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National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: July 8, 1986
In reply refer to: M-86-45 through M-86-48

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About 2330, on May 20, 1985, the posted drilling barge TONKAWA capsized and sank while under tow in Bayou Chene, approximately 6 1/4 miles southeast of Morgan City, Louisiana. The drilling barge had been underway for about 11 hours prior to the capsizing. There were 22 persons aboard the TONKAWA at the time of capsizing; 11 persons survived the casualty and 11 persons lost their lives. The drilling barge capsized in approximately 26 feet of water and came to rest on its starboard side, about 135° from its normal upright position. 1/

On the morning of May 20, 1985, the posted drilling barge TONKAWA was preparing to depart from a drilling site in Turtle Bayou, about 14 miles southeast of Morgan City, Louisiana. Some time after 0700, the deballasting of the rig started. By 1200, jetting of the ballast was complete except for some water left intentionally in the No. 4 port and starboard ballast tanks to give the barge a trim aft. At 1215, the rig broke free of the site and the journey commenced.

When the flotilla entered Bayou Penchant, the operator of the tug COMANCHE (the second vessel in the flotilla) alerted the crew of the TONKAWA about the port list by radio. He testified that he did not know to whom he spoke but asked that the list be corrected. He estimated the time to be about 1950. The person aboard the TONKAWA replied that nothing could be done until they reached deeper water and that they couldn't "put water in it at this time in shallow water." Approximately 1 to 1 1/2 hours before the flotilla entered Bayou Chene, the COMANCHE's operator received a call from the TONKAWA requesting their position and the time the flotilla would get to Bayou Chene. The caller did not identify himself nor did the tug operator recognize the voice. The party aboard the TONKAWA was informed that they would enter Bayou Chene between 2300 and 2330 that evening.

After the flotilla straightened out in Bayou Chene, the relief operator of the CHOCTAW, pushing at the stern of the TONKAWA, noticed a small starboard list on the barge. He informed the operator of the COMANCHE of the list and both agreed that it was a normal list when coming out of shallow water into deeper water. The COMANCHE's operator instructed him "to keep an eye on it and inform him if it [gets]

1/ For more detailed information, read Marine Accident Report--"Capsizing and Sinking of the Drilling Barge TONKAWA in Bayou Chene near Morgan City, Louisiana, May 20, 1985" (NTSB/MAR-86/07).

any worse." After about a minute or less, the CHOCTAW's relief operator radioed back to the COMANCHE and informed the operator that the "rig was listing a little bit more." The COMANCHE's operator then contacted the TONKAWA by radio and informed the driller (who was monitoring the portable radio) of the list. The driller replied that he would get someone to check it out and correct the problem. By this time, the list had increased even more. The operator of the COMANCHE said to the operator of the SIOUX (and was overheard by the relief operator of the CHOCTAW), "Let's break off and push her to the bank." At 2325, before the tugs were able to let go, the TONKAWA rolled to starboard and capsized.

At the time of the casualty, 22 persons were aboard the TONKAWA including the toolpusher, who was in charge. Seventeen were employees of Temple, four were employees of a subcontractor, Universal Catering Service, which provided hotel and catering services, and one, the operator of the crewboat RONCO 109, who happened to be aboard when the drilling barge capsized, was the employee of Best Boat Rentals.

Although the TONKAWA was equipped with a sufficient number of lifejackets for all persons aboard, including work vests, none of the persons nor bodies recovered was wearing any type of personal flotation device. An official of Temple testified that fire and abandon ship drills were normally held at weekly intervals and safety meetings at the beginning of each shift. Temple's safety director visited the drilling rig twice a month to conduct a safety equipment inspection. Except for the toolpusher's inspection, no other safety inspections were made by any State or Federal regulatory agencies. The uninspected drilling barge had no manning requirements and did not have any lifeboatmen among its assigned personnel. Any safety procedures implemented and requirements established were entirely at the discretion of Temple. The Company's safety director testified that it is company policy that any employee working on the barge deck of the rig must wear a lifejacket (work vest).

The events that led to the capsizing of the TONKAWA started about the time the flotilla turned into Bayou Penchant from Turtle Bayou. Until then, the towing operation had been routine, notwithstanding the difficulty encountered towing in shallow water. After turning into Bayou Penchant, the operator of the COMANCHE alerted either the driller on duty or the toolpusher aboard the TONKAWA of the port list and was told that nothing could be done until they reached deeper water. At this time, the No. 3 starboard ballast inlet valve was probably still closed. During the jetting out process, there was no need to open any inlet valves. The response from the TONKAWA that "they can't put water in at this time in shallow water" indicated that the anticipated corrective measure was to add water, presumably to the starboard side to correct the port list. An exact description of what followed cannot be provided since the crewmembers who participated in these events, i.e., the toolpusher, the other driller, and the motorman, were killed in the accident.

The query from the rig personnel asking for the estimated time of arrival in deep water further supports the supposition that the rig personnel were planning to correct the list. When the operator of the COMANCHE told them that the flotilla would enter Bayou Chene between 2300 and 2330, the morning shift motorman, who would come on duty about 2300, probably was ordered to flood the No. 3 starboard ballast tank until the port list was corrected. The inlet valve probably was only partially opened about 2300 to admit a limited amount of water. About this time, the TONKAWA passed over the particularly shallow area at the intersection of Bayou Penchant and Bayou Chene. The rig may have appeared to be without list at this time and a roustabout or other crewmember may have been ordered to close the inlet valve. With the valve in the partially open position, the crewmember, because of a lack of proper training, may have become confused and, instead of closing the valve, opened it fully (turned it

counterclockwise). Without a valve position indicator on the valve stand to indicate the position of the valve gate, this scenario is reasonable, particularly since the valve was found in the fully open position.

The deficiencies in operational knowledge reflected by Temple's personnel represent insufficient training practices. By vesting authority and responsibility to such individuals, without providing them with adequate training in standard operational and emergency procedures, Temple reduced the margin of safety for its crewmembers. Given this type vessel, with its relatively complex stability requirements and the necessity to perform stability calculations prior to vessel movement, an expert in barge moving would appear to be critical to perform these specialized functions. In addition, all employees on the barge should receive basic familiarization in barge operations. In this way, for example, they would be exposed to standard, correct procedures for repositioning valves, or for taking additional safety precautions when underway. Periodic review of emergency procedures and safety requirements on the vessel would also emphasize the importance of these practices to the employees.

The loss of 11 lives and the serious injuries sustained by other crewmembers when the TONKAWA capsized raise some questions about the soundness of the practice of keeping Temple's entire drilling crew aboard the vessel during a rig move. Temple's vice-president for operations pointed out that it was an industry practice to move rigs with the full complement of personnel aboard and that some maintenance projects cannot be accomplished when drilling and therefore are done underway. Similar accidents have been investigated by the Safety Board involving not only drill rigs, 2/ but also lift boats, 3/ and workover barges that have large numbers of workers aboard. Although the majority of these accidents were weather related and occurred offshore, the risk to personnel is similar. The Safety Board believes that some of the personnel risks involved when moving a rig can be avoided by having only the minimum number of people aboard. Temple should reevaluate the practice of retaining the entire drilling crew aboard posted drilling barges when moving them to another site.

Therefore, the National Transportation Safety Board recommends that the Temple Drilling Company:

> Assign a qualified barge mover to supervise the entire drilling rig moving operation, which includes deballasting, providing stability calculations, towing, and ballasting at the next drilling location; this person would have no other responsibilities during a rig move. (Class II, Priority Action) (M-86-45)
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> Retain only those persons aboard posted drilling barges during towing operations who are essential for the safe towing of the rig. (Class II, Priority Action) (M-86-46)

2/ See Marine Accident Report--"Capsizing and Sinking of the U.S. Mobile Offshore Drilling Unit OCEAN RANGER, off the East Coast of Canada, 166 Nautical Miles East of St. John's Newfoundland, February 15, 1982" (NTSB-MAR-83-2).
3/ See Marine Accident Report--"Capsizing of the U.S. Self-Propeller 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).

Revise the instructions in the company's operating manual to stipulate that, when moving a drilling rig with more than one tug, one tug operator be designated in charge of the navigation of the flotilla and that person maintain communication with the person in charge of the drilling rig during the period of the tow. (Class II, Priority Action) (M-86-47)

Require strict enforcement by toolpushers and other rig supervisors of your company's rule concerning the wearing of personal flotation devices by rig personnel while in unprotected areas of the rig, such as the barge deck of drilling barges. (Class II, Priority Action) (M-86-48)

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 recommendation in this letter. Please refer to Safety Recommendations M-86-45 through M-86-48 in your reply.

GOLDMAN, Acting Chairman, and BURNETT, LAUBER, and NALL, Members, concurred in these recommendations.

By: Patricia A. Goldman
Acting Chairman