



Fact Sheet on the Dangerous Effects Towers Pose to the Aerial Application Industry

Construction of towers on or near agricultural cropland throughout the U.S. is an area of concern to the aerial application industry. The number of telecommunications, wind energy and other towers erected in agricultural regions throughout the country has increased significantly over the past several years and the demand for these towers will only continue as wind energy development is projected to grow considerably across the country. These vertical obstacles are a major safety concern to aerial applicators and can significantly hamper their access to cropland, in turn detrimentally affecting agricultural production.

Safety is NAAA's and the aerial application industry's primary concern with wind energy turbines, meteorological testing towers, RTK (Real Time Kinetics) towers, "flying" wind turbines and other obstructions because they are not properly marked, lighted or displaying other cautionary devices in or near agricultural the areas where aerial applicators are spraying. Sadly, in the last 10 years, 5.6 percent of aerial application fatalities were the result of collisions with towers and 16.9 percent were the result of collisions with wires. Wire accidents are included in these statistics since the wind developments must install wires to connect the output of the turbines to the electrical power grid. These collisions are almost always fatal. Wind energy towers pose the greatest safety and accessibility threats to agricultural aviators not only because of their size, but also because they are expected to become more widespread in the coming years. These towers are often clustered closely together, creating ominous obstacles for pilots.

A more recent potential hazard in some parts of the country is the erection of RTK towers, for use with farm and construction equipment auto-steering. These obstacles can be deployed at any location in a matter of hours catching a low-level pilot off guard. The RTK towers are similar to METs in their difficulty to see, but usually measure only 105 feet in height and are supported with guy wires. Recent communication with one of the primary owners of these towers in the upper Midwest told a representative of the NAAA they did not intend to mark or light their towers because regulations did not require it. Safety dictates the towers should be marked for maximum visibility to low level aviation.

The newest potential obstacle and concern for aerial applicators is the development of "flying" wind turbines. This technology uses a "tethered kite" with the tether being the electrical conduit from the generator to the ground. This poses great concern because of the "flying" turbine's capability to literally lift from the ground as wind speeds allocate. NAAA submitted our concerns to the FAA in an answer filed in response to their "Notice of policy and request for information" on potential effects of Airborne Wind Energy Systems (AWES) to the airspace.

Without sensible placement and proper marking of towers in agricultural areas, farmers may be at risk of losing important aerial application services performed on their cropland. Towers erected directly in the flight path of aerial applicators' landing strips and/or hampering the accessibility of treatable cropland could literally shut down aerial application operations. This would detrimentally affect, in some instances, the only method farmers have available to them when the time comes to apply seeds, fertilizers and crop protection chemicals, necessary to foster crop growth. Aircraft help in treating wet fields when crop foliage is too dense to allow ground rigs to enter. Aerial application also results in no soil compaction. An aircraft is by far the most rapid form of application.

NAAA is concerned that as the demand for communication, wind energy and other towers increases—as projected—farmers will enter into leasing agreements with tower construction companies to erect these obstacles on their land without taking into account the safety and agricultural production issues of the aerial applicator. In 2010, NAAA launched a special towers section of its website, www.agaviation.org/towers.htm, which provides tools to educate the public on the dangers of unmarked testing towers to pilots of low-flying aircraft; and addresses the safety and accessibility concerns associated with wind turbines. The tools illustrate how poor tower marking and improper wind turbine siting put pilots' lives and farmers' livelihood at risk.

NAAA advocates the erection of these towers should be away from prime agricultural land. It has urged federal agencies that help to subsidize and promote wind energy, such as the USDA and DoE, to help in its campaign to inform the public that improper placement of wind towers may pose significant dangers to low-level aviation operations and may negatively affect agricultural production. NAAA worked to draft language within the FAA Reauthorization Bill to establish a study on the feasibility of developing a central tower database where all tower locations could be stored and searched before low-level flight activity. While variations of such legislation is something NAAA has sought in earlier Congresses, during the 112th Congress the Association has been working closely with the office of Congressman Randy Neugebauer's (R-TX) in drafting the current language. NAAA was pleased Representative Neugebauer's amendment was included in H.R. 658, the FAA Reauthorization Bill that the House of Representatives passed at the

(See reverse side for more information)

beginning of April. We are now working with the Senate and House to see that this language is included in the conference version of the FAA Reauthorization bill and voted into public law.

NAAA has established the following safety guidelines that it requests are met before constructing towers (including wind turbines and the associated meteorological towers) so they will pose a reduced risk for aerial applicators:

NAAA Tower Safety Guidelines

- Towers should not be erected on prime agricultural land in a manner that may inhibit aerial applicators' access and ability to treat the land.
- Petitions for constructing towers should be provided to the local government zoning authority, landowners and/or farmers and aerial applicators within at least a one-half mile radius of a proposed tower, as well as the state or regional agricultural aviation association, no later than 30 days before tower construction permits are considered for approval. This information should include the proposed location of:
 - each turbine generator
 - each meteorological tower including the height to be associated with the wind farm
 - the distribution sub-station and any connecting power lines from the generators
 - power lines connecting the sub-station to the existing electrical power grid.
- If a proposed tower is to be constructed on prime agricultural land or in the vicinity of such land in a way that may inhibit an aerial applicator's access, person(s) that own and/or farm such land should be made aware by the entity responsible for that tower that it may result in the land no longer being accessible to aerial applicators, and in the event of a pest outbreak or plant disease a crop on such land may be put in jeopardy of not being treated.
- In the event that a proposed tower is constructed on prime agricultural land or in the vicinity of such land, towers should be freestanding and without guy wires. Furthermore, towers should be well lit and properly marked so they are clearly visible to aerial applicators.
- Towers erected with guy wires, including meteorological testing towers, should be marked with aviation orange / white stripes with strobe lighting with four high-visibility cable balls on the outer guy wires (one on each at 37m [approximately half way up the tower] with a diameter of 53 cm). In addition, these towers should be equipped with 16 foot high-visibility sleeves, one per each anchor on each of the outer guy wires. These marking mechanisms must be maintained frequently to ensure their visibility and attachment to the wires.
- In the event that a number of proposed towers are to be constructed on prime agricultural land or in the vicinity of such land, the towers should be constructed in a linear pattern, rather than a random, clustered pattern that would make an area completely inaccessible by air.
- During construction and upon completion, the operator of the wind farm should provide detailed field layout information to the local government zoning authority and make this information available to those working in close proximity to that area.

In late June, the FAA released its long-awaited guidance for marking MET towers less than 200 feet above ground level (AGL) in remote and rural areas. The Agency concurred with almost all of NAAA's recommendations, except for those requesting lighting on the tower and the creation of a national database. The FAA has indicated the Advisory Circular referenced, AC No. 70/7460-1, will be revised within the next six months. Additionally, while the FAA did not recommend establishing a national tower database, NAAA continues to pursue a Congressional mandate within the FAA Reauthorization bill that would conduct a study of what would be required to feasibly have a database cataloging all guy-wired and free-standing tower locations. NAAA urges you to support Congressman Neugebauer's efforts requiring such a study to be included in the House FAA Reauthorization bill.

NAAA represents over 1,700 members in 46 states. NAAA member operator/pilots are licensed as commercial applicators that use aircraft to enhance food, fiber and bio-fuel 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.

For more information please contact Andrew Moore, NAAA Executive Director, or Danna Kelemen, Manager of Government & Public Relations at 202-546-5722.

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