



# National Transportation Safety Board

Washington, D.C. 20594

## Safety Recommendation

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**Date:** September 27, 2000

**In reply refer to:** M-00-28 through -32

Mr. Mark Lohman  
Chief Executive Officer  
President Casinos, Inc.  
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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,<sup>1</sup> 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, 5 of which are addressed to President Casinos, Inc. 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

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<sup>1</sup> 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).

captain of the *Anne Holly* disengaged his vessel from the six remaining barges in the tow and 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.

In the course of its investigation, the Safety Board reviewed the actions taken by *Admiral* personnel in response to the emergency. Although the *Admiral* security personnel were responsible for ensuring the safety of patrons in an emergency, they did not keep vessel patrons from becoming agitated and disorderly during the emergency response. Respondents to the Safety Board's postaccident questionnaire reported that some minor injuries and considerable anxiety resulted from people shoving them and crowds attempting to push through the single exit leading to the *Anne Holly*. Had the accident been more severe, this unruly conduct might have increased to the point of causing serious injuries or even deaths.

The fire drills held on the *Admiral* essentially addressed the procedures for securing the casino and evacuating a building-type structure, rather than for assembling and managing crowds to make an orderly evacuation. The drills did not provide alternative actions for personnel to take if the main avenues of egress were blocked or not available. Further, although the local fire prevention code required that fire drills be held every 90 days on the *Admiral*, the last such drill before the April 1998 accident was held in June 1997.

Clearly, local authorities did not provide adequate oversight of the company's responsibility to conduct periodic fire drills. Because the city of St. Louis did not require owners to keep records of drills that had been conducted, the city was unaware that the *Admiral* had gone almost 9 months between the last fire drill and the accident. In the Safety Board's opinion, frequent drills would have helped prepare the *Admiral*'s staff to deal with a real emergency. The Safety Board concluded that President Casino's failure to conduct fire drills and the city of St. Louis's failure to enforce fire drill requirements for the *Admiral* contributed to a lack of casino staff preparedness to deal with emergency situations.

Once the *Admiral's* ship-to-shore telephone lines parted during the near-breakaway, vessel personnel could not communicate with on-shore emergency personnel. None of the emergency rescue organizations were notified from the *Admiral* because the vessel had no means of communicating externally after it was struck and its phone lines parted. Since the accident, the *Admiral* has installed a marine radio scanner and a marine radio in the security office, and personnel now have access to cellular phones that are kept in the security shift and general managers' offices. The Safety Board is pleased that President Casinos has installed this important communication equipment.

Another element of a successful on-board emergency response is authoritative and helpful communication to vessel patrons and staff about the nature, scope, and status of the emergency. During the *Admiral's* near breakaway, internal communication deficiencies were evident. President Casinos had no formal policies governing the use of the public address system in an emergency. On the night of the accident, use of the public address system was delayed because the staff thought the system was inoperable until about 2145, when the security shift manager returned to the PMV from the shore. Thus, no use was made of the public address system until the emergency on the *Admiral* had gone on for about 1 hour and 45 minutes.

In their responses to postaccident questionnaires, a significant proportion of the *Admiral* patrons who responded stated that, despite some public address announcements and instructions from staff, patrons generally found the staff's communication of information not useful. They also reported that many people on board did not know what had happened or what they should do in the accident aftermath. Respondents said that panic and confusion may have been encouraged by the scarcity of information. Some respondents further claimed that they incurred minor injuries caused by other patrons' panicked attempts to evacuate the *Admiral* following the barge strikes. Therefore, the Safety Board concluded that patrons on board the *Admiral* did not receive sufficient safety information in the aftermath of the barge allisions to help prevent panic and confusion. To resolve this problem, the Safety Board believes that President Casinos should develop guidelines for making periodic public address announcements during emergencies to provide direction and ensure patron safety.

The *Admiral* often accommodates thousands of patrons and hundreds of staff members at a time. All would have to be evacuated safely in an emergency. Such evacuations are best conducted by trained personnel who are assigned, and trained in carrying out, specific responsibilities during an evacuation. As a result of its investigation of a 1994 fire aboard the *Argo Commodore*,<sup>2</sup> the Safety Board issued the following recommendation to the Passenger Vessel Association (PVA):

M-95-43

Develop and provide to your members crew drills for on-board crew emergency procedures/standards that include pre-incident planning for a variety of shipboard

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<sup>2</sup> For more information, see *Fire Aboard U.S. Small Passenger Vessel Argo Commodore in San Francisco Bay, California, December 3, 1994*, Marine Accident Report NTSB/MAR-95/03. (Washington, DC: National Transportation Safety Board, 1995).

emergencies, including fires, and the deployment of crew resources for proper response to the emergency without compromising passenger safety.

The PVA developed a section for its *Training Manual for Passenger Vessel Safety* entitled “Non-marine Crew Training” that outlines a comprehensive training program for nonoperating crewmembers. The introduction to this section states that specialized safety training for nonoperating employees “makes sense when management realizes that, more often than not, [these employees] will be the first person[s] on the scene in any kind of emergency.” Based on the PVA’s support for comprehensive training for nonoperating employees and the organization’s development of the training manual, the Safety Board classified Safety Recommendation M-95-43 “Closed–Acceptable Action” on July 21, 1997.

As an operator of several passenger vessels on the Mississippi River, President Casinos is a PVA member. Personnel on the PMV *Admiral* face many of the same emergency response challenges as crewmembers of other types of large passenger vessels.

The Safety Board understands that, since the accident, President Casinos has had three *Admiral* security employees trained in crowd management techniques. The Board considers that this effort, if continued, will improve the vessel’s on-board emergency response capability. To ensure the development of crowd management capabilities throughout the organization, the training should include all *Admiral* personnel. Such broad provision of training is prudent because even those vessel employees who do not have safety-related duties in an emergency can affect the response either positively or negatively. The Safety Board noted as a result of the *Bright Field* investigation<sup>3</sup> that nonoperating crewmembers on both the *Queen of New Orleans* and the *Creole Queen* had not received training covering the full range of emergency scenarios and were unprepared to properly carry out their responsibilities.

According to a comment made by a patron after the *Admiral* allision and near breakaway, some *Admiral* staff members “appeared to be just as confused as we were.” One cashier even shouted that the vessel was sinking. Staff confusion and inflammatory remarks can only increase the level of panic on board a vessel or a permanently moored casino during an emergency. Training in crowd management would help staff understand the importance of maintaining calm and order. The Safety Board concluded that *Admiral* security personnel and other staff members were not adequately trained and drilled in crowd management techniques and therefore were not successful in ensuring that the vessel’s patrons and staff behaved in a calm and orderly fashion in the aftermath of the April 4, 1998, accident. Therefore, the Safety Board believes that President Casinos should require and document that all *Admiral* personnel receive formal training in crowd management techniques and conduct periodic drills to reinforce this training so that vessel staff can perform effectively in an emergency. Also, President Casinos should amend the *Admiral*’s *Emergency Evacuation Procedures* to reflect crowd management techniques.

When the *Anne Holly* barges struck the *Admiral*, the standard gangways almost immediately dropped into the water. Together, the *Admiral* staff, the *Anne Holly* crew, and the

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<sup>3</sup> National Transportation Safety Board, *Allision of the Liberian Freighter Bright Field with the Poydras Street Wharf, Riverwalk Marketplace, and New Orleans Hilton Hotel in New Orleans, Louisiana, December 14, 1996*. Marine Accident Report NTSB/MAR-98/01. (Washington, DC: National Transportation Safety Board, 1998).

Gateway Riverboat Cruises personnel improvised means to evacuate patrons and staff, but they were following no directions from President Casinos about how to do so. Also, the makeshift evacuation was a slow process, taking more than 3 hours to complete. Had the *Admiral* caught on fire or begun to sink, such a lengthy evacuation would have placed patrons and staff at considerable risk.

In addition to strikes by barges or vessels, other emergency situations, such as fires, floods, severe winds, etc., that might make the *Admiral's* standard gangways dangerous or unavailable can easily be envisioned. Nevertheless, President Casinos did not have contingency plans for such events, and the company did not train or instruct its personnel in how to conduct an evacuation that would not involve use of the standard gangways. Therefore, the Safety Board concluded that the evacuation of the *Admiral* was jeopardized by the lack of contingency plans for an emergency egress when the standard gangways were not available. The Safety Board believes that President Casinos should develop and exercise contingency plans for emergency egress from the *Admiral* to ensure that occupants can exit the vessel in a timely and orderly manner when the standard means of egress become unusable and should amend the *Admiral's Emergency Evacuation Procedures* to reflect the new procedures.

PMV safety was another issue the Safety Board studied during this investigation. The Board found that President Casinos, as the owner of the *Admiral*, had the fundamental responsibility to ensure the safety of the PMV and all people on board it. President Casinos also had the corporate control, knowledge, and resources to provide an effective safety management system but failed to do so, unnecessarily exposing the *Admiral* and people on board to waterborne and current-related risks that none of the stakeholders were prepared to meet.

President Casinos was the entity most knowledgeable about its business and the unique aspects of operating a casino on a floating platform in the Mississippi River and was, therefore, best placed to provide the primary safety net for the PMV and its occupants. President Casinos operated other passenger vessels in St. Louis under the same environment and river conditions and was knowledgeable about and experienced with Coast Guard inspection and certification requirements for passenger vessels, including the provisions concerning such safety features as lifesaving equipment, staffing requirements, marine crew qualifications, and vessel operational requirements. President Casinos was more knowledgeable than any other organization about the operation of the *Admiral*, including its history of accidents and near misses while located in St. Louis Harbor. President Casinos was also familiar with the local and State jurisdictional authorities and the local codes and standards with which the *Admiral* had to comply.

President Casinos had the corporate responsibility to establish risk reduction measures to provide a safe operation. President Casinos was in the best position to understand the risks associated with marine operations because the company operated several passenger vessels and was involved with the daily operation of the *Admiral*. President Casinos also had access to the appropriate resources (such as capital, personnel, PVA membership, and so forth) to help mitigate the risks, and the company controlled the corporate decision-making process. President Casinos, however, did not take any safety action beyond complying with the regulatory requirements.

An effective safety management system is essential for the safe operation of a high-capacity passenger vessel (regardless of whether it is in permanently moored status). Such a system should, at a minimum:

- Describe the functions of the staff during an emergency,
- Require staff training in their respective emergency functions,
- Provide adequate fire and lifesaving equipment for passengers and staff,
- Provide appropriate shore notification,
- Provide internal communication with staff and passengers,
- Provide the capacity for communication with emergency responders,
- Provide for the safe evacuation of occupants or an adequate area of safe refuge aboard the vessel,
- Include regular drills, and
- Provide management oversight of the process to ensure compliance and system viability.

President Casinos did not have a safety management system to ensure that company responsibilities and authority were defined, risks were identified, contingency plans were prepared, staff emergency training was provided, proper safety and response equipment was available, and local responders were involved. A safety management system would have also provided for a designated individual to oversee and coordinate emergency training drills and for an audit to be conducted to ensure compliance with company safety policies and procedures. The company did not have an effective safety management system in place before it put the *Admiral* in service, nor did it implement one once the PMV was in operation.

Risk assessment is an essential part of any effective safety management system. President Casinos, however, did not conduct a comprehensive risk assessment before placing the vessel in service. The owner conducted only a limited risk assessment to evaluate the possibility of locating a protective cell upstream of the *Admiral*. The U.S. Army Corps of Engineers (USACE), urged by the Coast Guard, had required during the site permit review process that such a protective cell be installed because of concern that the *Admiral* had previously been struck by tows while at that location.

The professional engineering firm hired by President Casinos determined that a protective cell placed at the bow of the *Admiral* on the outboard side would present a safety problem; that is, the firm's report stated that, under such a cell arrangement, loose barges would be directed into the vessel rather than away from it. Neither the owner nor the engineering firm (which had cited three previous allisions of the *Admiral* by upbound tows) then considered what type of protection would be necessary to keep loose barges from striking the *Admiral*. Instead, President Casinos simply decided that because the engineer's report found that the proposed solution of using a single protective cell had negative safety implications, the requirement should be rescinded.

Therefore, despite its knowledge of previous allisions, President Casinos made no effort to mitigate the risk to the *Admiral* from breakaway tows or even from debris or ice flows. Had President Casinos employed risk reduction measures, the *Admiral's* ability to survive waterborne and current-related risks would have increased. Possible risk reduction methods included:

- relocating the vessel to an area that eliminates the chance of collisions,
- installing barriers, such as fendering or crush zones, to absorb the dynamic loading from collisions with other vessels or floating debris,
- restricting vessel operations during high-risk conditions,
- developing alternate escape routes for use in emergencies, and
- training the staff in crowd management, as is done on large cruise liners.

The operation of a high-capacity floating casino like the *Admiral* shares many operational elements and safety concerns with high-capacity passenger vessels that operate in the same area. President Casinos was a member of the PVA and had access to the PVA's experience and support in the safe operation of high-capacity passenger vessels. A President Casinos employee, in fact, drafted the chapter on "Emergency Drills and Contingency Planning" for the PVA's *Risk Management Manual for Passenger Vessels*. The chapter cites specific examples of conditions in St. Louis Harbor for use in developing passenger vessel marine risk contingency plans covering events such as collisions, taking on water, losing propulsion and requiring harbor tug assistance, moving casualties ashore, and transferring firefighters from shore to a vessel. The *Admiral* is subject to the same types of risks. President Casinos developed a contingency plan for the PMV (the *Admiral's* *Emergency Evacuation Procedures*). However, the risks identified in the plan did not include all the waterborne and current-related risks and factors cited in the PVA *Risk Management Manual for Passenger Vessels*.

The Safety Board concluded that President Casinos had the responsibility, knowledge, and experience with passenger vessel operations, previous accident history, and contingency planning, as well as the necessary management control and opportunity, to provide an effective safety management system for the *Admiral* but failed to do so. Therefore, the Safety Board believes that President Casinos should develop and implement a safety management system for the *Admiral* that anticipates and provides appropriate means of responding to all foreseeable emergencies.

The Safety Board also believes that President Casinos should site the *Admiral* in a location in which it is protected from waterborne and current-related risk events, including breakaways, allisions, sinking, capsizing, etc.

Therefore, the National Transportation Safety Board makes the following safety recommendations to President Casinos, Inc.:

Develop guidelines for making periodic public address announcements during emergencies to provide direction and ensure patron safety. (M-00-28)

Require and document that all *President Casino on the Admiral* personnel receive formal training in crowd management techniques, and conduct periodic drills to reinforce this training so that vessel staff can perform effectively in an emergency. Also, amend the *President Casino on the Admiral's Emergency Evacuation Procedures* to reflect crowd management techniques. (M-00-29)

Develop and exercise contingency plans for emergency egress from the *President Casino on the Admiral* to ensure that occupants can exit the vessel in a timely and orderly manner when the standard means of egress become unusable, and amend the *President Casino on the Admiral's Emergency Evacuation Procedures* to reflect the new procedures. (M-00-30)

Develop and implement a safety management system for the *President Casino on the Admiral* that anticipates and provides appropriate means of responding to all foreseeable emergencies. (M-00-31)

Site the *President Casino on the Admiral* in a location in which it is protected from waterborne and current-related risk events, including breakaways, allisions, sinking, capsizing, etc. (M-00-32)

The Safety Board also issued safety recommendations to the U.S. Coast Guard, the Research and Special Programs Administration, the States of Missouri and 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, Laclede Gas Company, and American Milling, L.P. In your response to the recommendations in this letter, please refer to Safety Recommendations M-00-28 through -32. 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