Before the
FEDERAL AVIATION ADMINISTRATION
Washington, D.C. 20590

In the Matter of	)	
	)	
Operation and Certification of	)	Docket No. FAA-2015-0150
Small Unmanned Aircraft Systems	)	
	)	

COMMENTS OF
THE COMPETITIVE ENTERPRISE INSTITUTE

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Prepared by:
Marc Scribner
Research Fellow
Competitive Enterprise Institute
1899 L Street N.W., Floor 12
Washington, D.C. 20036
(202) 331-1010
marc.scribner@cei.org

Introduction

On behalf of the Competitive Enterprise Institute ("CEI"), I respectfully submit these comments in response to the Federal Aviation Administration's ("FAA") notice of proposed rulemaking in the matter of Operation and Certification of Small Unmanned Aircraft Systems ("NPRM").[1] CEI is a nonprofit, nonpartisan public interest organization that focuses on regulatory policy from a pro-market perspective.[2]

Our comments develop the following points:

1) It is unclear why FAA is citing its FAA Modernization and Reform Act of 2012 ("FMRA") Section 333 authority as the basis for this rulemaking;

2) FAA does not adequately consider beyond-visual-line-of-sight ("BVLOS") and sense-and-avoid automated operations; and

3) FAA should adopt a risk-based, technology-neutral approach to safety regulation to best promote small unmanned aircraft system ("sUAS") innovation and national airspace system ("NAS") integration.

I. FAA Should Explain Its Reliance on FMRA Section 333 Authority for This Rulemaking

Congress ordered in FMRA Section 332(b) that the Secretary of Transportation must promulgate "a final rule on small unmanned aircraft systems that will allow for civil operation of such systems in the national airspace system, to the extent the systems do not meet the requirements for expedited operational authorization under section 333 of this Act[.]"[3]

Yet, in the NPRM, FAA's cites as authority for the basis of this rulemaking not FMRA Section 332(b), but Section 333.[4] Section 333 ("Special Rules for Certain Unmanned Aircraft Systems") instructs the Secretary to "determine if certain unmanned aircraft systems may operate safely in the national airspace system *before completion of the plan and rulemaking required by section 332* of this Act" (emphasis added) by evaluating specific aircraft and then determining what, if any, certification may be necessary to ensure safe operations.[5]

The clear intent of Congress was for FAA to wield its FMRA Section 333 case-by-case exemption authority *only until* it completed the sUAS NAS integration rulemaking mandated at Section 332(b)(1). There is no way Congress intended FAA to exercise its Section 333 authority to initiate and complete the sUAS rulemaking Congress required under Section 332(b).

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1. Operation and Certification of Small Unmanned Aircraft Systems, *Notice of Proposed Rulemaking*, FAA-2015-0150, 80 Fed. Reg. 9543 (Feb. 23, 2015) [hereinafter NPRM].
2. *See* About CEI, http://cei.org/about-cei (last visited Apr. 9, 2015).
3. FAA Modernization and Reform Act of 2012, Pub. L. No. 112-95, § 332(b)(1), 126 Stat. 11, 74 [hereinafter FMRA].
4. NPRM, *supra* note 1, at 9544.
5. FMRA, *supra* note 3, § 333(a).

There are a variety of plausible explanations for FAA's reliance on Section 333 in this rulemaking: that this proceeding will result only in a temporary, interim sUAS rule, rather than the sUAS "final rule" ordered under Section 332(b) of FMRA; that invoking Section 333 constrains FAA in its ability to authorize certain advanced sUAS flight operations, such as sense-and-avoid automated operation; or that FAA is merely attempting to avoid complying with current and future statutory milestones and deadlines.[6]

Regardless of its reason for doing so, FAA should clearly articulate why it is invoking FMRA Section 333 authority—rather than Section 332(b) authority—as the basis for this rulemaking.

II. FAA Fails to Adequately Consider BVLOS and Sense-and-Avoid Automated Operations

FAA's proposed rules would prohibit sUAS BVLOS operations. This is accomplished by the creation of 14 C.F.R. §§ 107.31, 107.37(a)(1). If adopted, 14 C.F.R. § 107.31 would state that "[w]ith vision that is unaided by any device other than corrective lenses, the operator or visual observer must be able to see the unmanned aircraft throughout the entire flight,"[7] while 14 C.F.R. § 107.37(a)(1) would require that "[e]ach operator must maintain awareness so as to see and avoid other aircraft and vehicles."[8]

This has the effect of prohibiting some of the most promising potential commercial uses of sUAS, such as Amazon's proposed Prime Air automated parcel delivery service.[9] In contrast to FAA's proposal, Canada permits some sUAS BVLOS operations.[10] CEI believes Canada's rules governing BVLOS operations are far too restrictive, but BVLOS operations are at least legally permissible under Canada's Special Flight Operations Certificate system.

To its credit, FAA has invited commenters to propose how BVLOS operations might be integrated into its proposed sUAS regulatory framework.[11] CEI supports the creation of a pathway to sUAS BVLOS operations. We recognize that technology at present may be unable to meet the necessary safety standards, yet it is vitally important that future sUAS innovators have some possibility to safely meet BVLOS operating requirements

6. *See* Brendan Schulman, *FAA Publishes Notice of Proposed Rulemaking for Small Unmanned Aircraft Systems*, KRAMER LEVIN UNMANNED AIRCRAFT SYSTEMS ALERT (Mar. 11, 2015), at 7-8, *available at* http://www.kramerlevin.com/files/Publication/f2d9411b-16d1-48f7-80e5-01b45f975a15/Presentation/PublicationAttachment/cf91f5f0-b70b-4dab-a88b-1718a6452bba/UAS%20Client%20Alert_March%2011%202015_FAA%20Publishes%20Notice%20of%20Proposed%20Rule%20Making%20for%20Sma.pdf.

7. NPRM, *supra* note 1, at 9587.

8. *Id.*

9. *See* Amazon Prime Air, http://www.amazon.com/b?node=8037720011 (last visited Apr. 9, 2015).

10. Review and Processing of an Application for a Special Flight Operations Certificate for the Operation of an Unmanned Air Vehicle (UAV) System, *Transport Canada Staff Instruction*, SI 623-001 (Nov. 19, 2014) (Can.), *available at* http://www.tc.gc.ca/media/documents/ca-standards/(SI)_No._623-001_2_en.pdf.

11. NPRM, *supra* note 1, at 9551, 9560–61.

under the proposed framework. Few would dispute the fact that sUAS technology is rapidly evolving, outpacing regulators' best efforts to comply with FMRA's NAS integration milestones and deadlines. If sUAS developers are explicitly prohibited from operating BVLOS, FAA will be foreclosing the most promising commercial sUAS business models. Innovators in the marketplace, and the consumers who would benefit from their products and services, should not be forced to pay the price for political failures.

In addition to BVLOS operations, CEI believes FAA is unreasonably restricting future sense-and-avoid automated operations. FAA notes that it "considered proposing that a UAS operator be permitted to exercise his or her see-and-avoid responsibilities through technological means, such as onboard cameras."[12] Yet, FAA goes on to note that it "has not identified an acceptable technological substitute for the safety protections provided by direct human vision in [sUAS] operations at this time."[13]

Again, we appreciate FAA's solicitation of comments on this issue. However, CEI believes, similar to our position on BVLOS operations, that FAA should either exempt or explicitly authorize see-and-avoid compliance with technologies such as cameras and sensors.

Such automated operations should also not be inhibited by FAA's proposals to prohibit nighttime operations at 14 C.F.R. § 107.29, and to require one-to-one operator-sUAS operations at 14 C.F.R. § 107.35.[14] In this rapidly evolving space, there is good reason to believe FAA's fears of permitting unsafe sUAS technology will quickly be shown to be overcautious. A number of developers have expressed confidence that their sense-and-avoid technologies will soon permit safe automated operations, and we look forward to their comments in this proceeding.

Furthermore, one can imagine a distant control station as the hub of a network of multiple automated sUAS, enabling an operator to address an automation fail-safe scenario and manually direct a single sUAS to a maintenance facility. Unfortunately, FAA's proposed rule at 14 C.F.R. § 107.33(c) would require that a sUAS "must remain close enough to the operator for the operator to be capable of seeing the aircraft with vision unaided by any device other than corrective lenses."[15] Outside of a very narrow class of testing operations, automated operations—including most potentially viable commercial operations—would be effectively prohibited by this rule.

III. FAA Can Best Promote sUAS Innovation by Adopting a Risk-Based, Technology-Neutral Approach to Safety Regulation

FAA argues that its proposal, "to the greatest extent possible, [] takes a data-driven, risk-based approach to defining specific regulatory requirements for [sUAS]."[16] It goes on to note that, when compared to performance-based regulations, technical regulation

12. *Id.* at 9560.

13. *Id.*

14. *Id.* at 9587.

15. *Id.*

16. *Id.* at 9552.

"[d]esign standards have a tendency to lock in certain approaches that limit the incentives to innovate and may effectively prohibit new technologies altogether."[17]

CEI agrees with FAA that any reasonable and pro-innovation commercial sUAS safety regulatory framework must rely on a risk-based, performance-based, and technology-neutral approach. However, we believe FAA's NPRM betrays these values by excessively restricting and even prohibiting safe, valuable sUAS operations.

As we noted above, FAA's proposal would greatly restrict or prohibit sUAS BVLOS operations, sense-and-avoid compliance with see-and-avoid requirements, multi-vehicle automated operations, and other valuable operations. FAA argues that technology has not yet evolved to safely permit these operations, but how does it expect developers to introduce this technology if its commercial use is effectively prohibited? Perhaps FAA believes it can use its FMRA Section 333 exemption authority to bless these future operations on a case-by-case basis, but as noted above, the language of the statute states that FAA may exercise this authority "before completion of the plan and rulemaking required by section 332 of this Act."[18] This suggests that once the sUAS final rule has been promulgated, FAA's Section 333 exemption powers are eliminated.

In the NPRM, FAA states that "the operational limits in this proposed rule would mitigate risk associated with small UAS operations in a way that would provide an equivalent level of safety to the NAS with the least amount of burden to business and other non-recreational users of even the smallest UAS."[19] We believe FAA could strengthen its equivalent level of safety ("ELOS") approach by developing a framework by which the greatly restricted or prohibited operations in its current proposal could be certified under alternative ELOS compliance. This ELOS-based approach should recognize that operational risks vary greatly. For instance, ELOS can be met even when operational failure rates for certain aircraft are greater than others if that aircraft is lower mass, lower speed, and/or operated above lower density areas.

Finally, CEI strongly urges FAA to recognize that safety is discovered through risk-taking and that overcautious safety regulations create their own risks, such as denying consumers a product that could improve or even save lives. As Aaron Wildavsky notes,

> My objection to current discussions of risk and safety is that they are one-sided, focusing almost entirely on the dangers of risk taking while neglecting, to the detriment of our common safety, opportunity benefits that would be lost by risk aversion. … Safety results from a process of discovery. Attempting to short-circuit this competitive, evolutionary, trial and error process by wishing the end—safety—without providing the means—decentralized search—is bound to be self-defeating.[20]

17. *Id.*

18. FMRA, *supra* note 3, § 333(a).

19. NPRM, *supra* note 1, at 9556.

20. AARON WILDAVSKY, SEARCHING FOR SAFETY 228 (1988).

Conclusion

CEI appreciates its ability to comment on FAA's sUAS NPRM. We hope FAA is able to address our comments on: the strange invocation of FMRA Section 333 as the basis for this rulemaking; the seemingly unreasonable restrictions on BLVOS, automated, and other operations; and FAA's claimed risk-based approach. We look forward to further participation.

Respectfully Submitted,

Marc Scribner
Research Fellow
Competitive Enterprise Institute