

What the H... is going on at the FAA...?

An overview of the FAA regulatory landscape now and moving forward. Also: The Taylor decision and what it means for FAA regulations.

June 1, 2017

FAA Micro UAS Arc - Recommendations

- ARC recommended a performance based approach and rejected defaulting to a weight based cut-off
- Recommended creation of four categories of small UAS with increasing levels of hazard and increased restrictions
- **Type 1:** 250 grams (8.8 ounces) or less, fully capable of flying in congested areas and crowds of people
- **Type 2:** Weight over 250 grams and the UAS has less than a 1% chance of causing a serious injury based on impact energy transfer (4-5 pounds).
- **Type 3:** Manufacturer must certify that probable failure modes have 30% chance or less of producing a serious injury based on an analysis of impact energy. No flight over crowds and “limited operations over people”
- **Type 4:** Same injury standards as type 3, with flight over people permitted based on some type of risk mitigation procedures, higher piloting standards, or aircraft certification/requirements

Flight Over People Rule

- Promised by end of 2017
- Withdrawn from publication over FBI objections
- Must have remote ID solution before rule can be released
- FAA creating ARC to propose solutions to remote ID
- AUVSI assisted with call for papers on technical solutions
- Announcement imminent
- Expect short timeline for recommendations

Taylor v. Huerta - Aircraft Registration

- In December 2015 the FAA issued a final rule requiring owners of all small unmanned aircraft, including model aircraft, to register with the FAA, 14 CFR Part 48.
- The Registration Rule requires model aircraft owners to provide their names, physical, mailing, and email addresses
- The Registration Rule also created an online platform for registration, establishing a \$5 per-individual registration fee, setting compliance deadlines, and requiring all small unmanned aircraft to display a unique identifier number
- 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.

Taylor v. Huerta - Section 336

- The Administrator of the Federal Aviation Administration may not promulgate any rule or regulation regarding a model aircraft, or an aircraft being developed as a model aircraft, if—
 - (1) the aircraft is flown strictly for hobby or recreational use;
 - (2) the aircraft is operated in accordance with a community based set of safety guidelines and within the programming of a nationwide community-based organization;
 - (3) the aircraft is limited to not more than 55 pounds unless otherwise certified through a design, construction, inspection, flight test, and operational safety program administered by a community-based organization;
 - (4) the aircraft is operated in a manner that does not interfere with and gives way to any manned aircraft; and
 - (5) prior notice to an airport if flying within 5 miles of an airport

Taylor v. Huerta - Decision

- "In short, the 2012 FAA Modernization and Reform Act provides that the FAA "may not promulgate any rule or regulation regarding a model aircraft," yet the FAA's 2015 Registration Rule is a "rule or regulation regarding a model aircraft." Statutory interpretation does not get much simpler. The Registration Rule is unlawful as applied to model aircraft."
- Rejected FAA's Arguments based on 49 U.S.C. §§ 44101, 44103. The FAA claimed that the Registration Rule is not a new requirement at all, but merely a "decision to cease its exercise of enforcement discretion." FAA Br. 20.
- "Congress is of course always free to repeal or amend its 2012 prohibition on FAA rules regarding model aircraft. Perhaps Congress should do so. Perhaps not. In any event, we must follow the statute as written."

FAA Reauthorization Act

- Congress passed a 14-Month extension of the FAA Authorization on July 13, 2016 with 24 pages dealing with UAS
- Key provisions require the FAA to:
 - Create industry standards for remote identification of UAS
 - Facilitate UAS operations in support of wildfires and utility outages
 - Conduct pilot projects for counter UAS technology and UAS Traffic Management (UTM)
 - Create a process to expedite emergency approvals for UAS used for disaster recovery
 - Create restrictions for UAS operations near critical infrastructure
 - Accelerate approval of day/night beyond visual line of sight operations for critical infrastructure inspections
 - Create and publish a comprehensive RE&D plan
 - Assess the risks of UAS implementation in the US
 - Mandate inclusion of safety information with small UAS sold in the US
 - Establish a \$20K fine for interfering with wildfire suppression

Part 107 Launch

- Self contained regulatory system for UAS under 55 pounds
- Replaces most of the ad hoc Exemption/COA system
- Part 107 Operators Certificate
- Visual Line of Sight Operations
- Flight restrictions tied directly to the type of airspace you wish to fly in
- Possibility of obtaining waivers for more complicated airspace
- No requirement for a carrier certificate

Waivers

- Waivable sections of 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)

Waivers - Form 7711-2

- Form 7711-2 will be used for Waivers:
 - Name of organization
 - Name of responsible person
 - Permanent house number and street or route number, city, state and ZIP code, telephone number and mailing address
 - FAR section and number to be waived
 - Detailed description of proposed operation (Attach supplement if needed)
 - Beginning (date and hour) and Ending (date and hour)
 - Aircraft make and model
 - Pilot's name
 - Certificate number and rating
 - Certification - I CERTIFY that the foregoing statements are true

Waivers

- 926 issued as of May 30, 2017
- Most are Night Operations and/or Airspace Authorizations
- You must "**provide justification that the operation can be safely conducted by satisfying the performance-based standards**" listed on the FAA UAS office Website.
- You must provide a complete description of the proposed operation and justification for the waiver that meets the specific criteria for that rule

Operations With Less Than 3 Statute Mile Flight Visibility (§ 107.51(c))

- Must use one or more VO;
- sUA must not be operated with less than 1 statute miles visibility, as observed from the control station
- sUA must remain 100 feet below clouds
- sUA must be operated within 0.5 nautical miles of the remote PIC
- No higher than 200 feet above ground level (AGL) when within 3 statute miles of any airport
- No higher than 100 feet AGL when within 2 statute miles of any airport
- No operations under this Waiver may be conducted closer than 2 statute miles of any airport when within 30 degrees either side of the extended runway centerline
- Vehicle must use highly visible exterior colors
- Notice to Airmen (NOTAM) must be filed

Operations Higher Than 400 feet AGL (§ 107.51(d))

- sUAS operations may be conducted above 400 feet AGL, not to exceed 600 feet AGL.
- The sUAS ground station must be equipped to display sUA altitude, position, attitude, and direction of flight information.
- The sUA must be equipped with high visibility markings that are visible during the daytime from a distance of no less than one statute mile.
- Not less than 24 hours prior to conducting operations that are the subject of this Waiver, a Notice to Airmen (NOTAM) must be filed.
- Operations conducted under this Waiver are limited to the area described in the waiver application.

Operating from a Moving Land Or Water-borne Vehicle (§ 107.25)

- PIC and the driver must have general knowledge of the topography and environment for the planned flight route and have briefed the intended flight to address matters such as vehicle route, speeds, and obstacles
- Vehicle operation must not interfere with the duties and responsibilities of the remote PIC
- The manipulator of the sUAS controls must be the holder of a remote pilot certificate with a sUAS rating
- Any electronic communication conducted by the driver during operations under this Waiver must be by use of a hands-free device
- The lost link procedures and contingency plans must account for the dynamic area of operation
- Plans and procedures must include a safe flight termination method or a safe lost link flight path around all obstacles, non-participating aircraft, persons, or vehicles on the ground

PIC Using First Person View, In Lieu Of Visual Line Of Sight (§ 107.31)

- sUAS operations may be conducted with the remote PIC using first person view, in lieu of visual line of sight, provided:
 - PIC must be able to determine that the Command and Control system and communications equipment have performance capabilities that meet the planned ranges for the proposed operation;
 - PIC must be able to use the cameras for visual navigation, maintain situational awareness to avoid collisions with obstructions and non-participating human beings, or to yield right-of-way in accordance with § 107.37;

sUAS Operations Over Human Beings (§ 107.39)

- The holder of this Waiver has the responsibility to train each new pilot in their operational procedures, as described in the waiver application, including:
 - emergency contingencies and in the special provisions of this Waiver;
 - all training for any individual directly participating in the operation of the sUA must be documented and available to the Administrator upon request;
- PIC must be proficient in the safe operation of the sUA
- **No operations under this Waiver are permitted after modification to the sUAS design or performance**
- Repair and replacement of damaged components is allowed with a replacement part that is exactly the same as the original; no substitutions are allowed without FAA approval
- sUAS must operate no closer than 10 feet from any non-participating human being

Operation of Multiple sUAS (§ 107.35)

- Prior to conducting operations that are the subject of this Waiver, operational area obstacles and boundaries must be identified so as to avoid collision with, or damage, to property
- An individual system failure must not interfere with the operation of any other sUA or cause incidents, accidents, or loss of control involving any other sUA that are subject to this Waiver
- Operations are only permitted within a location closed to the general public, with a secured perimeter
- Operations using multiple sUA are limited to no more than 6 sUA at a time and will not exceed 30 knots groundspeed (35 mph)
- Prior to conducting operations that are the subject of this Waiver, the flight controller and the associated flight control system capability for each aircraft must operate properly
- A Notice to Airmen (NOTAM) must be filed no less than 24 hours prior to conducting operations that are the subject of this Waiver

FAA Advisory Groups

- Unmanned Aircraft Safety Team
 - Announced August 2, 2016
 - First meeting held October 18-19 in Washington
 - The UAST is modeled on the Commercial Aviation Safety Team (CAST) and General Aviation Joint Steering Committee (GAJSC), and will use a data-driven, consensus-based approach to analyze safety data and develop specific interventions that will mitigate the root causes of accidents.
- Drone Advisory Committee
 - Announced May 4, 2016 at AUVSI
 - First meeting: September 16, 2016 - Washington DC
 - Last meeting: May 19, 2017 - Washington DC

State Laws By Topic - 2017 (38 States Considering)

- State use of Drones or State money for Drones - 4
 - Alaska, North Dakota, Utah, Wyoming
- Privacy, Harassment, Stalking, Surveillance - 4
 - Indiana, South Dakota, Utah (interference with livestock), Virginia
- Interference with First Responders - 3
 - Indiana, Montana, Virginia
- Local Preemption - 3
 - Georgia, Montana, Utah
- Critical Infrastructure and Large Events - 2
 - Nevada, South Dakota
- "Me Too" Laws - 1
 - South Dakota
- Weaponization of UAS - 1
 - Utah
- Regulation of Model Aircraft - 1
 - Utah

Notable Actions - Georgia

- Any ordinance, resolution, regulation, or policy of any county, municipality, or other political subdivision of this state regulating the testing or operation of unmanned aircraft systems shall be deemed preempted and shall be null, void, and of no force and effect; provided, however, that a county, municipality, or other political subdivision of this state may:
 - 1) Enforce any ordinance that was adopted on or before April 1, 2017;
 - 2) Adopt an ordinance that enforces Federal Aviation Administration restrictions;
 - 3) Adopt an ordinance that provides for or prohibits the launch or intentional landing of an unmanned aircraft system from or on its public property except with respect to the operation of an unmanned aircraft system for commercial purposes

Notable Actions - Indiana

- (a) This section applies only to a sex offender
- (b) A sex offender who:
 - 1) knowingly or intentionally operates an unmanned aerial vehicle for the purpose of:
 - a) Following
 - b) Contacting; or
 - c) Capturing images or recordings of; one (1) or more other individuals; and(2) is subject to a condition of probation or parole
 - 2) That prohibits the sex offender from following, contacting, or capturing images or recordings of one (1) or more other individuals
- The offense is a Level 6 felony if the person has a prior unrelated conviction under this section.

Notable Actions - Utah

- (2) An individual operating an unmanned aircraft shall:
 - (a) maintain visual line of sight of the unmanned aircraft . . .
 - (b) ensure that the ability described in Subsection (2) is exercised by either:
 - (i) the operator of the unmanned aircraft; or
 - (ii) a visual observer.
- (3) An individual may not operate an unmanned aircraft in Class B, Class C, or Class D airspace or within the lateral boundaries of the surface area of Class E airspace designated for an airport unless the operator of the unmanned aircraft has prior authorization from air traffic control.
- (5) An individual may not operate an unmanned aircraft system:
 - (a) from a public transit rail platform or station; or
 - (b) (i) under a height of 50 feet within a public transit fixed guideway right-of-way; and
 - (ii) directly above any overhead electric lines used to power a public transit rail vehicle.

Notable Actions - Utah

- (7) An individual may not operate an unmanned aircraft at an altitude that is higher than 400 feet above ground level unless the unmanned aircraft:
 - (a) is flown within a 400-foot radius of a structure; and
 - (b) does not fly higher than 400 feet above the structure's immediate uppermost limit.
- (8) (a) An individual who violates this section is liable for any damages that may result from the violation.
 - (b) A law enforcement officer shall issue a written warning to an individual who violates this section who has not previously received a written warning for a violation of this section.
 - (c) Except as provided in Subsection (8)(d), an individual who violates this section after receiving a written warning for a previous violation of this section is guilty of an infraction.
 - (d) An individual who violates this section is guilty of a class B misdemeanor for each conviction of a violation of this section after the individual is convicted of an infraction or a misdemeanor for a previous violation of this section.

Contact Information

For assistance in any issues regarding UAS Operation
or if you have any questions, please contact us:

Mark Dombroff
Dentons US LLP
1676 International Drive, PH
McLean, VA 22102
Phone (703) 336-8700
mark.dombroff@dentons.com

Mark McKinnon
Dentons US LLP
1676 International Drive, PH
McLean, VA 22102
Phone (703) 336-8708
mark.mckinnon@dentons.com

Jim Williams
JHW Unmanned Solutions LLP
1100 Round Pebble Lane
Reston, VA 20194
Phone (703) 439-9648
Jim@jhwunmannedsolutions.com

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Dentons US LLP
1676 International Drive
Penthouse
McLean, VA 22102-4832
United States

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