



International Center  
for Law & Economics



**COMMENTS OF**

**INTERNATIONAL CENTER FOR LAW & ECONOMICS<sup>1</sup>**

Geoffrey Manne, Executive Director  
Ben Sperry, Associate Director

&

**TECHFREEDOM<sup>2</sup>**

Berin Szoka, President  
Tom Struble, Legal Fellow

**In the Matter of**

Operation and Certification of Small Unmanned Aircraft Systems<sup>3</sup>

FAA Docket No. 2015–0150

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<sup>1</sup> Geoffrey Manne is Executive Director of the International Center for Law & Economics, a nonprofit, nonpartisan research and policy center. He can be reached at [gmanne@laweconcenter.org](mailto:gmanne@laweconcenter.org). Ben Sperry is ICLE's Associate Director. He can be reached at [bsperry@laweconcenter.org](mailto:bsperry@laweconcenter.org).

<sup>2</sup> Berin Szoka is President of TechFreedom, a nonprofit, nonpartisan technology policy think tank. He can be reached at [bszoka@techfreedom.org](mailto:bszoka@techfreedom.org). Tom Struble is a Legal Fellow at TechFreedom. He can be reached at [tstruble@techfreedom.org](mailto:tstruble@techfreedom.org).

<sup>3</sup> Federal Aviation Administration, Operation and Certification of Small Unmanned Aircraft Systems, *Notice of Proposed Rulemaking*, Docket No. FAA–2015–0150, 80 Fed. Reg. 9544 (Feb. 23, 2015) [hereinafter “NPRM”], available at <http://www.regulations.gov/-!documentDetail;D=FAA-2015-0150-0017>.

## Summary of Comments

We believe the Federal Aviation Administration (FAA) has failed to appropriately weigh the costs and benefits, as well as the First Amendment implications, of its proposed rules for the Operation and Certification of Small Unmanned Aircraft Systems (UAS).

The proposed rules would unduly burden both current and future economically and societally valuable uses of drones, in some cases effectively banning obviously valuable uses outright. Among other things, the proposed rules would effectively prohibit the use of commercial drones in populated areas, undermining what may well be drones' most economically valuable uses. Absent justification that such overbroad and costly rules are required to ensure the public safety, they are more restrictive than necessary to satisfy the FAA's core statutory responsibility: to protect the safety of the general public.

Moreover, these rules constitute a *de facto* ban on most — indeed, nearly all — of the potential uses of drones that most clearly involve the collection of information and/or the expression of speech protected by the First Amendment. Indeed, many of the rules likely amount to a prior restraint on protected commercial and non-commercial activity, both for obvious existing applications like newsgathering and for currently unanticipated future uses.

The same failure to tailor the rules according to an appropriate analysis of their costs and benefits also likely causes them to violate the First Amendment. Without proper tailoring based on the unique technological characteristics of drones and a careful assessment of their likely uses, the rules are considerably more broad than the Supreme Court's "time, place and manner" standard would allow.

Finally, the FAA's stated interest in protecting safety may be viewed by a court as being, at least in part, a pretext for attempting to regulate the use of UAS to collect information in order to address "privacy" concerns about uses many would find unsettling. We do not dismiss such concerns, but we believe there are better — and more legally supportable — ways to handle them than the effective ban in populated areas imposed by the proposed rules. If every new technology required the consent of everyone who might hypothetically be harmed by it, however small the risk, technological progress would come to a standstill, especially the progress of technologies that allow us to better observe, understand and communicate about the world.

We thus urge the FAA to:

1. Investigate, assess and incorporate into new rules the specific technological, scientific and economic characteristics of UAS;
2. Carefully assess the economic consequences of its rules to ensure that they reflect thorough and well-reasoned cost-benefit analysis;
3. Reevaluate its rules with unanticipated uses and innovative technologies in mind to ensure that it adopts the least burdensome rules necessary to effect its public safety aims, without inadvertently deterring innovation;
4. Reexamine its distinction between commercial and non-commercial uses of UAS to reflect the many uses of UAS for non-commercial speech, and consider establishing separate rules for commercial and non-commercial uses; and
5. Carefully assess the restrictions on visual line-of-sight (VLOS), daylight-only, licensing and multiple UAS operation, in particular, and revise the rules to better balance both their economic and Constitutional consequences with a more careful assessment of the safety risks posed by various versions of UAS technologies.

### **Cost/Benefit Analysis of the Rules**

Some of the FAA's proposals are simply too restrictive. The First Amendment analysis (below) will address areas where the rules' restrictions exceed Constitutional limits. But simply as a matter of common sense, many of the proposed rules are far more restrictive than necessary to achieve their stated purpose. As a result, the rules would impose costs that significantly exceed their benefits.

### **Applicable Standards**

Executive Order 12866, promulgated by President Clinton in 1993 and still in effect today, states that covered agencies

should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating. Costs and benefits shall be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nevertheless essential to consider. Further, in choosing among alternative regulatory approaches, agencies should select those approaches that

maximize net benefits ... unless a statute requires another regulatory approach.<sup>4</sup>

Section 1(b) of the Executive Order provides “Principles of Regulation” for covered agencies, including that they:

1. Promulgate regulation “in the most cost-effective manner to achieve the regulatory objective. In doing so, each agency shall consider incentives for innovation, consistency, predictability, the costs of enforcement and compliance (to the government, regulated entities, and the public), flexibility, distributive impacts, and equity”;
2. “assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs”;
3. “base [their] decisions on the best reasonably obtainable scientific, technical, economic, and other information concerning the need for, and consequences of, the intended regulation”;
4. tailor their regulations “to impose the least burden on society, including individuals, businesses of differing sizes, and other entities (including small communities and governmental entities), consistent with obtaining the regulatory objectives, taking into account, among other things, and to the extent practicable, the costs of cumulative regulations.”<sup>5</sup>

### **Economic Benefits**

The potential economic benefits that could accrue to the American economy as a result of the integration of UAS into the National Airspace System are significant. A report from the Association for Unmanned Vehicle Systems (AUVSI) estimates the following:

1. The economic impact of drone integration into the NAS “will total more than \$13.6 billion in the first three years ... and will grow sustainably for the foreseeable future, cumulating to more than \$82.1 billion between 2015 and 2025.”
2. Drone integration could create more than 70,000 new jobs in the first three years alone, with total job creation by 2025 estimated at over 100,000. These jobs will primarily be in the manufacturing sector and will be high paying (over \$40,000).

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<sup>4</sup> Executive Order 12866, “Regulatory Planning and Review,” 58 Fed. Reg. 51735 (Oct. 4, 1993), available at <http://www.whitehouse.gov/omb/inforeg/EO12866.pdf>.

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

3. State tax revenue in the first decade will amount to almost \$500 million.
4. With every passing day that integration is delayed, the economic losses amount to almost \$28 million lost to the American economy.<sup>6</sup>

The range of possible economically valuable uses for drones, meanwhile, is practically limitless. While current estimates of economic impact, like the one suggested by the AUVSI above, are already significant, even these estimates can't incorporate the potentially massive, unknown and unknowable range of innovative drone applications. Of central importance in drafting appropriate rules to regulate UAS, then, is the steadfast adherence to regulatory humility — ensuring that the rules are no more broad than necessary to further well-defined safety interests in order to avoid unintentionally deterring unanticipated future applications.

### **Analysis**

Among the core, overarching problems with the proposed rules is that they often seem to import “scientific, technical, economic, and other information” regarding traditional manned aircraft, rather than such knowledge specifically applicable to drones and their uses. As such, not only do the rules often not make sense as a practical matter, they also seek to simply adapt existing standards, rules and understandings promulgated for manned aircraft to regulate drones — insufficiently tailoring the rules to “impose the least burden on society....”

This is a classic error of regulation, which Federal Trade Commission Commissioner Maureen Ohlhausen has dubbed “The Procrustean Problem with Prescriptive Regulation”:

In Greek mythology Procrustes was a rogue blacksmith, a son of the sea god Poseidon, who offered weary travelers a bed for the night. He even built an iron bed especially for his guests. But there was a catch: if the visitor was too small for the bed, Procrustes would forcefully stretch the guest's limbs until they fit. If the visitor was too big for the bed, Procrustes would amputate limbs as necessary to fit them to the bed. Eventually, Procrustes met his demise at the hand of Greek hero Theseus, who fit Procrustes to his own bed by cutting off his head.

**The general lesson of Procrustes is a warning against the tendency**

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<sup>6</sup> Ass'n for Unmanned Vehicle Sys. Int'l, *The Economic Impact of Unmanned Aircraft Systems Integration in the United States* (Mar. 2013),

[https://higherlogicdownload.s3.amazonaws.com/AUVSI/958c920a-7f9b-4ad2-9807-f9a4e95d1ef1/UploadedImages/New\\_Economic\\_Report\\_2013\\_Full.pdf](https://higherlogicdownload.s3.amazonaws.com/AUVSI/958c920a-7f9b-4ad2-9807-f9a4e95d1ef1/UploadedImages/New_Economic_Report_2013_Full.pdf).

**to squeeze complicated things into simple boxes, to take complicated ideas, technologies, or people, and force them to fit our pre-conceived models.** As Nassim Taleb points out in “The Bed of Procrustes,” his book of aphorisms, we often do not recognize this backward fitting approach or are even oddly proud of our cleverness in reducing something complicated to something simple. Regulatory humility counsels embracing the lesson of Procrustes. Regulators should resist the urge to simplify, make every effort to tolerate complexity, and develop institutions that are robust in the face of complex and rapidly changing phenomena.<sup>7</sup>

The FAA has, like Procrustes, attempted to force drones to fit in the “bed” of traditional aircraft regulation.

For example, the proposed rules would require air traffic control clearance to operate within controlled airspace several miles around airports “consistent with the general requirement for aircraft operating in controlled airspace to have ATC approval prior to entering the airspace.” Such rules are aimed at minimizing the likelihood of collisions and problems of interference. But for UAS the rules may be inordinately broad (and, when there are multitudes of drones flying, inordinately costly for ATC operators) for that purpose. But instead of devising an alternate, drone-suitable mechanism for appropriately minimizing collision risks, the rules naturally gravitate toward existing airspace classifications and an ATC structure devised for completely different types of aircraft, without careful consideration of whether their application to drones makes practical or economic sense.

Similarly, the proposed rules’ visual line of sight (VLOS) limitations prohibiting drone use without unaided vision greatly diminish the utility of UAS for field scouting on large agricultural operations and other uses of drones for long-distance monitoring. Moreover, a line-of-sight requirement would (along with other FAA rules) make package delivery by drone — another dramatically cost-reducing use case — impossible.

Such a rule undoubtedly arises from the FAA’s experience with ensuring safety for manned aircraft, and it may well be an appropriate safety restriction in a world where an aircraft’s pilot and the aircraft itself are always in the same place.

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<sup>7</sup> Remarks of FTC Commissioner Maureen K. Ohlhausen at the Free State Foundation’s Sixth Annual Telecom Policy Conference, *The Procrustean Problem with Prescriptive Regulation* (Mar. 18, 2014) (emphasis added), available at [https://www.ftc.gov/system/files/documents/public\\_statements/291361/140318fsf.pdf](https://www.ftc.gov/system/files/documents/public_statements/291361/140318fsf.pdf).

But the imposition of VLOS constraints may imperil these uses, offering only limited safety gains (or safety gains that could be realized in other, less problematic ways) in exchange for the loss of the considerable economic advantages they could entail.

Agricultural field scouting, for example, generally requires flying at levels below the line of terrain (or below a tree line between adjoining field plots) in order to get a sufficient resolution to identify plants or conduct other forms of remote data collection at a sufficiently fine resolution. At these elevations, first-person camera views are sufficient for navigation, particularly given the relatively small size of camera-enabled UAS equipment most common for that use (*i.e.*, < 10 lbs.). Further, these elevations are also well below those that would cause any interference with manned vehicles (except possibly within very narrow boundaries around airports). An outright ban on such important uses as contemplated by the rules simply cannot be justified by the possible risks from such small vehicles.

It is essential — indeed, *required* by Section 6(a)(3) of Executive Order 12866 — that the FAA empirically assess the relative costs and benefits of its rules on precisely these sorts of uses. Yet they do not.

The FAA's proposed rules would also impose additional VLOS limitations on drones that seem manifestly inappropriate under basic cost-benefit analysis (even assuming the general line-of-sight requirement were somehow justified). By prohibiting relays (or “daisy-chain” formations) of multiple visual observers, the rules comprehensively prohibit these long-distance uses of drones, even though daisy-chaining would ensure that, at any given moment, a drone was *always* in an operator's line of sight.

Similarly the VLOS restriction restricting small UAS to daylight-only operations and imposing a minimum weather-visibility distance of three statute miles would substantially impair economically valuable uses without sufficient justification. Drones, of course, can, like manned aircraft, be equipped with lights to make them visible to the operator and other aircraft over longer distances, at nighttime and in limited-visibility weather conditions. It is remarkable that the FAA would not give drones the flexibility allowed to traditional aircraft. Even Procrustes did not try to cut his guests down to be *smaller* than the bed!

Still other restrictions are also over-broad, insufficiently tailored to drone characteristics and the range of use cases, and thus similarly problematic. For example, licensing requirements for operators (particularly of small UAS) seem to again reflect a “manned aircraft mindset” inapplicable to drones and insufficiently reflecting the “best reasonably obtainable scientific, technical, economic, and other

information concerning the need for, and consequences of, the intended regulation.”<sup>8</sup> Such a requirement is simply overkill for all or nearly all uses of smaller UAS, particularly for the type and size of UAS used for agricultural field scouting. The nature of these smaller units does not require the same level of aeronautical knowledge that larger winged units might require for safe operation.

Importantly, licensing requirements unnecessarily limit the ability of *farmers themselves* to use such equipment, and they may also restrict entry in the market by commercial field scouting service providers. Creating such a regulatory barrier to entry would impede innovation and impose monopoly burdens on society (particularly rural areas) without corresponding benefit, both in defiance of Executive Order 12866. By imposing a higher-than-necessary regulatory standard, the proposed regulations would arbitrarily inflate the costs of operation, even if they didn’t deter competitive entry, unnecessarily increasing the cost of providing these valuable services (either in the market or internally to farm operations).

Similar problems plague the rules limiting UAS operations to a single drone. Again, such a restriction fails to reflect the “best reasonably obtainable scientific, technical, economic, and other information.” Technologies exist that allow drone operators to safely manage multiple drones at once. Meanwhile, the restriction is particularly problematic for large commercial farms, forest product suppliers and other companies that wish to monitor or survey extended geographic areas. Similar insensitivity to both drone technology, as well as the valuable economic uses to which drones may be put, plague the proposed altitude ceiling rules. Although the proposed rules raise the allowable operating elevation for drones to 500 feet, any number of uses (ranging from tall-building inspections to nature photography to wildfire mapping), require higher altitudes.

Finally, and perhaps most significantly, by prohibiting UAS operation over people who are not directly involved in the drone’s operation, the rules dramatically limit the geographic scope in which UAS may operate, essentially limiting commercial drone operations to unpopulated or extremely sparsely populated areas. While that *may* be sufficient for important agricultural and forestry uses, for example, it effectively precludes all possible uses in more urban areas, including journalism, broadcasting, surveying, package delivery and the like. Even in non-urban areas, such a restriction imposes potentially insurmountable costs. Vacat-

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<sup>8</sup> Executive Order 12866, *supra* note 4.



ing all employees is impractical at mines, oil rigs, or construction sites, for example, where employees are protected by hardhats anyway.<sup>9</sup>

Mandating that operators not fly over other individuals not involved in the UAS operation is, in fact, the nail in the coffin of drone deliveries, an industry that is likely to offer a significant fraction of this technology's potential economic benefit. Imposing such a blanket ban thus improperly ignores the important "incentives for innovation" suggested by Executive Order 12866 without apparent corresponding benefit.

While there are, of course, potential safety concerns surrounding airborne drones operating in high-density urban environments, prescriptively banning their use before innovators have a chance to determine best practices in this space will only ensure that American consumers lose out on the many benefits associated with the network effects that would accrue from use in highly-populated areas.

In short, the FAA's approach to these rules is the worst kind of reactionary technocracy: banning nascent technologies based on unsubstantiated assumptions regarding their possible risks and a complete discounting of their benefits. Far from the humility with which regulators should approach the complex and unknown future, it is hubris — and it will cost Americans dearly, as drone technologies develop in other countries, leaving America behind.

## **First Amendment Analysis of the Rules**

The First Amendment applies equally to new technologies, as the Supreme Court made clear in its 2011 decision *Brown v. Entertainment Merchants Association*, which extended to video games the same protection the Court has applied to films, books, newspapers and other media:

whatever the challenges of applying the Constitution to ever-advancing technology, "the basic principles of freedom of speech and the press, like the First Amendment's command, do not vary" when a new and different medium for communication appears.<sup>10</sup>

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<sup>9</sup> The proposed Section 107.39 would not merely bar operation of a UAS over anyone who is not an employee of the mine operator, and thus involved and, presumably, on notice of the drone's use. Instead, it would "prohibit the operation of a small unmanned aircraft over a person *who is not directly participating in the operation of that small unmanned aircraft*" — i.e., the UAS controller and his team, but not other employees at the mine. NPRM at 9563.

<sup>10</sup> *Brown v. Entertainment Merchants Ass'n*, 131 S.Ct. 2729, 2733 (2011) (quoting *Joseph Burstyn, Inc. v. Wilson*, 343 U.S. 495, 503, 72 S.Ct. 777, 96 L.Ed. 1098 (1952) (extending equal First Amendment protection to films)).

UAS operations to collect images, videos or otherwise gather or disseminate information are just as deserving of the protection of the First Amendment as any medium.<sup>11</sup> The Supreme Court has interpreted the First Amendment to protect against not only speech, but also the creation and use of information,<sup>12</sup> because “[f]acts, after all, are the beginning point for much of the speech that is most essential to advance human knowledge and to conduct human affairs.”<sup>13</sup>

It is therefore incumbent upon the FAA, in fulfilling both its general duty to promote the development and safety of air commerce,<sup>14</sup> as well as its specific duty to help integrate civil uses of UAS into U.S. airspace,<sup>15</sup> to properly balance the interests of safety and free speech.

### **Applicable Standards of Review**

In Supreme Court jurisprudence, different levels of scrutiny are applied to federal regulations such as those at issue here depending on several factors, such as whether the regulated activity at issue is commercial or non-commercial in nature, whether the regulations are content-based or content-neutral, and whether the regulations amount to a prior restraint on protected activity or are merely restraints upon the “time, place, and manner” in which such activity may be conducted. This section sets forth the applicable standards of review.

Content-neutral time, place, and manner restrictions on speech, like the FAA’s rules, are permitted, provided that they “are narrowly tailored to serve a significant government interest, and leave open ample alternative channels of communication.”<sup>16</sup> Here, this means that the government’s interest in protecting public safety must be weighed against the value of the speech interests the rules impair. Below, we discuss the different speech interests that may be affected by rules governing UAS, and then evaluate the First Amendment consequences of some of the most significant provisions in the NPRM.

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<sup>11</sup> See Cynthia D. Love et al., *News from Above: First Amendment Implications of the Federal Aviation Administration Ban on Commercial Drones*, at 8 (Mercatus Working Paper, Sept. 2014), available at <http://mercatus.org/sites/default/files/Love-Commercial-Drone-Ban.pdf>

(“Though Congress has granted the FAA the power to regulate the integration of UASs into the domestic airspace, when those regulations apply to First Amendment-protected activity, they must comply with constitutional mandates.”).

<sup>12</sup> See, e.g., *Sorrell v. IMS Health Inc.*, 131 S.Ct. 2653, 2667 (2011).

<sup>13</sup> *Id.*

<sup>14</sup> See 49 U.S.C. § 40104(a).

<sup>15</sup> See FAA Modernization and Reform Act of 2012, Pub. L. No. 102-345, § 332, 126 Stat. 73–75 (2012) (codified at 49 U.S.C. § 40101).

<sup>16</sup> *Perry*, 460 U.S. at 45

The interests of journalists and photographers in gathering data for speech and the effects of the proposed UAS regulations on those interests has been thoroughly analyzed by others,<sup>17</sup> and we attach their analysis as Appendix A to these comments. Regulations that restrict the ability of journalists and photographers to use drones over top of public thoroughfares would undoubtedly trigger the highest level of First Amendment scrutiny because they burden non-commercial political speech and artistic expression.

The FAA's regulations are also likely unconstitutional in the burdens they place upon commercial speech, despite the lesser degree of protection it receives. For instance, commenter Hoovy LLC has described the use of drones for banner advertisements.<sup>18</sup> But even beyond advertising itself, drones could be used to collect data for targeted advertising — in other words, to gather data for speech much like the journalists and photographers described above.

In 1980, the Supreme Court made clear that the First Amendment protects commercial speech — “that is, expression related solely to the economic interests of the speaker and its audience[]” — from “unwarranted governmental regulation.”<sup>19</sup> Commercial speech receives such protection because it “not only serves the economic interest of the speaker, but also assists consumers and furthers the societal interest in the fullest possible dissemination of information.”<sup>20</sup>

However, the First Amendment “accords a lesser protection to commercial speech than to other constitutionally guaranteed expression.”<sup>21</sup> “The protection available for particular commercial expression turns on the nature both of the expression and of the governmental interests served by its regulation.”<sup>22</sup> As the Supreme Court described this test,

[t]he State must assert a substantial interest to be achieved by restrictions on commercial speech. Moreover, the regulatory technique must be in proportion to that interest. The limitation on expression

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<sup>17</sup> See Cynthia D. Love et al., *News from Above: First Amendment Implications of the Federal Aviation Administration Ban on Commercial Drones*, at 8 (Mercatus Working Paper, Sept. 2014), available at <http://mercatus.org/sites/default/files/Love-Commercial-Drone-Ban.pdf>.

<sup>18</sup> See Operation and Certification of Small Unmanned Aircraft Systems, *Comments of Hoovy LLC* (Apr. 13, 2015), available at

<http://www.regulations.gov/contentStreamer?documentId=FAA-2015-0150-2886&attachmentNumber=1&disposition=attachment&contentType=pdf>.

<sup>19</sup> *Central Hudson Gas & Elec. Corp. v. Public Serv. Comm'n of NY*, 447 U.S. 557, 561 (1980) (internal citations omitted).

<sup>20</sup> *Id.* at 561–62.

<sup>21</sup> *Id.* at 563 (citing *Ohralik v. Ohio State Bar Ass'n*, 436 U.S. 447, 456–57 (1978)).

<sup>22</sup> *Id.* at 563.

must be designed carefully to achieve the State's goal. Compliance with this requirement may be measured by two criteria. First, the restriction must directly advance the state interest involved; the regulation may not be sustained if it provides only ineffective or remote support for the government's purpose. Second, if the governmental interest could be served as well by a more limited restriction on commercial speech, the excessive restrictions cannot survive.<sup>23</sup>

While the FAA's proposed rules appear to be content-neutral, and will thus avoid the most-exacting Constitutional scrutiny, the FAA will nevertheless have a difficult time demonstrating that some of them are narrowly drawn and adequately tailored time, place, and manner restrictions. We examine these proposed rules in turn.

### **Place Restriction: Ban on UAS Flights over Populated Areas**

The most problematic place restriction is the FAA's proposal that UAS under 55 pounds (but over 4.4 pounds) "may not operate over any persons not directly involved in the operation (unless under a covered structure)."<sup>24</sup>

Many of the prohibited areas will be traditional public forums (like above sidewalks and public thoroughfares). In traditional public forums, the reasonableness of any such restriction will be evaluated in light of specific guidelines that have been established by the Supreme Court requiring such rules to be:

1. Content-neutral,
2. Viewpoint-neutral,
3. No more burdensome than necessary to serve an important government interest.

While the proposed rule likely meets the first two of these requirements, because the proposed rule indiscriminately imposes a complete ban on all drone flights in areas where any people are not involved in the drone's operation, the rule imposes restrictions that are more burdensome than necessary to protect safety. For example, a drone flying over a densely packed, uncovered sports stadium presents very different safety risks than one flying over suburban houses, streets with little pedestrian or cyclist traffic, or sparsely populated (but nonetheless inhabited) rural areas.

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<sup>23</sup> *Id.* at 564.

<sup>24</sup> NPRM at 9557.

Moreover, the rule does not evaluate the actual extent of the safety risks. Drone technology is rapidly developing and safety is one of the primary concerns of the industry. Remedies from the common law like negligence, along with market mechanisms like insurance, may develop to incentivize commercial operators to invest in optimal levels of security.

Further, the rules do not consider the ability of people to consent to drone overflight, or the ability of multistakeholder bodies to come up with enforceable best practices to balance safety and innovation needs. The FAA's complete ban on drones in all but truly uninhabited areas is both Procrustean and unconstitutional: it burdens far more speech than necessary.

### **Place Restriction: Specific Airspace Restrictions**

For UAS weighing less than 55 pounds, the FAA proposes that licensed operators would be able to fly in Class G airspace without permission,<sup>25</sup> but would be more restricted in the high-level Class A space and in the classes near airports. In those areas, operators would need permission from Air Traffic Control.<sup>26</sup>

Areas around airports are either limited public forums or non-public forums. At the same time, such areas present heightened safety concerns. Since the government's interest in safety is higher, and the speech interest likely is not, these restrictions likely pass First Amendment muster. Indeed, such restrictions, being tailored to a clear harm and minimizing the burden upon speech, are the kind of less-restrictive alternatives to which a court would likely require the FAA to defer instead of banning all operation over inhabited areas (as discussed below).<sup>27</sup>

### **Manner Restriction: Visual Line-of-Sight (VLOS) Only**

Another safety restriction proposed by the FAA would limit the manner in which operators can pilot drones by prohibiting their operation outside of the operator's line of sight unaided by any device. The visual line of sight rule states that

the unmanned aircraft must remain within VLOS of the operator or visual observer. At all times the small unmanned aircraft must remain

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<sup>25</sup> NPRM at 9546.

<sup>26</sup> NPRM at 9547 (“Specifically, small UAS would be prohibited from operating in Class A airspace, and would require prior permission from Air Traffic Control to operate in Class B, C, or D airspace, or within the lateral boundaries of the surface area of Class E airspace designated for an airport.”).

<sup>27</sup> These rules have other problems, as discussed above, but the problems are not constitutional ones.

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.”<sup>28</sup>

The rules also provide that “first-person view camera cannot satisfy ‘see-and-avoid’ requirement but can be used as long as requirement is satisfied in other ways.”<sup>29</sup>

The visual line of sight rule may be more burdensome than necessary to ensure public safety where technology renders flight without direct visual line of sight adequately safe. Some have argued that the technology already exists:

In traditional aircraft, pilots can fly under “instrument flight rules,” which allow them to rely on sensors and signals to navigate when visibility is limited. There is no reason a similar exemption cannot be applied to drones when they are flying beyond an operator’s line of sight.<sup>30</sup>

If these alternative measures are practical, a court is not likely to see the FAA’s rule as “no greater than necessary” to promote public safety.

### **Time Restriction: Daylight-Only Operations**

The FAA proposes to limit UAS to “Daylight-Only Operations,” which is defined as “official sunrise to official sunset, local time.”<sup>31</sup>

Time restrictions regulate *when* individuals may express themselves. At certain times of the day, the government may curtail or prohibit speech to address legitimate societal concerns, like safety. For instance, the Supreme Court has held on more than one occasion that no one may “insist upon a street meeting in the middle of Times Square at the rush hour as a form of freedom of speech.”<sup>32</sup>

While it may be true that safe operation is more difficult at night, the FAA has not established how much more difficult it is than in daytime, given the technologies available for remote operation and for navigating through, for example,

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<sup>28</sup> NPRM at 9546.

<sup>29</sup> *Id.*

<sup>30</sup> Gretchen West, *Drone On: The Sky’s the Limit—If the FAA Will Get Out of the Way*, FOREIGN AFFAIRS (May/June 2015), available at <http://www.foreignaffairs.com/articles/143325/gretchen-west/drone-on>.

<sup>31</sup> NPRM at 9546.

<sup>32</sup> *See, e.g., Cox v. Louisiana*, 379 U.S. 536 (1965).

non-visible wavelengths.<sup>33</sup> Nor has the FAA taken account of the potentially valuable uses of drones at night, such as recording breaking news at night, whether through the assistance of a spotlight (LEDs have made possible small and low-power but still powerful spotlights) or through on non-visible wavelengths. It is one thing, as a constitutional matter, for government to forbid the use of public places during night-time hours for political protest; it is quite another for government to refuse to allow newsgathering during night-time hours.

### **Manner Restriction: Simultaneous Operation of Multiple UAS**

The FAA also proposes that “[n]o person may act as an operator or VO for more than one unmanned aircraft operation at one time.”<sup>34</sup>

This manner restriction may be more burdensome than necessary, given the availability of “technologies ... that allow operators to safely manage multiple drones at once.”<sup>35</sup> The FAA has a constitutional obligation to explore the adequacy of such simultaneous operation technology. Otherwise, this rule will greatly increase the cost of operating drones, thus limiting their availability for all kinds of uses, both commercial and non-commercial, protected by the Frist Amendment.

### **Manner Restriction: Operation from Moving Vehicles**

The FAA recognized its line-of-sight rule would likely incentivize operations from moving vehicles – and so added on another rule barring “operations from a moving vehicle or aircraft, except from a watercraft on the water.”<sup>36</sup>

This is a classic example of the Procrustean Problem: one attempt to make technology fit old paradigms begets another. It also particularly burdens any user wishing to operate a UAS over a large geographic area. For example, the rule would bar farmers from extending the range of drones to monitor their crops by driving along with the drone to maintain Line of Sight – even while remaining on their own property. With such considerations in mind, the rule could be more narrowly stated to say either:

1. “no operations while in a moving vehicle on public roadway”, or

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<sup>33</sup> To say nothing of visible wavelengths: “In addition, the FAA’s rules would allow only daytime flights, even though drones can easily be equipped with lights that make them visible to the operator and others in the airspace at nighttime.” West, *supra* note 30.

<sup>34</sup> NPRM at 9546.

<sup>35</sup> West, *supra* note 30.

<sup>36</sup> NPRM at 9546.

2. “no operations *while operating* a moving vehicle...”

Either alternative would be less burdensome on speech interests while still addressing at least a significant part of the FAA’s likely safety concerns.

### **Prior Restraint: Licensing**

The FAA’s proposed licensing regime for UAS operators requires that they:

1. Pass an initial aeronautical knowledge test at an FAA-approved knowledge testing center.
2. Be vetted by the Transportation Security Administration.
3. Obtain an unmanned aircraft operator certificate with a small UAS rating (like existing pilot airman certificates, never expires).
4. Pass a recurrent aeronautical knowledge test every 24 months.
5. Be at least 17 years old.
6. Make available to the FAA, upon request, the small UAS for inspection or testing, and any associated documents/records required to be kept under the proposed rule.
7. Report an accident to the FAA within 10 days of any operation that results in injury or property damage.
8. Conduct a preflight inspection, to include specific aircraft and control station systems checks, to ensure the small UAS is safe for operation.<sup>37</sup>

These amount to a prior restraint, restricting who may operate a UAS and, as a practical matter, limiting their use to a small number of people, even though the falling cost of drones may put them within reach of many more – just as the falling cost of computing technology has made it possible for ordinary citizens to own computers far, far more powerful than those once possessed only by the military.

When a First Amendment right is limited by a prior constraint, the government usually has a very high burden to bear. When the government wishes to require permits before speech in a public forum, it can do so only after establishing “narrowly drawn, reasonable and definite standards for [permitting] officials to follow.”<sup>38</sup>

The proposed licensing regime is far more defensible, in First Amendment terms, than the current FAA rules, which fail to articulate the standards for granting licenses. However, the FAA does not articulate standards for its requirement to

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<sup>37</sup> NPRM at 9546.

<sup>38</sup> *Niemotko v. Maryland*, 340 U.S. 268, 272 (1951).



operate in the non-Class-G airspaces, making that rule vulnerable — although the heightened safety implicated interests there (as described above) may justify the lack of standards.

The standards for Class G airspace, while more definite, may be challenged as not having been drawn narrowly enough. For instance, the requirement that an operator pass a recurrent aeronautical knowledge test every 24 months does not compare favorably with a commercial driver's license, which, in most states, requires no knowledge test for renewal.<sup>39</sup> It is not clear that the FAA has a higher safety interest at stake regulating drones above public thoroughfares than the DMV does when regulating the use of semi trucks on the roadways themselves. After all, in 2013, 32,179 Americans died in traffic fatalities just on the country's highways – a record *low*.<sup>40</sup>

Risk is inherent in life; the job of regulators is not to eliminate it, but to balance it with benefits. This is especially true when those benefits involve expression and the collection of information protected by the First Amendment.

## Conclusion

While the FAA has been given a difficult task in engineering a set of rules to properly accommodate the need for commercial UAS to take flight, it must recognize the need for rules that are more appropriately tailored for unleashing the potential economic gains from both current and future uses of such vehicles.

The Association for Unmanned Vehicle Systems International (AUVSI) has correctly pointed out that “industry and government...need to work together to lay the groundwork for beyond-line-of-sight operation, a necessary prerequisite for package delivery and other transformational uses of UAS technology.”<sup>41</sup> The same applies to the full range of proposed restrictions that would significantly impair the ongoing development of innovative uses of UAS. Otherwise, Amazon and other companies will continue to move their research and development to

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<sup>39</sup> See, e.g., <http://www.dmv.org/va-virginia/renew-cdl.php> (“To renew a CDL, you must come into a DMV Customer Service Center in person. You can do this up to 1 year before your license expires. However, if you let your CDL expire for more than 1 year, you will have to retake your knowledge and road skills tests.”).

<sup>40</sup> U.S. Department of Transportation, U.S. Department of Transportation Announces Decline in Traffic Fatalities in 2013 (Dec. 19, 2014), <http://www.nhtsa.gov/About+NHTSA/Press+Releases/2014/traffic-deaths-decline-in-2013>

<sup>41</sup> Ass'n for Unmanned Vehicle Sys. Int'l, *Statement of Brian Wynne, President and CEO of AUVSI on the FAA Granting Amazon a Section 333 Exemption* (Apr. 10, 2015), <http://www.auvsi.org/blogs/auvsi-membership/2015/04/10/amazon333pr>.

other nations, ensuring that the “Drone Revolution,” unlike the Digital Revolution, will not be “Made in the USA.”

The FAA should view drones as simply the next stage in the development of advanced technological flight systems. The more burdensome the regulatory environment, the less innovation is likely for the American economy. If the FAA wishes to promote an environment of innovation, entrepreneurship, and technological and economic growth, it would do well to reconsider the more arduous hurdles that entrepreneurs and existing firms will need to surmount in order to bring this new technology to market.

Further, the FAA must not ignore First Amendment considerations when considering this unknown future. Even a compelling interest like public safety does not mean that any time, place, and manner restriction will survive court scrutiny. Many of the FAA’s proposals will have difficulty meeting the First Amendment’s burdens as currently drafted.