

M-134

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: October 16, 1980

Forwarded to:

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P.O. Box 100
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SAFETY RECOMMENDATION(S)

M-80-93 through -96

At 1412 c.d.t., on September 1, 1979, while discharging cargo at the Deer Park Shell Oil Company terminal on the Houston ship channel, the American tankship SS CHEVRON HAWAII exploded, burned, and sank after it was struck by lightning. A hull fragment from the exploding vessel penetrated a petroleum product tank at the terminal and caused the tank to explode and the contents to burn. The vessel fire spread into a barge slip where four barges were discharging cargo; all four caught fire, three of which exploded and sank. One crewmember and 2 radar repairmen aboard the vessel were killed, and 13 persons were injured. Damage to the CHEVRON HAWAII was estimated at \$50,000,000. Damages to the terminal, barges, and other vessels, and accident related claims exceeded \$27,000,000. ^{1/}

The CHEVRON HAWAII explosion and fire set off a chain of events which resulted in massive damage to the vessel and widespread damage about the Shell Oil Company terminal. The waterborne cargo oil fire from the vessel extended into the terminal barge slip where four barges at dock No. 1 were discharging or awaiting to discharge crude oil and gasoline. Although there was sufficient time after the tankship explosion to remove the barges from the barge dock, no action was taken to do so. The Shell Oil Company dockman, who was monitoring the cargo transfer of the barge deck, left his station without stopping the cargo operation even though he could have done so by activating an emergency switch located at the approach to the dock.

Two Coast Guard pollution team investigators from the Houston Port Safety Station arrived at the Shell terminal about 15 minutes after the explosion and proceeded to the barges at dock No. 1. They found the barges with cargo tank expansion trunk and ullage hatches open and flame screens lying on the deck.

Although the Shell Oil Company requires towboats to remain on standby when they deliver barges to the terminal for cargo transfer, and several towboats and tugs were available, the towboat operators did not initiate action to remove the barges from the slip. The Safety Board believes that the Shell Oil Company could improve its personnel indoctrination and training with increased emphasis on the importance of observing proper safety procedures during cargo transfer operations.

^{1/} For more information, read "Marine Accident Report—Explosion and Fire On Board the SS CHEVRON HAWAII with Damages to Barges and to the Deer Park Shell Oil Company Terminal, Houston Ship Channel, September 1, 1979" (NTSB-MAR-80-18).

No action was taken to remove the barges by either the dockman or other Shell Oil Company personnel, the Coast Guard investigators who boarded the barges, or the towboat operators on standby. This lack of action might be attributed to inadequate preplanning for such an emergency or the lack of authority of the personnel on scene to direct such action. If the towboat operators considered removing the barges, they did not take or initiate such action. The Safety Board believes that Shell Oil Company regulations relative to operational control authority over standby towboats need to be clarified to cover similar contingencies in the future.

The pollution control boom was not deployed during the transfer of cargo between the CHEVRON HAWAII and the terminal. When the tankship exploded and burned, the stowed containment boom and the motorboat used to deploy it were consumed by the fire. Had the containment boom been deployed, it might have confined the burning oil closer to the CHEVRON HAWAII and either prevented, or at least delayed, the fire from spreading to the barge slip. The Safety Board believes that safer stowage should be provided for the containment boom and that consideration should be given to deploying the boom whenever cargo is being transferred.

Therefore, as a result of its investigation, the National Transportation Safety Board recommends that the Shell Oil Company/Shell Chemical Company, at Deer Park Texas:

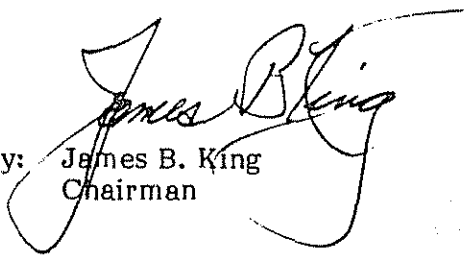
Strengthen company procedures and practices concerning the indoctrination, training, and experience of personnel assigned to supervise or monitor tank vessel operations with emphasis on the importance of strictly observing safety directives during cargo transfer operations. (Class II, Priority Action) (M-80-93)

Establish more effective operational control of tugs and towboats relative to standby procedures and the movement of endangered tank vessels in emergencies. (Class II, Priority Action) (M-80-94)

Provide for safer stowage and rapid deployment of pollution control booms to be used about tank vessels at the crude oil dock and across the barge slip. (Class II, Priority Action) (M-80-95)

Evaluate the advisability of keeping the booms deployed during cargo transfer operations. (Class II, Priority Action) (M-80-96)

KING, Chairman, DRIVER, Vice Chairman, and McADAMS, Member, concurred in these recommendations. GOLDMAN and BURSLEY, Members, did not participate.

By:  James B. King
Chairman