Log M-58

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: November 10, 1977

Forwarded to:

Admiral Owen W. Siler
Commandant
U.S. Coast Guard
Washington, D.C. 20590

SAFETY RECOMMENDATION(S)

M-77-33 through 36

On January 31, 1975, the SS EDGAR M. QUEENY departed the Monsanto Company dock at Bridgeport, New Jersey, and commenced a 180° turn to proceed up the Delaware River to Paulsboro, New Jersey. The turn across the Marcus Hook anchorage into the channel was not successful, and the QUEENY collided with the S/T CORINTHOS. The CORINTHOS was moored across the river on the Pennsylvania side at the British Petroleum dock discharging her cargo of crude oil. The collision initiated a series of explosions and fires that destroyed the CORINTHOS, caused minor damage to the QUEENY, and substantially damaged the British Petroleum facility. As a result of the accident, 26 persons either were killed or are missing, and 11 persons were injured. 1/

The collision resulted from the failure of the pilot aboard the QUEENY to safely execute a turn into Marcus Hook channel. The pilot was regularly assigned to the QUEENY on her itinerary of local ports and had frequently worked with the master. Both the pilot and master were familiar with the operating characteristics of the QUEENY and were well acquainted with the waters in which the ship was operating. The pilot, while maneuvering, divided his attention between conning and intership communications. The master questioned the pilot about the turning maneuver early in the evolution, accepted the assurance of the pilot, and failed to take corrective action until it was too late to avoid the collision with the CORINTHOS.

By recent Federal regulation (33 CFR 164.11(k)), the master is required to provide the pilot with essential information regarding

1/ For more complete information regarding this casualty, read "Marine Casualty Report, SS EDGAR M. QUEENY Collision with the Liberian S/T CORINTHOS, Marcus Hook, Pennsylvania, January 31, 1975." (USCG/NTSB-MAR-77-2)

maneuvering data, vessel characteristics and peculiarities, and equipment status. However, we believe it is at least equally important for the master to have pertinent information in regard to the plans of the pilot. We believe that a turn or maneuver in confined waters should not be undertaken without a briefing or discussion and mutual agreement between the master and the pilot before any maneuvering is begun. This matter was addressed in a previous recommendation as a result of our analysis of another casualty. 2/ In your rulemaking adding Part 164 to 33 CFR, the provision to require the pilot to advise the master regarding certain expected navigational precautions and maneuvers was not included in the final rules which became effective June 1, 1977. The Safety Board still believes that the master and the pilot should discuss and agree on the pertinent features of the planned maneuvers. A discussion between the master and the pilot would permit the master to evaluate the risks of the planned maneuver, resolve any disagreements with the pilot, and give the master the information needed to monitor the vessel's actual conformance with the agreed-upon maneuver. Such a discussion before the QUEENY left the dock could have established the intended position and heading at various checkpoints in the maneuver and avoided the indecisions and disagreements as to whether or not the ship was maneuvering as intended and eliminated the long delay before the master acted to alter the maneuver.

The problem of predicting the path of a ship in a turn is complicated because changes in the ship's angular accelerations are not easily and quickly detected. On board the QUEENY, such changes in angular accelerations could have been expected from the release of the tug, the diminishing effect of the bow thruster, the varying angle of attack of the river current, variations in the shallow bottom contours, and the increasing ship's speed. Although the master and pilot may not have needed to know which factor was causing a change in turn rate, it was important to know as soon as possible when a change did occur. It was also important that they commence their evaluation from an accurate common data base. A rate-of-turn indicating instrument does provide an immediate indication of a change in turn rate as well as a measure of the existing rate. This is particularly important for pilots who must frequently maneuver many vessels with different maneuvering characteristics. It is also important because pilots and masters rely so heavily on visual clues in piloting, yet factors which affect the turn rate, such as variations due to bottom contours, are not visually detectable or readily sensed. We believe that turn indicators should be installed on oceangoing vessels so that they may be operated more safely in restricted and congested waters.

2/ "Marine Casualty Report - SS AFRICAN NEPTUNE: Collision with the Sidney Lanier Bridge at Brunswick, Georgia, on November 7, 1972." (USCG/NTSB-MAR-74-4)

The cargo tanks in the CORINTHOS were penetrated and opened at low speed and at a relatively shallow collision angle. The protruding anchor of the QUEENY was instrumental in causing the breach in the CORINTHOS' hull. Had the anchor not been protruding, providing sharp edges to cut into the side plating, the collision could conceivably have resulted only in denting the plating.

The use of lifeboats was precluded due to their open construction and the surrounding fire. If an enclosed device such as that used successfully for escape from oil drilling rigs had been available to the crew of the CORINTHOS, the loss of life might have been greatly reduced.

The elimination of collision and reduction in the vulnerability of tankships is being pursued by several regulatory and legislative efforts. The elimination of the cascading fire and violent explosion was also addressed by the recommendation of the Marine Board. The Safety Board concurs in these efforts which address the need for inert gas systems, segregated ballast design, and other proposals.

The existence of similar conditions in other accidents is additional evidence that changes are needed. Therefore, the National Transportation Safety Board recommends that the U.S. Coast Guard:

> Amend 33 CFR 164.11(k) to require that masters and pilots discuss beforehand and agree to the essential features and relevant checkpoints of maneuvers expected to be undertaken. (Class II, Priority Action) (M-77-33)
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> Require a rate of turn indicator on the bridge of all ships of 10,000 or more deadweight tons. (Class II, Priority Action) (M-77-34)
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> Develop and promulgate specifications for an enclosed, firesafe, self-contained lifeboat for installation aboard oceangoing vessels of 10,000 or more deadweight tons. (Class II, Priority Action) (M-77-35)
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> Undertake rulemaking and IMCO initiatives to require that anchors be stowed in recesses in the hull so that there is no projection outside the hull plating. (Class III, Longer Term Action) (M-77-36)

BAILEY, Acting Chairman, McADAMS, HOGUE, and KING, Members, concurred in the above recommendations.

Francis H. McAdams

for By: Kay Bailey
Acting Chairman