



Fact Sheet on the Danger of Towers to Low-Altitude Aviators

Importance of the Aerial Application Industry

- Aerial applicators treat 127 million acres of cropland per year; 28% of the treated commercial cropland nationwide. In addition to the cropland acres, aerial applicators annually apply to 5.1 million acres of forest land, 7.9 million acres of pasture and rangeland, and 4.8 million acres for mosquito control and other public health concerns. Aerial applicators also fight fires and protect the environment from invasive species.
- Aerial application is often the only application method available to farmers to eradicate a pest before it destroys their crop. Aerial application is also the only method to treat crops that ground applicators can't get to, such as crops on rolling hills or crops after a rain, when the ground is too wet for ground applications. Furthermore, aerial application does not damage a standing crop and reduce yield like ground application does¹.
- The aerial application industry is directly responsible for the production of 1.69 billion bushels of corn, 199 million bushels of wheat, 548 million pounds of cotton, 295 million bushels of soybean, and 3.33 billion pounds of rice annually that would be lost every year without the aerial application of pesticides. The value of the aerial application industry to farmers, input suppliers, processors, and agricultural transportation and storage industries for corn, wheat, cotton, soybean, and rice production in the U.S. is estimated to be about \$37 billion^{2,3}.
- The aerial application of crop protection products results in greater harvest yields of crops. This in turn results in less land being used for agricultural production, preserving more wetlands for natural water filtration, forest ecosystems for carbon sequestration and habitat for threatened and endangered species. 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 Tennessee².
- Aerial applicators seed 3.8 million acres of cover crops annually², helping to sequester 1.9 million metric tons of CO₂ equivalent every year. According to the EPA this would be the equivalent of removing approximately 412,000 cars with carbon-combustion engines from the roads each year.

Tower History

- Unmarked towers are extremely difficult for aerial applicators to see, as their work is conducted while flying at speeds up to 160 mph just 10 feet off the ground.
- From 2008 – 2018, there were 22 agricultural aviation accidents from collisions with METs, communication towers, towers supporting powerlines and wind turbines resulting in nine fatalities. For all of general aviation, there were 40 tower related accidents and incidents resulting in 36 fatalities over the same 11-year period.
- From 2010 through 2022 there were 20 part 137 accidents involving towers and sadly 10 of those resulted in fatalities.
- In 2013, the National Transportation Safety Board recommended guidance for marking certain towers below 200 ft.
 - These recommendations included creating and maintaining a database for the required registration of certain towers and a requirement to mark and light (where feasible) certain towers.
- In 2014, a milestone settlement was reached on a wrongful death action filed by the family of Steve Allen, an agricultural aviator who was tragically killed by an unmarked tower. The settlement awarded \$6.7 million to

¹ Hanna, S., S. Conley, J. Santini, and G. Shaner. 2007. "Managing Fungicide Applications in Soybean." Purdue University Extension Soybean Production Systems SPS-103-W. <https://www.extension.purdue.edu/extmedia/sps/sps-103-w.pdf>

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. <https://www.agaviation.org/2020aatresearchpapers>

³ National Agricultural Aviation Association. May 2019. "2019 NAAA Aerial Application Industry Survey: Operators." <https://www.agaviation.org/Files/Comments/NAAA%202019%20Operator%20Survey.pdf>

Fact Sheet on the Danger Low-Level Obstacles Pose to the Aerial Application Industry

the aviator's family, which was to be paid by the tower manufacturer, landowner, farmer, and other responsible parties for not marking or making known the location of the tower.

- Tower marking has also been mandated in 15 states including Kansas, North Dakota, Idaho, Missouri, Mississippi, California, Colorado, Montana, Nebraska, North Carolina, Oklahoma, South Dakota, Texas, Washington, and Wyoming.

Latest Tower Developments

- The FAA Extension, Safety, and Security Act of 2016 required towers between 50 and 200 feet tall and ten feet in diameter in rural areas to be both marked and logged into a database accessible to aerial applicators.
- To accommodate the telecommunications industry, the 2018 FAA Reauthorization required only the marking or logging of these towers, but not both. Meteorological Evaluation Towers or METs must still both be marked and logged.
- In November 2018, shortly after the 2018 FAA Reauthorization was passed, the NTSB issued newly revised Safety Alert SA-016 titled "The Hazards of Unmarked Towers," urging pilots to be vigilant for unmarked meteorological evaluation towers (METs) and other unmarked towers such as GPS functionality and telecommunications towers.
 - The SA 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."
- The number of wind-energy, meteorological evaluation towers and communication towers (wireless and broad-band) is expected to grow significantly in the next decade and beyond, thereby exacerbating the risks for aerial applicators. In 2000 there were 60,000 towers for wireless in the U.S. Today there are 150,000; by 2025 200,000 are expected.
- Additionally, the guywires supporting towers need to be marked as well; In the summer of 2018 alone, two ag pilots were killed from crashing into unmarked guy-wires.
- Wind farms and towers near airports can also interfere with radar services and require atypical takeoff and landing procedures. The net results of these effects can make these airports less safe, especially for pilots unfamiliar with the area.

Bottom Line

- Unmarked towers between 50 and 200 feet with a small diameter are dangerous for aviators and have resulted in fatal injury.
- Congress must ensure the FAA follows through with the 2018 statutory requirements for towers between 50-200 feet especially considering the marked growth for these type of towers over the next few years and the danger they pose to low-flying aircraft. After many years of delays the FAA was expected to issue a NPRM on this in April 2020. However, this did not occur, and the delay continues into January of 2023. NAAA is pursuing action through legislative representatives to put pressure on the FAA to act on this important safety issue. House Transportation & Infrastructure Committee Ranking Member Sam Graves (R-MO) is pressuring the FAA to expedite their completion of the tower marking/logging rule. In a September 28th, 2021, letter to the FAA, Representative Graves reminded the FAA in no uncertain terms that the FAA is "blatantly ignoring this congressionally directed and long-overdue safety-critical rulemaking."
- For the safety of low-altitude pilots, per the NTSB's recommendation, Congress should include marking requirements for any type of tower—meteorological, communications, wind-energy, etc., especially if any federal infrastructure subsidies were granted to tower manufacturers.

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.

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Updated January 2023