



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

SP-20
Log. M-314 A

Date: May 23, 1986

In reply refer to: M-86-39

Captain Ed Griffis
Canaveral Seafood Company
70 South Banana River Drive
Merritt Island, Florida 32952

About 0430 on July 23, 1984, the 70.5-foot-long U.S. fishing vessel SANTO ROSARIO, while fishing for calico scallops about 35 nautical miles east of New Smyrna Beach, Florida, capsized and sank. Three crewmembers were rescued by a fishing vessel nearby, but the fourth crewmember, sleeping below deck, went down with the vessel and drowned. The vessel's estimated value was \$250,000. ^{1/}

The SANTO ROSARIO was on a regular fishing schedule during the summer harvest season supplying calico scallops to the Canaveral Seafood Company at Port Canaveral, Florida. The vessel was making five 18-hour round trips a week with the same crew to and from the fishing ground, as were about 19 other vessels that also were shrimp trawlers converted for scallop fishing. About 3 weeks before the accident, the captains of all 20 fishing vessels employed in this operation met with the company plant manager and agreed to a fixed unloading time requirement of 1 1/2 hours at the pier for each vessel regardless of its size and to a particular unloading schedule for each vessel. Each vessel had to be loaded sufficiently during its fishing operation to meet the unloading time requirement at the pier, or the vessel would be denied unloading services. Too large a load would require a longer unloading time, which would permit the scallops to spoil in the hot sun. Too small a load would require a shorter unloading time, which would be uneconomical for the company because the automatic shucking machine would have to be stopped more frequently. The 1 1/2-hour unloading time at the pier, which the fishing vessels had been complying with for about 3 weeks, caused many of the vessel captains to overload their vessels to meet this requirement and bring their vessels into port with large trim by the stern and reduced freeboard aft.

Although the vessels had been designed to stow shrimp on ice in the hold below deck, the fishermen were required to pile the calico scallops on their main decks so that a mechanical clamshell shovel at the pier could scoop them off directly to feed the automatic shucking machine. This method of stowing the catch is different from that of the deep-sea scallop trawlers that operate in colder waters. Those fishing vessels have larger crews to hand-shuck the scallops and stow them on ice in the hold.

^{1/} For more detailed information read Marine Accident Report--"Sinking of the U.S. Fishing Vessel SANTO ROSARIO about 35 Nautical Miles East of New Smyrna Beach, Florida, July 23, 1984" (NTSB/MAR-86/06).

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After the SANTO ROSARIO completed its last tow on July 23, 1984, its stability was critical. The catch of scallops and grit was piled 8 feet high on its main deck, a pair of steel "doors" and a paravane were hung on each outrigger, and the port and starboard tail bags--fully loaded from the last tow--were hung from the tops of the 27-foot-high after booms. The pile of scallops above the main deck, and the suspended weights significantly reduced the vessel's stability. The vessel's righting moment was so reduced that the combined off-center loading of the suspended port tail bag, the shift of the top of the pile of scallops to port caused by the moving starboard tail bag, and the sudden swing to port by the moving starboard tail bag with the after deckhand hanging on were enough to roll the vessel on its side. The vessel had no righting moment past 20° heel to resist these moments, and the vessel continued to be rolled further by the off-center moment of the sliding scallops until it overturned. About 15 minutes after overturning, the SANTO ROSARIO sank. An access opening in the bulkhead separating the engineroom and fishhold permitted rapid progressive flooding in the hull.

The SANTO ROSARIO, like 19 other fishing vessels working for the Canaveral Seafood Company in Port Canaveral, was a shrimp trawler that had been converted for scallop fishing. In its conversion, sturdier rigging, nets, and heavier "doors" were substituted for the lighter fishing equipment used to catch shrimp. The effects of these additional weights placed high on the vessel raised the vessel's center of gravity, which decreased the ability of the vessel to right itself. Further, the stability of the vessel was greatly reduced before the accident by loading the catch of scallops on the main deck instead of in the fishhold below. The 1 1/2-hour unloading time requirement at the fish pier, which had been in effect for about 3 weeks, encouraged the captain of the SANTO ROSARIO to load excessively to ensure himself that he met this time requirement. The deckhands had noticed that the freeboard aft of only 6 to 10 inches was less than usual and that the vessel had a steeper trim angle. The stability calculations performed after the accident show that the SANTO ROSARIO's stability was well below recognized international standards when fully loaded with scallops.


In the interim to prevent further sinkings of these converted shrimp trawlers and possible loss of life, a reduction in pierside unloading time is needed so that the vessels are not dangerously overloaded. The owner and operators of the Canaveral Seafood Company and the captains of the vessels employed in the operation should meet in the interest of safety to establish a shorter unloading time per vessel that will not require the vessels to load to dangerous levels on deck.

Therefore, the National Transportation Safety Board recommends that the Canaveral Seafood Company:

In cooperation with fishing vessel captains and a naval architect, establish a safe loading for all fishing vessels furnishing you with calico scallops to eliminate the capsizing hazard caused by the overloading of these vessels. (Class II, Priority Action) (M-86-39)

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 recommendation in this letter. Please refer to Safety Recommendation M-86-39 in your reply.

GOLDMAN, Acting Chairman, and BURNETT, LAUBER, and NALL, Members,
concurred in this recommendation.


By: Patricia A. Goldman
Acting Chairman