



National Transportation Safety Board

Washington, DC 20594

Safety Recommendation

Date: May 15, 2013

In reply refer to: A-13-21

50 US states, 5 territories and DC
(See attached distribution list)

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)¹ 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.² 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*

¹ 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.

² 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 permit³ 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 MET⁴ while maneuvering near Ralls, Texas.⁵ 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.⁶ 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 alert⁷ 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,⁸ 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.

³ 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%.”

⁴ The original accident report referred to the MET as an antenna tower.

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

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

⁷ 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.

⁸ 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 77,⁹ 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.

⁹ 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.¹⁰ 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,¹¹ 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 [state or territory]:

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. 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: Deboarh A.P. Hersman,
Chairman

¹⁰ 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]).

¹¹ 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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