



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: July 21, 2005

In reply refer to: M-05-9 through -11

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Commandant
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On June 14, 2003, the small passenger vessel *Taki-Tooo*, a U.S. charter fishing vessel with 2 crewmen and 17 passengers on board, was en route from Garibaldi, Oregon, to the Pacific Ocean for a day of fishing. A small craft advisory was in effect for the northern Oregon and southern Washington coasts, and personnel at U.S. Coast Guard Station Tillamook Bay, after assessing the hazardous conditions at the inlet, had activated the rough bar warning signs, restricting any transit attempts across the bar by recreational boats and uninspected passenger vessels. The restriction, however, did not apply to inspected small passenger vessels such as charter boats like the *Taki-Tooo*.

At the Tillamook Bay inlet, the *Taki-Tooo* operator waited in the channel for an opening in the ocean swells so that he could cross the bar. After the *Taki-Tooo* exited the inlet and proceeded around the north jetty, a wave struck and capsized the vessel. As a result of this accident, 11 vessel occupants died and 8 suffered minor injuries.¹

In its analysis of events leading to the accident, the Safety Board concluded that the Coast Guard effectively communicated information about the rough bar conditions to mariners, including the master of the *Taki-Tooo*. The Board further concluded that, considering the dynamic operating environment at the bar, the decision of the *Taki-Tooo* master and the four other charter vessel masters to leave port at the Garibaldi marina and proceed to the bar area to make a first-hand assessment of conditions was appropriate. The conditions at the bar were subject to change, as evidenced by the statements of Coast Guard officials who indicated that, over the last 5 years, Station Tillamook Bay had imposed or lifted the bar restriction more than once on a given day.

¹ For further information, read: National Transportation Safety Board, *Capsizing of U.S. Small Passenger Vessel Taki-Tooo, Tillamook Bay Inlet, Oregon, June 14, 2003*, Marine Accident Report NTSB/MAR-05/02 (Washington, DC: NTSB, 2005).

Research evidence² suggests that, once at the inlet, each master would have made the decision to cross the bar based on such factors as his perception of his own personal experience and abilities, his knowledge of the capabilities of the vessel he was operating, as well as such situational factors as the size and frequency of the waves and swells. In addition, each master would have his own personal reason for deciding to transit the bar. In the case of the *Taki-Tooo* master, his decision to cross the bar was probably influenced by a host of factors, including the specific request of his passengers for his services, his observations of sea conditions comparable to those he had seen before, his previous experience making the bar transit with this vessel, and his observation of the crossings of the other vessels before him.

Notwithstanding the information that argued against making the crossing, notably the weather forecasts, the bar restriction, and his own knowledge of the potential hazards of making the effort, the *Taki-Tooo* master made the decision to cross the bar. The tragic consequences of his transit attempt demonstrate the faultiness of his personal decision-making and highlight the need for small passenger vessel owners and/or operators to use a systematic method for addressing the potential risks associated with bar crossings and to adopt a go/no-go operating standard after weighing the risk factors.

Most major marine entities, including the U.S. Navy, the Coast Guard, and industry carriers (passenger and freight vessels), have adopted policies and procedures based on risk-management principles to improve safety in operations. Risk management is a decision-making process that involves weighing the various factors relating to a potential hazard so that various response options can be identified. The process enables the owner and/or operator of a company to preselect the optimal response to a hazard, thus eliminating or mitigating the danger. For example, in the aviation industry, Federal regulations require operators of commercial air transport operating under 14 *Code of Federal Regulations* (CFR) Part 121 to develop operating specifications that strictly delineate the conditions under which their aircraft will be allowed to operate. Unless the aircraft has certain navigation and flight control equipment and the pilot has certain qualifications, passenger- and cargo-carrying commercial air transport aircraft are not permitted to take off or land in defined conditions of restricted visibility or adverse winds.

Risk management can be a highly formalized or a comparatively informal process, depending on the size and complexity of the operation. In the case of a small passenger boat operation such as a charter boat company, the owners and/or operators could identify waterway hazards and establish policies for eliminating or mitigating the risks involved. For example, on the day of the *Taki-Tooo* accident, another highly experienced charter operator whose vessel (the *Kerri Lin*) was 3 feet shorter but had more propulsive power than the accident boat cancelled his fishing trip because of the prevailing conditions. He later told Safety Board investigators that he had established an operating policy of not attempting the bar transit if the sea swell at Tillamook Bay bar was 10 feet or greater.

In the Safety Board's opinion, most small passenger vessel owners and/or operators are well aware of the risk factors that need to be considered for a hazardous bar transit: the sea state,

²G. Klein, "Applied Decision Making," in P.A. Hancock (ed.), *Human Performance and Ergonomics* (San Diego, California: Academic Press, 1999).

the size and propulsive capability of the vessel, the extent of each master's experience in handling said vessel, and how often a particular master has crossed the bar with that vessel or comparable boats. Owners need to weigh such factors against possible unwanted outcomes, such as harmful effects on health and safety, potential damage to or loss of property, and so forth in developing a go/no-go policy for the bar transit.

Although the charter boat masters might be accomplished boat handlers, the decision to transit a potentially hazardous bar should not be left solely to their discretion. They might have outside factors to contend with at the time when making the crossing attempt as well as subtle influences such as the desire not to disappoint the passengers who chartered the fishing expedition. In developing vessel-specific operating standards for their masters, the boat owners could be assisted by Coast Guard personnel who have the knowledge of local conditions in evaluating whether the go/no-go policies developed and implemented by the small passenger vessel owners are appropriate to attain a sufficient level of operational safety.

Before the charter boat left the marina, the *Taki-Tooo* master conducted a safety briefing for his passengers, as required by Federal regulations. He discussed the donning of lifejackets, pointed out where they were located, and told his passengers that they could don them if they wished. None elected to do so. During the transit to the inlet area, the *Taki-Tooo* passed Station Tillamook Bay, where a small-craft advisory flag was raised and a rough bar advisory sign was illuminated, and the Coast Guard observation tower, where another rough bar advisory sign was illuminated. The master then witnessed the much larger *Norwester* encounter problems with the sea swells and received radio reports from other operators about the swells and waterway debris. Thus, despite receiving several indications that bar conditions were hazardous, the *Taki-Tooo* master did not don a lifejacket or direct the deckhand and the passengers to don lifejackets.

The results of the master's failure to mitigate the risk associated with the crossing attempt by having passengers and crew don lifejackets are telling. Of the 19 vessel occupants, 12 were not able to retrieve a lifejacket before the charter boat was swamped by a large wave. Of these individuals, only two survived. In contrast, six of the seven people who were able to retrieve lifejackets survived.

Coast Guard regulations at 46 CFR 185.508 stipulate that the master should require passengers to don lifejackets when possible hazardous conditions exist, such as when "transiting hazardous bars and inlets." The regulation followed a series of accidents in which the Safety Board recommended to the Coast Guard that passengers on the open decks of vessels be required to wear lifejackets when transiting areas of rough seas.³ In response, the Coast Guard began the rulemaking process to change the applicable regulation. The Coast Guard ultimately issued a rule placing exclusive responsibility on the master for passengers to don lifejackets. At the time, the Safety Board agreed that the Coast Guard's action satisfied the intent of the recommendation; however, the Board never expected that the Coast Guard would not establish procedures for monitoring compliance with 46 CFR 185.508 and for citing masters or operators for noncompliance.

³ Safety Recommendation M-86-113.

After the *Taki-Tooo* accident, Safety Board investigators interviewed mariners who operated small passenger vessels across the Tillamook Bay bar, all of whom contended that passengers should not be compelled to don lifejackets when crossing the bar. They said that passengers found lifejackets to be uncomfortable and that requiring passengers to wear lifejackets could frighten them. The interviews revealed that the regulation puts masters in the position of acknowledging that they are exposing their passengers to hazardous conditions whenever they require them to don lifejackets, potentially increasing their perceived exposure to liability if something untoward occurs.

Of the vessel masters who crossed the bar on the morning of the accident, none required passengers to don lifejackets. Further, none had ever been cited by the Coast Guard for not adhering to the requirements of 46 CFR 185.508 and requiring their passengers to don lifejackets before crossing the hazardous bar. The Safety Board, therefore, concluded that the U.S. Coast Guard's failure to enforce regulations at 46 CFR 185.508 contributed to the loss of life in the *Taki-Tooo* accident.

On March 31, 2005, in response to a directive from Congress, the U.S. Department of Homeland Security delivered the Coast Guard's "Report on Small Passenger Vessel Safety," which indicated that no citations had ever been issued to vessels or masters for violations of the lifejacket regulation since it became effective, and that enforcement or compliance monitoring was complicated by the fact that the regulation contained "little metric guidance for determining when a bar or inlet is sufficiently hazardous, or weather sufficiently severe, to trigger the requirement for a given vessel" after taking into consideration "its capabilities and the experience of its master."

Given that the Coast Guard has taken the position that it is too complicated for its personnel to determine whether a bar or inlet is sufficiently hazardous to direct masters of small passenger vessels to require boat occupants to wear lifejackets, a revision of Federal regulations is warranted. At a minimum, the Coast Guard needs to address marine safety at inlets that it has deemed hazardous by installing surf stations and/or by designating them as regulated boating areas. In the Safety Board's opinion, charter boat operators should not be allowed to continue to put themselves and their passengers at risk in hazardous conditions. The Board recognizes that a regulatory change affecting all bars and inlets may not be warranted. The sea conditions at West Coast inlets are usually far more severe than the sea conditions at East Coast inlets because of the greater fetch of the incoming swells and the effects of the steep continental slope and the narrow continental shelf. Consequently, the regulations should be revised to mandate the use of lifejackets at surf stations and regulated boating areas on the West Coast.

The National Transportation Safety Board, therefore, makes the following recommendations to the U.S. Coast Guard:

Require that owners of small passenger vessels operating within Coast Guard-designated surf stations and regulated boating areas on the West Coast develop and implement written go/no-go policies, based on risk-management principles, regarding transiting bars and inlets. (M-05-09)

Revise your regulations to require that small passenger vessels operating in Coast Guard-designated surf stations and regulated boating areas on the West Coast have all passengers and crew wear lifejackets while the vessels transit inlets where rough bar warnings are in effect. (M-05-10)

Until such time as your regulations are revised, issue guidance for mariners operating in Coast Guard-designated surf stations and regulated boating areas on the West Coast to require passengers and crew on small passenger vessels to wear lifejackets while transiting inlets where rough bar warnings are in effect. (M-05-11)

As a result of its investigation of the *Taki-Too* capsizing, the Safety Board has also issued safety recommendations to the small passenger vessel companies operating in the Tillamook Bay area and the National Marine Charter Association. In your response to this letter, please refer to M-05-09 through -11. If you need additional information, you may call (202) 314-6177.

Acting Chairman ROSENKER and Members ENGLEMAN CONNERS, HEALING, and HERSMAN concurred in these recommendations.

By: Mark V. Rosenker
Acting Chairman