

Log # M 406



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: JUN 14 1996

In Reply Refer To: M-96-1 through -3

Admiral Robert E. Kramek
Commandant
U.S. Coast Guard
Washington, D.C. 20593-0001

About 0200 on May 27, 1995, the U.S. fish processing vessel ALASKA SPIRIT caught fire and burned while moored alongside a dock at the Seward Marine Industrial Center, Seward, Alaska. Firefighters extinguished the fire at 1100. The master of the vessel died, and damage to the vessel was estimated at \$3 million.¹ The National Transportation Safety Board determined that the probable cause of the fire aboard the ALASKA SPIRIT was the failure of The Fishing Company of Alaska, Incorporated, to address the inadequate fire safety conditions and practices on the vessel. Contributing to the severity of the damage and the loss of life was the lack of fire safety standards for commercial fishing industry vessels.

The Safety Board's investigation indicated that the fire on the ALASKA SPIRIT ignited in the room of the vessel's assistant fish master, probably from overheating of a "cook pot" device that was left in the room when it was vacated several days earlier. The highly combustible construction of the vessel allowed the fire to grow and spread rapidly after ignition.

The poor structural fire protection of the ALASKA SPIRIT made it difficult to extinguish the fire until much of the combustible fuel had been consumed. The fuel load was very high in the small rooms of the vessel because of their wood construction and the volume of bedding, clothing, and wood furniture they contained. All of the partition bulkheads were constructed of wood with a vinyl veneer that had a National Fire Protection Association (NFPA) Class C flame spread rating. Further, all of the interior hull and deck surfaces, the exteriors of which were exposed to the elements, were covered with rigid polyurethane foam insulation. In some areas, sheets of

¹For further information, read Marine Accident Report -- *Fire On Board the U.S. Fish Processing Vessel ALASKA SPIRIT, Seward, Alaska, May 27, 1995* (NTSB/MAR-96/01).

polystyrene insulation were installed behind the wooden bulkheads and overhead. These combustible materials all contributed to fuel a rapidly spreading fire.

The ALASKA SPIRIT would not have met the requirements of the U.S. Coast Guard structural fire protection regulations for cargo and miscellaneous vessels or the NFPA shoreside Life Safety Code. The Coast Guard established cargo and miscellaneous vessel structural fire regulations and later developed the voluntary guidelines for fishing industry vessels in the Navigation and Vessel Inspection Circular (NVIC) 5-86 (which refers to the cargo and miscellaneous vessel regulations (46 Code of Federal Regulations (CFR) Subchapter I) for structural fire protection). Most of these regulations and guidelines were not incorporated into commercial fishing industry vessel regulations. Had structural fire protection guidelines been adopted into the regulations for fishing industry vessels, however, the owner of the ALASKA SPIRIT would still not have been required to implement them. The ALASKA SPIRIT was exempted from the regulations because: (1) it carried 49 or fewer persons, and (2) it had been operating as a fishing industry vessel before the effective date of the regulations.

Current Coast Guard regulations for new vessels carrying more than 16 persons require that vessels "minimize fire hazards insofar as is reasonable and practicable" and that "insulation be noncombustible." Except for NVIC 5-86, there is no other national standard for fishing industry vessels. This accident highlights the need to establish structural fire protection regulations for fishing industry vessels that carry more than 16 persons.

Following its 1994 investigation of the fire in the cargo spaces on the fish processing vessel ALL ALASKAN,² the Safety Board recommended that the Coast Guard:

M-95-16

Establish, in cooperation with the National Fire Protection Association, a national marine safety standard on the safe use of rigid polyurethane foam and other organic combustible material insulations on vessels.

The Coast Guard replied to this recommendation that it is working with the NFPA to develop such a standard. The Safety Board classified this recommendation "Open -- Acceptable Response" on February 6, 1996.

Seeking changes to regulations takes time. In the interests of safety, the Coast Guard could, in the interim, develop a national marine fire safety standard with the NFPA. A national marine fire safety standard for commercial fishing industry vessels, containing structural fire protection standards, would improve the level of fire safety on commercial fishing industry vessels by reducing the amount of highly combustible materials in vessel living spaces and corridors.

²Marine Accident Report -- *Fire On Board the U.S. Fish Processing Vessel ALL ALASKAN, Near Unimak Island, Alaska, Bering Sea, July 24, 1994* (NTSB/MAR-95/02).

Combustible construction was not the only factor in the ALASKA SPIRIT accident. Because heat rather than smoke detectors were used on the ALASKA SPIRIT, the crew was not provided with sufficient early warning of the fire, which led to the death of the master and allowed the fire to go out of control. An operating smoke detector in the rooms, and especially in the room of origin, would have given warning of the fire while it was still in the smoldering stage. Smoldering fires can produce smoke without significantly increasing room temperature.

Smoke-actuated fire-detecting units or independent modular smoke detectors (household type), however, are only required in the accommodation spaces of those commercial fishing industry vessels built or converted after September 15, 1991, that carry more than 16 persons. The minimal cost of these household-type battery-operated smoke detectors, and their ease of installation, strongly suggests the use of this safety device on existing vessels.

By the time the fire was discovered, it was well established and beyond the crew's capability to contain it. The regulations for new fishing industry vessels that are 36 feet and over in length that carry more than 16 persons require a power-driven fire pump and fire main system, but no fire suppression system in the accommodation area. The ALASKA SPIRIT had a power-driven pump and fire main system, which were not required by the regulations for this existing fishing vessel, but did not have a sprinkler system. To provide effective fire protection to the crew and the vessel, fire suppression equipment should be part of the power-driven fire pump and fire main system.

The Coast Guard should consider requiring automatic fire-extinguishing sprinkler systems on fish processing vessels with accommodations that are not of noncombustible construction. Such vessels often carry large numbers of people not trained as firefighters. They also operate in areas remote from professional firefighting assistance, in weather and sea conditions that could prevent help from being rendered even if available. Sprinklers also reduce the dependency on vessel personnel for responding to and extinguishing a fire, which is especially important when a reduced crew is staffing the vessel. In the case of the ALASKA SPIRIT accident, an installed sprinkler (suppression) system would probably have extinguished the fire in its early stages of development, impeded the spread of fire in the accommodation spaces, and possibly prevented the loss of life.

The ALASKA SPIRIT investigation has shown that fire safety standards for commercial fishing industry vessels are inadequate. In particular, it highlighted deficiencies in the areas of structural fire protection, fire detection systems, and fire suppression systems. The development and use of a national marine fire safety standard for commercial fishing industry vessels that includes structural fire protection standards and fire detection and suppression systems would improve the level of fire safety on board these vessels.

The Coast Guard reports that, since January 1992, a total of 62 new fishing vessels over 79 feet long have entered the industry. Only two of these vessels were over 100 feet long, and only one of the two was over 200 feet long. It is probable that only these 2 vessels, out of the 62 entering the industry, will carry more than 16 persons and so be required to meet some of the new fire safety

regulations. Even the larger vessel will likely not carry more than 49 persons and so will not be required to meet the structural fire regulations at 46 CFR 28.385.

A combination of reduced fishing quotas, over-capitalization, and owners' wishes to avoid costly implementation of the safety features required by regulations on new vessels perpetuates the use of older, less fire-protected vessels. These older vessels continue to operate without safety improvements, such as smoke detectors and the reduced use of combustible construction materials. By exempting these older vessels from safety regulations, two widely differing standards of safety for the fishing industry are effectively sanctioned. But all fishermen and fish processors are exposed to the same rigors on their jobs and should be afforded the same level of workplace safety.

Passenger vessel safety has been improved internationally in recent years, with the phasing in of higher fire protection levels on vessels built before the introduction of more stringent fire safety regulations. The older, less fire-protected passenger vessels are no longer permanently excused from meeting the higher fire prevention standards for new vessels. The same procedure could be used to improve the fire safety of fishing vessels.

Under current law, existing fishing industry vessels built before the effective date of the regulations are permanently exempted from meeting the new regulations. Because of the prevalence of fires that occur on fishing vessels and their great human and economic costs, the Coast Guard should seek legislation that would require the phasing in of fire safety regulations for all fishing vessels, regardless of age. In this way, owners of existing fishing vessels could gradually upgrade their vessels, in a planned cost procedure, or defer upgrading until their vessel is no longer permitted to operate and then replace it with a new vessel that would meet the higher regulatory standards. Such action would remove from operation those vessels currently exempted from the safety regulations and set a single safety standard for the fishing industry. The process of making the same regulations applicable to all fishing vessels should be completed by 2010.

Finally, in light of the widely relevant issues raised by this accident and the various shortcomings of the managerial oversight of the ALASKA SPIRIT that the Safety Board's investigation detected, the fishing industry should be made aware of the facts regarding of this accident. The circumstances of this accident should be disseminated to the fishing industry community.

Therefore, the National Transportation Safety Board issues the following safety recommendations to the U.S. Coast Guard:

Develop, in cooperation with the National Fire Protection Association, a national marine fire safety standard for commercial fishing industry vessels, which should include structural fire protection standards and fire detection and suppression systems in accommodation areas, and adopt it into the regulations. (Class II, Priority Action) (M-96-1)

Promptly seek to change the law to require the phasing in of fire safety regulations to apply to all existing fishing industry vessels that carry more than 16 persons. (Class II, Priority Action) (M-96-2)

Publicize the circumstances of this fire to the fishing industry. (Class II, Priority Action) (M-96-3)

The Safety Board also issued Safety Recommendations M-96-4 through -8 to The Fishing Company of Alaska, Incorporated, M-96-9 to the Commercial Fishing Industry Vessel Safety Advisory Committee, and M-96-10 to the National Fire Protection Association.

The Safety Board is interested in any action taken as a result of its safety recommendations. Therefore, it 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-96-1 through -3. If you need additional information, you may call (202) 382-0675.

Chairman HALL, Vice Chairman FRANCIS, and Members HAMMERSCHMIDT, GOGLIA, and BLACK concurred in these recommendations.

By: 
Jim Hall
Chairman