



Uncrewed Aircraft Systems (UAS)

Uncrewed Aircraft Systems (UAS), also known as Unmanned Aerial Vehicles (UAVs), unmanned aircraft (UA) or drones are a safety threat to low-altitude aviators, especially ag aviators, if operated carelessly. NAAA believes the Federal Aviation Administration (FAA) needs to take a measured, incremental approach to safely integrate UAS into the National Airspace (NAS). This means that the Agency needs to fully assess the risk of UAS to crewed aircraft as they incrementally open the airspace to UAS. The Association will continue to promote and assert the safety of its member operators and pilots above all other interests.

Federal Policy Background

14 CFR Part 107 – Small UAS

Effective since 2016, [Part 107](#) allows small (less than 55 lb.) UAS to be operated commercially with a [Remote Pilot Airman Certificate and Small UAS Rating](#). There are currently [over 325,000 Certified Remote Pilots](#). Some notable operating limitations to Part 107 include a maximum groundspeed of 100 MPH and a maximum altitude of 400 feet AGL (lowered from 500 feet thanks, in part, to NAAA comments). Only visual line of sight operations of a single UAS are permitted and all UA must yield right of way to manned aircraft. [Some of these rules](#) can be [waived](#) by FAA if an applicant demonstrates that such a waiver will not endanger the NAS and persons on the ground. Part 107 was [amended](#) in 2021 to allow operations over people and at night.

49 USC §44807 – Exemptions

To fly a UAS that exceeds the maximum weight in Part 107, or if the use requires relief from a non-waiverable rule, a petition for exemption may be filed under the authority of [49 U.S.C. §44807 – Special Authority for Certain Unmanned Aircraft Systems](#). This allows a risk-based case-by-case determination of whether certain UAS may operate safely in the NAS. You can search for granted exemptions [here](#). These exemptions are a type of federal rulemaking, but most petitions are granted as a “summary grant” using a materially similar prior granted petition as justification. The FAA must publish a petition for public comment if granting the exemption would set a precedent. NAAA has commented on over 100 of these petitions, asking the FAA to require a series of safety measures (approved previously by the NAAA Government Relations Committee) as follows:

- Crewed aircraft should always have the right-of-way over UAS.
- Commercially utilized UAS should be certified by FAA as airworthy
- Before UAS operate in areas commonly trafficked by crewed aircraft, such as above farms, they should be equipped with ADS-B In to be able to detect crewed aircraft with ADS-B Out. Ultimately, NAAA believes that UAS should be mandatorily equipped with FAA-certified detect and avoid (DAA) technology that detects crewed aircraft (both cooperative and non-cooperative) and alerts UAS to their position so they can give way to them.
- The above DAA technology should be a prerequisite for Beyond Visual Line of Sight (BVLOS) operations.
- UAS should be equipped with visible strobe lighting, and ideally painted in readily distinguishable colors, such as aviation orange and white, to increase visibility.
- UAS pilots should be held to a standard similar to crewed aviation pilots. This includes requiring a pilot certificate to demonstrate proper knowledge of the NAS, as well as a third-class medical certificate to demonstrate physical capability to operate a UAS.
- Notices to air missions (NOTAMs) should be filed 48 – 72 hours prior to UAS flights.



14 CFR Part 89 – Remote Identification

Effective September 16, 2023, all UAS are required to broadcast timestamped identification, location, altitude and velocity information via Bluetooth/WiFi. On September 12, 2023, the FAA instituted a policy of discretionary enforcement until March 16, 2024 to allow operators to equip and become compliant. Remote Identification (RID) is hailed as the next incremental step toward further integration of UAS in the NAS. It has been further described as a digital license plate and will be helpful to law enforcement and regulators to ensure responsible and safe UAS use. There have been situations where UAS were not operated legally; however, no enforcement action was taken because it could not be determined with certainty who was operating the UAS or where it was operating. NAAA has pushed the FAA to require identification for UAS since before they were first approved for commercial use in 2014.

NAAA's Actions to Promote Safety

NAAA has actively engaged aviation stakeholders over its concerns with UAS integration into the NAS since before their first commercial use in 2014. In short, UAS are incredibly hard to see for aerial applicators, particularly in the task saturated low-altitude environment they work in. It is paramount, then, that UAS be properly equipped and required to detect and avoid crewed aircraft to prevent loss of life through mid-air collisions. In addition to the many comments to the FAA on proposed UAS airworthiness criteria and petitions for exemption, the Association communicates with, and facilitates communication between, its member operators and pilots, regulators and the public to promote the safety of pilots over all other interests in integrating UAS into the NAS.

For updated information on this issue, and others of importance to the aerial application industry, visit NAAA's website: <https://www.agaviation.org/policy/uas>

UAS Used for Aerial Applications

NAAA believes FAA's integration of UAS into Part 137 Aerial Application Operations must prioritize the safety of crewed aviation above all else, and that EPA ensures UAS are held to the same or comparable application standards for efficacy and drift as crewed aerial applicators. Since their initial introduction into the US market in 2014, heavy interest has driven regulatory change, simplifying the [process to obtain a Part 137 certificate for UAS operations](#).

It is NAAA's position that, while significant strides have been made in terms of UAS airframe and avionics capabilities, there is currently a distinct lack of publicly accessible data on the application characteristics for commercially available UAS equipped for aerial applications. This data is critical, not only in demonstrating application performance/efficacy, but in developing UAS-specific models to assess the risk of drift. Pesticide products must have risk assessments performed in order to be registered, and the drift risk profile of aerial applications is used to determine whether that product may be applied aurally. The Spray Drift Task Force conducted scores of field trials with fixed wing and single rotor aircraft 30 years ago to build this risk profile. UAS travel at lower speeds and may have multi-rotor configurations, so their risk profile may be very different and may merit separate labeling considerations.

For updated information on this issue, and others of importance to the aerial application industry, visit NAAA's website: <https://www.agaviation.org/policy/uas/#part137>



About NAAA

The National Agricultural Aviation Association (NAAA) represents the interests of the 1,560 aerial application industry owner/operators and 2,028 non-operator agricultural pilots throughout the United States licensed as commercial applicators that use aircraft to enhance food, fiber and bio-energy production, protect forestry, and control health-threatening pests. Furthermore, through its affiliation with the National Agricultural Aviation Research & Education Fund (NAAREF), NAAA contributes to research and education programs aimed at enhancing the efficacy and safety of aerial application.

Contact Andrew D. Moore, NAAA’s Chief Executive Officer, at admoore@agaviation.org or (202) 546-5722 with any questions regarding this issue, or any other related to the aerial application industry. Find more information at agaviation.org

Importance of the Aerial Application Industry

Aerial applicators **annually treat:**

- 127 million acres of cropland (28% of the treated commercial cropland nationwide)
- 5.1 million acres of forest land
- 7.9 million acres of pasture and rangeland
- 4.8 million acres for public health and mosquito control

Aerial application is often the **only tool** to:

- Expediently eradicate a pest before it destroys a crop.
- Treat crops on rolling hills or in fields with soil too wet for ground applications.

The aerial application industry represents **\$37 billion in value** to farmers, input suppliers, processors and agricultural transportation and storage industries.

Without the aerial application of pesticides, the US would see annual losses of:

- 1.69 billion bushels of corn
- 199 million bushels of wheat
- 548 million pounds of cotton
- 295 million bushels of soybeans
- 3.33 billion pounds of rice

The total area of cropland needed to replace the yield lost if aerial application was not available for corn, wheat, soybean, cotton, and rice production is **27.4 million acres**, an area roughly the size of Tennessee.

Aerial applicators seed 3.8 million acres of cover crops annually², **sequestering over 2 million tons of CO₂**. According to the EPA this would be the equivalent of removing approximately 412,000 cars with carbon-combustion engines from the roads each year.

12

¹ National Agricultural Aviation Association. May 2019. “2019 NAAA Aerial Application Industry Survey: Operators.” agaviation.org/2019-naaa-operator-survey

² Dharmasena, S. 2020. “How Much is the Aerial Application Industry Worth in the United States?” Research presented at the 2020 Ag Aviation Expo, Savannah, GA. agaviation.org/aat-expo-presentations