



April 24, 2015

Docket Operations, M-30  
U.S. Department of Transportation  
1200 New Jersey Avenue SE.  
West Building Ground Floor, Room W12-140  
Washington, DC 20590-0001

**Re: Docket ID- FAA-2015-0150-0017  
Operation and Certification of Small Unmanned Aircraft Systems**

Dear Sir or Madam:

On behalf of the National Corn Growers Association (NCGA), the following comments are being submitted regarding the Federal Aviation Administration's (FAA) NPRM for Operation and Certification of Small Unmanned Aircraft Systems. NCGA represents more than 42,000 dues-paying corn grower members and the interests of more than 300,000 farmers who contribute through corn checkoff programs in their states.

NCGA's members support the use of Unmanned Aircraft Systems (UAS) technology as a tool for farmers to manage their farm operations for production and research. We thank the FAA for addressing the current ban on the commercial use of UAS, so farmers across the country can soon realize the myriad of positive, potential benefits the technology can offer crop production. UAS figures to improve the efficiency and safety of many industries. An economic study conducted on behalf of the Association of Unmanned Systems International titled "The Economic Impact of Unmanned Aircraft Integration in the United States" projected that the agriculture sector will make up 70% of the estimated \$82 million economic impact over the first ten years of implementation.<sup>1</sup> Therefore, it is timely that the FAA is seeking to integrate commercial UAS into our national airspace.

Corn farmers have the extraordinary opportunity to feed and fuel the growing world population, expected to reach 9 billion people by 2050, while continuing to be good stewards of the land. With this opportunity comes the challenge to become more efficient producers; doing so requires farmers to embrace new technologies and tools. We have entered an era known as precision agriculture: a practice that utilizes remote sensors and

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<sup>1</sup> "The Economic Impact of Unmanned Aircraft Integration in the United States." Association of Unmanned Vehicle Systems International. March 2013.

imagery equipment to collect agronomic data to better analyze soil, plants and fields, and thus make more informed operational and crop management decisions. UAS is the next step in precision agriculture offering farmers one more tool to meet rising demand. Corn farmers are on the leading edge of this transformation.

The immediate uses of UAS for corn farmers include field mapping and crop scouting, the latter of which is explicitly listed in the Notice of Proposed Rulemaking (NPRM). Remote sensors and cameras are already used on combines, tractors, and by satellite to collect data such as crop moisture and soil nutrient levels. Once the data is mapped out and georeferenced, farmers can make management decisions on the application of inputs such as fertilizer, lime, fungicide, herbicide, and water. Applying this technology to a UAS would give farmers a more portable and efficient platform for data collection and analysis.

Despite considerable technological advances to farming over the past several decades, most crop scouting continues to be done on foot. Farmers walk hundreds or thousands of acres looking for pest infestations, crop disease, and other irregularities. Early detection of such irregularities is critical while problems are still treatable. UAS is a more cost-effective, efficient crop scouting tool. It takes an hour or more to scout a 10-acre field on foot, and farmers don't have the best view of the irregularities they are looking for especially when the crop becomes taller than themselves. Using a UAS over the same amount of land would exponentially decrease the time needed to execute the task, while providing farmers a better perspective from the sky to better spot troubled areas.

UAS also has the potential to enhance sustainability efforts and responsible farming practices. Using the data collected from UAS and their accompanying sensors, coupled with the ability to increase chances of early detection of irregularities, farmers are able to treat specific areas of fields rather than mass application of inputs. This has many benefits, for both farmers and consumers: significantly lower operating costs; fewer inputs, such as pesticides and fertilizer; higher yields; and a reduced environmental impact.

From the small farmer looking to incorporate technology with crop scouting practices, to the large farming operations and cooperatives looking to add a complementary tool for field mapping, access to UAS technology for commercial purposes is key. We understand there are safety concerns when integrating a new technology into national airspace. However restrictions should not be burdensome to a point where the benefits and potential of said technology is nullified. NCGA agrees with the FAA's approach to creating a new operator class for UAS operators, rather than requiring those who wish to operate commercial UAS to hold a pilot's license. We are encouraged that the FAA recognizes that operating systems for manned and unmanned aircraft are very different. For the Aeronautical Knowledge test being developed for UAS operator certification, we call for a balance between learning the necessary safety protocols for operating in national airspace and straightforward access for farmers wishing to use UAS responsibly.

We also welcome the FAA's proposal for including a Micro UAS classification and hope to see this provision in the final rule. Other countries have successfully adopted UAS technology in their skies and are seeing the benefits today; our farmers want to see the

same benefits here in the U.S. Allowing operators to use UAS weighing 4.4 pounds or less while not being required to take the Aeronautical Knowledge Test opens the technology up to a much wider user base. As technology has shown, a UAS weighing 4.4 pounds can complete many of the potential functions smaller operations desire, such as crop scouting. However, it remains unclear what classifies a material as “frangible” as required by the NPRM. We encourage the FAA to continue looking to other countries that have successfully integrated UAS into their airspace and have collected data on best operational practices.

A reading of the FAA’s NPRM indicates two concerns shaped the proposed operator restrictions: current sense and avoid technology is not available for small UAS and thus pose a threat to manned aircraft operating in the same airspace; and the fear that the connection between operational controls and the unmanned aircraft will be lost. Our concern is that the current pace of technology is exceeding the pace at which regulations are being made. As an example, Amazon was recently granted FAA approval for testing a certain type of UAS, but the model was already outdated by the time approval was granted. The FAA’s NPRM also proposes several operational restrictions that would limit UAS potential in agriculture. Restrictions including day light operations only, operations within visual line-of-sight, and only flying over those involved in the flight operation will allow for small scale use of this technology. Those restrictions should be reexamined in order for the maximum potential in agriculture to be realized. The UAS industry has and will continue to see rapid improvements in technology. We ask that the FAA be flexible in their rule making process so that the rules regulating the technology can keep pace with the innovations.

UAS technology has clear benefits in agriculture, and farmers are excited to experience the potential value that it can bring to their operations. From crop scouting to field mapping, UAS technology is poised to become a complementary tool for farmers to meet rising production goals while being good stewards of their land. The FAA has taken steps in the right direction for integrating small, commercial UAS into the skies above our farms. We look to them to embrace innovation and remain flexible as the technology moves forward.

NCGA appreciates the opportunity to submit comments on this important matter.

Sincerely,

A handwritten signature in black ink that reads "Chip Bowling". The signature is written in a cursive, flowing style.

Chip Bowling  
President  
National Corn Growers Association