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National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Admiral J. William Kime
Commandant
United States Coast Guard
2100 2nd Street, S.W.
Washington, D.C. 20593

Date: December 11, 1990
In reply refer to:
M-90-110 and -111

At 1130 on December 2, 1989, the small passenger vessel BRONX QUEEN, a charter fishing vessel, with 14 passengers and 5 crewmembers aboard, anchored about 3 miles east of Sandy Hook, New Jersey, to allow the passengers to fish. The wind was moderate, and the seas were 3 to 5 feet high. During the afternoon the wind and the seas increased. By 1500 the wind velocity was 25 to 30 knots from the southwest, and the seas were about 7 feet high. The master ordered the fishing activities stopped and the vessel to return to its Bronx River berth at Bronx, New York.

After the BRONX QUEEN had been underway for about 15 minutes, the master felt a "thump" apparently from the after end of the vessel. He immediately ordered his first mate¹ to inspect the lazarette, the aftermost compartment in the hull. The mate found approximately 2 feet of water in the lower compartment. He quickly went to the engineroom, started one of the three bilge pumps, and informed the master of the flooding.

A few minutes later, the mate rechecked the lazarette and noticed that the water level had increased. He returned to the engineroom, started a second bilge pump, and told the master about the increased flooding.

Shortly after receiving the mate's report, the master slowed the vessel, went aft, and inspected the lazarette. He noticed the water was about 1 foot below the lower compartment hatch and concluded that it was rising. He secured the nonwatertight hatch, returned to the pilothouse, and increased the speed on the engines. At 1520 he broadcast a "MAYDAY" distress call over the VHF-FM radiotelephone on Channel 16. U.S. Coast Guard Group Sandy Hook responded and said that help was en route.

As the BRONX QUEEN approached Ambrose Channel, the master changed the vessel's heading to the left and paralleled the channel to allow an outbound freighter to pass. When he returned to a northerly heading to cross the channel, he noticed that the vessel handled "sluggishly." He stated that a large wave, caused by the passing ship, struck the starboard quarter of the BRONX QUEEN and tore away a large bait box, a ventilator, and the after cabin hatch. The master believed that additional flooding occurred when seawater from the wave entered the exposed after cabin and caused the stern to sink deeper into the water. When the vessel reached the northern side of Ambrose Channel near Buoy 2A, the water on deck had reached the engineroom hatch and

¹Informal title of an unlicensed crewmember who assisted the master.

had flooded the engineroom, causing the main engines and generators to stop. The master then ordered the passengers and crew to don lifejackets and to assemble on the bow to await the Coast Guard. The seas had increased to about 10 feet high, and additional sections of the deckhouse were washed away. The BRONX QUEEN continued to sink by the stern until only the bow remained above the water.

A Coast Guard 41-foot utility boat (UTB) from the USCG Station Sandy Hook arrived on scene while the passengers and crew were on the bow of the BRONX QUEEN. The water surface around the sinking vessel was littered with floating debris that included lifejackets, rope, coolers, sections of the deckhouse, and other material. Because debris in the water might damage the UTB propeller, the UTB was unable to come close to the sinking vessel and stood off about 20 to 30 feet. One Coast Guard crewmember shouted to the persons on the bow to enter the water one at a time and to swim towards the UTB. Instead, all 19 persons jumped into the 38-degree Fahrenheit water. Before jumping, the master released two 18-man buoyant apparatus that were stowed near the bow. These provided support for some in the water. The UTB crew pulled four survivors from the water, but the UTB high freeboard (distance from the main deck to the waterline) prevented retrieving the survivors quickly. Fortunately, a 24-foot rigid hull inflatable boat (RHI), from the pilot boat NEW JERSEY on station near Sandy Hook, arrived and retrieved the remaining 15 persons from the water. The RHI crew was able to pull the survivors from the water primarily because of the RHI low freeboard. A few minutes after the survivors entered the water, the BRONX QUEEN sank near the entrance to Ambrose Channel, approximately midway between Rockaway, New York, and Sandy Hook, New Jersey. The last person was retrieved from the water about 20 minutes after entering.

The U.S. Coast Guard dispatched a 44-foot Motor Life Boat (MLB), a second UTB, and a helicopter that all arrived after everyone had been rescued from the water. Survivors were transferred from the RHI to the UTBs and MLB and taken to area hospitals. One passenger drowned and was transported by helicopter to a hospital where he was pronounced dead. Another passenger died in the hospital. Many of the remaining survivors suffered from varying degrees of hypothermia.

Hypothermia caused by the loss of body heat to the water is a major cause of death in marine accidents. After an individual has succumbed to hypothermia, he will lose consciousness and drown. According to 33 Code of Federal Regulations (CFR) 181.705, persons immersed in water with a temperature of 32.5 to 40 degrees Fahrenheit will become exhausted or unconscious after 15 to 30 minutes, and death may occur in 30 to 90 minutes.

The National Transportation Safety Board believes that the inability of the Coast Guard crew to recover the survivors quickly from the water contributed to the loss of life. The Safety Board understands that it is not the primary mission of the 41-foot UTB to retrieve survivors from the water; however, this boat has been used in several other rescue operations because it often arrives first. Presently, the 44-foot MLB serves as the Coast Guard heavy weather search and rescue boat. However, this boat has operational problems similar to the 41-foot UTB in retrieving survivors from the water.

The Safety Board is aware of the Coast Guard plan to replace the 44-foot MLB with a new 47-foot MLB. A distinguishing feature of the 47-foot MLB is the side recesses in its hull that will facilitate retrieval of persons from the water. The Safety Board is pleased that the Coast Guard is upgrading its equipment by replacing the 44-foot MLB. However, the Safety Board is concerned about the existing limited ability of the 41-foot UTB and the 44-foot MLB to retrieve survivors from the water. Major modifications to the hull of the 41-foot UTB or the 44-foot MLB probably are not feasible, but small improvements such as a gate in the railing, a small platform, or a rope ladder may be sufficient.

The passengers and crew were forced to enter the water because the BRONX QUEEN lacked liferafts that could have prevented their immersion in the water. As a result of the grounding of the passenger vessel PILGRIM BELLE in Vineyard Sound, Massachusetts, on July 28, 1985, the Safety Board issued Safety Recommendation M-86-61 on July 24, 1986, to the Coast Guard:

Require that all passenger vessels except for ferries on river routes on short runs of 30 minutes or less have primary lifesaving equipment that prevents immersion in the water for all passengers and crew.

On February 19, 1987, the Coast Guard responded:

The Coast Guard concurs with this recommendation in part. Although we recognize the need for survival craft for all persons on board certain passenger vessels, the Board's proposed 30 minute criterion is not concurred with because a vessel could be several miles away from any assistance during such a voyage. Water temperature and distance from shore are more important criteria. As part of the regulatory project to incorporate the 1983 SOLAS Amendments into the Code of Federal Regulations, and to make other revisions to the lifesaving regulations, the Coast Guard will propose new survival craft requirements for passenger vessels. As a general requirement, passenger vessels would have to carry survival craft for all persons on board. Exceptions would be permitted for vessels not in ocean, short international voyage, or coastwise service, and which operate in waters where the temperature is above 15°C (59°F). Another exception would be permitted for vessels operating in narrow waterways (300 meters between the banks) where the temperature is above 10°C (50°F). A third exception would be permitted for vessels operating in shallow waters where the average depth of the channel does not exceed 1 m. [meter]. An Advance Notice of Proposed Rulemaking on this project appeared in the Federal Register of December 31, 1984. A Notice of Proposed Rulemaking should be published sometime in 1987.

On October 10, 1987, the Safety Board responded:

The Coast Guard's response to this safety recommendation appears to not concur with what is stated, although it will not be conclusive until the Coast Guard publishes its revised regulations on survival craft requirements for passenger vessels. Also, it appears that the Coast Guard has misread the intent of this recommendation regarding the 30 minute criterion. This criterion was meant to apply to "ferries on river routes on short runs of 30 minutes or less." In any event, Safety Recommendation M-86-61 will be held in a category of "Open--Acceptable Action" pending the outcome of the Coast Guard's regulatory project to revise the lifesaving regulations.

Following the investigation of the capsizing of U.S. charter fishing vessel FISH-N-FOOL on February 5, 1987, at Roca Ben, Baja California Norte, Mexico, the Safety Board reiterated Safety Recommendation M-86-61 to the Coast Guard. The Coast Guard responded:

The Coast Guard concurs with the intent of this recommendation. Although we recognize the need for survival craft for all persons on board certain passenger vessels, we do not feel that a 30 minute criterion for river ferries is appropriate. As part of the project to revise 46 CFR Subchapter T for Small Passenger Vessels, the Coast Guard will propose new survival craft requirements. As a general requirement, small passenger vessels in ocean, coastwise, and Great Lakes services, and larger vessels in lakes, bays and sounds, and in river services, would have to carry survival craft for all persons on board which prevents immersion in the water. Exceptions would be permitted for vessels which operate in water where the temperature is above 15°C (59°F), and for vessels in lakes, bays and sounds, and river services operating within 1 mile from shore. The Coast Guard considers this action sufficient to address the intent of the recommendation, and will update the Board as significant events in this regulatory initiative occur.

On October 3, 1988, the Safety Board responded:

We are concerned that there has been no progress on Safety Recommendation M-86-61 regarding increasing the requirement for primary lifesaving equipment on all passenger vessels since the Coast Guard's first response of February 19, 1987. Based on this lack of progress and on the fact that the number of exceptions listed appears to be too extensive to be considered an acceptable response, we have classified this safety recommendation

as "Open--Unacceptable Action." We urge the Coast Guard to expedite its regulatory project to revise the lifesaving regulations; and while doing so, consider reducing the number of proposed exceptions. The Board's concern about this issue has been heightened recently as a result of our ongoing investigation of the grounding of the passenger vessel ISLANDER near Woods Hole, Massachusetts, on July 29, 1988. The ISLANDER has a maximum capacity of 788 persons and has 10 liferafts with a total capacity of 250 persons. On the day of the accident, there were 527 persons on board. The proposed NPRM, which the Coast Guard initially indicated would be published in 1987, would require the ISLANDER to have liferafts for only 30 percent of the total number of persons allowed to be carried in summer (May 15 through October 15). The proposed regulations would exempt the ISLANDER from having liferafts for 100 percent of the persons allowed to be carried because the vessel is in lakes, bays, and sound service and the water temperature is above 15°C (59°F). The Board continues to believe that liferafts should be provided for 100 percent of the persons allowed to be carried on passenger vessels in lakes, bays, and sounds service regardless of the season of the year or the water temperature.

U.S. Coast Guard Notice of Proposed Rulemaking (NPRM), Lifesaving Equipment (CGD 84-069) dated April 21, 1989, (46 CFR section 199.2619i) proposed to exempt passenger vessels operating in water 59 degrees Fahrenheit and above, vessels not in ocean or coastwise service, and small vessels operating on the U.S. continental shelf in the Gulf of Mexico from the requirement to carry lifeboats, liferafts, and inflatable buoyant apparatus if lifefloats of sufficient capacity to accommodate all persons on board are carried.

In its response to this NPRM the Safety Board stated that lifefloats do not provide out-of-the-water flotation to survivors. Liferafts, lifeboats, and noninflatable buoyant apparatus provide more than just hypothermic protection to survivors. These devices

- provide protection from marine predators,
- provide support for unconscious or injured survivors,
- enable survivors to remain above water without exertion,
- provide a platform that permits the use of survival equipment such as signalling and electronic homing devices, and

-- provide protection from the inadvertent ingestion of seawater.

The primary lifesaving equipment issue also was discussed at length in the Safety Board Safety Study, "Passenger Vessels Operating from U.S. Ports," dated October 11, 1989. The Safety Board reiterated Safety Recommendation M-86-61 in that study.

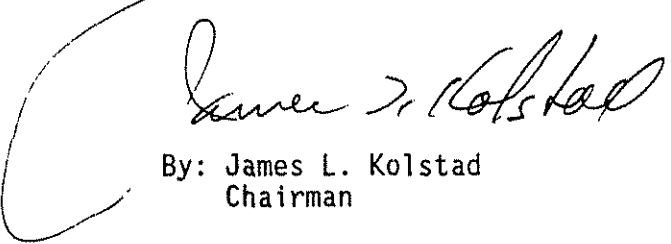
The Safety Board opposes the continued designation of lifefloats and noninflatable buoyant apparatus as primary lifesaving devices. The Coast Guard continues to approve noninflatable buoyant apparatus as primary lifesaving equipment and to permit their use to supplement lifeboats and liferafts. The continued use of noninflatable buoyant apparatus as primary lifesaving devices caused loss of life in this accident. Therefore, the National Transportation Safety Board reiterates Safety Recommendation M-86-61 made to the Coast Guard on July 24, 1986, to require that all passenger vessels except for ferries on river routes on short runs of 30 minutes or less have primary lifesaving equipment that prevents immersion in the water for all passengers and crew.

In addition, as a result of its investigation of the sinking of the Bronx Queen, the National Transportation Safety Board recommends that the Coast Guard:

Develop new methods and or equipment for use aboard the 41-foot utility boat to expedite the retrieval of survivors from the water during search and rescue operations. (Class II, Priority Action)(M-90-110)

Develop new methods and or equipment for use aboard the 44-foot Motor Life Boat to expedite the retrieval of survivors from the water during search and rescue operations. (Class II, Priority Action)(M-90-111)

KOLSTAD, Chairman, COUGHLIN, Vice Chairman, and LAUBER, BURNETT, and HART, Members, concurred in these recommendations.



By: James L. Kolstad
Chairman