



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: August 21, 1987

In reply refer to: M-87-49

Mr. G. S. Everett
 President
 Caleb Brett, U.S.A, Inc.
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About 1030 on October 28, 1986, explosions and fires occurred in the engine room and starboard fuel oil tanks of the 811-foot-long U.S. tankship OMI YUKON which was en route from Hawaii to South Korea for scheduled vessel repairs and biennial inspection by the U.S. Coast Guard. At the time of the explosions, the tankship was located in the Pacific Ocean about 1,000 miles west of Honolulu, Hawaii, and was not carrying any cargo. There were 24 crewmembers, 2 U.S. welders, and 11 Japanese workers employed in cleaning the cargo tanks aboard the vessel. Four persons were killed; the other 33 persons safely abandoned the vessel and were later rescued by a Japanese fishing vessel. The estimated damage to the OMI YUKON was \$40 million. The vessel was towed to Japan and sold for scrap. ^{1/}

The fuel oil sampling and testing procedures as practiced by OMI Corporation (OMI), Hawaiian Independent Refinery, Inc. (HIRI), Caleb Brett U.S.A., Inc., and the OMI YUKON's two chief engineers were not adequate for preventing fuel oil with a flash point below 140° F from being loaded aboard the OMI YUKON. The Caleb Brett surveyor, who was aboard the OMI YUKON on October 23, testified that neither Caleb Brett nor OMI provided him with any verbal or written instructions regarding the sampling of the fuel oil. The Caleb Brett surveyor took one fuel oil sample at the beginning of the first load of fuel oil on October 23, and a second sample at the beginning of the second load. He did not sample near the end of either load nor was he required to take a sample near the end of each load where the fuel oil was probably contaminated with low flash point oil products. There is a need for standardized sampling procedures of fuel oils loaded aboard vessels that will ensure that the entire load of fuel oil is within required specifications.

Coast Guard regulations require that the chief engineer of a vessel obtain a half-pint sample of each load of fuel oil, but the regulations do not require that the sample be tested or specify how the fuel oil should be sampled. Coast Guard regulations only state that the chief engineer must obtain the flash point of the fuel oil as certified by the producer. In the case of HIRI, the refinery tested the fuel oil in their storage tank several days before loading of the OMI YUKON began. These test results were then given to the chief engineer as certification of the fuel oil's flash point. The test results of samples of fuel oil taken while it was loaded were normally not forwarded to the chief engineer until

^{1/} For more detailed information, read Marine Accident Report—"Explosions and Fires Aboard U.S. Tankship OMI YUKON in the Pacific Ocean about 1,000 Miles West of Honolulu, Hawaii, on October 28, 1986" (NTSB/MAR-87/06).

after the fuel oil was used. The fuel oil sample retained by the chief engineer and any test results of the fuel oil actually loaded were normally used to settle contract disputes after the fuel oil had been used and not to determine whether the fuel oil had a flash point above 140° F. The OMI superintendent engineer stated it was OMI's policy not to have the fuel oil samples tested before the fuel oil was used aboard its vessels because it took too long to obtain the results. Because of the contaminated fuel oil loaded aboard the OMI YUKON at HIRI in April 1986, the two OMI YUKON chief engineers had changed their practice from loading fuel oil directly into the fuel oil settler tanks to loading fuel oil into empty fuel oil storage tanks before transferring the fuel oil to the settler tanks. However, they still used the fuel oil before obtaining any test results from HIRI of the fuel oil samples taken during loading.

Testing of fuel oil samples for flash point can be done quickly. On December 1, 1986, when the chief engineer of the ASPEN questioned the fuel oil being loaded aboard his vessel at HIRI, HIRI tested samples of the fuel oil in about 4 hours. This accident indicates the need for improved testing practices for boiler fuel oil being loaded aboard vessels. The National Transportation Safety Board believes that the Coast Guard should require not only that samples be taken but also require that the samples are tested to ensure that the fuel oil actually loaded aboard vessels meets Coast Guard safety requirements. In addition, Caleb Brett should establish written fuel oil sampling procedures to prevent improper fuel oil from being loaded aboard vessels.

Therefore, as a result of its investigation, the National Transportation Safety Board recommended that the Caleb Brett, U.S.A., Inc.:

Establish written fuel oil sampling procedures to prevent improper fuel oil from being loaded aboard vessels. (Class II, Priority Action)
(M-87-49)

Also, as a result of its investigation, the Safety Board issued Safety Recommendations M-87-28 through -37 to the U.S. Coast Guard, M-87-38 to the American Bureau of Shipping, M-87-39 through -46 to the OMI Corporation, M-87-47 and -48 to the Hawaiian Independent Refinery, Inc., M-87-50 to the American Petroleum Institute, and M-87-51 to the Federal Aviation Administration.

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 recommendation in this letter. Please refer to Safety Recommendation M-87-49.

BURNETT, Chairman, GOLDMAN, Vice Chairman, and LAUBER, NALL, and KOLSTAD, Members, concurred in this recommendation.

By: 
Chairman