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NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

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Forwarded to:

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SAFETY RECOMMENDATION(S)

M-85-82

About November 14, 1984, the 86-foot-long, uninspected U.S. fishing vessel AMAZING GRACE sank while on a fishing trip for scallops about 80 nautical miles east of Cape Henlopen, Delaware; there probably were seven crewmembers aboard. A 16-day search by the U.S. Coast Guard (USCG) resulted in finding only one of the two liferafts on the vessel. The liferaft was empty. The crewmembers are missing and presumed dead. As of the date of this report, the AMAZING GRACE has not been located. The vessel's estimated value was $500,000. 1/

The AMAZING GRACE probably sank sometime on the morning of November 14 before any crewmember could transmit a distress signal. The USCG was not notified that the AMAZING GRACE possibly had a problem until the morning of November 15. If the vessel had been equipped with an emergency position indicating radio beacon (EPIRB), its sinking might have been detected earlier, and the search effort could have been confined to a smaller area. The last reported position of the AMAZING GRACE was near major aircraft routes where aircraft could have picked up an EPIRB signal; moreover, a properly operating EPIRB probably would have been detected by satellite and reported to the USCG within 6 hours. Fishing vessels are not required to carry EPRIB's, and the owner of the AMAZING GRACE did not equip the boat with an EPIRB. In 1980 the Safety Board issued Safety Recommendation M-80-23 which recommended that the USCG seek legislative authority to require EPIRB's on fishing vessels. The USCG replied that since it would take 4 or 5 years to obtain and implement such legislation, the USCG would not seek legislation until there was a satellite EPIRB system.

Before the COSPAS-SARSAT satellite EPIRB system design is made final, the participating countries must decide which frequency is the best to use, determine the extent of possible system use beyond the marine and aviation modes, and adopt user identifications. Until these issues are resolved, which may take much longer than the current target date of 1996, U.S. fishing vessels should avail themselves of the safety offered by the existing satellite detection system, which has been proven successful in detecting signals emitted by EPIRB's on the 121.5 MHz and 243 MHz frequencies.

1/ For more detailed information, read Marine Accident Report--"Loss of the U.S. Fishing Vessel AMAZING GRACE about 80 Nautical Miles East of Cape Henlopen, Delaware, about November 14, 1984" (NTSB/MAR-85/07).

In the 5 years since the Safety Board made Safety Recommendation M-80-23, about 1,000 fishing vessels and more than 200 lives have been lost in accidents. Although the USCG actively has promoted voluntary installation of EPIRB's on fishing vessels, most fishing vessels still do not carry them. The cost of providing the approximately 33,000 documented U.S. fishing vessels with EPIRB's is estimated at less than $10 million. The search for the AMAZING GRACE alone cost about $12 million. Because the date for implementation of a full satellite system is still indefinite, and many issues are yet to be resolved, the Safety Board believes that there is no justification for the USCG to delay requiring EPIRB's on U.S. fishing vessels. The USCG has indicated that legislative authority is necessary to require EPIRB's; if this is the case, the Safety Board believes that the USCG should seek the appropriate legislative authority immediately so that regulations requiring U.S. fishing vessels to be equipped with current EPRIB's can be promulgated without further delay. On June 26, 1985, the Safety Board sent the USCG a letter reiterating its concern that the USCG has not implemented Safety Recommendation M-80-23.

The crew of the AMAZING GRACE was typical of most fishing vessels. The captain had no formal training in vessel safety. He had learned to be a fishing vessel captain by serving as a deckhand and mate under other fishing vessel captains who probably had little formal knowledge of stability, firefighting, or the use of the lifesaving equipment. Likewise, his crew probably would have had little knowledge of these subjects. There is little incentive for a fishing vessel captain to seek training since the evaluation for a good fishing vessel captain is based on how many fish he catches. Taking time off from fishing to attend courses, seminars, or expositions results in less fish caught and loss of income.

The Safety Board was unable to determine precisely who was aboard the AMAZING GRACE. The captain of the ATLANTIC PRIDE identified his brother and the mate on the AMAZING GRACE from radio conversations, but as of the date of this report the Safety Board has not found anyone who saw the AMAZING GRACE leave Hampton, Virginia. The owner had no positive record of who was aboard.

As a result of its investigation of the sinking of the USCG-certificated charter fishing boat JOAN LA RIE III, 3/ the Safety Board on February 7, 1984, issued Safety Recommendation M-84-14 to the USCG:

> Require that operators of charter fishing boats making an offshore trip or voyage prepare a crew and passenger list and deposit the list, or copy thereof, at a suitable location ashore before departure.

On May 15, 1984, the USCG replied that it intends to revise the USCG regulations for small passenger vessels to require that operators deposit a crew and passenger list ashore before departure. The Safety Board has classified Safety Recommendation M-84-14 as "Open--Acceptable Action." The Safety Board believes also that commercial fishing vessel owners should require their captains to deposit a crew list ashore before departure.

A simple method to minimize the loss of life on commercial fishing vessels operating offshore for extended periods of time would be to require such vessels to establish scheduled radio communications with designated shore facilities or other fishing vessels. For business purposes, most commercial fishing vessels are equipped with radio equipment that is capable of communicating with shore facilities and of contacting another fishing vessel if they are not capable of communicating directly with shore stations. Fishing vessel captains often do not communicate with shore facilities for days

3/ Marine Accident Report--"Sinking of the Charter Fishing Boat JOAN LA RIE III Off Manasquan Inlet, New Jersey, October 24, 1982" (NTSB/MAR-84/02).

or weeks. If the fishing vessel has an accident and is unable to send a distress message, days may elapse before anyone is aware of a problem. The captain of the ATLANTIC PRIDE did not become concerned for 24 hours after the probable time of the accident, even though he had not been able to contact the AMAZING GRACE during that time, because shutting down radio communications is not unusual.

The arguments that fishing captains do not want to disclose their position or other information to other fishermen can be overcome through the use of codes or other means. Also, if scheduled radio communications become commonplace, the failure to meet a scheduled communications check would alert shore facilities or other fishing vessels immediately of a potential problem. If fishing vessel captains were required to report their position regularly, rescue units would know where to begin looking to render assistance. Owners, insurance companies, and the USCG should all encourage scheduled communications by fishing vessel captains.

As a result of its investigation of the capsizing of the 82-foot-long fishing vessel PATTI-B in 1978, 2/ the Safety Board on June 25, 1979, issued Safety Recommendation M-79-69 to the USCG:

> Conduct a design study to determine if current published intact stability criteria are adequate for vessels similar in design to the PATTI-B.

On December 16, 1980, the USCG replied that ". . . there is no fully satisfactory stability standard . . . for small vessels like the PATTI-B. . . ." The USCG has "encouraged research into the seakeeping characteristics of small vessels on the international level, but is no longer able to continue small vessel research due to limited funds and other priorities." The Safety Board classified Safety Recommendation M-79-69 as "Closed--Acceptable Alternate Action," but urged the USCG to reevaluate its position with regard to such research.

In the USCG stability calculation report on the AMAZING GRACE, the USCG again reiterated that there are no fully satisfactory stability standards for small fishing vessels like the PATTI-B and the AMAZING GRACE. The USCG has announced that, because of the high rate of loss of fishing vessels and crewmembers, it intends to embark on a program to reduce the number of commercial fishing vessel casualties by not less than 10 percent by 1991 through the formulation of voluntary standards including stability standards. A 1984 study by the USCG shows that about 38 percent of the total losses of fishing vessels are the result of flooding, foundering, or capsizing. If the USCG is going to reduce the number of fishing vessel accidents, the USCG needs to develop adequate stability criteria for small fishing vessels. The USCG should reconsider its priorities and resume its research on the seakeeping capabilities of small vessels.

Since research on seakeeping of small vessels is a long-term project, the fishing industry should adopt as an interim measure the stability criteria contained in USCG Navigation and Vessel Inspection Circular (NVIC) No. 5-85, which have international recognition. Owners of fishing vessels should require builders to provide them with the stability characteristics of the vessel and guidance on how to load the vessel to meet the stability criteria contained in NVIC No. 5-85. The owner of the AMAZING GRACE was not provided with any stability information by the builder or any plans with which stability calculations could have been performed; however, stability information could have been developed from the actual vessel. The Safety Board believes that with the high loss rate

2/ Marine Accident Report--"Grounding and Capsizing of the Clam Dredge PATTI-B, Ocean City Inlet, Ocean City, Maryland, May 9, 1978" (NTSB-MAR-79-9).

of fishing vessels due to flooding, foundering, and capsizing, fishing vessel owners should determine the stability characteristics of their vessels and provide guidance to their captains on the proper loading of the vessels. The USCG has developed a number of simplified loading diagrams for inspected vessels that could be adopted for fishing vessels.

The freeing ports and the door on the stern ramp were kept closed on the AMAZING GRACE to keep water off the after deck and to prevent scallops from washing overboard during fishing operations. However, an accumulation of water on deck plus the dynamic effects of the water could reduce significantly the stability of a vessel and cause it to capsize. The practice aboard fishing vessels like the AMAZING GRACE of keeping freeing ports closed can be a safety hazard. The large openings for the freeing ports were designed to get rid of water rapidly. Wire mesh over freeing ports could solve the problem of scallops washing overboard, but solid plates should not be permitted. The same sea conditions that can cause excessive water on deck through the open freeing ports normally will be the same conditions that may cause an occasional wave to come over the top of the bulwarks or over the bow of a vessel, as in the case of the AMAZING GRACE. Fishing vessel owners should not permit freeing ports to be closed during adverse weather.

The Daniels family owned and operated 10 fishing vessels, including the AMAZING GRACE, and 3 fish-processing and -packing facilities in North Carolina and Virginia. The owners also operated fishing vessels out of New Bedford, Massachusetts. However, they had no contingency plan in case one of their vessels had an emergency such as a fire or flooding or a medical problem involving one of the crewmembers. The owners did not know what day the AMAZING GRACE departed Hampton, nor exactly who or how many persons were aboard. It took several days for them to determine that there were two liferafts and not just one aboard. It was fortunate that the approximate position of the AMAZING GRACE was known by the captain of the ATLANTIC PRIDE because the owners did not maintain regular radio communication with their vessels. In time of an emergency, complete and accurate information must be available to search and rescue authorities as quickly as possible. The owners of fishing fleets should develop contingency plans that include: (1) detailed information about each vessel, its communication equipment, and its crew; (2) procedures for contacting the USCG; (3) a list of other individuals or organizations to be contacted; and (4) procedures for coordinating search and rescue efforts with the USCG. The better the information provided to search and rescue authorities, the more effective will be their ability to respond to an emergency.

The National Council of Fishing Vessel Safety and Insurance, which represents the major fishing fleets in the United States and marine insurance companies, should promote the development of contingency plans by owners and operators, safety education programs for fishermen, and scheduled reporting by fishermen to keep shoreside personnel informed of their movements. Similarly, the USCG should encourage the development of contingency plans for fishing vessels and develop standard formats which are compatible with USCG search and rescue procedures so that the USCG can obtain quickly the information it needs in time of an emergency. Such contingency plans would increase the probability of rescuing fishermen and at the same time reduce the effort of the USCG in obtaining vital information.

Therefore, the National Transportation Safety Board recommends that the National Council of Fishing Vessel Safety and Insurance:

Promote through your organization and your member organizations:

(1) The carriage of emergency position indicating radio beacons (EPIRB's) on all commercial fishing vessels;

(2) The training of fishing vessel captains and their crews, as appropriate, in basic safety such as stability, watertight integrity, firefighting, and the use of lifesaving equipment;

(3) The deposit of crew lists by fishing vessel captains at a suitable location ashore before departure;

(4) The scheduling of frequent radio communications by fishing vessel captains which includes their position to reduce delays in initiating a response in case of an emergency in which the vessel is unable to communicate;

(5) The determination of the stability characteristics of fishing vessels by their owners and the provision of guidance to fishing vessel captains on proper loading;

(6) The need to keep freeing ports open during adverse weather conditions; and

(7) The development of contingency plans for emergencies by fishing vessel owners that include: (a) detailed information about each vessel, its communication equipment, and its crew; (b) procedures for contacting the U.S. Coast Guard and other authorities; (c) a list of other individuals or organizations to be contacted; and (d) procedures for coordinating search and rescue efforts with the U.S. Coast Guard.

(Class II, Priority Action) (M-85-82)

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.

BURNETT, Chairman, GOLDMAN, Vice Chairman, and BURSLEY, Member, concurred in this recommendation.

Patricia A. Goldman for

By: Jim Burnett
Chairman