

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

**SAFE AND SECURE OPERATIONS OF SMALL UNMANNED AIRCRAFT SYSTEMS –
ADVANCE NOTICE OF PROPOSED RULEMAKING**

Docket No. FAA-2018-1086

COMMENTS OF THE SMALL UAV COALITION

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The Small UAV Coalition¹ provides its comments in response to the FAA’s Advance Notice of Proposed Rulemaking (“ANPRM”) for Safe and Secure Operations of Small Unmanned Aircraft Systems (“ANPRM” or “Notice”), 84 Fed. Reg. 3732 (Feb. 13, 2019). While the Coalition appreciates the opportunity to help shape future unmanned aircraft systems (“UAS”) rulemakings, it urges the FAA to move forward with a Notice of Proposed Rulemaking on remote identification before devoting its finite resources to the issues raised in this ANPRM.

The FAA relies for this ANPRM on 49 U.S.C. 44807 (which replaced section 333 of the FAA Authorization and Reform Act of 2012), which directs the FAA to use a risk-based approach to determine whether to allow UAS operations and to establish requirements for safe operations in the National Airspace System (“NAS”).

As a general matter, the Coalition believes that rulemaking action on some of these issues is premature, without sufficient data to support additional requirements or limitations as may be authorized by section 44807. In particular, the UTM questions in the Notice should await the remote identification rule, ongoing UTM research and development, and further revisions to the UTM Concept of Operations paper discussed below. As explained below, the Coalition supports the continuation and expansion of FAA’s use of its waiver authority to permit certain operations not allowed under Part 107.

Stand-Off Distances

The FAA defines “stand-of distances” as “the amount of space between a small UAS and the closest person or object.” The FAA notes that it refrained from imposing minimum stand-off distances in Part 107 because it “would be more burdensome than necessary for some operations while not being stringent enough for other operations” in light of the “wide range of possible small

¹ Members of the Small UAV Coalition are listed at www.smalluavcoalition.org.

unmanned aircraft and small UAS operations.” 84 Fed. Reg. at 3734. The Coalition agrees with this conclusion and believes it remains valid. In particular, during BVLOS operations, it will be difficult practically to verify any standoff distance (whether from people, buildings, vehicles or aircraft), and that these distances are also dependent on the actions of third party non-participants.

With respect to stand-off distances from manned aircraft, the Notice does not refer to its draft Advisory Circular (“AC”) “Well Clear Definition for Small Unmanned Aircraft Systems Operating Beyond Visual Line of Sight.” The draft AC suggests a UAS would remain well clear of manned aircraft to comply with the right of way rules in Parts 91 and 107 if it were *either* 250 feet away vertically or 2,000 feet horizontally. In comments submitted to the FAA, the Coalition noted that these stand-off distances would not sufficiently account for proximity to terrain and such low altitude operations that are typical of drone operations below 400 feet AGL. A 250-foot vertical separation becomes problematic as it would take up much of the navigable airspace between the manned aircraft and the ground and the 2,000 feet horizontal distance would displace many UA over a congested area. Many models and types of UA presently on the market and in use today have the ability safely to make use of the otherwise non-navigable airspace to manned aircraft in close proximity to obstacles and structures. The Coalition offered a different approach in which the UA could remain “well clear” of a manned aircraft by half the distance from the manned aircraft to the obstacles or terrain that the UA is near. In this manner, the UA would remain capable of continuing its safe flight and not creating an unnecessary hazard to persons or property on the ground that both the UA and the manned aircraft seek to avoid.

The Notice refers to prescriptive stand-off distances in a proposed rule of European Union Aviation Safety Agency (EASA). Those limits are now in the European Commission Implementing Regulation, and apply only to drones in the Open Category and Subcategories A2 and A3. In Article 4, the remote pilot must ensure that the UA “is kept at a safe distance from people[.]” In the Annex, UAS.OPEN.030 (Subcategory A2) requires the UA to operate at a safe horizontal distance of at least 30 meters from involved persons, except that the remote pilot may reduce the lateral distance to a minimum of 5 meters when operating a UA “with active low speed function” and after evaluating the weather, the performance of the UA and the segregation of the overflown area. UAS.OPEN.040 (Subcategory A3, UAs up to 25 kg) requires the UA to be operated at a safe horizontal distance of at least 150 meters from residential, commercial, industrial or recreational areas. The Annex does not contain a stand-off distance in the Specific Category. The Coalition believes these stand-off distances are not necessary and that a general standard to stay “well clear” of aircraft or “keep a safe horizontal distance” from people and objects should suffice until there is data that may support a minimum distance.

Altitude, Airspeed, and Other Performance Limitations

The FAA notes that the capability of a small UAS for speed and both horizontal and vertical acceleration could pose a hazard to other aircraft and people on the ground. The FAA is also concerned of the risks these capabilities pose when operating in proximity to sensitive government locations, large gatherings of people, law enforcement activities, and search and rescue operations. 84 Fed. Reg. at 3735.

The current maximum speed limit in Part 107 is 87 knots (100 mph). The Coalition believes this categorical limit should be subject to waiver upon an appropriate showing of both an operational need for greater speed and a safety risk assessment demonstrating the safety of operating a small UAS at such speed. With respect to a lower speed limit, the Coalition is amenable to lower limits for small UAS operations over people, particularly open-air assemblies of people, and operations at such a low altitude pose a risk to persons and structures that is not otherwise sufficiently mitigated. Any lower regulatory limit should be subject to a waiver upon an appropriate showing of safety based on the technological capabilities of the drone and any other risk mitigation measure.

The Coalition also believes the 400 feet AGL limit should be waived upon an appropriate showing of safety. In some areas, Class G uncontrolled airspace goes up to 14,500 feet MSL (mean sea level), and thus a 400 feet AGL limit is artificial and in certain cases is not necessary for safety reasons. Part 107 currently permits a small UAS operations above 400 feet AGL when within 400 feet of a structure, in which case it may be operated up to 400 feet above the structure. The Coalition does not believe there is reason to raise or lower the regulatory limit, but supports the flexibility in current Part 107, supplemented by waiver authority.

Unmanned Traffic Management (UTM) Operations

The Coalition has long supported the development and implementation of an unmanned traffic management system that features a decentralized communication architecture. Given the ongoing research and development activities underway pursuant to the FAA-National Aeronautics and Space Administration (NASA) partnership, as well as the recent specific congressional directives in section 376 of the FAA Authorization and Reform Act of 2018, the Coalition believes it is premature to answer several of the questions posed in the Notice. This is amplified by the fact that the FAA has not yet published a remote identification NPRM, a rulemaking that should and will likely address some of the questions posed in this Notice.

The Coalition also notes that the FAA has developed a UTM Concept of Operations (ConOps), Version 1.0, which also addresses many of these questions. The Coalition recommends that the FAA seek public comment on its ConOps document, whether Version 1.0, on which the Coalition provided comments, or a later version, as it provides a much more thorough consideration of information sharing and equipage.

With respect to whether any small UAS operations should not be subject to UTM requirements, the Coalition believes that operations in an FAA-designated flying field, or over private property below a certain low level, need not participate in the UTM system. However, any small UAS operating in the same airspace as small UAS operating commercially should participate in the UTM system. Participation could mean something as minimal as declaring a flight in an areas and being equipped with remote identification.

The Coalition agrees that some training, and perhaps testing, may be appropriate to ensure that remote pilots participate in a UTM system competently and safely.

Questions regarding nonrecurring investment costs, annual recurring and maintenance costs, and costs for information sharing must await a determination of the critical elements of a UTM system.

These elements including the necessary communication technology, as well as detect (or sense) and avoid equipage.

Payload Restrictions

The Notice refers to the prohibition in Part 107 from transporting hazardous materials. 84 Fed. Reg at 3736. The FAA asks whether it should place restrictions on types of small UAS payloads or installed equipment.

The Coalition notes that most of the nefarious conduct identified in the Notice is already proscribed either by Federal or State law. See, e.g., section 363 of the FAA Reauthorization Act of 2018 (prohibiting carrying of weapons) The Coalition does not believe adding a specific regulatory provision is necessary, although it does not object to a general prohibition on carrying any payload in violation of Federal or State law, or to carry out an action that it prohibited by such law. Interference with firefighting and other first responders is already covered by Federal law. See, e.g., 49 U.S.C. 46320 (Interference with wildfire suppression, law enforcement, or emergency response effort by operation of unmanned aircraft)(added by section 2205 of the FAA Extension, Safety, and Security Act of 2016) 18 U.S.C. 40A (Operation of unauthorized unmanned aircraft over wildfires)(added by section 382 of the FAA Reauthorization Act of 2018). The prohibition against careless or reckless operations and the right of way requirement already address interference with aviation operations.

With respect to the transport of hazardous materials (hazmat), which would include chemical and radiological material, the Coalition believes the FAA should follow the hazardous materials regulations (HMR) and revise its categorical prohibition in Part 107. Many common consumer products, including nail polish and aerosol spray products, are considered hazardous material, but can be transported on aircraft under conditions and limitations in the HMR. The Coalition sees no reason why a properly trained remote pilot should not be permitted to transport hazardous materials provided the operation complies with the HMR, including marking and outer and inner packing and packaging requirements. The Coalition therefore recommends revising 107.36 to allow for transporting hazardous materials in compliance with the HMR and revising the training requirements to include hazmat specific training.

Small UAS Critical Systems Design Requirements

The FAA asks whether any redundancy requirement is appropriate for certain UAS operations, such as operations beyond the visual line of sight (“BVLOS”) or over people, based on concerns expressed by public safety and national security officials. 84 Fed. Reg. at 3736-37.

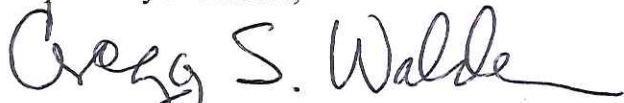
The Operations Over People proposed rule does not include any redundancy requirement, but the Notice states that a manufacturer may use a redundancy feature of a critical element in its Declaration of Compliance and may rely on such a redundancy feature in seeking a waiver from a Part 107 prohibition or limitation.

In general, redundancy is one means of handling a failure safely, but there are other means. For example, a redundant control link is one means of handling a control link failure; another means

would be a prescribed known safe flight path (such as a return to home feature) that the aircraft may fly in the event of a control link failure. Likewise, a parachute may be as safe a response to a motor failure as a redundant motor. Therefore, the Coalition believes that requiring certain specific redundancies may be unnecessary and too prescriptive.

Moreover, without any data showing a failure rate for any critical element in any UAS model, it is premature to propose any specific redundancy requirements. The Coalition believes that a small UAS operating BVLOS in certain environments, such as in urban settings, and over large assemblies of people, may be required to be equipped with certain redundant features, depending on whether the small UAS is equipped with other capabilities to mitigate the risk of a critical system failure. The Coalition does not believe there is sufficient data to support any new design or equipment requirement at this time.

Respectfully submitted,



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