



National Transportation Safety Board

Washington, D.C. 20594
Safety Recommendation

SP-20
Log M-309B

Date: February 6, 1986

In reply refer to: M-86-8 through -10

Mr. Richard Nelson
President
Dakota Creek Industries, Inc.
Post Office Box 218
115 Q Avenue
Anacortes, Washington 98221

About 0230 on February 14, 1983, the fishing vessel ALTAIR departed Dutch Harbor, Alaska, for the crab fishing grounds near the Pribilof Islands in the Bering Sea. About 0330, the helmsman of another fishing vessel en route to Dutch Harbor saw the ALTAIR proceeding on a course toward the Pribilof Islands at about 10 knots. About 0830, the fishing vessel AMERICUS, a sistership to the ALTAIR, departed Dutch Harbor for the same crab fishing grounds. Both the AMERICUS and the ALTAIR were fully loaded with crab pots. About 1430, the capsized AMERICUS was sighted about 30 nautical miles north of Dutch Harbor. The ALTAIR was never seen again. The AMERICUS' seven crewmembers and the ALTAIR's seven crewmembers are missing and presumed dead. The AMERICUS was valued at \$3 million and the ALTAIR was valued at \$3.2 million. 1/

The AMERICUS and the ALTAIR, as originally designed and constructed, had more than adequate stability when carrying 258 crab pots on deck as indicated in the vessels' stability booklets. In that loading condition, with the crab tanks empty and the double-bottom fuel tanks full as required by the vessels' stability booklets, both vessels had more than twice the area under the righting arm curve required by the International Maritime Organization stability criteria. However, during their years of service, the vessels' displacements had been increased by the addition of trawling gear and other items, the deck space available for storing crab pots had been reduced by the installation of the trawling gear, and the captains had developed a procedure of cross-tanking the crab tanks which was not included in the stability booklets.

Upon departure from Dutch Harbor, the AMERICUS had 228 crab pots on board and the ALTAIR had 224 crab pots on board. That number of crab pots would weigh about 70 tons and is less than the maximum of 258 indicated in the vessels' original stability booklets. The crab pots were not stacked higher than allowed by the stability

1/ For more detailed information read Marine Accident Report—"Capsizing of the U.S. Fishing Vessel AMERICUS and Disappearance of the U.S. Fishing Vessel ALTAIR, Bering Sea North of Dutch Harbor, Alaska, February 14, 1983" (NTSB/MAR-86/01).

booklets. Although the vessels' stability would decrease with an increasing load of crab pots, the number of crab pots carried by the AMERICUS and the ALTAIR on their last voyages was not sufficient alone to cause the vessels to capsize under the normal loading conditions in the vessels' stability booklets.

The lightship characteristics of the AMERICUS and the ALTAIR at the time of their loss did not correspond to the data derived from a stability test of their sister vessel ANTARES and presented in their stability booklets. There is no question that the lightship characteristics were changed by the addition of trawling gear; the lightship displacement was increased about 35 tons and the vertical center of gravity was raised about 1 foot. However, there is evidence from the stability tests of several other vessels that other items in addition to the trawling gear added to the displacements of the AMERICUS and the ALTAIR. The stability test of the MORNING STAR showed that vessel to be about 56 tons heavier than would be expected based upon the original ANTARES stability test, and stability tests of the VIKING EXPLORER and ANDREW MCGEE showed those vessels to be about 25 tons heavier. The stability test of the ALYESKA showed that vessel to be about 60 tons heavier. No single item could be identified to explain these weight differences, and it is very likely that they resulted from a combination of items. Inaccuracies in the trawling gear weights, installation of additional equipment, tools, spare parts, supplies, fishing equipment, and minor differences in vessel construction or in vessel condition at the time of the stability tests are some factors that might cause weight differences. Since the AMERICUS and the ALTAIR were lost and no stability tests had been performed on them, the magnitude of the weight differences for those two vessels will never be known. However, the evidence does indicate that both vessels were heavier than would be expected based upon the original ANTARES stability test.

Although the extrapolation of lightship data from one vessel to another might have been standard practice within the fishing vessel construction industry at the time, a deadweight survey probably would have been required to verify the lightship characteristics of the AMERICUS and the ALTAIR if those vessels had been required to meet U.S. Coast Guard stability standards for inspected vessels. If stability tests had been performed on the AMERICUS and the ALTAIR after the trawling gear had been installed, the increases in displacement and any inherent reductions of stability would have been discovered and quantified, and the vessels' stability booklets and stability letters could have been modified appropriately. The revised stability information would have shown the reduced crab pot loading capacity and any other precautions necessary to ensure safe loading. If the stability information had been amended and provided to the captains of the AMERICUS and the ALTAIR, and if the captains had used the information properly, these accidents might have been prevented.

Therefore, the National Transportation Safety Board recommends that Dakota Creek Industries, Inc., the builders of the AMERICUS and ALTAIR:

Recommend to your clients that a stability test be conducted on each new vessel constructed at your shipyard unless a deadweight survey confirms that the stability data from a sister vessel may be used.
(Class II, Priority Action) (M-86-8)

Recommend to your clients that a stability test or deadweight survey, as appropriate, be conducted on each vessel that undergoes a major modification, such as the addition of trawling gear, at your shipyard.
(Class II, Priority Action) (M-86-9)

Recommend to your clients that complete stability information be prepared for each vessel constructed or modified at your shipyard.
(Class II, Priority Action) (M-86-10)

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 recommendations in this letter. Please refer to Safety Recommendations M-86-8 through -10 in your reply.

BURNETT, Chairman, GOLDMAN, Vice Chairman, and LAUBER, Member, concurred in these recommendations.


By: Jim Burnett
Chairman