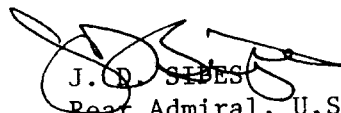


NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 6-91
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Subj: Fire Drills and On-Board Training

1. **PURPOSE.** The purpose of this Circular is to call attention to and endorse IMO MSC/Circular 544, "Fire Drills and On-Board Training," which was approved by the Maritime Safety Committee (MSC) on 5 June 1990 pending introduction into the SOLAS Convention.
2. **BACKGROUND.** IMO has been putting great emphasis on the role of human factor considerations. To this end, Assembly Resolution A.647(16) was adopted in 1989 to provide guidelines to ship owners and operators for improving operating practices and developing company policies on safe ship operation and pollution prevention. This in turn has been endorsed by the Coast Guard in NVIC 1-90. In addition, IMO issued an information circular MSC/Circ.544 in 1990, to provide recommendations and guidance for the proper conduct and recording of fire drills and on-board crew training.
3. **DISCUSSION.**
 - a. The U.S. Coast Guard endorses the proposed amendments for drills and on-board training set out in MSC/Circ.544. Use of these recommendations by ship owners and operators in conjunction with IMO Resolution A.647(16) will increase the level of safety aboard ships, reduce pollution, and improve the overall preparedness of the crews in the event of an emergency.
 - b. Owners and operators can improve the safety of their vessels with company policy which states the importance of vessel safety, and then putting company policy into practice by holding drills and on-board training as delineated in MSC/Circ.544.
4. **IMPLEMENTATION.**
 - a. Officers in Charge, Marine Inspection are urged to bring enclosure (1) to the attention of appropriate individuals in the marine industry in their zones.
 - b. Owners and operators should implement the recommendations of enclosure (1) in order to enhance the safety of their vessels.



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Chief, Office of Marine Safety,
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MSC/Circ .544
19 July 1990

IMO

FIRE DRILLS AND ON-BOARD TRAINING

1 The Organization has been informed that in a number of recent passenger ship fires, some of which have resulted in a high number of fatalities, the crew's performance during fire emergencies has been inadequate.

2 On-board personnel should receive periodic training and drills to become well versed in fire-fighting and fire safety measures. Resolution A.437(XI) "Training of crews in fire-fighting" contains information on land-based fire-fighting training for marine personnel. Land training is essential, but by itself insufficient. The crew should know how to deal with fires on their ship because even the location of fire-fighting equipment on 'sister' ships may vary from ship to ship. The common practice of transferring crew members from one ship to another at frequent intervals means that without on-board training and drills they may not become sufficiently familiar with the fire safety features of the ship on which they are serving.

3 Current regulations in chapter 11-2 of the 1974 SOLAS Convention, as amended, do not require on-board training or drills for fire emergencies and although chapter III requires that fire drills be held at monthly intervals in cargo ships, at weekly intervals in passenger ships, and lays down various other requirements regarding the conduct and recording of fire drills (see regulations 18, 25, 51 and 52), its detailed requirements for fire drills are not considered sufficient.

4 The Maritime Safety Committee, at its fifty-eighth session, agreed that the SOLAS Convention, as amended, should be further amended to contain a new regulation covering on-board training and fire drills.

5 Further, the Maritime Safety Committee, recognizing the need to increase the state of awareness on board ships, instructed the Sub-Committee to prepare appropriate guidance for Governments and owners and operators in the conduct of on-board fire training and fire drills.

6 Annex I shows amendments to the Convention concerning fire drills and on-board training approved by the Committee, at its fifty-eighth session. Annex 2 provides guidance for incorporating these requirements into the crew's routine through minimum standards for on-board fire training and drills.

7 Member Governments are invited to give effect, as early as possible, to the draft new regulation to the 1974 SOLAS Convention, as amended, as contained in annex I, pending the adoption of an amendment to the Convention, and additionally to encourage shipowners, ships' crews and port fire brigades to co-operate in practicing fire drills in port locations to ensure more efficient fire-fighting arrangements at such locations.

ANNEX 1

DRAFT NEW REGULATION OF THE 1974 SOLAS CONVENTION

Fire drills and on-board training

1 Fire drills

- 1.1 Each member of the crew shall participate in at least one fire drill every month. A drill shall take place within 24 h of the ship leaving port if more than 25% of the crew have not participated in a fire drill on board that particular ship during the previous month. The Administration may accept other arrangements that are at least equivalent for those classes of ships for which this is impracticable.
- 1.2 In passenger ships, a fire drill with the participation of the crew shall take place weekly.
- 1.3 Each fire drill shall include:
 - .1 reporting to stations and preparing for the duties described in the fire muster list required by regulation 11118;
 - .2 starting of a fire pump, using at least the two required jets of water to show that the system is in proper working order;
 - .3 checking fireman's outfit and other personal rescue equipment;
 - .4 checking the relevant communication equipment;
 - .5 checking the operation of watertight doors, fire doors and fire dampers;
 - .6 checking the necessary arrangements for subsequent abandoning of the ship.
- 1.4 Fire drills shall, as far as practicable, be conducted as if there were an actual emergency.
- 1.5 Fire drills should be planned in such a way that due consideration is given to regular practice in the various emergencies that may occur depending on the type of ships and the cargo.

2 On-board training and instructions

On-board training and instruction in the use of the ship's fire-extinguishing appliances shall be given at the same intervals as the drills. Individual instruction may cover different parts of the ship's fire-extinguishing appliances, but all the ship's fire-extinguishing appliances shall be covered within a period of two months. Each member of the crew shall be given the necessary instructions for their assigned duty.

3 Availability of fire-extinguishing appliances

- 3.1 Fire-extinguishing appliances shall be kept in good order and be available for immediate use at all times.

3.2 The equipment used during drills shall immediately be brought back to fully operational condition and any faults and defects discovered during the drills shall be remedied as soon as possible.

4 Records

The date and details of the fire drills shall be recorded as prescribed in regulation 111/18.5.

ANNEX 2

MINIMUM STANDARDS FOR ON-BOARD FIRE TRAINING AND DRILLS

1 Owners and operators are urged to take measures to improve crew performance during shipboard emergencies. The human factor is very important. Each member of the crew should be instructed to recognize the importance of the emergency organization procedure and should take their role in this organization procedure seriously. Guidance should be given to each employee crew member to highlight the importance of this philosophy.

Fire drills

2 An emergency organization procedure should be established to fight fires and deal with abandon ship emergencies, which should include all members of the crew and there should be one -organizational structure for both fire and abandon ship situations, since both may occur during the same incident. This procedure should include:

- .1 conduct of fire drills as if an actual emergency existed, all hands reporting to their respective stations prepared to perform the duties specified in the station bill;
- .2 starting the fire pumps using a sufficient number of outlets to show that the system is in proper working order;
- .3 bringing all rescue and safety equipment from the emergency equipment lockers and designated crew members demonstrating their ability to use the equipment;
- .4 operating all watertight doors and all fire doors; and
- .5 making an entry into the log for each drill, including the date and hour, length of time of the drill, the number of lengths of hose used and a statement of the condition of all fire equipment, watertight door mechanisms and valves. If at any time the required fire drills are not held, or only partial drills are held, an entry should be made stating the circumstances and extent of the drills held.

On-board training

3 On-board training should include:

- .1 instruction on:
 - .1.1 the purpose and meaning of the ship's station bill, fire control plans and muster stations;
 - .1.2 each individual's assigned duties and the equipment issued;
 - .1.3 the meaning of the ship¹s many alarms;
- .2 on-board refresher training) including lectures, training books and equipment demonstrations) including warnings on ways to prevent fires (good housekeeping, smoking, etc.), fire hazards from common shipboard supplies (paints, cooking oil,

- lubricants, etc.) and first aid techniques (burns, broken bones, cardiopulmonary resuscitation);
- .3 learning to work within the emergency organization/procedure, including working with individual's superiors, his co-workers and his subordinates, as applicable, and for those in charge exercising leadership;
 - .4 instruction on the purpose of the ship¹ 5 passive fire protection design features and the purpose and requirements of the shipboard fire patrol;
 - .5 location and operation of shut-downs for ventilation fans, fuel and lubricants; the manual fire alarm boxes and the ship's fire-fighting equipment; and the fire doors and ventilation dampers;
 - .6 instruction and drills on extinguishing fires including:
 - .6.1 how a single crew member can extinguish small fires;
 - .6.2 special measures needed to combat fires involving dangerous goods, electrical installations and liquid hydrocarbons;
 - .6.3 use of the ship's fire-fighting equipment (e.g. fire hoses, fire nozzles, portable and semi-portable fire extinguishers and fire axes) including any post-drill clean-up and equipment stowage;
 - .6.4 dangers from fire-fighting systems, e.g. carbon dioxide system discharges;
 - .6.5 use of breathing apparatus, fireman's outfits and personal equipment, including lifeline and harness;
 - .7 instruction on:
 - .7.1 means of escape from any location in the ship, including all stairways, ladders and emergency exits;
 - .7.2 procedures covering the search and evacuation of passengers from all locations in the ship;
 - .7.3 the importance of closing doors after searching staterooms, not leaving fire hoses in doorways and not using elevators;
 - .8 location of first-aid equipment and of medical facilities;
 - .9 how to transport injured individuals;
 - .10 first-aid techniques, including treatment for burns, bleeding and broken bones and cardiopulmonary resuscitation.

Availability of fire-extinguishing appliances

- 4 The following equipment should be tested periodically:

- .1 detection systems, alarm Systems, walkie-talkies, public address and other communications systems;
- .2 fixed fire-extinguishing connections (e.g. fire hydrants);
- .3 watertight doors and self-closing fire doors;
- .4 pressure of portable and semi-portable fire extinguishers and shut-downs for ventilation, fuel and lubrication systems;
- .5 fire pumps, emergency fire pump, emergency generator and the pressurized water tank, as appropriate;
- .6 international shore connections;
- .7 fire main system, hoses and nozzles;
- .8 inventory and condition of the contents of repair lockers.

However, only a portion of each type of fire-fighting and fire-detection equipment, e.g. some and not all of the fire hoses, need to be tested during each drill. A plan for periodically exercising each piece of equipment should be developed.

Records

- 5 The date and details of the fire drills should be recorded, as prescribed in SOLAS regulation 111/18.5.
- 6 Records of crew members who participated in the training sessions and drills should be kept by date. An assessment of new crew members should be made prior to departure and the main office notified of their training status.
- 7 Records of the equipment tested at each drill should be kept by date.