



National Transportation Safety Board

Washington, D.C. 20594
Safety Recommendation

Date: January 14, 1991

In reply refer to: M-90-105 through -109

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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.

It was only after the master had lowered the TITAN into the water and it was moving away from the offshore platform, while the legs were being raised, that he detected the starboard list. Although the master recognized that some condition on the vessel was causing the list, he assumed that it was either mud or foreign material on the starboard leg footing. Knowing from past experience that leg flooding also could cause a similar list, the master might have stopped raising the legs, reelevated the vessel, and inspected the leg interiors through the leg top manholes for flooding before completely raising the legs. However, since the master had not been formally trained about vessel stability, he apparently was not aware of the detrimental effects that flooded legs, water on deck, and free surface in tanks could have on liftboat stability.

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).

The master could have inspected the legs for flooding before lowering the TITAN, but the procedure is time consuming. Consequently, unless leg flooding was suspected, the tendency of a liftboat master would be to avoid making these time-consuming visual inspections unless operating procedures required that he routinely do so. Since the TITAN had experienced leg flooding, it would have been a good operating practice to inspect for flooding when preparing to move the vessel. Had the TITAN master done so, this accident may have been averted. Therefore, the Safety Board believes that a routine procedure should be required for liftboat masters to have legs that are watertight inspected for flooding before the liftboat is lowered and floated.

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.

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.

The Laredo employees on board were, according to the Coastal Marine Lift Barges, Inc., owner, to receive a safety briefing before leaving port for an offshore assignment; however, the Laredo survivors stated that they received no briefing before departure or while on board. The Laredo president stated that company policy was for employees to wear lifevests and stand on the pilothouse deck level when the liftboat raised or lowered. However, this procedure was not followed when the TITAN was lowered into the water for the trip to Freeport. It is critical that when offshore workers first board they receive a briefing about the vessel's safety features, including actions that should be taken in an emergency. The Safety Board believes that before departing on assignment liftboat masters should be required to give briefings to all on-board persons about the vessel's safety features and appropriate actions to be taken in an emergency, that emergency drills should be held regularly and recorded in the logbook, and that liftboat owners should monitor regularly the safety procedures conducted aboard their vessels.

Neither the surviving crewmembers nor the offshore workers had received any formal marine safety or survival training. However, crewmembers or workers employed aboard liftboats and offshore supply vessels are not required to be provided survival training as has been done in parts of the commercial fishing industry. The North Pacific Fishing Vessel Owners'

Association vessel safety manual has been distributed to some fishing vessels, and industry-sponsored safety courses have been developed for fishermen. Had the crewmembers and offshore workers aboard the TITAN received survival training, they would have been aware of the hazards of shipboard operations and better prepared to cope with the unexpected capsizing. Their inability to obtain life preservers suggests that the possibility and consequences of a capsizing was unanticipated and all aboard were completely unprepared for the event. The Safety Board believes that a need exists for crewmembers and workers employed aboard offshore industry vessels to receive survival training similar to that currently being provided in the commercial fishing industry.

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

Publicize to companies operating liftboats that liftboat masters should check legs that are supposed to be watertight for flooding before jacking down vessels. (Class II, Priority Action) (M-90-105)

Publicize to companies operating liftboats that the information and stability calculations included in operating manuals should be clearly presented and include precautions needed to be taken when flooded legs are encountered. (Class II, Priority Action) (M-90-106)

Publicize to companies operating liftboats that safety meetings and emergency drills should be held regularly and logged by the master. (Class II, Priority Action) (M-90-107)

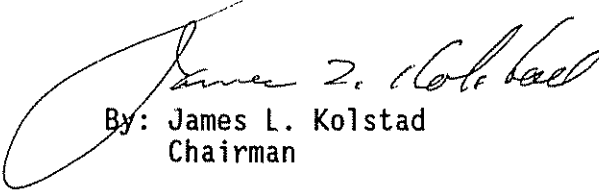
Encourage the development of lifesaving and survival training programs for crewmembers and others employed in the offshore marine industry. (Class II, Priority Action) (M-90-108)

Publicize the circumstances of this accident. (Class II, Priority Action) (M-90-109)

Also, the Safety Board issued Safety Recommendations M-90-85 through -99 to the U.S. Coast Guard, M-100 through -103 to Coastal Marine Lift Barges, Inc., and M-104 to the Laredo Construction, Inc.

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-90-105 through -109 in your reply.

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



By: James L. Kolstad
Chairman