National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: September 27, 2000

In reply refer to: M-00-33

Mr. Dave Jump
President
American Milling, L.P.
Fox Terminal Road
Cahokia, Illinois 62206

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 recommendation in this letter. The Safety Board is vitally interested in this recommendation because it is designed to prevent accidents and save lives.

This recommendation addresses the advisability of the M/V *Anne Holly* captain's decision to make an upriver transit through St. Louis Harbor and the effectiveness of safety management oversight on the part of American Milling, L.P. The recommendation is 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 *Anne Holly* with subsequent ramming and near breakaway of the *President Casino on the Admiral* (*Admiral*) in St. Louis Harbor, Missouri,[1] and is 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, 1 of which is addressed to American Milling, L.P. Information supporting this recommendation 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 recommendation.

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

[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).

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.

On the night of the accident, the principal task of the *Anne Holly* captain was to navigate the 14-barge tow upriver from the Eagle fleeting area past four bridges. Under normal river stage (less than 20 feet on the St. Louis gage) and in daylight, someone with experience and skills similar to the captain's could routinely accomplish this task. Conditions, however, were unfavorable in that the river was in flood and it was dark.

The captain's decision to proceed with the transit under the prevailing conditions of darkness and flood (which resulted in minimal vertical clearance at the Eads Bridge and a swift current of 6 mph) is critical to understanding the probable cause of this accident. On the night of the accident, the *Anne Holly* captain was aware of the difficult navigation task that he was undertaking; once he left the fleeting area he requested a helper boat to assist him in taking his tow through the St. Louis Harbor bridges. When he learned that no helper boat was immediately available, he chose to attempt the transit without one. Other options, however, were open to him. He could have:

- returned to the fleet to await the availability of a helper boat;
- returned to the fleet, dropped off part of his tow, and then proceeded with a partial tow through St. Louis Harbor[2] (he would then have had to return to the fleet to retrieve the remainder of the tow and make a second trip through the harbor or had another towboat bring the remaining barges upriver for him); or

[2] By making the transit with a shorter tow, the captain would have made the navigation task less challenging because it would have reduced the tow's tonnage, increased the *Anne Holly*'s control over the barges in the tow and the tow's maneuverability, and lessened the effect that the current had on the tow by reducing the surface area of the tow that was exposed to the current.

- returned to the fleet and remained there until daylight so that he could make the transit through St. Louis Harbor in daytime.

Despite these options, the captain decided to continue with the transit without a helper boat.

The transit of this tow under the prevailing conditions was a difficult task and presented risks that increased the likelihood of an accident. The captain, although experienced and familiar with the navigational demands of the area, decided on the evening of April 4, 1998, to move the *Anne Holly* tow through the area under recognizably adverse conditions. The Safety Board concluded that, given the difficult navigation task, the darkness, the flood conditions (which resulted in a swift current and minimal vertical clearance at the Eads Bridge), and the lack of a helper boat, the captain should have chosen to pursue another option on the evening of April 4, 1998.

Although the immediate cause of the accident was the *Anne Holly* captain's operational error or errors, the underlying cause was the owner's lack of effective safety management of its towing operations. The absence of corporate management input into the captain's strategic decision-making process about whether to proceed with the transit of St. Louis Harbor that night placed an unreasonable burden on the captain and forced him to make unilateral safety-critical decisions from the narrow perspective of the pilothouse.

As a small business, American Milling often contracts for boats and operators as its workload requires and does not maintain an extensive shoreside operations infrastructure. According to American Milling management, the company relies on the captain to make all decisions regarding the tow's operation. The company does not have written policies that its captains should follow to consistently ensure safe towing operations or procedures to assist the captains in choosing the proper course of action in safety-critical situations. The company has not established policies that address high water, nighttime transit, and other conditions that might affect the safety of towing operations. In addition, American Milling has provided no written guidance to its captains describing situations in which they may be justified in recessing operations for safety reasons. Nor does the company provide basic guidance concerning the proper way to make up a tow or use the tow's equipment when underway. Company officials told the Safety Board that they rely exclusively on the knowledge, experience, and discretion of the individual captain to decide what is safe and proper under the prevailing circumstances.

In the Safety Board's view, the company's comparatively small size does not justify American Milling's attempt to place sole responsibility for safe operation of its vessels on the captain. Regardless of corporate size, management retains responsibility and accountability for its vessels' operations and accidents. The Safety Board realizes that the captain is on board the vessel and is making decisions and taking actions for which he, and only he, can be responsible. Nevertheless, shoreside management shares or owns the responsibility for many of the operational decisions and actions affecting vessel safety.

American Milling, which is not an American Waterways Operators member, did not participate in the Responsible Carrier Program and did not have a similar safety management

system. The absence of such a system meant that American Milling had no comprehensive method to provide effective management oversight of safety operations, a responsibility that the company should have proactively pursued. This responsibility is not one that can be delegated to the towboat captain. The lack of an effective safety management system that provided procedures governing the safe operation of the *Anne Holly* was substantially responsible for creating an environment that increased the likelihood that this accident would occur.

Night operation increases the risk of accidents, and American Milling should have developed night operations procedures for its captains. Operations during high water also pose greater risks, and American Milling should have addressed them through management instruction and policy. Certain areas of operation, such as the transit through St. Louis Harbor, present unique risks that likewise should have been the subject of management policy and oversight. The procedures should have anticipated the need for a helper boat and should have delineated alternative actions that the captain might take under various foreseeable circumstances. Moreover, the risk of collision with other river traffic is always present. Had the *Anne Holly*'s tow struck and ruptured other barges loaded with petroleum products or hazardous materials, the resulting spill could have seriously harmed the environment. The captain should have been provided guidance concerning such an eventuality.

By not providing guidance through a comprehensive safety management system, American Milling left the captain of the *Anne Holly* to his own devices to make safety-critical decisions, increasing the likelihood that the captain would make an inappropriate decision. Consequently, the Safety Board concluded that the captain of the *Anne Holly* would have been better able to make prudent decisions concerning the operation of his tow, and this accident might thereby have been prevented, had American Milling developed and implemented an effective safety management system.

Therefore, the National Transportation Safety Board makes the following safety recommendation to American Milling, L.P.:

> Develop and implement a safety management system similar to the Responsible Carrier Program used by the American Waterways Operators; the system should establish effective policies and procedures to enhance the safety of vessel operations. (M-00-33)

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, President Casinos, Inc., and Laclede Gas Company. In your response to the recommendation in this letter, please refer to Safety Recommendation M-00-33. If you need additional information, you may call (202) 314-6170.

Chairman HALL and Members HAMMERSCHMIDT, GOGLIA, BLACK, and CARMODY concurred in this recommendation.

Original Signed

By: Jim Hall
Chairman