Rec M-310 SP. 20

National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: February 27, 1986

In reply refer to: M-86-12 through -14

Mr. Stefano Tinacci, General Manager
Tourship Co. S.A.
c/o Dominican Ferries
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The Dominican Ferries Line M/V A. REGINA, a Panamanian-flag, 330-foot, 3,658-gross-ton passenger carferry ran aground on the southeast coast of Mona Island, Puerto Rico, at 0020 on February 15, 1985, while en route from Mayaguez, Puerto Rico, to San Pedro de Macoris, Dominican Republic. After unsuccessful attempts to refloat the REGINA, the 72 crewmembers and 143 passengers were landed by the vessel's lifeboats and liferafts on Mona Island and subsequently flown back to Mayaguez. One crewmember was injured slightly when leaving the vessel. The stranded vessel, valued at $5 million, was considered a total loss. 1/

On February 14, 1985, the REGINA had arrived at Mayaguez at 1730. After discharging its vehicles and passengers, the vessel took aboard 31 automobiles and 143 passengers. About 2115, the vessel's main engines, bow thruster, steering gear, and navigation equipment were tested or checked and found to be satisfactory for getting underway, according to the Italian master. A logbook entry was not made of the tests. The REGINA left its berth at 2135, and the master maneuvered it out of the harbor.

The master had allowed the second officer to stay on leave at San Pedro de Macoris, and the third officer to leave at Mayaguez to return to Italy. The master, the chief officer, and an apprentice third officer were onboard to stand the navigation bridge watches on this trip.

The master testified that he plotted a 255° true course line on British Admiralty chart No. 472 which was in use on the chart table. The vessel's course was established to allow a passing of 1 nautical mile off the south coast of Mona Island. The master did not make any allowances for drift when setting the autopilot. The weather was clear, visibility was 8 to 10 nautical miles, the wind was 15 knots from the east, and the sea was Beaufort scale state 4 from the east. The vessel's engine speed for the trip was set for 16 knots by the master.

1/ For more detailed information, read Marine Accident Report—"Grounding of the Panamanian-Flag Passenger Carferry M/V A. REGINA, Mona Island, Puerto Rico, February 15, 1985" (NTSB/MAR-86/02).

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The master usually did not stand a navigation watch, but since the REGINA was lacking two deck officers, he took the navigation watch after departing the Mayaguez Harbor buoys. The master testified that he was "very tired" when the vessel left Mayaguez, and that he planned to have the apprentice third officer relieve him after the vessel passed Mona Island.

The master stated that during his watch en route toward Mona Island, he stayed near the starboard engine control console inside the pilothouse. The master testified that he checked the gyro and magnetic compasses during the watch, but that he did not use the navigation equipment to plot the vessel's positions on the chart while proceeding toward Mona Island. The vessel's portside radar, oriented "north up," was set to the 12-nautical-mile scale. The master stated that neither a vessel's heading flasher nor range rings were displayed on the radarscope, and there was about 2 nautical miles of sea return showing at the center of the radarscope. He did not make any adjustments to eliminate the sea return. The starboard radar was inoperable. The master expected to be at the island between 0030 and 0045 on February 15.

The master testified that about 2400 he looked at the radarscope and saw that the "island was hidden in the sea return." About 0020 on February 15, he saw the "wall of Mona [Island]" to starboard and realized that the vessel was too close to the island. He disengaged the autopilot and turned the helm hard to port, but the maneuver was made too late to avoid grounding. The REGINA ran aground on the reef off Mona Island while traveling at 16 knots.

By using the satellite navigation system and by taking visual gyrocompass bearings of available lighted navigation aids and radar ranges of landmasses while leaving Puerto Rico and approaching Mona Island, the master could have determined the vessel's positions as the vessel traversed Canal de la Mona. However, at no time during the 2 hours 30 minutes that the REGINA was in transit from the Mayaguez Harbor entrance buoys until grounding did the master make use of the navigation equipment to fix the vessel's positions on the chart.

International Maritime Organization (IMO) Resolution 1 recommends that when navigating in coastal waters, fixes be taken by watch officers at frequent intervals, and that fixing should be carried out by more than one method. The United States navigation and safety regulations, 33 CFR Part 164, require that masters of vessels of 1,600 or more gross tons, when operating in the navigable waters of the United States shall, while directing the movements of the vessels, use electronic and other navigational equipment to fix the vessels' positions on a chart, take into consideration current velocity and direction for the area to be transited, and know the predicted set and drift of the vessel. Had the master plotted the fixes on the navigation chart, he should have been able to detect that the REGINA was being set northward from the plotted course line.

The Safety Board believes that the master's failure to efficiently employ his officers and make use of available equipment to monitor the vessel's progress along the charted course line by plotting navigation fixes so as to detect the vessel's set and drift resulted in the grounding of the REGINA. Had the master applied a safer passing distance off the coast of Mona Island when plotting the course line, the grounding could have been averted.

The master's inadequate performance of routine navigation watchkeeping tasks, and lax adherence to recommended, safe navigation procedures, can be attributed to the repetitive trip routine on the ferry route. However, illness, fatigue, circadian rhythm effects, and possibly boredom were also involved to varying degrees. The master said

that he had been ill for about 1 month with an upper respiratory infection. Although there is no indication that the illness was serious, there is little doubt that it adversely affected the master's performance to some degree. Two of three medications the master said he had been taking probably did not affect his performance, but the cough syrup may have made him drowsy.

There is evidence that the master was suffering from both chronic and acute fatigue. He had not had a day off duty during the preceding 12 months. Insomnia and operational responsibilities had deprived the master of sleep for a period of about 42 hours at the time of the grounding.

The master was cognizant of his responsibility to supervise the health and fitness of his crew, and he controlled the watch and leave schedules of the crew. However, he apparently was not effective in monitoring his own health. Because of vessel operating schedules, it is not uncommon for masters to work for prolonged periods if operational or economic considerations make this practice necessary. However, management needs to be aware of the potential for chronic fatigue and to institute means of detecting it. In addition to monitoring fatigue, the company should be concerned with the health of its masters. The master of the REGINA was not required to report his illness or the fact that he was taking medication.

The Safety Board believes that oversight of the physical fitness of a master is the responsibility of the owner/operator who employs the master. The Board also believes that in the interest of passenger safety, passenger vessel officers who stand vessel operating watches should be required to report when they are taking medication since it could affect their ability to properly perform watchkeeping tasks.

Rule 5 of the International Navigation Rules requires that "every vessel shall at all times maintain a proper lookout . . . ." The rule applies to any condition of visibility. The REGINA operated in island waters where small vessels frequently may be encountered, and it carried a sizeable crew. However, the navigation bridgewatch consisted of only the master and the helmsman; a lookout was not posted at the bow. Had a bow lookout been posted, he would have been able to maintain a dedicated watch for small, poorly lighted vessels ahead, and he might have alerted the master to the proximity of Mona Island directly ahead. An earlier alerting of the master to the danger would have resulted in earlier maneuvering action and the grounding might have been averted. The Safety Board believes that the REGINA should have had a bow lookout posted, particularly while traveling at night in island waters where poorly lighted small vessels could be encountered.

Therefore, the National Transportation Safety Board recommends that the owner/operator of the M/V A. REGINA:

> Conduct regular onboard inspections of your Panamanian-flag passenger carferry operations, determine if navigation watches are being maintained at sea as prescribed by International Maritime Organization regulations, and direct the masters of the vessels calling at United States ports to conform with the navigation safety procedures specified in 33 CFR Part 164. (Class II, Priority Action) (M-86-12)
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> Establish a procedure to require that your vessel masters and watchstanding officers report when they are taking any medication, determine whether such medication may affect the performance of their duties, and arrange for a qualified relief if necessary. (Class II, Priority Action) (M-86-13)

Require that your vessel masters comply with Rule 5 of the International Navigation Rules concerning the posting of proper lookouts. (Class II, Priority Action) (M-86-14)

The National Transportation Safety Board is an independent Federal agency with the statutory responsibility ". . . to promote transportation safety by conducting independent accident investigations and by formulating safety improvement recommendations" (Public Law 93-633). The Safety Board is vitally interested in any actions taken as a result of its safety recommendations and would appreciate a response from you regarding action taken or contemplated with respect to the recommendations in this letter. Please refer to Safety Recommendations M-86-12 through -14 in your reply.

BURNETT, Chairman, GOLDMAN, Vice Chairman, and LAUBER, Member, concurred in these recommendations.

By: Jim Burnett
Chairman