



U.S. Department
of Transportation

**Federal Highway
Administration**

Memorandum

Subject: **ACTION:** National Transportation Safety Board Recommendations Date: NOV 15 1995

From: Director, Office of Engineering Reply to Attn. of: HNG-33

To: Regional Federal Highway Administrators
Federal Lands Highway Program Administrator

The National Transportation Safety Board (NTSB) conducted an investigation of an accident on September 22, 1993, when barges that were being pushed by the towboat MAUVILLA struck and displaced the Big Bayou Canot railroad bridge near Mobile, Alabama. Shortly thereafter, National Railroad Passenger Corporation (Amtrak) train 2, the Sunset Limited, enroute from Los Angeles, California, to Miami, Florida, with 220 persons on board, struck the displaced bridge and derailed. Forty-two passengers and five crew members were killed, and 103 passengers were injured.

As a result of this catastrophic incident, the NTSB made the following recommendations to Secretary Federico Peña:

1. Convene an intermodal task force that includes the Coast Guard, the Federal Railroad Administration, the Federal Highway Administration, and the U.S. Army Corps of Engineers to develop a standard methodology for determining the vulnerability of the Nation's highway and railroad bridges to collisions from marine vessels, to formulate a ranking system for identifying bridges at greatest risk, and to provide guidance on the effectiveness and appropriateness of protective measures.
2. Require that the Federal Railroad Administration and the Federal Highway Administration, for their respective modes, use the methodology developed by the intermodal task force to carry out a national risk assessment program for the Nation's railroad and highway bridges.
3. Require the modal operating administrations to develop and disseminate bulletins, notices, circulars, and other documents that call attention to the need for an employee reporting procedure concerning use of medication (over-the-counter and prescription) while on duty and that urge the transportation industry to develop and implement informational and educational programs related to this subject.

4. Consider the use of RACONS, radar detectors, and other devices to make bridges more identifiable on radar.

The Office of the Secretary has provided an initial response to each of the NTSB's recommendations. Recommendation 4 has been satisfactorily closed, whereas Recommendations 1, 2, and 3 remain open. The open recommendations concerning the development and use of a risk assessment methodology and the employee use of medication while on duty require action by FHWA at this time.

We share the NTSB's concern regarding the serious consequences resulting from marine vessel collisions with highway bridges. However, the FHWA believes the States currently have available for use the needed guidance for the performance of the recommended risk assessment. This guidance is contained in the American Association of State Highway and Transportation Officials' (AASHTO) publication entitled "Guide Specification and Commentary for Vessel Collision Design of Highway Bridges, February 1991."

The AASHTO guide specification provides the basic framework and guidance for the States to appropriately determine the vulnerability of the Nation's highway bridges to collisions from marine vessels, to formulate a ranking system for identifying bridges at greatest risk, and to evaluate the appropriateness of protective measures. It enables bridge engineers to assess the risk of vessel collisions with a bridge, calculate the costs of probable collisions, develop plans to minimize the risk of collision, and develop designs to protect the bridge and its motorists in the event of a collision.

The FHWA has developed a National Highway Institute (NHI) training course, NHI Course Number 13060 "Vessel Collision Design of Highway Bridges," to acquaint bridge engineers with the background and overall approach of the AASHTO guide specification, and to train them in the detailed application of the specification through the use of a typical design example. Upon the satisfactory completion of this NHI course, participants are able to appropriately use the AASHTO guide specification to design new bridges and evaluate existing bridges crossing navigable waterways which are subject to collision by marine vessel.

In addition to the AASHTO guide specification, the States also have available guidance provided in the National Research Council's publication entitled "Ship Collisions With Bridges: The Nature of the Accidents, Their Prevention, and Mitigation, 1983." This publication presents the results of a study of 133 bridge crossings of navigable waterways. The study examined the risks and consequences of ship collisions with bridges spanning navigable coastal waters, and considerations important to the understanding of these accidents, the interaction of ships and waterways, and measures that can be taken to prevent ship-bridge collisions and to reduce their consequences.

The NTSB's Recommendation 1 also addresses evaluating the effectiveness and appropriateness of marine vessel-bridge collision protective measures. This particular issue relates to our December 8, 1980, memorandum (copy attached) that provided information concerning motorist warning systems on bridges subject to ship collisions. As indicated in the memorandum, Federal funds can

be used to install motorist warning systems on existing bridges or on new construction. Please note that the warrants for the installation of such a system should be based on an assessment of the risks and consequences of a ship-bridge collision..

In response to the NTSB's Recommendations 1 and 2, please request the divisions to alert the States of the potential hazard of marine vessel collisions with highway bridges and urge them to assess the hazard of such accidents using the available AASHTO and other appropriate guidance. The priority of mitigative actions may then be determined by each State through its bridge management process. In addition, the States should be made aware of the availability of NHI Course Number 13060 and be encouraged to schedule presentations as appropriate.

The Office of the Secretary in response to NTSB Recommendation 3 has developed the following statement to be used by all of the modal administrations:

The U.S. Department of Transportation (DOT) reminds all transportation industries of the potential threat to public safety caused by the on-duty use of some over-the-counter and prescription medications by persons performing safety-sensitive duties. As a result, we strongly urge all transportation industry employers to include in their employee training materials appropriate information to address this issue. We also encourage employers to reiterate with their employees the need to report use of such medications when required by applicable DOT rules or by company policies.

Please ensure that the States within your region are also aware of this DOT statement regarding the on-duty use of medications by persons performing safety-sensitive duties.

If there are any questions concerning the above, please contact the Bridge Management Branch at (202)366-4617.


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Attachment