



Presentation to the
[NAME WITHHELD]
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THE LAW OF UNMANNED AIRCRAFT OPS IN THE US Past-Present-Future

Date	Event
Ancient History- Present	<p>Public Aircraft status.</p> <p>Federal law allows the FAA to govern: Airspace, Airmen and Aircraft. When another government instrumentality is overseeing airworthiness, the FAA relinquishes regulatory oversight. Aircraft airworthiness governed by other federal agencies (including military) and state instrumentalities are not governed by the FAA.</p>
	<p>Prior to 2012, A great deal of research and development in UAS design and operation was done by state universities (because they are government instrumentalities) using the public aircraft rules. The FAA did not certify the UAS, nor the operators, but the FAA would issue a certificate of waiver or authorization (COA) specifying the flight rules and restrictions for these operations. Often these universities teamed with private companies putting the UAS into “research” service doing inspections and surveying at private facilities, for example. With the passage of the FAA Modernization and Reform act of 2012 (FMRA), the FAA severely restricted the use of public aircraft and COAs in service to private companies.</p>

1981	Modeler’s Exemption. FAA first published guidelines on model aircraft operation in the form of Advisory Circular AC 91-57, a one-page statement calling for prudent self-governance by aircraft model operators.
2004	The first GoPro Hero is sold. Lightweight video cameras and lithium batteries were truly the catalyst for UAS growth.
2012	FAA Modernization and Reform Act (FMRA) is passed. The FMRA directed the FAA to integrate unmanned aircraft into the national airspace by 2015.
	Section 336 of the FMRA states: “... 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 ... the aircraft is flown strictly for hobby or recreational use ... in accordance with a community based set of safety guidelines and within the programming of a nationwide community-based organization ... in a manner that does not interfere with and gives way to any manned aircraft...”
	Early legal debate on FMRA dealt with privacy, not commercial usage.
12/2013	Amazon (Bezos) announces plans for UAS package delivery.
03/2014	FAA v. Pirker. Pirker’s 15 minutes of fame, finding an FAA Administrative Law Judge to agree that his operation was not subject to FAA oversight. This was reversed in November 2014 by the NTSB, finding “any contrivance invented, used or designed to navigate, or fly in, the air” is subject to FAA oversight.
09/2014	First Section 333 Exemption Granted to Aerial MOB. The first regulatory avenue to permit employment of UAS in a non-recreational (commercial) environment was through an exemption issued by the FAA pursuant Section 333 of the FMRA. Section 333 exemption includes a COA of the type that the FAA issues in the public aircraft sector. It establishes very specific parameters on how a particular UAS can and will be operated, inspected, tested and maintained. A Section 333 exemption is: (i) specific to the applicant person or entity, (ii) specific to the UAS make and model in the exemption, and (iii) specific to the operating parameters stated in the exemption.
	To date, 5,309 Section 333 petitions have been granted.
02/2015	Proposed Rules for sUAS. New regulations would be FAR Part 107. • Less than 55 lbs. (25 kg).

	<ul style="list-style-type: none"> • Visual line-of-sight (VLOS) only • Small unmanned aircraft may not operate over any persons • Daylight-only operations • Maximum airspeed of 100 mph • Maximum altitude of 500 feet above ground level • Operations in Class G airspace are allowed without ATC permission • No airworthiness standards apply. • All aircraft marketing requirements must be complied with • “Operators” must pass FAA knowledge test.
04/2015	Comments on the sUAS rule were received and are closed and those submitted are being considered.
10/2015	Commercial Pilot Suffers Suspension for UAS Operation. A commercial pilot operated an unregistered UAS over spectators at a hot dog eating contest at Coney Island, NY. He busted just about every rule in the book and earned a 90 day suspension.
12/2015	FAA Issues Interim Final Rule on Registration. FAA’s “hands-off” mandate regarding hobbyists does not apply to registration. Unmanned aircraft weighing less than 55 pounds and more than 0.55 pounds (250 grams) on takeoff, including everything that is on board or otherwise attached to the aircraft and operated outdoors in the national airspace system must register.
04/2016	FAA Blanket COA. To streamline the Section 333 exemption process, the FAA released a “safe harbor” COA which established permissible flight operations for any holder of a Section 333 exemption.
04/2016	Micro-UAS Report Issued. The Micro Unmanned Aircraft Systems Aviation Rulemaking Committee (ARC) issued recommendations to the FAA for a sub-class of UAS with reduced ballistic risk and commensurate reduced operational oversight. The primary thrust of the M-UAS standard is to permit use over people based on a physics-based standard (F=MV). Four micro categories were proposed, the smallest being 250 grams or less. Think: shampoo bottle or big hamster (flying).
Soon?	Part 107 Finalized. The primary differences (from Section 333 exemptions) are: (1) no pilot’s license under the Rule, (2) self-certifying medical, (3) no requirement for observers, (4) 500 feet altitude (not 400), (5) no NOTAM filing.

THE FUTURE

Package delivery.	Nothing in current or proposed US law even comes close to permitting package delivery, unless the delivery is to a location within unaided sight of its origin. For the foreseeable future, commercial UAS ops are primarily for visual enhancement and spectrum scanning.
	The sUAS Rule took two years to finalize. Unmanned package delivery will take much longer.
State & Local Law	As a general rule, regulation of aviation and airspace is reserved to the federal government (pre-emption). However, the realities of UAS operations (hobbyist and commercial) make it impossible for the FAA to police lawful operations and to address unlawful activity. Moves are underway to carve out a state/local role.

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