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# **“WHAT A LONG STRANGE TRIP IT’S BEEN”: A JOURNEY THROUGH THE FAA’S DRONE POLICIES AND REGULATIONS**

*Douglas Marshall\**

## INTRODUCTION

The emergence of civilian, private, and commercial-use remotely piloted aircraft (drones) in the last seven to eight years overwhelmed the federal agency tasked with ensuring the safety of the nation’s airways. The Federal Aviation Administration (FAA) regulates aircraft, airmen, most categories of airline employees, commercial or common carrier operations, airports, and, most importantly, the national airspace. The FAA’s “toolbox” is comprised of a mixed bag of regulations, rulemaking processes, certifications, advisory circulars, technical safety orders, special authorizations, and directives that the agency employs to carry out its regulatory functions of rulemaking, surveillance, compliance, and enforcement. A historical source of confusion and contention was the absence of the terms “unmanned aerial vehicle” (UAV), “unmanned aerial system” (UAS), “unmanned system,” “unmanned aircraft,” “drone,” or any other term referring to remotely piloted aircraft, from the Federal Aviation Regulations (FARs) and, for that matter, any other federal regulation or statute until passage of the FAA Modernization & Reform Act of 2012 (2012 FMRA).<sup>1</sup>

In the void created by the lack of a statutory mandate to include UAS in its regulatory scheme, the FAA embarked on a perilous journey to regulate this rapidly evolving technology by issuing a series of policy statements, orders, and directives culminating in the creation of a Small UAS Aviation Rulemaking Committee (sUAS ARC). The sUAS ARC was chartered to recommend a comprehensive set of rules that would permit a gradual integration of small unmanned systems into the national airspace under very limited and controlled operating

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1. FAA Modernization & Reform Act of 2012, Pub. L. No. 112-95, 126 Stat. 11 (2012).

restrictions. The rulemaking process consumed nearly six years as the proposed rule worked its way through the exhaustive Administrative Procedures Act process, and as of this Essay's publication, the proposed rule is still months (if not years) away from finalization. In the meantime, Congress seized the initiative and passed the aforementioned 2012 FMRA, effectively paving a parallel path for commercial UAS operational approvals.

This Essay's goal is to shed light on the FAA's administrative processes as they impact and respond to the recent surge of applications for commercial UAS operations in the United States.

### I. SETTING THE STAGE

The U.S. Department of Defense is spending over \$5 billion per year on UAS, flying in excess of 600,000 hours per year, fielding more than 6,000 air vehicles, and training thousands of pilots and sensor operators.<sup>2</sup> The U.S. Department of Homeland Security and the U.S. Customs and Border Protection operated unmanned aircraft for over ten years.<sup>3</sup> First responders in Colorado, Michigan, North Dakota, Texas, and at least ten other states deployed UAS in support of their public safety missions.<sup>4</sup> The UAS industry is forecast to create up to 100,000 new jobs and approximately \$82 billion in economic activity worldwide in the next ten years.<sup>5</sup> The technology's rapid evolution produced an increased demand for FAA authorizations for civil, non-military, commercial operations in the national airspace (NAS). "The FAA has recognized the need to make integration of unmanned aircraft into the national airspace a priority. All the way up to the FAA administrator, who has made it one of his priorities."<sup>6</sup>

Rarely a day passes where there is not a news item, media coverage, or an informational article published in a newspaper, magazine, or on the Internet that highlights some event or technological advance involving drones, as they are usually called in the popular press. There

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2. See DEP'T OF DEF., 14-S-0553, UNMANNED SYSTEMS INTEGRATED ROADMAP FY2013-2038, at 3, 103-07, [www.defense.gov/pubs/DOD-USRM-2013.pdf](http://www.defense.gov/pubs/DOD-USRM-2013.pdf).

3. U.S. DEP'T OF HOMELAND SEC., U.S. CUSTOMS & BORDER PROTECTION, FACT SHEET: UNMANNED AIRCRAFT SYSTEM MQ-9 PREDATOR B (2014), [www.cbp.gov/sites/default/files/documents/FS\\_2014\\_UAS.pdf](http://www.cbp.gov/sites/default/files/documents/FS_2014_UAS.pdf).

4. Douglas Marshall, *Understanding Unmanned: Defining the Current State of UAS Use in Law Enforcement*, AIR BEAT, March/Apr. 2015, at 34 (2015).

5. Hilary Tuttle, *Drones Take Flight*, RISK MGMT., Apr. 2015, at 28, 29.

6. Interview by Debra Werner with Jim Williams, former Manager, Fed. Aviation Admin., Unmanned Aircraft Sys. Integration Office, in *Opening the Skies to Unmanned Aircraft*, AEROSPACE AM., July-Aug. 2015, at 14, 14-15, [http://www.aerospaceamerica.org/Documents/Aerospace%20America%20PDFs%202015/July-August%202015/AA\\_Jul-Aug2015\\_Conversation.pdf](http://www.aerospaceamerica.org/Documents/Aerospace%20America%20PDFs%202015/July-August%202015/AA_Jul-Aug2015_Conversation.pdf).

are drones for just about anything you could imagine: beer and pizza delivery, aerial photography, door-to-door package delivery, entertainment, and infrastructure inspection. The coverage of newsworthy events, and a number of useful applications of these enormously popular, user-friendly, affordable and readily available drones, makes it appear that virtually anyone with a few extra dollars to spare can become a drone operator. The problem is that a congressional mandate deems these systems as aircraft that can and must be properly regulated by the FAA if they are to operate in the NAS unless they are flown for recreational, noncommercial purposes. However, even the recreational park flyer must comply with the FARs that prohibit careless and reckless operations that endanger the life or property of another.<sup>7</sup>

The FAA's statutory mandate seeks to ensure the safety of the national airspace.<sup>8</sup> The agency accomplishes this with a virtual maze of regulations, policy statements, orders, airworthiness directives, advisory circulars, guidance documents, legal opinions, and consensus-based industry standards.<sup>9</sup> An advisory circular (AC) or an airworthiness directive (AD) may be issued in response to a safety-related event or system anomaly. A technical standards order (TSO) could be developed and published to remediate a technical problem brought to the FAA's attention by outside sources or as a result of a FAA or National Transportation Safety Board (NTSB) investigation. ACs are utilized to advise the aviation community on issues pertaining to the regulations, but they are not binding on the public unless the AC is specifically referenced in a regulation.<sup>10</sup> The most controversial AC regarding unmanned aircraft was AC 91-57,<sup>11</sup> which set forth guidelines for hobbyist operations of radio-controlled model aircraft.<sup>12</sup> This AC references air traffic and general operating rules, which contain the airspace regulations, and is intended to exempt recreational model aircraft operators from the FARs.<sup>13</sup> AC 91-57 has been superseded by specific language in the 2012 FMRA,<sup>14</sup> but before passing the statute, the FAA came into conflict with a number of commercial UAS opera-

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7. 14 C.F.R. § 91.13 (2015) (stating the rules on careless or reckless operation).

8. 49 U.S.C. §§ 40101(a)(1), 40103(b), 44701(a) (2012).

9. One need only inspect the FAA's website to see the "virtual maze." FED. AVIATION ADMIN., [www.faa.gov](http://www.faa.gov) (last visited Sept. 30, 2015).

10. U.S. DEP'T OF TRANSP., FED. AVIATION ADMIN., AC 00-2.11, ADVISORY CIRCULAR CHECKLIST & STATUS OF OTHER FAA PUBLICATIONS (1997).

11. U.S. DEP'T OF TRANSP., FED. AVIATION ADMIN., AC 91-57, MODEL AIRCRAFT OPERATING STANDARDS (1981).

12. *Id.*

13. 14 C.F.R. §§ 91.1–91.1609 (2015).

14. FAA Modernization & Reform Act of 2012, Pub. L. No. 112-95, § 336, 126 Stat. 11 (2012).

tors (primarily aerial photographers) who relied on AC 91-57 for support and claimed that their aircraft were model aircraft and thus exempt from the FARs.<sup>15</sup>

Another FAA advisory tool is the policy statement. Administrative implementation or interpretation (as announced by a published policy statement) of a particular regulatory provision is accorded deference by the courts when Congress delegates general authority to the agency to make rules carrying the force of law, and the agency exercises that authority by promulgating the rules.<sup>16</sup> Delegation of this authority may be shown in a variety of ways, such as an agency's power to engage in adjudication, notice-and-comment rulemaking, or by some other indication of comparable congressional intent.<sup>17</sup> The FAA issued several policy statements referencing unmanned aircraft, including "UAS Policy Statement 05-01"<sup>18</sup>—a clarification of the statement published in the Federal Register on February 6, 2007, titled "Unmanned Aircraft Operations in the National Airspace System"<sup>19</sup>—and "Interim Operational Approval Guidance 08-01,"<sup>20</sup> which references 14 CFR Part 91. Since 2007, the FAA published additional notices, including: "Inspection and Maintenance Program Requirements for Airworthiness Certification of Unmanned Aircraft Operating Under 55 Pounds;"<sup>21</sup> "Aviation-Related Videos or Other Electronic Media on the Internet;"<sup>22</sup> "Sporting Event Temporary Flight Restrictions;"<sup>23</sup> "Education, Compliance, and Enforcement of Unauthorized Un-

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15. See, e.g., U.S. DEP'T OF TRANSP., FED. AVIATION ADMIN., NOTICE NO. 4910-13, UNMANNED AIRCRAFT OPERATIONS IN THE NATIONAL AIRSPACE SYSTEM (2007), [https://www.faa.gov/uas/media/frnotice\\_uas.pdf](https://www.faa.gov/uas/media/frnotice_uas.pdf).

16. *Chevron U.S.A., Inc. v. Nat. Res. Def. Council, Inc.*, 467 U.S. 837, 837-44 (1984).

17. *United States v. Mead Corp.*, 533 U.S. 218, 227 (2001).

18. FED. AVIATION ADMIN., AFS-400 UAS POLICY 05-01, UNMANNED AIRCRAFT SYSTEMS OPERATIONS IN THE U.S. NATIONAL AIRSPACE SYSTEM - INTERIM OPERATIONAL APPROVAL GUIDANCE (2005).

19. Unmanned Aircraft Operations in the National Airspace Systems, 72 Fed. Reg. 29, 6689 (Feb. 13, 2007) (codified at 4 C.F.R. pt. 86).

20. FED. AVIATION ADMIN., AVIATION SAFETY UNMANNED AIRCRAFT PROGRAM OFFICE, AIR-160, INTERIM OPERATIONAL APPROVAL GUIDANCE 08-01 (2008).

21. U.S. DEP'T OF TRANSP., FED. AVIATION ADMIN., NO. 8900.291, INSPECTION & MAINTENANCE PROGRAM REQUIREMENTS FOR AIRWORTHINESS CERTIFICATION OF UNMANNED AIRCRAFT SYSTEMS OPERATING UNDER 55 POUNDS (2015), [http://www.faa.gov/documentLibrary/media/Notice/N\\_8900.291.pdf](http://www.faa.gov/documentLibrary/media/Notice/N_8900.291.pdf).

22. U.S. DEP'T OF TRANSP., FED. AVIATION ADMIN., NO. 8900.292, AVIATION-RELATED VIDEOS OR OTHER ELECTRIC MEDIA ON THE INTERNET (2015), [http://www.faa.gov/documentLibrary/media/notice/n\\_8900.292.pdf](http://www.faa.gov/documentLibrary/media/notice/n_8900.292.pdf).

23. U.S. DEP'T OF TRANSP., FED. AVIATION ADMIN., FDC NOTAM 4/3621, SPORTING EVENT TEMP. FLIGHT RESTRICTION, [https://www.faa.gov/uas/regulations\\_policies/media/Sports\\_TFR-UAS\\_Handout.pdf](https://www.faa.gov/uas/regulations_policies/media/Sports_TFR-UAS_Handout.pdf).

manned Aircraft Systems Operators;”<sup>24</sup> at least seven orders;<sup>25</sup> two additional ACs;<sup>26</sup> three guidance documents;<sup>27</sup> four legal interpretations;<sup>28</sup> and one special rules interpretation.<sup>29</sup> All of these documents are readily accessed on the FAA’s website.<sup>30</sup>

For years, an unanswered question was whether a published roadmap<sup>31</sup> was equivalent to a policy statement, and furthermore, whether policy statements were equivalent to enforceable regulations. The FAA’s position on the issue of its regulatory authority over unmanned aircraft (outlined in the February 13, 2007 policy statement published in the Federal Register) was that any unmanned aircraft operated in the national airspace, with the exception of radio-controlled models, must comply with the requirements for a Certificate of Authorization or Waiver (COA) if it was a public aircraft or for a special airworthiness certificate if it was a civil aircraft. Thus, the agency consistently answered the second question (what it will regulate) with a broad policy statement announcing that it had the responsibility and authority over airspace and aviation.

An informal statement regarding the FAA’s current policies on general enforcement and unmanned aircraft comes from an interview with retired Unmanned Aircraft Systems Integration Office (UASIO) manager, Jim Williams:

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24. U.S. DEP’T OF TRANSP., FED. AVIATION ADMIN., NO. 8900.268, EDUCATION, COMPLIANCE, AND ENFORCEMENT OF UNAUTHORIZED UNMANNED AIRCRAFT SYSTEMS OPERATORS (2014), [http://www.faa.gov/documentLibrary/media/Notice/N\\_8900.268.pdf](http://www.faa.gov/documentLibrary/media/Notice/N_8900.268.pdf).

25. *See, e.g.*, U.S. DEP’T OF TRANSP., FED. AVIATION ADMIN., ORDER 8130.34C, AIRWORTHINESS CERTIFICATION OF UNMANNED AIRCRAFT SYSTEMS AND OPTIONALLY PILOTED AIRCRAFT (2013), <http://www.faa.gov/documentLibrary/media/Order/8130.34C.pdf>.

26. U.S. DEP’T OF TRANSP., FED. AVIATION ADMIN., AC No. 21–12C, APPLICATION FOR U.S. AIRWORTHINESS CERTIFICATE, FAA FORM 8130–6 (2012), [http://www.faa.gov/documentLibrary/media/Advisory\\_Circular/AC%2021-12C.pdf](http://www.faa.gov/documentLibrary/media/Advisory_Circular/AC%2021-12C.pdf); U.S. DEP’T OF TRANSP., FED. AVIATION ADMIN., AC No. 45-2D, IDENTIFICATION AND REGISTRATION MARKING (2009), [http://www.faa.gov/documentLibrary/media/Advisory\\_Circular/AC%2045-2D.pdf](http://www.faa.gov/documentLibrary/media/Advisory_Circular/AC%2045-2D.pdf).

27. *See, e.g.*, U.S. DEP’T OF TRANSP., FED. AVIATION ADMIN., LAW ENFORCEMENT GUIDANCE FOR SUSPECTED UNAUTHORIZED UAS OPERATIONS, [https://www.faa.gov/uas/regulations\\_policies/media/FAA\\_UAS-PO\\_LEA\\_Guidance.pdf](https://www.faa.gov/uas/regulations_policies/media/FAA_UAS-PO_LEA_Guidance.pdf).

28. *See, e.g.*, U.S. DEP’T OF TRANSP., FED. AVIATION ADMIN., CLARIFICATION OF JUNE 13, 2014 INTERPRETATION ON RESEARCH USING UAS (2014), [https://www.faa.gov/about/office\\_org/headquarters\\_offices/agc/pol\\_adjudication/agc200/Interpretations/data/interps/2014/Williams-AF%20S-80%20Clarification%20-%20\(2014\)%20Legal%20Interpretation.pdf](https://www.faa.gov/about/office_org/headquarters_offices/agc/pol_adjudication/agc200/Interpretations/data/interps/2014/Williams-AF%20S-80%20Clarification%20-%20(2014)%20Legal%20Interpretation.pdf).

29. *See, e.g.*, U.S. DEP’T OF TRANSP., FED. AVIATION ADMIN., INTERPRETATION OF THE SPECIAL RULE FOR MODEL AIRCRAFT, [https://www.faa.gov/uas/media/model\\_aircraft\\_spec\\_rule.pdf](https://www.faa.gov/uas/media/model_aircraft_spec_rule.pdf).

30. FED. AVIATION ADMIN., [http://www.faa.gov/regulations\\_policies/advisory\\_circulars](http://www.faa.gov/regulations_policies/advisory_circulars) (last updated May 5, 2015, 1:59 PM).

31. Examples include the 2013 “Integration of Civil Unmanned Aircraft Systems (UAS) in the National Airspace System (NAS) Roadmap” (mandated by the 2012 FMRA) or similar public pronouncements and guidance documents.

The FAA is not about enforcement but about compliance. We can't be everywhere. We only want to get involved in identifying the really bad actors. We communicate with people who disregard the rules. We have a standard letter we send. Enforcement is a last resort. The only rules people need to know is to stay out of the way of manned aircraft and not to put people on the ground at risk. It's that simple. But unfortunately people don't even know that. New York City police arrested two guys who chased after one of their police helicopters.<sup>32</sup>

Until passage of the 2012 FMRA, the FAA's policy was that there were only two categories of UAS operations allowed under the FARs: (1) public users (federal, state, and local governments) pursuant to a COA; and (2) civil users through the mechanism of a special airworthiness certificate in the experimental category.<sup>33</sup> Now, there are two additional paths to operational authority. The first is available by way of a petition for exemption authorized by Section 333 of the 2012 FMRA,<sup>34</sup> and the second will be whatever process emerges from the final small UAS rule that is now in the final stages of the rulemaking process.

The pending small UAS rule is intended to be the end result of the FAA's early attempt to bring some order to the chaos when it chartered the sUAS ARC in 2008.<sup>35</sup> This process was authorized by the FAA Administrator<sup>36</sup> and a committee of twenty members representing manufacturers, academia, government, industry organizations, employee groups, aviation associations, and the FAA that worked diligently and presented a report and recommendations to the FAA in April 2009.<sup>37</sup> The ARC's recommendations went through an exhaustive multi-agency review process that resulted in publication of the small UAS Notice of Proposed Rulemaking (NPRM) in February 2015.<sup>38</sup> The key elements of the NPRM require the aircraft to: (1) weigh less than fifty-five pounds; (2) only operate within visual line-of-sight; (3) not operate directly over people; (4) only perform day-

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32. Interview by Debra Werner with Jim Williams, *supra* note 6, at 16–17.

33. 14 C.F.R. § 21.175(b) (2012) is the authorizing regulation.

34. FAA Modernization & Reform Act of 2012, Pub. L. No. 112-95, § 333, 126 Stat. 11 (2012).

35. U.S. DEP'T OF TRANSP., FED. AVIATION ADMIN., ORDER No. 1110.150, SMALL UNMANNED AIRCRAFT SYSTEM AVIATION RULEMAKING COMMITTEE (2008), <http://www.faa.gov/documentLibrary/media/Order/1110.150.pdf>.

36. 49 U.S.C. § 106(p)(5) (2012).

37. SMALL UNMANNED AIRCRAFT SYSTEMS AVIATION RULEMAKING COMMITTEE: COMPREHENSIVE SET OF RECOMMENDATIONS FOR sUAS REGULATORY DEVELOPMENT (2009), [www.faa.gov/regulations\\_policies/rulemaking/committees/documents/media/SUAS.ARC.RR.20090401.pdf](http://www.faa.gov/regulations_policies/rulemaking/committees/documents/media/SUAS.ARC.RR.20090401.pdf).

38. Operation and Certification of Small Unmanned Aircraft Systems, 80 Fed. Reg. 9544 (proposed Feb. 23, 2015) (to be codified in scattered parts of 14 C.F.R.).

time operations; (5) yield right-of-way to other aircraft; (6) not exceed 100 miles per hour airspeed; (7) not fly above an altitude of 500 feet above ground level; (8) maintain minimum weather visibility of three miles; (9) not operate in Class A airspace (above 18,000 feet mean sea level); and (10) only operate in Class E airspace unless given permission by Air Traffic Control. In addition, there will be no requirement for the pilot to obtain a private pilot certificate, however, some testing and qualifications are still required.<sup>39</sup>

## II. WAITING FOR GODOT: THE PART 107 NPRM

A question often posed by interested parties and those who hope to utilize the new rule to initiate commercial UAS operations is: Why did it take so long to get a rule in place? The path taken by the sUAS NPRM is illustrative of the process.

At a leadership level, the FAA Administrator and her deputies first needed to decide that a rule was necessary or desired. Any number of outside influences could have motivated this decision, but the major impetus was an action taken by the FAA in February 2007. Small UAS civil operations were terminated by a clarification of existing policy, which stated that operating civil UAS under the AC 91-57 guidance document was no longer allowed.<sup>40</sup> After this policy was published, there were only two ways to fly a small UAS in the NAS outside of restricted airspace. As mentioned *supra*, public entities could obtain a COA or civilians and civil entities could obtain an experimental airworthiness certificate for research and development, training, and marketing. Both alternatives bore significant restrictions and neither allowed for flight operations for compensation or hire. In response to the public outcry and to help develop the rules that would allow more small UAS access to the NAS, the sUAS ARC was chartered. Some of the sUAS ARC's recommendations were used by the FAA to develop the recently published NPRM.<sup>41</sup>

A smorgasbord of federal statutes, administrative rules, and international agreements require a multi-step review process of any proposed rule. The Administrative Procedures Act of 1946<sup>42</sup> and the Federal Register Act of 1935<sup>43</sup> govern the rulemaking process. These

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39. *Id.* at 9546.

40. Unmanned Aircraft Operations in the National Airspace System, 72 Fed. Reg. 6689, 6690 (Feb. 13, 2007) (to be codified at 14 C.F.R. pt. 91).

41. Telephone Interview with Ted Wierzbanski, former Co-Chair of the sUAS Aviation Rulemaking Comm. (July 10, 2015); Ted Wierzbanski, *UASs in the National Airspace System (NAS): Past-Present-Future*, Power Point Slides (Apr. 21, 2015) (on file with author).

42. Administrative Procedure Act of 1946, Pub. L. No. 79-404, 60 Stat. 237 (1946).

43. Federal Register Act of 1935, Pub. L. No. 74-220, 49 Stat. 500, 500-03 (1935).

two statutes combined are intended to ensure that the process is open to public scrutiny. This is accomplished by procedural due process and publication requirements. This “informal rulemaking” is a four-step process that follows what often involves months, or even years, of industry rulemaking committee effort, internal FAA review and analysis, and interagency negotiation. “Once the proposed rule has achieved a sufficient level of maturity, it will be published in the Federal Register as a Notice of Proposed Rulemaking.”<sup>44</sup> Executive Orders 12866, 13132, 13211, 13563, and 13609 require interagency negotiation and coordination.<sup>45</sup> Additionally, the agency must comply with the Regulatory Flexibility Act of 1980,<sup>46</sup> the Trade Agreements Act,<sup>47</sup> the Unfunded Mandates Reform Act,<sup>48</sup> the Paperwork Reduction Act of 1995,<sup>49</sup> FAA Order 1050.1E (Environmental Analysis),<sup>50</sup> and Department of Transportation Order 2100.5 (Policies for Review of Regulations).<sup>51</sup> Every other federal agency whose jurisdiction may be impacted by the proposed rule is given the opportunity to review the rule and register objections or comments. Lastly, the White House Office of Management and Budget (specifically, the Office of Information and Regulatory Affairs) must sign off on the proposal before it is published.<sup>52</sup>

In brief summary, after nearly six years of internal reviews and development, the FAA announced the new Part 107 NPRM on February 15, 2015 and published the document on February 23, 2015. The sixty day comment period, during which time anyone could log onto the FAA website and post her comments on the rule, closed on April 24, 2015. Now, the FAA must collate, categorize, and resolve all of the comments before publishing a final rule. This process also requires

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44. RICHARD K. BARNHART ET AL., *INTRODUCTION TO UNMANNED AIRCRAFT SYSTEMS* 39 (2012).

45. Exec. Order No. 13609, 77 Fed. Reg. 87 (May 4, 2012); Exec. Order No. 13563, 76 Fed. Reg. 14 (Jan. 21, 2011); Exec. Order No. 13211, 66 Fed. Reg. 99 (May 22, 2001); Exec. Order No. 13132, 64 Fed. Reg. 153 (Aug. 10, 1999); Exec. Order No. 12866, 58 Fed. Reg. 190 (Oct. 4, 1993).

46. Regulatory Flexibility Act of 1980, Pub. L. 96-354, 94 Stat. 1164 (1980).

47. Trade Agreements Act, Pub. L. 96-39, 93 Stat. 144 (1979).

48. Unfunded Mandates Reform Act, Pub. L. 104-4, 109 Stat. 48 (1995).

49. 44 U.S.C. § 3507(d) (2012).

50. U.S. DEP'T OF TRANSP., FED. AVIATION ADMIN. ORDER NO. 1050.1E., *ENVIRONMENTAL IMPACTS: POLICIES AND PROCEDURES* (2006).

51. U.S. DEP'T OF TRANSP., OFFICE OF THE SECRETARY, DOT 2100.5, *POLICIES AND PROCEDURES FOR SIMPLIFICATION, ANALYSIS, AND REVIEW OF REGULATIONS* (1980).

52. Congress created OIRA with the enactment of the Paperwork Reduction Act of 1980 (PRA). In addition to its work reviewing Federal regulations, OIRA carries out several other important functions, including reducing paperwork burdens and overseeing policies relating to privacy, information quality, and statistical programs. WHITE HOUSE, <https://www.whitehouse.gov/omb/oira/about> (last visited Sept. 30, 2015).

public notice as well, so the comment resolutions are published and often appear in the preamble to the final rule. The projection is that the resolution process will be completed and the final rule published sometime in 2016. The internal FAA process started in 2011, so the effort will have taken five years to complete.<sup>53</sup>

### III. A ONE-WAY MIRROR: THE EX-PARTE RULE AND CONSENSUS STANDARDS

The sUAS ARC recommended that detailed requirements for civil operations be established through industry consensus standards, and while the proposed rule was winding its way through the process outlined *supra*, the FAA chartered the ASTM International organization to develop those standards (Committee F38 Unmanned Aircraft Systems).<sup>54</sup> The categories of standards that have been fully vetted and published by ASTM International include: (1) Design, Construction and Test; (2) Production Acceptance; (3) Quality Assurance; (4) Maintenance and Instructions for Continued Airworthiness; (5) Aircraft Flight Manual; and (6) Marking.<sup>55</sup> However, when the NPRM was finally published, there was no mention of consensus standards. The FAA was prohibited from advising ASTM and its many volunteers who served—and continue to serve—on the several committees that created these standards, which were not mentioned in the proposed rule due to an ex-parte rule.<sup>56</sup> The conundrum faced by the committees was that the charter to develop standards for acceptable means of compliance with the proposed rule was inhibited by the lack of meaningful guidance from the FAA as to what the proposed rule would state.

The criteria for these standards, as set forth in the ASTM charter, should: (1) properly align the standards with the NPRM; (2) be traceable from the lowest level standard to a stated objective or identified hazard; (3) be measurable and testable; (4) be realistically achievable; (5) provide sufficient coverage that ensures small UAS can operate safely and reliably in the NAS; and (6) be timely.<sup>57</sup>

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53. Interview by Debra Werner with Jim Williams, *supra* note 6, at 15.

54. See ASTM INT'L, <http://www.astm.org/ABOUT/overview.html> (last visited Sept. 30, 2015).

55. There are additional standards for operations over people, beyond visual line-of-sight operations, extended line-of-sight operations, and operational risk assessment in development.

56. 14 C.F.R. § appx. 11 (2012).

57. *Committee F38 on Unmanned Aircraft Systems*, ASTM INT'L, <http://www.astm.org/COMMITTEE/F38.htm> (last visited Aug. 10, 2015).

#### IV. CONGRESS SPEAKS: TEST SITES, THE ARCTIC, 333 EXEMPTIONS, AND UNFUNDED MANDATES

Congress seized the initiative in facilitating civil UAS operations by passing the 2012 FMRA.<sup>58</sup> The Act specified, among other things, a requirement that the FAA: (1) establish six national test ranges for UAS research and development pursuant to specified criteria; (2) develop a plan and initiate the process to authorize certain commercial and research UAS operations in the Arctic region north of Alaska; (3) engage in rulemaking to allow for civil operations of small commercial UAS; (4) update its 2007 policy statement so that the FAA can develop a Comprehensive Plan for the integration of unmanned aircraft into the national airspace; (5) produce a five-year roadmap for future development of UAS policy and introduction of unmanned aircraft into the NAs; (6) assess whether certain unmanned aircraft systems can safely operate in the national airspace so that the FAA can expedite issuance of COAs for public safety agencies; (7) carry out safety studies to support the integration of unmanned aircraft systems into the NAS; and, finally, (8) be prohibited from promulgating any rule or regulation regarding model aircraft if the aircraft is flown for hobby or recreational purposes.<sup>59</sup> Notwithstanding the model aircraft prohibition, the FAA is still empowered to enforce the rules of 14 CFR Part 91's air provisions as well as any other existing rules or regulations that may affect model aircraft operations.<sup>60</sup>

#### V. SUMMARY AND CONCLUSIONS

The paths to operational approval for small commercial or civil UAS are varied. The traditional method is to obtain a restricted category type certificate under 14 CFR § 21.25, which allows for civil certification of aircraft that are manufactured in accordance with the requirements of, and accepted for use by, the United States Armed Forces and have been modified for one of the delineated special purposes.<sup>61</sup> A second and somewhat parallel method is a Special Class Certificate under 14 CFR § 21.17(b), which is an alternative type of

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58. FAA Modernization & Reform Act of 2012, Pub. L. No. 112-95, 126 Stat. 11 (2012). Subtitle B of the statute contains six sections that deal specifically with unmanned aircraft systems and operations: (1) § 331 Definitions; (2) § 332 Integration of civil unmanned aircraft systems into the national airspace system; (3) § 333 Special rules for certain unmanned aircraft systems; (4) § 334 Public unmanned aircraft systems; (5) § 335 Safety studies; (6) § 336 Special rules for model aircraft.

59. FAA Modernization & Reform Act, Pub. L. No. 112-95, 126 Stat. 11.

60. *See, e.g.*, Interpretation of the Special Rule for Model Aircraft, 79 Fed. Reg. 43240, 43240 (July 25, 2014) (to be codified at 14 C.F.R. pt. 91).

61. 14 C.F.R. § 21.25(a)(2), b(1)–(7) (2012).

aircraft certification process for which airworthiness standards have not yet been issued under this subchapter.<sup>62</sup> For public aircraft operations (federal, state, and local government entities), a COA is the preferred method.<sup>63</sup> The third path is through the new Section 333 exemption process, as provided by the 2012 FMRA.<sup>64</sup> This alternative has been the most popular way to obtain authorization for commercial UAS operations. As of this Essay's publication, over 1500 petitions have been granted in the fields of aerial photography, infrastructure inspection, construction, entertainment, news gathering, precision agriculture, and many more.<sup>65</sup> The last path is reserved for small UAS operations authorized under the pending Part 107 rule.<sup>66</sup> In the meantime, another Aviation Rulemaking Committee is working on a broader scope for all UAS categories with a goal of integrating UAS into the national airspace, supporting the FAA's NextGen effort, and ultimately facilitating global harmonization of UAS regulations and policies.<sup>67</sup>

There are multiple land mines and blind alleys to trap the unwary entrepreneur or business entity seeking to design, acquire, build, deploy, or otherwise exploit the virtually unlimited opportunities for both profitable and humanitarian uses of unmanned aircraft systems.<sup>68</sup> The landscape seemingly changes on a weekly basis. Case in point, a new UAS policy statement was released the day this Essay was submitted for consideration. Time does not permit an exhaustive analysis, but it purports to clarify existing policy, provide information and interim guidance on air traffic policies, and prescribe procedures for

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62. *Id.* § 21.17(b).

63. See generally 49 U.S.C. §§ 40102(a)(41), 40125 (2012) (defining public aircraft and examining the qualifications for public aircraft status); 14 C.F.R. § 1.1 (defining public aircraft). A certificate of waiver or authorization is essentially the only method available for public entities to operate aircraft in the national airspace that do not have an airworthiness certificate. U.S. DEP'T OF TRANSP., FED. AVIATION ADMIN., AC No. 00-1.1A, Public Aircraft Operations (2014), [https://www.faa.gov/documentLibrary/media/Advisory\\_Circular/AC\\_00-1\\_1A.pdf](https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_00-1_1A.pdf) (including flow charts Figures 1 & 2.).

64. See Section 333, FED. AVIATION ADMIN., [www.faa.gov/uas/legislative\\_programs/section\\_333/](http://www.faa.gov/uas/legislative_programs/section_333/) (last modified Aug 04, 2015, 8:26 AM).

65. *Id.*

66. U.S. DEP'T OF TRANSP., FED. AVIATION ADMIN., OPERATION AND CERTIFICATION OF SMALL UNMANNED AIRCRAFT SYSTEMS (2015), [https://www.faa.gov/regulations\\_policies/rulemaking/recently\\_published/media/2120-AJ60\\_NPRM\\_2-15-2015\\_joint\\_signature.pdf](https://www.faa.gov/regulations_policies/rulemaking/recently_published/media/2120-AJ60_NPRM_2-15-2015_joint_signature.pdf).

67. U.S. DEP'T OF TRANSP., FED. AVIATION ADMIN., UNMANNED AIRCRAFT SYSTEMS AVIATION RULEMAKING COMMITTEE (2011), [www.faa.gov/regulations\\_policies/rulemaking/committees/documents/media/uas.arc.cht.20110617.pdf](http://www.faa.gov/regulations_policies/rulemaking/committees/documents/media/uas.arc.cht.20110617.pdf).

68. See *infra* Parts I, II.

planning, coordination, and services involving the operation of unmanned aircraft systems in the NAS.<sup>69</sup>

It goes without saying that the prudent UAS operator or entrepreneur will consult a seasoned professional before embarking on a potentially costly and fruitless enterprise simply to avoid choosing the wrong path—or choosing no path at all—and trying to operate commercially without appropriate authorization. Although the FAA prefers compliance over enforcement, it will bring enforcement proceedings that may include substantial civil penalties against a UAS operator who blatantly disregards basic safety practices and the relevant sections of Part 91 or otherwise presents a hazard to people and property.<sup>70</sup> Indeed, the FAA must do so to honor its statutory mandate of ensuring the safety of the NAS.

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69. DEP'T OF TRANSP., FED. AVIATION ADMIN., N JO 7210.882, AIR TRAFFIC ORGANIZATION POLICY (2015), [http://www.faa.gov/documentLibrary/media/Notice/N\\_JO\\_7210\\_882.pdf](http://www.faa.gov/documentLibrary/media/Notice/N_JO_7210_882.pdf).

70. Interview by Debra Werner with Jim Williams, *supra* note 6, at 17.