



# The FAA and Drones: A Modern Day Dr. Frankenstein and His Monster?

by Garrett Caffee

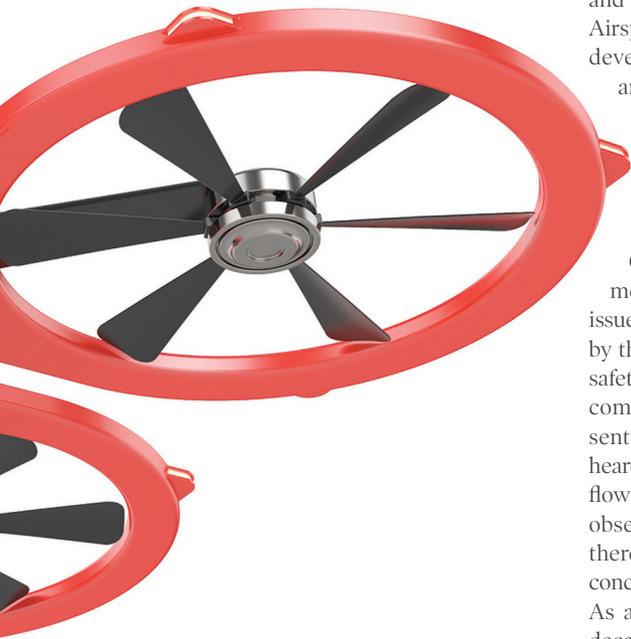
*“Hateful day when I received life!” I exclaimed in agony.  
“Accursed creator! Why did you form a monster so  
hideous that even you turned from me in disgust?”*

—Mary Shelley, *Frankenstein*

In her novel *Frankenstein, or The Modern Prometheus*, 18-year-old Mary Shelley’s sometimes strained relationship with her father, William Godwin, can be seen as the motivation for her story of a creator and his creation. While Unmanned Aircraft Systems (UAS or drones) quickly arose as an offshoot of the development of the airplane, and predate the creation of the Federal Aviation Administration (FAA), the historical disconnect between the FAA and drones resembles in many ways the story of Dr. Frankenstein and his monster.

Like any good story, in order to see the relationship in its most pure sense, it is best to go back to where it all started. In 1916, just 13 years after the Wright Brothers first took to the (very low) skies of Kitty Hawk, the U.S. Army developed the first pilotless aircraft while looking for ways to integrate flight-based weapons and surveillance systems into its Great War arsenal.

World War II saw the use of multiple pilotless aircraft and rockets, including, famously, the German V-1 and V-2 rockets, the latter of which would catapult its creator, Wernher von Braun, to the forefront of the Space Age in the decades to come. Even more sophisticated technology



The FAA, our figurative Dr. Frankenstein, was created 60 years ago. Currently a part of the Department of Transportation, the FAA became the primary regulatory agency for establishing and maintaining flight safety standards in the U.S., including pilot certification requirements, air traffic control standardization, and researching and developing the National Airspace System (NAS). For decades, the FAA developed and perfected a set of standards and regulations for air travel that focused primarily on its first-born, manned aircraft. This system was so successful, the FAA became known around the globe as one of the premier registries for aircraft.

On June 9, 1981, the FAA and the drones met for the first time. At that time, the FAA issued Advisory Circular 91-57 (AC 91-57), which by the FAA's own admission was an "outline of safety standards for model aircraft operators," compliance with which was voluntary. The sentiment at the time was that the FAA had heard some concerns about model aircraft being flown at distances from airports, which some observers deemed possibly unsafe. However, there was never enough public or legislative concern to lead to any sort of formal rulemaking. As a result, the FAA and drones spent three decades in an informal relationship, with the FAA being reluctant to make anything truly official and instead provided recommendations of use to the Academy of Model Aeronautics (AMA) only via AC 91-57.

relating to unmanned but piloted aircraft was developed and used in small numbers by the United States during the war. Laden with explosives and TV cameras, the unmanned aircraft was capable of transmitting images back to a trailing piloted aircraft for purposes of steering the unmanned leading aircraft. Already, UAS were being conceived and developed in conjunction with their manned siblings.

Beginning in 1947 and continuing to the present day, the U.S. Air Force has led the efforts to develop and integrate drones into the U.S. military arsenal. Perhaps the most significant advancement was the use of CIA-operated Predator drones in Afghanistan in the hunt for Osama bin Laden and other Taliban prior to and immediately after 9/11. Even before the U.S. Air Force received its own drone fleet, in October 2001, the CIA used Predator tailfin number 3034 (which now hangs in the Smithsonian Air and Space Museum) in an unsuccessful attempt to kill Mullah Omar. As is often the case with developing industries, much of the technology now employed in modern UAS, including those used by hobbyists and commercial operators across the world, was first seen on the drawing boards of corporations vying for military contracts.

In 2007, the FAA attempted to legislate more stringent rules regarding the commercial use of drones by issuing the FAA 2007 Policy Notice<sup>1</sup> (the 2007 Notice), leaving the recreational use of drones covered by the voluntary AC 91-57. It would take only four years for the acts of drone users to force the FAA to revisit the issue.

On October 17, 2011, Raphael Pirker used a four-pound, seven-ounce Ritewing Zephyr-powered Styrofoam glider to capture video and aerial photographs of the University of Virginia campus for which he was compensated by a third-party advertising agency. The Ritewing Zephyr sports a 56-inch wingspan and retails for \$130. Video recorded during the flight shows Pirker haphazardly flying the drone near students and through pedestrian tunnels. On April 13, 2012, the FAA issued a Notice of Proposed Assessment, proposing a civil penalty against Pirker in the amount of \$10,000. On June 27, 2013, the FAA issued a formal Order of Assessment, which Pirker appealed in an attempt to differentiate drones from manned aircraft, and, as such, not subject to Federal Aviation Regulations (FARs), namely, "No person may operate an aircraft in a careless or reckless manner so as to endanger the life or property of another."<sup>2</sup>

On March 6, 2014, administrative law judge Patrick Geraghty issued a decisional order in the *Raphael Pirker*<sup>3</sup> case, striking down the FAA's fine on Pirker. Among other reasons, Judge Geraghty struck down the fine because of his finding that Notice 07-01 was ineffective as it was arguably an attempt at legislative rulemaking and did not adhere to 5 U.S.C. Section 553(d), which requires 30 days' notice prior to an effective date. What's important about the fact that Notice 07-01 was no longer enforceable is that Notice 07-01 was the vehicle through which the FAA had dichotomized commercial UAS activity from hobbyist use of model aircraft, and placed strict restrictions on commercial UAS use. So strict in fact, that up to that date, no commercial UAS use had been approved south of the Arctic. The ruling of the ineffectiveness of Notice 07-01 was not addressed by the FAA in its appeal brief, and therefore was waived, exposing a gaping hole in FAA regulatory authority through which adventurous enterprising UAS flew their drones for commercial purposes pending further clarification on the state of UAS laws.

On November 18, 2014, the National Transportation Safety Board (NTSB) issued the long-awaited and much-anticipated opinion and order in the FAA's appeal of the administrative law judge's decisional order in the *Raphael Pirker* case (Appeal Order). In the Appeal Order, the NTSB explicitly stated that Mr. Pirker's Ritewing Zephyr was in fact an "aircraft" under 49 U.S.C. § 40102(a)(6) and 14 C.F.R. § 1.1<sup>4</sup> and therefore was subject to FAA regulations.

Much like a custody order in a sense, the Appeal Order put the public on notice that things such as "unmanned free balloons, kites, rockets, and moored balloons that rise or travel above the surface of the earth,"<sup>5</sup> including UAS are "aircraft." The NTSB stated that "...the plain language of the statutory and regulatory definitions is clear: an 'aircraft' is any device used for flight in the air,"<sup>6</sup> and continued, "[t]his definition includes any aircraft, manned or unmanned, large or small."<sup>7</sup>

In conjunction with its loss of any enforceability of the 2007 Notice and in an effort to corroborate its argument in the appeal brief in *Pirker*, on June 25, 2014, the FAA caused the publication in the Federal Register of a notice titled "Interpretation of the Special Rule for Model Aircraft"<sup>8</sup> (the 2014 Notice). So why after more than 30 years did the FAA decide to move away from AC 91-57 with regard to its guidance for the use of recreational UAS, which, judging by the relative absence of incidents with model aircraft, had been effective for so long? The FAA stated that it was "issuing this interpretation because we have received many inquiries regarding the scope of the special rule for model aircraft . . . and the FAA's enforcement authority over model aircraft. . ."<sup>9</sup>

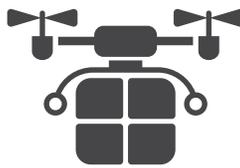
In reality, while never directly mentioned, the Notice had everything to do with the FAA's ongoing efforts to maintain its self-professed authority over the commercial use of unmanned aircraft systems by claiming that it never specifically disclaimed jurisdiction over model aircraft, and while AC 91-57 was self-described as voluntary, the FAA really just meant that it could choose whether or not to enforce the FAR regulations on unmanned aircraft at any time, the same way that they could choose whether or not to enforce said regulations on manned aircraft.

During the judicial proceedings accompanying the *Raphael Pirker* case, the FAA continued its floundering and at times confounding treatment of UAS, trying to shoehorn UAS and the regulations surrounding the operation and operators of said half-pound drones into the same FARs that governed the operation of myriad manned aircraft, including behemoths like the Boeing 747 and 777 and Airbus A330 and A380; each commercial airline capable of carrying hundreds of paying passengers, with the A380's maximum take-off weight in excess of 1.2 million pounds.

Impatient UAS operators, both recreational and aspiring commercial enterprises, along with Congress and a supportive President Barack Obama, enacted into law the FAA Modernization and Reform Act of 2012<sup>10</sup> (the 2012 Reform Act), which among other things commanded the FAA to take steps to reign in and take responsibility for its creation, to allow drones to gradually integrate into a shared NAS with manned aircraft, albeit at a literal lower altitude than its manned cousins. The 2012 Reform Act was explicit in allowing for safe commercial operations of drones via Section 333 of the 2012 Reform Act, while also explicitly informing the FAA that it was not to hinder recreational usage of UAS.

Proactive UAS operators around the country seized the opportunity and hurriedly filed Section 333 petitions, essentially an equivalent of adoption papers for their "little monsters," i.e., their drones. Section 333 petitions required the petitioner to detail the exact FARs to which they believed their UAS to be unable or impractical to adhere. As you can imagine, the FAA's monstrosities acted little and looked even less like their manned counterparts, making the number of FARs from which exemptions were sought well over 20, including by way of illustration 14 C.F.R. § 91.9(b)(2), requiring a copy of the current approved flight manual to be carried aboard the aircraft. Similarly, those operators whose Section 333 exemptions were granted by the FAA were subsequently required to register their UAS with the FAA in the same

manner required for a manned aircraft. The FAA had long operated with the carbon-copy-based FAA Form 8050-3 and a \$5 check to register aircraft. Imagine the surprise that greeted many commercial UAS operators when after the arduous Section 333 petition drafting and the wait required in order to operate a state of the art unmanned flying commercial aircraft, the reality of the FAA's affairs meant keeping a pink carbon copy of their application and sending in a de minimis application fee before they could finally proceed. In some states, including Minnesota, that also meant registering the drones with the state, along with paying an annual registration fee.



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Thousands of Section 333 exemptions were filed with the FAA, causing wait times to increase to a point where new UAS models with increased battery life and more sophisticated cameras eclipsed the older models before the initial Section 333 exemptions were even approved. Section 333 exemption requests required a specific delineation of UAS models for which exemptions were sought, so that, in turn, required commercial operators to file further amendments to their approved Section 333 exemptions just to stay competitive in the market. During all that time, recreational UAS users were inundated by a number of flip-flopping positions by the FAA of registration requirements. At times requiring UAS users to register under a new web-based system along with a \$5 registration fee (which was promised to be refunded by the FAA if done within a particular timeframe, and which to date, this author never

received), and at others, being advised by the courts and media that such registration was not allowed pursuant to the 2012 Reform Act.

In June 2016, the FAA promulgated the Small Unmanned Aircraft Rule<sup>11</sup> ("Part 107"), which provides specific, tailored rules that detail requirements for operators, the certification they must possess, and the standards and airspace restrictions that UAS operators must abide by. Section 333 continued to be utilized for commercial operation FAR exemptions for UAS over 55 pounds, and for other operations, such as beyond the visual line of sight and nighttime flights.

In October 2018, the Senate, House, and President effected the FAA Reauthorization Act of 2018<sup>12</sup> (the 2018 Bill), providing for five years' worth of appropriations for the FAA. The 2018 Bill represents the longest appropriations time period that the FAA's Airport Improvement Program has had since its 1982 inception and it passed with a 92-6 vote in the Senate, showing near unanimous support.

The 2018 Bill leaves many specific details up to the FAA to determine over the next year, but it does give us a general road map for UAS in the future and benchmarks that Congress has directed the FAA to accomplish. So what does that road map look like?

First, Section 333 is now repealed. As of today, the FAA does not allow drone operators to fly their drones beyond their own line of sight; nor are nighttime flights allowed. With the 2018 Bill, the FAA has specific direction to provide guidance and allow flights that extend beyond the visual line of sight of the operator and for nighttime operations of UAS. Also under the 2018 Bill, all users, even recreational ones, will be required to pass an Aeronautical Knowledge and Safety Test, a provision which is to be implemented by the FAA by April 3, 2019. This test requires an understanding of aeronautical safety and knowledge of FAA regulations and requirements pertaining to the operation of a UAS in the NAS.

Finally, and perhaps most importantly, Congress has given the FAA until October 5, 2019, to update the existing regulations to allow for the carriage of property by operators for compensation or hire. It appears that my ultimate dream of having *Terminator 3: Rise of the Machines* delivered to my doorstep by a drone might actually come true prior to the complete obsolescence of my Blu-Ray player.

One small but very important item to note in the 2018 Bill is that Congress has included an ambiguous proviso that "a violation of a

privacy policy by a person that uses a UAS for compensation or hire, in the NAS shall be an unfair and deceptive practice.”<sup>13</sup> Such violation of the privacy act explicitly falls under Federal Trade Commission jurisdiction.<sup>14</sup> Interestingly, this is the first time that we’ve seen Congress mention an area that remains a highly contentious and discussed arena in UAS operations—that of the privacy rights.

For years, the FAA has had much success dealing with its first-born, manned aircraft. While oft delayed and from time-to-time at odds with previously issued directives, the FAA has begun to integrate and incorporate the life of its second-born, drones, into the NAS. Still to be determined are how privacy, property rights, sharing of and jurisdiction over certain classes of airspace, and the usage of existing rights of way will be managed during the period when the more numerous but less glamorous of the FAA’s offspring becomes fully integrated into our lives.

## Notes

<sup>1</sup> 72 Fed. Reg. 6689 (Feb. 13, 2007).

<sup>2</sup> 14 C.F.R. § 91.13(a).

<sup>3</sup> *Michael P. Huerta, Administrator, Federal Aviation Administration v. Raphael Pirker*, National Transportation Safety Board Decisions, Docket No. CP-217, March 6, 2014 (“*Raphael Pirker*”).

<sup>4</sup> *Michael P. Huerta, Administrator, Federal Aviation Administration v. Raphael Pirker*, NTSB Order No. EA-5730, 12 (Nov. 18, 2014).

<sup>5</sup> *Id.* at 10.

<sup>6</sup> *Id.* at 7.

<sup>7</sup> *Id.* at 12.

<sup>8</sup> 79 Fed. Reg. 36171 (June 25, 2014).

<sup>9</sup> *Id.* at 36172.

<sup>10</sup> FAA Modernization and Reform Act of 2012, Pub. L. No. 112-95, 126 Stat. 11 (amending 49 U.S.C.).

<sup>11</sup> 14 C.F.R. Part 107.

<sup>12</sup> H.R. 302, Pub. L. 115-254.

<sup>13</sup> *Id.* at Section 375(a).

<sup>14</sup> 15 U.S.C. § 45(a).



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