



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: July 11, 2007

In reply refer to: M-07-8

Mr. Michael Patterson
General Manager
Central Boat Rentals, Inc.
P.O. Box 2545
Morgan City, Louisiana 70381

The National Transportation Safety Board is an independent Federal agency charged by Congress with investigating transportation accidents, determining their probable cause, and making recommendations to prevent similar accidents from occurring. We are providing the following information to urge you to take action on the safety recommendation in this letter. The Safety Board is vitally interested in the recommendation because it is designed to prevent accidents and save lives.

The recommendation addresses the failure to use safety devices on construction barges. The issue derives from the Safety Board's investigation of the October 12, 2006, fire on board the construction barge *Athena 106* and is consistent with the evidence we found and the analysis we performed.¹ About 1155 central daylight time on the day of the accident, the uninspected towing vessel *Miss Megan* was pushing two deck barges in Louisiana's West Cote Blanche Bay oil field, en route to a pile-driving location. Construction barge *Athena 106* was tied along the port side of deck barge *IBR 234*, and the *Miss Megan* was secured astern of *IBR 234*. While the vessels were under way, the aft spud (a 5-ton steel shaft used as a mooring device) on the *Athena 106* released from its fully raised position. The spud dropped into the water and struck a submerged, buried high-pressure natural gas pipeline. The resulting gas release ignited and created a fireball that engulfed the towing vessel and both barges. The master of the towing vessel was killed, along with four barge workers. The *Miss Megan* deckhand and one barge worker survived. One barge worker is officially listed as missing.

The National Transportation Safety Board determined that the probable cause of the accident was Athena Construction's failure to require its crews to pin the spuds securely in place on its barges, which allowed the sudden, unintentional release of the *Athena 106*'s aft spud,

¹ For further information, see *Fire Aboard Construction Barge Athena 106, West Cote Blanche Bay, Louisiana, October 12, 2006*, Marine Accident Report NTSB/MAR-07/01 (Washington, DC: National Transportation Safety Board, 2007). The report will be available on the Safety Board's website <www.nts.gov>.

rupturing a buried pipeline and causing natural gas to surface and ignite. Contributing to the accident was the failure of Central Boat Rentals to require, and of the *Miss Megan* master to ensure, that the barge spuds were securely pinned before getting under way.

Safety Board investigators determined that the *Athena 106* spud winch operator followed his usual method of operating the spud winch on the day of the accident, which was to employ only the foot brakes to secure both spuds once they were fully retracted. The spud winch operator had two additional means of locking the spuds in the retracted position, neither of which he used: (1) a steel pawl that, when engaged at the operator's station, fit into a notched ring fastened to the outer periphery of the winch drum to stop it from turning backward if the brake failed; and (2) a 36-inch-long, 2-inch-diameter steel securing pin that could be inserted directly through the spud slightly above deck level once it was fully retracted.

The steel securing pin was a fail-safe device that would have kept the aft spud from falling even if the winch or the supporting cable failed. If the barge crew had used the steel pins to secure the retracted spuds in place during their transit, the aft spud would have remained locked in its lifted position regardless of whether the winch brake mechanism, the spud's supporting cable, or a piece of connecting hardware had failed. Thus, the accident could have been prevented if the spuds on the *Athena 106* had been securely pinned while the barge was in transit.

Central Boat Rentals had a health and safety manual and trained its crews. However, the written procedures did not specifically warn masters about the need to secure spuds or other barge equipment before navigating. Central Boat Rentals owns and operates a variety of vessels, including spud barges, and should have been aware that pinning the spuds is an important safety precaution. The company's crews should have been trained to identify potential safety hazards on vessels under their control. The National Transportation Safety Board therefore recommends that Central Boat Rentals take the following action:

Develop procedures and provide initial and recurrent training to the employees on your barges to use the securing pins to hold spuds safely in place before transiting from one site to another. (M-07-8)

The Safety Board also issued recommendations to the U.S. Coast Guard, the Occupational Safety and Health Administration, and Athena Construction. The Board would appreciate a response from you within 90 days addressing the actions you have taken or intend to take to implement its recommendation. Please refer to Safety Recommendation M-07-8 in your reply. If you need additional information, you may call (202) 314-6174.

Chairman ROSENKER, Vice Chairman SUMWALT, and Members HERSMAN, HIGGINS, and CHEALANDER concurred in this recommendation.

[Original Signed]

By: Mark V. Rosenker
Chairman



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Mr. Dana Lee
Athena Construction LLC
P.O. Box O
Morgan City, Louisiana 70381

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The steel securing pin was a fail-safe device that would have kept the aft spud from falling even if the winch or the supporting cable failed. The *Athena 106* spud winch operator told investigators that the securing pins were generally inserted only on long transits, not on short trips between work sites. The operator stated in his interview, "I mean I'm sure it's a lot safer to do it [use the pins], but we don't. I don't know why." The Athena Construction barge supervisor confirmed that in day-to-day operations, crews used only the foot brakes to hold the retracted spuds.

If the *Athena 106* crew had used the steel pins to secure the retracted spuds in place during their transit, a pin would have prevented the aft spud from accidentally deploying. The spud would have remained locked in its lifted position regardless of whether the winch brake mechanism, the spud's supporting cable, or a piece of connecting hardware had failed. The evidence indicated that the *Athena 106*'s spud winch and its associated lifting apparatus were free of mechanical damage or defect before the accident. However, investigators found little or no evidence to establish which, if any, of several other possible scenarios accounted for the spud's sudden fall—the spud winch operator failing to set the brake properly, one or more of the vessels grounding in the shallow bay, or the vessels in the tow jostling each other enough to loosen the foot brake on the aft spud. The Safety Board concluded that while it was unlikely that a mechanical defect in the spud winch or its associated apparatus caused the accident, the reason the foot brake for the aft spud released could not be determined.

The Safety Board further concluded that the accident could have been prevented if Athena Construction had required the spuds on its barges to be securely pinned while the barges were in transit. The Board understands that since the accident, Athena Construction has reached a settlement agreement with the Occupational Safety and Health Administration that provides, in part, for employees to be instructed to raise and pin the spuds in the up position before a barge is moved. The National Transportation Safety Board therefore recommends that Athena Construction take the following action:

Develop procedures and provide initial and recurrent training to the employees on your barges to use the securing pins to hold spuds safely in place before transiting from one site to another. (M-07-8)

The Safety Board also issued recommendations to the U.S. Coast Guard, the Occupational Safety and Health Administration, and Central Boat Rentals, Inc. The Board would appreciate a response from you within 90 days addressing the actions you have taken or intend to take to implement its recommendation. Please refer to Safety Recommendation M-07-8 in your reply. If you need additional information, you may call (202) 314-6174.

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Chairman