BEFORE THE ADMINISTRATOR OF THE UNITED STATES

FEDERAL AVIATION ADMINISTRATION

PETITION FOR RULEMAKING

MODOVOLATE AVIATION, LLC

Petitioner

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Glencoe, IL 20022

MEMORANDUM IN SUPPORT OF PETITION FOR RULEMAKING SEEKING THE REGULATION OF SMALL UNMANNED AIRCRAFT SYSTEMS

UNDER 49 U.S.C. §§ 44701(a), 40109(b), and 44701(f)

9 July 2014

MEMORANDUM IN SUPPORT OF

PETITION AND COMMENT OF MODOVOLATE AVIATION, LLC,

FOR RULEMAKING ON

SMALL UNMANNED AIRCRAFT SYSTEMS

Introduction and summary

This Memorandum supports the Petition and Comment of Modovolate Aviation, LLC, for Rulemaking on Small Unmanned Aircraft Systems ("sUAS" or "microdrones").

It argues that the FAA is authorized to regulate such systems, that it is statutorily mandated to do so by a deadline already passed, that, as a result, many unregulated flight vehicles are being operated so as to pose a threat to manned aircraft and to persons and property on the ground, that the FAA lacks the resources to implement a traditional regulatory system modeled on regulation of manned aircraft, and that it should instead regulate microdrones as consumer products by imposing prerequisites for offering them in the marketplace.

As the Petition itself requests, if the FAA issues an NPRM on this subject within 45 days of the submission of the Petition, the Petitioner requests that the Petition and this supporting Memorandum become part of the rulemaking record opened by the NPRM, pursuant to 14 C.F.R. § 11.73(b).

Terminology is problematic. The FAA officially refers to the flight vehicles as "small Unmanned Aircraft Systems." United Kingdom regulators refer to them as "Unmanned Aircraft". The Australian Civil Aeronautics Authority recently amended its regulations to replace the term "UAV" with the term "RPA" (remotely piloted aircraft). To avoid terminological confusion within the current binary classification system for small Unmanned Aircraft Systems, this Memorandum refers to small unmanned aircraft weighing less than 20 pounds as "microdrones," a term commonly used in the intensifying public discourse. It refers to larger unmanned aircraft as "machodrones."

Interests of the petitioner

Modovolate Aviation, LLC, (the "LLC" or "Movo Aviation") an Illinois limited liability company organized for the purpose of conducting microdrone research,

experimentation, demonstration, and education. Modovolate Aviation, LLC, also is known as "Movo Aviation."

The opportunities available to Movo Aviation are extensive if it were allowed legally to engage in these activities in a commercial context. The LLC has the capability within its resources to contract with customers to operate commercial microdrones for demonstration purposes in a variety of practical mission environments. Because of legal uncertainty in the absence of regulations or an NPRM from the FAA, the LLC is at a significant competitive disadvantage because of its knowledge of and commitment to comply with the Federal Aviation Rules.

Movo Aviation was formed and is jointly owned by Henry H. Perritt, Jr. and Eliot O. Sprague.

Henry H. Perritt, Jr., the Managing Member of the LLC, is a law professor and former dean at Chicago-Kent College of Law, the law school of Illinois Institute of Technology. Holding a bachelor of science degree in aeronautics and astronautics from MIT, a master of science degree in management from MIT's Sloan School, and a juris doctor degree from Georgetown University Law Center, Mr. Perritt has written dozens of law review articles and several books on how the law should adapt to technological innovation. He also is an expert on the federal regulatory process, having written many articles on the subject, having served as an official in the federal wage and price control program, as a member of the White House Staff, and as Deputy Under Secretary of Labor. As a consultant to the Administrative Conference of the United States, he wrote reports on, among other things, the utility of negotiated rulemaking, in which affected interests and regulatory agencies collaborate in developing the content of new rules, and on the process for adjudicating civil penalties under the Federal Aviation Act. He is a private helicopter and airplane pilot.

Eliot O. Sprague is Director of Operations and Chief Pilot of the LLC. He is a full-time news helicopter pilot, helicopter flight instructor, director for a Chicago-area on-demand commercial helicopter operator, and a member of the board of directors of Midwest Helicopter Association. A graduate of Hillsboro flight school, he is intimately familiar with commercial aviation and familiar with the threats that unregulated microdrone flight present to the safety of himself, his coworkers, his passengers, and to persons and property on the ground. He holds commercial helicopter and airplane,

instrument helicopter, commercial flight instructor-rotary wing, and commercial flight instructor – instrument-rotary wing ratings.

Through the LLC, Messrs. Perritt and Sprague have flown a variety of microdrones and are now constructing a larger one for which they have applied to the FAA for a special certificate of airworthiness/experimental so that they can conduct more extensive flight tests and data collection in the commercial context to understand more concretely their capabilities, the challenges they present to operators, and the risks they pose to other aviators and to the general public.

They have co-authored a number of articles over the past several months on microdrone technologies and their application as microdrones are integrated into the National Airspace System.

Nature of the problem

The 26 June 2014 DOT inspector general's report[1] concludes that the FAA is way behind in meeting at statutory mandate to integrate drones into the National Airspace System. "[I]t . . . remain[s] unclear when, *and if*, FAA can meet its goals to safely integrate UAS."[2]

Fulfilling its mandate to integrate small unmanned aircraft system of the national airspace system confronts the FAA with two clashing realities. First, unregulated operation of these vehicles poses serious hazards to the flight of other aircraft and to persons and property on the ground. But second, these flight vehicles are consumer products priced at levels that almost anyone can afford. They are obviously useful and have already been purchased in great numbers on the open market, through e-commerce and more traditional channels, and are being flown widely.

While the FAA has consistently reiterated its position that such microdrone operation is illegal until the FAA establishes a regulatory framework, and has levied a few civil penalties and sent a number of cease-and-desist letters, the FAA's position has had little

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[1] Office of Inspector General, *FAA Faces Significant Barriers to Safely Integrate Unmanned Aircraft Systems into the National Airspace System*, Report Number: AV-2014-061 (June 26, 2014), http://www.oig.dot.gov/sites/dot/files/FAA%20Oversight%20of%20Unmanned%20Aircraft%20Systems%5E6-26-14_0.pdf [hereinafter "Inspector General Report").

[2] Id. at 16 (emphasis added).

discernible effect. Vendors continue to sell them and ordinary people lacking airmen certificates continue to fly them.

The most urgent problem is presented by rotary-wing microdrones, weighing 10-20 pounds. These are the vehicles being purchased online from a wide variety of vendors by individuals lacking any connection with the safety-oriented and FAA-rule-compliance culture of the aviation community.[3] Fixed-wing microdrones have far less utility, and therefore are less popular. Machodrones will cost more, require more elaborate traffic separation systems, and are more likely to be operated within the organizational and licensing infrastructure for manned aircraft. Their prices will place them beyond reach of the casual consumer or small business.

The Inspector General's report appropriately criticizes the FAA's unreasonably coarse classification of drones.[4] The greatest threat arises from operation of inexpensive rotorcraft at the low end of the weight and flight-capability spectrum. Within the last few days a New York police helicopter nearly collided with a microdrone flying at 2,000 feet.[5]

This is where the FAA most urgently needs to focus its attention.

Authority to regulate

The FAA has authority to regulate microdrones under 49 U.S.C. § 44701(a) (prescribing standards for aircraft); 49 U.S.C. § 40109(b) (authority to grant exemptions); 49 U.S.C. § 44701(f) (same); and 49 U.S.C. sec. 44711(a)(1) (prohibiting operation of civil aircraft without an airworthiness certificate.

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[3] See Larry Celona, 2 Drones in near-miss with NYPD chopper, N.Y. Post, July 7, 2014, http://nypost.com/2014/07/07/two-drones-in-near-miss-with-nypd-copter-over-gwb/ (quoting sources that report drone flights at 2,000 and 5,000 feet by a microdrone purchased for $500-$700).

[4] Inspector General Report at p. 8.

[5] Larry Celona, 2 Drones in near-miss with NYPD chopper, N.Y. Post, July 7, 2014, http://nypost.com/2014/07/07/two-drones-in-near-miss-with-nypd-copter-over-gwb/ (quoting sources that report drone flights at 2,000 and 5,000 feet).

Section § 44701 and 44704 of Title 49, [6] and section 333 of the 2012 Act give the FAA sufficient flexibility to address these risks in light of the difficulties of regulating microdrones with its traditional approaches. In *Holbrook v. United States*,[7] the court of appeals reiterated the breadth of the FAA's authority under section 44701. The court quoted the Supreme Court's opinion in *Varig Airlines*,[8] that the agency is entitled, under the statute, to "establish and implement a mechanism for enforcing compliance with minimum safety standards according to its judgment of the best course."[9] Further quoting *Varig*, the court deferred to the FAA's balancing of such policy considerations as "the goal of air transportation safety and the reality of finite agency resources."[10] The Supreme Court has recognized that the FAA has flexibility to select a regulatory enforcement method that takes into account its limited resources.[11] Rather than withholding action until its statutory authority can be clarified by the Congress, the FAA should act now under its existing authority. Then, if its authority is challenged

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[6] "(a) Promoting safety.--The Administrator of the Federal Aviation Administration shall promote safe flight of civil aircraft in air commerce by prescribing--

(1) minimum standards required in the interest of safety for appliances and for the design, material, construction, quality of work, and performance of aircraft, aircraft engines, and propellers." 49 U.S.C. § 44701.

49 U.S.C. § 44704 generally is interpreted to prohibit the manufacture of an aircraft until it has received a type certificate, although the section does not explicitly impose such a prohibition. "A manufacturer wishing to introduce a new type of aircraft must first obtain FAA approval of the plane's basic design in the form of a type certificate." United States v. S.A. Empresa de Viacao Aerea Rio Grandense (Varig Airlines), 467 U.S. 797, 805 (1984). "[B]efore introducing a new type of aircraft, a manufacturer "must first obtain FAA approval of the plane's basic design in the form of a type certificate." Holbrook v. United States, 673 F.3d 341, 343 (4th Cir. 2012).

[7] 673 F.3d 341 (4th Cir. 2012) (rejecting challenge to FAA's grant, then suspension, of airworthiness certificate for helicopter type).

[8] Varig Airlines, 467 U.S. at 816 (characterizing FAA's broad discretion in rejecting Federal Tort Claims Act claim).

[9] 673 F.3d at 346.

[10] 673 F.3d at 346.

[11] See Varig Airlines, 467 U.S. at 806-807 ("With fewer than 400 engineers, the FAA obviously cannot complete this elaborate compliance review process alone.")

successfully in judicial review, it can approach the Congress with a narrower set of statutory clarifications, tailored to actual difficulties.

The Consumer Product Safety Commission ("CPSC") prohibits sales of certain manufactured goods not meeting safety standards—the approach urged by the Petition and this Memorandum--but the Commission lacks the authority to regulate aircraft and aircraft systems because of a specific exclusion from the definition of "consumer product." [12]

If, however, model aircraft are excluded from the definition of "aircraft" as the ALJ decision in the *Pirker* case reasons, the CPSC does have authority to regulate them, because only "aircraft" are excluded from the CPSC's jurisdiction... The FAA and the CPSC could move forward in tandem, with the FAA prohibiting the sale and distribution of commercial microdrones not meeting the prescribed limitations for small unmanned "aircraft," while the CPSC prohibits the sale and distribution of recreational hobbyist vehicles not meeting the same requirements.

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[12] "§ 2068. Prohibited acts

"(a) It shall be unlawful for any person to--

(1) sell, offer for sale, manufacture for sale, distribute in commerce, or import into the United States any consumer product, or other product or substance that is regulated under this chapter or any other Act enforced by the Commission, that is not in conformity with an applicable consumer product safety rule under this chapter, or any similar rule, regulation, standard, or ban under any other Act enforced by the Commission." 15 U.S.C.A. § 2068

15 U.S.C. § 2052(5)(F) excludes from the definition of "consumer product" subject to CPSC regulations "aircraft, aircraft engines, propellers, or appliances (as defined in section 40102(a) of Title 49)."

Enforcement of traditional FAA rules is infeasible

The regulatory approach traditionally pursued by the FAA to regulate manned aircraft is unsuitable for regulating consumer products like microdrones. Manned aircraft are expensive capital goods. The size of the necessary investment by operators and the essentiality of valid pilot certificates for the careers of professional pilots provide strong incentives to comply with FAA regulations. These incentives are entirely lacking in the microdrone environment.

Given the relatively small size of these flight vehicles compared to manned aircraft, the small geographic scope of their operational capabilities, and their proliferation, it is unrealistic to think that the FAA ever could marshal enough enforcement resources to detect every violation of its current prohibition.

The FAA should regulate microdrones as consumer products

The FAA must treat microdrones as what they are: inexpensive consumer products that put strikingly useful technologies within the reach of almost everyone. The FAA must recognize that it is regulating something that is available off-the-shelf at very low prices. In other words, the economic barriers to entry are quite low. People purchasing microdrones are likely to be individuals and small businesses not now in the aviation industry. If they are confronted with a regulatory process designed for type certification of the 787 or the Diamond Twin Star or licensing requirements for instrument-rated medevac helicopter pilots, they are more likely to take the outlaw route. The average person purchasing a microdrone does not have the means for such certification. This is especially true because the dangers facing the operator are minimal and do not pose significant risk to the individual flying the microdrone to provide an incentive to incur the cost for certification. Thus, the regulatory process needs to be much simpler.

A fundamentally different approach to regulation, new to the FAA, but proven in the context of other federal consumer product safety regulation, would enhance the degree of compliance with reasonable requirements and ease the burden on FAA rulemaking and enforcement resources.

The agency should take advantage of the capabilities of microdrone technology to enforce certain limits on flight profiles autonomously. Such an approach would focus FAA energy on defining what limits should be built into drones commercially

marketed, relieving it of detailed regulation of airmen and detailed flight rules to be enforced in the conventional way.

The FAA has very broad authority for safety regulation under 49 USC §§ 44701 and 44704. Traditionally, it has focused on the operation of aircraft rather than their sale and distribution. Aviation regulation traditionally has stood on three pillars: certification of aircraft, certification of airmen, and rules for flight operations. Aircraft certification imposes detailed requirements on vehicle design and manufacture. Airmen certification allows for requiring defined skills and knowledge of personnel who operate and maintain aircraft. Flight rules specify how certificated airmen can fly certificated aircraft.

Requirements in the three areas are interrelated. For example, more demanding airmen requirements can compensate for more relaxed vehicle requirements; a highly skilled pilot can fly a poorly behaved aircraft safely, while only well-behaved aircraft should be flown by pilots with ordinary skills. And more restrictive flight rules can compensate for simpler airmen or vehicle requirements. For example, section 61.101 of the FARs prohibits recreational pilots from carrying more than one passenger and from flying more than 50 miles from the airport of origin, unless the pilot has received additional instruction. FAR section 91.319 imposes flight restrictions such as VFR-day only on experimental aircraft unless they meet additional certification requirements.

Microdrones, however, present regulatory challenges not presented by manned airplanes and helicopters, for the reasons developed in the preceding paragraphs.

Despite their unique challenges for effective regulation, they present safety risks to air commerce at least as great as those presented by manned aircraft.

The capability of microdrones to restrict their flights opens up new possibilities for regulation. Most microdrones already on the market have some capability to hover autonomously. Many can also take off, land, orbit a GPS waypoint, return to home autonomously, and be programmed to stay within an envelope defined by maximum height AGL, maximum radius, and maximum speed.

The FAA should embrace this self-enforcement capability rather than engaging in the line-by-line adaptation of existing rules. It should think of microdrones as the consumer products that they are.

If a microdrone is designed and manufactured so that it will not operate outside of flight parameters specified by FAA rules for approval, detailed regulation of operators is unnecessary; they simply will be unable to fly their vehicles in violation of the rules; the vehicle will not comply with an illegal command.

Likewise, if the commercially marketed microdrones are incapable of operating outside the rules, the number of rule excursions by vehicles needed to be detected by the FAA enforcement arm will be greatly reduced.

While many purchasers of microdrones assemble them from kits, they mostly use standard components developed and manufactured by a dozen or so vendors of components. Few operators have the capability to design and build these core components – power distribution boards, flight control boards, and GPS navigation--boards from scratch. Accordingly, even the kit portion of the market can be made safer by the proposed approach; flight control and GPS navigation control boards cannot be sold unless they meet the proposed requirements.

Proposed contents of the rule

14 C.F.R. Aeronautics and Space

Subchapter C

Part 50

§ 50.101 Marketing of small Unmanned Aircraft Systems.

(a) Except as provided elsewhere in this section, no person shall sell or lease, or offer for sale or lease (including advertising for sale or lease), or import, ship, or distribute for the purpose of selling or leasing or offering for sale or lease, any small Unmanned Aircraft System unless the System complies with the technical standards of subsection (b) and also complies with all applicable administrative (including verification of the equipment or authorization under a Declaration of Conformity, where required), technical, labelling and identification requirements specified in this chapter.

(b) Performance requirements

Each small Unmanned Aircraft System must have these limitations programmed into it, beyond the control of the operator to override the limitations:

(1) Restricting flight to heights no greater than 400 feet above the surface;

(2) Restricting flight to horizontal distances no greater than 1,500 feet from the ground control station;

(3) Excluding flight in Class B, C, or D airspace; and

(4) Ensuring that the flight vehicle autonomously returns to its launching point if the control link is lost

Other federal agencies successfully use this approach

Proven models exist for regulating consumer products like microdrones by prohibiting their introduction into the marketplace unless they incorporate basic limitations on their operation. Other agencies have proven the practicability of regulating consumer products by prohibiting offering them in the marketplace unless certain safety features are built in.

The FAA should imitate the Federal Communications Commission's ("FCC") regulation of WiFi routers and cellphones, or the Consumer Product Safety Commissions, regulation of lawnmowers.

The FCC uses this approach to mitigate the risks of Wi-Fi networking. The FCC makes certain blocks of radio frequency spectrum available on an unlicensed basis for wireless networking of computers. In this regulatory regime, users of the technology need not obtain radio operator licenses, as they must for many other wireless services. Operating rules exist, but rather than being enforced directly, by FAA inspectors, or through radio operator licensing to assure that operators understand the regulations, the operating rules are internalized into the hardware. The requirements for hardware certification manage the risk of interference from the radio equivalent of a midair collision – though usually with less risk to human life and property – by limiting transmitter power and the requiring software to behaves in a certain way when the device detects a conflicting signal.

Wireless routers and the Wi-Fi transceivers and antennas built into almost every desktop and laptop computer must, before they can be offered in the marketplace, be certificated by the FCC. Indeed one can see the representation of certification engraved

or otherwise affixed to such devices. In other words, it's not possible for the hardware to violate the operating rules unless one modifies it – a far from trivial process.

A growing consensus defines the particular limitations that should be built in to microdrones

Some aspects of a gradually forming consensus are sound. Most fundamentally, microdrones should be confined to certain spaces where they are less likely to encounter manned aircraft. But how should these spaces be defined?

The most basic rules to be encoded into microdrones are largely agreed on. First, a height limit is necessary to keep microdrones away from the airspace in which manned aircraft fly most of the time. Under the proposed approach, legal microdrones must have a navigational mechanism—a combination of barometric pressure sensors (altimeters)) and GPS navigational systems--that would not permit them to fly more than 400 feet above ground level.

Second, microdrones can be flown only within line of sight. In order to keep them within line of sight and within wireless control-link range, microdrones must have a built-in radius limit of, say, 1500 feet horizontally from the DRoneOPerator ("DROP").

As a further prerequisite for certification, microdrones must have a return-to-home feature that could be triggered by the DROP and which would be automatically triggered by loss of signal. This also might be triggered by an indication that the DROP has become inattentive, kind of like the "dead man control" on railroad locomotives (more formally known as "alerters").

Specific airspace restrictions also could be enforced. Relatively inexpensive moving map systems for manned aircraft automatically alert pilots that they are about to enter controlled airspace. The same geospatial referencing algorithms could be used to prevent microdrones from flying into Class B, C, or D airspace.

Once a microdrone meets these requirements and is type certificated by the FAA, it could be offered for sale through any channel. A potential operator could buy one on Amazon or elsewhere, take it out of the box, and fly it for whatever purpose, without having to worry about compliance with FAA rules. Compliance would be built-in.

To be sure, no regulatory system encounters 100% compliance, but the incidence of noncompliance is a function of the incentives for noncompliance, and the ease of noncompliance. If the microdrone type certification requirements strike a reasonable balance between legitimate safety concerns and productive utility, few purchasers of these vehicles would have a significant incentive to corrupt their vehicles so they would become outlaws.

Furthermore, the vehicles themselves can be made extremely difficult to corrupt. Modifying a wireless router to operate on a different set of frequencies from those for which it is designed is quite different from cutting off the tailpipe of a hotrod, or taping down the blade control on a lawnmower.

If a smartphone is designed to resist user modifications, only those with significant technical knowledge, and a gentle touch can override design features. The same thing is true of consumer-oriented wireless networking devices. Causing an off-the-shelf wireless modem to transmit on the ILS frequency of a nearby airport is not easy. Just as important, why would anyone want to do it?

Furthermore, while it might be overkill, microdrones could be programmed to detect tampering and create a log that could be used as evidence against those who tampered, basically building off the same idea as theft protection and recovery protocols built into smartphones.

This approach is far better suited to regulation of consumer products—which microdrones already are—than a more traditional approach, designed around expensive airplanes and helicopters, which are not bought online, used, and discarded casually.

The proposed rule will enhance compliance

While it might seem that the adoption of the proposal would merely add another unenforceable layer to the status quo, this is not so. The present prohibition can be enforced, if at all, only by the FAA's detecting actual operations of microdrones for commercial purposes. The proposed regulation would permit the FAA to focus its enforcement resources on fewer than a dozen major vendors. The compliance incentives are greater for vendors than they are for the undifferentiated mass purchasers and operators.

Vendors have significant incentives to meet the requirements in a robust and reliable way. A vendor delivering unreliable systems would be subject to substantial liability under ordinary tort law. The existence of the FAA performance standards would represent the standard of care a manufacturing vendor must meet in order to avoid liability, under the well-known doctrine of negligence *per se*.

The proposed regulation will accommodate reality much better than the status quo or a traditional set of regulations for the place after years of development. Rule compliance always is greater when prohibitions or limitations are congruent with market and technological realities.

The proposed rule eliminates the troublesome distinction between "model aircraft" and small Unmanned Aircraft

The proposed approach fully satisfies the statutory safe harbor for model aircraft, in § 336 of the 2012 Act, which prohibits regulation of model aircraft meeting certain conditions. Under the proposed rule, model aircraft meeting the statutory definition could be sold and flown, without further regulation; the proposal simply ensures that all microdrones, whether intended to be flown for commercial or recreational purposes, meet the statutory definition of model aircraft. When they do, their operations would not be regulated otherwise.

Prompt issuance of an NPRM will permit crystallization of specific issues and options for their resolution

The longer it takes for the FAA to get rules in place prescribing design characteristics for microdrones, the more of them not meeting these requirements there will be. It is not feasible for the FAA to establish a sufficiently pervasive enforcement presence to stop the noncompliant vehicles from flying. Eventually, attrition of existing microdrones will increase the percentage of compliant microdrones and reduce the percentage of noncompliant ones. Noncompliant microdrones will be destroyed, damaged, abandoned or replaced with newer models containing better technology and complying with FAA requirements. Time is of the essence, however.

Enough information exists now in the literature and in the contents of this Petition and supporting Memorandum to permit the FAA to issue an NPRM within a matter of weeks. Not all of the issues can be resolved concretely, but issuance of an NPRM will

frame useful participation by the FAA and its affected interests to narrow the issues and develop the details.

Following this approach does not mean that the FAA must make detailed design decisions itself. It can, instead, embrace a performance-based regulatory approach in which it accepts manufacturer representations as to standards compliance, much as the FCC does under its procedure for Wi-Fi equipment.

Nor is a protracted period necessary to develop detailed design specifications for microdrone flight control systems. The limitations simply can be stated as performance requirements, allowing vendor designers to come up with their own technologies for meeting the requirements.

There would, no doubt, be a period of evaluation of the rule, which might expose a need for further refinement or supplementation. This reality, should not, however, hold the FAA back. A straightforward requirement that everything on the market be autonomously law-abiding would represent a substantial improvement over the status quo.

The petitioners are not alone in pressing for speed and a new direction.

Most aviation advocacy organizations joined in a letter to the FAA administrator urging him to accelerate release of an NPRM and to allow greater flexibility in the meantime.[13] Press and media organizations filed an amicus brief in the *Pirker* case, arguing that the current prohibition on news gathering operations of microdrones violates the First Amendment of the United States Constitution.[14]

Litigation over the FAA's position and inaction on rulemaking is spreading, down from the National Transportation Safety Board to the states Court of Appeals in the 11th and second circuits. An administrative law judge ("ALJ") at the National Transportation Safety Board ("NTSB")[15] has invalidated the FAA's blanket prohibition, and press and

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[13] http://higherlogicdownload.s3.amazonaws.com/AUVSI/958c920a-7f9b-4ad2-9807-f9a4e95d1ef1/UploadedFiles/Joint%20Letter%20to%20FAA%20on%20Expediting%20UAS%20rulemaking%20Final.pdf

[14] http://www.dronejournalism.org/news/2014/5/american-news-media-coalition-files-brief-in-support-of-pirker-first-amendment-rights

[15] The NTSB hears appeals of civil penalties imposed by the FAA.

media advocates have filed an amicus brief with the full NTSB in conjunction with its review of the ALJ decision, arguing that the ban on newsgathering use violates the First Amendment's guarantee of freedom of the press.

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