

SP-20
Log M-292

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

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Forwarded to:

Honorable Donald P. Hodel
Secretary
U.S. Department of the Interior
Washington, D.C. 20240

SAFETY RECOMMENDATION(S)

M-85-91

About 1900, c.d.t., on September 25, 1982, a severe explosion occurred in the engineroom of the offshore supply vessel M/V ANGELA BRILEY while the vessel was moored to the Gulf Oil Company drilling platform located at High Island Block 517A in the Gulf of Mexico about 80 nautical miles south-southeast of Galveston, Texas. The ANGELA BRILEY was damaged extensively, two crewmembers were killed, and one crewmember was injured. 1/

The ANGELA BRILEY had arrived earlier in the day about 1400 at High Island Block 517A in the Gulf of Mexico about 80 nmi south-southeast of Galveston, Texas, and moored alongside a Gulf Oil Corporation drilling platform. While moored, the ANGELA BRILEY experienced problems with excessive water in the engineroom bilges, which the crew believed was coming from a leaking stern tube. The chief engineer attempted to pump the bilges using the vessel's installed bilge pumps and other fixed pumps but was unsuccessful. About 1630, the master, chief engineer, and mate decided to pump the bilges using a portable electric pump because the water had risen to the level of the engineroom floor plates.

About 1645, before the portable electric pump was rigged for use, the rising bilge water shorted the main switchboard, causing a total loss of electrical power throughout the vessel, and the diesel generator ceased operating. Thus, the only machinery operating throughout the vessel were the idling main engines. The chief engineer and the mate went to the drilling platform and asked for assistance. It was agreed that the platform would provide a pneumatic pump with suction and discharge hoses and the vessel would provide an air hose to be led up to the platform. At 1700, a 2-inch pneumatic pump was placed on the deck of the ANGELA BRILEY, and the vessel's air hose was hauled up to the platform. The hose was led to the production deck of the platform where it was connected to piping to natural gas which was under pressure and could be used to power portable pneumatic equipment. The piping was not marked at the connection point to indicate its contents.

1/ For more detailed information, read Marine Summary Report—"U.S. Offshore Supply Vessel M/V ANGELA BRILEY, Gulf of Mexico, September 25, 1982" (NTSB/MAR-85/02/SUM).

This was the only source of pneumatic low pressure on the production deck. Compressed air was available on the rig mounted above the platform deck, but there were no lines leading down to the production deck. Neither the roustabout (member of the platform crew) nor the ANGELA BRILEY deckhand who attached the hose to the platform piping knew that the hose was connected to a natural gas line. The natural gas was colorless and odorless because the supply was coming directly from its underground source and had not been odorized.

The ANGELA BRILEY crew tried for several minutes to get the 2-inch pump to pick up suction. When this proved unsuccessful, a larger 3-inch pump was provided by the platform crew. About 1720, the larger pump was placed on deck and pumping of the engineroom bilges commenced. At 1810, the pump lost suction. The hose to the natural gas piping was disconnected, pinched off, and the pump was carried into the engineroom of the ANGELA BRILEY and the hose was reconnected. Around 1820, pumping of the engineroom bilges resumed. Every time the pump cycled, natural gas was exhausted into the engineroom. However, because the natural gas was colorless and odorless, the crew of the ANGELA BRILEY did not notice that the natural gas was accumulating in the engineroom.

Shortly after the pump was started in the engineroom, the main engines began to idle poorly (probably because they were ingesting natural gas) and they were secured. This left no vessel equipment operating. With the shutdown of the engineroom ventilation equipment, all personnel left the engineroom and stood by on the cargo deck. By about 1850, the water level in the engineroom had been pumped down to below the switchboard. While the cook and two crewmembers remained on the cargo deck and the mate went to the pilothouse, the master and chief engineer returned to the engineroom and made several attempts to start the generator. These attempts were accompanied by very loud backfires or explosions and flames from the exhaust stack.

About 1900, as an able-bodied seaman was approaching the engineroom escape hatch to make sure that the master and chief engineer were aware of the backfires, a large explosion occurred inside the vessel. A fireball shot out from the engineroom escape hatch and from openings blown in the main deck, but there was no ensuing fire. The chief engineer died instantly, the master died 4 days later, the seaman received burns, and the mate and the two other crewmembers were not injured. The platform was not damaged, but the ANGELA BRILEY was damaged extensively.

Because the piping and connection point for the natural gas on the platform was not marked to indicate its contents, the roustabout and the deckhand who connected the hose on the platform for the pump knew only that it was a source of pneumatic pressure. Because the natural gas that was released from the pneumatic pump was odorless and colorless, the vessel's crew could not detect the natural gas that accumulated in the engineroom. The Safety Board concludes that a spark produced by the generator during the attempt to start it ignited the natural gas. The Safety Board believes that regulations or guidelines for the safe use of natural gas on drilling platforms and in portable pneumatic equipment/tools powered by natural gas should be established for the offshore industry.

Therefore, the National Transportation Safety Board recommends that the U.S. Department of the Interior:

Develop and promulgate an Outer Continental Shelf Order for the safe use of natural gas on offshore drilling platforms. Areas that should be addressed are:

- a. Marking of natural gas lines, other pipelines, outlets, and equipment;
- b. use of warning labels on portable pneumatic equipment and tools powered by natural gas;
- c. proper venting of equipment and tools powered by natural gas; and
- d. control of sources of ignition around equipment powered by natural gas.

(Class II, Priority Action) (M-85-91)

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.

BURNETT, Chairman, GOLDMAN, Vice Chairman, and BURSLEY, Member, concurred in this recommendation.


By: Jim Burnett
Chairman