SP-20

Log M-305

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: December 17, 1985

Forwarded to:

Admiral James S. Gracey
Commandant
U.S. Coast Guard
Washington, D.C. 20593

SAFETY RECOMMENDATION(S)

M-85-111 through -115

During the early morning hours of October 17, 1984, the AMAY S, a 64-foot-long, self-propelled lift boat, became disabled when it lost propulsion and electrical power while en route to Sabine Pass, Texas, from an offshore oil drilling platform in the Gulf of Mexico. The master radioed the U.S. Coast Guard requesting assistance, and the U.S. Coast Guard Cutter POINT HOPE was dispatched to assist. About 0830 c.s.t., the POINT HOPE arrived on scene, and by 0917, the cutter had the AMAY S in tow bound for Sabine Pass. About 15 minutes after the tow was commenced, the AMAY S suddenly rolled to starboard, capsized, and sank. All seven persons on board the AMAY S were rescued by the POINT HOPE, but the vessel was not salvageable and has been declared a total loss. The loss was valued at $600,000. 1/

There are no prescribed stability criteria for lift boats in the United States. The stability calculations performed by the Coast Guard on the AMAY S showed that the vessel had limited stability, and the Safety Board believes that lift boats as a class have similarly limited stability, particularly if not loaded properly. The Safety Board requested information from the Coast Guard concerning lift boat accidents to determine whether stability-related problems were a major factor in lift boat accidents. According to the information received, 34 lift boat accidents were reported to the Coast Guard between January 1981 and May 1985. These accidents resulted in more than $16 million in property damage and disabling injury to 12 persons. A review of the nature of these accidents showed that nearly 50 percent of them involved capsizing or flooding. The Coast Guard was unable to provide information on the undetermined number of lift boat accidents which occurred before January 1981. Some of these accidents have resulted in loss of life, as illustrated by the 1976 capsizing of the AMAY S while operating under the name TRI-LIFT II, in which four persons died. Based on the information provided by the Coast Guard and as evidenced by the October 17 accident, the Safety Board believes that there is a need for stability criteria for lift boats.

The starboard list greatly reduced the vessel's stability. Coast Guard calculations show that without a starboard list the vessel had about 13 foot-degrees under its righting arm curve, while with a starboard list the vessel had only about 2 foot-degrees,

1/ For more detailed information, read Marine Accident Report—"Capsizing of the U.S. Self-Propelled Lift Boat AMAY S While Under Tow of the U.S. Coast Guard Cutter POINT HOPE, Gulf of Mexico, October 17, 1984" (NTSB/MAR-85/10).

which is a drastic reduction in stability. If the master of the AMAY S had trimmed the vessel on to an even keel by taking on ballast, the stability of the AMAY S would have been significantly improved and off-center loading from waves washing on deck would have been reduced or eliminated. The decision to tow the vessel bow first into the seas, however, was a major factor contributing to the accumulation of water on the deck. If the commanding officer (CO) of the POINT HOPE had towed the vessel stern first toward Sabine Pass instead of bow first, the greater freeboard at the stern and the substantial structure of the deckhouse at the stern of the vessel would have minimized the amount of water that came on deck, and the vessel might not have capsized. The decision to tow the AMAY S bow first was made at the suggestion of the master of the AMAY S, who was not qualified to make such a determination. That the CO of the POINT HOPE acquiesced in the suggestion probably was a result of the CO's limited towing experience. The CO of the POINT HOPE had been transferred directly from duty on board a 378-foot ship to an 82-foot patrol boat. The towing operations performed by small cutters have little correlation to those conducted by large cutters. Moreover, large Coast Guard cutters rarely are involved in towing operations while 82-foot patrol boats engage in towing operations as a matter of routine. The CO of the POINT HOPE probably should not have been designated as the commanding officer of the 82-foot patrol boat without first having undergone some intensive hands-on training in small cutter towing operations.

Lift boats are not restricted by regulation as to the waters upon which they may operate, and at times they operate on the waters over the outer continental shelf. Since the Outer Continental Shelf Lands Act grants the Coast Guard the authority to regulate vessels in outer continental shelf activities, the Safety Board believes that the Coast Guard should establish mandatory stability criteria for lift boats that operate on waters over the continental shelf. However, the establishment of stability criteria by itself will not be sufficient to insure that lift boats are operated safely.

Masters of lift boats are not required by regulation to be licensed or to demonstrate any professional qualifications. The master of the AMAY S did not have a merchant mariner's license and had little experience on vessels that operate offshore. He had received no formal training in the proper operation of lift boats. Since these vessels have stability limitations, in aggregate carry large numbers of passengers, and work in exposed areas in the Gulf of Mexico, the Safety Board believes that the Coast Guard should establish mandatory professional qualifications for lift boat masters through a licensing program.

Lift boats are vessels of unique design and function. In order to perform their function safely, the master must know the maximum deck cargo that the jacking system can lift, the maximum depth of water in which the vessel may be jacked, and the minimum air gap that must be maintained between the bottom of the vessel and the surface of the sea in the jacked-up mode. Additionally, the master should know the maximum wind and sea conditions in which the jacking system may be operated, and should be provided with instructions concerning actions to be taken when weather and sea conditions deteriorate while the vessel is in the jacked-up mode. The master of the AMAY S was not provided with any of this information concerning his vessel's operational limitations.

As a result of the capsizing of the work barge STAR 2, 2/ the Safety Board recommended that the Coast Guard:

2/ For more information, read Marine Accident Report--"Summary Format, Issue Number 6--Reports Adopted January 1983 through December 1983" (NTSB/MAB-84/01) (Marine Accident No: DCA 80AM077 Involving the Self-propelled, Jacked-up Work Barge STAR 2).

> Require that jack-up offshore supply vessels, performing activities in support of exploration, exploitation, or production of offshore mineral or energy resources, be equipped with an approved operating manual that contains guidance to the master for the safe operation of the vessel including maximum deck load, maximum water depth, and the minimum air gap required for expected sea conditions. (M-84-4)

In response to Safety Recommendation M-84-4, the Coast Guard stated:

> A requirement for an operations manual on lift boats of the size and service similar to the STAR 2 would have to be made under the authority of the Outer Continental Shelf (OCS) Lands Act as amended. The Coast Guard has initiated a regulatory project to update and expand the requirements in 33 CFR Subchapter N, Outer Continental Shelf Activities. One of the objectives of this project is to establish appropriate standards for all vessels engaged in OCS activities within the authority of the Act. The need to require operating manuals on lift boats similar to the STAR 2 will be considered as part of this regulatory project and any significant development related to this recommendation will be provided to the Board when final action is completed.

The Safety Board urges the Coast Guard to expedite its work on this regulatory project and reemphasizes the need for operating manuals on board lift boats working not only on the outer continental shelf, but anywhere outside protected waters.

The AMAY S was outfitted with two life floats which it was not required to carry by regulation. One of these devices provided buoyant support for two persons in the water until they were rescued by the POINT HOPE. Although the life float is not as effective a survival platform as an inflatable liferaft or a lifeboat, it does provide buoyancy and a means whereby survivors can stay together in the water. This makes it easier for rescue forces to locate survivors who otherwise might drift apart. Additionally, persons clinging to these devices can help and encourage each other to survive until rescued. Since the POINT HOPE was close at hand when the AMAY S capsized, it probably was not critical to the survival of the persons on board the AMAY S that life floats were provided. However, if the circumstances had been such that some appreciable length of time would have passed before a rescue vessel arrived on scene, a buoyant platform which could support all of the survivors at one time would have been crucial to their continued survival. Title 33 CFR 144.01 requires that a manned offshore platform operating on the outer continental shelf be provided with at least two approved life floats of sufficient capacity to accommodate all persons on the platform. However, lift boats, which operate in the same waters, carry similar numbers of persons, and are vulnerable to all of the hazards of navigation, are not required to carry any life floats or liferafts.

The Coast Guard currently has a project to revise the regulations concerning facility and vessel operations on the outer continental shelf (CGD84-098 (Revision of the Regulations on Outer Continental Shelf Activities)). As part of this project, on March 7, 1985, the Coast Guard published an advance notice of proposed rulemaking in the Federal Register. 3/ This notice stated, in part:

3/ 50 Federal Register 9291.

With the expansion of activities on the OCS, many specialized vessels have been developed for such jobs as well servicing, diving support, towing, construction, painting, sand blasting, and standby. Under this rulemaking project, the Coast Guard will conduct a comprehensive study of the operations and safety records of these vessels to determine whether there is a need for further regulations.

The Safety Board believes that there is a need for further regulation of self-elevating lift boats to upgrade the lifesaving equipment requirements for these vessels when operating on the outer continental shelf, and that the Coast Guard should include a requirement for such lifesaving devices as inflatable liferafts, life floats, distress flares, and emergency position indicating radio beacons, in its regulatory project.

Therefore, the National Transportation Safety Board recommends that the U.S. Coast Guard:

Require junior officers to complete a training program, which includes hands-on training in small cutter towing operations, before being assigned as commanding officers of Coast Guard patrol boats. (Class II, Priority Action) (M-85-111)

Using the authority of the Outer Continental Shelf Lands Act, establish stability criteria for self-elevating lift boats that engage in outer continental shelf activities. (Class II, Priority Action) (M-85-112)

Seek legislative authority to license persons-in-charge of miscellaneous vessels, such as lift boats, which are engaged in outer continental shelf activities and which are not currently required by existing legislation, to be operated by a licensed officer or operator. (Class II, Priority Action) (M-85-113)

Include in regulatory project CGD84-098 (Revision of the Regulations on Outer Continental Shelf Activities) a requirement for operating manuals which set forth the operating limitations of lift boats engaged in outer continental shelf activities. (Class II, Priority Action) (M-85-114)

Include in regulatory project CGD84-098 (Revision of the Regulations on Outer Continental Shelf Activities) an upgrading of the lifesaving equipment requirements for self-elevating lift boats engaged in outer continental shelf activities. (Class II, Priority Action) (M-85-115)

BURNETT, Chairman, GOLDMAN, Vice Chairman, and BURSLEY, Member, concurred in these recommendations.

By: Jim Burnett
Chairman