



November 17, 2014

Docket Management Facility
U.S. Department of Transportation
1200 New Jersey Avenue, SE
West Building Ground Floor, Room W12 – 140
Washington, DC 20590

Re: Petition for Exemption: Team 5, LLC; Docket Number FAA-2014-0783

To Whom It May Concern:

The National Agricultural Aviation Association (NAAA) appreciates the opportunity to comment on Team 5 LLC's petition for an exemption from various Federal Aviation Administration regulations in order to operate an unmanned aircraft system (UAS) for commercial purposes.

Importance of Aerial Application Industry

The NAAA consists of more than 1,700 members in 46 states, and represents the interests of small business owners and pilots licensed as commercial applicators that use aircraft to enhance the production of food, fiber and bio-fuel; protect forestry; protect waterways and rangeland from invasive species; and control health-threatening pests. Aerial application is so important to agricultural, forestry and public health protection because it is by far the fastest method of application. Furthermore, when the presence of water, wet soil conditions, rolling terrain or dense plant foliage prevents the use of other methods of pesticide application, aerial application may be the only remaining method of treatment. Aerial application is also conducive to higher crop yields, as it is non-disruptive to the crop and causes no soil compaction. Applying crop protection products by air is an essential component of no-till or reduced tillage farming operations which limit storm water runoff and reduces soil erosion. These farming methods, through their preservation of organic matter and topsoil, help maintain productive soils and reduce greenhouse gas emissions through the sequestration of carbon. According to the USDA's Economic Research Service, there are a total of 408 million cropland acres in the U.S., of which approximately 70 percent are commercially treated with crop protection products. Further, according to NAAA data nearly 20 percent of commercial crop protection product applications are made through aerial applications. As a result, NAAA estimates that 71 million acres of cropland are treated via aerial application in the U.S. each year. This does not include the aerially treated pasture and rangeland of which there are 614 million total acres in the U.S. or the 671 million total forestry acres and 61 million total urban acres in the U.S.—a portion of which are treated by air.

Because of the importance of the aerial application industry, it is vital a safe low-level airspace exists to ensure these pilots can continue to do their jobs safely. Ensuring safe low-level airspace includes minimizing obstructions which are difficult to be seen and identified by the pilots. In addition to aerial application operations, aircraft users of low-level airspace include: Emergency Medical Services (EMS), air tanker firefighting aircraft and their lead aircraft; power line and pipeline patrol aircraft; power line maintenance helicopters; fish and wildlife service aircraft; animal control aircraft (USDA-APHIS-ADC); military helicopter and fixed-wing operations; seismic operations (usually helicopters); livestock roundup (ranching or animal relocation); aircraft GIS mapping of cropland for noxious weed populations and the like; and others.

Safety Concerns Associated with UAS

NAAA is concerned that the widespread use of UAS without proper safe integration, will result in conditions ripe for low-level aviation accidents.

UAS present a hazard to low-level pilots similar to that presented by birds and other low-level obstacles such as other aircraft and towers. According to a joint report by the FAA and the U.S. Department of Agriculture's Animal and Plant Health Inspection Service (USDA-APHIS), between 1990 and 2012 over 131,000 wildlife strikes occurred with civil aircraft, 97 percent of which were the result of collisions with birds, with 25 producing fatalities. Accident records maintained by NAAA, as taken from NTSB accident reports, show there were 10 collisions between aircraft, in which at least one of the aircraft was an ag aircraft during the last 10 years (2004-2013) and since 2004 there have been 12 accidents between ag aircraft and towers, resulting in 7 fatalities. The agricultural aviation industry places a great amount of importance on the ability to see and avoid obstructions and other aircraft in the airspace in which they operate. While this principal is the backbone of safety for our industry and all air traffic operating under visual flight rules (VFR), it can only be utilized effectively when other aircraft do their part in avoiding collisions. The necessary technology to allow UAS to "sense and avoid" other aircraft is currently in the nascent stages of

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development and is nowhere near commercial viability. Furthermore, the U.S. Government Accountability Office (GAO), an independent federal agency, determined in September, 2012 that no adequate technology currently exists that would allow UAS to adequately sense and avoid other aircraft. NAAA believes until this technology is developed, UAS operators should be required to post a Notice to Airmen (NOTAM) 48-72 hours prior to their operations. Such a requirement is already in place by the FAA for the Certificates of Waiver or Authorization granted for current limited commercial operations. UAS operators should also be required to have radios on the ground tuned to a locally defined frequency, allowing them to monitor air traffic in the area, and alert local manned and unmanned aircraft operators to their presence.

NAAA believes UAS should also be painted in colors which make them readily distinguishable from the background. Strobe lighting should be required on the UAS itself, and to assist with identification of UAS operating areas, on the UAS operator's ground vehicle. Automatic Dependent Surveillance-Broadcast (ADS-B) Out technology is a key component of the FAA's Next Generation Air Transport System (NextGen) that allows the identification of aircraft based on transponder and GPS signals, and allows nearby aircraft with the proper reading equipment to identify their exact location. Proven, economically viable ADS-B systems designed for UASs are currently on the market and should be a requirement for commercial UAS operations.

Operational Safety

NAAA requests that operators of UAS develop ways of making the presence of UAS known to VFR air traffic if they are to be integrated into the National Airspace System (NAS). NAAA believes it is imperative for users of the NAS and residents and landowners within the areas of UAS usage to be able to safely utilize the services of agricultural aircraft and other low level operations without jeopardizing the aircraft occupant's safety. Agricultural producers are aware of the necessity of quickly treating their crops by air when a potential yield threat such as plant disease or insects strike.

Without having aerial application services blocks of farm land in UAS high-usage areas may be untreatable by air. In addition to the above recommendations to better identify UAS', NAAA recommends the following measures be taken in the near term regarding small unmanned aircraft systems (UAS). This list is similar to that presented by the North Dakota Agricultural Aviation Association to the North Dakota Department of Commerce; the organization awarded the North Dakota UAS test site:

UAS Operations

1. UAS support vehicle should be equipped with a strobe light that is activated when UAS is operating.
2. UAS operator should be attending/monitoring UAS at all time and attentive to surroundings (no headphones, etc., or other distractions).
3. For authorized use of UAS in the national airspace system (NAS) – either as a public operator under a COA or as a civil operator under a Special Airworthiness Certificate - the UAS operator must issue a Notice to Airmen (NOTAM) 48-72 hours in advance of an operation.
4. UAS operator is trained and equipped with aviation radio set to some kind of locally defined frequency to account for various areas.
5. UAS operator procedure if an agricultural aircraft or any other type of low-flying aircraft is within two miles should be to immediately ground the UAV as soon as practicable.
6. UAS operators should comply with all current FAA regulations, policies and procedures and state department of agriculture and EPA procedures if appropriate.
7. UAS operator has a commercial pilot's license and as such can demonstrate knowledge of aviation safety and communication procedures (similar to FAA private pilot written exam) including requiring a Class 2 medical.
8. UAS are required to have a separate visual observer as part of the crew who possesses a Class 2 medical certificate and is responsible to clear the flight path of the UAS from any other airborne traffic.
9. UAS is required to have an airworthiness certificate.
10. UAS operator maintains line-of-sight operations (operates from a location that minimizes the furthest distance UAS is from operator).
11. UAS should be required to have liability insurance.

12. UAS observers is present and able to communicate with operator from the most minimal distance possible and are not allowed to perform crew duties for more than one UAS at a time.
13. UAS must be equipped with strobe lights.
14. UAS must be equipped with ADS-B Out technology or the like pending its effectiveness and usability to track UAVs.
15. UAS operator must be well-versed in UAS operator manual and UAS must be properly maintained.
16. UAS must be coated in a highly visible color(s) markedly contrasted from the surrounding airspace and ground.
17. UAS should have a registered N-number on an indestructible and unmovable plate attached to the UAS.
18. UAS conducting low-level aerial application work must comply with 14 CFR Part 137

Just as manned aircraft pilots are required to undergo a rigorous training curriculum and show that they are fit to operate a commercial aircraft, so too must UAS operators. Holding a commercial certificate holds UAS operators to similar high standards as commercial aircraft operators and ensures they are aware of their responsibilities as commercial operators within the NAS. Medical requirements ensure they have the necessary visual and mental acuity to operate a commercial aircraft repeatedly over a sustained period of time. Having a UAS observer helps compensate for the lack of "see and avoid" capabilities, and record retention ensures the aircraft is airworthy (discussed below).

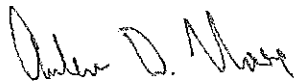
It is vital that commercial aircraft, manned and unmanned, have received airworthiness certification by the FAA to ensure they can safely operate in the NAS without posing a hazard to persons or property. ADS-B Out equipage, strobe lighting, and marking, as discussed above, ensures the aircraft is visible to manned aircraft, law enforcement, the public and other UAS.

The issue of protecting all pilots from mid-air collisions, when they are operating in close proximity to unmanned aircraft is vitally important. In the case of agricultural aviators, timely treatment of the crop is an issue of great importance to the safe, affordable and abundant production of food, fiber and bio-fuel to our global population.

NAAA is aware of the important functions which can be accomplished by UAS, potentially even to agriculture but at the same time protecting the safety of current and future users of the NAS is mandatory. NAAA appreciates the FAA addressing this life-saving issue vital to the agricultural aviation industry, and urges the Agency to consider the above stated comments in an effort to strengthen aviation safety overall.

Thank you for the opportunity to comment.

Sincerely,



Andrew D. Moore
Executive Director