



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: September 26, 2002

In reply refer to: M-02-23 and -24

Mr. Gus N. Markou
Director of Marine Operations
Circle Navigation Company of New York
World Yacht Marina, Pier 81
West 41st Street at the Hudson River
New York, New York 10036

The National Transportation Safety Board (Safety Board) is an independent Federal agency charged by Congress with investigating transportation accidents, determining their probable cause, and making recommendations to prevent similar accidents from occurring. We are providing the following information to urge you to take action on the safety recommendations in this letter. The Safety Board is vitally interested in these recommendations because they are designed to prevent accidents and save lives.

The recommendations address the adequacy of crewmember training in marine firefighting and company maintenance and inspection procedures. The recommendations are derived from the Safety Board's investigation of the fire on board the high-speed domestic vessel *Seastreak New York* near Sandy Hook Point, New Jersey, on September 28, 2001, and are consistent with the evidence we found and the analysis we performed.¹ As a result of this investigation, the Safety Board has issued safety recommendations to Cummins Engine Company, Inc., and Circle Navigation Company of New York. The Safety Board would appreciate a response from you within 90 days addressing actions you have taken or intend to take to implement our recommendation.

The National Transportation Safety Board determined that the probable cause of the fire on board the *Seastreak New York* was the improper installation of the Centinel System's lube oil hose, which allowed the hose to come in contact with the hot exhaust manifold. Contributing to the cause of the fire was the absence of detailed guidance from the manufacturer of the Centinel System on the proper installation of the system. Also contributing to the cause of the fire was the lack of inspection and maintenance procedures by Circle Navigation Company that might have discovered the improper installation.

¹ For further information, read: National Transportation Safety Board, *Fire On Board the Small Passenger Vessel Seastreak New York, Sandy Hook Point, New Jersey, September 28, 2001*, Marine Accident Report NTSB/MAR-02/04 (Washington, DC: NTSB, 2002).

In this accident, deckhand No. 4 discovered the fire and acted instinctively to try to extinguish it using the nearby portable CO₂ extinguisher. His first action, however, should have been to notify the master before attempting to control the fire.² Training indicates that the proper procedures would have been to call the master on the telephone that was located in the engineroom. This would have given the master the opportunity to shut down the engine, either remotely or by directing deckhand No. 4 to do so locally. With the engine secured, the hose would no longer have been pressurized, and the flare-up may not have occurred or, at least, might have been greatly reduced. This could have lessened the severity of the emergency, and, possibly, instead of a fire igniting, an engine failure might have occurred.

After deckhand No. 4 retrieved the portable extinguisher, he pulled its safety pin and moved toward the fire. He did not check to see whether the extinguisher was operational by making a quick discharge. Checking the extinguisher in this manner before approaching a fire is critical to ensuring personal safety. Attacking a fire only to discover that the extinguisher is not operational creates a serious personal risk.

Had deckhand No. 4 been overcome by the flare-up and unable to exit the engine room, the situation could have been worse. The *Seastreak New York* carried no fire protection equipment (including SCBA³) for personnel and no such equipment was required. Entry into the burning engineroom by another crewmember would not have been possible. The crewmembers would have been faced with the choice of either closing the engineroom and using the CO₂, which probably would have killed deckhand No. 4, or leaving the engineroom open, which could have allowed the fire to spread to the passenger cabins.

As the deckhand evacuated the engineroom, he believed his clothes were on fire and planned to jump into the water to extinguish the fire. If the deckhand had jumped overboard, the crewmembers' attentions would have in all likelihood been focused on responding to the man overboard. The delay in securing the access hatch and responding to the fire could have created a situation in which the fire would have spread to the passenger cabins. If the deckhand who left the engineroom had collapsed after securing the space and had not prevented deckhand No. 1 from reopening the access doors to the space, a sudden introduction of additional oxygen could have caused the fire to flash and could have resulted in the fire spreading to the passenger cabins. Had the fire spread into the passenger cabins, the risk to passengers and crewmembers would have been a greatly increased. Smoke would have filled most if not all of the passenger cabins. The primary area of refuge from the smoke would have been the exterior third deck. The quick movement of 198 passengers to that space would have been difficult and hazardous. Without proper training in firefighting, it is doubtful that the crewmembers could have prevented the spread of the fire. Based on the crewmembers' actions and the potential ramifications of their response, the Safety Board concluded that while the fire was

² "The first actions are to sound the alarm and report the fire location...Do not attempt to extinguish a fire, however small it may seem, until sounding the alarm by voice, telephone, pull box, etc." Barbara Adams, *Marine Fire Fighting* (Stillwater, Oklahoma: Fire Protection Publications, 2000) p. 241.

³ Self-Contained Breathing Apparatus.

successfully extinguished, the crew's lack of training could have negatively impacted passenger safety.

Once deckhand No. 4 had exited from the engine room, the crewmembers followed the proper procedures as far as physical actions required before activating the fixed fire suppression system. They closed the access hatches, secured the ventilation dampers and the blower, shifted the electrical load to the port generator, and secured the fuel to all equipment in the engine room. However, there was some confusion about getting permission from the master before activating the CO₂ release. Deckhand No. 4 was unaware that he needed to get permission to activate the system. Accepted industry practice is as follows: "When to use a fixed fire suppression system is an important decision that the designated officer in charge of fire control must make after becoming well informed of the situation and its surrounding circumstances."⁴ On the *Seastreak New York*, this officer was the master. If the fire suppression system is activated without the master's knowledge or permission, it may adversely affect the results of decisions and actions he is directing. If he were to direct that an engine room hatch be opened after the CO₂ was discharged, it would negate the effectiveness of the CO₂. The CO₂ would also be hazardous, possibly fatal, to anyone entering the engine room.

New York Waterway, another company that operates commuter ferries in the metropolitan New York area, has voluntarily provided formal firefighting training to its marine crews. This shows that companies can take action to improve fire safety on their vessels without having to wait for the development of regulations requiring them to do so. Firefighting training is critical, not only for the safety of the vessels and crews, but also for the safety of the passengers. The actions of the crewmembers of the *Seastreak New York* in this fire show that Circle Navigation Company marine personnel lacked adequate firefighting training. Consequently, the Safety Board believes that Circle Navigation Company should develop and implement a training program in marine firefighting for its crewmembers.

The *Seastreak New York* had been in service less than 6 months when this fire occurred. Although there could be a reasonable expectation that components should not fail in such a short period, attachments to engines are subject to vibration, abrasion, and heat and may be vulnerable to failure long before the manufacturer's recommended replacement date. Attachments such as hoses are particularly vulnerable and should be visually inspected frequently and regularly to ensure that they are not subject to stresses that could materially lessen their service life. The condition of hoses is particularly important because they typically hold flammable liquids under pressure and if the hose fails for any reason, the likelihood of fire is very high. As can be seen from this accident, even relatively new hoses can fail, if the conditions are appropriate.

A comprehensive maintenance and inspection program should start when the vessel is delivered to the owner and should include frequent inspections of the condition, routing, and securing of hoses to the main engine and to other operating diesel engines. If a comprehensive inspection program had been in place at Circle Navigation, the hose

⁴ Adams, p. 201.

resting on the manifold would probably have been identified and the hose rerouted and secured before the hose ruptured, and this fire could have been avoided. The lack of a preventive maintenance and inspection program set the stage for this fire to occur.

As discussed in the Safety Board's report on the fire on the *Port Imperial Manhattan*, the airline, rail, and motor carrier industries require preventive maintenance programs.⁵ As a result of the *Port Imperial Manhattan* fire, the Safety Board recommended (Safety Recommendation M-02-5) that the Coast Guard require that companies operating domestic passenger vessels develop and implement preventive maintenance programs for all systems affecting the safe operation of their vessels, including the hull and the mechanical, and electrical systems. At the time of this writing, the Safety Board is still awaiting the Coast Guard's response to this recommendation. However, recognizing that the Coast Guard rulemaking requiring preventive maintenance programs is likely to be a time-consuming process, the Safety Board believes that, in the interim, Circle Navigation should develop and implement a preventive maintenance and inspection program for systems affecting the safe operation of its vessels, including the hull and the mechanical and electrical systems.

The National Transportation Safety Board, therefore, makes the following safety recommendations to Circle Navigation Company of New York:

Develop and implement a training program in marine firefighting for your crewmembers. (M-02-23)

Develop and implement a preventive maintenance and inspection program for systems affecting the safe operation of your vessels, including the hull and the mechanical and electrical systems. (M-02-24)

In your response to the recommendations in this letter, please refer to M-02-23 and -24. If you need additional information, you may call (202) 314-6177.

Acting Chairman CARMODY and Members HAMMERSCHMIDT, GOGLIA, and BLACK concurred in these recommendations.

Original Signed

By: Carol J. Carmody
Acting Chairman

⁵ National Transportation Safety Board, *Fire On Board the Small Passenger Vessel Port Imperial Manhattan, Hudson River, New York City, New York, November 17, 2000*. NTSB/MAR-02-02 (Washington, D.C.: NTSB, 2002).