

NATIONAL TRANSPORTATION SAFETY BOARD  
WASHINGTON, D.C.

Log M-57

ISSUED: October 26, 1977

Forwarded to:

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Administration  
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Rockville, Maryland 20852

SAFETY RECOMMENDATION(S)

M-77-32

About 2051 (P.d.t.), on September 13, 1976, the PEARL-C, a charter fishing boat, rolled over on its port side, flooded, and sank while being towed across the Columbia River Bar near Astoria, Oregon, by a U.S. Coast Guard 44-foot motor lifeboat. Of the 10 persons aboard the PEARL-C, 2 persons were rescued, 1 person drowned, and 7 persons, including the operator, are missing and presumed dead. 1/

The PEARL-C became disabled earlier in the day and was taken in tow by a Coast Guard motor lifeboat. When the vessels arrived at the bar entrance about 1 hour before maximum ebb current, the decision could have been made to delay crossing until the speed of the ebb current decreased. However, it would have been about 2 hours before the ebb current reduced significantly, and during this time the weather and sea conditions outside the bar, where the vessels would be waiting, were expected to worsen.

Crossing the bar near the time of maximum ebb current was known to be dangerous because the boats would be exposed to the dangerous sea conditions on the bar for a longer time. The vessels might have to cross a 2-mile zone of waterway where sea conditions would be significantly worse. With progress slowed to less than 2 knots by the ebb current, the boats might be exposed to the most dangerous area of the bar for approximately an hour. The time of exposure to the dangerous water would decrease rapidly as the ebb current decreased since forward speed would increase and the extent of the danger zone would decrease.

1/ For more detailed information, read "Marine Casualty Report: Charter Fishing Boat PEARL-C Sinking on the Columbia River Bar Near Astoria, Oregon, September 13, 1976." (NTSB-MAR-77-1)

Small boats generally rely on direct observations of the sea conditions to determine if it is safe to cross the bar and even then visual observations can be deceiving when approaching from seaward. In darkness and low visibility there is no means of determining sea conditions with adequate precision to assure that small boats can cross safely. Even though the coxswain of the relief motor lifeboat had just crossed the bar outbound, the conditions which he experienced would not necessarily have remained the same on his return because sea conditions on the bar are known to change rapidly with the progress of the ebbtide.

Your Office of Ocean Engineering assisted the Safety Board in acquiring expert testimony regarding the feasibility of installing an on-site monitoring system to measure and report bar conditions. The system would acquire, process, and format selected environmental data to provide timely reports on bar conditions so that boat operators could better plan a safe bar crossing. We were advised that the development of a bar condition monitoring system is feasible.

Therefore, the National Transportation Safety Board recommends that the National Oceanic and Atmospheric Administration:

Develop an oceanographic measurement system to measure, process, and report those sea conditions which are important to the safe navigation of boats crossing the Columbia River Bar. (Class II, Priority Followup) (M-77-32)

BALLEY, Acting Chairman, McADAMS, HOGUE, and HALEY, Members, concurred in the above recommendation.



By: Kay Bailey  
Acting Chairman