



# National Transportation Safety Board

Washington, D.C. 20594

## Safety Recommendation

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**Date:** August 8, 2001

**In reply refer to:** M-01-13

Admiral James Loy  
Commandant  
U.S. Coast Guard  
Washington, D.C. 20593-0001

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On the morning of May 23, 2000, while the Netherlands-registered passenger ship *Nieuw Amsterdam* was en route to Glacier National Park carrying 1,169 passengers and 542 crewmembers, a fire broke out in a crew cabin. A premature effort to extinguish the fire by officers lacking proper gear and backup contributed to the spread of fire and smoke. The fire did not spread beyond the deck of origin; however, the untimely closing of fire screen doors (FSDs) and watertight doors (WTDs) allowed the smoke to migrate up eight decks, creating hazardous conditions in crew and passenger accommodations areas. Properly outfitted and equipped shipboard firefighting teams subsequently extinguished the fire. One passenger sustained smoke inhalation injuries and had to be evacuated by medical helicopter to a shoreside hospital for additional medical treatment. Property damage to the vessel was estimated at more than \$360,000.<sup>1</sup>

The National Transportation Safety Board determined that the probable cause of the fire on board the *Nieuw Amsterdam* was the unauthorized use of a coffee maker that had been left unattended and plugged into an electrical outlet in a crew cabin. Contributing to the extent of the fire damage and spread of smoke was a breakdown in firefighting command and control by the vessel's master and senior officers.

The accident investigation revealed that, at 0911, the ship's fire detection system received an alarm indicating that a smoke detector had activated in a crew cabin on D deck (cabin D98). The third officer on duty in the pilothouse immediately notified the master and dispatched one of the duty quartermasters to determine whether the alarm was false. The quartermaster had a smoke mask and a UHF radio with which he could communicate with the bridge. When the quartermaster arrived at cabin D98, he noticed smoke coming through the louvers in the cabin door. He radioed his findings to the bridge and, with the assistance of another crewman, attempted to extinguish the fire with

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<sup>1</sup> For more detailed information, read: National Transportation Safety Board *Fire On Board the Netherlands Registered Passenger Ship Nieuw Amsterdam, Glacier Bay, Alaska, May 23, 2000*, Marine Accident Brief NTSB/MBR-01/01 (Washington, DC: NTSB, 2001). This report will be posted on the Web at <http://www.nts.gov>.

a portable fire extinguisher. When these efforts proved ineffective, the two crewmen closed the door and the quartermaster reported the situation to the bridge.

The breakdown in the systematic handling of the emergency began with the master's actions on the bridge. When the third officer told the master of the quartermaster's account of the smoke, the master's first action was to violate his own shipboard fire plan. He ordered the chief officer to investigate the fire scene instead of having him immediately report to the bridge, his assigned duty station in the event of a fire. As the person in charge of the command and control of shipboard firefighting operations, the chief officer belonged on the bridge, where he had access to communications equipment, vessel plans, fire detection and suppression systems, and remote controls for the ventilation systems, FSDs, and WTDs and where he could receive reports of conditions, assess the situation, and plan the proper course of action. The master, however, assumed the chief officer's responsibilities, as well as his own, which included the safe navigation of the ship, the internal and external communications, and the overall management of the shipboard emergency to ensure the safety of the passengers and crewmembers.

Holland America's shipboard emergency procedures were based on the assumption that the existence of a fire would be verified before the ship's firefighting assets were mobilized. In this case, the quartermaster had been tasked appropriately with this responsibility. However, despite the quartermaster's providing an early confirmation of the fire and follow-up calls advising the bridge on the status of the fire, the master did not immediately react. He did not sound the general alarm signaling the fire teams to marshal or broadcast a message alerting crewmembers on D deck to evacuate their accommodations until he received a call several minutes later from an officer who happened to be on D deck.

While the master was trying to juggle his own responsibilities and the firefighting responsibilities of the chief officer, additional crucial actions were not executed in a timely manner. The master lost some degree of control over external communications and did not ensure that the Coast Guard was contacted in a timely manner. About an hour elapsed after the fire alarm sounded before the Coast Guard received a relayed distress signal from another Holland America vessel and responded to the *Nieuw Amsterdam* emergency. If the fire on the *Nieuw Amsterdam* had been beyond the capabilities of the shipboard firefighters, the delay in contacting the Coast Guard and arranging for additional resources could have had tragic consequences.

Inefficient management contributed to the spread of smoke beyond the area of the fire and increased the risk of injury to passengers and crewmembers. Following the quartermaster's report of the fire, the master did not immediately order the ventilation secured in any area of the ship. He also did not immediately order the fire doors closed and the decks progressively cleared in response to his receiving continuous alarms and crewmembers' reports indicating the smoke was migrating to other decks. Any of these actions could have dramatically curtailed the spread of smoke throughout the *Nieuw Amsterdam*.

Smoke control problems were not limited to the bridge. Some crewmembers did not recognize the importance of promptly reporting smoke conditions. For example, the chief officer, during his descent to D deck, failed to alert the bridge that he smelled smoke on C deck. Such information might have assisted the master in directing smoke control activities. The Safety Board notes that the ship's log indicates that the *Nieuw Amsterdam* conducted periodic fire drills as required by the *International Convention for the Safety of Life at Sea, 1974* and that Coast Guard reports indicate that shipboard personnel had performed satisfactorily during a fire drill that was conducted as part of the Coast Guard's last quarterly examination.<sup>2</sup>

The focus during fire drills, however, is typically on firefighting. To maximize safety on a passenger ship, procedures for managing the evacuation of passengers and crew and for managing the control of smoke need to be established. For example, crewmembers need to be trained to immediately report any progression of smoke, to rapidly evacuate any passengers and crew from smoke-threatened areas, and to close FSDs to prevent the migration of smoke any farther. Officers, too, need to be trained to take proactive measures to prevent the migration of smoke and to direct the clearing of decks where passengers and crewmembers might be located. They should be able to use the fire control plan so that they can anticipate where smoke might migrate. They should interactively coordinate with crewmembers to clear the decks and close the FSDs. They should be able to activate or shut down ventilation as appropriate. Drills should be devised and practiced that feature different scenarios to test the abilities of the officers and crewmembers to respond to different smoke conditions.

During the early stages of the fire, the chief officer and the chief engineer essentially abandoned their command roles, choosing to make a premature attack on the fire without obtaining proper gear and arranging for backup. Their inappropriate actions directly contributed to the spread of fire and smoke.

Some of the firefighting personnel handled the firefighting effectively, albeit not in accordance with the ship's station bill. The performance of the ship's Bravo squad in attacking this fire demonstrated that they were trained and properly equipped to extinguish the fire. They used proper techniques in approaching the fire and backed one another up during the firefighting evolution. They maintained effective communications with each other and with the bridge via radio; their efforts resulted in the fire being extinguished in short order, with no injury to any of the firefighters. Had the chief mate and the chief engineer not acted precipitately during the early stages of the fire, the regularly constituted and properly outfitted fire squads would probably have extinguished the fire inside cabin D98 and flames might never have spread to the adjoining passageways. The actions of the chief officer and chief engineer compromised the effectiveness of the ship's firefighting capability, needlessly endangered themselves, and risked the safety of the passengers and crew.

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<sup>2</sup> The examination was conducted on May 21, 2000.

That the Bravo fire teams expeditiously extinguished the fire was a credit to their organization, training, and ability. However, like the chief officer, the Bravo squad officers elected to assume forward attack positions without arranging for replacements in their command and control positions. If the second engineer and the third engineer had been seriously injured or overcome by smoke, the handling of the emergency might have been adversely affected.

All of the officers in this firefighting effort were well qualified marine officers who had completed basic and advanced firefighting training and who had participated in the regular fire drills conducted on board the ship. While the training may have provided adequate skills for some shipboard personnel to attack a fire, the drills apparently did not adequately prepare some officers to appropriately assess a fire emergency and/or manage firefighting assets. The Safety Board considers it essential to the safe operation of ships that masters and other officers be able to fulfill their proper command and control functions during shipboard fires.

As a result of this accident investigation, the Safety Board asked that Holland America revise its training and drills to emphasize the managers' responsibilities and proper response to varying smoke conditions during a fire. The Board also asked that as part of its management oversight to ensure the continued adequacy of its safety programs, Holland America assess the effectiveness of its training and drills in firefighting command and control and the effectiveness of its procedures for controlling the spread of smoke during a shipboard fire.

The Safety Board is aware that the International Maritime Organization's Maritime Safety Committee has established a working group to consider safety on large passenger ships. The working group is considering safety on existing and future large passenger ship from a global perspective, that is, from an overall systems-safety approach. In reviewing large passenger ship safety issues, the working group is also considering matters related to the human element, such as operations, management, and training. The Safety Board is convinced that the circumstances of the *Nieuw Amsterdam*'s fire, described in greater detail in the Board's report of its investigation, provide many lessons directly related to the interests of the working group.

The National Transportation Safety Board, therefore, makes the following recommendation to the U.S. Coast Guard:

Submit the lessons learned from the National Transportation Safety Board's investigation of the *Nieuw Amsterdam* accident, in particular, the need for proper firefighting management and the need to control the spread of smoke, to the International Maritime Organization's Working Group on Large Passenger Ship Safety for its consideration. (M-01-13)

The Safety Board also issued related safety recommendations to Holland America Line Westours, Inc., American Classic Voyages, Carnival Corporation, Inc., Crystal Cruises, Disney Cruise Line, Norwegian Cruise Line, Orient Lines, P&O Princess

Cruises International, Ltd., Radisson Seven Seas Cruises, Regal Cruises, Renaissance Cruises, Inc., Royal Olympic Cruises, Royal Caribbean Cruises, Ltd., and Silversea Cruises, Ltd. In your response to the recommendation in this letter, please refer to M-01-13. If you need additional information, you may call (202) 314-6607.

Acting Chairman CARMODY and Members HAMMERSCHMIDT, GOGLIA, and BLACK concurred in this recommendation.

By: Carol J. Carmody  
Acting Chairman