

TESTIMONY BEFORE  
HOUSE COMMITTEE ON ENERGY, UTILITIES AND TELECOMMUNICATIONS

REGARDING HOUSE BILL 2702  
RELATING TO A REGISTRATION REQUIREMENT FOR  
METEOROLOGICAL EVALUATION TOWERS

FEBRUARY 14, 2017

Mr. Chairman and Committee Members:

Good morning. I am Barbara Rankin, Chief Counsel of the Kansas Department of Transportation (KDOT), and am here today to provide testimony in support of HB 2702.

At the outset, I believe some background on this issue would be helpful. In 2011 the National Transportation Safety Board (NTSB) issued a Safety Alert (Attachment 1) warning pilots of low-flying aircraft about the dangers associated with unmarked meteorological evaluation towers (METs). For purposes of the NTSB's Alert and the bill before you today, METs are towers of 50 to 200 feet in height which have instruments mounted on them to record wind information. Numerous fatality accidents, including several involving agricultural applicators, had resulted from collisions with unmarked METs. Based on this Safety Alert, a bill was passed by the Kansas legislature in 2011 requiring the painting of the top 1/3 of a tower with alternating bands of orange and white, and marker balls and safety sleeves placed on guy wires. That bill was codified in K.S.A. 66-1281.

The MET "problem" results somewhat from the fact that towers of 200 feet in height (AGL) require notification to the FAA. Many towers erected to gather wind information are under the 200-foot threshold for notification to the FAA.

In 2013, the NTSB sent the governors of each state Safety Recommendation A-13-21 which noted additional accidents involving METs (Attachment 2). The issue, as stated by NTSB, is that the speed at which METs can be erected is such that "in just a matter of hours, the navigable airspace for low-flying operations can change without notice." In the Recommendation, the NTSB noted that ten states, including Kansas, had adopted legislation requiring the marking of towers of 50 to 200 feet in height. However, the 2013 Recommendation directed states to take the further step of also requiring registration of MET locations. The Recommendation stated: "Maintaining a directory of MET locations provides pilots with useful information and an added layer of protection in instances where environmental conditions may hamper visibility, such as at night. [ ] The NTSB is concerned that without measures to enhance their conspicuity and record their locations, METs pose a continuing hazard to low-altitude aviation operations." The Recommendation specified that each state should "Enact legislation requiring that meteorological evaluation towers erected in your state are marked and registered in a directory." (Emphasis added.)

It's unknown whether KDOT received the 2013 recommendation sent to the Governor's Office. However, in 2014 KDOT's Division of Aviation began tracking FAA notifications of towers in excess of 200 feet as part of its airspace awareness initiative and published locations of those on its Aviation Portal for the benefit of pilots operating in the state. Unfortunately, without a registration requirement, there isn't a method for KDOT to be notified of locations of METs that are under the FAA's 200-foot threshold.

Which brings us to where we are today. In August 2017, Governor Brownback received a follow-up letter from the NTSB requesting a report of the actions taken by Kansas in response to the 2013 Recommendation. (Attachment 3). This letter was forwarded to KDOT for a response. As mentioned before, Kansas enacted legislation in 2011 to require marking of METs. However, the agency realized the Recommendation to enact legislation for a registration and directory requirement had not been acted upon. Thus, KDOT is proposing HB 2702 to provide the legislature with the opportunity to take action in response to the NTSB's recommendation.

We would also advise the committee the FAA Authorization Act of 2017 included proposed language for towers over 50 feet that have an above-ground base of ten feet or less in diameter to be marked or registered in a directory. That proposal applies to a wider array of towers than HB 2702 will apply to. We understand it has not progressed beyond assignment to the Commerce, Science and Transportation Committee, and stakeholders in the telecommunications industry are working to narrow that language and/or limit the marking and registration requirement for cell towers and other telecommunication structures that may be under 200 feet in height. We want to point out that the language of HB 2702 was intentionally drafted narrowly to include only towers mounted with anemometer equipment in order to comply with, but not go beyond, the NTSB Recommendation. An FAA proposal for registration of towers 50 to 200 feet in height may be enacted in some form at a later date. However, in the meantime, the NTSB maintains its position that states should move forward with enacting legislation to require registration of METs, rather than to wait for a federal solution.

I believe the Kansas Agriculture Aviation Association has provided written testimony in support of this bill, and some of their members may provide testimony with regard to safety benefits of a directory of MET locations of 50 to 200 feet in height. Based on testimony offered in 2011, METs are a concern for not only agricultural aerial applicators, but also negatively affect emergency medical flights, aerial firefighters, pipeline patrol planes and other low-flying operations.

If this bill is enacted into law, KDOT's Division of Aviation is willing and able to expand its current database to include the location of towers under 200 feet in height.

Thank you for your attention. KDOT's current Director of Aviation, Bob Brock, is also here today. We are happy to answer any questions the committee has at this time.



# NTSB SAFETY ALERT

National Transportation Safety Board

## ★ Meteorological Evaluation Towers

### *Pilots urged to be vigilant for Meteorological Evaluation Towers*

#### **The Problem**

- Meteorological Evaluation Towers (METs) are used to measure wind speed and direction during the development of wind energy conversion facilities. METs are made from galvanized tubing (or other galvanized structure) with a diameter of 6 to 8 inches and are secured with guy wires that connect at multiple heights on the MET and anchor on the ground.
- Many METs fall just below the 200-foot Federal Aviation Administration (FAA) threshold for obstruction markings. They can also be erected quickly and without notice to the local aviation community, depending upon their location.
- Because of their size and color, pilots have reported difficulty seeing METs from the air. Therefore, METs could interfere with low-flying aircraft operations, including those involving helicopter emergency medical services, law enforcement, animal damage control, fish and wildlife, agriculture, and aerial fire suppression.
- The NTSB has investigated several fatal accidents involving aircraft collisions with METs:
  - On January 10, 2011, a Rockwell International S-2R, N4977X, collided with a MET during an aerial application in Oakley, California.
  - On May 19, 2005, an Air Tractor AT-602, N9017Z, collided with a MET that was erected 15 days before the accident in Ralls, Texas.
  - On December 15, 2003, an Erickson SHA Glasair, N434SW, collided with a MET near Vansycle, Oregon.
- While Wyoming and South Dakota have implemented requirements for METs to improve the safety of low-flying aircraft, not all states have such requirements for METs. (Wyoming maintains an online database of METs and requires all METs to be registered and marked so that they are visible from a distance of 2,000 feet. South Dakota requires that METs be marked.)

- The FAA has issued a notice of proposed rulemaking (docket number FAA-2010-1326) to update Advisory Circular (AC) 70/7460-1K to recommend the marking of METs. However, the NTSB is concerned that the application of the AC is voluntary, and, without mandatory application and marking requirements for METs, many METs will still be constructed without notice to the aviation community and will fail to be marked appropriately.

### ***What can pilots do to avoid METs?***

- Maintain vigilance for METs when conducting low-altitude flights.
- If you locate a MET in your area, let other pilots know about the location of the MET. FAA Safety Team members are also exploring methods of notifying pilots of the location and height of METs and are working to educate MET owners, builders, and communities on the flight-safety issues presented by METs.
- Encourage the marking of METs in your area.

### ***Need more information?***

NTSB accident database for information on MET accidents: <http://www.nts.gov/ntsb/query.asp>

FAA AC 70/7460-1K:

[http://rgl.faa.gov/Regulatory\\_and\\_Guidance\\_Library/rgAdvisoryCircular.nsf/0/b993dcd486257251005c4e21/\\$FILE/AC70\\_7460\\_1K.pdf](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/0/b993dcd486257251005c4e21/$FILE/AC70_7460_1K.pdf)

Proposed revisions to FAA AC 70/7460-1: <http://www.gpo.gov/fdsys/pkg/FR-2011-01-05/pdf/2010-33310.pdf>

National Agricultural Aviation Association: [www.aqaviation.org/content/lets-be-fair-about-sharing-air](http://www.aqaviation.org/content/lets-be-fair-about-sharing-air)

South Dakota House Bill 1155: <http://legis.state.sd.us/sessions/2010/Bill.aspx?Bill=1155>

Wyoming database of METs: <http://af.state.wy.us/METTowers/default.aspx>

SA-016 March 2011



## National Transportation Safety Board

Washington, DC 20594

### Safety Recommendation

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**Date:** May 15, 2013

**In reply refer to:** A-13-21

46 US states, 4 territories and DC  
(See attached distribution list)

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The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant accidents in other modes of transportation—railroad, highway, marine, and pipeline. The NTSB determines the probable cause of the accidents and issues safety recommendations aimed at preventing future accidents. In addition, the NTSB carries out special studies concerning transportation safety and coordinates the resources of the federal government and other organizations to provide assistance to victims and their family members affected by major transportation disasters. We are providing the following information to urge you to take action on the safety recommendation issued in this letter.

This recommendation addresses the need to mitigate risks to low-altitude aviation operations by requiring that meteorological evaluation towers (MET)<sup>1</sup> be marked and registered in a directory. It is derived from the NTSB's investigations of three accidents in which airplanes inadvertently collided with METs, fatally injuring four people. As a result of these investigations, the NTSB has issued six safety recommendations, one of which is addressed to [state or territory]. Information supporting this recommendation is discussed below.

#### Accidents

On January 10, 2011, about 1057 Pacific standard time, the left wing of a Rockwell International S-2R, N4977X, impacted an unmarked and unlighted MET during an aerial seed application flight on Webb Tract Island, Oakley, California.<sup>2</sup> Witnesses reported that they did not see the airplane perform any evasive maneuvers before the impact, indicating that the pilot did not see the obstruction. The pilot was fatally injured, and the airplane sustained substantial damage. Visual meteorological conditions prevailed and no flight plan was filed for the 14 *Code*

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<sup>1</sup> METs are temporary structures used to measure wind speed and direction during the development of wind energy conversion facilities. METs are made from galvanized tubing (or other galvanized structure) with a diameter of 6 to 8 inches and are secured with guy wires that connect at multiple heights on the MET and anchor on the ground.

<sup>2</sup> More information about this accident, NTSB case number WPR11LA094, is available at <http://www.nts.gov/aviationquery/index.aspx>.

of *Federal Regulations* (CFR) Part 137 flight. The NTSB's investigation found that the county permit<sup>3</sup> for the MET had expired more than a year before the accident, but the MET had not been removed as stipulated by the permit's conditions of approval.

On May 19, 2005, about 0944 central daylight time, a turbine-powered Air Tractor AT-602 agricultural airplane, N9017Z, registered to and operated by McAdoo Flying Service, Inc., of Crosbyton, Texas, impacted terrain following an in-flight collision with an unmarked and unlighted MET<sup>4</sup> while maneuvering near Ralls, Texas.<sup>5</sup> The commercial pilot, the sole occupant of the airplane, was fatally injured, and the airplane was destroyed. Visual meteorological conditions prevailed throughout the area and a flight plan was not filed for the 14 CFR Part 137 aerial application flight. The local flight originated from Crosbyton Airport, near Crosbyton, Texas.

On December 15, 2003, about 1416 Pacific standard time, an Erickson SHA Glasair TD homebuilt aircraft, N434SW, collided with an unmarked and unlighted MET and its wires during an unknown phase of operation about 1 nautical mile north of Vansycle, Oregon.<sup>6</sup> The pilot and passenger sustained fatal injuries, and the airplane was destroyed. Visual meteorological conditions prevailed and a flight plan was not filed. The personal flight originated from Yakima, Washington, about 1345, and its destination was reported to be Walla Walla, Washington.

## Discussion

METs can be erected quickly and, depending on their location, without notice to the local aviation community. In March 2011, the NTSB issued a safety alert<sup>7</sup> about METs, noting that the speed with which they can be erected is an important aspect of this safety issue—in just a matter of hours, the navigable airspace for low-flying operations can change without notice. In addition, because their height is typically just under the 200-feet-above-ground-level (AGL) threshold that requires Federal Aviation Administration (FAA) notification,<sup>8</sup> including a marking and lighting plan, METs are often erected without markings and lighting. Because of these factors, pilots have reported difficulty seeing METs from the air (the following figure shows an example MET), which has led to accidents.

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<sup>3</sup> The permit for the MET was issued by Contra Costa County, which specified that the paint colors for the MET blend in with the surroundings and “have a reflectivity less than 55%.”

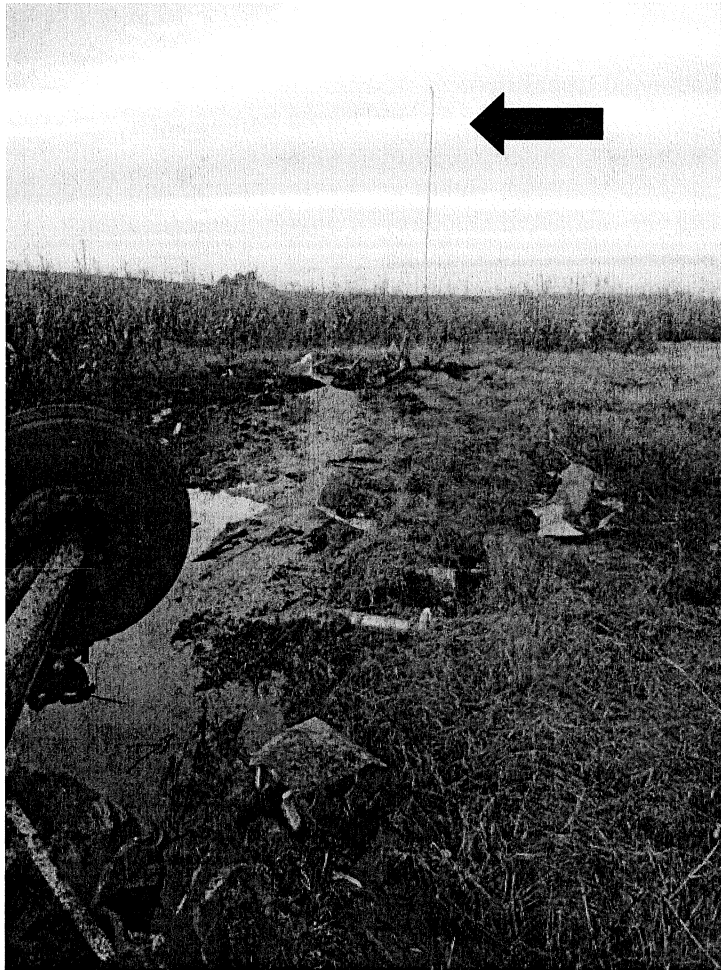
<sup>4</sup> The original accident report referred to the MET as an antenna tower.

<sup>5</sup> More information about this accident, NTSB case number DFW05LA126, is available at <http://www.nts.gov/aviationquery/index.aspx>.

<sup>6</sup> More information about this accident, NTSB case number SEA04LA027, is available at <http://www.nts.gov/aviationquery/index.aspx>.

<sup>7</sup> NTSB Safety Alert SA-016 highlights the dangers of METs and provides links to resources where pilots can find additional information; it is available at [http://www.nts.gov/doclib/safetyalerts/SA\\_016.pdf](http://www.nts.gov/doclib/safetyalerts/SA_016.pdf).

<sup>8</sup> Title 14 CFR 77.9, “Construction or alteration requiring notice” states, in part, that “If requested by the FAA, or if you propose any of the following types of construction or alteration, you must file notice with the FAA of: (a) Any construction or alteration that is more than 200 ft. AGL at its site.”



**Figure.** A photograph showing a MET (indicated by the black arrow), as seen from an accident site (NTSB case number WPR11LA094).

Currently, it is unknown how many METs are erected in the United States. Unless notice is required by other provisions in 14 CFR Part 77,<sup>9</sup> the FAA does not conduct an aeronautical study of any structure less than 200 feet AGL at its site. On January 5, 2011, acknowledging that METs often fall outside of FAA regulations governing tall structures and their impact on navigable airspace, the FAA published a notice seeking comments on a proposed revision to Advisory Circular (AC) 70/7460-1, "Obstruction Marking and Lighting," that is intended to establish "a uniform and consistent scheme for voluntarily marking" METs less than 200 feet AGL (76 *Federal Register* 490). In June 2011, the FAA published a policy statement announcing its approval of the recommended guidance (76 *Federal Register* 36983). According to the FAA, no further action on MET requirements is presently being considered. The NTSB is recommending in a separate letter that the FAA amend Part 77 to require marking and registration of all METs and create a nationwide registry.

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<sup>9</sup> In addition to height considerations, section 77.9 requires that notice for proposed structures be filed with the FAA based on proximity to an airport, location, and frequencies emitted from the structure.

In the absence of a federal requirement concerning METs, 10 states have taken action to implement requirements for METs at the local level. All of these states have enacted or initiated legislation requiring that wind measurement towers 50 feet AGL and taller be marked. Specifically, Idaho, Kansas, Mississippi, and South Dakota require that METs be clearly marked, and California and Missouri have proposed similar legislation.<sup>10</sup> In addition to requiring that METs be marked, four states—Montana, Nebraska, North Dakota, and Wyoming—also require that all METs in these states be registered in a directory noting their locations.

The NTSB is encouraged by the state laws passed and pending on this safety issue, particularly those that require both MET marking and registration. Maintaining a directory of MET locations provides pilots with useful information and an added layer of protection in instances where environmental conditions may hamper visibility, such as at night. As the wind energy industry expands,<sup>11</sup> the deployment of METs will also increase. The NTSB is concerned that, without measures to enhance their conspicuity and record their locations, METs pose a continuing hazard to low-altitude aviation operations. The NTSB believes that those states that have passed or pending legislation requiring the clear marking of METs should consider also requiring that they be registered.

Therefore, the National Transportation Safety Board makes the following recommendation to the 46 states, 4 territories, and DC without the following legislation:

Enact legislation requiring that meteorological evaluation towers erected in your state or territory are marked and registered in a directory. (A-13-21)

The NTSB also issued two safety recommendations to the FAA; one safety recommendation to the Department of the Interior, the Department of Agriculture, and the Department of Defense; and two safety recommendations to the American Wind Energy Association. In response to the recommendation in this letter, please refer to Safety Recommendation A-13-21. We encourage you to submit updates electronically at the following e-mail address: [correspondence@ntsb.gov](mailto:correspondence@ntsb.gov). If your response, including attachments, exceeds 10 megabytes, please e-mail us at the same address for instructions. Please do not submit both an electronic copy and a hard copy of the same response.

Chairman HERSMAN, Vice Chairman HART, and Members SUMWALT, ROSEKIND, and WEENER concurred in this recommendation.

*[Original Signed]*

By: Deborah A.P. Hersman,  
Chairman

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<sup>10</sup> For more information, see the website for Harness Energy, a company that specializes in MET installation (<http://www.harnessre.com/map> [accessed May 10, 2013]).

<sup>11</sup> For example, a February 2011 joint press release by the Department of the Interior and Department of Energy announced a “coordinated strategic plan to accelerate the development of offshore wind energy” in the United States. For more information, see <http://www.doi.gov/news/pressreleases/Salazar-Chu-Announce-Major-Offshore-Wind-Initiatives.cfm> (accessed May 10, 2013).



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OFFICE OF CHIEF COUNSEL



**National Transportation Safety Board**  
 Washington, DC 20594 | www.ntsb.gov  
 OFFICE OF THE VICE CHAIRMAN

August 3, 2017

The Honorable Samuel Brownback  
 Governor of Kansas  
 300 SW 10th St.  
 Topeka, KS 66612

Dear Governor Brownback:

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant accidents in other modes of transportation—railroad, highway, marine, and pipeline. We determine the probable cause of the accidents we investigate and issue safety recommendations aimed at preventing future accidents. In addition, we conduct special transportation safety studies and coordinate the resources of the federal government and other organizations to assist victims and their family members who have been impacted by major transportation disasters.

We issued A-13-21 to the state of Kansas on May 15, 2013, as a result of our investigations of three accidents in which airplanes inadvertently collided with meteorological evaluation towers, fatally injuring four people.

A-13-21

Enact legislation requiring that meteorological evaluation towers erected in your state or territory are marked and registered in a directory.

We are interested in knowing whether and how our recommendations are implemented, both to ensure that the traveling public is provided the highest level of safety and to identify creative solutions that might be shared with others, and we normally expect actions to address our recommendations to be completed within 3 to 5 years. We have yet to hear from you regarding your progress toward addressing this recommendation, which was issued more than 4 years ago. We would appreciate receiving a response within 90 days indicating any actions you have taken or plan to take to implement this recommendation; until then, this recommendation will retain its current classification of "Open—Await Response."

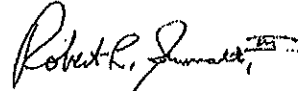
For additional background information about Safety Recommendation A-13-21, please refer to our May 15, 2013, recommendation transmittal letter.<sup>1</sup> Please update us at

<sup>1</sup> Safety Recommendation A-13-21 (Washington, DC: National Transportation Safety Board, 2013).

[correspondence@ntsb.gov](mailto:correspondence@ntsb.gov) regarding your actions to address Safety Recommendation A-13-21, and do not submit both an electronic and a hard copy of the same response. If you have any questions, please contact Mr. Nathaniel Hoyt, Safety Recommendation Specialist, at (202) 314-6172, or [nathaniel.hoyt@ntsb.gov](mailto:nathaniel.hoyt@ntsb.gov).

Thank you for your assistance in this matter.

Sincerely,

A handwritten signature in black ink that reads "Robert L. Sumwalt, III". The signature is written in a cursive style with a horizontal line at the end.

Robert L. Sumwalt, III  
Acting Chairman