

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: February 12, 1979

Forwarded to:
Admiral John B. Hayes
Commandant
U.S. Coast Guard
Washington, D.C. 20590

SAFETY RECOMMENDATION(S)

M-79-1 through -7

About 1625 e.d.t. on June 6, 1977, the charter fishing boat DIXIE LEE II capsized during a sudden, severe thunderstorm in the Chesapeake Bay near Norfolk, Virginia, with 27 persons on board. Shortly after the accident, a commercial fishing boat passed near the accident scene and rescued 14 persons. Twelve persons died and another is missing and presumed dead. The DIXIE LEE II suffered minor damage due to flooding, and after being repaired and recertified by the U.S. Coast Guard, was returned to service. 1/

Even though the DIXIE LEE II met the Coast Guard's stability requirements for wind and passenger heel, the Safety Board determined that the boat was unable to survive the high winds generated by the storm. The passengers reacted to the intense wind and rain by seeking shelter away from the windward side of the boat. The overturning effect of this passenger movement could have significantly reduced the boat's resistance to wind heel. Although the Coast Guard evaluates wind heel and passenger heel separately, this accident demonstrates that they are not always independent of each other. Because the Coast Guard's wind heel criteria are not sufficiently conservative to protect against passenger reaction to high beam winds which can occur on the Chesapeake Bay, small passenger vessel certification should be based on the combined heeling effects of wind and off-center weight.

The certificate of inspection states the maximum number of persons to be carried and the vessel's route restrictions. However, a vessel may encounter more severe winds while operating on its allowed route than the wind severity used to derive the wind pressure factor in the vessel's certification. Many small passenger vessel operators are not

1/ For more detailed information read "Marine Accident Report-- Charter Fishing Boat DIXIE LEE II Capsizing in Severe Thunderstorm in the Chesapeake Bay near Norfolk, Virginia, June 6, 1977" (NTSB-MAR-79-1).

aware of the wind speed equivalent used to certify their vessels, and they may not have operational experience in seldom-encountered high winds which exceed the conditions of certification. Without such information they are not able to assess the risk of high winds to their vessels.

In this accident, it appears that the operator was not aware of the National Weather Service (NWS) forecast for severe thunderstorms. There is no requirement that an operator determine the official weather forecast before getting underway and while underway with passengers. Generally, it is considered a matter of good seamanship to keep informed of weather developments, but many experienced vessel operators probably rely on their own observations to forecast the weather. The circumstances of this accident indicate that two experienced boat operators misjudged the weather. However, operators carrying passengers for hire should be required to check the NWS forecast frequently enough to assure the safety of their passengers.

Although the NWS continuously broadcasts weather information over specified VHF radio frequencies, a vessel is not required to carry a radio receiver which can be tuned to the weather broadcast frequencies. Even when a vessel is equipped with a radio receiver having the weather broadcast frequencies, as the DIXIE LEE II had, an operator's preoccupation with the fishing activities may prevent him from checking the weather. However, radio receivers are now available which are automatically turned on or sound an alarm by the NWS preceding a broadcast of severe weather. Use of such radio receivers can add an important element to the safe operation of small passenger vessels.

The NWS broadcast a severe thunderstorm watch for a large section of eastern Virginia at 1310 and advised that the storm would give very little advance warning. Between 1310 and 1625, the approximate time of the accident, only two weather broadcasts were made by Coast Guard Group Hampton Roads; and neither of these stated that the storm would give little advance warning. These broadcasts were made over VHF channel 22A after a brief notice on VHF channel 16 to switch to VHF channel 22A for a small craft advisory. These broadcasts were too infrequent and incomplete to warn boat operators that a severe thunderstorm was imminent. Also, because marine VHF radiotelephones are not required to have channel 22A, the benefit of these broadcasts is lost to those boats which have only the required VHF channel 16. The Safety Board realizes that the multiple uses of VHF channel 16 for safety, distress, and calling limit its effectiveness for routine weather broadcasts. However, the Coast Guard should insure that its units improve the timeliness, frequency, and completeness of their weather broadcasts over channel 16 when severe weather conditions threaten the safety of boats which may not be equipped with weather radio receivers.

After the DIXIE LEE II capsized, many persons struggled for some means to keep afloat. The approved buoyant apparatus drifted away too fast to be retrieved. A Coast Guard regulation in 46 CFR 180.20-1 prohibits securing the buoyant apparatus to the boat. This requirement is most likely intended to prevent a sinking boat from taking the buoyant apparatus to the bottom with it. However, attachment provisions which would keep the apparatus near the vessel and automatically release the buoyant apparatus in the event of vessel sinking are readily available. Further, in shallow waters such as the Chesapeake Bay, use of a sufficiently long tether would keep the apparatus accessible to persons in the water while not being pulled under by the sinking vessel.

Therefore, the National Transportation Safety Board recommends that the U.S. Coast Guard:

Revise stability requirements to include the effect of off-center passenger weight in the wind heeling criteria for small passenger vessels. (Class II, Priority Action) (M-79-1)

State on the Certificate of Inspection for small passenger vessels the approximate wind speed equivalent used to certify the vessel's stability. (Class II, Priority Action) (M-79-2)

Revise the Miscellaneous Operating Requirements in 46 CFR 185.20 to include a requirement for operators of small passenger vessels to check the National Weather Service forecast before getting underway and periodically while underway and to proceed to the nearest harbor of safe refuge when a watch or warning is issued for wind speeds that exceed the wind speed equivalent used to certify the vessel's stability. (Class II, Priority Action) (M-79-3)

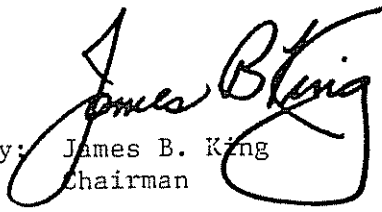
Require the operators of small passenger vessels to post an Operating Safety Checklist, in a conspicuous place accessible to crew and passengers, which states the pertinent requirements of 46 CFR 185.20. (Class II, Priority Action) (M-79-4)

Require small passenger vessels that are certified to operate on partially protected waters to have a weather monitor radio receiver at the operator station which can be automatically activated by the Warning Alarm Device of the National Weather Service. (Class II, Priority Action) (M-79-5)

Revise its procedures for broadcasting severe weather statements to provide more frequent, timely, and complete weather information. (Class II, Priority Action) (M-79-6)

Require tethering of lifeboats and buoyant apparatus to keep such devices from drifting from vessels which are partially submerged, are capsized but remain afloat, or sink in shallow water. (Class II, Priority Action) (M-79-7)

KING, Chairman, DRIVER, Vice Chairman, McADAMS and HOGUE, Members concurred in the above recommendations.

By:  James B. King
Chairman