



National Transportation Safety Board

Washington, DC 20594

Marine Accident Brief

Accident No.: DCA-97-MM-028
Vessel: Bahamian-registered passenger ship, *Vistafjord*, Lloyd's No.7214715;
built in 1973; 24,116 gross tons; 626.9 by 82.2 by 55.0 feet
Accident Type: Fire
Location: Atlantic Ocean near Grand Bahama Island, Bahamas,
Latitude 26° 14.1'N, Longitude 79° 00.0'W
Date and Time: April 6, 1997, at 0112
Owner: Cunard Lines Ltd., Nassau, Bahamas
Property Damage: Estimate of \$684,845
Injuries: Fatal, one crewmember; minor, six passengers and nine crewmembers
Complement: 422 crewmembers with 569 passengers

Accident Description

At 2107 on April 5, 1997, the Bahamian-registered passenger ship *Vistafjord* departed Fort Lauderdale, Florida, for a 16-day cruise to Valletta, Malta, with 569 passengers and 422 crewmembers on board.¹ About 0112 on April 6, a fire alarm sounded on the fire control panel in the bridge indicating a fire was in the C-deck laundry storeroom. A heat detector, which had been set at 70°C (158°F), had activated in the storeroom. The laundry and the laundry storeroom had been unoccupied since 2345 on April 5. The watch officer immediately sounded the general alarm bell throughout the entire ship, alerting passengers and crew; during the next 7 minutes, the alarms were sounded twice more. The master announced over the public address system that a fire had been discovered and ordered that the passengers and crew report to their lifeboat embarkation area. At 0115, the master ordered that all fire doors be remotely closed and the ventilation stopped by the bridge controls to isolate the fire. Fire teams were sent to the area on both sides of the C-deck laundry storeroom. At 0238, the course of the vessel was changed to Freeport, Bahamas. The *Vistafjord* was about 20 miles southwest of Freeport and 60 miles east of Fort Lauderdale.

The C-deck laundry storeroom is forward of the laundry in the forward section of the vessel. The laundry storeroom is accessed from aft through a watertight door (WTD) on the common bulkhead between the C-deck laundry and the storeroom and from forward by a stairway that leads down from the B- and A-decks. This stairway also leads down to the forward D-deck storeroom below the laundry storeroom. (See figure 1.) The laundry storeroom and the D-deck

¹The vessel was to be refitted at Malta to meet the 1992 amendments to the International Maritime Organization fire safety rules of the Safety of Life at Sea Convention (SOLAS).

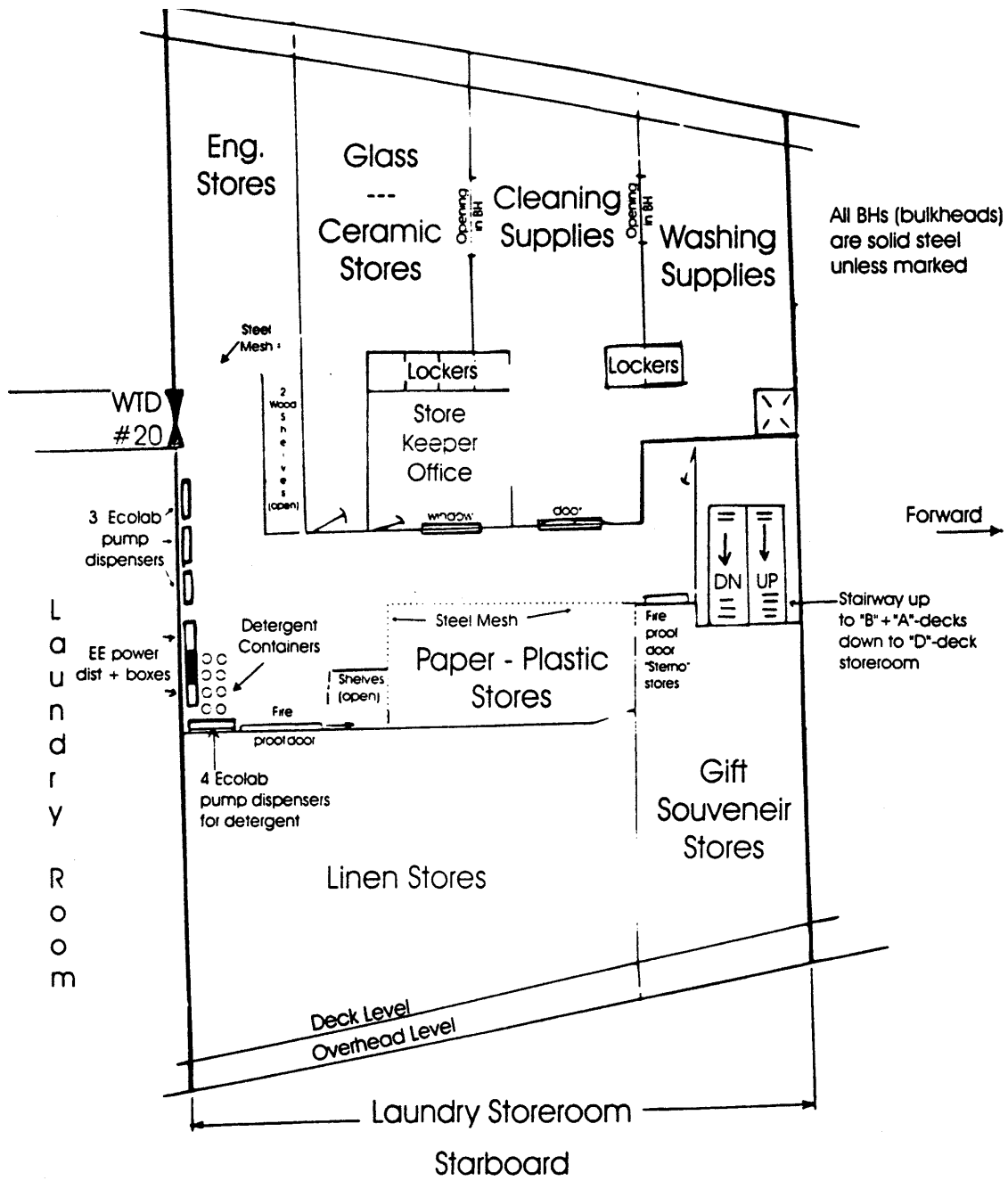


Figure 1 – Layout of fire area on C-deck.

storeroom² below it were protected by a fixed carbon-dioxide (CO₂) system. At 0232 before the release of CO₂ into the storerooms, the master ordered the fire teams to withdraw from the fire area. Nineteen 45-kilogram (99-pound) CO₂ bottles were released between 0241 and 0415 from the fixed fire extinguishing system into the laundry storeroom and the D-deck storeroom (7 and 12, respectively). At 0600, fire teams again entered the fire area with fire hoses.

At 0343, the person-in-charge of mustering personnel in that section of the ship reported that one crewmember was missing. His room was searched at 0352, but he was not found. After searching other crew rooms in the area, the missing crewmember was found at 0638 behind a door in another crewmember's room. That room was next to the port side WTD on B-deck forward (one deck above the laundry). The crewmember was immediately removed from the room, given cardiopulmonary resuscitation by the ship's doctor and nurse, and subsequently transported by ambulance to a shoreside hospital, where he was later pronounced dead. His fatality resulted from "carbon monoxide poisoning derived from a fire."

While the ship was en route to the dock in Freeport, shoreside firefighters boarded the vessel underway at 0452 and assisted the crew in fighting the fire. At 0506, the ship was moored in Freeport, and more shoreside firefighters came aboard and assisted in the firefighting operations. The fire was under control and declared extinguished on April 6 at 0700 and 1044, respectively.

Laundry supplies, paper and plastic products, and electrical stores had been stowed behind steel bulkhead partitions or in locked steel mesh cages on the port and starboard sides of the C-deck laundry storeroom. Laundry supplies behind a fireproof sliding door were undamaged. The paper and plastic products on shelves in the caged area were burned and melted. About 30 boxes, each containing 72 cans of Sterno, were stored behind a fireproof locked door, and none of the cans ignited. The heavily smoke-damaged stairway area appeared to have had fire damage from the C-deck up to the A-deck. Smoke damage occurred on the forward B-deck (crew) area above the laundry storeroom.

The four electrical pump-dispenser panels, which supplied liquid detergent to washing machines, were mounted above the deck on the starboard bulkhead aft corner and sustained fire damage. The third pump panel up appeared to have the most fire and heat damage. The three electrical power distribution panel boxes on the aft bulkhead sustained fire and heat damage. Port of the WTD, the electrical stores inside a steel mesh cage were smoke damaged. Forward of the WTD were wooden shelves holding 5-gallon plastic pails containing laundry products. The upper

²At 0126 on February 11, 1997, while on a cruise, the *Vistafford* was near Punta Arenas, Chile, around the southern end of South America when fires erupted in the D-deck forward storeroom and outside of the C-deck laundry. Both spaces were unoccupied at the time, and the fires were extinguished by the crew without injury to anyone on board. A fire investigator, employed by Cunard Lines Ltd., concluded that the char patterns in the storeroom on D-deck were the result of a flammable liquid being used. The cause of the fire outside of the laundry could not be determined, but the investigator believed that that fire had been ignited deliberately. The National Transportation Safety Board did not investigate the fire.

wooden shelving sustained some charring and the tops and sides of plastic pails on the middle shelf sustained some melting, but no product had leaked.

The possible ignition sources for the fire in the laundry storeroom included the electrical detergent pump-dispenser panels, the electrical distribution panels, discarded tobacco-related smoking materials, and a deliberate act. The storeroom was unlocked with access by a stairway forward and a WTD to a corridor and stairway outside of the locked laundry.

The four pump-dispenser panels on the starboard aft corner of the storeroom were examined by Safety Board investigators in the Cunard Lines legal office in Miami, Florida, on August 27, 1997.³ The Safety Board found no evidence of electrical failure of the 110-volt supply connections in the pump-dispenser panels and could not determine whether detergent with a flash point 150°F had leaked into the pump-dispenser panels and ignited the fire. The electrical system distribution panels near the pump-dispenser panels had extensive heat and fire damage, but photographs of the area that were examined did not show any electrical arcing or failure in the electrical distribution panels.

Because the fire debris had been disturbed or removed during firefighting operations, an examination for discarded tobacco-related smoking materials could not be made. The burn pattern in this fire showed evidence of two potential ignition sites, which were on the pump-dispenser panels starboard aft and in the paper-plastic supplies storage area starboard forward. The observation that the sites were between 10 and 15 feet apart makes it highly unlikely that carelessly discarded tobacco-related smoking materials started the fire. Because it seems unlikely that a fire would originate from accidental sources in two separate locations and no evidence of any other cause was found, it appears highly probable that the fire was purposely set.

The lack of an early fire detection system (smoke detectors in lieu of or in addition to heat detectors) in the laundry storeroom probably contributed to the amount of fire damage. An operating smoke detector in the storeroom would have warned of a fire that was still in the smoldering stage. The forced ventilation in the laundry storeroom where the fire originated allowed the early spread of heat, combustible gases, and smoke into the stairway forward of the storeroom and to B-deck and other spaces. The SOLAS rules, amended in 1992 with an effective date of October 1, 1997, for the installation of smoke detection devices on board passenger ships with alarm indicators in a continually manned central control station do not require smoke detectors to automatically sound locally when smoke is detected. An automatic smoke alarm that would sound within crew accommodation areas when smoke is detected would offer crewmembers immediate warning of the presence of smoke and allow the maximum available escape time during a fire. The lack of a smoke detector in the storeroom to detect the fire early and the lack of an automatic local-sounding smoke alarm in the crew area probably contributed to the crew fatality.

As a result of its investigation of this accident and another fatal fire on board the Panamanian Passenger Ship *Universe Explorer* in July 1996 near Juneau, Alaska, the Safety Board issued urgent safety recommendations in April 1997 to Cunard Lines urging without delay to install

³The Safety Board fire specialist was unavailable to conduct the examinations sooner because he was involved in two major aviation accident investigations.

smoke alarms that sound locally in the crew and passenger accommodation areas so that the crew and passengers will receive immediate warning of the presence of smoke and will have the maximum available escape time during a fire. As of January 1998, Cunard Lines has not responded to the recommendations.

The laundry storeroom was not required to be fitted and was not fitted with an automatic sprinkler system. Although the space was protected by a CO₂ extinguishing system, it did not immediately extinguish the fire. The master began discharging CO₂ into the storeroom at 0241, but the fire was not extinguished until 1044 after firefighters entered the space with fire hoses. If the storeroom had been fitted with an automatic sprinkler system, the system would have begun discharging firefighting water at the first moment that the heat detector activated. The immediate suppression response provided by an automatic sprinkler system would have extinguished the flames early, reduced the amount of smoke that developed, and cooled the fire area, thus enabling early entry by the backup fire parties.

Probable Cause

The National Transportation Safety Board determines that the probable cause of the fire on board the *Vistafford* was a deliberate ignition of combustibles at two sites in the laundry storeroom. Contributing to the loss of life was the lack of timely fire warning for the crewmembers in B-deck accommodations and of an automatic sprinkler system in the laundry storeroom.

Adopted: March 10, 1998