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NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: SEP 2 1982

Forwarded to:

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President
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SAFETY RECOMMENDATION(S)

M-82-38 through -40

On September 20, 1981, the integrated tug-barge tug OXY PRODUCER/OXY 4102 was anchored about 1 nmi offshore from Ponta Delgada, San Miguel Island, Azores, and was undergoing repairs. The barge was carrying a cargo of 39,631 tons of phosphoric acid. During the early morning, the winds and seas increased, and the hulls of the catamaran tug began slamming against the hull of the barge. The master believed that the tug-barge would ride the seas better if underway, and he took the tug-barge from the anchorage about 0550. However, the slamming continued and the tug's hulls were breached. The tug subsequently became disconnected from the barge, flooded, and sank about 0746. No persons were injured, but the tug, valued at approximately \$24 million, was lost. 1/

The master had made no voyages, the chief officer had made two short voyages, and the chief engineer had made one voyage previously on an integrated tug-barge similar to the OXY PRODUCER/OXY 4102. None of the officers had received training in the operation and use of the tug-barge interlocking devices, in the emergency procedures to be followed in the event of interlocking device problems, or in the importance of maintaining a tight fit between the tug and barge. Although the master ordered the crew to secure the tug to the barge with mooring lines and wire cables when the link pins were found to be out of position, the chief officer and the chief engineer attempted to adjust the interlocking devices before the crew had finished securing the lines and cables. However, if the cradles were moved in the wrong direction, as one witness testified, before the lines were secured, the separation and the magnitude of relative motion between the tug and barge would have increased and caused additional damage to the interlocking devices.

Successful operation of an integrated tug-barge such as the OXY PRODUCER/OXY 4102 requires that the tug and the barge be held tightly together in all sea conditions. The interlocking devices, bumper pads, and greenheart bearing surfaces are designed to hold the two vessels tightly together, but only the interlocking devices can be adjusted by the crew during a voyage. If relative motion between the tug and the barge develops, and correct adjustment of the interlocking devices does not stop the relative motion, other actions which might reduce the motion are limited. The tug-barge's speed can be altered and the draft of the tug-barge and the weight of the tug

1/ For more detailed information read Marine Accident Report—"Sinking of the M/V OXY PRODUCER in the Atlantic Ocean near the Azores Islands, September 20, 1981" (NTSB-MAR-82-6).

can be changed by adding or removing ballast. Adjustment of the interlocking devices is difficult when the tug-barge is pitching or rolling in a seaway, although the adjustment procedure is not complicated. However, if the correct adjustment procedure is not followed, or if the interlocking device cradles are not positioned correctly, the tug and barge can be damaged by the resulting misalignments and relative motion. Therefore, the officers who might have to make adjustments to the interlocking devices while underway must be familiar with the correct adjustment procedures.

Although the tug could have been disconnected from the barge at any time during the voyage, the master believed that it was safer to keep the tug on the barge tongue than to attempt to tow the barge. However, he had not previously operated the tug independently of the barge. If he had had such experience, he would have been in a better position to evaluate the advantages and disadvantages of disconnecting from the barge.

Therefore, the National Transportation Safety Board recommends that Seabulk Transmarine II, Inc.:

Establish a formal training program for the officers of Seabulk Transmarine II, Inc.'s integrated tug-barges which includes instruction in the operation and use of the tug-barge interlocking devices, in emergency procedures to be followed in the event of interlocking device failure or the development of relative motion between the tug and barge, and in the operation of the tug and barge as independent vessels. (Class II, Priority Action) (M-82-38)

Require each officer assigned to a Seabulk Transmarine II, Inc. integrated tug-barge to satisfactorily complete the training program developed as a result of the above recommendation. (Class II, Priority Action) (M-82-39)

Require each officer assigned to a Seabulk Transmarine II, Inc. integrated tug-barge to periodically demonstrate competent operation of the interlocking devices and satisfactory knowledge of emergency procedures and tug-barge disconnect/reconnect procedures. (Class II, Priority Action) (M-82-40)

The National Transportation Safety Board is an independent Federal agency with the statutory responsibility "... to promote transportation safety by conducting independent accident investigations" (P.L. 93-633). The Safety Board is vitally interested in any actions taken as a result of its safety recommendation(s). Therefore, we would appreciate a response from you regarding actions taken or contemplated with respect to the recommendation(s) in this letter.

BURNETT, Chairman, McADAMS, BURSLEY, and ENGEN, Members, concurred in these recommendations. GOLDMAN, Vice Chairman, did not participate.


By: Jim Burnett
Chairman