

M-145 AI-4

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: April 22, 1981

Forwarded to:

Admiral John B. Hayes
Commandant
U.S. Coast Guard
Washington, D.C. 20593

SAFETY RECOMMENDATION(S)

M-81-11 through -17

About 0734 e.d.t. on May 9, 1980, the Liberian bulk carrier M/V SUMMIT VENTURE rammed a support pier of the western span of the Sunshine Skyway Bridge in Tampa Bay, Florida. As a result of the ramming, the support pier was destroyed and about 1,297 feet of bridge deck and superstructure fell about 150 feet into the bay. A Greyhound bus, a small pickup truck, and six automobiles fell into the bay and 35 persons died. Repair costs were estimated at about \$30 million for the bridge and about \$1 million for the SUMMIT VENTURE. 1/

Vessel traffic monitoring or active traffic control in congested waterways, such as Tampa Bay, is a proven method of increasing the safety of navigation and improving the efficiency of traffic lanes. The existing level of the Tampa Bay Vessel Traffic Service (VTS) involves only bridge-to-bridge radiotelephone communication and does not include traffic monitoring or navigation restrictions. The SUMMIT VENTURE's pilot testified that he avoided turning hard left at buoys 1A and 2A because he was concerned about the proximity of the outbound tanker S/S PURE OIL. However, it was later determined that the PURE OIL was about 1.5 nmi distant and should not have been a cause for concern.

The Safety Board believes the establishment of one-way traffic zones in the vicinity of the Sunshine Skyway Bridge would reduce the risk of vessels meeting near the navigable span. If a no-meeting zone were specified by the Tampa Bay VTS, this would eliminate possible traffic congestion in the bridge approach. Also, during severe weather conditions, such as strong winds, swift currents, or reduced visibility, the Coast Guard in cooperation with local port authorities could implement a plan to forbid or restrict vessels from transiting bridges. The development of the severe weather in Tampa Bay on May 9 might have been too rapid to implement such a plan without benefit of an appropriate weather forecast, but the integration of updated weather information with a vessel traffic system could reduce the risk of weather-related accidents.

The location of the turning buoys at the intersection of Mullet Key Channel and Cut A Channel requires that inbound vessels negotiate a left turn of 18° only 0.7 nmi

1/ For more detailed information, read "Marine Accident Report--Ramming of the Sunshine Skyway Bridge by the Liberian Bulk Carrier SUMMIT VENTURE, Tampa Bay, Florida, May 9, 1980" (NTSB-MAR-81-3).

before passing under the Sunshine Skyway Bridge. If a vessel operator fails to properly negotiate the turn, this can greatly reduce the probability of safe bridge passage. For example, if the helm is put over too early, if it is held over too long, or if the rudder deflection is too great for the appropriate speed, the vessel may overshoot the turn and cross the channel toward the north. With a late helm or too little helm for the appropriate speed, the vessel can slide out of the channel toward the south. Either condition could place the vessel in an untenable position because of the limited distance available to correct the vessel's course before arriving at the Sunshine Skyway Bridge. Those conditions could be further aggravated by the influence of wind or current. The Safety Board believes that channel bends should not be so close to bridges that the success of navigating under the bridge span is dependent upon the successful navigation of the channel bend, especially in a major waterway, such as Tampa Bay, where there is adequate sea room for the placement of channels.

The existing State and Federal laws pertaining to Tampa Bay and other pilotage services allow a pilot who holds both licenses to operate under the authority of either, but not both at the same time. If the Coast Guard revokes a pilot's Federal license, this will not necessarily prevent him from piloting vessels under his State license; the converse is also true. This condition can limit the Coast Guard's jurisdiction in setting the qualifications for obtaining a pilot's license and in initiating remedial action for suspending or revoking a pilot's licenses. Cases might arise where a pilot could continue to serve under the authority of his Federal license even after he had an established history of hazarding the safety of vessels while piloting under the authority of his State license.

To alleviate this situation, the Safety Board believes that the Coast Guard should seek congressional legislation to gain statutory authority to act, when appropriate, against the Federal license of a pilot serving under the authority of his State license. This need not reduce the State's authority in the area of pilotage.

The mass and design of bridge piers and pier protection systems and the configuration, weight, and speed of vessels has a direct effect on the damage which may result from a collision. The bulwark and the forecastle of the SUMMIT VENTURE struck the pier column before the lower bow struck the pier crashwall. If the pier crashwall had been larger, or if a pier protection system had been installed at that location, the initial impact would have occurred near the waterline. Because the pier crashwall is anchored through the pier footer directly into the bay bottom and is larger and stronger than the columns, it is possible that sufficient energy might have been absorbed to reduce the vessel's forward motion and perhaps to redirect the vessel before the bulwark and forecastle struck the column. While the pier still could have been damaged, only the vessel's mast would have struck the bridge span if the vessel had been redirected to starboard. The vessel could have passed under the bridge span if it had been redirected to port, and the damage to the bridge span might have been minimized.

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

Improve navigational aids for vessels passing under the Sunshine Skyway Bridge. (Class II, Priority Action) (M-81-11)

Prohibit vessels from meeting near the Sunshine Skyway Bridge. (Class II, Priority Action) (M-81-12)

In cooperation with local port and bridge authorities, determine the feasibility of installing nonstructural bridge protection devices for the Sunshine Skyway Bridge. (Class II, Priority Action) (M-81-13)

Seek legislation to allow the Coast Guard to act against a pilot's Federal license for acts committed while serving under the authority of his State license. (Class II, Priority Action) (M-81-14)

In cooperation with the Federal Highway Administration, develop standards for the design, performance, and location of structural bridge pier protection systems which consider that the impact from an off-course vessel can occur significantly above as well as below the water surface. (Class II, Priority Action) (M-81-15)

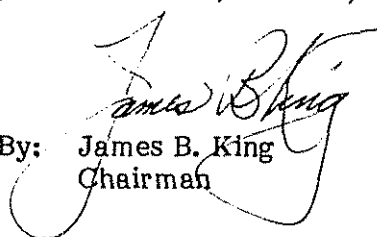
In cooperation with the Federal Highway Administration, conduct a study to determine which existing bridges over the navigable waterways of United States ports and harbors are not equipped with adequate structural pier protection. (Class II, Priority Action) (M-81-16)

Distribute a copy of the results of the Coast Guard's studies regarding bridge and pier protection systems to each appropriate member of the American Association of State Highway and Transportation Officials. (Class II, Priority Action) (M-81-17)

In addition, the Safety Board reiterates safety recommendation M-80-78:

Reevaluate the proposed level of vessel traffic service (VTS) in Tampa Bay and determine if a higher level of VTS is needed. (Class II, Priority Action)

KING, Chairman, and McADAMS and GOLDMAN, Members, concurred in these recommendations. DRIVER, Vice Chairman, and BURSLEY, Member, did not participate.

By:  James B. King
Chairman