

**BEFORE THE
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
WASHINGTON, D.C.**

IN THE MATTER OF

Petition of Wilbur-Ellis Company for Exemption

Docket Number: FAA-2014-0613

COMMENTS OF THE SMALL UAV COALITION

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Introduction

The Small UAV Coalition¹ is pleased to provide its comments in support of the petition for exemption submitted by McKenna Long & Aldridge on behalf of Wilbur-Ellis Company (“Wilbur-Ellis”) under section 333 of the FAA Modernization and Reform Act of 2012 (“the Act”). Wilbur-Ellis proposes to operate the HoneyComb AgDrone fixed-wing unmanned aircraft vehicle and system (“UAV” and “UAS”) to conduct precision agriculture services for its agricultural customers. Members of the Small UAV Coalition share an interest in advancing regulatory and policy changes that will permit the operation of small UAVs in the near term, within and beyond the line of sight, with varying degrees of autonomy, for commercial, consumer, recreational and philanthropic purposes. Coalition members are concerned with the current pace of regulatory and policy development, particularly in the U.S. but also in other countries, which has impeded and will continue to impede small UAV development, services, and benefits for consumers. We encourage the Federal Aviation Administration (“FAA”) to establish, as soon as possible, a regulatory environment for small UAVs, such as Wilbur-Ellis’s, that will foster safe experimentation and innovation so that globally important development work and operations can occur here in the U.S.

Although the focus of these comments is the Wilbur-Ellis petition, the Coalition recognizes that UAV policy in the U.S. may have ramifications worldwide. There are many UAV manufacturers outside of the U.S. who are or soon will be ready to market their products and services in the

¹ Members of the Small UAV Coalition include 3D Robotics, Airware, Amazon Prime Air, DJI Innovations, Google, GoPro, and Parrot.

U.S., and many U.S. corporations have expanded their small UAV development activities overseas. Moreover, other countries may follow or adopt U.S. regulations or policies for their domestic UAV operations. It should be a U.S. policy imperative, therefore, to foster innovative technologies that promise consumer and public benefits, as soon as safely possible. The FAA should work expeditiously to implement its section 333 authority with these policy considerations in mind. The Small UAV Coalition seeks to work with the FAA to expedite testing and operation of small UAVs in the United States. Reasonable regulations, waivers and exemptions, with safety, security, and privacy as their foundation, will encourage the growing domestic and international opportunities.

Clarity and clear guidelines are needed from the FAA for development and operation of small UAVs, whether those UAVs are used for recreational or commercial purposes. Because of their size, weight, speed, and the altitude at which they will typically operate, small UAVs such as the ones to be operated by Wilbur-Ellis pose considerably less safety risk than larger UAVs. The Small UAV Coalition urges the FAA to adopt an evaluation framework for UAV operations under section 333 that weighs the relative safety issues and risks of UAVs.

The Wilbur-Ellis Petition

As noted above, Wilbur-Ellis's petition seeks FAA permission to conduct precision agriculture for its customers. Although Wilbur-Ellis's proposed small UAV operations may pose no greater risk than small UAVs that are used by hobbyists and modelers (because of weight, altitude, etc.), Wilbur-Ellis has proposed to abide by much stronger safety measures than are required for these groups. The Small UAV Coalition does not believe that heightened safety measures should be required for Wilbur-Ellis simply because of the commercial nature of its operations. Small UAVs that operate for any purpose, commercial or non-commercial, should be judged based upon the precautions taken for safe operation, taking into consideration the relevant technical parameters of the UAV and UAS.

Wilbur-Ellis proposes to operate a HoneyComb AGDrone fixed-wing UAV weighing less than 6 lbs., within the visual line of sight of the operator and/or observer, and confined to a "sterile area" as defined in an Operations Manual (provided to the FAA but not available in the public docket), and designated in advance by a NOTAM filed with the FAA at least 1 hour before operating. Flights will be operated below 400 feet AGL, in Class G airspace. Wilbur-Ellis will obtain written or oral permission from relevant property owners. The AgDrone is programmed with failsafe features and will automatically return to the launch area or a pre-determined location within the sterile area in the event the UAV loses communication with the ground station or loses its GPS signal. The UAS will also have the capability to abort a flight in the event of an unpredicted obstacle or emergency.² Total flight time, subject to wind conditions, will be 37 minutes; flights will be terminated at 25% battery reserve should that occur prior to the 37-minute mark. Each Wilbur-Ellis pilot in command ("PIC") will hold "a commercial and/or private pilot certificate, or will have successfully completed, at a minimum, FAA private pilot ground instruction and passed the FAA private pilot written examination or FAA recognized equivalent[,]" and hold a third class medical certificate.³ The PIC will have conducted three

² Petition, at page 7 and note 11.

³ Petition, at pages 5-6, citing FAA Order 89001, Volume 16, Chapter 4, section 1, ¶ 16-4-1-3(B)(5)(a).

takeoffs and landings with the particular UAV within the previous 90 days. Each pilot and observer will also have been trained in the operation of UAVs generally and the HoneyComb AgDrone in particular, and will receive a briefing before each day's operations.

The Small UAV Coalition offers the following comments in support of the Wilbur-Ellis petition:

Consistent with Section 333, the FAA should authorize UAV operations for Wilbur-Ellis in the near term, including in advance of the small UAV rulemaking.

In section 333 of the Act, Congress directed the FAA to determine if certain UAV operations may be authorized even in advance of the completion of the small UAV rulemaking mandated in section 332 if operations will not “create a hazard to users of the national airspace system or the public or pose a threat to national security.”⁴

Section 333 is best understood in conjunction with the mandated small UAV rulemaking under section 332.⁵ Congress directed the FAA, under section 332, to publish a final small UAV rule by August 2014. In contrast, Congress directed the FAA, under section 333, to determine by August 2013 whether certain unmanned aircraft systems may be operated safely even before completion of the section 332 rulemaking. Although neither deadline was met, we believe it is imperative that the FAA continue to push forward with both initiatives, expeditiously processing and approving petitions filed under section 333, such as the Wilbur-Ellis petition. The clear intent of Congress was to direct the FAA to authorize certain UAV operations on an expedited basis, including in advance of completing the rulemaking.⁶ Wilbur-Ellis has made a strong showing justifying grant of the requested authority.

⁴ Section 333 states in relevant part:

(a) **IN GENERAL.**— Notwithstanding any other requirement of this subtitle, and not later than 180 days after the date of enactment of this Act, the Secretary of Transportation shall 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[.]

(b) **ASSESSMENT OF UNMANNED AIRCRAFT SYSTEMS**— In making the determination under subsection (a), the Secretary shall determine, at a minimum—

(1) which types of unmanned aircraft systems, if any, as a result of their size, weight, speed, operational capability, proximity to airports and populated areas, and operation within visual line of sight do not create a hazard to users of the national airspace system or the public or pose a threat to national security; and

(2) whether a certificate of waiver, certificate of authorization, or airworthiness certification under section 44704 of title 49, United States Code, is required for the operation of unmanned aircraft systems identified under paragraph (1).

(c) **REQUIREMENTS FOR SAFE OPERATION.** — If the Secretary determines under this section that certain unmanned aircraft systems may operate safely in the national airspace system, the Secretary shall establish requirements for the safe operation of such aircraft systems in the national airspace system.

⁵ There is no pertinent legislative history that sheds any light on the meaning of this provision.

⁶ In section 332(b)(1), Congress directed the publication of a rule for small unmanned aircraft systems “to the extent the systems do not meet the requirements for expedited operational authorization under section 333 of this Act.” Congress clearly intended for the FAA to proceed expeditiously to authorize safe operation and experimentation of small UAVs.

Section 333 directs the FAA to authorize UAV operations that may safely operate in the national airspace system; Wilbur-Ellis's petition demonstrates safe operations.

Congress gave the FAA authority to determine whether certain unmanned aircraft systems may be operated safely in the national airspace system,⁷ and listed in section 333 seven factors for the FAA to consider. The FAA is to consider operational risks and steps that can be taken to eliminate or reduce such risks. In the view of the Small UAV Coalition, risk should be the touchstone for any and all FAA rules, waivers, and exemptions governing UAVs.

We recognize that, in implementing the Federal Aviation Act as Congress directed, the FAA historically has imposed greater requirements on commercial operators than on general aviation. However, those requirements derive from a legitimate public concern over passenger safety on manned aircraft that serve as common carriers for public transportation, and do not apply to operation of small unmanned aircraft, such as the UAV operations proposed by Wilbur-Ellis.

Unlike the model aircraft concept defined in section 336, the FAA's safety evaluation of UAV operations does not hinge on whether the operation is public, commercial, recreational or philanthropic.⁸

Finally, the Small UAV Coalition wishes to respond to comments filed by the Air Line Pilots Association ("ALPA") in other section 333 exemption dockets, in which ALPA argues that all aircraft, manned and unmanned, in the National Airspace System ("NAS") "must operate to the same high level of safety." This position is at odds with the explicit direction by Congress in the Federal Aviation Act,⁹ that the FAA promulgate safety regulations considering "(A) the duty of an air carrier to provide service with the highest possible degree of safety in the public interest, and (B) differences between air transportation and other air commerce." Requirements imposed on common carriers for air transportation under Parts 121 and 135 are much more stringent than requirements imposed on general aviation under Part 91. Certainly requirements may differ depending on whether a UAV will be operating in Class A or Class G airspace. Manned aircraft are currently subject to different requirements based on the airspace in which they are operated. Here, Wilbur-Ellis proposes to operate its UAVs in Class G airspace below 400 feet AGL, in a sterile area, with the consent of relevant property holders, and with a NOTAM filed with the FAA 1 hour before the operation. These precautions are more than adequate to ensure safe operations by Wilbur-Ellis.

While the Coalition is committed to ensuring the safety of small UAV and UAS operations in the National Airspace System, we believe FAA safety regulations should be proportionate to the risks posed by the particular UAV operations proposed, distinguishing small UAVs from other

⁷ Subsections 333(a) and (c) provide that safety in the national airspace system is the ultimate consideration.

⁸ Although Congress in section 336 limited the special rule for model aircraft to aircraft "flown for hobby or recreational purposes," the FAA need not and should not apply a commercial/non-commercial distinction in its small UAV rulemaking under section 332 or when considering petitions for exemption and other requests under section 333. All regulations and policies with respect to small UAVs should be safety and risk-based, taking into consideration size, weight, speed, altitude, etc., and this approach should be taken in evaluating Wilbur-Ellis's petition.

⁹ 49 U.S.C. 44701(d) and 44702(b).

UAVs. Small UAV operations, such as those proposed by Wilbur-Ellis, pose minimal risks to safety and should, therefore, be subject to minimal and appropriate regulations.

When evaluating the Wilbur-Ellis petition, the FAA should consider the seven factors Congress directed the FAA to consider, but the FAA should recognize that this list is not exhaustive or requisite.

As Wilbur-Ellis's petition shows, factors other than the seven factors set forth by Congress in section 333 are relevant. In section 333, Congress directed the FAA to consider the following when making section 333 determinations: size, weight, speed, operational capability, proximity to airports, proximity to populated areas, and operation within visual line of sight. But in the words immediately preceding this list, Congress stated that the FAA is to consider these factors "at a minimum." The FAA may consider additional relevant factors not enumerated in section 333, including some factors that are addressed in Wilbur-Ellis's petition, such as: location, the airspace and altitude of its small UAV operations, and pilot training and experience.

Each of the seven identified factors identified by Congress is potentially relevant to the FAA's safety risk determination, but not all of these factors are a prerequisite for every exemption. In particular, the FAA cannot interpret section 333 as prohibiting operations beyond the visual line of sight in every case. If Congress intended any factor to be a section 333 requirement, it would have mandated such restrictions by law.

It is incumbent on the FAA to evaluate each factor within the context of the applicant's proposed UAV operations. Consider the factor of weight. Congress did not provide a weight (or size) limit for model aircraft, and provided that a small UAV (for purposes of the small UAV rulemaking under section 332) could weigh up to 55 pounds (section 331(6)). Congress did not provide a weight (or size) limit in section 333. Whether the weight of the aircraft poses an undue safety risk will depend on the facts and circumstances of the particular UAV operations: altitude of operation, airspace for operation, and geographic area. In Wilbur-Ellis's case, the weight of its small UAV is less than 6 pounds. Considering the altitude and areas in which its small UAVs will be operated, and other precautions to be taken, Wilbur-Ellis's UAV operations are unlikely to pose a safety risk to other aircraft, national security, or persons on the ground.

Other factors the FAA may consider include speed and proximity of UAV operations to airports and populated areas. With respect to speed, the relevance of this factor depends on the facts and circumstances of the particular UAV operations. The speed of a UAV operating in the same airspace as commercial aircraft operations is a legitimate safety factor. However, the speed of a UAV operating below 400 feet AGL should be evaluated with respect to safely maneuvering, detecting and avoiding. Wilbur-Ellis's small UAVs may travel as fast as 48 knots, but the operations covered by this petition will take place below 400 feet AGL, in a sterile area, and within the visual line of sight of the operator or observer. Thus, these operations do not create any safety risk that is not more than adequately mitigated.

The risk of UAV operations that are close to populated areas is highly dependent on the specific facts and circumstances. Congress did not define "populated area" and it is not apparent that this concept is the same as or similar to the concept of "congested area" in 14 C.F.R. 91.119. Similar to the concept of shielding (used in determining electromagnetic interference), tall buildings or

structures between airports or populated areas and the proposed small UAV operation may allow a small UAV to operate without a safety risk, despite the operation's proximity to either. There is often a congregation of people present on a closed set where a UAV will be used for filming; however, the UAV may be operated safely nearby or inside a populated area. Although Wilbur-Ellis's petition does not address the proximity of its UAV operations to airports or populated areas, it does state that its UAVs will be operated in a restricted area, "where buildings and people will not be exposed to operations without their pre-obtained consent."¹⁰

Finally, Congress also directed the FAA to consider operational capability of the UAV. The UAV to be operated by Wilbur-Ellis will be programmed to respond to a loss of communications or lost link, and unpredicted obstacles and other emergencies. The HoneyComb AgDrone is also equipped with an automatic mode, in which heading, speed, and altitude are controlled by autopilot.

We believe the relevant factors for the FAA's UAV evaluation, whether or not identified in section 333, should be viewed through the lens of the particular UAV operations that are proposed in each petition, including Wilbur-Ellis's petition. In considering whether to authorize UAV operations, the FAA should evaluate and balance these factors using safety and security as cornerstones, not rigidly adhere to a list of factors that may or may not be relevant or important to particular UAV operations. In the view of the Small UAV Coalition, Wilbur-Ellis's proposed operations satisfy the relevant factors set forth by Congress and several additional mitigating factors that will ensure the safety and security of Wilbur-Ellis's proposed small UAV operations.

Section 333 permits the FAA to authorize UAV operations without type, production, or airworthiness certification; Wilbur-Ellis has demonstrated that no such certification is necessary.

Congress expressly vested in the FAA authority to determine the substantive safety requirements to impose on UAV operations under section 333. Congress also left to the FAA the question of how authorizations would be granted pursuant to section 333. It tasked the FAA with determining *whether* a certificate of waiver, certificate of authorization or airworthiness certification under 49 U.S.C. 44704 should be required.

Wilbur-Ellis's petition, similar to other petitions, seeks an exemption from the airworthiness certification regulation.¹¹ Given the nature of its proposed operations, we believe an exemption from the certification requirements for restricted category aircraft is warranted. Restricted category aircraft are so named because the FAA certifies aircraft for a special purpose operation, such as agricultural, aerial surveying, patrolling of pipelines and power lines, aerial advertising, and "any other operation specified by the FAA."¹² An operator of a restricted category aircraft is required to have obtained type, production, and airworthiness certificates. The type, production, and airworthiness certification processes are unnecessary if the FAA and the UAV operator agree on certain operational limitations to ensure safety (similar to limitations on

¹⁰ Petition, at page 13.

¹¹ 14 C.F.R. Part 21.

¹² 14 C.F.R. 21.25(b).

an airworthiness certificate). The operational limitations proposed by Wilbur-Ellis should be more than adequate to grant an exemption from the airworthiness certification regulation.

Each Wilbur-Ellis PIC will hold a commercial or private pilot certificate, or will have successfully completed, at a minimum, FAA private pilot ground instruction and passed the FAA private pilot written examination or FAA-recognized equivalent. The PIC will have conducted three takeoffs and landings with the particular UAV within the previous 90 days. Each pilot and observer will also have been trained in the operation of UAVs generally and the HoneyComb AgDrone in particular, and will receive a briefing before each day's operations. The Small UAV Coalition believes such a UAV/UAS-focused training regimen alone will achieve at least as equivalent level of safety as obtaining a private pilot certificate because the training will be focused on the particular skills of operating a small UAV and the particular nature of UAS operations. As a general matter, however, the Small UAV Coalition does not believe that traditional pilot certification requirements for manned aircraft are necessary or appropriate for operators of small unmanned aircraft. Although the requirement for a pilot to hold an airman certificate is statutory, section 333 of the Act instructs the FAA to consider whether to require, waive, or exempt the enumerated certificates "at a minimum." The FAA should waive or exempt the pilot certification requirement with respect to small UAS operators under section 333 as well as under its general waiver/exemption authority in the Federal Aviation Act.¹³ The manifold innovative UAV technologies, particularly for small UAVs, should not be subject to a one-size-fits-all paradigm with respect to pilot certification. Applying manned aircraft pilot certification requirements to small unmanned aircraft is not necessary as a matter of safety, and does not make sense as a matter of public policy.

Section 333 permits the FAA to use any administrative process to authorize UAV operations.

Congress also left to the FAA the question of how the substantive safety requirements under section 333 would be imposed. Congress provided no guidance other than to expedite operational authorizations, including in advance of completing the small UAV rulemaking under section 332. Wilbur-Ellis's petition for exemption is one of over 45 petitions docketed since the FAA invited entities to submit petitions.

Although the FAA may use its Part 11 exemption process to authorize UAV operations under section 333, the FAA also has broad authority under the Federal Aviation Act to grant an exemption from any safety regulation "if the Administrator finds the exemption in the public interest."¹⁴ In evaluating Wilbur-Ellis's petition and other petitions filed under section 333, it may be more appropriate to assess the safety impact, if any, of the particular small unmanned aircraft operations that are proposed, rather than to engage in a comparison with Federal Aviation Regulations adopted with manned aircraft in mind.

We encourage the FAA, in granting an exemption petition under section 333, to advise the public, where it is appropriate, that a subsequent petition requesting the same relief under the same material facts will be granted. For the FAA's own administrative convenience, and for the

¹³ 49 U.S.C. 44701(f).

¹⁴ 49 U.S.C. 44701(f).

benefit of small UAV innovation, the FAA can and should make public interest and safety determinations more broadly than in case-by-case exemption proceedings. Two illustrations, among many others, may be found in section 333 petitions for exemption filed to date, including Wilbur-Ellis's. For example, the Federal Aviation Regulations require that the approved Airplane Flight Manual, the aircraft registration certificate, and the aircraft airworthiness certificate be carried on board the aircraft.¹⁵ For all small UAVs, regardless of the nature of their operations, these requirements are impractical and may be remedied simply by ensuring these documents are maintained in the UAV operator's identified ground station. Consistent with the intent of section 333, the FAA can impose this requirement across the board. Congress directed the FAA in section 333 to determine which "types of operations" may be conducted safely in the national airspace system; thus, Congress contemplated the making of generally applicable safety determinations apart from and in advance of the small UAV rulemaking.

Section 333 authority does not expire on the publication of a small UAV rule.

Congress directed the FAA, under section 333, to determine whether certain unmanned aircraft systems may be operated safely even before completion of the section 332 rulemaking. However, section 333 is not temporary authority which expires with the publication of a final small UAV rule. There is no "sunset" provision. If Congress had intended section 333 authorizations to expire, or that the FAA would no longer entertain petitions for exemption after publication of a final rule, it would have included such a provision. For instance, Congress included a sunset provision for its pilot program for passenger facility fee authorizations at non-hub airports.¹⁶ Congress inserted sunset triggers in connection with age standards for pilots operating certain types of flights.¹⁷ A view that section 333 authorizations must expire or be superseded by the small UAV rule is unsupported by the statutory text. There is no basis to opine that UAV operations under section 333 and upcoming small UAV rules will not exist in parallel. Rather, section 333 gives the FAA the necessary flexibility to grant case-by-case authority and foster the development of the U.S. UAV industry.

The small UAV rulemaking will benefit from safety determinations made by the FAA under section 333, including making a positive decision on Wilbur-Ellis's petition in the near term.

The Small UAV Coalition believes the FAA should adopt and propose some of the precedents it sets in granting section 333 petitions as part of the small UAV Notice of Proposed Rulemaking, provided that it exercises proportionality, taking into account specific classes of UAVs, such as the particular characteristics of small UAVs. As we have made clear, the Small UAV Coalition firmly believes that operators will employ different technologies and standards commensurate with the particular capabilities of the UAS and the particular capabilities of the UAV operations. It may be that some technologies and protocols may be generally applicable, but others should be tailored to specific classes of UAV/UAS technology. We encourage the FAA to adopt the broadest and most flexible approaches at this stage to ensure continued innovation of technology and standards that will allow for safe small UAV operations across a myriad of small UAV/UAS technologies and applications.

¹⁵ 14 C.F.R. 91.9(b), 91.203(a) and (b).

¹⁶ 49 U.S.C. § 40117(1)(7).

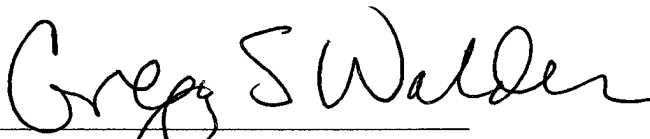
¹⁷ 49 U.S.C. 44729(c)(2) & (d).

We also believe that the experience the FAA and the UAV industry gain from UAV operations authorized under section 333, as well as the experience gained at FAA test sites and elsewhere, can improve and accelerate the rulemaking process. Allowing Wilbur-Ellis and other petitioners to begin near-term operations under section 333, with appropriate conditions and limitations, will provide innovators the necessary physical and regulatory space to pioneer technologies and develop viable business models. This experience and knowledge also will allow the FAA to develop the optimal regulatory framework that both promotes safety and supports growth of a very promising industry by allowing the FAA to learn from operations pursuant to section 333 authority and incorporate insights and lessons learned into the regulatory framework. All of this will allow manufacturers, operators and other interested parties to effectively participate in the rulemaking process with real-world data, observations and analysis.

Conclusion

Wilbur Ellis's petition demonstrates that its small UAS operations can be conducted safely on privately owned or controlled property, with a number of voluntary safety precautions. In the view of the Small UAV Coalition, the FAA should expeditiously grant Wilbur-Ellis authority under section 333. The Small UAV Coalition is pleased to support this petition and to recommend that the FAA apply section 333 flexibly in this case. The Small UAV Coalition believes that Wilbur-Ellis's operations will provide a valuable opportunity for the FAA to advance the Congressional goal of permitting small UAVs to fly commercially in the U.S. safely and in the near future.

We believe the relevant factors for the FAA's evaluation of the Wilbur-Ellis petition – including several factors we have identified that are not enumerated in section 333 – all support grant of its petition. In considering whether to authorize UAV operations such as Wilbur-Ellis's, the FAA should evaluate and balance these factors using safety and security as cornerstones. The Small UAV Coalition hopes that the FAA will create a regulatory environment for UAVs that will foster safe and innovative experimentation and operations for companies such as Wilbur-Ellis, so that globally important UAV development work can occur in the United States.



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