



National Transportation Safety Board

Washington, D.C. 20594
Safety Recommendation

Date: January 14, 1991

In reply refer to: M-90-100 through -103

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President
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On June 29, 1989, the U.S. self-elevating uninspected liftboat M/V TITAN finished its work at Corpus Christi Oil and Gas Block 427 where it had been elevated in about 95 feet of water. The TITAN had a crew of four, plus five Laredo Construction, Inc., employees aboard. About 1330 the master lowered the liftboat and headed it toward Freeport, Texas. While the 160-foot legs were being raised, the TITAN began listing to starboard. The master believed the list was caused by mud on the starboard leg pad. However, the master found on inspection that the starboard leg was flooded and gushing water on deck through a fracture or fractures in the leg. The master directed the legs to be lowered to improve the stability of the vessel. While the legs were being lowered the TITAN capsized about 1345.¹

Six survivors on the TITAN were rescued by the U.S. Coast Guard. Divers who searched the flooded vessel recovered one body from the galley, but two Laredo employees remain missing. The TITAN was valued at \$2,200,000. The TITAN was salvaged and delivered to Freeport, Texas, on September 5, 1989.

The TITAN's lifesaving equipment complied with Coast Guard regulations for uninspected vessels; however, the type and stowage was inadequate.

Three lifefloats were stowed flat on top of each other in a float-free rack on the starboard side of the third deck. However, the lifefloats failed to deploy during the capsizing. The vertical stanchions prevented the lifefloats from shifting horizontally and should have allowed them to float upward. But, since the lifefloats were stacked and stowed close to the pilothouse's exterior sidewall, they may have jammed against the stanchions and the sidewall when the rising sea water floated them as the TITAN capsized to starboard. Thus, the liftboat float-free stowage rack appears not to have functioned as expected because of its arrangement and location on the starboard side of the pilothouse. Had the TITAN not capsized so rapidly, the

¹For more detailed information, read Marine Accident Report--Capsizing and Sinking of the Self-elevating Liftboat M/V TITAN, Gulf of Mexico, June 29, 1989" (NTSB/MAR-90/07).

stacked lifefloats may have floated free. As the lifefloats did not float free, they were inaccessible to the survivors.

The Safety Board has expressed its opposition to the use of lifefloats as primary lifesaving devices and has recommended liferafts. Lifefloats do not provide out-of-the-water flotation to survivors. Lifeboats, liferafts, and inflatable buoyant apparatus provide more than just hypothermic protection to survivors. They also:

1. provide protection from marine predators;
2. provide support for unconscious or injured survivors;
3. do not require survivors to exert themselves to maintain themselves above the water;
4. provide better visibility for search and rescue;
5. provide a platform that permits the use of survival equipment, such as signaling and electronic homing devices; and
6. provide protection for the survivors from the inadvertent ingestion of sea water.

The Safety Board further believes that lifefloats should be phased out, but where authorized by the Coast Guard their stowage should be dispersed and stacking minimized to avoid their being jammed or obstructed from floating free.

According to the survivors a sufficient supply of PFDs (life preservers) was aboard the TITAN at the time of the accident. However, because the life preservers were stowed in the crew quarters, these were inaccessible after the capsizing. Since the offshore workers were normally required by Laredo policy to muster on deck wearing PFDs during liftboat raising or lowering operations, the PFDs could have been stowed on deck at exit doors or at muster stations. During an emergency, it would be safer to go directly to the muster or emergency stations without having to enter accommodations. Additionally, in an emergency while in the accommodations, persons may not remember or have time to retrieve PFDs before escaping. Furthermore, had the PFDs been stowed on an outside deck where they could float free, they may have been more readily accessible to the survivors.

The TITAN operating manual contained considerable information about vessel stability and operations. However, it did not address actions that could be taken to maintain stability if legs flooded nor the effects that sea water on deck and wave-induced motions would have on stability. Had the TITAN operating manual contained a precaution to inspect for leg flooding and instructions for corrective action to be taken by the master, he may have been able to prevent the capsizing.

Moreover, a liftboat operating manual should include clear and concise instructions for masters about loading and stability, as well as general vessel operation. However, it can benefit only if written in clear, concise language and if the reader has the necessary training to properly apply the

information presented. Had the TITAN master received formal training on liftboat stability, he may have been more inclined to use the load condition summary sheet forms, contained in the operating manual, for calculating stability. The Safety Board believes that liftboat owners should be required to provide their masters with operating manuals that include instructions in clear, concise language that is understandable to liftboat masters.

Therefore, the National Transportation Safety Board recommends that the Coastal Marine Lift Barges, Inc.:

Provide liftboats with primary lifesaving equipment that protects persons from water immersion. (Class II, Priority Action) (M-90-100)

Insure that primary lifesaving equipment is stowed in unobstructed locations so that such equipment will deploy readily. (Class II, Priority Action) (M-90-101)

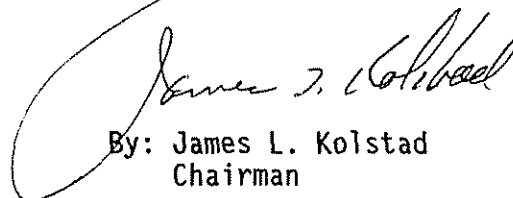
Revise liftboat operating manuals to include specific information about the inspection of legs for flooding and precautions to be taken to maintain vessel stability when flooded legs are encountered. (Class II, Priority Action) (M-90-102)

Revise liftboat operating manuals to present stability information and calculations in clear, concise form for liftboat masters' use and monitor liftboat operations to insure that masters are properly applying the information presented. (Class II, Priority Action) (M-90-103)

Also, the Safety Board issued Safety Recommendations M-90-85 through -99 to the U.S. Coast Guard, M-90-104 to Laredo Construction, Inc., and M-105 through -109 to the Offshore Marine Services Association.

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 action taken as a result of its safety recommendations. Therefore, it 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-90-100 through -103 in your reply.

KOLSTAD, Chairman, COUGHLIN, Vice Chairman, and BURNETT, LAUBER, and HART, Members, concurred in these recommendations.



By: James L. Kolstad
Chairman