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**Commet Letter to the FAA on Proposed Rule for Operation and Certification of Small
Unmanned Aircraft Systems**

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Federal Aviation Administration
U.S. Department of Transportation
1200 New Jersey Avenue, S.E.
Washington, D.C. 20590

Re: FAA-2015-0150; Operation and Certification of Small Unmanned Aircraft Systems

To: Administrator Huerta and FAA Unmanned Systems Integration Team

The undersigned colleges and universities submit the following comments in response to the Notice of Proposed Rulemaking for the Operation and Certification of Small Unmanned Aircraft Systems (Docket No. FAA-2015-0150). First and foremost, we commend the FAA for making substantial progress in this complex and controversial regulatory area. We also very much appreciate the FAA's leadership in making the US aviation system the safest in the world.

With regards to the NPRM specifically, it is notable that model and unmanned aircraft have been used for teaching, research, and recreation for many decades in the United States. As education and research tools, they have contributed significantly to US leadership in aviation, to advances in science and engineering, and more broadly to our national interest. Moreover, institutions of higher learning have accomplished these advances and made these contributions with an impeccable safety record. Indeed, we are not aware of any fatalities or serious incidents involving educational or research use of model or small unmanned aircraft during the entire history of aviation in the United States.

We therefore strongly support elements of the NPRM that will enable our faculty, staff, and students to continue to work freely with unmanned aircraft technology. In particular, we strongly support the NPRM's proposal for an Operator Certificate, rather than a Private Pilot's License, as a safe, sensible, and cost-effective approach. This reasonable certification pathway is likely to increase compliance, heighten respect for other airspace users, and strongly deter illegal activities, while at the same time enabling essential research and education activities using unmanned aircraft.

We also commend the NPRM for recognizing that small unmanned aircraft, when used by trained operators under controlled conditions, should not require airworthiness certifications. Such certification requirements would severely curtail critical research, relegating some of our nation's top faculty, scientists and engineers to users of existing (certified) UAS rather than being the developers of tomorrow's technologies.

There are five specific areas where we believe that moderate changes to the NPRM will significantly benefit science and engineering, education, and our national interest:

1. Although the preamble to the NPRM notes that public institutions can opt to comply with the regulations, if adopted, in lieu of pursuing other avenues for FAA review of their unmanned aircraft operations, the use of the term “civil” throughout the NPRM obscures this possibility. We would recommend that the proposed regulations specifically state that use of the term “civil” in describing the operations subject to the rule is not intended to limit the regulations’ scope to commercial/non-public operations; rather, public institutions may likewise use small unmanned aircraft in compliance with the proposed rule, without any additional or contrary requirements’ being applied to them.
2. It is critically important that the final rule allow for an Operator in Command (OIC). Such a designation would allow a certified faculty member, for example, to supervise students using small unmanned aircraft as part of a course or research activity. We believe that the OIC should always be present and prepared to take immediate control of any outdoor UAS that is being operated under their supervision, but that a student should be allowed to operate the controls under that supervision, and without any need for separate compliance with the operator certification requirements set forth in the NPRM in most cases. The OIC would have full authority over, and responsibility for, the safety of the flight and would be responsible for training students on safe and effective operation of the small unmanned aircraft. The need for an OIC is particularly important in education because students may not meet the age requirement, or may not have the time or financial resources to become certificated operators. Supervised one-on-one training, such as we endorse for education, is how the Academy of Model Aeronautics (AMA) has trained its members safely and effectively for decades. In contrast, students who would regularly use small UAS, for example in graduate aeronautics research, could certainly be expected to complete the FAA certification process as part of their education.
3. We strongly endorse the establishment of a micro-UAS category. Based on fundamental physics and well as historical experience, it is clear that small, slow, and lightweight UAS do not present the same hazards as their larger counterparts. By way of example, we are not aware of any incident in which a Park Flyer model aircraft (defined as less than 2 pounds and 60 mph) has ever caused a fatality. It would be reasonable for the final rule to minimally regulate micro-UAS that are used exclusively at low altitudes and with landowner consent. We respectfully request that the final rule allow our ongoing use of the immediate reaches of the airspace on our property for teaching and research purposes, including those activities utilizing small model aircraft and micro UAS, except in areas where low-flying manned aircraft are common, such as final approach and initial departure corridors.
4. In certain circumstances, we urge the FAA to make reasonable allowances for advanced technologies including beyond-line-of-sight, first-person-view, autonomous and multi-UAS operations, towing and external payloads, and nighttime capabilities. For example, there are scenarios in which a small UAS operated near the ground on private property would present little if any danger to other aircraft or the public, especially in rural areas. We respectfully request that the final rule make reasonable accommodations for advanced technologies because active research in these emergent areas is vital

to continued US leadership in aviation. Sensible limits on system weight, range, location, and altitude could be established to mitigate any additional risk and thereby ensure an equivalent or greater level of safety compared with more conventional small unmanned aircraft.

5. The most critical issue raised by the NPRM is the lack of clarity regarding the ability of landowners, including colleges and universities, to regulate or limit the operation of UAS within the immediate reaches of their property. The preamble to the NPRM suggests that landowner permission will be necessary (for instance, by limiting operations to situations in which landowners agreed to remain indoors and out of the way of a proposed flight), and many of the FAA's recent grants of Certificates of Waiver of Authorization or Approval (COAs) likewise specifically reference the need for such permission before a COA-holder can operate. To avoid the unprecedented possibility that low-flying UAS will interfere with long-standing educational and research activities on our property, *we strongly urge the FAA to make clear that nothing in the proposed regulations precludes a landowner, including a college or university, from establishing its own expectations and standards for operation of UAS at low altitudes on or directly over its property, generally understood as being within a few hundred feet of the surface.* Expressly recognizing this landowner authority would significantly improve safety, accountability, and public acceptance of unmanned aircraft by allowing appropriate management of risk (e.g. to various outdoor events, research activities, athletic contests, and gatherings), by mitigating nuisance concerns, and by ensuring at least a minimum level of privacy.

In summary, we believe that addressing issues raised above will substantially improve the final rule by furthering public safety, reducing the administrative burden on the FAA, and promoting continued university contributions to innovation and US leadership in aviation.

Thank you for your consideration of these critically important issues.

Respectfully submitted,

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