

NATIONAL TRANSPORTATION SAFETY BOARD
Public Meeting of April 8, 2014
(Information subject to editing)

Marine–SEASTREAK WALL STREET FERRY
New York, New York
January 9, 2013

This is a synopsis from the NTSB's report and does not include the Board's rationale for the conclusions, probable cause, and safety recommendations. NTSB staff is currently making final revisions to the report from which the attached conclusions and safety recommendations have been extracted. The final report and pertinent safety recommendation letters will be distributed to recommendation recipients as soon as possible. The attached information is subject to further review and editing.

EXECUTIVE SUMMARY

The *Seastreak Wall Street*, a high-speed passenger ferry serving commuters traveling between New Jersey and New York City, struck a Manhattan pier at about 12 knots on the morning of January 9, 2013. Of the 331 people on board, 79 passengers and 1 crewmember were injured, 4 of them seriously, in the third significant ferry accident to occur in the New York Harbor area in the last 10 years.

During the captain's approach for docking, he intended to reduce speed and transfer control from one bridge station to another less than a minute before reaching Pier 11/Wall Street on the East River. Seastreak captains routinely used this procedure and changed stations for better visibility. In this instance, however, the maneuver proved unsuccessful, and the captain was unable to remain in control of the ferry before impact.

National Transportation Safety Board (NTSB) investigators identified the following safety issues pertinent to this accident:

- The captain's control of the vessel as it approached the pier;
- Procedures, guidance, crew training, and managerial oversight provided by Seastreak LLC, the managing owner and operator of the *Seastreak Wall Street* and similar ferries;
- Control of passenger access to stairways;
- Control panel design;

- Development and implementation of an effective safety management system (SMS); and
- The value of information captured by a voyage data recorder (VDR) in accident investigations.

Captain's control of the vessel. The captain's landing approach involved slowing the *Seastreak Wall Street* and transferring propulsion control from the center bridge control station to the starboard station. However, the vessel did not respond as the captain expected, and he could not determine why he was unable to maintain vessel control in the seconds before the vessel struck the dock. The captain also did not allow enough time to react to loss of vessel control while approaching the pier.

Company procedures and managerial oversight. The NTSB investigation found Seastreak's management and oversight of vessel operations could have lessened the likelihood of this accident. More effective company policies and procedures would have included documentation of the ferry's recently retrofitted propulsion system, broader crew training, and risk mitigation and safety enhancement practices.

When the accident occurred, the *Seastreak Wall Street* operations manual had not been updated since the ferry was converted in July 2012 from waterjet to controllable pitch propeller (CPP) propulsion. Further, the transfer of control from one bridge station to another was a critical point in the vessel's approach, but no formal company guidance was available for executing this procedure. The captain also could have benefited from the mate's assistance, but company policies did not adequately define crewmember roles.

Additional areas of vessel management that were absent from the operations manual and company oversight were passenger control policies, formal training for crewmembers in vessel operations, vessel incident assessment, identification of possible risks and corrective action, and application of a safety management system (discussed below).

Severity of passenger injuries. NTSB examination of the evidence revealed that the passenger requiring the most extensive medical treatment had fallen down a stairwell, sustaining severe head injuries. Seastreak ferry crewmembers were not directed to control passenger access to stairwells, even when approaching a landing, nor were they required to make a passenger safety announcement upon arrival.

Control panel design and mode indication. Identical sets of control panel pushbuttons were located on either side of the order levers, one set of buttons for each propeller, port and starboard. A small red light in the upper left corner of each button would light when the button was active. In addition to using the order levers to change main propulsion engine rpm, the operator could use these pushbuttons to control vessel actions such as changing propeller pitch. When illuminated, lights on each button also identified, for instance, whether that control station was active and which operating mode was engaged. However, the available visual and audible cues to indicate mode and control transfer status were ambiguous.

Safety management systems. A US vessel in domestic service is not required to develop and implement an SMS, and the *Seastreak Wall Street* operated without the guidance of such a system. Operators can, however, voluntarily meet well-established international SMS standards

that are required for many ships, including provisions for safe vessel operation, emergency procedures, and internal audits and management reviews.

Several NTSB marine accident investigations highlighted the need for specific safety-related vessel operational procedures. These included two previous accidents involving ferries operating in New York Harbor. The NTSB previously issued recommendations in support of safety management systems and remains committed to the establishment of SMS requirements.

Voyage data recorders. Had the *Seastreak Wall Street* been fitted with a VDR, several aspects of the NTSB investigation would have benefited from considerably more evidence. A broader range of data would have provided substantial insight into the operation of the *Seastreak Wall Street* and its performance as it approached the pier. A VDR could have captured the vessel's operating conditions; propulsion commands ordered and system responses; audio recording on the bridge, which could have clarified interactions between officers and any alerts that were activated; the status of the controllable pitch propulsion system; and a precise record of vessel movements, among other information.

The NTSB continues to promote requirements for VDRs to enhance the depth and quality of accident investigation, further the identification of marine safety risks, develop recommendations to address those risks, and enhance the safety of passengers on board ferries and other vessels. Moreover, many operators in other modes of transportation have voluntarily equipped their vehicles with data recorders, demonstrating that these devices can benefit operations.

CONCLUSIONS

1. Mechanical failure, distraction due to cell phone use, fatigue, use of alcohol or illicit drugs, the captain's health, and weather were not factors in this accident.
2. The emergency response by the Fire Department of the City of New York was timely and appropriate.
3. The captain did not return the propulsion control system to Combinator mode after switching to Backup mode earlier in the voyage.
4. The captain successfully transferred rpm control to the starboard station, and he attempted to slow the vessel by moving the order levers astern; however, this input resulted in forward acceleration because the system was in Backup mode.
5. The point in the voyage at which the captain initiated transfer of the *Seastreak Wall Street's* propulsion control did not allow sufficient time and distance to react to the loss of vessel control.

6. The propulsion control system on the *Seastreak Wall Street* used poorly designed visual and audible cues to communicate critical information about mode and control transfer status.
7. Seastreak LLC bridge control transfer procedures at the time of the accident were inadequate as they did not reflect the new propulsion system nor did they define crewmember roles, which contributed to the loss of vessel control.
8. The number and severity of injuries resulting from this accident could have been mitigated by alerting passengers and controlling their access to stairwells during docking and undocking.
9. Seastreak LLC provided ineffective oversight of the operation of the *Seastreak Wall Street*, including maintaining procedures that did not apply to the new propulsion configuration, providing inadequate crew training, and poorly identifying and mitigating risks.
10. Information that could have been captured by a voyage data recorder would have enhanced the National Transportation Safety Board's analysis of the loss of vessel control that caused the allision.

PROBABLE CAUSE

The National Transportation Safety Board determines that the probable cause of the *Seastreak Wall Street's* allision with the pier was the captain's loss of vessel control because he was unaware the propulsion system was in Backup mode. In addition, his usual method of transferring control from one bridge station to another during the approach to the pier did not allow sufficient time and distance to react to the loss of vessel control. Contributing to the accident was Seastreak LLC's ineffective oversight of vessel operations. Contributing to the severity of injuries was Seastreak LLC's lack of procedures to limit passenger access to stairwells on the *Seastreak Wall Street* during potentially high-risk situations such as vessel docking and undocking.

RECOMMENDATIONS

To the United States Coast Guard:

1. Develop and implement human factors standards for the design of critical vessel controls for US-flag ships to include clearly identifiable and understandable audible alerts and displays indicating which mode is engaged.
2. Distribute the National Transportation Safety Board safety alert outlining the circumstances of this accident to warn passenger vessel operators of the need to control passenger access to stairwells while performing maneuvers such as docking and undocking.

3. Require installation of voyage data recorders that meet the International Maritime Organization's performance standard for voyage data recorders on new ferry vessels subject to 46 *Code of Federal Regulations* Subchapters H and K.
4. Require installation of voyage data recorders that meet the International Maritime Organization's performance standard for simplified voyage data recorders on existing ferry vessels subject to 46 *Code of Federal Regulations* Subchapters H and K.
5. Develop a US voyage data recorder standard for ferry vessels subject to 46 *Code of Federal Regulations* Subchapter T and require the installation of such equipment where technically feasible.

To Seastreak LLC:

6. Work with Scana Mar-EI AS to implement a modification to the Neptune Compact propulsion control system that includes clearly identifiable audible alerts and easily visible and understandable displays to remind the operator when Backup mode is engaged.
7. Expedite implementation of a safety management system for your fleet that is appropriate for the characteristics, methods of operation, and nature of service of your vessels and the size of your operations.
8. Revise your operations and training manuals to include better utilization of crew and procedures for standard bridge operations, vessel emergencies, and control of passenger access to stairwells during docking and undocking.

To Scana Mar-EI AS:

9. Modify your design for new Neptune Compact propulsion control systems to include clearly identifiable audible alerts and easily visible and understandable displays that will remind the operator when Backup mode is engaged and revise your owner's manual accordingly.
10. Design a solution for existing Neptune Compact propulsion control systems to include clearly identifiable audible alerts and easily visible and understandable displays to indicate to operators when Backup mode is engaged, revise your owner's manual accordingly, and alert your customers to the circumstances of this accident and to the availability of the retrofit solution.

Three previously issued recommendations to the United States Coast Guard are reclassified:

Require installation of voyage data recorders that meet the international performance standard on new ferry vessels. (M-10-5)

Require installation of voyage data recorders on all ferry vessels that will record, at a minimum, the video, audio, and parametric data specified in the International Maritime Organization's performance standard for simplified voyage data recorders. (M-10-6)

Both of these recommendations, currently classified "Open—Unacceptable Response," are reclassified "Closed—Unacceptable Action," and are superseded by new Safety Recommendations 3 through 5.

Staff also proposes to reclassify a third previously issued recommendation to the United States Coast Guard:

Require all operators of US flag passenger vessels to implement safety management systems, taking into account the characteristics, methods of operation, and nature of service of these vessels, and, with respect to ferries, the sizes of the ferry systems within which the vessels operate. (M-12-3)

This recommendation, previously classified " is reclassified "Open—Unacceptable Action."