SMALL UAV
COALITION
A Partnership for
Safety & Innovation

July 29, 2016

Honorable Michael Huerta
Administrator
Federal Aviation Administration
800 Independence Avenue SW
Washington, DC 20591

Re: Unmanned Aerial Systems (UAS) Remote Pilot Training and Testing

Dear Administrator Huerta:

The Small UAV Coalition commends the Federal Aviation Administration for recent steps to integrate UAS into the National Airspace System (NAS), including finalizing Part 107 and implementing an online registration system. Both of these achievements offer the opportunity to provide online education and training for both commercial and recreational operators to ensure the continued safe integration of UAS. The Coalition and its members offer assistance in ensuring the FAA's rollout of aeronautical knowledge testing and training is a success and is well-accepted by the remote pilot community, and that remote pilots are suitably qualified to operate UAS safely. We respectfully request a meeting with the FAA officials in charge of this rollout, at their earliest convenience, to discuss the recommendations in this letter.

We focus in this letter on the aeronautical knowledge test for remote pilots required in Part 107, and the training and education likely necessary to ensure applicants understand what is expected of them to pass this test. We also want to emphasize that the aeronautical knowledge test being developed should focus on the particular knowledge and skills needed to operate a UAS and should not simply replicate the test for manned aircraft pilots.

Online training

In the preamble to Part 107, the FAA states that it intends to host online training for remote pilot applicants. In the rule itself, the FAA determined not to require any training for remote pilot applicants. Not requiring training may lull applicants into thinking that training is not necessary to pass the aeronautical knowledge test, which for many may not be a safe assumption. The preamble to the rule states that remote pilot applicants may acquire the necessary knowledge "through self-study, enrolling in a training seminar or online course, or through one-on-one instruction with a trainer familiar with small UAS operations and part 107." As the FAA considers how to best provide these educational and training opportunities, we suggest that the FAA focus on online programs that are easily accessible, affordable, and engaging to ensure maximum participation. As has been observed in other areas, including boating and hunting, participants are far more likely to complete a training course when it can be done online, on their schedule and in their own home. Research has shown that users prefer digital, gamified learning tools because they not only maintain their level of interest and engagement but they also increase achievement results and retention levels.

These online learning tools will ensure higher voluntary participation among recreational and commercial users and higher passing rates for those taking the aeronautical knowledge test for a commercial remote pilot certificate. We urge the FAA to embrace online education for remote pilot applicants and make this online training available before August 29, the effective date of Part 107.

A wide range of stakeholders, including the Air Line Pilots Association (ALPA) and members of Congress, have publicly called for online UAV education. Providing easily accessible and convenient online training opportunities is one of the most impactful and efficient ways to ensure that UAS integration – of both commercial and recreational operators – meets the highest safety standards.

Online testing

In the preamble to the final rule, the FAA explained that, although at the present time the FAA requires remote pilot applicants to take the aeronautical knowledge test at one of the FAA-approved testing centers, the FAA may authorize online testing in the future if such testing can be conducted securely, without the risk of fraud or cheating. Such security technology, including online proctoring, is currently available and utilized for testing and certification programs in other industries. There is a proven online equivalent for any in-person security measure. We are happy to brief you on this technology and also urge you to conduct a pilot program to explore the online option.

Aeronautical knowledge test contents

It is critical to the public's acceptance of the aeronautical knowledge test that it be focused on the knowledge, skills, and behaviors needed to operate a UAS. This statement may seem obvious, and we commend the FAA for eliminating in the final rule several proposed areas not relevant to small UAS operations. However, we are concerned that the aeronautical knowledge test may be unduly burdensome if it includes questions pertinent only to operations in controlled airspace appropriate for manned aircraft pilots. The training materials now available online for Part 61 certificate holders appear to require a level of knowledge well beyond what it necessary to ensure a safe cadre of remote pilots and, as noted above, there are no training materials available at the present for remote pilot applicants.

A few examples taken from the preamble to the final rule show why we are concerned:

> The FAA requires knowledge how to calculate weight and balance of the UAV and the "resulting impacts on performance," but the FAA offers no explanation of how to do so and whether any equipment will be needed to calibrate weight and balance.
>
> With respect to determining the performance of the UAS, the FAA explains that knowledge of how the UAS would perform in a given operational environment is necessary so that the remote pilot can be assured that the operation will pose no undue

hazard if there is a loss of control. The FAA provided no other explanation for the level of knowledge required. Will it suffice to know that the UAS has a go-home feature?

The FAA requires a remote pilot to understand aeronautical decision-making and judgment by manned aircraft pilots, for the reason that the UAS may share the airspace with some manned aircraft. However, the FAA offers nothing further as to what will constitute adequate knowledge of manned aircraft pilot decision-making.

The FAA requires remote pilot applicants to understand radio communication procedures to avoid safety risks at Class G airports, yet use of radio communications is not required. The FAA states that the knowledge of these procedures will provide the ability to employ the Common Traffic Advisory Frequency (CTAF) as a valuable resource. It is one thing to require a remote pilot to know of this resource, and another to require an understanding of the radio communications procedures.

Promoting compliance

The regulatory evaluation for Part 107 assumes an applicant will travel an average of 19 miles to a knowledge testing center, that it will cost $150 to take the test, and that an applicant will devote 20 hours of self-study in preparation for taking the test. The FAA also assumes only a 10% failure rate, an estimate based entirely on failure rates of manned aircraft pilot applicants. This estimate could be very low, especially because the FAA's assumption that 20 hours of education will be needed is likely known only to those few who read the summary of the regulatory evaluation in the Federal Register.

We are concerned that a high failure rate may discourage some persons from showing up at a knowledge testing center and taking the test. For others who fail initially, they will have to wait 14 days before reapplying for the test, and pay another $150.

The Coalition wants to encourage compliance and ensure that remote pilot operators have the knowledge necessary to comply with Part 107 in every respect. We would like to meet with the FAA with this objective in mind and to discuss the concerns expressed in this letter to ensure that both the FAA and remote pilot applicants are adequately prepared for the barrage of individuals seeking to safely and legally operate on August 29.

Thank you for your consideration of this request.

Sincerely,

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