

Log M-323B



# National Transportation Safety Board

Washington, D.C. 20594

## Safety Recommendation

**Date:** November 20, 1986

**In reply refer to:** M-86-120 and -121

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Director  
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On October 28, 1985 about 1615, the U.S. lift boat A.M. HOWARD departed Hopedale, Louisiana, with a master and three industrial persons aboard, and entered the Mississippi River Gulf Outlet Canal en route to Breton Sound. The master stated that the winds were 15 to 25 mph, the seas were 3 to 4 feet in height and intermittent rain squalls were passing through the area. Hurricane Juan was located in the Gulf of Mexico west of the Mississippi River. Several hours later engine problems caused the master to shut down the starboard engine. Shortly thereafter, the master was told that Hurricane Juan was moving eastward and he decided to return to Hopedale. While turning the lift boat in the canal, it grounded on the southwest side near Light No. 61. The master backed the vessel off the ground and proceeded inbound. Several hours later the vessel rolled to starboard and sank. The master exited the pilothouse as the vessel sank and was rescued by a passing towboat. The three industrial persons, located in the deckhouse, went down with the vessel and drowned. 1/

When the engineer was asked to check the vessel's void after the grounding it is very likely that he did not carefully inspect the entire void area, because he was not trained in vessel operations and had only been aboard the vessel 4 days. Subsequent to the engineer's actions, checks were not made to determine if the hull was flooding or to detect a small or slow leak. Although the master did not believe the grounding caused any damage, he should have considered it important to periodically monitor the void for signs of flooding and should have inspected it for damage because the vessel was not equipped with a high water alarm or automatic pump in the void space. Prudent actions under normal operating conditions would involve hourly inspections of unmanned engine spaces that lack monitoring and alarm systems. While the master was the only person familiar with the vessel and its operation, he could have considered the option of jacking the vessel up after grounding and inspecting the void and hull himself or continuing to have the engineer check the void at frequent intervals. The vessel was not equipped with anchor, high water alarm, or a means to activate the pump for the void without entering the space. Therefore, in the event that the lift boat could not have been jacked up due to adverse sea conditions, water depth, and/or the bottom contour, the master would have had to allow the vessel to drift or leave an untrained person to operate the vessel if it was necessary for him to inspect the hull for flooding. High water sensors located in the vessel's void with alarms located in the pilothouse, would have warned the master of

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1/ For more detailed information, read Accident/Incident Summary Report--"Sinking of the U. S. Lift Boat A.M. HOWARD in the Mississippi River Gulf Outlet Canal, about 1/4 nmi east-southeast of Light No. 87 on October 28-29, 1985" (NTSB/MAR-86/02/SUM).

flooding. An automatic pump or means to activate a manually started pump from the pilothouse would have provided the master with a means to immediately respond to the flooding of the unmanned space. Vessel owners and operators have the responsibility to equip their vessels so that they can be operated safely as manned. Therefore, the Safety Board believes that the owner of the A. M. HOWARD and other lift boat owners and operators should equip void spaces of the lift boats with high water sensors which have pilothouse alarms and a drainage system which includes an automatic pump or a manually started pump which can be operated from the pilothouse.

Sea water entering the void was free to flow from side to side or fore and aft throughout the entire compartment, because the void was not subdivided. Thus, the water, free to flow to the low side, would have reduced the vessel's stability or tendency to return to its original position at both large and small angles of heel. The reduction in the vessel's stability from the free surface effect of the flooding would have been worsened by the effects of the fuel oil shifting among the interconnected, partially filled fuel oil tanks. Further, the seawater entering the void would have added more weight to the vessel and caused a reduction in the freeboard. A decrease in freeboard results in deck immersion at smaller angles of heel and can decrease the ability of the vessel to right itself at moderate and large angles of inclination. It is probable that the A.M. HOWARD heeled to starboard from an adjustment in the heading or movement because of the seas. This would have caused the liquid in the void and fuel tanks to shift to the starboard side. This shift in weight would have resulted in a larger angle of heel. As the vessel listed the unsecured deck cargo would have shifted to the starboard. Eventually the A.M. HOWARD's righting ability was exceeded and it was not able to recover from the list and capsized.

If the A.M. HOWARD's void was subdivided such that the vessel could have survived the flooding of any one compartment, damage to the hull would not have allowed the entire void to flood, resulting in the loss of the vessel's stability and buoyancy. In this case, because the hull was not breached in the machinery area the engines and pumps for dewatering would have remained operational. Several hundred lift boats are operating and there are no prescribed stability criteria for this type of vessel. A review of lift boat accidents shows that many accidents involved capsizing or flooding. Therefore, the Safety Board believes there is a need for not only the owner of the A. M. HOWARD, but other lift boat operators to ensure that the vessels which they operate be modified as necessary so the lift boats will not capsize or sink at maximum allowable loaded draft when any one compartment is flooded.

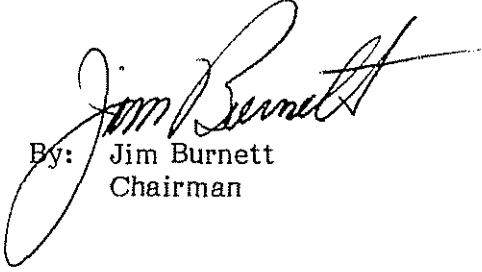
Therefore, the National Transportation Safety Board recommends that the Offshore Marine Service Association:

Recommend to member companies which operate lift boats that they equip their vessels' void spaces with high water sensors, which have pilothouse alarms, and a drainage system which includes an automatic pump or a manually started pump which can be operated from the pilothouse. (Class II, Priority Action) (M-86-120)

Urge member companies which operate lift boats to ensure that the vessels they operate be modified as necessary so the lift boats will not capsize or sink at maximum allowable loaded draft when any one compartment is flooded. (Class II, Priority Action) (M-86-121)

Also as a result of its investigation, the Safety Board issued Safety Recommendations M-86-116 through -118 to Cardinal Wireline Specialists, Inc., and M-86-119 to the U.S. Coast Guard.

The National Transportation Safety Board is an independent Federal agency with the statutory responsibility ". . . to promote transportation safety by conducting independent accident investigations and by formulating safety improvement recommendations" (Public Law 93-633). The Safety Board is vitally interested in any actions taken as a result of its safety recommendations and would appreciate a response from you regarding action taken or contemplated with respect to the recommendations in this letter. Please refer to Safety Recommendations M-86-120 and -121 in your reply.

  
By: Jim Burnett  
Chairman