

July 24, 2014

Mr. Dean E. Griffith
Regulations Division, Office of the Chief Counsel
Federal Aviation Administration
800 Independence Avenue, SW
Washington DC, 20591

RE: Interpretation of the Special Rule for Model Aircraft, Docket No. FAA-2014-0396

Dear Mr. Griffith,

On behalf of the Information Technology and Innovation Foundation (ITIF), we are pleased to submit these comments in response to the Federal Aviation Administration's (FAA) request for public comment concerning the FAA's Interpretation of the Special Rule for Model Aircraft established by Congress in the FAA Modernization and Reform Act of 2012.

ITIF is a nonprofit, non-partisan public policy think tank committed to articulating and advancing a pro-productivity, pro-innovation and pro-technology public policy agenda internationally, in Washington, and in the states. Through its research, policy proposals and commentary, ITIF is working to advance and support public policies that boost innovation, e-transformation, and productivity.

The FAA has interpreted the Special Rule for Model Aircraft too narrowly and risks placing unnecessary burdens on a pastime enjoyed by more than 650,000 Americans.¹ Historically, model aircraft have been exempt from FAA rulemaking. However, in its current interpretation, the FAA would severely limit specific technologies through its proposed interpretation of statutory protections

¹ Gregory McNeal, "Drone Users Largely Silent Regarding FAA Rules That May Limit Flights," *Forbes*, July 10, 2014, <http://www.forbes.com/sites/gregorymcneal/2014/07/10/drone-users-largely-silent-regarding-faa-rules-that-may-limit-flights/>.

guaranteed for model aircraft. This interpretation would affect new technologies, such as first person view (FPV) goggles, which allow the user to gaze out from the aircraft as if on board.² The FAA should not create preemptive or prophylactic rules that limit innovative technologies such as these which represent the next-generation of model aircraft. Instead, the FAA should make rules that mirror the established model aircraft community's voluntary safety criteria and enforce light-touch regulation on these budding technologies. In doing so, the FAA will adhere to Congress's original intent and facilitate safety among model aircraft users who are experimenting with new technology. The FAA should give hobbyists and inventors room to thrive and not limit them with overbearing restrictions.

In addition, useful technologies, such as unmanned aircraft systems (UAS), should not be limited to non-commercial use. If the FAA's main purpose in regulation is to address safety concerns, and it believes certain technologies are safe for non-commercial use, then it should not regulate commercial uses. By creating this arbitrary distinction, the FAA will limit innovation and the economic potential of unmanned aircraft technologies.

Background

On February 14, 2012, the President signed into law the FAA Modernization and Reform Act of 2012, defining a model aircraft as “an unmanned aircraft” that is capable of sustained flight, flown within a “visual line of sight” of the person operating the aircraft for “hobby or recreational purposes.”³ This Act also explicitly prohibits the FAA from creating any rule or regulation regarding such model aircraft if the following statutory requirements are met: (1) the aircraft is flown as a hobby, (2) it is flown with a community-based set of safety guidelines, (3) it does not weigh more than 55 pounds, (4) it gives right-of-way to manned aircraft, and (5) when flown within five miles of an airport, the operator of the aircraft provides the airport operator with prior notice of the operation.⁴

² “What is FPV,” *Ready Made RC*, Accessed July 21, 2014, http://www.readymaderc.com/store/index.php?main_page=page&id=7.

³ “FAA Modernization and Reform Act of 2012,” Section 336.

⁴ *Ibid.*

In the recently published Interpretation of the Special Rule for Model Aircraft, the FAA states that model aircraft that do not strictly meet the statutory requirements are nonetheless unmanned aircraft, and as such, are subject to all existing and future FAA regulations.⁵ As explained below, in this narrow interpretation, the FAA would preclude hobbyist's use of emerging technologies due to the meanings of "visual line of sight" and "hobby or recreational purpose."⁶

As noted in the FAA's Interpretation of the Special Rule for Model Aircraft, it is within the FAA's purview to conduct oversight of model aircraft guided by the risks that these operations may present.⁷ Therefore, as implied in Section 336 of the FAA Modernization and Reform Act of 2012, the FAA is correct to assume that it can—and should—regulate aircraft on a case-by-case basis due to safety concerns if these aircraft violate any of the Act's Model Aircraft requirements.⁸ However, this should be a light-touch regulation, developed with an eye to Congress' intent through a set of community-based, voluntary safety standards.

The FAA Should Use Bottom-Up Community Guidelines, Rather than Top-Down Regulations for Model Aircraft

Instead of creating a hard and fast rule to govern new forms of model aircraft, the FAA should adopt user safety guidelines in cooperation with community-based national organizations. Two major community-based national organizations exist today: the Academy of Model Aeronautics (AMA) and the Association for Unmanned Vehicle Systems International (AUVSI). The FAA should work with

⁵ "Interpretation of the Special Rule for Model Aircraft," *the Federal Aviation Administration*, June 23, 2014, http://www.faa.gov/about/initiatives/uas/media/model_aircraft_spec_rule.pdf and "Unmanned Aircraft Operations in the National Airspace System," 72 F.R. 6689 Vol. 29, *the Federal Aviation Administration*, February 13, 2007, <http://www.gpo.gov/fdsys/granule/FR-2007-02-13/E7-2402>.

⁶ "Interpretation of the Special Rule for Model Aircraft," *the Federal Aviation Administration*.

⁷ Ibid.

⁸ "The FAA Modernization and Reform Act of 2012," Pub. L. No. 112-95, 111th Cong., (Feb. 14, 2012), Section 336, http://www.faa.gov/about/office_org/headquarters_offices/apl/aatf/legislative_history/media/faq_modernization_reform_act_2012_plaw-112publ95.pdf, and "Interpretation of the Special Rule for Model Aircraft," *the Federal Aviation Administration*.

the AMA and AUVSI, as it has in the past, to establish voluntary community guidelines.⁹ These guidelines could establish height limits, weight limits, spotter requirements for FPV technologies, and other safety techniques.¹⁰ Community guidelines would satisfy the Congressional intent; promote safety among users of emerging technologies, such as FPV goggles; and support model aircraft hobbyists' organizations. As model aircraft technology continues to evolve, these voluntary safety guidelines would give the FAA and the model aircraft community flexibility to evolve with them.

The FAA's interpretation goes against Congress' intent that recreational aircraft activities be managed by community-based national organizations. As stated in Section 336, one of the requirements for model aircraft is that it "is operated in accordance with a community-based set of safety guidelines and within the programming of a nationwide community-based organization."¹¹ Guidelines established by the community address many of the safety concerns that the FAA seeks to regulate. For example, the AMA National Model Aircraft Safety Code stipulates model aircraft must give the right of way to manned aircraft and restricts operating near airports, among many other safety standards.¹² Both the AMA and the AUVSI have guidelines in place to instruct users with FPV goggles.¹³ Therefore, the FAA should defer to these guidelines when assessing new technologies, or work with the model aircraft community to set new ones.

There exists little evidence to suggest that these voluntary guidelines have been ineffective. AMA boasts 165,000 members and AUVSI has over 7,500.¹⁴ Despite the spread of this hobby, the

⁹ "FAA, AMA Work Together on Model Aircraft/UAS Safety," *the Federal Aviation Administration*, January 13, 2014, <http://www.faa.gov/news/updates/?newsId=75599>.

¹⁰ "Radio Controlled Model Aircraft Operation Utilizing First Person View Systems," *Academy of Model Aeronautics*, accessed July 16, 2014, <https://www.modelaircraft.org/files/550.pdf>.

¹¹ "FAA Modernization and Reform Act of 2012," Section 336.

¹² "Academy of Model Aeronautics National Model Aircraft Safety Code," *Academy of Model Aeronautics*, January 1, 2014, <http://www.modelaircraft.org/files/memmanual.pdf>.

¹³ "Radio Controlled Model Aircraft Operation Utilizing First Person View Systems," *Academy of Model Aeronautics*, and "Unmanned Aircraft System Operations Industry 'Code of Conduct'," *Association for Unmanned Vehicle Systems International*, accessed July 23, 2014, <http://www.auvsi.org/conduct>.

¹⁴ "Join AUVSI," *Association for Unmanned Vehicle Systems International*, accessed July 16, 2014, <http://www.auvsi.org/membershipandchapters/joinauvsi/>, and Jason Koebler, "Drone Pilots Are Gearing Up for a Fight

incidence of death or injury among model aircraft users remains low, with only two deaths in the past few decades.¹⁵ In a report for the Congressional Research Service in 2012, Specialist in Aviation Policy Bart Elias argued that smaller aircraft may be expected to crash more frequently, but the potential for catastrophic consequences is much less, given their small size and carrying capacity.¹⁶ Based on these assertions, the FAA should adjust its safety assumptions regarding this new technology as it interprets the model aircraft rule, focusing on the following: whether technological advances associated with these aircraft mitigate the original risk; whether having a bystander act as a “spotter” for the operator of FPV technology can reduce the risks associated with lack of visual line of sight; and what degree of sight constitutes safe model aircraft behavior.

Another approach for the FAA to reduce safety risks associated with aircraft would be to create basic training and certification standards for operators of small FPV aircraft devices. By requesting hobbyists who use FPV technologies to take a short certification program, the FAA can promote safety without creating undue restrictions on these hobbyists. A community-based national organization like AMA could conduct the certification programs, and ensure that the individual understands the safety guidelines set by the recreational community.

The FAA’s Interpretation Would Unnecessarily Restrict First Person View (FPV) Controlled Aircraft

Aircraft that operate with FPV technologies are becoming increasingly common. These recreational aircraft are driven remotely from a first-person perspective through an onboard camera that feeds

Against the FAA’s New ‘Rules’,” *Motherboard*, June 25, 2014, <http://motherboard.vice.com/read/drone-pilots-are-gearing-up-to-fight-the-faas-new-rules>.

¹⁵ Matt Flegenheimer, “Flying Model Aircraft Comes Under Scrutiny After Fatal Accident in Brooklyn Park,” *New York Times*, September 6, 2013, <http://www.nytimes.com/2013/09/07/nyregion/flying-model-aircraft-comes-under-scrutiny-after-fatal-accident-in-brooklyn-park.html>.

¹⁶ Bart Elias, “Pilotless Drones: Background and Considerations for Congress Regarding Unmanned Aircraft Operations in the National Airspace System,” *Congressional Research Service*, September 10, 2012, <http://biotech.law.lsu.edu/crs/R42718.pdf>.

wirelessly to video goggles or a video monitor.¹⁷ While these technologies are relatively new—gaining in popularity since the early 2000s—the FAA predicts there may be as many as 7,500 civilian unmanned aircraft in use within five years.¹⁸

The FAA has interpreted “visual line of sight” in such a way as to preclude or burden recreational users from using new FPV technologies. The FAA’s interpretation states that these aircraft “must be visible at all times to the operator” and “an operator could not rely on another person to satisfy the visual line of sight requirement.”¹⁹ Because FPV technologies require the user to wear goggles, he or she cannot physically keep a line of sight with the aircraft.²⁰ Many hobbyists who enjoy FPV aircraft technologies have used a second person as a “spotter” to mitigate this risk and fulfill this visual line of sight requirement.²¹ However, because using FPV technologies would violate the FAA’s narrow interpretation of “visual line of sight,” aircraft using these technologies would not be considered model aircraft under section 336 of the FAA Modernization and Reform Act of 2012. As a result, they would be subject to all existing FAA regulations, most of which do not currently apply to model aircraft.²² Therefore, this interpretation would ban or severely limit use of these emerging technologies. In pursuit of their hobby, FPV aircraft enthusiasts should not be forced to abide by parachute regulations or airworthiness standards made for manned aircraft. The FAA should recognize this is a recreational pastime, and not burden it with regulation.

If the FAA places tight restrictions on these emerging technologies, its actions would be outside of Congress’ original intentions of the FAA Modernization and Reform Act of 2012. In the Act, Congress explicitly states that the FAA should not promulgate “any rule or regulation regarding a

¹⁷ Bart Elias, “Pilotless Drones: Background and Considerations for Congress Regarding Unmanned Aircraft Operations in the National Airspace System,” *Congressional Research Service*, and David, “FPV Starting guide,” *REExplorer*, September 8, 2009, <http://rcexplorer.se/educational/2009/09/fpv-starting-guide/>.

¹⁸ Joseph Serna, “As hobby drone use increases, so do concerns about privacy, security,” *LA Times*, June 21, 2014, <http://www.latimes.com/local/la-me-drone-hobbyist-20140622-story.html>.

¹⁹ “Interpretation of the Special Rule for Model Aircraft,” *the Federal Aviation Administration*.

²⁰ Jason Koebler, “The FAA Is Trying to Ban First-Person View Drone Flights,” *Motherboard*, June 23, 2014, <http://motherboard.vice.com/read/the-faa-is-trying-to-ban-first-person-view-drone-flights>.

²¹ “FPV Flying -- Safety! Some Common sense flight rules,” *fpvpilot.com*, accessed July 16, 2014, <http://www.fpv-pilot.com/Pages/FPVPilotSafety.aspx>.

²² “Interpretation of the Special Rule for Model Aircraft,” *the Federal Aviation Administration*.

model aircraft, or an aircraft being developed as a model aircraft” if it adheres to the statutory requirements.²³ Congress could not foresee the explosion of new types of aircraft or the forms these technologies may take. Despite this, Congress’ overall intent that the FAA should not create rules against model aircraft shows that recreational aircraft should not be limited or burdened by the same FAA rules that apply to larger, manned aircraft. Therefore, by using its “plain language” interpretation to ban emerging recreational technologies, the FAA is acting outside of Congress’ original intentions to not restrict recreational users.

The FAA Should Embrace the Concept of “Hobbyists as Innovators”

Innovation often takes place on many levels and in many different arenas, with hobbyists and entrepreneurs tinkering, exploring, and building new technologies. Any adopted regulations should promote a “culture of innovation,” in which tinkerers have the freedom to play with new technologies. Consider Amazon, a company whose creator, Jeff Bezos, started in his garage in Bellevue, Washington in 1994.²⁴ Free from restrictive regulation, Bezos was free to play with new ideas and new technologies which evolved it into the innovative entity we know today. In this way, removing limits on model aircraft hobbyists can foster innovation from the ground up. Amateur inventors and model aircraft enthusiasts will create new innovations in aircraft devices, improving them organically. These hobbyists may even address many of the FAA’s original safety concerns with improvements to these devices.

The FAA should embrace the idea of “permissionless innovation,” the ability for users to experiment and create new ideas without being subjected to onerous regulation.²⁵ Often the legislative and regulatory solutions to problems are not as productive for safety concerns, because these preemptive moves can be costly, difficult to implement, overly constraining, and unnecessary.²⁶ As discussed

²³ “FAA Modernization and Reform Act of 2012,” Section 336.

²⁴ Richard Brandt, “Birth of a Salesman,” *Wall Street Journal*, October 11, 2011, <http://online.wsj.com/news/articles/SB10001424052970203914304576627102996831200>.

²⁵ Adam Thierer, *Permissionless Innovation*, (Arlington, VA: Mercatus Center at George Mason University, 2014), 3, http://mercatus.org/sites/default/files/Permissionless.Innovation.web_.pdf.

²⁶ Ibid, 69.

earlier in these comments, community-created guidelines already address many of the FAA's ongoing safety concerns. Instead of regulations, the FAA could use public awareness campaigns or develop voluntary guidelines to build individual resiliency and ensure proper assimilation of these unmanned aircraft into our society.

The FAA Should Rethink Its Commercial and Recreational Distinction

Great innovations should not be limited to non-commercial uses. In 1982, users of the Internet—ARPAnet as it was then called—were not allowed to conduct any commercial or social business.²⁷ Undoubtedly, these restrictions were put in place for noble reasons, and those who imposed them were probably unable to imagine the economic potential of the technology. It was not until the early 1990s that the Internet was opened up for commercial and social use.²⁸ Within a few years it grew to the innovative experience it is today, bringing users email, web-browsers, and many other new advances. In the same way the Internet was limited to non-commercial use, the FAA's current rules prohibit unmanned aircraft from flying for commercial purposes unless otherwise granted special permission.²⁹ Ahead of its commercial unmanned aircraft ruling in 2015, the FAA should rethink its distinction between commercial and recreational unmanned aircraft.³⁰

In 1981, the FAA saw fit to regulate model aircraft that “at times pose a hazard to full-scale aircraft in flight and to persons and property on the surface” and recommend a set of voluntary operating standards for model aircraft operators to follow to mitigate these safety risks.³¹ If the FAA's primary purpose for regulating unmanned aircraft is safety, then the FAA should not draw a distinction for the purpose of the activity preformed, whether it be for recreation and for-profit. The effects of this

²⁷ Gordon Crovitz, “WeHelpedBuildThat.com,” *Wall Street Journal*, July 29, 2012, <http://online.wsj.com/news/articles/SB10000872396390443931404577555073157895692>.

²⁸ “Brief History of the Internet,” *the Internet Society*, accessed July 16, 2014, <http://www.internetsociety.org/internet/what-internet/history-internet/brief-history-internet#Commercialization>.

²⁹ “Interpretation of the Special Rule for Model Aircraft,” *the Federal Aviation Administration*.

³⁰ Craig Whitlock, “FAA will miss deadline to integrate drones in U.S. skies, report says,” *Washington Post*, June 30, 2014, http://www.washingtonpost.com/world/national-security/faa-will-miss-deadline-to-integrate-drones-in-us-skies-report-says/2014/06/30/fd58e8e2-007f-11e4-b8ff-89afd3fad6bd_story.html.

³¹ “Interpretation of the Special Rule for Model Aircraft,” *the Federal Aviation Administration*.

difference can be seen with a simple example: under current rules, it is legal for an individual to operate an unmanned aircraft to take pictures of his or her house for fun. If that same person then sells those pictures for profit, as a realtor in New York City did in June 2014, he or she may face a penalty.³² If the purpose of regulating unmanned aircraft, as defined by the FAA in its own rules, is to promote safety, then this distinction is tenuous at best.³³

Additionally, individuals that own a full-scale plane for recreational purposes are allowed to conduct aerial photography as a private civil operator whether or not they intend to sell a photograph.³⁴ So the FAA imposes commercial restrictions on recreational operators of unmanned aircraft, but not for recreational operators of manned aircraft. This example shows a distinct inconsistency in the FAA's regulatory premises. By allowing commercial unmanned aircraft users equal responsibility and regulation as model aircraft hobbyists, the FAA can improve safety standards, unlock new economic activity, and usher in a wave of innovation.

³² Jennifer Gould Keil and Kate Sheehy, "FAA takes on city Realtors using drones," *New York Post*, July 1, 2014, <http://nypost.com/2014/07/01/faa-takes-on-city-realtors-using-drones/>.

³³ "Advisory Circular 91-57, Model Aircraft Operating Standards," *the Federal Aviation Administration*, June 9, 1981, www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentid/22425.

³⁴ *Professional Aerial Photographers Association*, accessed July 16, 2014, www.papainternational.org.

Conclusion

The current proposed interpretation of Special Rule for Model Aircraft limits the use of next-generation model aircraft and could subject hobbyists to a new wave of regulations, reducing access to this activity and user's potential to innovate. Instead of creating burdensome regulation, the FAA should adopt voluntary community guidelines that promote safety and permissionless innovation. The FAA should also rethink its commercial distinction and establish safety rules for both commercial and private-use unmanned aircraft to boost innovation throughout the country. By using a light-touch regulatory framework for recreational unmanned aircraft technologies, as intended by Congress, the FAA will not only protect hobbyist's freedom to tinker, it will promote a better future.

Sincerely,

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