



Meteorological Evaluation Towers (METs) and their Impacts on Aviation

For more information on METs and other aviation sustainability issues, please see 2015 WRP document titled "Airspace Sustainability Overview: Brief Overview for Policy Makers and Planners of Aviation Sustainability Concerns, Aviation Coordination Best Practices and Aviation Resources"

Issue:

- Meteorological Evaluation Towers (METs) are being built more frequently and at an increasing height. Many towers are built lower than 200 feet Above Ground Level (AGL) to avoid the Federal Aviation Administration (FAA) rule requiring coordination of any structure 200 feet or taller. In many areas such development does not require notification, which may result in a pilot first learning of the new tower while flying. Recent Federal law, signed July 2016, mandates the FAA within a year to develop regulations requiring marking of towers between 50 and 200 feet AGL. Additionally, this law directs the FAA to maintain a database of the location and height of covered towers. This new law directly addresses marking of METs that previously were of concern to aviation users. WRP Partners are encouraged to monitor the new FAA regulations and determine where and if appropriate additional disclosure and notification of METs would promote aviation safety.

Background:

- METs measure various meteorological conditions for many different purposes. Developers of wind energy farms need to determine the suitability of a particular site, which they do by constructing and maintaining a MET to take readings over a period of months or years. Increased interest in the development of wind energy has made METs more prominent.
- Wind energy developers have an interest in ensuring their tower locations are not known to competitors, and can construct or place METs rapidly due to their portability.
- The METs can readily be moved from one site and erected in another virtually overnight, without warning to aviators. Several fatal accidents have occurred as a result of pilots colliding with unmarked, undisclosed and unlighted MET structures.
- At the present time, METs that are 200 feet AGL or taller must be reported to the FAA, which both requires markings and disclosure to the public so that aviators are not surprised by the existence of a new tower. Developers have found that METs less than 200 feet AGL in height serve their purposes and avoid FAA requirements.
- In the absence of a federal regulation to require MET developers to submit an FAA Form 7460-1, Notice of Proposed Construction to the FAA to determine if the structure is hazardous to air navigation, it became necessary that States develop laws to address those towers not covered by the FAA requirements in order to provide a safe flying environment for both the military and the general flying public, either requiring marking or both requiring marking and registration with a State office.

- In 2011, the FAA published its recommendation that owners and operators of METs voluntarily mark their towers¹ as provided in FAA Advisory Circular (AC) 70/7460-1K "Obstruction Marking and Lighting."² However, the FAA rejected the idea of lighting the towers as many are located in remote locations far from any power source. Note: FAA Engineering Brief No. 76 Using Solar Power for Airport Obstruction Lighting dated November 1, 2008 does provide guidance to use solar power for obstruction lights.
- In March 2013, taking the FAA's "voluntary" marking and rejection of a national database into account, the National Transportation Safety Board (NTSB) issued a Safety Recommendation directed at the then 46 States (other than Montana, Nebraska, North Dakota and Wyoming, which already conformed to the recommendation at the time,) four territories and the District of Columbia. The NTSB recommended that States and territories: *"Enact legislation requiring that meteorological evaluation towers erected in your State or territory are marked and registered in a directory."*³ Many States (among them California, Colorado, Idaho, Kansas, Mississippi, Missouri, Montana, Nebraska, North Dakota, Oklahoma, South Dakota, Texas, Washington, and Wyoming) and cities throughout the nation have identified the aviation safety issues of placement of METs without notification and disclosure and have taken proactive steps to address the issue in State statute or city code. Additionally, the National Agricultural Aviation Association (the NAAA,) the member-pilots of which frequently face new MET structures, has made some recommendations regarding the specific design of the towers.⁴
- In December 2015, the FAA cancelled AC 70/7460-1K and superseded it with AC70/7460-1L, also entitled "Obstruction Marking and Lighting."⁵ This updated several provisions, including changing the recommendations for how voluntary marking of structures under 200 feet should be done, intended to make these structures more visible. In addition, the new Advisory Circular prescribes guidelines for the marking of wind turbines and introduces new lighting and marking standards to reduce the impact of structures on migratory bird populations.
- On July 15, 2016, the President signed into law the FAA Extension, Safety and Security Act of 2016⁶ (the Act.) Section 2110, "Tower Markings," directly addresses the issue of towers between 50 and 200 feet above ground level.

What the 2016 FAA "Tower Markings" Section Does

- Defines "covered towers" as those that are
 - Self-supporting or supported by guy wires and ground anchors

¹ Federal Register, Vol. 76. No. 122, Pages 36983-36986, <http://www.gpo.gov/fdsys/pkg/FR-2011-06-24/pdf/2011-15746.pdf>

² http://www.faa.gov/documentLibrary/media/Advisory_Circular/AC%2070%207460-1K.pdf

³ [NTSB Safety Recommendation A-13-21](#). Eight States (Alaska, Hawaii, Iowa, Kentucky, Maryland, Michigan, Utah, Washington) have indicated to the FAA that they have initiated efforts in response to this recommendation. See [NTSB Special Investigation Report on the Safety of Agricultural Aircraft Operations](#) May 2014

⁴ [NAAA Fact Sheet on the Dangerous Effects Low-Level Obstacles Pose to the Aerial Application Industry](#), updated October 2014

⁵ http://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_70_7460-1L_.pdf

⁶ Pub. Law 114-190.

- Are 10 feet or less in diameter at their base
 - At their highest point are at least 50 but less than 200 feet above ground level
 - Are equipped with antennas, sensors, cameras, meteorological instruments or other equipment and
 - Is either located outside an incorporated city or town or on undeveloped or agricultural land.
- Excludes from covered towers those adjacent to a house, barn, electric utility station or other building, within a farmstead, electric utility transmission or distribution lines, wind towers and street lights.
 - Requires the FAA to issue regulations within one year requiring the marking of covered towers consistent with the December 2015 Advisory Circular.
 - Applies the regulations to all towers constructed after the regulation takes effect and to all pre-existing towers one year after the regulations take effect.
 - Requires the FAA to maintain a database of the location and height of covered towers, keeping it current to the extent practicable, and allowing users to access the database for aviation safety purposes only in order to maintain the proprietary nature of the information.

Proposed Legislative Solution For State, City, County and Town Consideration:

Given the scope of the Act, States may wish to consider legislation to either conform their laws to the FAA regulations or to address any gaps they feel exist. It should first be noted that the Act does not contain specific pre-emptive language; that is, it does not appear that the Act would prevent state and local governments from enacting or maintaining their own regulatory schemes so long as they are not inconsistent with the Act and the FAA's rules. Second, the FAA rules will not be effective for perhaps more than a year, as the agency has until July 15, 2017 to issue the regulations, and the regulations will not take effect until sometime after issuance, so local statutes or rules may need to cover that period of time. Third, the Act does not cover certain structures (heights under 50 feet, diameters over 10 feet, towers in certain locations including those in incorporated cities and towns) that local jurisdictions may want to address. Also, some jurisdictions may find the FAA database adequate, but others may want to require notice to a local permitting body as well.

Although the Act is a big step in the right direction for aviation safety, States, counties, cities and towns may continue to find it useful to enhance aviation safety by the enactment of local laws consistent with the FAA rules on tower markings.