

Log M-392

NATIONAL TRANSPORTATION SAFETY BOARD

Washington, D.C. 20594

Safety Recommendation



Date: AUG - 3 1994

In Reply Refer To: M-94-15, -16, and -17

Admiral Robert E. Kramek
Commandant
U.S. Coast Guard
Washington, D.C. 20593-0001

About 1532 on August 18, 1993, the 224-foot-long passenger vessel YORKTOWN CLIPPER, with 134 passengers and 42 crewmembers, was southbound in Glacier Bay, Alaska, when it struck an underwater rock. The hull was pierced in several locations, and the vessel began to flood. The passengers and most of the crew were transferred to assisting vessels, and the YORKTOWN CLIPPER was moved to a shallow, sheltered cove where it could be beached if necessary. After temporary repairs, the vessel sailed to a shipyard for permanent repairs.¹

The National Transportation Safety Board determines that the probable cause of the grounding of the YORKTOWN CLIPPER was the failure of the second officer to plot his courses and positions, due to the Clipper Cruise Line's and master's inadequate oversight of the watch officers' navigational planning and procedures. Contributing to the accident was the Coast Guard's lack of a requirement that watch officers on small passenger vessels equipped with radar be qualified in radar navigation.

Throughout his 3 hours on watch preceding the grounding, the second officer was navigating the vessel by using radar. He had no formal training in using radar, only limited on-the-job instruction, and did not have to demonstrate any radar navigation skills to pass his U.S.

¹For more detailed information, read Marine Accident Report--*Grounding of the Passenger Vessel YORKTOWN CLIPPER in Glacier Bay, Alaska, August 18, 1993* (NTSB/MAR-94/02).

Coast Guard license examination. He did not have and was not required to have a radar observer's endorsement. The Safety Board concludes that had the second officer been properly trained as a radar observer, he might have made more effective use of the radar and thereby prevented his navigational errors.

The Safety Board has repeatedly addressed the issue of inadequate radar training and qualifications for operators of small passenger vessels that are equipped with radar. The history of those recommendations to the Coast Guard spans more than 15 years without satisfactory resolution of this passenger safety issue. It has been nearly 6 years since the Safety Board last urged the Coast Guard to address radar qualification requirements, and action is long overdue. Because the Board has seen no significant progress in this area, it has reclassified Safety Recommendation M-88-9 "Open--Unacceptable Response."

The YORKTOWN CLIPPER was equipped with a gyrocompass, and the installed radar was designed to accept the gyrocompass input with slight modification. However, Clipper Cruise Line had not installed the modification that would have stabilized the radar. The Safety Board concludes that had the radar been gyrostabilized, it would have facilitated the taking and plotting of accurate fixes.

In its report on the collision between the commuter ferries JACK W and JAMEY DOWNEY,² the Safety Board recommended that the Coast Guard:

M-88-11

Require, in the current regulatory project (CGD 85-080) concerning small passenger-carrying vessels, that all inspected passenger vessels that carry 50 or more passengers be equipped with radar.

On July 29, 1988, the Coast Guard responded:

The Coast Guard partially concurs with this recommendation. As part of the project to rewrite 46 CFR, Subchapter T, Small Passenger Vessels, the Coast Guard is considering proposing that certain vessels be required to have radar dependent upon number of passengers carried, route, and type of operation. We do not intend to require all vessels carrying 50 or more passengers to have radar since many such vessels do not operate in a manner which would make radar necessary.

On October 25, 1988, the Safety Board classified Safety Recommendation M-88-11 "Open--Acceptable Response," pending publication of the Final Rule for 46 CFR, Subchapter T. However, the SNPRM published on January 13, 1994, does not require that radar be installed

² Marine Accident Report--Collision of the Commuter Ferries JACK W and JAMEY DOWNEY, Lower New York Bay, June 22, 1987 (NTSB/MAR-88/02).

on small passenger vessels already in operation, nor does it require that radar be gyro-stabilized on existing or future small passenger vessels. Because the Safety Board believes that existing vessels, such as the YORKTOWN CLIPPER, that carry 50 or more passengers should be equipped with a radar, the Safety Board has reclassified Safety Recommendation M-88-11 "Open--Unacceptable Response."

Another safety issue identified in this accident investigation was the adequacy of the manhole covers installed in the double bottom. The hold deck, which extended from the forward boundary of the engineroom to the bow thruster room was designed to be watertight. If any space below this deck were to flood accidentally, the flooding would be contained and the ship could survive. The manhole covers installed in this deck were crucial to the watertight integrity of the vessel and, therefore, to the vessel's safety. Water leaking through the single center-bolt manhole cover over the port void, which the engineer tried to tighten, caused the storeroom to flood. This flooding caused the bow to sink more and increased the risk that the bow thruster room would overflow and sink the vessel. Fuel oil leaking through the single center-bolt manhole cover over the duct in the forward crew quarters caused oil damage to the crew quarters and led to dewatering complications. The Safety Board concludes that the single center-bolt manhole cover is not an adequate design for use as part of a watertight boundary.

The Coast Guard *Marine Safety Manual*, Volume IV, points out that approval of the installation of "single-dogged" hatches and scuttles, similar to manhole covers, is left to the discretion of the local inspector. It states that "these fittings should be accepted as being watertight and, therefore, may be used in compartments such as voids and ballast tanks in any type of vessel or service, subject to the approval of the OCMI." The manual cautions, however, that "these fittings are difficult to maintain gastight and shall not be used in cargo or fuel tanks where lack of a gastight seal poses a serious hazard." This accident shows that the known maintenance difficulty may also pose a serious hazard to the *watertight* integrity of passenger vessels. In fact, the Coast Guard required that these covers be welded closed before the vessel departed for its shipyard repairs. In addition, the Clipper Cruise Line representative stated that the company intended to replace all such single center-bolt manhole covers on watertight boundaries with covers that rely on multiple periphery bolts. Given the known maintenance difficulty of single-dogged center-bolt manhole covers, the Coast Guard needs to reexamine its policy of permitting their use in double bottoms that are required to be watertight.

As a result of this investigation, the National Transportation Safety Board reiterates Safety Recommendation M-88-9 of March 14, 1988, which asked that the U.S. Coast Guard:

Require that operators of all inspected radar-equipped passenger vessels under 300 gross tons be qualified as radar observers.

In addition, the National Transportation Safety Board recommends that the U.S. Coast Guard:

Require that radar be gyrostabilized on any small passenger vessel that is constructed after the Final Rule for 46 CFR, Subchapter T, becomes effective if the vessel carries more than 49 passengers and operates on routes other than rivers. (Class II, Priority Action) (M-94-15)

Require that radar be gyrostabilized on any existing small passenger vessel that carries more than 49 passengers and operates on routes other than rivers. (Class II, Priority Action) (M-94-16)

Require manhole covers installed in watertight double bottoms on small passenger vessels to meet a suitable watertight reliability performance standard. (Class II, Priority Action) (M-94-17)

Also, the Safety Board issued Safety Recommendations M-94-18, -19, and -20 to Clipper Cruise Line, Inc. If you need additional information, you may call the Chief of the Marine Division at (202) 382-6860.

Acting Chairman HALL and Members LAUBER, HAMMERSCHMIDT, and VOGT concurred in these recommendations.



By: Jim Hall
Acting Chairman