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STATES RIGHTS . . . OR JUST WRONG?

A DISCUSSION OF DRONE LAWS AND NATIONAL SECURITY THROUGH THE LENS OF FEDERAL PRE-EMPTION

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That drones present a genuine national security threat is no secret. Missing from most analysts' radar, however, is how the lack of a federal regulatory scheme assimilating drones into the national airspace is, in and of itself, a threat to our security. The current patchwork of state and local legislation creates conflicts and leaves gaps in regulation to the detriment of the safe inclusion of drones into the national airspace. These legal and policy conflicts and gaps also exist between the states and our Federal government creating ambiguity and a lack of cohesiveness. Until the FAA releases a comprehensive regulatory framework, integrating appropriate roles for state and local government agencies, the country is ill prepared to respond to emergencies involving drones and risks compounding potential disasters. This article reviews the current statutory collage through the lens of the federal preemption doctrine to discern the state of the law on drones and its potential impacts on national security.

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INTRODUCTION

The skies are filled with drones. Drones have interfered with firefighting efforts in California, crashed-landed at prominent sporting venues, and been routinely spotted in the same airspace by manned-aircraft.[1] A drone even landed on the White House lawn.[2]

[1] Registration and Marking Requirements for Small Unmanned Aircraft, 80 Fed. Reg. 78, 594 (Dec. 16, 2015) (to be codified at 14 C.F.R. pts. 1, 45, 47, 48, 91, and 375).

[2] Interview by Fareed Zakaria with Barack Obama, President, United States

And more drones are on the way. In 2013, the leading drone manufacturing company acquired $131 million in sales revenues.[3] They earned an estimated $500 million the next year. The annual global drone revenue for 2016 estimates to reach one billion dollars.[4] Drones are projected to become a multi-billion-dollar industry.[5]

As drones proliferate across the country, powers once reserved for the nation's air forces, such as mobility, speed, range and altitude, are within the purview of radio-controlled aircraft hobbyists.[6] Yet the regulatory landscape has failed to keep pace with technological development. Federal Aviation Administration ("FAA") rulemaking to assimilate drones into the national airspace ("NAS") has lagged. In response, the states have attempted to fill the void. The result is a patchwork of conflicting guidance, coupled with gaping legal holes.

The purpose of this article is not to review the potential threat to national security posed by drones, but rather to posit that in the wake of the democratization of airpower to individual users, the lack of clear regulation is, in and of itself, a threat to national security. As will be discussed, the current patchwork of state legislation creates conflicts and leaves gaps in regulation to the detriment of the safe inclusion of drones into the NAS. These legal and policy conflicts and gaps exist, not just between the states, but also between the states and our Federal government creating

(Jan. 27, 2015), http://cnnpressroom.blogs.cnn.com/2015/01/27/presidentobamainterviewedbycnnsfareedzakariainindiaforcnnsnewday/.

[3] Alan Levin, *Santa Delivering Drones for Christmas Amid Rising Safety Concern*, BLOOMBERG BUS. (Dec. 17, 2014), http://www.bloomberg.com/news/articles/2014-12-17/santa-delivering-drones-for-christmas-amid-rising-safety-concern.

[4] Gail Whitney, *3 Drone Stocks to Watch in 2016*, UAV EXPERT NEWS (Dec. 22, 2015), http://www.uavexpertnews. com/3-drone-stocks-to-watch-in-2016/.

[5] Clay Dillow, *What Is The Drone Industry Really Worth?*, FORTUNE (Mar. 12, 2013), http://fortune.com/2013/03/ 12/what-is-the-drone-industry-really-worth/.

[6] *Unmanned Aerial System Threats: Exploring Security Implications and Migration Technologies: Hearing before the Subcomm. on Oversight and Mgmt. Efficiency of the Comm. on Homeland Security*, 114th Cong. 15-16 (2015) (testimony of Maj Gen. Fred Roggero, USAF Ret.).

ambiguity and a lack of cohesiveness, including in response to emergencies such as terrorist attacks. Thus, this article reviews federal drone regulations and state statutes through a pre-emption lens, to discern the current state of the law and its potential impacts on national security.

Part I begins this analysis with a brief overview of federal pre-emption law. Part II continues on to review current federal aviation laws and proposed FAA regulations relevant to drone use in the NAS. Part III addresses state laws relating to drone use, highlighting topics rightly regulated by the states and those normally reserved for federal action under pre-emption doctrine. Part IV, navigates the legal seams, conflicts, and gaps to illustrate how the ensuing legal ambiguity creates a veritable safe-haven for bad actors. Finally, Part V concludes by summarizing the problem and suggesting that a comprehensive federal approach to drone regulation is the best approach to protect our nation's security.

I. FEDERAL PRE-EMPTION LAW

A. Pre-emption Doctrine

In *McCulloch v. Maryland*, the Supreme Court determined that Article VI, clause 2, of the United States Constitution, commonly referred to as the "Supremacy Clause," enshrined the idea that all valid laws enacted by Congress cannot be impeded, burdened or contradicted by state law.[7] Pre-emption is the concept that inconsistent state laws will fall, null and void, in light of existing federal law on the same issue. Federal regulations are considered to be an extension of Congressional legislative intent and have the same pre-emptive effect as enacted statutes.[8] However, any pre-emption analysis begins with the "assumption that the historic police powers

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[7] McCulloch v. Maryland, 17 U.S. 316, 405-06 (1819).

[8] *See* Nat'l Meat Ass'n v. Harris, 132 S. Ct. 965, 970-71 (2012); Fid. Fed. Sav. & Loan Ass'n v. de la Cuesta, 458 U.S. 141, 153 (1982); United States v. Shimer, 367 U.S. 374, 381-82 (1961).

of the States [are] not to be superseded by . . . Federal Act unless that [is] the clear and manifest purpose of Congress."[9]

The intention of Congress to pre-empt exists in a number of ways. The courts have identified three different ways federal pre-emption occurs: express, conflict, and field pre-emption. Express pre-emption occurs when Congressional intent to pre-empt is "explicitly stated in the statute's language."[10] This puts the states on clear notice of federal intent to occupy an area of law and to prevent the enforcement of any state or local laws to the contrary. Conflict pre-emption exists when a state law impedes, burdens, or controverts the intent of the federal law, or when compliance with both federal and state law becomes impossible.[11] In such a case, any state law that conflicts with a valid federal law is void. When neither express nor conflict pre-emption are present, state law is still pre-empted when a federal regulatory scheme is "so pervasive as to make reasonable the inference that Congress left no room for the states to supplement it," or when "the Act of Congress may touch a field in which the federal interest is so dominant that the federal system will be assumed to preclude enforcement of state laws on the same subject."[12] In these instances, courts conclude that field pre-emption applies. Likewise, any state law existing in the field addressed by the federal scheme is void.

B. As Applied to Aviation

With passage of the Federal Aviation Act of 1958 ("Aviation Act"), the United States declared exclusive sovereignty over its NAS and set the course for field pre-emption of its safe and efficient use.[13] The Aviation Act established the FAA as the centralized authority with the power to frame the rules for operating in the NAS.[14] Even

[9] Rice v. Santa Fe Elevator Corp., 331 U.S. 218, 230 (1947).
[10] Cipollone v. Liggett Group, 505 U.S. 504, 516 (1992) (quoting Jones v. Rath Packing Co., 430 U.S. 519, 525 (1977)).
[11] *See Fid. Fed. Sav. & Loan Ass'n*, 458 U.S. at 153.
[12] *See Rice*, 331 U.S. at 230.
[13] *See* Federal Aviation Act of 1958, Pub L. No. 85-726, 72 Stat. 731 (1958); 49 U.S.C.S. § 40103(a)(1) (2016).
[14] United States v. Christensen, 419 F.2d 1401, 1404 (9th Cir. 1969); Air Line Pilots Ass'n v. Quesada, 276 F.2d 892, 894 (2d Cir. 1960).

so, the courts have not held that the FAA has acted so comprehensively that the entire field of aviation is pre-empted, as the mere volume and complexity of the FAA's regulatory scheme is not alone determinative.[15]

The Supreme Court, in cases that have implicated the Aviation Act, has looked first to the FAA's overarching mandate to regulate the use of the navigable airspace, then specifically as to whether or not the FAA's regulations in each particular aspect of aviation demonstrate an intent to occupy that particular field.[16] For example, in *Burbank v. Lockheed Air Terminal, Inc.*, the Court interpreted the Aviation Act, as amended by the Noise Control Act of 1972 and its implementing regulations, to find that the City of Burbank, California was pre-empted from imposing a curfew on jets between the hours of 11:00 p.m. and 7:00 a.m.[17] The Court's multi-faceted examination of pre-emption led it to conclude that the local curfew was pre-empted, not only because the federal scheme for regulating aircraft noise was pervasive, but also because the collateral impacts of the regulations resulted in cluttering the NAS with flights during the final hours prior to the curfew which negatively impacted the FAA's core responsibility for operational safety.[18]

While the Aviation Act predominantly pre-empts the field of airspace navigation, operations, and safety, the Airline Deregulation Act of 1978 ("ADA") added an express pre-emption clause, prohibiting the states from enforcing any law "relating to rates, routes, or services" of any air carrier.[19] In 1988, the National Association of Attorneys General ("NAAG") adopted Air Travel Industry Enforcement Guidelines that purported to "explain in detail how existing state laws apply to air fare advertising and frequent flyer

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[15] Skysign Int'l v. Honolulu, 276 F.3d 1109, 1116-17 (9th Cir. 2002) (citing Hillsborough Cty. v. Automated Med. Labs., 471 U.S. 707, 718 (1985)); Morris v. Cessna Aircraft Co., 833 F. Supp. 2d 622, 630 (N.D. Tex. 2011).

[16] *See generally* Burbank v. Lockheed Air Terminal, Inc., 411 U.S. 624, 625-26, 631-34 (1973).

[17] *Id.* at 626.

[18] *Id.* at 627, 633.

[19] Morales v. Trans World Airlines, Inc., 504 U.S. 374, 378-79 (1992) (quoting Airline Deregulation Act of 1978, 49 U.S.C. § 1305(a)(1) (1978)).

programs."[20] These enforcement guidelines were the subject of *Morales v. TWA*, in which the NAAG argued that the express pre-emption clause in the ADA only precluded the states from prescribing actual rates, routes, or services, not the NAAG state-level advertising enforcement scheme. The Supreme Court disagreed and ruled the ADA language expressly pre-empted the guidelines because they "related to" rates, routes, or services. Justice Scalia, writing for the Court, referred to the ADA clause as "broadly worded," "deliberately expansive," and "conspicuous for its breadth," consistent with other similar pre-emption cases, and that such an interpretation by the NAAG would read the words "relating to" right out of the statute.[21]

Thus, with respect to aircraft in the NAS, precedent is clear that the FAA has broad authority to regulate matters affecting operational safety, including noise, as well as air carriers' rates, routes, and services. The FAA Modernization and Reform Act of 2012 ("FMRA") affirmed Congress' intent to apply this aircraft-centric precedent to drones. It also specifically codified the FAA's authority to incorporate drones into the NAS safely.[22] Prior to the FMRA, the FAA treated drones as falling under the umbrella classification of "aircraft," defined as "any contrivance invented, used, or designed to navigate, or fly in, the air."[23] In the FMRA, Congress reaffirmed that a drone is, in fact, an aircraft by defining an unmanned aircraft as "*an aircraft* that is operated without the possibility of direct human intervention from within or on the aircraft."[24]

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[20] *Id.* at 379.
[21] *Id.* at 384-85 (quoting a series of ERISA cases: Metro. Life Ins. Co. v. Massachusetts, 471 U.S. 724, 739 (1985); Pilot Life Ins. Co. v. Dedeaux, 481 U.S. 41, 47 (1987); Ingersoll-Rand Co. v. McClendon, 498 U.S. 133, 138 (1990); FMC Corp. v. Holliday, 498 U.S. 52, 58 (1990)).
[22] FAA Modernization and Reform Act of 2012, Pub. L. No. 112-95, 126 Stat. 72 (2012).
[23] Definitions, 49 U.S.C. § 40102(a)(6) (2012).
[24] Sec. 331(8), 49 U.S.C. § 40101 (2000) (emphasis added).

C. As Applied to Drones

The FMRA required the FAA to integrate commercial drones into the NAS by the end of 2015. However, between 2012 and 2015, the rules for drone use remained unclear. By the end of 2015, the FAA had still not finalized its drone regulations. For this reason, and as will be discussed below, the overwhelming majority of states launched their own regulations to address the explosion of public and private drone use, addressing issues ranging from law enforcement use of drones for criminal investigations to licensure and registration requirements. In response, the FAA Office of the Chief Counsel ("OCC") issued a statement addressing federal pre-emption as applicable to state drone laws.[25] Noting the established parameters of the federal regulatory framework charged to and established by the FAA for the safe and efficient use of the NAS, and highlighting the aircraft-centric cases discussed above, the FAA OCC provided examples of the types of state and local laws that they opined were consistent with a state's police powers. These examples included: requiring police to obtain warrants before using drones for surveillance; privacy issues, such as banning drone use for voyeurism; prohibitions for drone use in hunting; or similarly, any type of arming of drones. The OCC requested that state and local authorities consult with the FAA before legislating in the areas of operational drone restrictions on flight altitude, flight paths, or use of navigable airspace, as well as on any mandates on equipment and training related to drone aviation safety. While not a regulation in and of itself, the FAA OCC statement provides useful insight into areas the FAA believes are exclusively within their federal purview. We next turn to a discussion of the current state of the federal FAA rules and regulations applicable to drones in the NAS.

[25] *See* Fact Sheet, FAA OCC State and Local Regulation of Unmanned Aircraft Systems (UAS) 2 (Dec. 17, 2015) [hereinafter FAA Fact Sheet], http://www.faa.gov/uas/regulations_policies/media/UAS_Fact_Sheet_Final.pdf.

II. FEDERAL AVIATION LAWS AND REGULATIONS APPLICABLE TO DRONES

A. General Aviation Law

As discussed above, the FAA considers drones to be aircraft. Under current federal law, any aircraft operation in the NAS requires a certificated and registered aircraft, a licensed pilot, and operational approval.[26] Unfortunately, the realities of drone operations do not comport with these requirements in many respects largely because the drafters of the Aviation Act and subsequent implementing regulations did not contemplate the use of aircraft that lack an onboard pilot such as drones.

For example, the FAA's current processes for issuing airworthiness and airman certificates, which take between three and five years to complete, were designed to be used for manned aircraft and do not take into account the rate of technological change associated with drones.[27] Likewise, both private, and to a greater extent, commercial pilot certificates require extensive training in aeronautical and operational knowledge from an authorized instructor; specified hours of flight experience (40 for private; 250 for

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[26] *See* Operation of Aircraft, 49 U.S.C. § 44101 (2015) (civil aircraft registration); Prohibitions and Exemptions, 49 U.S.C. § 44711(a)(1) (2012) (civil airworthiness certificate); 49 U.S.C. § 44711(a)(2)(A) (airman certificate for airman on a civil aircraft being operated in air commerce). These requirements derive from the FAA's definition of "air commerce" and broad administrative and court interpretations of that term that extend coverage to a civil and commercial drone operations. 49 U.S.C. § 40102(a)(3); Administrator v. Barrows, 7 N.T.S.B. 5, 8-9 (1990); United States v. Healy, 376 U.S. 75, 84-85 (1964) (holding that "air commerce" is not limited to commercial airplanes); Hill v. NTSB, 886 F.2d 1275, 1280 (10th Cir. 1989) ("The statutory definition of 'air commerce' is therefore clearly not restricted to interstate flights occurring in controlled or navigable airspace."); United States v. Drumm, 55 F. Supp. 151, 155 (D. Nev. 1944) ("[A]ny operation of any aircraft in the air space either directly affects or may endanger safety in, interstate, overseas, or foreign air commerce.").

[27] FAA, FAA-2015-0150; Notice No. 15-01, Operation and Certification of Small Unmanned Aircraft Systems, DEP'T OF TRANSP. 24-28 (Feb. 15, 2015), https://www.faa.gov/regulations_policies/rulemaking/recently_published/media/2120-AJ60_NPRM_2-15-2015_joint_signature.pdf (notice of proposed rulemaking).

commercial); and a medical certificate, all of which seem unduly burdensome and unworkable for drone operations.[28] Most importantly, because drones do not have an onboard pilot, they conflict with the critical "see and avoid" requirement applicable to general aircraft.[29] This requires that during flight, *a pilot on board the aircraft* look out of the aircraft, and not be hindered by "cock-pit duties," to observe whether his and other aircraft are on a collision path.[30] It is clear from both the text and the history of the "see and avoid" language that "those provisions did not contemplate the use of technology to substitute for the human vision."[31] These are but a few of the significant mismatches between the needs of drone operators and current FAA regulations written with manned flight in mind. Because the current laws are not a perfect fit for drone operations in the NAS, and in accordance with the FMRA, the FAA is attempting to carve out new regulatory spaces for them.[32]

B. A Specific Regulatory Scheme for Drones

As with manned aircraft, the FAA categorizes drones as public, commercial or civil, or as model aircraft. As will be discussed below, public drone operations are well regulated; regulation of civil and commercial drones has been much more complex and continues to evolve; and a loose set of guidelines govern model aircraft.

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[28] *See* 14 C.F.R. §§ 61(e)-(f); 14 C.F.R. § 61.23(a)(3)(i); 14 C.F.R. § 61.23(a)(2).

[29] 14 C.F.R. § 91.113(b) requires aircraft operators to maintain vigilance "so as to see and avoid other aircraft" and aircraft collision-awareness problems by requiring that a pilot on board the aircraft look out of the aircraft during flight to observe whether other aircraft are on a collision path with his or her aircraft.

[30] Pilot Vigilance, 33 Fed. Reg. 10505 (proposed July 24, 1968) (to be codified at 14 C.F.R. pt. 91).

[31] U.S. DEP'T OF TRANSP., FAA Notice of Proposed Rulemaking to 14 C.F.R. §§ 21, 43, 45, 47, 61, 91, 101, 107, and 183, at 22 (Feb. 15, 2015).

[32] *See* FAA Notice of Policy: Unmanned Aircraft Operations in the National Airspace System, 27 Fed. Reg. 6689 (Feb. 13, 2007) (to be codified at 14 C.F.R. pt. 91) (the FAA acknowledges that regulatory standards need to be developed to enable current technology for unmanned aircraft to comply with Title 14 Code of Federal Regulations).

1. Public Drones

Public aircraft, and thus public drones, are defined as, "an aircraft operated by a governmental entity (including federal, state, or local governments, and the U.S. Department of Defense and its military branches) for certain purposes."[33] Public drones obtain access to operate within the NAS through FAA-approved Certificates of Waiver or Authorization ("COA"), an authorization for a specific activity that the FAA provides after operational and technical review of the drone mission.[34] In addition to a COA, public drones also have certification and registration requirements as well as the requirement that licensed pilots operate them.[35]

2. Civil and Commercial Drones

Civil drone operations include any activity that "does not meet the criteria for public Unmanned Aircraft System ("UAS") operations or model aircraft operations."[36] The FAA currently authorizes civil drone operations through a couple of different mechanisms: a grant of exemption to the airworthiness certificate requirement under Section 333 the FMRA ("Section 333 approval"); through a Special Airworthiness Certificate ("SAC") in the Experimental or Restricted Category; or through a special flight permit.[37] Section 333 allows the FAA to provide a case-by-case

[33] *See* 14 C.F.R. § 1.1 for the complete definition of public aircraft. Permissible public drone use is outlined in 49 U.S.C. §§ 40102(a)(41), 40125.
[34] *See Certificates of Waiver or Authorization (COA)*, FAA, http://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/systemops/aaim/organizations/uas/coa/ (last visited Apr. 17, 2016). The FAA has a web-based UAS COA Online System and the turn-time for approvals takes approximately sixty days. *Id.*
[35] 49 U.S.C. § 44101; Prohibitions and Exemption 49 U.S.C. § 44711(a)(1) (2012); 49 U.S.C. § 44711(a)(2)(A).
[36] *See Civil Operations (Non-Governmental)*, FAA, http://www.faa.gov/uas/civil_operations/ (last visited Apr. 17, 2016).
[37] FAA Modernization and Reform Act of 2012**,** Pub. L. No. 112-95, §333(a) (2012), Special Rules for Certain Unmanned Aircraft Systems (directed the Secretary of Transportation to determine whether drone operations posing the least amount of public risk and no threat to national security could safely be operated in the NAS and if so, to establish requirements for the safe operation of these systems in the NAS, prior to completion of the UAS comprehensive plan and rulemakings). *See also* 14 C.F.R. §§ 21.25(a), 21.197 (2011); FAA Order 8130, 34C (Aug. 2, 2013).

approval of commercial drone operations in low-risk and controlled environments prior to the finalization of FAA's Small UAS Rule. Examples of drone operations granted Section 333 approval include real-estate photography and movie cinematography. A time-limited SAC in the Experimental Category applies to research and development, crew training, and market surveys.[38] In the Restricted Category, there are two SAC options, the first of which is an aircraft accepted by an Armed Force of the United States and later modified for a special purpose. Also in the Restricted Category are aircraft used in special purpose operations, such as: agricultural operations; forest and wildlife conservation; aerial surveying; patrolling pipelines, power lines, and canals; weather control; aerial advertising; and "any other operation specified by the FAA."[39] Special flight permits for drones are limited, but include flight-testing of new production aircraft.[40]

In February 2015, the FAA issued a Notice of Public Rule-Making ("NPRM") or proposed rule for drones, up to fifty-five pounds, which would apply only to small commercial drones.[41] The NPRM addresses operational limitations such as daylight-only operations, use of visual observers, confined areas of operation, and visual-line-of-sight operations. Operators must comply with certification requirements that include registration with the Transportation Security Agency and a review for airman certificate applicants. The NPRM also includes aircraft requirements, specifically aircraft registration and marking "in order to maintain

Section 333 of Public Law 112-95 directed the Secretary to determine whether UAS operations posing the least amount of public risk and no threat to national security could safely be operated in the NAS and if so, to establish requirements for the safe operation of these systems in the NAS, prior to completion of the UAS comprehensive plan and rulemakings required by section 332 of Public Law 112-95. *See* Pub. L. No. 112-95, §333(a).

[38] 14 C.F.R. §§ 21.191-21.195.

[39] 14 C.F.R. §§ 21.25(a)(2), 21.25(a)(1).

[40] 14 C.F.R. § 21.197 (2010).

[41] *Small UAS Notice of Proposed Rulemaking (NPRM)*, U.S. DEP'T OF TRANSP. (2015) [hereinafter FAA NPRM] https://www.faa.gov/ uas/nprm/, ("[T]his proposed rule would…leave the existing public aircraft operations COA process unchanged.").

the safety of the NAS and ensure that they do not pose a threat to national security."[42] This Rule is not yet finalized.

3. Model Aircraft

FAA Advisory Circular ("AC") 91-57A governs "model aircraft," defined as drones used for "hobby or recreational purposes."[43] It applies only to non-commercial drones and requires conformity with "community-based" or nationwide safety guidelines. Pursuant to AC 91-57A, drone hobbyists must: not interfere with and must give way to manned aircraft; provide notice to Air Traffic Control if any use will be within five miles of an airport; stay out of restricted airspace areas; obey any FAA Temporary Flight Restrictions, and restrict flights below 400 feet.[44] The FAA, in its discretion, has not brought enforcement actions against model-aircraft operations that comply with AC 91-57A.[45]

Although AC 91-57A does not contain registration or certification requirements, the FAA has utilized the "emergency rule-making" provision of the Administrative Procedures Act[46] to issue an Interim Final Rule for Registration and Marking Requirements for Small Unmanned Aircraft.[47] This Rule puts forth the framework for a national drone registry, of anyone at 13 years of age or older to register online for a unique number for drones weighing less than 55 pounds, regardless of intended use.[48]

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[42] The *Small UAS Notice of Proposed Rulemaking* contained therein provides an excellent synopsis of the major provisions of the NPRM. *Id.* at 10.
[43] FAA, U.S. DEP'T OF TRANSP., AC 91-57A MODEL AIRCRAFT OPERATING STANDARDS—INCLUDING CHANGE 1 (Jan. 11, 2016), https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentID/1028086.
[44] *Id.*
[45] FAA NPRM, *supra* note 41, at 29.
[46] Rule Making, 5 U.S.C. § 553(b)(3)(B) (2012) (dispensing of the public notice and comment portions of rule-making).
[47] Registration and Marking Requirements for Small Unmanned Aircraft, 80 Fed. Reg. 78,593 (Dec. 16, 2015) (to be codified at 14 C.F.R. pts. 1, 45, 47, 48, 91, and 375).
[48] Registration and Marking Requirements for Small Unmanned Aircraft, 80 Fed. Reg. at 78,595.

Because AC 91-57A does not apply to non-recreational drone operations, until the NPRM is finalized into a Rule, and unless specialized FAA approval is obtained as described above under Section 333 of the FMRA or otherwise, all other non-recreational civil small drone operations are effectively prohibited at this time. What is also currently lacking in FAA's drone regulations, with limited exception, is any reference to large civil UAS.[49]

Until finalization of the Small UAS Rule and other rules that address drones weighing more than 55 pounds, critical issues directly related to national security remain in limbo, such as security vetting for training and certification of drone-related personnel. If the draft Rule is any indication of the anticipated final product, even when it is published, crucial issues will remain unaddressed including cyber and communications vulnerabilities; air defense and domain awareness issues; counter-drone authorities; and other security concerns. Due to the lack of clarity and finality in federal drone regulation, the states have seized the initiative through extensive drone legislation.

III. STATE DRONE LAWS

A. The Landscape

Whereas federal drone regulation has lagged, state legislation has exploded. Between 2013 and 2015, all but one state has proposed a total of approximately 300 drone bills, with roughly one-fifth becoming law.[50] Specifically, 29 states have passed 1 or more bills, totaling 70 laws.[51]

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[49] Special flight permits only for production flight-testing can be obtained for drones weighing more than 55 pounds. *See* Special Flight Permits, 14 C.F.R. § 21.197 (2015). These will include operational requirements and limitations. *Id.*

[50] Every state except South Dakota has yet to propose a drone bill. *See* Appendix A.

[51] This figure includes Virginia Governor Terry McAuliffe's Executive Order 43. Va. Exec. Order No. 43 (2015). The State lawmaker bills include: H.B. 471, Reg. Sess. (Ala. 2016); H. Con. Res. 6, 28th Leg., 1st Sess. (Alaska 2013); H. Con. Res. 15, 28th Leg., 2d Sess. (Alaska 2014); H.B. 255, 28th Leg., 2d Sess. (Alaska 2014); H.B. 1770, 90th Gen. Assemb., Reg. Sess. (Ark. 2015); H.B. 1349, 90th Gen. Assemb., Reg. Sess. (Ark. 2015); Sen. Con. Res. 16, 2013-14 Reg. Sess. (Cal. 2013); Assemb. J. Res. 6,

State drone laws have focused, to varying degrees on three types of actors: governmental, in particular law enforcement agencies ("LEA"); private; and industry. Forty-four bills that passed directly address LEA or private actors, while sixteen bills are dedicated to test-site establishment, research, development or industry ("RD&I") purposes.[52] Of the 44 non-RD&I laws, 25 are focused on LEAs' use of drones.[53] The remaining 19 address private actors across a wide

2013-14 Reg. Sess. (Cal. 2013); Assemb. B. 856, 2015-16 Reg. Sess. (Cal. 2015); S.B. 766, 2015 Leg., 24th Sess. (Fla. 2015); H.R. 80, 152nd Assemb., Reg. Sess. (Ga. 2013); H.R. 81, 152nd Gen. Assemb., Reg. Sess. (Ga. 2013); S.R. 172, 152nd Gen. Assemb., Reg. Sess. (Ga. 2013); S.B. 1221, 27th Leg., Reg. Sess. (Haw. 2013); S.B. 661, 28th Leg., Reg. Sess. (Haw. 2015); S.C.R. 103, 62nd Leg., Reg. Sess. (Idaho 2013); S.B. 1134, 62nd Leg., Reg. Sess. (Idaho 2013); S.B. 1587, 98th Gen Assemb. (Ill. 2013); H.B. 1652, 98th Gen. Assemb. (Ill. 2013); S.B. 2937, 98th Gen. Assemb. (Ill. 2013); S.B. 44, 99th Gen. Assemb. (Ill. 2015); H.B. 1009, 118th Gen Assemb., 2nd Reg. Sess. (Ind. 2014); S.R. 27, 118th Gen. Assemb., 1st Reg. Sess. (Ind. 2013); H.F. 2289, 85th Gen. Assemb., Reg. Sess. (Iowa 2014); H.B. 1029, 2014 Reg. Sess. (La. 2014); S.B. 183, 2015 Reg. Sess. (La. 2015); Legis. Doc. 25, 127th Leg., 1st Reg. Sess. (Me. 2015); H.B. 100, 433rd Gen. Assemb., Reg. Sess. (Md. 2013); S.B. 370, 435th Gen. Assemb., Reg. Sess. (Md. 2015); H. Res. 87, 97th Leg. (Mich. 2013); H. Res. 280, 97th Leg. (Mich. 2013); S.B. 54, 98th Leg., Reg. Sess. (Mich. 2015); S.B. 55, 98th Leg., Reg. Sess. (Mich. 2015); S.B. 2022, Reg. Sess. (Miss. 2015); S.B. 196, 63rd Leg., Reg. Sess. (Mont. 2013); S. Con. Res. 7, 77th Leg. (Nev. 2013); Assemb. B. 507, 77th Leg. (Nev. 2013); Assemb. B. 239, 78th Leg. (Nev. 2015); S.B. 222, 160th Leg., Reg. Sess. (N.H. 2015); S.B. 744, 2013 Gen. Assemb., Reg. Sess. (N.C. 2013); S.B. 446, 2015 Gen. Assemb., Reg. Sess. (N.C. 2015); H. Con. Res. 3012, 63rd Leg. Assemb., Reg. Sess. (N.D. 2013); S.B. 2018, 63rd Leg. Assemb., Reg. Sess. (N.D. 2013); H.B. 1328, 64th Leg. Assemb., Reg. Sess. (N.D. 2015); Amend. Substitute H.B. 292, 130th Gen. Assemb., Reg. Sess. (Ohio 2013); H.B. 2710, 77th Leg. Assemb., Reg. Sess. (Ore. 2013); H.B. 2534, 78th Leg. Assemb., Reg. Sess. (Ore. 2015); H.B. 2354, 78th Leg. Assemb., Reg. Sess. (Ore. 2015); S.B. 796, 108th Gen. Assemb., Reg. Sess. (Tenn. 2013); H.B. 591, 108th Gen. Assemb., Reg. Sess. (Tenn. 2013); H.B. 1779, 108th Gen. Assemb., Reg. Sess. (Tenn. 2013); S.B. 1892, 108th Gen. Assemb., Reg. Sess. (Tenn. 2013); H.B. 153, 109th Gen. Assemb., Reg. Sess. (Tenn. 2015); H.B. 912, 83rd Leg., Reg. Sess. (Tex. 2013); H. Comm. Res. 217, 83rd Leg., Reg. Sess. (Tex. 2015); H.B. 3628, 84th Leg., Reg. Sess. (Tex. 2015); H.B. 2167, 84th Leg., Reg. Sess. (Tex. 2015); H.B. 1481, 84th Leg., Reg. Sess. (Tex. 2015); S.B. 167, 2014 Gen. Sess. (Utah 2014); H.B. 296, 2015 Gen. Sess. (Utah 2015); H.B. 2012, 2013 Gen. Assemb. (Va. 2013); S.B. 1331, 2013 Gen. Assemb. (Va. 2013); H.B. 2125, 2015 Gen. Assemb. (Va. 2015); H.B. 1301, 2015 Gen. Assemb (Va. 2015); H. B. 2515, 2015 Leg., Reg. Sess. (W.Va. 2015); S.B. 196, 2013-14 Leg., Reg. Sess. (Wis. 2013); Assemb. B. 203, 2013-14 Leg., Reg. Sess. (Wis. 2013).

[52] *See* Appendix A.

[53] Law Enforcement bills and laws: H.B. 255, 28th Leg., Reg. Sess. (Alaska 2013-2014); S.B. 92, 2012-2013 Leg., Reg. Sess. (Fla. 2013); S.B. 1134, 62nd Leg., 1st Reg. Sess. (Idaho 2013); S.B. 1587, 98th Gen. Assemb., Reg. Sess. (Ill. 2013); S.B. 2937,

range of topics.[54] Only four enacted bills simultaneously regulate both LEAs and private actors.[55]

B. Law Enforcement and Privacy

Portions of signed bills include strict rules for drone use by LEAs. The underlying theme of these laws is a fear of "unwarranted surveillance" that would result in a violation of individual privacy. Generally, these laws seem to take a buffet-style approach to well established Fourth Amendment protections and jurisprudence. For instance, Florida Senate Bill 92 requires a warrant in order for a LEA to use a drone to gather evidence or obtain information, but the LEA may do so without a warrant to counter a terrorist attack, track a fleeing felon, or prevent danger to life.[56] However, this Florida law would effectively prohibit the LEA from conducting a drone search in cases where the individual consents to it.[57]

98th Gen. Assemb., Reg. Sess. (Ill. 2013); H.B. 1009, 118th Gen. Assemb., 2d Reg. Sess. (Ind. 2014); H. File 2289, 85th Gen. Assemb., Reg. Sess. (Iowa 2014); Legis. Doc. 25, 127th Leg., 1st Reg. Sess. (Maine 2015); Mont. S.B. 196, 63rd Leg., Reg. Sess. (Mont. 2013); Assemb. B. 239, 78th Leg., Rreg. Sess. (Nev. 2015); S.B. 744, 2013 Gen. Assemb., Reg. Sess. (N.C. 2013); S.B. 402, 2013 Gen. Assemb., Reg. Sess. (N.C. 2013); H.B. 1328, 64th Legis. Assemb., Reg. Sess. (N.D. 2015); H.B. 2710, 77th Legis. Assemb., Reg. Sess. (Ore. 2013); S.B. 796, 106th Gen. Assemb., Reg. Sess. (Tenn. 2013); TENN. CODE ANN. § 39-13-609 (2015); UTAH CODE ANN. § 63G-18-101 (2014); H.B. 2012, 2013 Leg. Sess. (Va. 2013); S.B. 1331, 2013 Leg. Sess. (Va. 2013); VA. CODE ANN. § 19.2-60.1 (2015); H.B. 2012, 2013 Leg. Sess. (Va. 2013); WIS. STAT. § 175.55 (2013); A.B. 203, 2013-14 Sess., (Wis. 2013).

[54] Private Actor bills and laws include: ARK. CODE ANN. § 5-60-103 (2015); CAL. CIV. CODE § 1708.83 (2015); FLA. STAT. § 934.50 (2015); IDAHO CODE § 21-213 (2013); IND. CODE § 34-30-2-146.4 (2014); LA. STAT. ANN. § 14:336 (2014); LA. STAT. ANN. §§ 3:41-47 (2015); MICH. COMP. LAWS § 324.40112 (2015); MICH. COMP. LAWS ANN. § 324.40111c (West 2015); MISS. CODE ANN. §§ 97-29-61, 63 (2015); N.H. REV. STAT. ANN. § 207:57 (2016); N.C. Gen. Stat. § 15A-300.1; OR. REV. STAT. §§ 837.300-390 (2013); TENN. CODE ANN. § 39-13-903 (2015); TEX. GOVT. CODE ANN. §§ 423.001-008 (West 2013); TEX. GOVT. CODE ANN. §§ 411.062, 065 (West 2015); H.B. 2167, 2007 Leg., Reg. Sess. (Tex. 2007); TEX. FAMILY CODE ANN. § 102.006 (West 2007); W. VA. CODE § 20-2-5 (2015).

[55] *See* IDAHO CODE § 21-213 (2013); IND. CODE § 35-33-5-0.5 (2014); S.B. 744, 2013 Leg., Reg. Sess. (N.C. 2013); TEX. GOVT. CODE ANN. §§ 423.001-008 (West 2013).

[56] FLA. STAT. § 934.50 (2015).

[57] *Id.*

In addition to limited use by LEAs, most state drone laws also contain complicated operational and procedural restrictions ranging from high level of approvals to acquire drones to requirements to maintain records and report drone usage to the public. For example, Illinois Senate Bill 1587 requires their LEAs to:

(1) retain images captured by drones for no longer than 30 days unless an ongoing criminal investigation requires retention;

(2) report on a public website the number of drones on hand, the number of crimes investigated with them and details regarding those drone operations; and

(3) limit drone use pursuant to a warrant to a 45 day period. It also limits drone use to twenty-four hours in the case of an emergency.[58]

Out of 15 states with a LEA-focused law enacted, only 2 have kept it simple. Alaska House Bill 255 and Montana Senate Bill 196 included brief statements that the LEA may use a drone to gather evidence in a criminal investigation under the express terms of a search warrant or "in accordance with a judicially recognized exception to the warrant requirement."[59]

C. Private Actors and Crime

In addition to regulating governmental actors, the states have increasingly focused their attention on private actors' drone use over the last several years. In contrast to only 1 bill passed in 2013 that applied to private actors,[60] in 2015, 10 such bills were enacted.[61] Courts are also beginning to see more cases relating to private drone

[58] ILL. COMP. STAT. § 098-0569 (2014).
[59] ALASKA STAT. § 18.65.902 (2014); MONT. CODE ANN. § 46-5-109 (2015).
[60] IDAHO CODE § 21-213 (2013).
[61] ARK. CODE ANN. § 5-60-103 (2015); CAL. CIV. CODE § 1708.83 (2015); FLA. STAT. § 934.50 (2015); LA. STAT. ANN. §§ 3:41-47 (2015); MICH. COMP. LAWS § 324.40112 (2015); MICH. COMP. LAWS ANN. § 324.40111c (West 2015); MISS. CODE ANN. §§ 97-29-61, 63 (2015); TENN. CODE ANN. § 39-13-903 (2015); TEX. GOVT. CODE ANN. §§ 411.062, 065 (West 2015); W. VA. CODE § 20-2-5 (2015).

users flying over others' private property, including cases of retaliation where individuals have shot down drones.[62] Generally, state legislation focused on private drone users has criminalized private behavior in three main areas: flights near critical state infrastructure; drone voyeurism; and drone use in relation to hunting.

By way of illustration, Texas House Bills 912 and 1481 both list certain structures as "critical infrastructure" near which privately operated drones cannot operate. The Texas law also creates two Class C misdemeanors for illegal use of a drone to capture images and for possessing or distributing the image.[63] Similarly, Arkansas and Mississippi have both passed voyeurism prevention bills, making it a felony for anyone who commits a "Peeping Tom" violation with a drone.[64] On the other hand, some state lawmakers have passed broad criminal legislation for drone use, such as North Carolina Senate Bill 744, which states:

> All crimes committed by use of an unmanned aircraft system, while in flight over this State shall be governed by the laws of the State, and the question of whether the conduct by an unmanned aircraft system while in flight over this State constitutes a crime by the owner of the unmanned aircraft system shall be determined by the laws of this State.[65]

Other criminal provisions for private drone use likely resulted from incidents involving spying on hunters or weaponizing drones to facilitate hunting.[66] Of the 70 bills passed relating to drones in general, 5 bills have addressed hunting game, fishing, and

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[62] Anthony Bellano, *Cape May County Man Pleads Guilty to Shooting Down Drone*, THE OCEAN CITY PATCH, Feb. 12, 2016, http://patch.com/new-jersey/oceancity/cape-may-county-man-pleads-guilty-shooting-down-drone.

[63] TEX. CODE ANN. § 423.002 (2013); TEX. CODE ANN. § 423.00245 (2013).

[64] H.B. 1349, 90th Gen. Assemb., Reg. Sess. (Ark. 2015);
MISS. CODE ANN. § 97-29-61 (2015). Mississippi Senate Bill 2022 imposes a $5,000 fine for violation of such an act and prison for not more than five years.

[65] N.C. GEN. STAT. § 14-7.45 (2014).

[66] *New Mexico Taking Aim Drones In Hunting Big Game Animals,* ASSOC. PRESS (May 3, 2014), http://www.summitdaily.com/news/11267861-113/drones-hunting-animal-drone.

trapping in some manner.[67] Common language includes prohibitions from "using UAS to interfere with or harass an individual who is hunting."[68]

From a national security standpoint, drone laws that address private users have relatively insignificant ramifications for violating their provisions. Excluding felonious voyeurism, the remaining bills categorize criminal drone use as a misdemeanor. Most are Class C Misdemeanors, which impose no jail time and have maximum fines less than the drone's purchase price.[69]

Drone prosecutions have been few and far between, as a few cases from 2015 illustrate. Most cases involve use of a drone in the commission of an already existing felony or interference with law enforcement or municipal activities. In Maryland, two people were arrested while using a drone in an attempt to smuggle drugs and pornography into a maximum-security prison.[70] In another case, an operator was charged with assault with a deadly weapon after he flew a drone too close to a Los Angeles Police Department chopper.[71] In an upstate New York case, a man was found not guilty of unlawful surveillance in the second degree for allegedly viewing patients in a hospital with his drone.[72]

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[67] MICH. COMP. LAWS § 324.40112 (2015); MICH. COMP. LAWS § 324.40111c (2015); N.H. REV. STAT. ANN. § 207:57 (2016); OR. REV. STAT. § 498.128 (2015); W.VA. CODE § 20-2-5 (2015).

[68] *See, e.g.*, MICH. COMP. LAWS § 40112.

[69] Misdemeanor penalties: 720 ILL. COMP. STAT. 5/48-3 (2013); IND. CODE § 35-46-8.5(b) (2014) (electronic surveillance as a misdemeanor); N.C. GEN STAT. § 15A-300.1 (2014); TENN. CODE ANN. § 39-13-4 (2013); TEX. GOV'T CODE ANN. § 423 (West 2013).

[70] Kurt Brooks, *2 Arrested in Plot to Fly Contraband Into Prison With Drone,* USA TODAY (Aug. 24, 2015), http:// www.usatoday.com/story/news/nation/2015/08/24/2-arrested-plot-fly-contraband-into-prison-drone/32306943/.

[71] Miriam Hernandez, *Drone Operator Taken Into Custody After Close Call With LAPD Helicopter in Hollywood,* ABC 7 KABC (Aug. 28, 2015), http://www.abc7.com /960511/.

[72] *Man Arrested for Flying Drone Outside Hospital Windows: "I Am Not A Peeping Tom!"*, INSIDE EDITION (Sept. 4, 2015), http://www.insideedition.com/ headlines/11796-man-arrested-for-flying-drone-outside-hospital-windows-i-am-not-a-peeping-tom.

Similarly, the FAA has been slow to take action on regulatory violators, when the local prosecutors fail to act. In one of the rare cases of enforcement, for example, in 2013, the FAA fined a private actor for a drone flight in New York that flew above several buildings and crashed into the sidewalk during rush hour.[73] A businessman standing nearby recovered the drone's chip, which led to the identification of the operator.[74] He handed it to a New York Police officer, who allegedly did not know how to handle the situation.[75] Ultimately, the FAA fined the operator $2,200 because he "endangered the safety of the national airspace system" by flying in a "careless and reckless manner."[76] While New York did not have a statute specifically addressing drones, the police filed the investigation under reckless endangerment before the FAA administered the fine. This is but one of many examples that highlight the lack of an overarching system or process between local governments and the FAA that addresses threats to public safety and security.

D. The Drone Industry, Research and Development

Industry is the third major actor that state drone regulations address, with an emphasis on fostering research, development and commerce. Forecasting the financial benefits that drones will have in terms of job creation, lawmakers have passed 11 bills since 2013 "to recognize the benefits of a thriving UAS industry" in their state.[77] They have also passed legislation focused on research development

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[73] Jim Hoffer, *Small Drone Crash Lands in Manhattan*, ABC7 – EYEWITNESS NEWS - WABC (Oct. 3, 2013), abc7ny.com/archive/9270668.
[74] *Id.*
[75] *Id.*
[76] *Id.*
[77] States recognizing economic impact include: Alabama, California, Georgia, Idaho, Michigan, Nevada, and North Dakota. *See* H.R. Res. 381, Reg. Sess. (Ala. 2013); S. Con. Res. 16, 2013-14 Sess. (Cal. 2013); Assemb. J. Res. 6, 2013-14 Sess. (Cal. 2013); H.R. Res. 80, 152d Gen. Assemb., 1st Reg. Sess. (Ga. 2013); H.R. Res. 81, 152nd Gen. Assemb., 1st Reg. Sess. (Ga. 2013); S. Res. 172, 152nd Gen. Assemb., 1st Reg. Sess. (Ga. 2013); S. Con. Res. 103, 62d Legis., 1st Reg. Sess. (Idaho 2013); H.R. Res. 280, 97th Legis. (Mich. 2013); S. Con. Res. 7, 77th Sess. (Nev. 2013).

and establishing test sites.[78] For example, Hawaii's SB 661 creates a Chief Operating Officer position and advisory board to manage their drone test site.[79] Another Hawaiian bill appropriated $100,000 to the University of Hawaii to establish a training program for drone pilots.[80]

Clearly, in the absence of federal guidance, states have jumped into the fray, regulating drone operations within their borders. Lawmaker trends since the passage of the FMRA in 2012 span a wide swath of issues, from a primary focus on LEAs' potential abuse of individual privacy rights to private actor abuses in the privacy arena to encouraging RD&I.

IV. CONFLICTS OF LAWS AND NATIONAL SECURITY

A. The Current Situation

While the FAA continues to grapple with creating relevant regulations for the safe assimilation of drones into the NAS, the states already have enacted a full palette of laws. Nevertheless, when the FAA does publish their Rule governing drones within the NAS, that federal scheme will pre-empt any state laws that conflict or interfere with it. The FAA, through their OGC, has forecasted pre-emption over operational issues such as flight altitude, flight paths, operational bans, any regulation of navigable airspace, as well as mandates on equipment or training. We now turn to a review of how the previously discussed state laws and proposals would, or would not, withstand a claim of pre-emption and what the potential that such conflicts could have on national security.

[78] Test Site bills include: S.B. 661, 28th Leg. (Haw. 2015); H.R. B. 100, 2013 Reg. Sess. (Md. 2013); Assemb. B. 507, 77th Sess. (Nev. 2013); S. B. 2018, 63rd Legis. Assemb., Reg. Sess. (N.D. 2013).
[79] S.B. 661, 28th Leg. (Haw. 2015).
[80] S.B. 1221, 27th Leg. (Haw. 2013).

B. State Law Enforcement Activities

The FAA has indicated that it will defer to laws traditionally relegated to state and local police power.[81] States have enacted laws addressing a wide range of LEA-related activities, including requiring warrants before operating a drone, imposing procedural requirements associated with drone use, and allowing drone use in exigent circumstances. These types of clauses require individualized analysis and succeed based on the specific language used.

1. Warrant Requirement and Exceptions

Generally speaking, warrant requirements for state LEAs are a valid exercise of police power and would not conflict with FAA governance of the NAS; however, certain exceptions to the warrant requirement, as applied to drone operations, may conflict with federal guidance.

As an example of a law that is generally not subject to federal regulation, the FAA OCC Fact Sheet specifically enumerates, a "[r]equirement for police to obtain a warrant prior to using a UAS for surveillance."[82] Thus, the portions of Alaska House Bill 255, Florida Senate Bill 92, and Montana Senate Bill 196 that relate to search warrant requirements should withstand scrutiny.[83]

In contrast, Florida Senate Bill 92, which discusses permissible LEA drone operations without a warrant, may go too far into the operational scheme contemplated by the FAA.[84] For example, the law permits Florida LEA to use drones to pursue a fleeing felon, which may present a potential danger for flight safety in the NAS. One can imagine a scenario where a felon-pursuit leads law enforcement in a high-speed cross-border chase across the NAS. Without obedience to a consistent framework, a lack of communication could lead to operational conflict. The Supreme

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[81] *See* FAA Fact Sheet, *supra* note 25, at 3.
[82] *Id.*
[83] H.B. 255, 28th Leg., 2d Sess. (Alaska 2014); FLA. STAT. § 934.50 (2015); S.B. 196, 63rd Leg., Reg. Sess. (Mont. 2013).
[84] FLA. STAT. § 934.50.

Court struck down a local law for less when it ruled against the City of Burbank's curfew based on aircraft noise.[85] There, the mere limiting of flight hours, which could have theoretically led to a congestion of flights in the waning hours of the day was deemed to interfere too much with the FAA's broader scheme in organizing the NAS.[86] Imagine state LEA drones racing through the skies, crossing state borders at will, in hot pursuit of a fleeing criminal. Without specific inter-state agreements or a means to rapidly dovetail into the federal air traffic control system, such dynamic LEA operations have the potential to further chaos, and danger, in the NAS.

Now imagine that the fleeing felon, a terrorist whose activities were captured by drone imagery, objects to the admissibility of the evidence based on federal pre-emption, prevails, and is exonerated . . . even though there is video of his terroristic acts. This is but one scenario that exemplifies how the potential conflict between state and federal drone legal schemes can have detrimental impacts on national security.

2. Procedural Requirements

State-imposed procedures for LEA to obtain a warrant fall within the state's police powers. For example, the provisions of Illinois Senate Bill 1587 that impose warrant waiting periods and require the protection and destruction of collected information would survive pre-emption scrutiny because they are procedural in nature and would not affect NAS operations.[87] Conversely, if a state law, like Florida Senate Bill 92, provided a procedure for launching a drone in pursuit of a fleeing felon, or a tactical communication plan with air traffic control towers, such measures would directly regulate activities in the NAS and be ripe for pre-emption.

C. Private Actors and Crime

In addition to the warrant requirement, the establishment of crimes is generally respected as within the province of local police

[85] *See* Burbank v. Lockheed Air Terminal, Inc., 411 U.S. 624, 640 (1973).
[86] *Id.* at 627, 633.
[87] S.B. 1587, 98th Gen. Assemb. (Ill. 2013).

power to govern private citizens' behavior.[88] As discussed, a number of states have moved to incorporate drone-related offenses into their criminal codes.[89] While at first blush there would seem to be no legitimate FAA interest in criminal penalties as established by a state, states may be crossing the line when they criminalize issues relevant to FAA's charter of operational safety in the NAS.

1. Drones as Aggravating Factor

On its face, crime generally falls within the purview of police power. States will likely be able to continue to enhance their criminal codes by including the use of drones in the commission of the types of offenses already codified as crimes, such as voyeurism, discussed above. Similarly, Ohio House Bill 228 enhances 23 existing crimes such as burglary, endangering aircraft, menacing, voyeurism and vandalism, among others, by creating an additional offense for engaging those activities, "through use of a drone."[90] This type of inclusion of drone offenses into a local criminal code will likely withstand federal pre-emption scrutiny, as it does not delve into the operational schema of the FAA.

2. Privacy Violations

Traditionally, the issue of privacy is also considered within state and local police power. In the instances where states are outlawing the use of drones in the commission of offenses violating privacy or private property, such laws will likely be allowed to stand. This is a logical response and extension of law that prevents a person from trespassing on one's land or from viewing someone through the window of their bordering property. As an example of this, Mississippi simply added "drones" to the list of technologically advanced devices one might use to spy on someone in private chambers, such as a periscope, telescope or binoculars.[91] Arkansas House Bill 1349 used the same approach in merely adding

[88] Randy E. Barnett, *The Proper Scope of the Police Power*, 79 NOTRE DAME L. REV. 429, 475 (2004).
[89] *See supra* notes 52-54 and accompanying text.
[90] H.B. 228, 131st Gen. Assemb., Reg. Sess. (Ohio 2015).
[91] S.B. 2022, 2015. Leg., Reg. Sess. (Miss. 2015).

"unmanned vehicle or aircraft" as another way in which the crime of voyeurism could be committed.[92]

3. Real Property and Trespass

Similarly, trespass is an offense upon real property, a prerogative of the states. Texas House Bill 1481 ("H.B. 1481"), passed into law in 2015, bans the use of drones over critical infrastructure.[93] As noted above, pursuant to the City of Burbank case, federal courts closely scrutinize state and local regulation of overflight.[94] However, the definition of "critical infrastructure" in H.B. 1481 makes it more akin to a criminal trespass statute than a regulation on flight paths. It describes such infrastructure as:

> completely enclosed by a fence or other physical barrier that is obviously designed to exclude intruders, or if clearly marked with a sign or signs that are posted on the property, are reasonably likely to come to the attention of intruders, and indicate that entry is forbidden.[95]

Like the voyeurism statutes discussed above, H.B. 1481 merely adds drones as a means by which a trespass is accomplished. It further clarifies that an offense is committed when a person:

> (1) operates an unmanned aircraft over a critical infrastructure facility and the unmanned aircraft is not higher than 400 feet above ground level;
>
> (2) allows an unmanned aircraft to make contact with a critical infrastructure facility, including any person or object on the premises of or within the facility; or
>
> (3) allows an unmanned aircraft to come within a distance of a critical infrastructure facility that is close enough to interfere with the operations of or cause a disturbance to the facility.[96]

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[92] H.B. 1349, 90th Gen. Assemb., Reg. Sess. (Ark. 2015).
[93] H.B. 1481, 84th Leg., Reg. Sess. (Tex. 2015).
[94] *See* FAA Fact Sheet, *supra* note 25, at 3.
[95] H.B. 1481, 83rd Reg. Sess. (Tex. 2015).
[96] *Id.* (amending Tex. Gov. Code by adding § 423.0045(b)).

By focusing on drone flights under 400 feet, subparagraph 1 clearly establishes that the offense is not about a flight path under the purview of the FAA. Furthermore, subparagraphs 2 and 3 continue to hone in on trespass and interference with property as the primary purpose of the law. Therefore, H.B. 1481 and others like it should survive federal pre-emption challenge because the establishment of such a crime is a central function of state police power.

There is a fine line for a state to walk between treating drone incursions as trespass and creating a pre-empted ban in navigable airspace. This is why it is critical that any FAA drone scheme address states' concerns and incorporate them into plans for geo-fences or no-drone zones. Local governments and agencies should reach out to the FAA to incorporate their concerns concerning landmarks, significant infrastructure and large public gathering facilities. These types of locations are of great national security interest and without a consistent framework establishing restrictions on drone use around them, vulnerabilities will persist.

4. Broad Discretionary Crimes

In contrast to the few examples outlined relating to warrant requirements, criminalization of private actors' behavior and protection of privacy and real property, states may overstep their boundaries by broadly reserving the right to criminalize drone flights over their land. North Carolina Senate Bill 744, which proclaims that the state will determine whether any action by a drone pilot flying over the state is a crime, is an example of this.[97] While nothing about this general provision in and of itself is ripe for pre-emption, North Carolina could find itself in the pre-emption crosshairs if it decides to criminalize a drone activity that is not within the typical police powers of the state or obstructs the FAA scheme.

5. Penalties for Training and Certification Violations

In its Fact Sheet, the FAA OCC noted, "[m]andating equipment or training for UAS related to aviation safety such as geo-

[97] S.B. 744, 2013 Gen. Assemb., Reg. Sess. (N.C. 2013).

fencing would likely be pre-empted."[98] Thus, if any State were to require a particular training and make the failure to accomplish a crime, even a low-class misdemeanor, such a crime could be pre-empted as interfering with the FAA Rule.

6. Hunting Restrictions

Five state laws thus far criminalize the use of privately operated drones in hunting or to interfere with hunting.[99] The regulation of hunting and fishing is traditionally left to the states, a concept respected by the FAA.[100]

Not surprisingly, these state laws address the issue of arming a drone for the purposes of hunting. However, the weaponization of drones, even if for hunting, is also a national security concern. While hunting may be within the traditional domain of the states, the FAA is charged with the efficient organization and safe use of the NAS consistent with national security. The mere possibility of a drone "flyaway" while armed is alarming.[101] For example, the pilot of the drone that landed on the White House lawn claimed that his incident was the result of such a flyaway.[102] What if it had been armed for hunting and taken off just across the Potomac in Virginia before suffering a flyaway malfunction?

The malfunction of a drone while armed for hunting is one of the most benign scenarios one could posit. Anyone with malicious intentions could rig a drone to exact devastating loss of life

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[98] *See* FAA Fact Sheet, *supra* note 25, at 3; Air Evac EMS, Inc. v. Robinson, 486 F. Supp. 2d 713, 722 (M.D. Tenn. 2007).

[99] *See* FAA Fact Sheet, *supra* note 25, at 3; *Current Unmanned Aircraft State Law Landscape,* NAT'L CONF. OF STATE LAW LEGISLATURES (Apr. 6, 2016), http://www.ncsl.org/research/transportation/current-unmanned-aircraft-state-law-landscape.aspx.

[100] *See* FAA Fact Sheet, *supra* note 25, at 3 (examples of State and Local Laws within State and Local Government Police Power).

[101] Jack Nicas, *What Happens When Your Drone Escapes*, WALL ST. J. (Dec. 8, 2014, 7:51 PM), http://www. wsj.com/articles/what-happens-when-your-drone-escapes-1418086281.

[102] Jim Acosta & Pamela Brown, *First on CNN: No Charges Against White House Drone Flyer*, CNN (March 18, 2015), http://www.cnn.com/2015/03/18/politics/white-house-drone-charges/.

and terror with any of the commercially available drones capable of carrying a significant firearm, explosive, chemical, or biological payload. It is easily within the domain of the FAA's mandate to ban the arming of drones for any use, trumping any state law regulating permissible armed drone hunting. Despite the FAA OCC position on this issue, weaponization of drones is clearly an area with broad national security interest that cannot be handled by the States individually, and needs to be addressed at the federal level by the FAA.

D. The Drone Industry, Research and Development

Pursuant to the mandate in the FMRA, the FAA set out to establish six drone test sites run by non-federal public agencies to accelerate the integration of drones into the NAS. Programs were solicited and selected by the FAA Administrator.[103] The six sites selected were: Griffiss International Airport, North Dakota Department of Commerce, the State of Nevada, Texas A&M University-Corpus Christi, University of Alaska; and Virginia Polytechnic Institute and State University. Their programs span across 20 different test locations in 14 states, all of which have legislated to authorize and fund them, as necessary.[104] While these particular laws fall squarely within the FAA's mandate to establish research programs to assist in integrating drones into the NAS, if any other state were to establish a similar test site, such would be pre-empted by the FAA Administrator's Order.[105] Specifically because some of the additional factors considered for site selection were "sites where UAS can be safely and efficiently" tested for integration into the NAS, it could be presumed that anything outside FAA-approved sites could be presumed to interfere with the NAS.

Also related to industry, manufacturing specifications for the drone industry would also likely not survive a pre-emption challenge.

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[103] *See* U.S. DEP'T OF TRANSP., FAA, SELECTION OF SIX UNMANNED AIRCRAFT SYSTEMS TEST SITES IN ACCORDANCE WITH FAA MODERNIZATION AND REFORM ACT OF 2012, PL-112-95 (Dec. 30, 2013); *see also Test Sites*, U.S. DEP'T OF TRANSP., FAA, http://www.faa.gov/uas/legislative_programs/test_sites/ (last modified Aug. 4, 2015).
[104] *See* U.S. DEP'T OF TRANSP., *supra* note 103; FAA Fact Sheet, *supra* note 25, at 3.
[105] *See* U.S. DEP'T OF TRANSP., *supra* note 103.

For example, in the aftermath of the White House lawn incident, drone-builder DJI voluntarily patched and sent out an update to its drone software, putting a geo-fence around the entire downtown Washington D.C. area.[106] Imagine the impacts upon drone manufacturers if every state produced its own geo-fencing requirements. Conceivably, the FAA will claim dominion over any future directives regarding geo-fences protecting areas of national priority.[107] The centralization of this process in the FAA will likely be to the benefit of manufacturers who will have to look to one regulatory agency instead of 50, governing what safety mechanisms they must install in a drone.

E. Absence of National Regulatory Scheme as National Security Threat

The patchwork of state drone laws, discussed above, spawned in response to FAA inaction. While it is generally true that technology will usually outpace the law, the explosion of drone technology available to the public not only presents unique legal challenges, it also creates real practical dangers. If one looks at the FAA definition of an aircraft, which includes both airplanes and drones,[108] it is troubling that over the last few years, thousands of new aircraft are populating the skies, flown by unlicensed, untrained, and minimally regulated pilots. Some may want to dismiss this concern and say these drones are just toys or will be used responsibly by industry. However, as discussed, these small non-traditional aircraft have the capacity, intentionally or not, to create devastation.[109]

The unintentional threat is characterized by operational safety hazards posed by the average American flying a drone. Drone proliferation has made it possible for anyone to launch a resilient

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[106] *DJI has Released the New Rirmware v3.12 for Phantom 2 Series Quadcopter*, DJI, http://www.dji.com/newsroom/news/dji-has-released-the-new-firmware-v3-12-for-phantom-2-series-quadcopter (last visited Apr. 10, 2016).

[107] *See* Press Release, FAA, FAA Selects Unmanned Aircraft Systems Research and Test Sites (Dec. 30, 2013), http://www.faa.gov/news/press_releases/news_story.cfm?newsid=15576.

[108] 14 C.F.R. § 1.1 (2015).

[109] *See* INTRODUCTION, *supra*.

plastic and metal machine into the sky. Without a national operational framework and associated education campaign, the average person likely has no idea about the restrictions or requirements imposed by their own state and local governments, let alone those of neighboring jurisdictions. Other unintentional threats include drones that could have flyaway malfunctions.

The greater national security concern, however, lies with the incohesive regulatory framework to respond to this diffuse capability to deliver a destructive payload remotely by air. Since the end of WWII, the United States has maintained a strategic advantage worldwide due to its air superiority defined by a premier lineup of traditional combat aircraft: support, intelligence, attack, and bomber.[110] Drones present a macro-security problem due to their micro-size coupled with their strategic advantage from the sky. One does not have to strain to imagine scenarios where the lack of organized regulation has created vulnerabilities. For instance, while there have been prohibitions against flying drones around sports stadiums (e.g., the Super Bowl),[111] not all mass gatherings have such legal or policy protection. Even if they did, what plans are in place in the event of an attack? Take the following scenario: a drone flies over a community 5K run and starts dropping a white powdery substance. Here are just a few of the questions that must be considered:

- Who is responsible to take action? Local, state, or Federal?
- Are those various levels of government agencies prepared to collaborate?
- What is the substance?
- Might it also be carrying an explosive?

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[110] *See Challenges and Capabilities of the U.S. Air Force*, USAF (Feb. 9, 2005), http://www.af.mil/aboutus/SpeechesArchive/Display/tabid/268/Article/143991/challenges-and-capabilities-of-the-us-air-force.aspx (remarks at the 2005 Air Force Defense Strategy and Transformation Seminar Series, Washington DC).

[111] A huge public gathering, Super Bowl 50 garnered more than just a drone no-fly zone around the stadium. Rather, the FAA banned the entire 32-mile radius surrounding Levi Stadium. *See* James Eng, *FAA: Drones Flown Around the Super Bowl Could Face 'Deadly Force'*, NBC NEWS (Feb. 3, 2016), http://www.nbcnews.com/storyline/super-bowl/faa-drones-flown-around-super-bowl-could-face-deadly-force-n510606.

- Where is the remote pilot?
- Should we send up an armed police drone to shoot it down?
- Can we shoot it down from the ground?
- Could we jam the remote signal?
- Can authorities identify the aggressor drone vs. friendly drones?
- Can authorities identify friendly support from another jurisdiction?

Answers to these factual questions are difficult enough in such a hypothetical situation. However, the procedural questions also remain unanswered by the current regulatory and policy landscape. The United States lacks a framework to guide the decision-making process in such an event. The FAA may have been tracking security at Super Bowl 50, but they are not covering the mid-sized city Fun Run or the summer concert series at the community park. Federal authorities are not monitoring lunch hour in downtown Chicago, standing by and waiting to respond to a drone threat. The responsibility to respond to incidents under these circumstances is less clear, and therein lies the crux of the problem. Emergencies, particularly terrorist events, are inherently chaotic. Without proper organization to restore order, haphazard government actions are likely to add more confusion to the situation and potentially cause more harm. If every state is left to figure this out, the potential patchwork quilt of regulations on warrants, information collection, no-fly zones, hunting drones, manufacturer requirements, and more, would greatly inhibit a coordinated response to a disaster. Only a national regulatory framework as dictated by the FAA can resolve such discrepancies. At the very least, a federal delegation of responsibilities to state and local governments with specific guidelines for cooperation would be a step in the right direction.

V. CONCLUSION

In stark contrast to the rate of speed at which the drone industry has accelerated, the law has failed to keep pace. The current legal landscape applicable to domestic drone use is a patchwork of

seemingly random state rules that sometimes conflict with current and proposed federal guidance and fail to address issues crucial to our national security.

Because the FAA continues to struggle with how to best balance safety requirements with operational flexibility, a final rule for small commercial drones remains elusive. In the meantime, to bridge the regulatory gap, individual states have created a host of laws regulating drone activities in the skies above their land targeting governmental, private and commercial actors' drone use across a wide range of issues. From trespass in relation to critical infrastructure, to drones-as-hunting weapon bans, to restrictions against potential Fourth Amendment violations by law enforcement, inconsistency prevails.

Such legal ambiguity, especially when viewed through the lens of pre-emption, can lead to intentional and unintentional consequences. Nefarious actors continue to have room to maneuver with relative impunity and with potential amnesty from prosecution. The resultant environment, as illustrated by the fleeing felon drone chase across borders, is also ripe for accident.

A comprehensive national federal framework for domestic drone use is required. Such a framework must address not only safety, but also security. The states should regulate privacy, property and crimes, as they relate to drone operations above their land. They should do so in consultation with the FAA so as not to contravene FAA's field of regulation. However, the FAA remains in the best position to promulgate safety and security rules consistent with their already established requirements for manned aircraft, with special consideration given for the unique attributes of unmanned flight. Failure to do so, in the wake of the democratization of airpower to individual users, is, in and of itself, a threat to our national security.

APPENDIX A

State Legislation Enacted by Topic

Total Bills:	70
State Bills:	69
Governor Initiated:	1
Law Enforcement Focused Bills:	25
Private Actor Focused Bills:	19
Hunting Bills:	5
Test Site Establishment:	5
Recognition of Industry Benefits:	11
L.E. Must Obtain Warrant:	17
Exigent Circumstances:	3
Consent Exception:	6
Amber/Missing Person Alerts:	5
Terror Threat Exception:	6
Critical Infrastructure Protection:	1
Felony Penalty:	5
Misdemeanor Penalty:	6
Civil Penalties:	7
Voyeurism Prohibited:	2