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## Don't Ground Me Bro!: Private Ownership of Airspace and How It Invalidates the FAA's Blanket Prohibition on Low Altitude Commercial Drone Operations

Pierce Giboney

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DON'T GROUND ME BRO! PRIVATE OWNERSHIP OF  
AIRSPACE AND HOW IT INVALIDATES THE FAA'S BLANKET  
PROHIBITION ON LOW ALTITUDE COMMERCIAL DRONE  
OPERATIONS

*Pierce Giboney\**

Abstract

In years past, society has typically associated the word “drone” with the War on Terror and far-off battlefields. With the advent of the smart phone revolution, however, the once prohibitive costs of the technology have decreased to a level the general public can afford. As a consequence, a rising number of entrepreneurs associate the word “drone” with opportunity—a means of reaching a new commercial frontier, provided they can get off the ground.

Purportedly due to the lack of a regulatory framework governing the new technology, the Federal Aviation Administration (FAA) has essentially prohibited the use of drones at any altitude for “business purposes.” With the prohibition likely to remain in place for the foreseeable future, many of these would-be entrepreneurs choose to fly in open defiance of the FAA. Some of these drone pilots challenge whether the FAA even possesses the authority to impose the prohibition. The FAA responds to these challenges by insisting that it alone has the power to regulate the safety of all airspace “from the ground up.”

While the U.S. Supreme Court has held that landowners retain a right to own the “superadjacent” airspace above their property, the Court has left undefined the precise limits of superadjacent airspace. However, utilizing drones provides an opportunity to define “superadjacent” and, more importantly, establish the outer limits of the FAA’s authority over the lower airspace. This Note argues that the FAA’s broad interpretation of its authority cannot be reconciled with the Supreme Court decisions regarding landowners’ rights to own airspace above their property. This Note concludes that given the Supreme Court precedent, the FAA’s blanket prohibition on the use of drones for “business purposes” is an invalid exercise of its authority.

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\* J.D. Candidate 2016, University of Florida Levin College of Law; B.A. 2008, Georgia Southern University. I would like to thank the editors and fellow members of the *Florida Law Review* for their hard work and diligence. I would also like to specifically thank Cole Barnett, Jennings Cooksey, Trace Jackson, John Printy, Sonja Sahlsten, and Anthony Sirven for their insightful commentary and encouragement. Most of all I would like to thank the person this Note is dedicated to, my beloved wife Amanda, without whom none of this would have been possible.

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## INTRODUCTION

Louisiana farmers have a problem: feral hogs are ravaging their crops and farmland. This problem is serious enough that Louisiana allows people to hunt feral hogs almost without restriction.<sup>1</sup> The relatively loose hunting restrictions, however, have been largely ineffective in checking the feral hog population.<sup>2</sup> Intelligent enough to know that farmers will shoot them during the daytime, feral hogs often wait until dark before coming out to eat.<sup>3</sup> With hunting and trapping proving to be inefficient, and other means of control being prohibitively expensive (e.g., hunting from helicopters), the noxious beasts appeared to be winning the war against their predators.<sup>4</sup>

Enter Cy Brown's "Dehogiflier," a homemade drone equipped with a thermal imaging camera.<sup>5</sup> Where the feral hog once used the heavy Louisiana brush and cover of darkness to evade their human predators, Brown and his team tipped the balance in favor of the farmers. He was so successful that the U.S. Department of Agriculture expressed an interest in adopting Brown's method.<sup>6</sup> The victory would prove to be short-lived: the Federal Aviation Administration (FAA) grounded Brown's operation, and the feral hog, once again, reigns supreme over the Louisiana farmer.<sup>7</sup>

Cy Brown is not alone. The FAA has grounded virtually any private individual or organization utilizing drones for commercial purposes.<sup>8</sup> Understandably, the subjects of the FAA's blanket prohibition on flying drones—specifically, those flying drones at lower altitudes—have questioned the FAA's justifications for doing so.

One drone enthusiast, however, raised a more fundamental question. In response to a \$10,000 enforcement action, Raphael Pirker questioned

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1. Michael Perot, *Coping with Feral Hogs*, LA. DEP'T OF WILDLIFE & FISHERIES, [http://www.wlf.louisiana.gov/sites/default/files/pdf/publication/32954-feral-hogs/feral\\_hogs.pdf](http://www.wlf.louisiana.gov/sites/default/files/pdf/publication/32954-feral-hogs/feral_hogs.pdf) (last visited Oct. 14, 2015).

2. Julia O'Donoghue, *Feral Hogs, the Unpopular Affordable Care Act and Smoking Restrictions: Capitol Digest*, TIMES PICAYUNE (Apr. 04, 2014, 7:48 PM), [http://www.nola.com/politics/index.ssf/2014/04/capitol\\_digest\\_april\\_4.html](http://www.nola.com/politics/index.ssf/2014/04/capitol_digest_april_4.html) (“[Feral hogs] are prolific breeders. Experts say 75 percent of the wild hog population would have to be killed just to keep it to current levels.”).

3. *Id.*

4. Jesse Hirsch, *Hunting Wild Pigs with Drones*, MOD. FARMER (Apr. 18, 2013), <http://modernfarmer.com/2013/04/hunting-pigs-with-drones/>.

5. *Id.*

6. *Drone Wars: Who Owns the Air?*, NPR (May 30, 2014, 3:03 AM), <http://www.npr.org/templates/transcript/transcript.php?storyId=317074394>.

7. *Id.*

8. See, e.g., Nick Bilton, *Delivery Drones Grounded by F.A.A.*, N.Y. TIMES: BITS (June 25, 2014, 7:15 AM), <http://bits.blogs.nytimes.com/2014/06/25/delivery-drones-grounded-by-f-a-a/>; Heather Kelly, *Beer-Delivery Drone Grounded by FAA*, CNN (Feb. 3, 2014, 10:03 AM), <http://www.cnn.com/2014/01/31/tech/innovation/beer-drone-faa/>.

not only whether the FAA was justified in imposing the fine, but whether the FAA *even possessed the authority* to do so.<sup>9</sup> Specifically, Pirker maintained that the FAA lacked any jurisdictional authority to regulate aircraft, or even the airspace itself, below what the U.S. Supreme Court has declared to be in the public domain.<sup>10</sup> In doing so, Pirker raised an old but ultimately unsettled issue: If a landowner maintains a property interest in the “superadjacent” airspace above her land, to what height does that interest extend? More importantly, what limitations does this impose on the FAA’s ability to regulate drones flying within that airspace? Answering those questions may prove critical in determining whether the FAA may ground operations such as Pirker’s for the foreseeable future.

Part I of this Note introduces the current costs and capabilities of drone technology, provides insight into the adversarial relationship developing between drone enthusiasts and the FAA, and concludes with the facts and arguments raised in *Huerta v. Pirker*. Part II identifies the primary arguments the FAA raises to justify the prohibition and how those arguments relate to statutes governing the agency. Part III argues that the FAA’s broad interpretation of its own regulatory authority cannot be reconciled with the landowner’s right to privately own and develop airspace above his property, as established by the Supreme Court. Part IV reconciles the FAA’s regulatory authority with the right to privately own airspace and argues that the FAA cannot sustain its prohibition even under the broadest possible interpretation.

## I. DRONE TECHNOLOGY AND REGULATION

The FAA broadly defines “drone,” or unmanned aircraft, as “a device that is used, or is intended to be used, for flight in the air with no onboard pilot.”<sup>11</sup> The definition encompasses drones as simple as remotely controlled model aircrafts to complex drones used for sophisticated aerial surveillance over hostile areas.<sup>12</sup> Drone weights currently range from as small as four ounces to over 32,000 pounds, with wingspans varying from six inches to over 240 feet.<sup>13</sup>

As recently as ten years ago, the prohibitive cost of the technology (some of it classified) limited the use of drones largely to military

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9. See *infra* Section I.D.

10. Respondent’s Motion to Dismiss at 10, *Huerta v. Pirker*, No. CP-217 (N.T.S.B. Sept. 27, 2013) [hereinafter *Pirker* MTD], available at <http://www.kramerlevin.com/files/upload/FAA-v-Pirker.pdf>.

11. Unmanned Aircraft Operations in the National Airspace System (UAONAS), 72 Fed. Reg. 6689, 6689 (Feb. 13, 2007).

12. *Id.*

13. Unmanned Aircraft System Test Sites, 77 Fed. Reg. 14,319, 14,319 (Mar. 9, 2012).

applications.<sup>14</sup> With the advent of the smart phone revolution, however, the costs of essential drone components, such as accelerometers, gyroscopes, and GPS trackers, have decreased to a level the general public can afford.<sup>15</sup> Consequently, where an advanced flight control system would have formerly cost between \$5000 and \$10,000, an entire drone flight platform—capable of flying twenty-two miles per hour and at altitudes up to 1000 feet—only costs \$489 online.<sup>16</sup> Drones of more limited capabilities, albeit still equipped with video cameras and other gadgets, cost less than \$100 online.<sup>17</sup>

Moreover, as costs have decreased, the technological capabilities of drones continue to dramatically increase. For instance, manufacturers can equip drones with state-of-the-art high-resolution cameras capable of viewing an object as small as six inches from 17,000 feet in the air.<sup>18</sup> The Wireless Aerial Surveillance Platform, WASP), a drone weighing only fourteen pounds with a six-foot wingspan, is capable of not only hacking into personal Wi-Fi networks, but also rerouting and recording outgoing phone calls and text messages.<sup>19</sup>

#### A. Civil Drones: Proliferation and Projected Economic Impact

The FAA estimates that “some 100 U.S. companies, academic institutions, and government organizations are developing over 300 [drone] designs.”<sup>20</sup> Though the FAA characterizes the number of units as

14. Ben Popper, *Drones over US Soil: The Calm Before the Swarm*, VERGE (Mar. 19, 2013, 1:00 PM), <http://www.theverge.com/2013/3/19/4120548/calm-before-the-swarm-domestic-drones-are-here>; see also UACNAS, 72 Fed. Reg. at 6689 (“The most common public use of unmanned aircraft today in the United States is by the Department of Defense.”); Oren Gross, *The New Way of War: Is There a Duty to Use Drones?*, 67 FLA. L. REV. 1, 1 (2015) (noting that drones “have become the poster child for America’s continuing fight against terrorism”).

15. Popper, *supra* note 14.

16. *Id.*; see also, e.g., DJI Phantom Aerial UAV Drone Quadcopter for GoPro, AMAZON.COM, <http://www.amazon.com/DJI-Phantom-Aerial-Drone-Quadcopter/dp/B00AGOSQI8> (last visited Oct. 14, 2015) (showing the price of a drone on Amazon.com). This price of \$489 was current as of the time of this Note. The price is subject to change.

17. See, e.g., UDI U818A 2.4GHz 4 CH 6 Axis Gyro RC Quadcopter with Camera RTF Mode 2, AMAZON.COM, <http://www.amazon.com/U818A-2-4GHz-Axis-Quadcopter-Camera/dp/B00D3IN11Q/> (last visited Oct. 14, 2015).

18. See Ryan Gallagher, *Could the Pentagon’s 1.8 Gigapixel Drone Camera Be Used for Domestic Surveillance?*, SLATE (Feb. 6, 2013, 10:14 AM), [http://www.slate.com/blogs/future\\_tense/2013/02/06/argus\\_is\\_could\\_the\\_pentagon\\_s\\_1\\_8\\_gigapixel\\_drone\\_camera\\_be\\_used\\_for\\_domestic.html](http://www.slate.com/blogs/future_tense/2013/02/06/argus_is_could_the_pentagon_s_1_8_gigapixel_drone_camera_be_used_for_domestic.html).

19. See Andy Greenberg, *Flying Drone Can Crack Wi-Fi Networks, Snoop on Cell Phones*, FORBES (July 28, 2011, 2:11 PM), <http://www.forbes.com/sites/andygreenberg/2011/07/28/flying-drone-can-crack-wifi-networks-snoop-on-cell-phones/>.

20. U.S. DEP’T OF TRANSP., FED. AVIATION ADMIN., FAA AEROSPACE FORECAST: FISCAL YEARS 2010–2030, at 48 (2010), available at [http://www.faa.gov/data\\_research/aviation/aerospace\\_forecasts/2010-2030/media/2010%20Forecast%20Doc.pdf](http://www.faa.gov/data_research/aviation/aerospace_forecasts/2010-2030/media/2010%20Forecast%20Doc.pdf).

“small,” it forecasts that 30,000 drones will be flying over the United States by 2030.<sup>21</sup> Where drones were once almost exclusively a government endeavor, everyone from real estate photographers to multinational corporations has recognized and seized on the affordability and rapidly increasing commercial (and noncommercial) potential of drone technology.

Though drones already play a significant role in the public sphere (e.g., law enforcement, firefighting, border patrol, search and rescue<sup>22</sup>), “their application in commercial or civil use is equally diverse.”<sup>23</sup> In the United States, both Amazon and Google are investing in and making headway with this technology. To reduce shipping costs and compete with the same-day delivery capabilities of its rivals, Amazon is currently developing and testing a drone-based delivery system.<sup>24</sup> The purported goal of Amazon’s drone delivery system, Amazon Prime Air, is to “get packages into customers’ hands in 30 minutes or less using small unmanned aerial vehicles.”<sup>25</sup> Amazon insists that Prime Air will be a delivery option “when and where we have the regulatory support needed to realize our vision.”<sup>26</sup> Google is experimenting with a drone delivery system of its own. In August 2014, Google’s five-foot-wide drone prototype delivered candy, dog treats, cattle vaccines, water, and radios to farmers in Queensland, Australia.<sup>27</sup> The “DomiCopter,” a drone developed by Domino’s Pizza, successfully delivered two pizzas in the United Kingdom last year.<sup>28</sup> Other commercial applications include

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21. *Id.*

22. See *Fact Sheet—Unmanned Aircraft Systems (UAS)*, FED. AVIATION ADMIN. (Jan. 6, 2014), [http://www.faa.gov/news/fact\\_sheets/news\\_story.cfm?newsId=14153](http://www.faa.gov/news/fact_sheets/news_story.cfm?newsId=14153) [hereinafter *FAA Fact Sheet*].

23. UACNAS, 72 Fed. Reg. 6689, 6689 (Feb. 13, 2007).

24. See Jillian D’Onfro, *Why Amazon Needs Drones More Than People Realize*, BUS. INSIDER (July 30, 2014, 6:23 PM), <http://www.businessinsider.com/amazon-drones-2014-7>.

25. *Amazon Prime Air*, AMAZON.COM, <http://www.amazon.com/b?ie=UTF8&node=8037720011> (last visited Oct. 14, 2015).

26. *Id.*

27. Alistair Barr & Greg Bensinger, *Google Is Testing Delivery Drone System*, WALL ST. J. (Aug. 29, 2014, 4:04 AM), <http://www.wsj.com/articles/google-reveals-delivery-drone-project-1409274480>.

28. Julianne Pepitone, *Domino’s Tests Drone Pizza Delivery*, CNN MONEY (June 4, 2013, 6:29 PM), <http://money.cnn.com/2013/06/04/technology/innovation/dominos-pizza-drone/index.html>.

filmmaking,<sup>29</sup> real estate,<sup>30</sup> and agriculture.<sup>31</sup>

The FAA predicts that yearly spending on drones will double from \$5.2 billion to \$11.6 billion, increasing to more than \$89 billion in the next decade.<sup>32</sup> A 2013 research study conducted by the Association for Unmanned Vehicle Systems International (AUVSI) estimates the economic impact of commercial drones will total more than \$13.6 billion within three years of integration into the national airspace system.<sup>33</sup> AUVSI further estimates that integration “will create more than 34,000 manufacturing jobs . . . and more than 70,000 new jobs” within the same time frame.<sup>34</sup> Other estimates include an increase in state tax revenues totaling more than \$482 million within the first eleven years following integration and the creation of 103,776 total jobs by 2025.<sup>35</sup> AUVSI asserts that the United States loses more than \$10 billion for every year that integration is delayed—a total loss of \$27.6 million per day.<sup>36</sup> AUVSI concludes that “[t]he main inhibitor of U.S. commercial and civil development of [drones] is the lack of a regulatory structure.”<sup>37</sup>

#### B. *Regulation of Drones and the FAA Modernization and Reform Act of 2012*

The FAA distinguishes between “public aircraft” and “civil aircraft” for regulation purposes. A “public aircraft” is (1) an aircraft only used for governmental purposes, or (2) an aircraft owned or leased by the government and operated by any persons “for purposes related to crew training, equipment development, or demonstration.”<sup>38</sup> A “civil aircraft”

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29. See, e.g., Neal Ungerleider, *See What You Can Do with Drone Filmmaking*, FAST CO. (Jan. 31, 2013, 9:00 AM), <http://www.fastcocreate.com/1682320/see-what-you-can-do-with-drone-filmmaking>.

30. See, e.g., Rapti Gupta, *Drones: Aerial Photos the Latest Real Estate Marketing Tool*, REALTY TODAY (May 16, 2014, 4:48 AM), <http://www.realtytoday.com/articles/5806/20140516/drones-aerial-photos-latest-real-estate-marketing-tool.htm>.

31. See, e.g., Chris Anderson, *Agricultural Drones*, MIT TECH. REV. (Apr. 23, 2014), <http://www.technologyreview.com/featuredstory/526491/agricultural-drones/>.

32. See Alan Levin, *Drone Pilot Fine Test Industry Seen Reaching \$89 Billion*, BLOOMBERG BUS. (Oct. 24, 2013, 12:00 AM), <http://www.bloomberg.com/news/2013-10-24/drone-pilot-fine-tests-industry-seen-reaching-89-billion.html>.

33. DARRYL JENKINS & BIJAN VASIGH, ASS’N FOR UNMANNED VEHICLE SYS. INT’L, *THE ECONOMIC IMPACT OF UNMANNED AIRCRAFT SYSTEMS INTEGRATION IN THE UNITED STATES 2*, available at [https://higherlogicdownload.s3.amazonaws.com/AUVSI/958c920a-7f9b-4ad2-9807-f9a4e95d1ef1/UploadedImages/New\\_Economic%20Report%202013%20Full.pdf](https://higherlogicdownload.s3.amazonaws.com/AUVSI/958c920a-7f9b-4ad2-9807-f9a4e95d1ef1/UploadedImages/New_Economic%20Report%202013%20Full.pdf).

34. *Id.*

35. *Id.*

36. *Id.*

37. *Id.*

38. 14 C.F.R. § 1.1 (2015).

is anything other than a public aircraft.<sup>39</sup> Generally, aircraft used for commercial purposes qualify as civil aircraft under FAA regulations.<sup>40</sup>

The distinction between public and civil aircraft is relevant in that the FAA may not regulate or impose specific safety requirements on aircraft classified as public.<sup>41</sup> Currently, the only way for a civil drone operator to access the national airspace system is to apply for and obtain an experimental airworthiness certificate from the FAA.<sup>42</sup> Historically, the FAA has been extremely reluctant to issue airworthiness certificates to private entities.<sup>43</sup> Operating commercial drones at any altitude is essentially prohibited—prior to September 2014, the FAA certified only two commercial drone models, both limited to Arctic airspace.<sup>44</sup>

Recognizing that commercial and civil drone use was far outpacing the FAA's promulgation of regulations, the federal government enacted the FAA Modernization and Reform Act of 2012 (FMRA).<sup>45</sup> The legislation mandates that the FAA develop a plan to safely integrate civil drones into the national airspace system by September 30, 2015.<sup>46</sup> The plan must include, among other things, "recommendations or projections . . . on how the rulemaking will define . . . the acceptable standards for operation and certification of [drones]."<sup>47</sup> The FMRA also requires the establishment of six test ranges for "develop[ing]

39. *Id.*

40. *Id.* (defining "commercial purposes" as "the transportation of persons or property for compensation or hire").

41. See *Testimony—Statement of Nicholas A. Sabatini, Associate Administrator for Regulation and Certification Before the Comm. on Commerce, Sci. & Transp. on Role of FAA in Safety Oversight of Forest Service Firefighting Operations*, 109th Cong. (2004), available at [http://www.faa.gov/news/testimony/news\\_story.cfm?newsId=6151&print=go](http://www.faa.gov/news/testimony/news_story.cfm?newsId=6151&print=go).

42. *FAA Fact Sheet*, *supra* note 22.

43. See Michael Berry & Nabihah Syed, *The FAA's Slow Move to Regulate Domestic Drones*, WASH. POST: THE VOLOKH CONSPIRACY (Sept. 24, 2014), <http://www.washingtonpost.com/news/volokh-conspiracy/wp/2014/09/24/the-faas-slow-move-to-regulate-domestic-drones/>.

44. *Busting Myths About the FAA and Unmanned Aircraft*, FED. AVIATION ADMIN., <http://www.faa.gov/news/updates/?newsId=76240> (last updated Mar. 07, 2014). In September 2014, the FAA granted six aerial photography companies exemptions to use drones in a limited capacity. David Robb, *FAA Approves Drone Use for Hollywood Productions, Sets Guidelines—Update*, DEADLINE (Sept. 25, 2014, 1:29 PM), <http://deadline.com/2014/09/drones-hollywood-faa-approves-841265/>. The FAA granted exemptions to four more companies the following December. Alwyn Scott, *UPDATE 2-U.S. OK's More Commercial Drone Use as Congress Probes Risks*, REUTERS (Dec. 10, 2014, 1:31 PM), <http://www.reuters.com/article/2014/12/10/usa-drones-faa-idUSL1N0TU0Z820141210>.

45. FAA Modernization and Reform Act of 2012, Pub. L. No. 112-95, 126 Stat. 11 (codified as amended in scattered sections of 49 U.S.C.).

46. *Id.* § 332(a)(3).

47. *Id.* § 332(a)(2).

certification standards and air traffic requirements for [drones, both civil and public].”<sup>48</sup>

However, the legislation notably prohibits the FAA from “promulgat[ing] any rule or regulation regarding a model aircraft, or an aircraft being developed as a model aircraft,” provided certain conditions are met.<sup>49</sup> These conditions require that the model aircraft be “flown strictly for hobby or recreational use,” not weigh over fifty-five pounds, and not be operated in a manner that interferes with the flight of manned aircraft.<sup>50</sup> The FAA may, however, “pursue enforcement action against persons operating model aircraft who endanger the safety of the *national airspace system*.”<sup>51</sup>

At the current pace, the FAA is unlikely to meet the 2015 integration deadline. A 2014 report released by the U.S. Department of Transportation states that the FAA missed the statutory milestones for most of the drone-related provisions of the FMRA, including a mandate to issue a final rule by August 2014 for small drone operations.<sup>52</sup>

### C. *The Tumultuous Relationship Between the FAA and Civil Drone Operators*

With the prospects of the FAA implementing a workable regulatory framework and certification process in the near future looking increasingly dim, the near-blanket ban on commercial drone use has led to a high degree of tension between citizen drone enthusiasts/entrepreneurs and the FAA. The FAA has issued at least seventeen cease-and-desist letters to drone operators since 2012.<sup>53</sup> The activities targeted in the FAA’s letters include commercial cinematography, aerial photography, tornado research, inspection of gas

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48. *Id.* § 332(c).

49. *Id.* § 336(a).

50. *Id.*

51. *Id.* § 336(b) (emphasis added). In sum, the FAA may not promulgate rules or regulations regarding model aircraft but may pursue enforcement actions against model aircraft operated in a manner that endangers airspace in the public domain. See *infra* Section IV.B.

52. See Memorandum from Matthew E. Hampton, Assistant Inspector Gen. for Aviation Audits, U.S. Dep’t of Transp., to Fed. Aviation Admin. (June 26, 2014), in U.S. DEP’T OF TRANSP., AUDIT REPORT: FAA FACES SIGNIFICANT BARRIERS TO SAFELY INTEGRATE UNMANNED AIRCRAFT SYSTEMS INTO THE NATIONAL AIRSPACE SYSTEM 2 [hereinafter Hampton Memorandum], available at <https://www.oig.dot.gov/sites/default/files/FAA%20Oversight%20of%20Unmanned%20Aircraft%20Systems%5E6-26-14.pdf>.

53. Matthew Schroyer, *FAA Cease and Desist Letters Show Agency’s Attempts to Control Drone Use in the US*, PROF. SOC’Y OF DRONE JOURNALISTS (Feb. 4, 2014), <http://www.dronejournalism.org/news/2014/2/faa-cease-and-desist-letters-show-agencys-attempts-to-control-drone-use-in-the-us> [hereinafter *C&D Letters*] (compiling copies of the FAA’s cease and desist letters and discussing their contents).

well stacks, and “journalism education[.]”<sup>54</sup> Though the cease-and-desist letters detail the means by which a civil operator may obtain authorization to fly, many of the letters clearly state that the FAA prohibits drones operated for commercial use.<sup>55</sup>

In response, some high-end commercial operators are considering moving their operations to countries with more favorable regulations.<sup>56</sup> However, the FAA’s prohibition has done little, if anything, to dissuade the low-end drone user from continuing to fly. The low barriers to entering the drone market have promulgated an underground economy composed of wedding and real estate photographers, rural farmers, and teenagers—all confident that their limited activities will escape the FAA’s attention.<sup>57</sup>

One major (perhaps *the* major) source of tension arises from the apparent disagreement that commercial drones—at least those that qualify under the model aircraft exception—are beyond, or should be beyond, the FAA’s authority to regulate.<sup>58</sup> As a threshold issue to this, it

54. *See id.*; Jason Koebler, *These Are the Companies the FAA Has Harassed for Using Drones*, MOTHERBOARD (Feb. 6, 2014, 3:20 PM), <http://motherboard.vice.com/blog/these-are-the-companies-the-faa-has-harassed-for-using-drones>.

55. *C&D Letters*, *supra* note 53; *see also* Julianne Chiaet, *Drone Pilot Challenges FAA on Commercial Flying Ban*, SCI. AM. (Nov. 1, 2013), <http://www.scientificamerican.com/article/drone-pilot-challenges-faa-commercial-flying-ban/> (“[I]n 2007 the FAA turned its attention to model airplanes once again. Now termed drones . . . , the agency banned their use for business purposes.”).

56. *See* Chad Garland, *Drones May Provide Big Lift to Agriculture When FAA Allows Their Use*, L.A. TIMES (Sept. 13, 2014, 5:00 AM), <http://www.latimes.com/business/la-fi-drones-agriculture-20140913-story.html> (stating that the FAA’s strict regulations have caused manufacturers of agricultural drones to market their products overseas); *see also* Letter from Paul Misener, Vice President of Global Pub. Policy, Amazon.com, to Michael P. Huerta, Fed. Aviation Adm’r, 2 (July 9, 2014), *available at* <http://www.statewatch.org/news/2014/jul/usa-amazon-delivery-drones.pdf> (“Because Amazon is a commercial enterprise we have been limited [by the current FAA rules] to conducting R&D flights indoors or in other countries. Of course, Amazon would prefer to keep the focus, jobs, and investment of this important research and development initiative in the United States by conducting private research and development operations outdoors near Seattle . . .”).

57. Some openly defy the FAA. *See, e.g.*, Kevin Robillard, *FAA Risks Losing Drone War*, POLITICO (Feb. 22, 2014, 7:02 AM), [http://www.politico.com/story/2014/02/federal-aviation-administration-faa-drones-103800\\_Page2.html](http://www.politico.com/story/2014/02/federal-aviation-administration-faa-drones-103800_Page2.html) (noting that “acts of defiance against the FAA ban are becoming more blatant”); Jack Nicas & Andy Pasztor, *FAA, Drones Clash on Rules for Unmanned Aircraft*, WALL ST. J. (May 11, 2014, 8:43 PM), <http://online.wsj.com/news/articles/SB10001424052702303851804579556144292258188> (“Mike Fortin, president of an Orlando, Fla., drone company that films concerts and TV commercials, received an email from an FAA official in January telling him that his business was violating FAA policy. ‘My response to the FAA was to piss off,’ he said. The FAA hasn’t followed up.”).

58. The FAA itself acknowledges this situation. *See* UAONAS, 72 Fed. Reg. 6689, 6690 (Feb. 13, 2007) (“The FAA recognizes that people and companies other than modelers might be flying [drones] with the mistaken understanding that they are legally operating under the authority

is unclear exactly what types of drone activities constitute “commercial” uses. For instance, real estate agents who fly drones to photograph listings have insisted that because they are not directly charging money for drone service, they qualify as hobbyists rather than commercial users,<sup>59</sup> an argument that the FAA explicitly rejects.<sup>60</sup> The FAA’s extension of its definition of “commercial” to volunteer nonprofit organizations utilizing drones for what are clearly noncommercial operations (e.g., search-and-rescue missions) has only strained this relationship further.<sup>61</sup> Recently, these issues have moved beyond public debate and into the courtroom.

#### D. Raphael Pirker Challenges the FAA

Swiss-born Raphael Pirker—famous for his aerial videos of the Statue of Liberty, the French Alps, and a cruise ship—is a legend among the drone underground.<sup>62</sup> Pirker flies a “Ritewing Zephyr,” a styrofoam radio-controlled airplane weighing approximately 4.5 pounds and equipped with a high-definition video camera.<sup>63</sup> In 2011, an advertising company hired Pirker to take aerial photographs and video of the University of Virginia.<sup>64</sup> Two years after uploading video of the flight to his website,<sup>65</sup> the FAA notified Pirker that it was assessing a \$10,000 civil penalty against him for, among other things, allegedly operating his drone “for compensation” and “in a careless or reckless manner” at altitudes of less than 400 feet above the University.<sup>66</sup> In response, Pirker filed a motion to dismiss the FAA’s Order of Assessment with the National Transportation Safety Board (NTSB).<sup>67</sup>

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of AC 91-57. AC 91-57 only applies to modelers, and thus specifically excludes its use by persons or companies for business purposes.”)

59. Teke Wiggin, *FAA Says Realtors Who Fly Drones to Shoot Listing Photos Are Not Hobbyists*, INMAN (June 25, 2014), <http://www.inman.com/2014/06/25/faa-says-realtors-who-fly-drones-to-shoot-listing-photos-are-not-hobbyists/> (stating that “agents will sometimes say they are charging for photo or video editing, not drone flights”).

60. Interpretation of the Special Rule for Model Aircraft, 79 Fed. Reg. 36,172, 36,174 (June 25, 2014) (stating that “[a] realtor using a model aircraft to photograph a property that he is trying to sell and using the photos in the property’s real estate listing” is “[n]ot hobby or recreation”).

61. See, e.g., Jason Koebler, *A Search-and-Rescue Group Is Fighting the FAA for the Right to Use Drones*, MOTHERBOARD (Apr. 7, 2014, 1:05 PM), <http://motherboard.vice.com/read/a-search-and-rescue-group-is-fighting-the-faa-for-the-right-to-use-drones>.

62. See Jason Koebler, *Drones Could Be Coming to American Skies Sooner Than You Think*, POLITICO (Jan. 28, 2014), <http://www.politico.com/magazine/story/2014/01/drones-faa-lawsuit-coming-to-american-skies-102754.html>.

63. *Pirker MTD*, *supra* note 10, at 2–3.

64. *Id.* at 3.

65. See Chiaet, *supra* note 55.

66. Order of Assessment at 2–3, *Huerta v. Pirker*, No. CP-217 (N.T.S.B. June 27, 2013) [hereinafter NTSB Order of Assessment], available at [http://www.wired.com/images\\_blogs/threatlevel/2014/10/Complaint.pdf](http://www.wired.com/images_blogs/threatlevel/2014/10/Complaint.pdf).

67. See *Pirker MTD*, *supra* note 10.

Pirker sought dismissal on multiple grounds, including the following: (1) the FAA may not regulate, and has never attempted to regulate, model airplanes; (2) the “policy statements” issued by the FAA regarding model airplanes do not qualify as valid administrative rule making and are therefore unenforceable; and (3) to the extent the FAA’s policy statements may be an interpretive rule, an interpretation distinguishing between drones used for recreational and commercial purposes is erroneous “and must be rejected.”<sup>68</sup>

One of Pirker’s specific contentions also threatens to resurrect a previously unsettled and largely dormant issue and thrust it back into the limelight:

The FAA also lacks jurisdiction. At a minimum, partial dismissal of the Complaint is warranted as to all allegations concerning operation at very low altitudes, inside a tunnel, below tree top level, or underneath a pedestrian overpass *because these locations are not “navigable airspace” subject to FAA jurisdiction. See 49 U.S.C. § 40102 (“navigable airspace means airspace above the minimum altitudes of flight prescribed by regulations . . . including airspace needed to ensure safety in the takeoff and landing of aircraft.”)*.<sup>69</sup>

In its response to Pirker’s motion, the FAA, though conceding that Pirker had accurately defined “navigable airspace,” emphatically rejected the idea that its jurisdiction was so limited.<sup>70</sup> Instead, the FAA insisted that its regulatory authority extends to “the use of *all airspace* over the United States by both civil and military aircraft.”<sup>71</sup>

On March 6, 2014, Administrative Law Judge Patrick G. Geraghty granted Pirker’s motion, vacated the FAA’s Order of Assessment, and terminated the proceedings.<sup>72</sup> Assuming that Pirker’s radio-controlled plane was a model aircraft, Judge Geraghty ruled that the FAA’s policy memoranda are not binding upon the general public, and thus the FAA

68. *Id.* at 4–13.

69. *Id.* at 10 (emphasis added).

70. Administrator’s Response to Respondent’s Motion to Dismiss at 4–5, *Huerta v. Pirker*, No. CP-217 (N.T.S.B. Nov. 1, 2013) [hereinafter FAA Response], available at [http://www.suasnews.com/wp-content/uploads/2013/11/FAA\\_Response.pdf](http://www.suasnews.com/wp-content/uploads/2013/11/FAA_Response.pdf).

71. *Id.* at 5 (quoting *United States v. Christenson*, 419 F.2d 1401, 1404 (9th Cir. 1969)) (internal quotation marks omitted); see also *Busting Myths About the FAA and Unmanned Aircraft*, *supra* note 44 (“The FAA is responsible for the safety of U.S. airspace from the ground up. This misperception [that the FAA does not control airspace below 400 feet] may originate with the idea that manned aircraft generally must stay at least 500 feet above the ground.”).

72. Decisional Order at 8, *Huerta v. Pirker*, No. CP-217 (N.T.S.B. Mar. 6, 2014) [hereinafter *Pirker Order*], available at <https://app.nts.gov/legal/pirker/Pirker-CP-217.pdf>.

currently lacks the regulatory authority to classify model aircraft as a drone.<sup>73</sup> He further ruled that because the FAA lacks regulatory authority over model aircraft, Pirker's operation was subject only to the voluntary compliance standards of Advisory Circular 91-57.<sup>74</sup>

The FAA immediately appealed the decision to the full NTSB. Finding that Pirker's drone met the statutory definition of "aircraft" and was, therefore, subject to 14 C.F.R. § 91.13,<sup>75</sup> the NTSB reversed Judge Geraghty's decision and remanded the case for further proceedings.<sup>76</sup> Pirker ultimately settled with the FAA for \$1100 in January 2015, "solely to avoid the expense of litigation."<sup>77</sup>

The issue of whether the FAA's jurisdiction reaches beyond the confines of navigable airspace has remained relatively dormant for decades, and neither Judge Geraghty nor the NTSB addressed it. That the question has remained unaddressed is, presumably, a testament to both its difficulty and the fact that courts can easily avoid deciding the issue in a world where commercial air safety generally requires flight at altitudes higher than 500 feet. But that sky has fallen. In an airspace densely occupied (potentially) by package delivering quad-copters and real estate photographers, this issue is of substantial importance.

Although the FAA insists that it "is responsible for the safety of U.S. airspace from the ground up,"<sup>78</sup> critics vehemently maintain that the FAA's jurisdiction does not extend to the lower airspace.<sup>79</sup> Were a court to take on the airspace issue, the outcome would have critical implications. A finding that the FAA has limited or no jurisdiction below navigable airspace would leave regulation of low-altitude drones almost totally in the hands of state and local governments—an assuredly less restrictive outcome and one that, presumably, drone enthusiasts and entrepreneurs would favor. An opposite finding, however, would likely ground operations such as Pirker's for the foreseeable future, at least

73. *Id.* at 5.

74. *Id.* at 7. AC 91-57 is an FAA advisory circular, issued in 1981, which "outlines, and encourages voluntary compliance with, safety standards for model aircraft operators." U.S. DEP'T OF TRANSP., FED. AVIATION ADMIN., ADVISORY CIRCULAR 91-57 (1981), available at [http://www.faa.gov/documentLibrary/media/Advisory\\_Circular/91-57.pdf](http://www.faa.gov/documentLibrary/media/Advisory_Circular/91-57.pdf).

75. This regulation states that "[n]o person may operate an aircraft in a careless or reckless manner so as to endanger the life or property of another." 14 C.F.R. § 91.13 (2014).

76. Opinion and Order at 7–11, *Huerta v. Pirker*, No. CP-217 (N.T.S.B. Nov. 18, 2014) [hereinafter *Pirker* Opinion and Order], available at <https://app.nts.gov/legal/pirker/5730.pdf>.

77. Settlement Agreement, *Huerta v. Pirker*, No. CP-217 (N.T.S.B. Jan. 16, 2015), available at <http://cdn.arstechnica.net/wp-content/uploads/2015/01/pirkerdeal.pdf>.

78. *Busting Myths About the FAA and Unmanned Aircraft*, *supra* note 44.

79. *E.g.*, Peter Sachs, *FAA's Myth Busting Page Now Mirrors Losing Pleadings*, DRONE-RSS (Mar. 9, 2014), <http://drone-rss.com/2014/03/faas-myth-busting-page-now-mirrors-losing-pleadings/> (arguing that under the FAA's logic, "the FAA would have jurisdiction if two frisbees were to collide in a backyard").

given the FAA's actions and stated intentions so far. Though Pirker has settled his case, it is likely that similar cases will increasingly find their way into the courtroom and, in time, force the courts to decide the issue of whether and to what degree the FAA's jurisdiction extends to non-navigable airspace.

## II. THE FAA'S ARGUMENT FOR DRONE PROHIBITION

In response to the dramatic increase in drone operations “during the past several years in both the public and private sectors,” the FAA issued a 2005 policy memorandum to “provide[] guidance . . . to determine if [drones] may be allowed to conduct flight operations in the U.S. National Airspace System.”<sup>80</sup> Two years later, the FAA published FAA Notice 07-01 in the Federal Register stating that “the current FAA policy for [drone] operations is that no person may operate a [drone] in the National Airspace System without specific authority.”<sup>81</sup> However, “policy statements of an agency are not . . . binding upon the general public.”<sup>82</sup> In *Pirker*, Judge Geraghty specifically addressed Notice 07-01, stating that “as a statement of policy, [Notice 07-01] cannot be considered as establishing a rule or enforceable regulation . . . [and] does not . . . meet the criteria for valid legislative rulemaking.”<sup>83</sup> As of September 2015, the FAA has not promulgated any enforceable rules that specifically regulate drone operations.<sup>84</sup> Thus, the FAA's ability to regulate and prohibit the use of drones for business purposes must necessarily derive from the same statutory and regulatory authority that existed prior to the prohibition.

Congress has declared that “[t]he United States Government has exclusive sovereignty of airspace of the United States” and that “[a]

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80. Memorandum, Fed. Aviation Admin., Unmanned Aircraft Systems Operations in the U.S. National Airspace System—Interim Operational Approval Guidance (Sept. 16, 2005), available at [http://www.uavm.com/images/AFS-400\\_05-01\\_faa\\_uas\\_policy.pdf](http://www.uavm.com/images/AFS-400_05-01_faa_uas_policy.pdf).

81. UAONAS, 72 Fed. Reg. 6689, 6690 (Feb. 13, 2007).

82. *Pirker* Order, *supra* note 72, at 1, 5; see also *Prof'ls & Patients for Customized Care v. Shalala*, 56 F.3d 592, 596 (5th Cir. 1995) (“A general statement of policy . . . does not establish a ‘binding norm.’ It is not finally determinative of the issues or rights to which it is addressed. The agency cannot apply or rely upon a general statement of policy as law because a general statement of policy only announces what the agency seeks to establish as policy.”).

83. *Pirker* Order, *supra* note 72, at 6.

84. See *Pirker* Opinion and Order, *supra* note 76, at 1, 9 (“The Board has affirmed the Administrator’s application of § 91.13(a) as an alleged independent violation in other cases in which, presumably, *no other regulation would have explicitly prohibited [Raphael Pirker’s] conduct.*” (emphasis added)); Hampton Memorandum, *supra* note 52 (stating that the “FAA has not established a regulatory framework for [drone] integration, such as aircraft certification requirements, standard air traffic procedures for safely managing [drones] with manned aircraft, or an adequate controller training program for managing [drones]”).

citizen of the United States has a public right of transit through the navigable airspace.”<sup>85</sup> Section 40103 tasks the Administrator of the FAA with developing “plans and policy for the use of the navigable airspace and assign[ing] by regulation or order the use of the airspace necessary to ensure the safety of aircraft and the efficient use of airspace.”<sup>86</sup> The Administrator is to “prescribe air traffic regulations . . . for—(A) navigating, protecting, and identifying aircraft; (B) protecting individuals and property on the ground; (C) using the navigable airspace efficiently; and (D) preventing collision between aircraft, between aircraft and land or water vehicles, and between aircraft and airborne objects.”<sup>87</sup>

“Aircraft” is defined in 49 U.S.C. § 40102 as “any contrivance invented, used, or designed to navigate, or fly in, the air.”<sup>88</sup> Also relevant is 14 CFR § 91.13, which states that “[n]o person may operate an aircraft in a careless or reckless manner so as to endanger the life or property of another.”<sup>89</sup> Aside from § 91.13 of the Code of Federal Regulations, the FAA rarely cites to any specific statute or regulation authorizing the grounding of drones used for commercial purposes.<sup>90</sup> Nevertheless, one can deduce how the FAA interprets its statutory and regulatory authority as applying to drones by examining the numerous cease-and-desist letters issued by the FAA, as well as the arguments it raises in the *Pirker* dispute.

Many of the FAA’s cease-and-desist letters state that “[t]he FAA has the requirement for the regulation and safe operation of the National Airspace System which covers all *navigable airspace* in the US.”<sup>91</sup> “Navigable airspace” is defined in 49 U.S.C. § 40102 as the “airspace above the *minimum altitudes of flight* prescribed by regulations under this subpart and subpart III of this part, including airspace needed to ensure safety in the takeoff and landing of aircraft.”<sup>92</sup> Minimum altitudes of flight are described as, generally, 1000 feet above the highest obstacle over congested areas and 500 feet above the surface over non-congested areas, except when necessary for taking off and landing.<sup>93</sup>

Thus, the FAA’s above statement, on its own, would suggest that the FAA’s mandate does not extend to drone operations, such as *Pirker*’s, flying below navigable airspace. Three of the cease-and-desist letters, however, further state that “[p]rivate land owners do not have any

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85. 49 U.S.C. § 40103(a)(2) (2012).

86. *Id.* § 40103(b)(1).

87. *Id.* § 40103(b)(2).

88. *Id.* § 40102(a)(6).

89. 14 C.F.R. § 91.13(a) (2015).

90. *See infra* Section IV.C.

91. *C&D Letters, supra* note 53 (emphasis added).

92. 49 U.S.C. § 40102(a)(32) (2012) (emphasis added).

93. 14 C.F.R. § 91.119(b)–(c) (2015).

jurisdiction over the airspace above their property and cannot prohibit or allow aviation operations over their land.”<sup>94</sup> This statement implies that the FAA interprets its mandate as extending to the safe operation and regulation of not just navigable airspace but all airspace—an interpretation expressly confirmed by the FAA.<sup>95</sup>

In response to Pirker’s contention that the FAA “lacks jurisdiction . . . at very low altitudes . . . because these locations are not ‘navigable airspace’ subject to FAA jurisdiction,”<sup>96</sup> the FAA stated:

The Respondent accurately cites the definition of “navigable airspace;” however, that definition does not in any way, explicitly or implicitly, define the outer limits of the FAA’s authority to regulate airspace. In sum, the FAA’s mandate to regulate the use of all airspace necessary to “ensure the safety” of aircraft, for “protecting, and identifying” those aircraft, and for “protecting individuals on the ground” is not confined solely to the “navigable airspace.”<sup>97</sup>

The quoted language in the second sentence of the FAA’s statement derives from 49 U.S.C. § 40103(b)(2)(A)–(D). However, in insisting that the outer limits of its authority are not limited by definition of navigable airspace, the FAA is actually interpreting 49 U.S.C. § 40103(b)(1), which states:

The Administrator of the Federal Aviation Administration shall develop plans and policy for the use of the navigable airspace and assign by regulation or order the use of the airspace necessary to ensure the safety of aircraft and the efficient use of airspace. The Administrator may modify or revoke an assignment when required in the public interest.<sup>98</sup>

Thus, in insisting that it “is responsible for the safety of U.S. airspace from the ground up,”<sup>99</sup> the FAA clearly reads “use of the airspace necessary” as having meaning independent of “for the use of navigable airspace.” Stated differently, the FAA has interpreted § 40103(b)(1) as a dual mandate: the FAA must develop plans and policies for the use of navigable airspace *as well as* ensure the safety of all airspace (and aircraft), regardless of altitude.

Does § 40103 authorize the FAA to regulate the safety of all airspace rather than just that in the public domain? To justify a blanket prohibition

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94. *C&D Letters*, *supra* note 53.

95. *Busting Myths About the FAA and Unmanned Aircraft*, *supra* note 44.

96. *Pirker MTD*, *supra* note 10, at 10.

97. FAA Response, *supra* note 70, at 5.

98. 49 U.S.C. § 40103(b)(1) (2012).

99. *Busting Myths About the FAA and Unmanned Aircraft*, *supra* note 44.

on the use of drones for business purposes, flying *safely* below navigable airspace, requires the FAA to answer that question in the affirmative.<sup>100</sup> If, however, the answer to that question is no, then it is highly unlikely that the FAA has any authority to ground low-altitude drone operations such as Pirker's. Answering this critical question requires examining previous airspace disputes between the federal government and property owners.

### III. LANDOWNERS' RIGHTS TO "SUPERADJACENT" AIRSPACE AND HOW IT LIMITS THE FAA'S JURISDICTION

Prior to the advent of aviation, the predominant theory of airspace property rights were expressed in the Roman Law maxim *cujus est solum, ejus est usque ad coelom* (commonly translated as "whoever has the land possesses all the space upwards to an indefinite extent").<sup>101</sup> The rule, incorporated into the English common law system with the support of Sir Edward Coke and Lord William Blackstone, would eventually make its way across the Atlantic and firmly establish itself in the United States.<sup>102</sup> This all changed, however, on December 17, 1903, when "two daring American brothers near Kitty Hawk, North Carolina sparked a technological revolution that would soon bring Lord Coke's well-reasoned doctrine crashing in upon itself."<sup>103</sup>

With the rapid expansion of civil aviation leading up to and following World War II, the traditional legal framework proved wholly inadequate in addressing the onslaught of airspace trespass and nuisance cases.<sup>104</sup> The legal challenge was twofold: granting absolute airspace rights to property owners would threaten to stifle a young and flourishing form of commerce, while "allow[ing] every low-flying barnstormer to terrorize rural communities with no consequence seemed an equally bad alternative."<sup>105</sup>

Believing that the young, but burgeoning, airplane industry "could not reach its full commercial potential without federal action," Congress passed the Air Commerce Act in 1926.<sup>106</sup> The legislation charged the Secretary of Commerce with, among other things, fostering air commerce

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100. See *infra* Part IV.

101. Colin Cahoon, Comment, *Low Altitude Airspace: A Property Rights No-Man's Land*, 56 J. AIR L. & COM. 157, 161 (1990).

102. *Id.* at 161–62.

103. *Id.* at 162.

104. *Id.* at 162–63.

105. *Id.* at 163.

106. See *A Brief History of the FAA*, FED. AVIATION ADMIN., [https://www.faa.gov/about/history/brief\\_history/](https://www.faa.gov/about/history/brief_history/) (last updated Feb. 19, 2015, 4:23 PM).

and improving and maintaining safety standards.<sup>107</sup> This law included a provision stating that “Congress hereby declares that the Government of the United States has, to the exclusion of all foreign nations, complete sovereignty of the airspace over the lands and waters of the United States.”<sup>108</sup> The Air Commerce Act, however, applied only to *interstate* flights and further complicated the “aerial trespass question.”<sup>109</sup>

Under federal law, planes had to be at least five hundred or one thousand feet above the ground, but under state law there was no guarantee that they could be above the ground at all. Everything depended on the law of the particular state. And to make matters even stranger, in the first reported case testing the constitutionality of the Air Commerce Act, a federal judge suggested that the minimum altitude requirements might not be lawfully applied to intrastate flights in the first place.<sup>110</sup>

The Aeronautics Branch, previously tasked with aviation oversight, was renamed the Bureau of Air Commerce in 1934.<sup>111</sup> However, at this point, the Bureau had no radio link with aircraft, and local governments continued to operate airport towers.<sup>112</sup> The public outcry in response to a number of high-profile plane accidents<sup>113</sup> prompted President Franklin D. Roosevelt to sign the Civil Aeronautics Act in 1938.<sup>114</sup>

The Act established the Civil Aeronautics Authority (CAA) and expanded the federal government’s role in aviation by granting the CAA the power to regulate airline fares and routes.<sup>115</sup> The Act—in the wake of prior Supreme Court decisions substantially broadening Congress’s power to regulate interstate commerce (as well as “five cases . . . conclud[ing] that flights at high altitudes were not trespasses”)—also did away with the intrastate/interstate distinction and declared a “public right of freedom of transit . . . through the navigable air space” for all flights.<sup>116</sup> While the Act definitively settled who

107. Air Commerce Act of 1926, Pub. L. No. 69-254, 44 Stat. 568.

108. *Id.* (codified as amended at 49 U.S.C. § 40103 (2012)).

109. STUART BANNER, WHO OWNS THE SKY?: THE STRUGGLE TO CONTROL AIRSPACE FROM THE WRIGHT BROTHERS ON 167 (2008).

110. *Id.*

111. *A Brief History of the FAA*, *supra* note 106.

112. *Id.*

113. One such accident involved football legend Knute Rockne. See Herbert M. Friedman & Ada Kera Friedman, *The Legacy of the Rockne Crash*, AEROPLANE MAG. (May 2001), available at <http://www.irishlegends.com/pages/reflections/reflections49.html>.

114. *A Brief History of the FAA*, *supra* note 106.

115. *Id.*

116. See BANNER, *supra* note 109, at 199 (quoting Civil Aeronautics Act of 1938, Pub. L. No. 75-706, 52 Stat. 973).

controlled the airspace at higher altitudes, exactly who controlled the airspace below the public domain remained an open question.<sup>117</sup>

A. *Establishing the Landowner's Right to Own  
"Superadjacent" Airspace*

Thomas Causby owned and maintained a chicken farm on 2.8 acres of land near an airport outside of Greensboro, North Carolina.<sup>118</sup> The federal government leased the airport in 1942.<sup>119</sup> Before long, four-motored bombers and other heavy planes were frequently passing over the Causbys' property "in considerable numbers and rather close together."<sup>120</sup> The approved glide path of the airport's northwest-southeast runway passed directly over the Causbys' farm at extremely low altitudes.<sup>121</sup>

The noise proved to be too much for the Causbys' chickens, which Causby stated "[would] get excited and jump against the side of the chicken house and the walls and burst themselves open and die."<sup>122</sup> Losing their chicken business (and perhaps their sanity) as a result, the Causbys filed suit against the U.S. government.<sup>123</sup> The Supreme Court granted certiorari, noting that the issue was one of first impression as well as noting its importance.<sup>124</sup>

The government argued that since the military flights were within the minimum safe altitudes of flight as prescribed by the CAA and because there had been no physical invasion of the Causbys' property, there had been no compensable Fifth Amendment taking.<sup>125</sup> The government's primary argument, however, was that the Causbys did not "own [the] superadjacent airspace which [they have] not subjected to possession by the erection of structures or other occupancy," and hence the Causbys possessed no property that the government could have taken.<sup>126</sup>

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117. *Id.* at 199–200.

118. *United States v. Causby*, 328 U.S. 256, 258 (1946).

119. *Id.*

120. *Id.* at 259.

121. *Id.* at 258–59 (stating that the aircrafts "come close enough at times to appear barely to miss the tops of the trees and at times so close to the tops of the trees as to blow the old leaves off").

122. BANNER, *supra* note 109, at 229 (stating that Thomas Causby purportedly lost 150 chickens in this manner).

123. *Causby v. United States*, 60 F. Supp. 751 (Ct. Cl. 1945), *rev'd*, 328 U.S. 256 (1946).

124. *Causby*, 328 U.S. at 258.

125. *Id.* at 260.

126. *Id.*; BANNER, *supra* note 109, at 242.

Justice William O. Douglas, writing for the Court, addressed the latter argument first, declaring that *cujus est solum, ejus est usque ad coelom* “has no place in the modern world.”<sup>127</sup> He reasoned:

The air is a public highway, as Congress has declared. Were that not true, every transcontinental flight would subject the operator to countless trespass suits. Common sense revolts at the idea. To recognize such private claims to the airspace would clog these highways, seriously interfere with their control and development in the public interest, and transfer into private ownership that to which only the public has a just claim.<sup>128</sup>

However, Justice Douglas then stated that the above principle would not control the *Causby*’ case.<sup>129</sup> Framing the issue as a loss of land rather than airspace, Justice Douglas rejected the government’s contention that a landowner had no proprietary interest in the airspace above his property.<sup>130</sup> He stated:

We have said that the airspace is a public highway. Yet it is obvious that if the landowner is to have full enjoyment of the land, he must have exclusive control of the immediate reaches of the enveloping atmosphere. Otherwise buildings could not be erected, trees could not be planted, and even fences could not be run. . . . The landowner owns at least as much of the space above the ground as he can occupy or use in connection with the land.<sup>131</sup>

Further, Justice Douglas reasoned that a landowner’s failure to physically occupy the airspace above his property is immaterial, stating that “[a]s we have said, the flight of airplanes, which skim the surface but do not touch it, is as much an appropriation of the use of the land as a more conventional entry upon it.”<sup>132</sup> He continued, “While the owner does not in any physical manner occupy that stratum of airspace or make use of it in the conventional sense, he does use it in somewhat the same sense that space left between buildings for the purpose of light and air is used.”<sup>133</sup> Justice Douglas concluded, “We think that the landowner, as an incident to his ownership, has a claim to it and that invasions of it are in the same category as invasions of the surface.”<sup>134</sup>

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127. *Causby*, 328 U.S. at 260–61.

128. *Id.* at 261.

129. *Id.*

130. BANNER, *supra* note 109, at 252.

131. *Causby*, 328 U.S. at 264.

132. *Id.*

133. *Id.* at 265.

134. *Id.*

Justice Douglas's holding in *Causby* firmly established that the landowner retains ownership of at least some of the airspace above her property. But how much? “[A]s much of the space above the ground as he can occupy or use in connection with the land.”<sup>135</sup> On the other hand, the Court expressly stated that a landowner may not convert into private ownership airspace within the public domain.<sup>136</sup> This raised another question: At what point does public ownership of the airspace begin and private ownership end? The Court addressed the former without addressing the latter.<sup>137</sup>

In his holding, Justice Douglas notably equated airspace in the public domain with navigable airspace stating that “[t]he navigable airspace which Congress has placed in the public domain is ‘airspace above the minimum safe altitudes of flight prescribed by the Civil Aeronautics Authority.’”<sup>138</sup> When the Court decided *Causby*, the minimum safe altitude prescribed by the CAA was 500 feet during the day and 1000 feet at night.<sup>139</sup> Because the aircraft flying over the Causbys’ farm were below navigable airspace, Justice Douglas reasoned that “the flights in question were not within the navigable airspace which Congress placed within the public domain.”<sup>140</sup> Thus, Thomas Causby had a valid claim.

Noting that the CAA has “the power to prescribe air traffic rules,”<sup>141</sup> the Court appears to suggest that redefining minimum safe altitudes of flight might avoid claims such as Causby’s. Justice Douglas anticipated the issue but did not address it, stating only that if the CAA “prescribed 83 feet as the minimum safe altitude, then we would have presented the question of the validity of the regulation.”<sup>142</sup>

*Causby* establishes two crucial points in determining the extent of the FAA’s authority: (1) a private landowner owns as much of the airspace, below the airspace Congress has placed within the public domain, “as [he] can occupy or use in connection with the land”; and (2) the minimum altitudes of flight, as defined by Congress, determine the outer limits of airspace owned by the public.<sup>143</sup> However, an important question remained: though it is clear that public airspace may not be incorporated into private ownership, is the converse also true? May privately owned

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135. *Id.* at 264.

136. *Id.* at 261.

137. *Id.* at 266 (stating that “[t]he airspace, apart from the immediate reaches above the land, is part of the public domain. We need not determine at this time what those precise limits are”).

138. *Id.* at 263 (quoting 49 U.S.C. § 180).

139. *Id.*

140. *Id.* at 264.

141. *Id.*

142. *Id.* at 263. Eighty-three feet was the approximate altitude of the military aircraft flying over Thomas Causby’s farm. *Id.* at 258.

143. *Id.* at 264.

airspace be incorporated into the public domain *without invading a private property interest* by merely revising the definition of “navigable airspace,” i.e., by lowering the “minimum safe altitudes of flight”?<sup>144</sup>

When the Court decided *Causby*, the airspace required for taking off or landing was not “within the navigable airspace which Congress placed within the public domain.”<sup>145</sup> Had that airspace been included, the Court noted, the government would have been immune from *Causby*’s claim.<sup>146</sup> Largely in response to the shift in the nature and targets of airspace lawsuits resulting from the *Causby* decision, Congress redefined navigable airspace to include “airspace needed to insure safety in take-off and landing of aircraft.”<sup>147</sup>

Now, there is no question that the glide paths above the *Causbys*’ property were within navigable airspace. Could the affected landowner still sustain a *Causby*-type claim now that planes were taking off and landing in statutorily defined public airspace? Stated differently, if planes were flying in airspace Congress had formally dedicated to the public, how could the affected landowner claim that *his* rights to *his* airspace had been violated? Interestingly, Justice Douglas would answer this question, hinted at by himself in *Causby*, sixteen years later in *Griggs v. Alleghany County*.<sup>148</sup>

The facts in *Griggs* are markedly similar to those in *Causby*. In *Griggs*, planes taking off from a nearby airport’s newly constructed runway “observed regular flight patterns ranging from 30 feet to 300 feet over [Thomas Griggs’s] residence.”<sup>149</sup> Griggs alleged that the low-flying aircraft made it impossible for people to “converse or to talk on the telephone” and that they were “frequently unable to sleep even with ear plugs and sleeping pills.”<sup>150</sup>

In a short opinion, Justice Douglas held that, despite the fact that the aircraft were operating in accordance with federal regulations and flying within navigable airspace, a taking had occurred.<sup>151</sup> Relying on his prior decision in *Causby*, Justice Douglas stated:

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144. 49 U.S.C. § 180 (2012).

145. *Id.*

146. *Id.*

147. BANNER, *supra* note 109, at 259 (“Landowners had once sued pilots and airplane owners for trespass and nuisance; now, more often than not, they sued government-owned airports for violations of the Takings Clause or its state constitutional analogues. In the 1950s, as they acquired jet engines, planes grew larger and louder, and they needed longer and shallower glide paths on takeoff and landing. Meanwhile the volume of air traffic continued to increase, so there was never any shortage of aggrieved landowners near airports . . .”).

148. 369 U.S. 84 (1962).

149. *Id.* at 87.

150. *Id.*

151. *Id.* at 88–89.

[T]he use of land presupposes the use of some of the airspace above it. Otherwise no home could be built, no tree planted, no fence constructed, no chimney erected. An invasion of the “superadjacent airspace” will often “affect the use of the surface of the land itself.”<sup>152</sup>

Justice Douglas concluded, “[Alleghany County] in designing [the airport and glide path] had to acquire some private property. Our conclusion is that by constitutional standards it did not acquire enough.”<sup>153</sup>

B. *The FAA’s “Ground Up” Argument Cannot Be Reconciled with Griggs and Causby*

The essential holdings of both cases clearly establish that landowners own the immediate airspace above their land. The holdings’ continued survival decisively undercuts the FAA’s assertion that it “is responsible for the safety of U.S. airspace from the ground up.”<sup>154</sup> First, if “[t]he landowner owns at least as much of the space above the ground as [he] can occupy or use in connection with the land,”<sup>155</sup> then the privately owned airspace by definition is not “U.S. airspace.” Second, presuming that a landowner does in fact own at least some airspace above his property, then “U.S. airspace,” at least above the landowner’s property, does not extend “from the ground up.” Third, the “ground up” argument would suggest that the FAA retains regulatory authority over a decidedly absurd amount of private property and, by extension, all undertakings conducted in the airspace above that property. In sum, accepting the “ground up” argument requires inferring that Congress intended the FAA’s jurisdiction to extend to an errant firework launched into the air above a neighbor’s property, smoke from controlled burnings, parasailing, or even “two frisbees . . . collid[ing] in a backyard.”<sup>156</sup> Clearly then the obvious absurdities inherent in the FAA’s “ground up” argument cannot be reconciled with the Supreme Court’s decisions in *Causby* and *Griggs*.

Likewise, the same reasoning defeats the related argument that “[p]rivate land owners do not have any jurisdiction over the airspace above their property and cannot prohibit or allow aviation operations over their land.”<sup>157</sup> The landowner’s ownership of the airspace used in connection with the land carries with it an implicit right to exclude

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152. *Id.* at 89 (citation omitted).

153. *Id.* at 90.

154. *Busting Myths About the FAA and Unmanned Aircraft*, *supra* note 44.

155. *United States v. Causby*, 328 U.S. 256, 264 (1946).

156. Sachs, *supra* note 79.

157. *C&D Letters*, *supra* note 53.

others—a right the Supreme Court has repeatedly characterized as “one of the most essential sticks in the bundle of rights that are commonly characterized as property.”<sup>158</sup> Thus, while a landowner cannot prohibit or allow aviation operations conducted in *public* airspace, a landowner, incident to his ownership may, at the very least, exclude aviation operations conducted in his *privately* owned airspace. Any assertion to the contrary would suggest that had Pirker conducted his operation without the consent of the University of Virginia, any attempt by the University to remove Pirker’s aircraft from their airspace without consulting the FAA would be an exercise of authority that the University does not possess. Thus, landowners must, contrary to the FAA’s assertion, possess at least some “jurisdiction over the airspace above their property.”<sup>159</sup>

The FAA’s justification for its moratorium on flying drones for business purposes, at least those flying in privately owned airspace, must rest on alternative grounds.

### C. Flower Mills and the FAA’s “All Airspace Necessary” Argument

The FAA’s better argument is the more limited one it advanced in the *Pirker* case: “[T]he FAA’s mandate to regulate the use of all airspace necessary to ‘ensure the safety’ of aircraft, for ‘protecting, and identifying’ those aircraft, and for ‘protecting individuals on the ground,’” and this “is not confined solely to the ‘navigable airspace.’”<sup>160</sup> This interpretation is narrower than those discussed previously in that it suggests that the FAA is responsible for the safety of all *aircraft* rather than airspace, and hence it may regulate the use of “all airspace necessary” to (1) *protect aircraft* and (2) protect “individuals on the ground” *from those aircraft*.

But this interpretation, though lacking the absurdities inherent in the arguments already discussed, is overbroad. If the FAA may regulate the use of all airspace necessary to protect aircraft, then the FAA should possess regulatory authority over building heights and all manner of vertical construction and undertakings. Stated differently, under this interpretation, the FAA should be able to halt proposed construction projects that it determines would endanger the safety of aircraft. The U.S. Claims Court took up this issue in *Flower Mills Associates v. United States*.<sup>161</sup>

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158. *Kaiser Aetna v. United States*, 444 U.S. 164, 176 (1979); *see, e.g., Dolan v. City of Tigard*, 512 U.S. 374, 384 (1994) (quoting *Kaiser Aetna*); *Lucas v. S.C. Coastal Council*, 505 U.S. 1003, 1044 (1992) (Blackmun, J., dissenting) (same); *Nollan v. Cal. Coastal Comm’n*, 483 U.S. 825, 831 (1987) (same).

159. *C&D Letters*, *supra* note 53.

160. FAA Response, *supra* note 70, at 5.

161. 23 Cl. Ct. 182 (1991).

In *Flower Mills*, the plaintiff sought to construct a warehouse building on its property that would be 700 feet from the end of a runway of a privately owned airport.<sup>162</sup> To build the structure, the plaintiff required the approval of the Pennsylvania Department of Transportation, which agreed to grant the construction permit if the FAA first determined that “the proposed building would not be a hazard to air navigation.”<sup>163</sup> The FAA, after reviewing the plaintiff’s proposed structure, decided “that . . . the proposed structure would have a substantially adverse effect on the safe and efficient use of airspace by aircraft.”<sup>164</sup> The plaintiff brought an action against the FAA, alleging that the FAA’s decision amounted to an uncompensated regulatory taking prohibited under the Fifth Amendment.<sup>165</sup>

The court stated that the issue was one of first impression but noted that other courts had reviewed prior safety determinations made by the FAA outside of the context of regulatory takings.<sup>166</sup> Citing *Aircraft Owners & Pilots Ass’n v. FAA*,<sup>167</sup> the court stated, “Once issued, a [safety] determination has no enforceable legal effect. *The FAA is not empowered to prohibit or limit proposed construction it deems dangerous to air navigation.*”<sup>168</sup> Because compliance with the FAA’s hazard determination was voluntary, the court reasoned that the government had not deprived the plaintiff of any property rights, and hence no regulatory taking had occurred.<sup>169</sup>

*Flower Mills* shows that the FAA, contrary to its claim, lacks the authority to regulate the use of “all airspace necessary,” even where a landowner’s use of airspace above his property is dangerous to air navigation—at least where that airspace is used for purposes of construction. Taken together with the decisions in *Causby* and *Griggs*, it is clear that the FAA’s jurisdiction over the airspace is not nearly as broad as the FAA would suggest. Defining the precise limits of that authority, however, presents a more difficult question. In attempting to derive an answer, the most logical place to start must necessarily be where the FAA’s regulatory authority is at its minimum: the “superadjacent” airspace above a landowner’s property.

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162. *Id.* at 183–84.

163. *Id.* at 185.

164. *Id.*

165. *Id.*

166. *Id.* at 186.

167. 600 F.2d 965 (D.C. Cir. 1979).

168. *Flower Mills*, 23 Cl. Ct. at 186 (emphasis added).

169. *Id.* at 188–89.

#### D. *The Limits of “Superadjacent” Airspace*

Does a landowner’s superadjacent airspace extend to the boundaries of navigable airspace?<sup>170</sup> Or does a zone of unclaimed airspace exist between navigable airspace and superadjacent airspace? Justice Douglas left this ambiguity unaddressed in both *Causby* and *Griggs*. Despite holding that a landowner has a property interest in the superadjacent airspace above his land,<sup>171</sup> Justice Douglas declined to provide a precise definition of the term. Though the Supreme Court continues to recognize a distinction between navigable airspace and privately owned airspace,<sup>172</sup> it has never resolved this ambiguity.<sup>173</sup> Interestingly, modern technology—specifically, drones and the manner in which the public uses them—may provide an answer, rather than the courts.

“The landowner owns at least as much of the space above the ground as he can occupy or use in connection with the land.”<sup>174</sup> While it may have been difficult for a run-of-the-mill landowner to use or occupy the airspace 200 feet or more above his land in 1962 (the year the Court decided *Griggs*), drone technology’s affordability provides landowners a means to access what was once virtually inaccessible. Further, the modern capabilities of drone technology allow landowners to use these higher altitudes not merely for recreational use but “in connection with the land.”

For instance, the university that hires a commercial drone operator to acquire aerial photographs and footage for advertising its campus can reasonably be said to be using the airspace above the ground “in connection with the land.” Other examples include the above-mentioned real estate owners, boar hunters, and farmers.<sup>175</sup> Any landowner using

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170. At least one state supreme court has held that it does. See *McCarran Int’l Airport v. Sisolak*, 137 P.3d 1110, 1119 (Nev. 2006) (holding that airspace below the required minimum altitudes for flight “is vested in the owner of the subjacent land”).

171. *United States v. Causby*, 328 U.S. 256, 265 (1946).

172. See, e.g., *Air Pegasus of D.C., Inc. v. United States*, 424 F.3d 1206, 1217 (Fed. Cir. 2005).

173. This is probably because resolving the ambiguity proved unnecessary. See BANNER, *supra* note 109, at 259–60 (“Many of the uncertainties surrounding aerial trespass in the years after *Causby* were eventually ironed out, after enough cases presenting slightly different fact situations had made their way through the lower courts. As the law coalesced, landowners in practice had to prove they had suffered some harm on the ground in order to prevail. . . . The resulting legal standard thus ended up being very close to the formulation of the *Restatement of Torts* from the early 1930s, in that by requiring harm and low overflights as prerequisites it effectively merged the law of nuisance . . . with the law of trespass to land . . . . As the law grew clearer, reported cases raising the issue became less common, as airports acquired enough neighboring parcels to forestall litigation[,] . . . the aerial trespass debate largely fizzled out.”).

174. *Causby*, 328 U.S. at 264.

175. See *supra* notes 4, 30–31 and accompanying text.

drones to further an undertaking “in connection with the land,” in accordance with Justice Douglas’s reasoning in *Causby*, converts the previously unclaimed airspace into private ownership.

Hence, for the landowner utilizing drones above his property, the superadjacent airspace is limited only by the bounds of navigable airspace. The FAA’s prohibition on a landowner utilizing drones above his land for business purposes therefore amounts to a denial of the landowner’s property interest—his right to “own[] at least as much of the space above the ground as [he] can occupy or use in connection with the land.”<sup>176</sup> For reasons previously discussed, this invasion of private property cannot be justified on the “ground up” theory or the “land owners do not have any jurisdiction over the airspace” theory.<sup>177</sup> Nor can it be justified purely on a determination that use of the airspace on its own presents a danger to air navigation.<sup>178</sup>

Thus, resolution of the superadjacent airspace question suggests two limiting factors on the FAA’s jurisdiction over private airspace: (1) its mandate to ensure the safety and efficiency of airspace in the public domain (navigable airspace) and (2) its authority to regulate aircraft.

#### IV. THE FAA’S BLANKET PROHIBITION ON DRONES OPERATED FOR “BUSINESS PURPOSES” IS AN INVALID (AND UNJUSTIFIED) EXERCISE OF ITS (CURRENT) AUTHORITY

What justifications have the FAA advanced for prohibiting the use of drones at any altitude for business purposes? The core justification, gleaned from the language in the cease-and-desist letters, appears to be that persons operating drones for business purposes are unable to comply with Title 14 of the Code of Federal Regulations.<sup>179</sup> They are unable to comply because “most wishing to operate [drones] are not pilot trained, certified, or familiar with the Code of Federal Regulations to ensure the safety of others.”<sup>180</sup> However, there is currently no process to train or certify an operator to use commercial drones at any altitude.<sup>181</sup>

In other words, operators of commercial drones are “unable to comply” with regulations because there are no regulations to comply with. Yet, provided they refrain from endangering “the safety of the

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176. *Causby*, 328 U.S. at 264.

177. *See supra* Section III.B.

178. *See supra* Section III.C.

179. *C&D Letters, supra* note 53.

180. *Id.*

181. The only way to do so is to seek a waiver exempting the operator from the regulations. *See Petitioning for Exemption Under Section 333*, FED. AVIATION ADMIN., [http://www.faa.gov/uas/legislative\\_programs/section\\_333/how\\_to\\_file\\_a\\_petition/](http://www.faa.gov/uas/legislative_programs/section_333/how_to_file_a_petition/) (last updated Mar. 13, 2015, 1:52 PM).

national airspace system,<sup>182</sup> persons using drones for recreational use are largely beyond—in some cases completely beyond<sup>183</sup>—the FAA’s regulatory authority. Such persons are also not, in general, “pilot trained, certified, or familiar with the Code of Federal Regulations.”<sup>184</sup> Hence, the justification for the prohibition inheres in the nature of the use, not the machine itself.

That drones operated for business purposes may, in theory, present a greater safety risk than when operated recreationally is certainly not unreasonable. But the enforcement of a blanket prohibition first requires the authority to impose it. Because (1) the scope of the FAA’s authority is limited, and (2) the prohibition is based on the manner (i.e., business purposes) in which the operator uses the drone, it is unlikely that the FAA retains the authority to maintain the prohibition.

#### A. *Reconciling the FAA’s Regulatory Authority with the Right to Privately Own Airspace*

The landowner’s right to own the airspace above his land cannot be reconciled with the FAA’s dual-mandate interpretation discussed above,<sup>185</sup> as the FAA does not possess the blanket authority to the “use of all airspace necessary to ‘ensure the safety’ of aircraft.”<sup>186</sup> However, resolution of the superadjacent airspace question suggests two possible interpretations for reconciling the airspace rights of the landowner with the FAA’s mandate to ensure the safety and efficiency of airspace.

The first and narrower interpretation is that the FAA’s jurisdiction over the airspace itself is limited to navigable airspace but extends to all *aircraft*, regardless of altitude, designed or operated in a manner that presents a risk to the safety and efficiency of *navigable airspace*.<sup>187</sup> Put differently, the landowner would retain the right to own the superadjacent airspace above his land, but the FAA would retain the authority to prevent the landowner from utilizing aircraft designed or operated in a manner that threatens the integrity of airspace within the public domain. Of course, under this interpretation, maintaining the moratorium on drones flown below navigable airspace utilized for business purposes requires the FAA to persuasively argue that the nature of the use, rather than the

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182. FAA Modernization and Reform Act of 2012, Pub. L. No. 112-95, § 336(b), 126 Stat. 11, 77.

183. See *infra* Section IV.B.

184. *C&D Letters*, *supra* note 53.

185. See *supra* Part II.

186. FAA Response, *supra* note 70, at 5; see also *supra* Section III.C.

187. This interpretation accords with the interpretation advanced by Pirker’s attorney. See *Pirker MTD*, *supra* note 10, at 10; see also *infra* Section IV.D (discussing the safety risks of drones occupying navigable airspace).

physical characteristics or the manner in which these aircraft are operated, endangers or otherwise affects the safety and efficiency of navigable airspace.<sup>188</sup>

The second and broader interpretation encapsulates the first but extends the FAA's jurisdiction to any aircraft occupying any airspace, *provided those aircraft are operated in a careless or reckless manner*. This interpretation accords with the NTSB's decision on appeal<sup>189</sup> and would allow the FAA to pursue an enforcement action against any aircraft operated "in a careless or reckless manner," regardless of whether that operation presents a danger to navigable airspace.<sup>190</sup> Here too, the landowner would retain his airspace rights but would be prevented from utilizing aircraft in a manner that could potentially "endanger the life or property of another." But even here the FAA would find difficulty in maintaining its blanket prohibition. The FAA would have to persuasively argue either (1) that the operation of any drone aircraft for any commercial purpose constitutes negligence or (2) that the current lack of regulations precludes any commercial operator from flying in a less than negligent manner.<sup>191</sup>

In any case, both approaches accord with Supreme Court rulings on the issue of private airspace ownership. Because the broader interpretation accords with the NTSB's reversal of Judge Geraghty's decision, the remainder of this Part examines whether the prohibition on drones used for business purposes can survive under that interpretation.

### B. *Argument by Analogy: The FMRA's Special Rule for Model Aircraft*

Under the FMRA's Special Rule for Model Aircraft, Section 336, the FAA is expressly forbidden from "promulgat[ing] any rule or regulation regarding a model aircraft," provided certain conditions are met.<sup>192</sup> The

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188. The FAA has yet to demonstrate that the machines themselves present such a danger, much less those used for "business purposes." See Hampton Memorandum, *supra* note 52, at 2 (stating that the "FAA is not effectively collecting and analyzing UAS safety data to identify risks"); see also *infra* Section IV.D (noting a study on the safety impact of drones in the airspace).

189. See *infra* Section IV.C.

190. 14 C.F.R. § 91.13 (2014).

191. See *infra* Section IV.B.

192. FAA Modernization and Reform Act of 2012, Pub. L. No. 112-95, § 336(a), 126 Stat. 11, 77. The FAA may not regulate a model aircraft if:

- (1) the aircraft is flown strictly for hobby or recreational use;
- (2) the aircraft is operated in accordance with a community-based set of safety guidelines and within the programming of a nationwide community-based organization;
- (3) the aircraft is limited to not more than 55 pounds unless otherwise certified through a design, construction, inspection, flight test, and operational safety program administered by a community-based organization;
- (4) the aircraft is operated in

FMRA defines “model aircraft” as an “unmanned aircraft that is—(1) capable of sustained flight in the atmosphere; (2) flown within visual line of sight of the person operating the aircraft; and (3) flown for hobby or recreational purposes.”<sup>193</sup> Most important, however, is the following language included in the same section: “Nothing in this section shall be construed to limit the authority of the Administrator to pursue enforcement action against persons operating model aircraft who endanger the safety of the national airspace system.”<sup>194</sup>

By implication, the language makes clear that a drone operating within the statutory parameters just discussed *does not* endanger the safety of the national airspace system, or any airspace, without some further negligent act on the part of the operator. It stands to reason then that operating a drone in accordance with all the requirements of Section 336 save one—flying for business purposes instead of recreation—does not endanger the safety of the national airspace system, or any airspace. Thus, unless the FAA intends to argue that safety inheres purely in whether money changes hands,<sup>195</sup> operating a drone that would otherwise qualify as a model aircraft (e.g., Pirker’s glider) does not, without more, endanger the airspace or the public. Stated differently, the operation of *any* drone aircraft for *any* commercial purpose *does not necessarily* constitute negligence. Operating such a drone in a less than negligent manner would therefore not bring the operator within the purview of the FAA’s jurisdiction, regardless of whether the drone is operated for business purposes. The FAA appears to concede this conclusion in the enforcement action levied against Pirker.

### C. *The FAA Implicitly Concedes that the Prohibition Is Invalid*

In its complaint, the FAA charged Pirker only with violating 14 C.F.R. § 91.13 by “operat[ing his aircraft] in a careless or reckless manner so as to endanger the life or property of another.”<sup>196</sup> The commercial nature of

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a manner that does not interfere with and gives way to any manned aircraft; and (5) when flown within 5 miles of an airport, the operator of the aircraft provides the airport operator and the airport air traffic control tower (when an air traffic facility is located at the airport) with prior notice of the operation (model aircraft operators flying from a permanent location within 5 miles of an airport should establish a mutually-agreed upon operating procedure with the airport operator and the airport air traffic control tower (when an air traffic facility is located at the airport)).

*Id.*

193. *Id.* § 336(c).

194. *Id.* § 336(b).

195. This is an argument the FAA appears to deliberately avoid making. See *infra* Section IV.C.

196. NTSB Order of Assessment, *supra* note 66, at 2.

the flight is only referenced in paragraphs five and six of the assessment, presumably to demonstrate that the Special Rule for Model Aircraft does not protect Pirker.<sup>197</sup> The “for compensation” language does not appear in paragraph nine, where the FAA specifically alleged what actions taken by Pirker constitute operating the aircraft in a careless or unsafe manner.<sup>198</sup> That it refrains from doing so suggests that the FAA is not convinced that the \$10,000 fine can rest on a claim that Pirker operated his drone “for compensation.” This accords with the NTSB’s decision to remand Pirker’s case.

The Administrator’s interpretation of this text—that it applies to respondent’s operation of his Zephyr to prohibit careless or reckless operations—is reasonable, given the broad language of the section. . . . The Board has affirmed the Administrator’s application of § 91.13(a) as an alleged independent violation in other cases in which, presumably, *no other regulation would have explicitly prohibited the alleged conduct.*<sup>199</sup>

Thus, absent § 91.13(a), which expressly requires careless or reckless conduct on the part of the operator, the FAA could not pursue an enforcement action against Pirker. Put differently, absent a finding that Pirker “endanger[ed] the property or life of another,” Pirker’s operation was lawful, whether for business purposes or otherwise.<sup>200</sup> The language from the NTSB’s remand, the inferences drawn from Congress’s Special Rule for Model Aircraft, and the arguments the FAA raised against Pirker, all support the conclusion that the FAA may, at most, pursue enforcement actions against drones flying below navigable airspace when they are operated in a careless or reckless manner. The FAA may not pursue any enforcement action against drone operators flying *safely* below navigable airspace. Thus, the FAA’s blanket prohibition is not a valid exercise of its current authority.

#### D. *A Study on Micro Drones and the Risks They Pose to Navigable Airspace*

A final issue is worth addressing. Though this Note argues that the FAA *currently* lacks the regulatory authority to enforce its prohibition, it takes no position on whether Congress could grant that authority in the future. However, presuming that Congress could extend the FAA’s

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197. *Id.* at 1; *see also Pirker Order, supra* note 72, at 6 (stating that the “flight for compensation/payment . . . appears to be for the purpose of re-classifying Respondent’s model aircraft as [a drone] within the terminology of Notice 17-01”).

198. NTSB Order of Assessment, *supra* note 66.

199. *Pirker Opinion and Order, supra* note 76, at 9 (emphasis added).

200. 14 C.F.R. § 91.13 (2014).

authority that far, it is by no means clear that such an extension is necessary, as a recent report utilizing FAA data suggests.

Though researchers currently lack data to study the risks drones pose to navigable airspace, an engineering and scientific consulting firm—Exponent Failure Analysis Associates (Exponent)—used birds as a stand-in for lightweight drones (called micro UAVs in the study) to analyze the issue.<sup>201</sup> The primary concern of the study was the risks posed by the interaction of drones and manned aircraft occupying navigable airspace.<sup>202</sup> Noting the “dearth of data” about the risks posed by drones, Exponent relied instead on the FAA Wildlife Strike Database (Strike Database), which records reports of wildlife aircraft strikes.<sup>203</sup> The FAA estimates that aircraft operators submit 39% of bird strikes to the Strike Database.<sup>204</sup>

Exponent chose birds as an analog to drones for two reasons: (1) aerospace vehicles are commonly segregated by weight for analysis and regulation,<sup>205</sup> and (2) birds are similar in weight to “micro UAVs,” drones weighing three pounds or less.<sup>206</sup> Exponent’s initial search of the Strike Database limited itself to reports of bird strikes that occurred within five or more miles of an airport and at or below 400 feet.<sup>207</sup> Exponent found that under those parameters, no injuries or fatalities were caused to manned aircraft.<sup>208</sup> Changing the parameters did not lead to significantly different results. Exponent concluded:

Analysis of the full 24.5 years of available FAA data using the proposed UAV regulations of 400 ft. and 5 miles from airports (including “en route” operations of unreported distance from airport), with small- and medium-size birds as a surrogate for UAVs, shows that there were 34 cases of damage to aircraft in collisions with small and medium size birds. This search found only 6 collisions resulting in injuries and none resulting in fatalities within these parameters. Based on the FAA Wildlife Strike database there is no indication that allowing UAVs of three pounds or less to

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201. EXPONENT FAILURE ANALYSIS ASSOCS., UAS SAFETY ANALYSIS 38 (2014), available at <http://www.kramerlevin.com/files/upload/UAS%20America%20Fund%20Petition%20Rulemaking.pdf>.

202. *Id.*

203. *Id.*

204. DOT Asks FAA to Do More to Reduce Bird Strikes, NAT’L BUS. AVIATION ASS’N (Sept. 21, 2012), <http://www.nbaa.org/ops/safety/20120921-dot-asks-faa-to-do-more-to-reduce-bird-strikes.php>.

205. UAS SAFETY ANALYSIS, *supra* note 201, at 3.

206. *Id.*

207. *Id.* at 5.

208. *Id.*

operate at least 5 miles from airports and at or below 400 feet will pose a significant increase in risk to manned aircraft.<sup>209</sup>

This is only one study, but it convincingly suggests that drones such as Pirker's—weighing a mere 1.5 pounds above the study's parameters—present a marginal safety risk to navigable airspace, even when flying *in navigable airspace*. More importantly, it suggests that drones flying *below navigable airspace* present an exceedingly minimal, if any, danger to navigable airspace. Thus, the safety risk drones pose to airspace at any altitude is uncertain at best. At worst, it is exaggerated. In either case, the prudent course cannot be to stifle innovation and entrepreneurship. Particularly not when, as one author has suggested, common law and the existing regulatory framework has “successfully balanced innovation and safety in a fair, efficient manner for decades.”<sup>210</sup>

#### CONCLUSION

For global giants such as Amazon and Google as well as sole proprietors such as Brown and Pirker, drones offer the promise of opportunity and the means of reaching a new commercial frontier. For the public, drones offer the promise of substantial job creation and growth in a still-recovering economy. For state and local governments, drones offer millions of dollars in new tax revenue. In short, drones offer something for everybody. While it may be true that the FAA will lift its prohibition in time, the agency lacks the authority to impose it in the first place. For that reason, these would-be entrepreneurs and innovators should not have to wait.

The physical characteristics of drones, the degree to which the public utilizes them, and the manner of their operation will almost certainly evolve; presenting new dangers where few or none existed before. Nevertheless, the irrational fear of a future hypothetical danger should not serve as justification to strangle the promising innovation and entrepreneurship of the present. Were that not the case, the world may have never learned the names, Wilbur and Orville Wright.

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209. *Id.* at 7.

210. F. Patrick Hubbard, “*Sophisticated Robots*”: *Balancing Liability, Regulation, and Innovation*, 66 FLA. L. REV. 1803, 1872 (2014).

