

*Log # M-4066*



## National Transportation Safety Board

Washington, D.C. 20594

### Safety Recommendation

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Date: JUN 14 1996

In Reply Refer To: M-96-9

Mr. George J. Easley, Chairman  
Commercial Fishing Industry Vessel Safety Advisory Committee  
Oregon Trawl Commission  
655 West Marine Drive  
Astoria, Oregon 97103-0569

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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.<sup>1</sup> 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, (FCA) 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. In particular, the Safety Board found that managerial oversight was deficient in the areas of: requiring procedures to ensure the fire safety of vacant rooms on FCA vessels; providing appropriate fire detection equipment; providing appropriate fire suppression equipment; ensuring the adequacy of fire hose equipment and connections; and providing realistic fire contingency plans.

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.

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<sup>1</sup>For 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).

When crewmembers leave their vessel after a voyage, they often do not check their accommodation rooms to verify that all electrical items have been turned off and secured, and that smoking materials have been removed. After occupants vacate a room, if it is likely to be vacant for a period of time, the room should be checked for fire hazards. Good marine practice calls for a responsible measure of "good housekeeping" on board vessels to lessen the danger of fire or other hazards occurring unexpectedly. While such routine checks cannot guarantee vessel safety, they can increase the likelihood that accidents will be prevented. Had the FCA provided written guidance to vessel masters to check on the fire safety condition of vacant crewrooms and had such a review procedure been implemented, the fire might have been avoided.

The inadequacy of the fire detection equipment on the vessel aggravated the seriousness of the accident. While the ALASKA SPIRIT's previous owner had installed the fire protection equipment used on the vessel, the responsibility for reviewing the adequacy of that equipment to ensure the fire safety of the vessel and the crew lay with the current owner, the FCA. Such a review would have revealed the need for smoke rather than heat detectors in the vessel's living quarters. When the fire ignited on the ALASKA SPIRIT, by the time that the heat detectors activated, the fire had advanced to a point that the master could not escape and shoreside firefighters could only contain it to the 02 deck and wheelhouse. 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. While smoke-actuated fire-detecting units or independent modular smoke detectors 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 on the ALASKA SPIRIT 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. Although automatic fire extinguishing sprinkler systems are not required in accommodation spaces, the management of the vessel is responsible for ensuring that fire suppression equipment is adequate to safeguard the crew and the vessel in case of fire. 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. Sprinklers 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. An installed sprinkler 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 firefighting response of the crew to the fire aboard the ALASKA SPIRIT was also adversely impacted by insufficient managerial oversight. Because the vessel was equipped with two different types of fire hose, a special adapter was required to connect the hydrant outlet (which had a National Standard-38 valve thread) with the nonstandard thread hose fitting of an Armtex hose selected to fight this fire. Due to this incompatibility, the crew was initially delayed in its firefighting efforts. The Safety Board is deeply concerned about the operation of a vessel with fire hose equipment that was not only incompatible but which had critical components (i.e. adapter coupling) stowed far away from the hydrants. It seems evident that if adapters are necessary, they should be installed. The responsibility for ensuring the adequacy of vessel fire hose systems and their practical hookup lies with the vessel's management.

Oversight and training of security watch personnel was also brought into question by the ALASKA SPIRIT accident. Once the fire ignited and became well established, more efficient communication between the security watchman hired by the FCA and emergency response personnel might have been beneficial. While the watchman called 911 to notify response personnel of the situation, he did not, after learning that the accident had already been reported, provide additional information to the 911 operator. Had the watchman identified himself to the 911 operator, she could have questioned him for additional details. The watchman might have been a source of specific information, such as the exact location of the fire on the vessel and whether individuals might have been trapped or injured. The FCA did not train night watch personnel in procedures for notifying response centers of an emergency. Security night watch personnel should have a checklist of initial notification procedures to ensure that requisite information is provided to emergency response communicators: At a minimum, the initial notification procedures should address: the emergency's nature, location, and extent; details as to personnel trapped or injured; and efforts in process to minimize the damage.

The ALASKA SPIRIT's master last conducted a fire drill on the previous fishing trip when the vessel was at Dutch Harbor. However, the fire drill was conducted without the crew's laying out or charging the ship's fire hose lines from any of the hydrants or donning the self-contained breathing apparatus or firefighting gear. As a result, the firefighting system was not tested and the crew was not completely familiar with the equipment. This accident demonstrates the importance of holding realistic fire training drills, designed to improve the crew's familiarity with the equipment and to test the equipment's effectiveness. The lack of realistic fire drills compromised the vessel's firefighting system.

Coast Guard regulations at 46 Code of Federal Regulations (CFR) 28.270, applicable to the ALASKA SPIRIT and all documented fishing vessels with more than 16 individuals on board,<sup>2</sup> require that drills be carried out as if:

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<sup>2</sup>On documented vessels with 16 or fewer persons, the rule applies if the vessel operates beyond the Boundary lines as listed in 46 CFR Part 7. Generally, the lines are seaward of the shorelines and cross entrances to small bays, inlets, and rivers.

There were an actual emergency and must include participation by all individuals on board, breaking out and using emergency equipment, testing of all alarm and detection systems, donning protective clothing... .

Commercial fishing industry vessel operators should develop fire contingency plans that improve the readiness of their vessel personnel and equipment to respond to a fire emergency, and include provisions concerning the duties of security watch personnel and the training of crew in firefighting techniques by the implementation of realistic fire drill procedures. To be realistic, the drills should require that each crewmember know where all fire and lifesaving equipment is stowed and how to use it.

The issues raised by the investigation of the fire on board the ALASKA SPIRIT are applicable to the entire fishing industry. Therefore, to ensure that the recommendations developed as a result of the ALASKA SPIRIT investigation receive wide dissemination within the industry, the National Transportation Safety Board issues the following recommendation to the Commercial Fishing Industry Vessel Safety Advisory Committee:

Inform fishing industry vessel owners of this accident and advise them to: install on their vessels smoke detectors in accommodation spaces; install automatic fire suppression systems in accommodation spaces that are constructed of combustible materials; develop written guidance for vessel masters to review the fire safety condition of all crewrooms when the occupants disembark from the vessel and the room will be vacant; direct vessel masters to check fire stations to ensure that fire hose couplers are compatible with vessel fire hydrants; and develop fire contingency plans that improve the readiness of vessel personnel and equipment, including provisions addressing the duties of security watch personnel and procedures for realistic fire drills. (Class II, Priority Action) (M-96-9)

The Safety Board also issued Safety Recommendations M-96-1 through -3 to the U.S. Coast Guard, M-96-4 through -8 to The Fishing Company of Alaska, Incorporated, and M-96-10 to the National Fire Protection Association.

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 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 recommendation in this letter. Please refer to Safety Recommendation M-96-9. If you need additional information, you may call (202) 382-0675.

Chairman HALL, Vice Chairman FRANCIS, and Members HAMMERSCHMIDT, GOGLIA, and BLACK concurred in this recommendation.

By:   
Jim Hall  
Chairman