

M-117

NATIONAL TRANSPORTATION SAFETY BOARD  
WASHINGTON, D.C.

ISSUED: January 25, 1980

Forwarded to:

Honorable Julius L. Katz  
Assistant Secretary for Economic  
and Business Affairs  
Room 6828  
Department of State  
Washington, D.C. 20520

SAFETY RECOMMENDATION(S)

M-80-4

On June 5, 1979, a fire erupted on the Canadian bulk carrier CARTIERCLIFFE HALL while it was underway in Lake Superior between Duluth, Minnesota, and Port Cartier, Quebec, Canada, in U.S. waters. The fire destroyed the vessel's accommodation spaces. Six persons were killed and five persons were injured; one person died later as a result of burns received in the fire. 1/

Although the source of ignition of this fire could not be determined, the Safety Board determined that the rapid rate at which the fire spread was due to a lack of structural fire protection in the design and the extensive use of combustible materials in the construction of the vessel's accommodation spaces.

The joiner bulkheads and overhead linings of the vessel's accommodation spaces were of a composition wood material, wherein wood fibers were glued and pressed together to form panels. These panels were affixed to a wooden frame structure to form the internal partitions for rooms and passageways. The doors at the bottoms of ladder wells, the pilothouse stairtower, and the treads on the stairs were of wooden construction. The living spaces were not insulated with materials having fire resistant or fire retardant properties, and these spaces were not protected by any sort of a fire detecting, smoke detecting, or sprinkler system.

The fire spread so rapidly because of the extensive use of combustible materials in the construction of the accommodation spaces which provided a copious amount of fuel for the fire and because of the total lack of effective barriers that could

1/ For more detailed information, read, "Marine Accident Report — Fire on Board the Canadian Bulk Carrier M/V CARTIERCLIFFE HALL, Lake Superior, June 5, 1979 (NTSB-MAR-80-1).

have contained the fire. Once the fire ignited, there was nothing to prevent it from traveling along the wooden bulkheads, partitions, and overhead linings to involve the entire spar deck crew's quarters, and there was no barrier to prevent the interior stairwells from becoming conduits for the vertical spread of the fire to the poop deck and pilothouse.

An examination of the structural fire protection standards applicable to Great Lakes vessels determined that these vessels are specifically exempted from compliance with the requirements of the Safety of Life at Sea Convention, 1960, which sets forth minimum international structural fire protection standards for cargo vessels and, therefore, are subject only to those requirements enforced by their home country. Since the Government of Canada has neither adopted nor developed structural fire protection standards for its Great Lakes fleet, the vessels of this fleet are not required to meet any standards.

U.S. Great Lakes cargo vessels must meet the same structural fire protection standards as U.S. oceangoing vessels. These structural fire protection standards are set forth in Title 46 of the Code of Federal Regulations, subpart 92.07. These standards apply to all vessels of 4,000 gross tons and over contracted for on or after January 1, 1962. These requirements specify the degree of fire retardancy and materials of constructions required for bulkheads, doors, interior stairs, stair-towers, deck coverings, ceiling, linings, and insulation used in the fabrication of accommodation spaces. They comprise a comprehensive body of regulation which, if followed in the construction of accommodation spaces, will provide a fire resistant living and working environment for the vessel's crew. The merit and efficiency of this type of construction was dramatically demonstrated in the fire on board the U.S. cargo vessel, SS SEA WITCH, which ensued after its collision with the SS ESSO BRUSSELS in New York Harbor on June 2, 1973. Because the SEA WITCH was built in conformance with these regulations, the crew of this vessel was afforded a safe refuge in the accommodation spaces from engulfing flames for a period of about 1 hour until rescue units arrived to remove them from the burning vessel. 2/

For U.S. cargo vessels of 4,000 gross tons and over contracted for before January 1, 1962, existing structure arrangements and materials previously approved are considered to be satisfactory as long as they are maintained in good condition. In a separate letter to the U.S. Coast Guard, the Safety Board has recommended that fire detecting systems be installed in the accommodation spaces of these older U.S. cargo vessels that do not meet current structural fire protection standards. The Canadian Government could make a similar provision for their existing vessels that have not been built to a recognized standard of structural fire protection.

Canadian cargo vessels regularly enter U.S. ports on the Great Lakes. A fire on board a vessel of similar magnitude while alongside a fuel or grain loading facility or while passing through a restricted section of waterway would endanger U.S. lives and property. That this fire erupted while the CARTIERCLIFFE HALL

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2/ For more detailed information, read, "Marine Casualty Report: SS C.V. SEA WITCH - SS ESSO BRUSSELS (BELGIUM); Collision and Fire in New York Harbor on June 2, 1973, With Loss of Life." (Report No. USCG-NTSB-MAR-75-6)

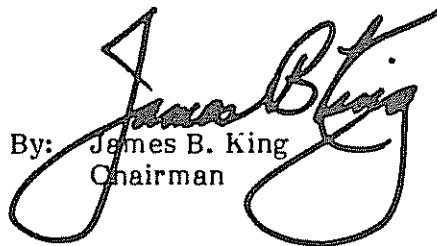
was on the open lake is completely fortuitous.

The Safety Board believes that it would be in the interest of the United States for the Canadian Government to develop and adopt structural fire protection standards at least for its new Great Lakes vessels and fire detecting systems for its existing Great Lakes vessels. Therefore, the National Transportation Safety Board recommends that the U.S. Department of State:

In consultation with the U.S. Coast Guard, initiate negotiations for a bilateral agreement between the United States Government and the Canadian Government to establish common structural fire protection and fire detection standards for Great Lakes vessels. (Class II, Priority Action) (M-80-4)

KING, Chairman, DRIVER, Vice Chairman, McADAMS, GOLDMAN, and BURSLEY, Members, concurred in the above recommendation.

By: James B. King  
Chairman

A large, stylized handwritten signature in black ink, appearing to read "James B. King". The signature is written over the typed name and title.

M-118

NATIONAL TRANSPORTATION SAFETY BOARD  
WASHINGTON, D.C.

ISSUED: January 25, 1980

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

SAFETY RECOMMENDATION(S)  
  
M-80-5

On June 5, 1979, a fire erupted on the Canadian bulk carrier CARTIERCLIFFE HALL while it was underway in Lake Superior between Duluth, Minnesota, and Port Cartier, Quebec, Canada, in U.S. waters. The fire destroyed the vessel's accommodation spaces. Six persons were killed and five persons were injured; one person died later as a result of burns received in the fire. 1/

Although the Safety Board was not able to determine the source of the ignition, it determined that the fire spread to combustible materials used in the construction of the joiner bulkhead and overhead linings in the spar deck crew's quarters. The absence of structural fire protection enabled the fire to spread upward to the officer's quarters on the poop deck and to the pilothouse and downward to the 'tween deck stores area beneath the crew's mess and galley. The rate at which the fire spread was so rapid that many crewmembers were trapped in their cabins and were forced to climb through portholes to escape.

The Safety Board believes that the magnitude of this fire stemmed from construction and design considerations and from the lack of structural fire standards for Great Lakes vessels of Canadian registry. The Safety Board examined this accident looking for any parallel risks that similar U.S. vessels could encounter. The structural fire protection standards are set forth in 46 CFR, subpart 92.07. These standards apply to all vessels of 4,000 gross tons and over contracted for on or after January 1, 1962. For all vessels of 4,000 gross tons and over contracted for before January 1, 1962, existing structure arrangements and materials previously approved are acceptable as satisfactory as long as they are maintained in good condition and no major repair or alteration to these structures

1/ For more detailed information, read, "Marine Accident Report — Fire on Board the Canadian Bulk Carrier M/V CARTIERCLIFFE HALL, Lake Superior, June 5, 1979 (NTSB-MAR-80-1).

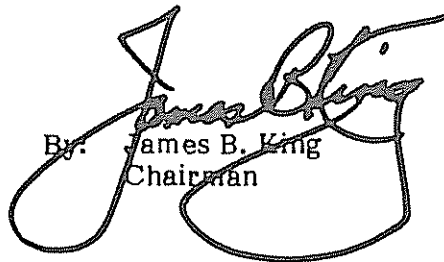
is effected. Furthermore, since cargo vessels are also exempted from providing fire detecting, manual alarm, and supervised patrol systems as set forth in 46 CFR, subpart 95.05, the Safety Board concludes that there are U.S. ships navigating the Great Lakes on which a fire could erupt and result in similar losses of lives and property as experienced on board the *CARTIERCLIFFE HALL*.

The Safety Board believes that action should be taken to upgrade the level of fire safety to protect the lives of the crews of older cargo vessels which were built without structural fire protection.

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

Amend 46 CFR, subpart 95.05-1 to require that a fire detection system be installed in the accommodation spaces of U.S. vessels that do not meet current structural fire protection standards. (Class II, Priority Action) (M-80-5)

KING, Chairman, DRIVER, Vice Chairman, McADAMS, GOLDMAN, and BURSLEY, Members, concurred in the above recommendation.

  
By: James B. King  
Chairman