



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: September 27, 2000

In reply refer to: M-00-17 and -18

Honorable Mel Carnahan
Governor of Missouri
216 State Capitol
Jefferson City, Missouri 65102

The National Transportation Safety Board is an independent Federal agency charged by Congress with investigating transportation accidents, determining their probable cause, and making recommendations to prevent similar accidents from occurring. We are providing the following information to urge your organization to take action on the safety recommendations in this letter. The Safety Board is vitally interested in these recommendations because they are designed to prevent accidents and save lives.

These recommendations address the effectiveness of safety measures provided for the permanently moored vessel (PMV) *President Casino on the Admiral (Admiral)* and the adequacy of public safety for PMVs. The recommendations are derived from the Safety Board's investigation of the April 4, 1998, marine accident concerning the ramming of the Eads Bridge by barges in tow of the *M/V Anne Holly* with subsequent ramming and near breakaway of the *Admiral* in St. Louis Harbor, Missouri,¹ and are consistent with the evidence we found and the analysis we performed. As a result of this investigation, the Safety Board has issued 30 safety recommendations, 2 of which are addressed to the State of Missouri. Information supporting the recommendations is discussed below. The Safety Board would appreciate a response from you within 90 days addressing the actions you have taken or intend to take to implement our recommendations.

About 1950 on April 4, 1998, a tow of the *M/V Anne Holly*, comprising 12 loaded and 2 empty barges, which was traveling northbound on the Mississippi River through the St. Louis Harbor, struck the Missouri-side pier of the center span of the Eads Bridge. Eight barges broke away from the tow and drifted back through the Missouri span. Three of these barges drifted toward the *Admiral*, a permanently moored gaming vessel below the bridge on the Missouri side of the river. The drifting barges struck the moored *Admiral*, causing 8 of its 10 mooring lines to break. The *Admiral* then rotated clockwise downriver, away from the Missouri riverbank. The captain of the *Anne Holly* disengaged his vessel from the six remaining barges in the tow and

¹ For additional information, see forthcoming Marine Accident Report NTSB/MAR-00/01: *Ramming of the Eads Bridge by Barges in Tow of the M/V Anne Holly with Subsequent Ramming and Near Breakaway of the President Casino on the Admiral, St. Louis Harbor, Missouri, April 4, 1998*, (Washington, DC: National Transportation Safety Board, 2000).

placed the *Anne Holly*'s bow against the *Admiral*'s bow to hold it against the bank. About the time the *Anne Holly* began pushing against the *Admiral*, the *Admiral*'s next-to-last mooring line parted. The *Anne Holly* and the single mooring wire that remained attached to the *Admiral*'s stern anchor held the *Admiral* near the Missouri bank. No deaths resulted from the accident; 50 people were examined for minor injuries. Of those examined, 16 were sent to local hospitals for further treatment. Damages were estimated at \$11 million.

The National Transportation Safety Board determined that the probable cause of the ramming of the Eads Bridge in St. Louis Harbor by barges in tow of the *Anne Holly* and the subsequent breakup of the tow was the poor decision-making of the captain of the *Anne Holly* in attempting to transit St. Louis Harbor with a large tow, in darkness, under high current and flood conditions, and the failure of the management of American Milling, L.P., to provide adequate policy and direction to ensure the safe operation of its towboats.

The National Transportation Safety Board also determined that the probable cause of the near breakaway of the *President Casino on the Admiral* was the failure of the owner, the local and State authorities, and the U.S. Coast Guard to adequately protect the permanently moored vessel from waterborne and current-related risks.

The Coast Guard coordinated the development of the St. Louis Harbor Emergency Response Plan in cooperation with State and local fire and rescue services and the local marine industry. The intent of the plan was to allow the emergency response agencies, the industry, and the Coast Guard to achieve coordinated and effective use of public and private response resources during an emergency. Although the Coast Guard has Federal responsibility for the overall safety of the port during an emergency, the responsibility for emergency response rests with local fire and rescue services and State response services. While, as a policy matter, the Coast Guard responds to emergencies to the extent that its resources allow, it does not have primary search and rescue responsibility in inland areas, such as St. Louis Harbor. The Coast Guard does not have firefighting or search and rescue capabilities in St. Louis Harbor, yet its personnel helped coordinate the plan, participated in drills, and provided information about marine risk mitigation measures to the incident commander. The Coast Guard Captain of the Port also assisted in crises by restricting vessel movements on the Mississippi River.

The Safety Board evaluated the St. Louis Harbor Emergency Response Plan and found that it adequately identified the agencies that would participate in marine emergency responses in St. Louis Harbor and provided a comprehensive contact listing for critical responders. The plan further identified the interagency command and control responsibilities of the various agencies and designated the radio frequencies to be used during responses.

The response plan, however, did not take into account the various types of accidents that might occur in the harbor. For instance, the plan did not anticipate an accident similar to that involving the *Admiral* on April 4, 1998—the breakaway or near breakaway of a high-capacity PMV. The possibility of such an accident, especially during a period of high water, was reasonably foreseeable. The St. Louis Harbor Emergency Response Plan did not identify all foreseeable emergencies or create strategies to deal with them. Without identifying the types and magnitudes of the possible emergencies for which St. Louis Harbor authorities would have to be

prepared, response planners could not determine the amounts, types, and sources of emergency equipment and other resources that would be needed to conduct a successful response.

A 1994 search and rescue exercise sponsored by the Coast Guard in New Orleans, Louisiana, revealed that local contingency plans and responses for the New Orleans area were inadequate for rescuing large numbers of people from the Mississippi River. The exercise illustrated that responding to emergencies requiring the rescue of large numbers of people from the Mississippi River can overwhelm local resources, even in municipalities that may have greater marine resources than St. Louis.

It is conceivable that, had the *Anne Holly* not held the *Admiral* against the riverbank on April 4, 1998, the *Admiral* might have broken free of its last mooring wire and floated downriver, possibly causing collisions and sinking or capsizing under one of the lower bridges. The risk to the *Admiral* and its more than 2,000 occupants would have been high in such a scenario because the *Admiral* did not have means of propulsion or navigational control, marine lifesaving equipment (such as life floats or personal flotation devices), or an experienced marine crew.

Therefore, the Safety Board concluded that the St. Louis Harbor Emergency Response Plan did not sufficiently prepare emergency response agencies to deal with an emergency involving the rescue of a large number of people on or in the Mississippi River. The Safety Board believes that the Coast Guard should conduct, in cooperation with the States of Missouri and Illinois and the cities of St. Louis and East St. Louis, regular drills to exercise the contingency plans for a variety of different marine scenarios, such as stopping breakaway vessels or rescuing large numbers of people from the Mississippi River.

Further, the Safety Board's investigation of this accident showed that local and State jurisdictional authorities for St. Louis Harbor did not provide adequate marine safety oversight of the owners' responsibility to assess and mitigate waterborne and current-related risks to the local PMVs and all people on board them. At the time of the *Admiral* accident, local jurisdictional authorities, such as the city's public safety and fire departments, had immediate oversight responsibility for the PMVs in St. Louis Harbor. The local authorities provided the first level of regulatory oversight for PMV owners and the first safety net under PMV operations. The St. Louis Department of Public Safety believed that it had met its obligation to ensure public safety by reviewing the *Admiral's* design plans to ensure that the PMV met the applicable building codes for certain aspects of building structures, such as fire safety, electrical, mechanical, and plumbing requirements.

The St. Louis Department of Public Safety also approved the *Admiral's* design and evacuation plan for compliance with requirements for emergency exits, emergency lighting, and fire sprinklers, as they would apply to buildings. However, the department did not require the equivalent of below-ground structural elements, such as would be required of a land-based structure, or any additional structural elements to protect the *Admiral* from the risk of collision. Buildings, when they are designed for public occupancy, are required to have fixed fire exits with clear access to areas of safety. The city required no added features to ensure the long-term integrity of the *Admiral's* fire exits. According to its representative, the St. Louis Department of

Public Safety was not required to address the siting of the *Admiral* or marine safety aspects, such as the possibility of the PMV's breaking away or sinking, or whether it might require flooding alarms or emergency pumps and generators. Nor did the city consider the need for lifesaving equipment, because such aspects are not considered during the approval processes for buildings.

After the Coast Guard designated the *Admiral* as a PMV, the city of St. Louis assumed responsibility for its safety. In the absence of Coast Guard involvement, the city had general oversight responsibility for public safety for the entire operation. Yet city authorities did not have a mechanism for regulating the marine safety aspects of the operation of PMVs located in St. Louis Harbor. Local building and safety codes did not address the waterborne and current-related risks and risk reduction measures associated with PMVs in the harbor. The Safety Board therefore concluded that the city of St. Louis did not exercise effective marine safety oversight for the *Admiral* because the city treated the *Admiral* as a commercial building on land.

The State of Missouri Gaming Commission also placed safety requirements on the operation of the *Admiral*. In a July 9, 1998, letter to the Safety Board, the Commission stated that it requires its licensees to meet the minimum standards for safety and environment established by the Coast Guard, the U.S. Army Corps of Engineers, and the Environmental Protection Agency. It also requires that licensed casino PMVs meet Missouri's fire safety standards, the National Fire Protection Association's (NFPA's) fire safety standards for the construction and fire protection of marine structures, and the NFPA Life Safety Code.

In addition, the Commission requires that the vessel comply with all local fire and safety codes. However, because the Coast Guard did not impose any safety requirements beyond "secure and substantial mooring" of the vessel and because none of the other authorities or standards addressed all the waterborne and current-related risks to which the *Admiral* was exposed, the Commission's actions fell short of its intended purpose.

The Commission also said in the July 1998 letter that it does not employ safety experts but relies on government agencies with safety standard and inspection expertise. Thus, the Commission recognized that it does not possess the requisite expertise to establish safety standards or to provide safety oversight of the *Admiral*'s operations.

Although the State Gaming Commission required the owner to contract with the American Bureau of Shipping Marine Services to assess the stability of the *Admiral* and to periodically inspect its hull and watertight closures to ensure their integrity, the American Bureau of Shipping Marine Services did not, nor was it requested to, assess the adequacy of the mooring design, fire safety, lifesaving, or any other marine safety systems related to the *Admiral*'s operation. The Safety Board therefore concluded that the oversight provided by the State of Missouri, as represented by the State Gaming Commission, did not address marine safety systems, such as the PMV's mooring design, fire safety, and lifesaving capabilities, and did not protect the safety of people on board the *Admiral*.

In the Safety Board's opinion, city and State authorities should recognize their limitations in marine safety expertise. The Coast Guard is the primary recognized marine safety regulatory authority and should regulate the operation of floating casinos exposed to waterborne and

current-related risks. The Safety Board therefore believes that the Coast Guard, the city of St. Louis, and the State of Missouri should either require owners of PMVs to protect their vessels from waterborne and current-related risks so that their PMVs are, in fact, equivalent to buildings or require that the owners obtain Coast Guard certificates of inspection for their PMVs.

Therefore, the National Transportation Safety Board makes the following safety recommendations to the State of Missouri:

Conduct, in cooperation with the U.S. Coast Guard, the State of Illinois, and the cities of St. Louis and East St. Louis, regular drills to exercise the contingency plans for a variety of different marine scenarios, such as stopping breakaway vessels or rescuing large numbers of people from the Mississippi River.
(M-00-17)

Either require owners of permanently moored vessels to protect their vessels from waterborne and current-related risks so that their permanently moored vessels are, in fact, equivalent to buildings or require that the owners obtain U.S. Coast Guard certificates of inspection for their permanently moored vessels. (M-00-18)

The Safety Board also issued safety recommendations to the U.S. Coast Guard, the Research and Special Programs Administration, the State of Illinois, the cities of St. Louis and East St. Louis, the National League of Cities, the American Association of Port Authorities, the American Gas Association, the American Public Gas Association, President Casinos, Inc., Laclede Gas Company, and American Milling, L.P. In your response to the recommendations in this letter, please refer to Safety Recommendations M-00-17 and -18. If you need additional information, you may call (202) 314-6170.

Chairman HALL and Members HAMMERSCHMIDT, GOGLIA, BLACK, and CARMODY concurred in these recommendations.

By: Jim Hall
Chairman