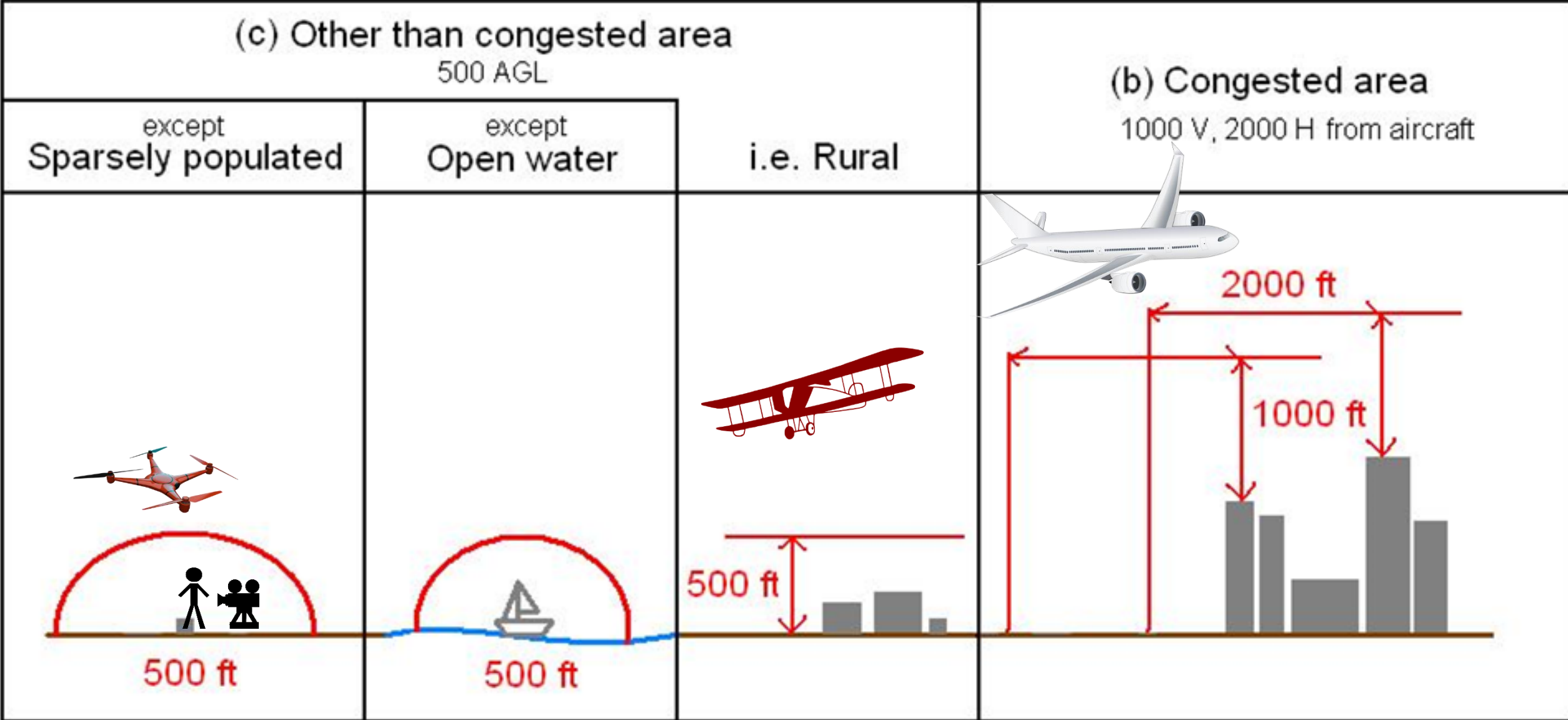


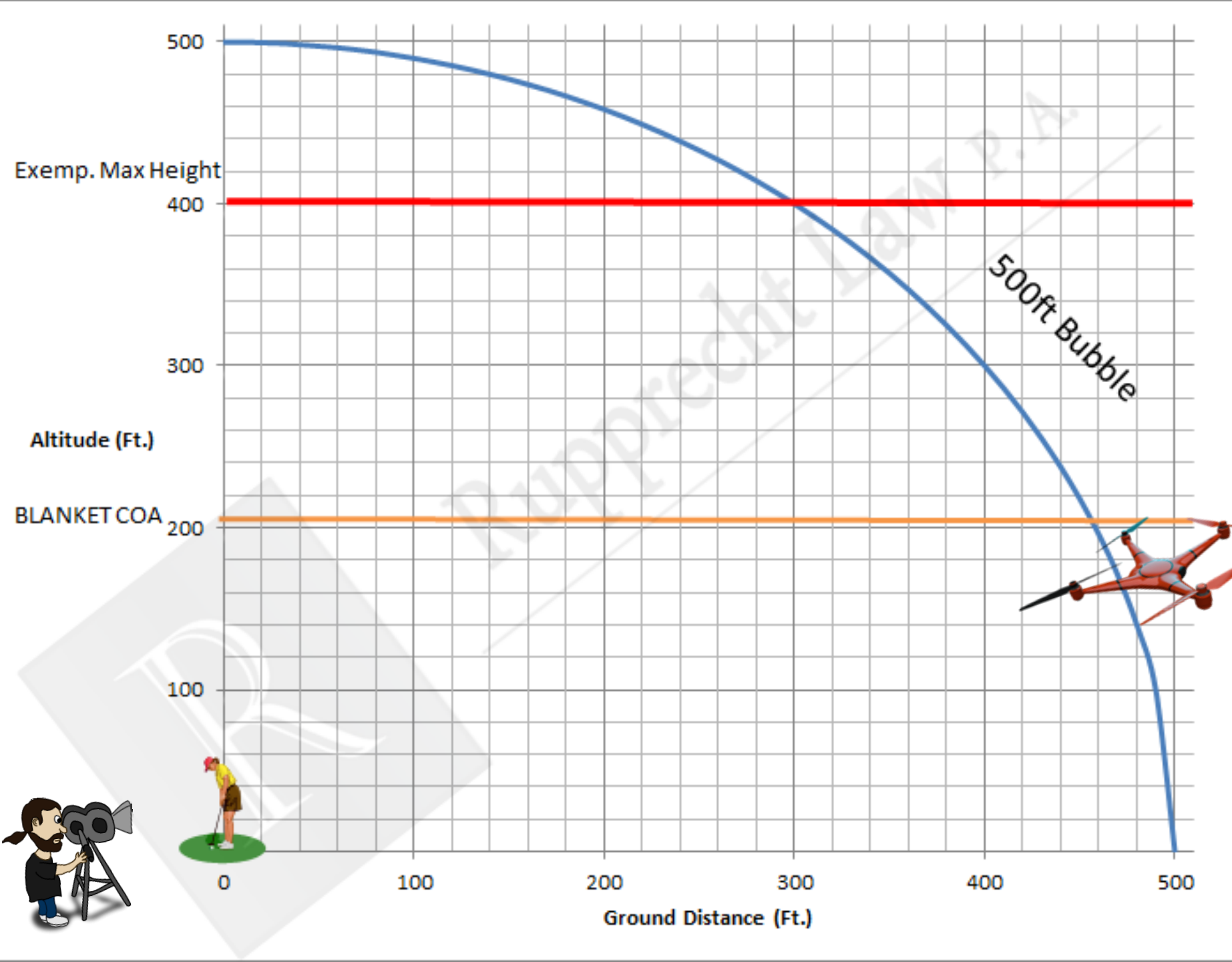
Ultra Music Festival is within 1 mile of heliport and also within Class B airspace (Miami International). Need another COA.



Coachella Music Festival is in between airports.

EXAMPLE OF A BURDENSOME REGULATION (14 CFR § 91.119)





500 FT. EXCEPTIONS

- People:

“Barriers or structures are present that sufficiently protect nonparticipating persons from the UA and/or debris in the event of an accident.” or

The people are participating under a closed-set exemption. FAA also said “The PIC, VO, operator trainees or essential persons are not considered nonparticipating persons under this exemption.”

- Property:

“The owner/controller of any vessels, vehicles or structures has granted permission for operating closer to those objects and the PIC has made a safety assessment of the risk of operating closer to those objects and determined that it does not present an undue hazard.”

MYTH

Myth - “Everyone can become a participant by putting a warning on a sign or the back of a ticket stub; therefore, we can fly within 500ft of everyone.”

- The FAA defines Participating Person/Authorized Person as, “All persons associated with the filming production must be briefed on the potential risk of the proposed flight operation(s) and they must acknowledge and accept those risks. **Nonparticipating persons are the public, spectators, media, etc., not associated with the filming production.**”

4. FLIGHT INSTRUCTION OPERATIONS

- The 500ft buffer applies to the public, but not:
 - Participants
 - Essential Personnel
 - Crew: PIC, VO, & operator trainees.
- You can flight instruct your OWN guys, but not members of the public.
- One flight instructing exemption has been granted, four are pending (mine). What is interesting is the flight instructors only need to be sport pilots at a minimum.
- Contact me if you are interested in one of those operations.
- Another work around is just instruct inside a building or build a large netted facility.

THINGS YOU CANNOT DO UNDER THE 333

Under the current 333 exemptions being given out, a drone operator cannot:

- Fly at night (flying after civil twilight which is roughly around 20 minutes after sunset).
- Fly within 500ft unless local FSDO has approved the plan of activities.
- Fly within 500ft of non-participating and unprotected individuals, unless they have closed-set approval and those individuals are considered “participating” (actors) under the motion picture manual.
- Fly a drone while in a moving vehicle

THINGS YOU CANNOT DO UNDER THE BLANKET COA

- Under their blanket certificate of authorization or waiver (COA), a drone operator cannot:
 - Fly unless they have filed a notice to airman AND waited 24 hours
 - Fly over 200 feet above the ground
 - Fly within 5 nautical miles of an operational towered airport
 - Fly within 3 nautical miles from an airport having a published instrument flight procedure, but not having an operational control tower; or
 - Fly within 2 nautical miles from an airport, heliport, glider port or seaplane base.

WHY WOULD A PUBLIC ENTITY GET A 333?

- They want to make money or be reimbursed (state vs. fed)
- The ownership/use is outside statutes.
- They want the blanket COA from the Section 333 exemption.
- Non Core Function Examples:
 - Flight Instruction /education
 - Reporting/ news gathering
 - Subsidized precision ag imagery for farmers
 - Commercial research
 - Private security

Timelines & Costs

- Times:
 - A public COA ranges 1.75 months – 8 months.
 - 333 runs around 4-6 months.
- Costs:
 - A public COA and a 333 exemption do NOT cost anything. (Like filing taxes)
 - A public COA can range between 1,000-4,000 depending on part of the US, airspace, type of operations, congestions of the airspace, etc.
 - A section 333 exemption can range around 1,500+.

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**WORDS OF
WARNING**

A WORD OF WARNING ON DRONE CONSULTANTS

- Everyone is a self-proclaimed expert. Many are posers.
- Seeing that they could make a quick buck, many are “guinea pigging” on people and offering Section 333 services or public COA services.
- Wild Wild West



- A disbarred attorney (for dishonest conduct) calling himself an attorney in person only and picking up clients.
- Consultant who DID federal prison time for fraud – now “expert.”
- A flight instructor/commercial pilot who stole his clients manuals, sold them off, took the money, and did not file the Section 333 exemption.

**PROBLEMS WITH HIRING A DRONE
CONSULTANT FOR A SECTION 333 EXEMPTION**

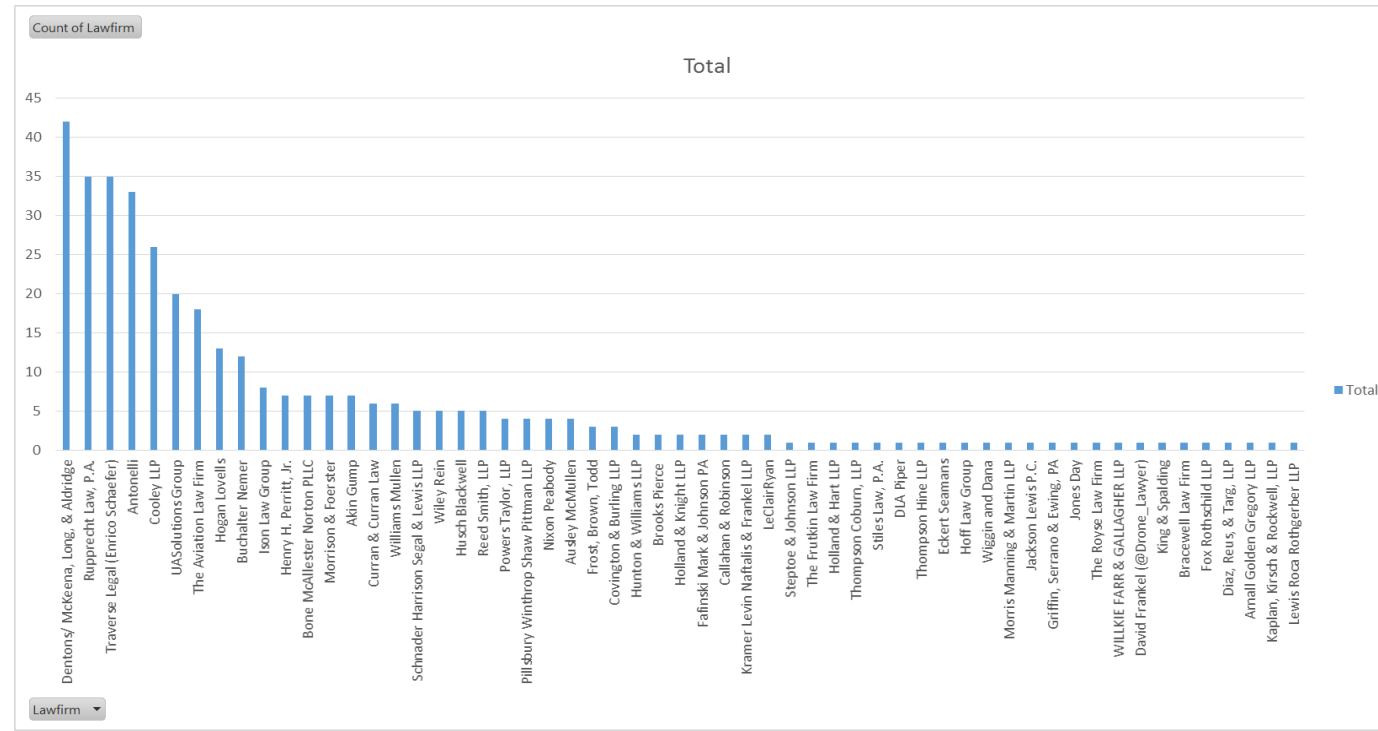
- Most are committing the crime of unlicensed practice of law. Florida makes it a 3rd degree felony.
- Almost all of them do NOT have any type of malpractice insurance to protect YOU.
- There is no 3rd party oversight (1) keeping them honest or (2) gatekeeping to keep the dishonest out.
- The attorney-client privilege does NOT apply to them.
- A legally incorrect or poorly written exemption does not make you look professional.

A WORD OF WARNING ON DRONE ATTORNEYS

- Find out how many exemptions they have filed.
 - Cheaper(getting feet wet) vs. expensive (learning aviation law on your dime)
 - If new, most likely slow at filing.
 - Most are not aviation attorneys and will guinea pig on you.

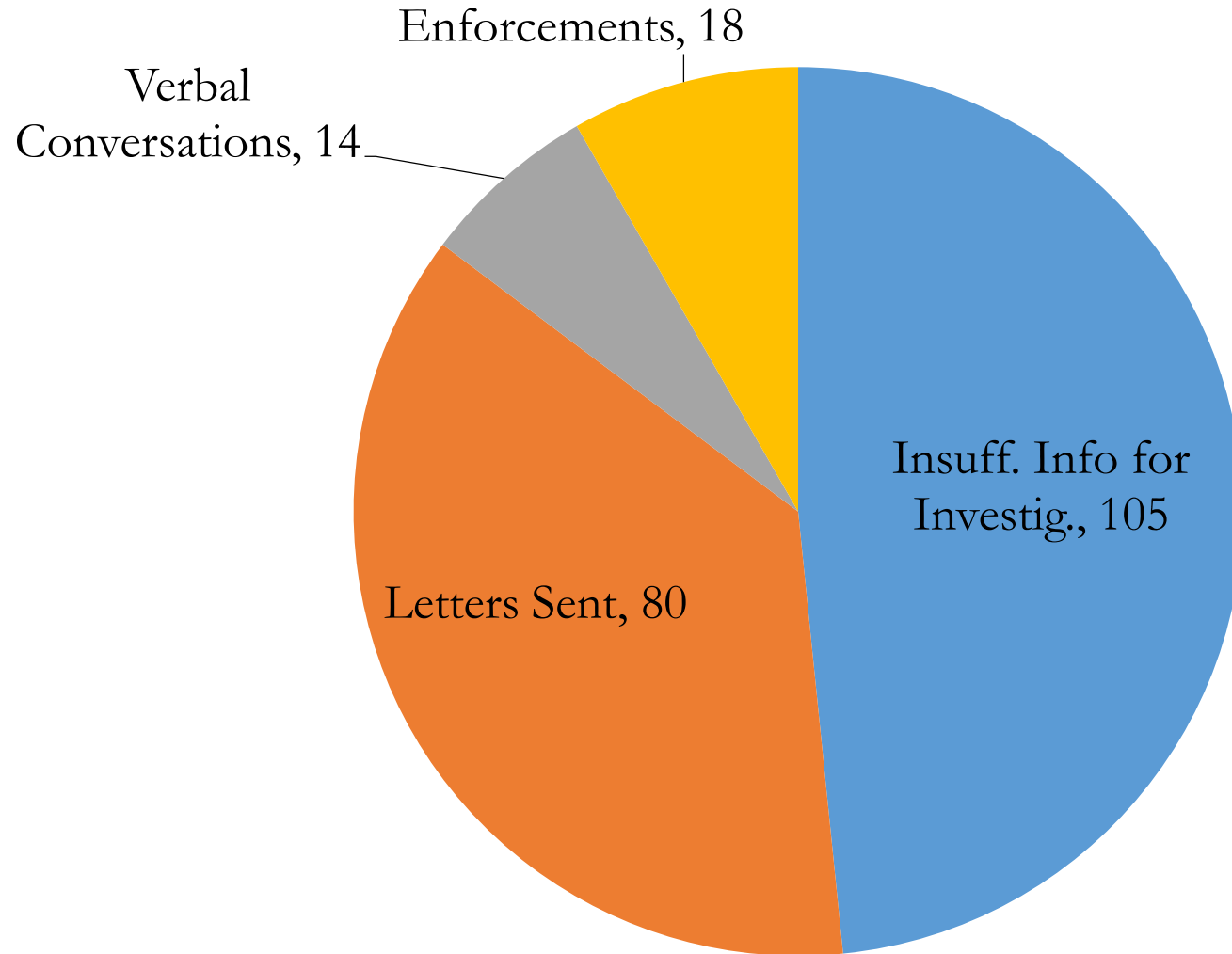
“The UAS proposed by the petitioner is a 3D Robotics PixHawk.”

- Are they a one trick pony? How many non-aerial data collection exemptions they have filed? (E.g. closed-set, flight instruction, night, moving vehicle.)
- How many COA’s have they filed?
- How many drone clients do they currently have?

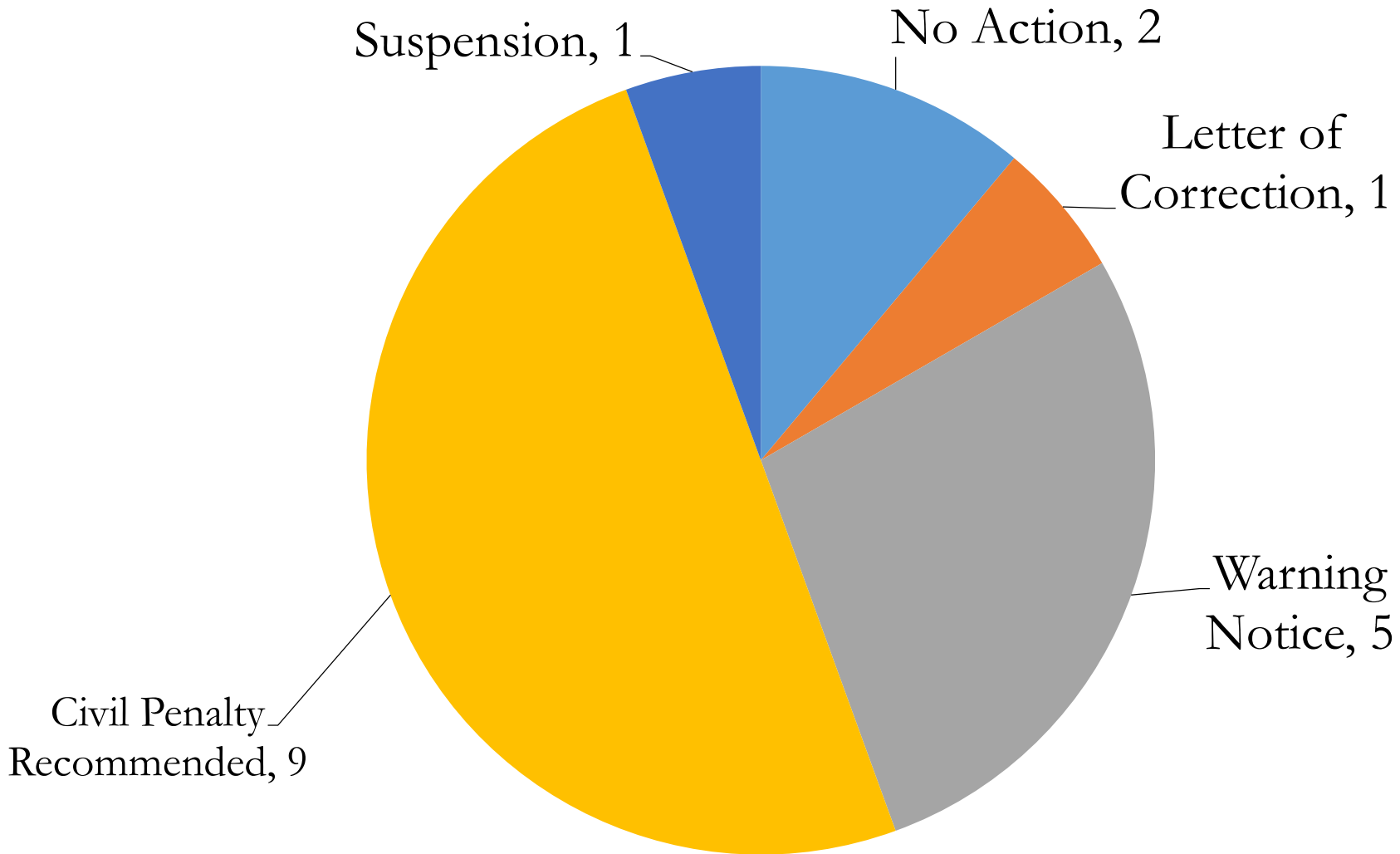


**CURRENT FEDERAL
ENFORCEMENT**

JULY 2014- DECEMBER 2014



JULY 2014- DECEMBER 2014



Fall 2015 – the FAA said there were 20 enforcement actions going on.

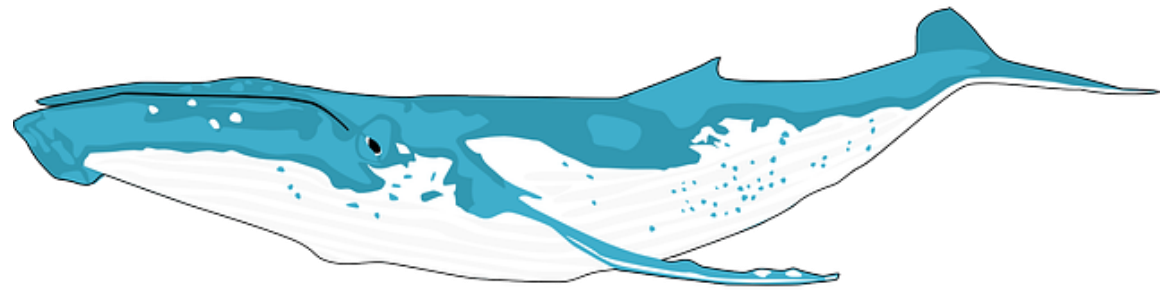
SKYPAN



- Flying in downtown New York and Chicago many times.
- \$1.9 million dolla-to-make-ya-holla fine!
- Fighting it out since 2012.
- Received 333 exemption in 2015.
- FAA subpoenaed Skypan and his client. Client turned over the documents.
- Was charged with violating regulations that would normally be exempted under a Section 333 exemption.



OTHER FEDERAL AGENCIES

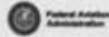


- National Oceanic and Atmospheric Administration – Sent a warning letter to a guy on Youtube who took pictures of whales.
- Veterans Affairs- Man was fined for filming VA hospital.
- Nation Park Service- Pirker and many others have been fined. The NPS issued some memos regarding the taking off and landing of drones in parks.
- Department of the Interior has warning individuals flying in a wildlife habitat.
- Federal Fish and Wildlife confiscated a memory card from a guy at a National Wildlife Refuge.

**CURRENT STATE & LOCAL
ENFORCEMENT**

STATES UAS LAWS (2015)

- 45 states have considered 153 bills related to drones. Seventeen states—Arkansas, Florida, Hawaii, Louisiana, Maine, Maryland, Michigan, Mississippi, Nevada, New Hampshire, North Dakota, Oregon, Tennessee, Texas, Utah, Virginia and West Virginia—have passed legislation.
- Since there are not many drone laws created, police are repurposing crimes to encompass drones.
 - Trespassing
 - Noise/disturbing the peace
 - Careless and reckless behavior (New York's favorite)



LAMC Sec 56.31

LAPD Law Enforcement Guide

1. Determine type of activity

A. Civil & Public Use

- 1) No COA-RFC/Arrest 56.31
- 2) Following COA-No Action

B. Model Aircraft Category

- 1) RFC/Arrest for:
 1. Interfering w/ Manned Aircraft
 2. Above 400'
 3. Within 5 mi of an Airport
 4. Not flying Line-of-sight
 5. Flying closer than 25ft
 6. Between Sunset & Sunrise
 7. Other FAR Violation

2. Book Evidence

- 1) Drone
- 2) Control Unit (w/ Phone or Tablet)
- 3) Payload (camera or video device)

CITY OF LOS ANGELES

- Two are being prosecuted
- At least 5 have been charged.
- Police are going around and arresting if you violating the first page.



Federal Aviation Regulations

FAR 91.13

Careless or reckless operation.

(a) Aircraft operations for the purpose of air navigation. - No person may operate an aircraft in a careless or reckless manner so as to endanger the life or property of another.

(b) Aircraft operations other than for the purpose of air navigation. - No person may operate an aircraft, other than for the purpose of air navigation, on any part of the surface of an airport used by aircraft for air commerce (including areas used by those aircraft for receiving or discharging persons or cargo), in a careless or reckless manner so as to endanger the life or property of another.

FAR 91.119

Minimum safe altitudes.

General Except when necessary for takeoff or landing, no person may operate an aircraft below the following altitudes:

(a) Anywhere. An altitude allowing, if a power unit fails, an emergency landing without undue hazard to persons or property on the surface.

(b) Over congested areas. Over any congested area of a city, town, or settlement, or over any open air assembly of persons, an altitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft.

(c) Over other than congested areas. An altitude of 500 feet above the surface, except over open water or sparsely populated areas. In those cases, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure.



LAMC Sec 63.44 B. 8.

B. Within the limits of any park or other City-owned Harbor Department designated and controlled property within the City of Los Angeles:

No person shall land, release, take off or fly any balloon, except children toy balloons not inflated with any flammable material, helicopter, parakite, hang glider, aircraft or powered models thereof, except in areas specifically set aside therefor.

SO WHY DID I MENTION ALL THAT?

- Proper vetting to find legal drone operators would, *generally*, prevent many problems in this area from federal, state, or local law enforcement.
- *Generally*, law enforcement is trying to find people NOT complying with what the FAA requires.
- This means you have a lower risk of problems.

LITIGATION

- 2014
 - -Pirker - ALJ & NTSB but settled.
 - -Texas Equusearch Case- (DC Circuit Court of Appeals)
 - -Skypan, AMA, et. al. sued FAA in DC Circuit over 2014 interpretation. 2 of the 3 cases were held in abeyance (“holding pattern”).
- 2015
 - -Epic v. FAA (DC Circuit) saying the FAA needs to protect privacy
 - -FAA issued \$1.9 million enforcement against Skypan
 - -Taylor v. FAA (DC Circuit) 3 cases & Tech Freedom v. FAA.
- 2016
 - -Boggs v. Meredith – Fed district court in KY. Declaratory action on where navigable airspace is.
 - -The “next big one” is brewing.

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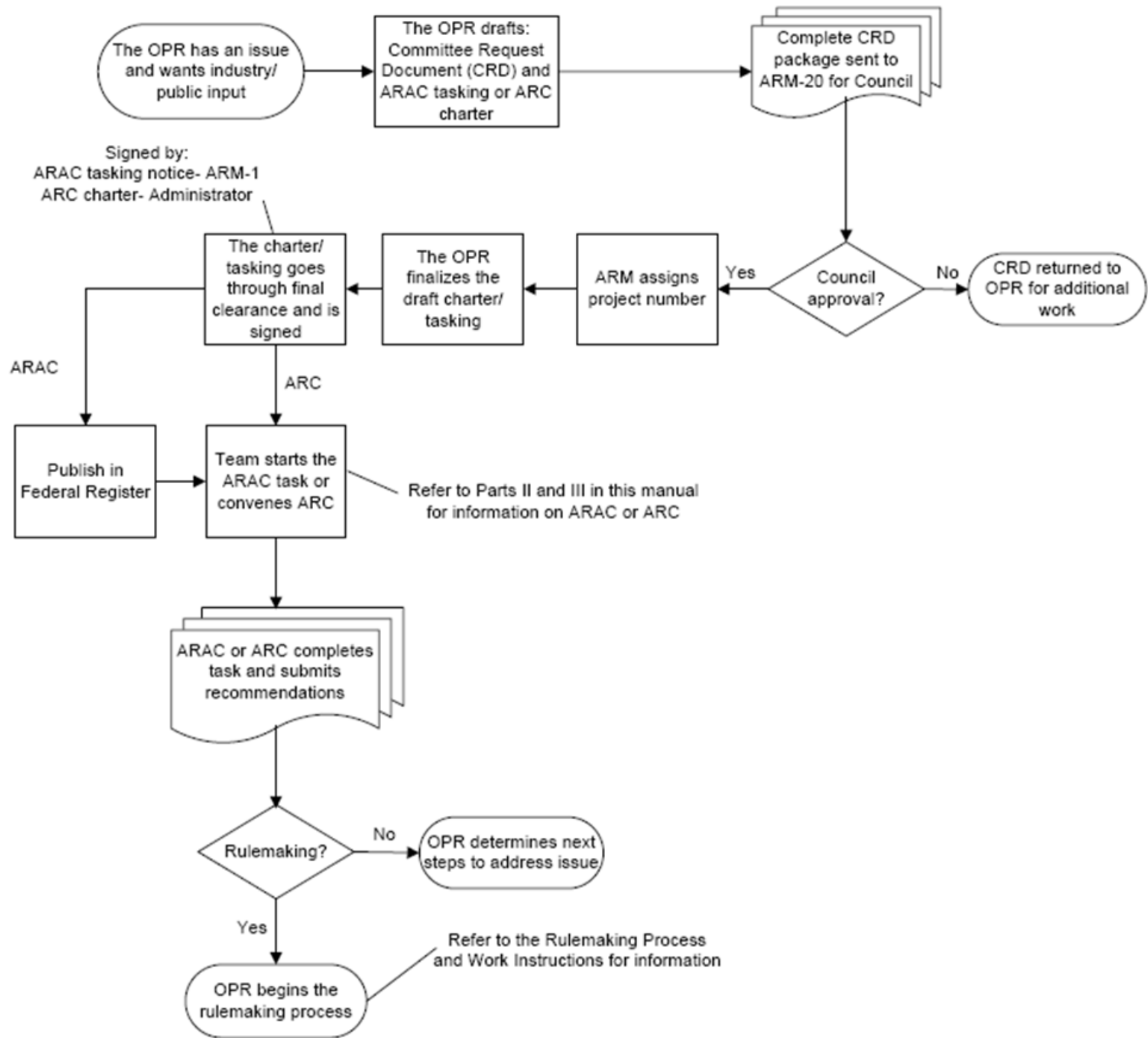
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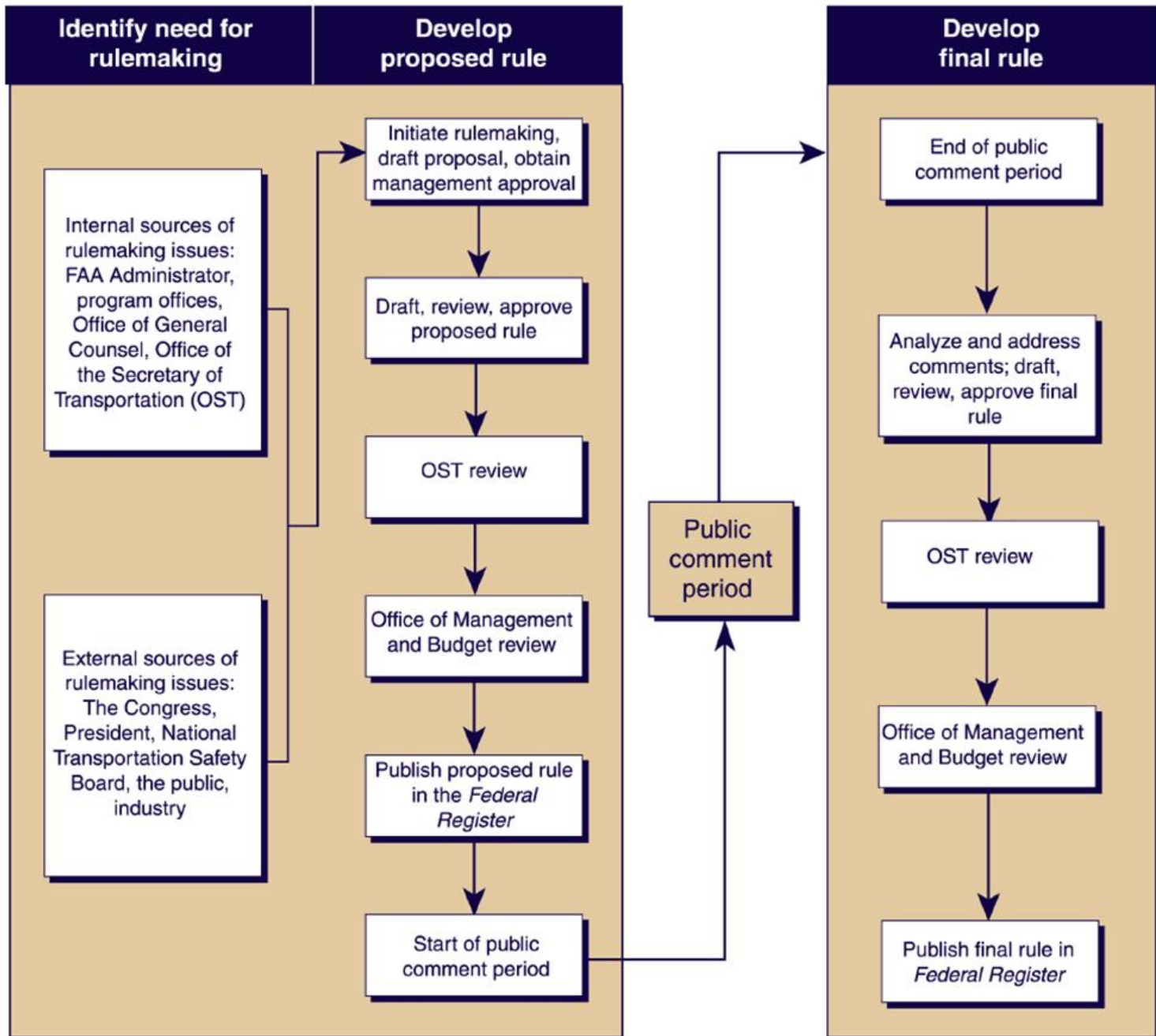
**THE FAA'S PROPOSED
COMMERCIAL DRONE
RULES**

THE LAWS APPLYING TO CREATING REGULATIONS

- The Administrative Procedures Act,
- The Federal Register Act,
- The Federal Advisory Committee Act,
- The Regulatory Flexibility Act,
- The Congressional Review Act,
- And many more!
- We also have executive orders such as EO 12,866 and EO 13,563.
- Office of Management and Budget has A-4
- Department of Transportation has Order 2100.5







**ESTIMATE:
6 MONTHS –
3 YEARS FROM
NOW**

SUMMARY OF THE IMPORTANT PARTS OF THE NPRM

- A UAS operator passes a knowledge test with some of the similar areas as the private pilot knowledge test.
- Unmanned Aircraft certificate with a small UAS rating. (drone pilot license)
- 500 feet AGL height
- Aircraft do not need airworthiness certificates.
- Class B, C, D, and E airspace with ATC permission. This means airports are NOT as much of a problem as they are now.
- No 500ft buffer zone mentioned!
- No 24 hour wait NOTAM requirement.

**OPERATIONS NOT COVERED BY
107 BUT COULD BE DONE BY A
SPECIAL 333**

- Operations not allowed under Part 107:
- Night
- Moving Vehicle
- 500 ft+
- 55 pound +
- 100 MPH +

Services:

- Public COA's
- Section 333 Exemptions (closed-set & ground breaking ops. like night, moving vehicle, 55lb +)
- Problems with FAA or law enforcement?
- Near airport COA's
- Vetting of drone operators or setting up of drone operator vetting programs.
- Answering, "Can I or my drone operator do _____?"

THE END

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