



Low-Altitude Obstructions: Towers

Low-altitude, rural Class G airspace is considered by the broader public a space of negligible aviation activity. Due either to lack of awareness or understanding of the unique nature of Part 137 (aerial application) operations, structures are often erected in these spaces without consideration to their impact on the aerial application of crop protection products, and agricultural productivity.

While the Federal Aviation Administration (FAA) requires all structures exceeding 200 feet above ground level (AGL) to be [marked](#) with tower lights or tower paint, the rules vary for structures below that height. Unmarked towers are extremely difficult for aerial applicators to see as they conduct their work at speeds up to 160 mph just 10 feet off the ground, and accidents (too many, fatal) occur every year as a result.

Federal Policy Background

The FAA Modernization and Reform Act of 2012 - §219 directed the FAA to consult with affected industries and carry out a feasibility study for developing a publicly searchable, web-based resource that provides information regarding the height and latitudinal and longitudinal location of guy-wire and free-standing tower obstructions.

The FAA Extension, Safety and Security Act of 2016 - §2110 directed the FAA to issue regulations to require marking (consistent with AC 70/7460-1) for all towers 10 feet or less in diameter and 50-200 feet AGL located in rural/agricultural areas. In addition, the FAA was directed to develop a database to log the location and height for each tower to be used for aviation safety purposes.

To appease the telecommunications industry, the FAA Reauthorization Act of 2018 - §576 amended the 2016 act to allow applicable towers to be either marked *or* logged, however meteorological evaluation towers (METs) must still be marked *and* logged.

After the FAA Reauthorization Act of 2024 - §355, again, directed rulemaking on this matter, FAA issued a Notice of Proposed Rulemaking (NPRM) in December of 2024. This NPRM (Docket ID: FAA-2024-2574), however, only partially addresses the issue. It would require new and existing 50-to-200-foot AGL METs to be geospatially logged in a public database, and only new or altered METs to be marked consistent with AC 70/7460-1.

As written in the NPRM, existing METs would *not* be required to be marked. Critically, it also *does not* contain any logging/marking requirements for materially similar towers which are not METs, such as GPS or telecommunications towers. This would not satisfy §355 of the FAA Reauthorization Act of 2024.

Addressing the Hazard

There were 20 accidents, 10 of which were fatal, involving towers in Part 137 operations between 2010 and 2022.

METs present an especially pronounced risk to aerial applicators. Many are erected only temporarily to test sites for wind farm suitability, and they can be put up in what was a familiar field in a very short period of time. In addition, METs placed within and near operational wind farms can be difficult to spot as an aerial applicator is focused on avoiding other obstacles, sometimes the wind turbines themselves.

The National Transportation Safety Board (NTSB) issued a Safety Alert (SA-016) in 2011 on the hazards of unmarked METs. In 2018, they revised and reissued it urging pilots to be vigilant for unmarked GPS and



telecommunications towers, in addition to METs. The Safety Alert reads, in part, “FAA published AC 70/7460-1L, which recommends the marking of METs and provides marking guidance. However, the NTSB is concerned that the application of the AC is voluntary and, without mandatory application and marking requirements for METs and other kinds of towers less than 200 feet tall, many of these towers will continue to be constructed without notice to the aviation community and will fail to be marked appropriately.”

In 2014, the wrongful death action filed by the family of a California agricultural aviator was settled in the amount of \$6.7 million against a group of defendants representing tower manufacturing, wind energy, land-owning and farming interests for not marking or making aware the location of an unmarked MET to protect the pilot. The settlement establishes a standard of care as to the use of METs for wind prospecting in agricultural areas.



Figure 1 - A photograph taken from a pilot flying a low-altitude ag aircraft, highlights the difficulty ag aviators have in seeing unmarked towers. The only clue to trigger further observation to search for a tower is the unmanicured soil surrounding the tower’s footprint. Once the crop grows the footprint because harder to observe and sometimes farmers plant crops within the footprint making them more difficult to observe. Logging data should include the guy-wire footprint area surrounding the crop.

This safety issue is also being addressed at the state level; tower marking has been mandated in 15 states: CA, CO, ID, KS, MO, MS, MT, NC, ND, NE, OK, SD, TX, WA and WY.

Advocacy by NAAA

NAAA has actively engaged aviation stakeholders over its concerns with unmarked towers for decades. In short, unmarked towers are incredibly hard to see for aerial applicators, particularly in the task saturated low-altitude environment they work in. As demand for wind energy and higher frequency telecommunication networks fuels further proliferation of unmarked towers, the risk only increases. It is paramount, then, that *all* towers be properly marked and logged to prevent loss of life through collisions with them.

NAAA conducted a nationwide grassroots campaign, encouraging aerial applicators to provide comment on the December 2024 NPRM. Specifically, comments were sought on the absence of a requirement to mark existing METs and the absence of any logging/marketing requirements for other towers which are not METs.

NAAA’s comments on the 2024 NPRM were echoed by the NTSB in their comments which stated, in-part, “we are concerned that subsequent marking of meteorological towers [...] would only apply to towers constructed or altered after the effective date of the NPRM. [...] The intent of Safety Recommendation A-13-16 is to apply to all towers, including existing towers. Therefore, we encourage the FAA to address this concern in the final rule.”

NAAA will continue to advocate for the logging and marking of all towers which present a hazard to low-altitude aviation operations; as such it will urge Congress that the FAA promulgate and enforce the statutory dictate to properly mark and log towers per the enacted laws referenced above.

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



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.

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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