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NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 6 02

Subj: 2000 AMENDMENTS TO SOLAS CHAPTER II-2

Ref: (a) Interpretations of SOLAS Chapter II-2, COMDTPUB P16700.4 NVIC 10-99

1. PURPOSE. On 1 July 2002, MSC Resolution MSC.99(73), which amends Chapter II-2 of the International Convention for the Safety of Life at Sea (SOLAS) will come into force for new ships. Several of the amendments are retro-active and will apply to existing ships. This document provides information for application to SOLAS vessels. Unless the guidance in this document indicates that it is only for U.S. flag ships, it applies to all SOLAS ships.

2. ACTION. Officers in Charge, Marine Inspection (OCMI) should use this Guidance when inspecting vessels for compliance with the retro-active provisions of the SOLAS 2000 Amendments, particularly enclosure (2) which provides clarification of the requirements for the carriage and tracking of Emergency Escape Breathing Devices (EEBDs). Internet release authorized.

3. DIRECTIVES AFFECTED. None.

4. BACKGROUND.

   a. The 2000 Amendments to Chapter II-2 update the SOLAS 1997 regulations by adding and harmonizing numerous amendments that have been issued by the International Maritime Organization's (IMO) Sub-Committee on Fire Protection since 1996. A majority of the amendments previously existed as interpretations in MSC/Circ. 847, which is provided in reference (a). This change will result in making the selected interpretations mandatory for vessels whose keel laying date is on or after July 1, 2002.

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NON-STANDARD DISTRIBUTION: (SEE PAGE 3)

For vessels constructed before this, the interpretations in reference (a) will remain as guidance.

b. Not all of the interpretations in MSC/Circ. 847 have been added to the revised Chapter II-2. IMO is expected to issue a new circular with interpretations to SOLAS 2000, which will include the information in MSC/Circ. 847 that was not included as amendments. Until the new circular is available, it will be necessary to compare the interpretations in reference (a) with the revised SOLAS chapter to determine if a particular interpretation is advisory or mandatory.

c. The revised Chapter II-2 has been re-organized and re-numbered. This was necessary to adapt its use as a performance-based standard, and to allow the details for the various fire protection systems required by Chapter II-2 to be removed from the standard and placed into a new Fire Safety Systems Code (FSS Code). The FSS Code is now a mandatory instrument that is incorporated by reference in Chapter II-2.

5. DISCUSSION. In addition to the amendments taken from MSC/Circ. 847, the revised Chapter contains significant new requirements:

a. A new Part E has been added that includes regulations for the operational readiness of fire protection systems.

b. New requirements have been added to regulation 13 for emergency escape breathing devices (EEBDs) on most new and existing ships.

c. Regulation 10 will require fixed local-application extinguishing systems to protect high hazard areas in the engine rooms of most ships in addition to the required area-wide fire extinguishing systems.

d. SOLAS 2000 now includes a performance-based option that permits the use of engineering evaluations to justify ship specific alternative design and arrangements in lieu of complying with the prescriptive regulations.

6. IMPLEMENTATION. Officers in Charge, Marine Inspection, are encouraged to bring this Circular to the attention of appropriate individuals in the marine industry within their zones. Guidance is provided in the enclosures as follows:

a. Enclosure (1) discusses the regulations in the 2000 SOLAS Amendments that apply to existing vessels, and includes discussion of the new fixed local-application extinguishing systems required for machinery spaces of Category A.

b. Enclosure (2) discusses EEBDs and includes guidance on Coast Guard policy for the implementation of the new requirements on U.S. flag vessels.

c. Enclosure (3) reproduces new SOLAS regulation 17 for alternative design and arrangements.

d. Enclosure (4) is IMO's MSC/Circ.1002 containing guidance on the use and application of regulation 17.

e. Enclosure (5) is a cross reference list that shows where the SOLAS 1997 regulations appear in SOLAS 2000 and the Fire Safety Systems (FSS) Code.

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Assistant Commandant for Marine Safety, Security and Environmental Protection

Encl: (1) SOLAS Chapter II-2 2000 Amendments Applying to Existing Ships.
(2) Guidance on the Carriage of Emergency Escape Breathing Devices Aboard U.S. Flag SOLAS Vessels.
(3) Alternative Design and Arrangements.
(4) MSC/Circ.1002, Guidelines on Alternative Design and Arrangements for Fire Safety.
(5) Cross Reference List

Non-Standard Distribution:

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SOLAS CHAPTER II-2 2000 AMENDMENTS APPLYING TO EXISTING SHIPS

The 2000 amendments to Chapter II-2 of SOLAS apply mainly to ships constructed on or after July 1, 2002. However, several of the new requirements will also apply to ships constructed before this date. Regulation 1.2.2 lists the retro-active requirements:

"Regulation 1

2 Applicable requirements to existing ships

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2.2 Ships constructed before 1 July 2002 shall also comply with:

.1 paragraphs 3, 6.5 and 6.7 as appropriate;

.2 regulations 13.3.4.2 to 13.3.4.5, 13.4.3 and Part E, except regulations 16.3.2.2 and 16.3.2.3 thereof, as appropriate, not later than the date of the first survey after 1 July 2002;

.3 regulations 10.4.1.3 and 10.6.4 for new installations only; and

.4 regulation 10.5.6 not later than 1 October 2005 for passenger ships of 2,000 gross tonnage and above."

Each of the listed requirements is discussed in detail in the following paragraphs, and the full text of the requirement is provided.

Paragraphs 3, 6.5 and 6.7 (of Regulation 1) as appropriate

These requirements deal primarily with ships that have undergone conversion or major modifications. Examples of major modifications include such changes as lengthening by adding a new midbody, converting a vehicle deck to a passenger accommodation area or the renewal of the passenger accommodations on one entire deck. Other requirements affect tanker pumproom protection.

"Regulation 1

3 Repairs, alterations, modifications and outfitting

3.1 All ships which undergo repairs, alterations, modifications and outfitting related thereto shall continue to comply with at least the requirements previously applicable to these ships. Such ships, if constructed before 1 July 2002, shall, as a rule, comply with the requirements for ships constructed on or after that date to at least the same extent as they did before undergoing such repairs, alterations, modifications or outfitting.

3.2 Repairs, alterations and modifications which substantially alter the dimensions of a ship or the passenger accommodation spaces, or substantially increase a ship's service life and outfitting related thereto shall meet the requirements for ships constructed on or after 1 July 2002 in so far as the Administration deems reasonable and practicable."

6.5 Combination carriers constructed before, on or after 1 July 2002 shall not carry cargoes other than oil unless all cargo spaces are empty of oil and gas-freed or unless the arrangements provided in each case have been be approved by the Administration taking into account the guidelines developed by the Organization.*

* Refer to the Guidelines for inert gas systems (MSC/Circ.353), as amended by MSC/Circ.387.

6.7 The requirements of regulations 4.5.10.1.1 and 4.5.10.1.4, and a system for continuous monitoring of the concentration of hydrocarbon gases shall be fitted on all tankers constructed before 1 July 2002 by the date of the first scheduled dry-docking after 1 July 2002, but not later than 1 July 2005. Sampling points or detector heads shall be located in suitable positions in order that potentially dangerous leakages are readily detected. When the hydrocarbon gas concentration reaches a pre-set level which shall not be higher than 10% of the lower flammable limit, a continuous audible and visual alarm signal shall be automatically effected in the pump-room and cargo control room to alert personnel to the potential hazard. However, existing monitoring systems already fitted having a pre-set level not greater than 30% of the lower flammable limit may be accepted.

4.5.10 *Protection of cargo pump-rooms*

4.5.10.1 In tankers:

.1 cargo pumps, ballast pumps and stripping pumps, installed in cargo pumprooms and driven by shafts passing through pump-room bulkheads shall be fitted with temperature sensing devices for bulkhead shaft glands, bearings and pump casings. A continuous audible and visual alarm signal shall be automatically effected in the cargo control room or the pump control station;

.4 all pump-rooms shall be provided with bilge level monitoring devices together with appropriately located alarms."

Regulations 13.3.4.2 to 13.3.4.5, 13.4.3 and Part E, except regulations 16.3.2.2 and 16.3.2.3 thereof, as appropriate, not later than the date of the first survey after 1 July 2002

Regulations 13.3.4.2 to 13.3.4.5 and 13.4.3 deal with the new requirements for EEBDs. Policy guidance on the type and number of EEBDs for carriage aboard U.S. Flag SOLAS vessels is provided in enclosure (2).

Part E of SOLAS contains three new regulations with operational requirements applicable to all vessels. Regulation 14 discusses operational readiness and maintenance. Regulation 15 has provisions for on-board training and drills. Regulation 16 contains fire protection-related procedures for shipboard operations.

"**Regulation 13**

3.4.2 All ships shall carry at least two emergency escape breathing devices within accommodation spaces.

3.4.3 In passenger ships, at least two emergency escape breathing devices shall be carried in each main vertical zone.

3.4.4 In passenger ships carrying more than 36 passengers, two emergency escape breathing devices, in addition to those required in paragraph 3.4.3 above, shall be carried in each main vertical zone.

3.4.5 However, paragraphs 3.4.3 and 3.4.4 do not apply to stairway enclosures which constitute individual main vertical zones and for the main vertical zones in the fore or aft end of a ship which do not contain spaces of categories (6), (7), (8) or (12) defined in regulation 9.2.2.3.

4.3 *Emergency escape breathing devices*

4.3.1 On all ships, within the machinery spaces, emergency escape breathing devices shall be situated ready for use at easily visible places, which can be reached quickly and easily at any time in the event of fire. The location of emergency escape breathing devices shall take into account the layout of the machinery space and the number of persons normally working in the spaces.*

* Refer to the Guidelines for the performance, location, use and care of emergency escape breathing devices (MSC/Circ.849).

4.3.2 The number and location of these devices shall be indicated in the fire control plan required in regulation 15.2.4.

4.3.3 Emergency escape breathing devices shall comply with the Fire Safety Systems Code.

PART E - OPERATIONAL REQUIREMENTS

Regulation 14

Operational readiness and maintenance

1 Purpose

The purpose of this regulation is to maintain and monitor the effectiveness of the fire safety measures the ship is provided with. For this purpose, the following functional requirements shall be met:

.1 fire protection systems and fire-fighting systems and appliances shall be maintained ready for use; and

.2 fire protection systems and fire-fighting systems and appliances shall be properly tested and inspected.

2 General requirements

At all times while the ship is in service, the requirements of paragraph 1.1 shall be complied with. A ship is not in service when:

.1 it is in for repairs or lay-up (either at anchor or in port) or in dry-dock;

.2 it is declared not in service by the owner or the owner's representative; and

.3 in the case of passenger ships, there are no passengers on board.

2.1 *Operational readiness*

2.1.1 The following fire protection systems shall be kept in good order so as to ensure their required performance if a fire occurs:

.1 structural fire protection including fire resisting divisions, and protection of openings and penetrations in these divisions;

.2 fire detection and fire alarm systems; and

.3 means of escape systems and appliances.

2.1.2 Fire-fighting systems and appliances shall be kept in good working order and readily available for immediate use. Portable extinguishers which have been discharged shall be immediately recharged or replaced with an equivalent unit.

2.2 Maintenance, testing and inspections

2.2.1 Maintenance, testing and inspections shall be carried out based on the guidelines developed by the Organization* and in a manner having due regard to ensuring the reliability of fire-fighting systems and appliances.

* Refer to the Guidelines on maintenance and inspection of fire protection systems and appliances (MSC/Circ.850).

2.2.2 The maintenance plan shall be kept on board the ship and shall be available for inspection whenever required by the Administration.

2.2.3 The maintenance plan shall include at least the following fire protection systems and fire-fighting systems and appliances, where installed:

.1 fire mains, fire pumps and hydrants including hoses, nozzles and international shore connections;

.2 fixed fire detection and fire alarm systems;

.3 fixed fire-extinguishing systems and other fire extinguishing appliances;

.4 automatic sprinkler, fire detection and fire alarm systems;

.5 ventilation systems including fire and smoke dampers, fans and their controls;

.6 emergency shut down of fuel supply;

.7 fire doors including their controls;

.8 general emergency alarm systems;

.9 emergency escape breathing devices;

.10 portable fire extinguishers including space charges; and

.11 fire-fighter's outfits.

2.2.4 The maintenance programme may be computer-based.

3 Additional requirements for passenger ships

In addition to the fire protection systems and appliances listed in paragraph 2.2.3, ships carrying more than 36 passengers shall develop a maintenance plan for low-location lighting and public address systems.

4 Additional requirements for tankers

In addition to the fire protection systems and appliances listed in paragraph 2.2.3, tankers shall develop a maintenance plan for:

.1 inert gas systems;

.2 deck foam systems;

.3 fire safety arrangements in cargo pump rooms; and

.4 flammable gas detectors.

Regulation 15

Instructions, onboard training and drills

1 Purpose

The purpose of this regulation is to mitigate the consequences of fire by means of proper instructions for training and drills of persons onboard in correct procedures under emergency conditions. For this purpose, the crew shall have the necessary knowledge and skills to handle fire emergency cases, including passenger care.

2 General requirements

2.1 *Instructions, duties and organization*

2.1.1 Crew members shall receive instruction on fire safety onboard the ship.

2.1.2 Crew members shall receive instructions on their assigned duties.

2.1.3 Parties responsible for fire-extinguishing shall be organized. These parties shall have the capability to complete their duties at all times while the ship is in service.

2.2 *Onboard training and drills*

2.2.1 Crew members shall be trained to be familiar with the arrangements of the ship as well as the location and operation of any fire-fighting systems and appliances that they may be called upon to use.

2.2.2 Training in the use of the emergency escape breathing devices shall be considered as part of on board training.

2.2.3 Performance of crew members assigned fire-fighting duties shall be periodically evaluated by conducting onboard training and drills to identify areas in need of improvement, to ensure competency in fire-fighting skills is maintained, and to ensure the operational readiness of the fire-fighting organization.

2.2.4 Onboard training in the use of the ship's fire-extinguishing systems and appliances shall be planned and conducted in accordance with provisions of regulation III/19.4.1.

2.2.5 Fire drills shall be conducted and recorded in accordance with the provisions of regulations III/19.3 and III/19.5.

2.3 *Training manuals*

2.3.1 A training manual shall be provided in each crew mess room and recreation room or in each crew cabin.

2.3.2 The training manual shall be written in the working language of the ship.

2.3.3 The training manual, which may comprise several volumes, shall contain the instructions and information required in paragraph 2.3.4 in easily understood terms and illustrated wherever possible. Any part of such information may be provided in the form of audio-visual aides in lieu of the manual.

2.3.4 The training manual shall explain the following in detail:

.1 general fire safety practice and precautions related to the dangers of smoking, electrical hazards, flammable liquids and similar common shipboard hazards;

.2 general instructions on fire-fighting activities and fire-fighting procedures including procedures for notification of a fire and use of manually operated call points;

.3 meanings of the ship's alarms;

.4 operation and use of fire-fighting systems and appliances;

.5 operation and use of fire doors;

.6 operation and use of fire and smoke dampers; and

.7 escape systems and appliances.

2.4 *Fire control plans**

* Refer to the Graphical symbols for fire control plans, adopted by the Organization by resolution A.654(16).

2.4.1 General arrangement plans shall be permanently exhibited for the guidance of the ship's officers, showing clearly for each deck the control stations, the various fire sections enclosed by "A" class divisions, the sections enclosed by "B" class divisions together with particulars of the fire detection and fire alarm systems, the sprinkler installation, the fire-extinguishing appliances, means of access to different compartments, decks, etc., and the ventilating system including particulars of the fan control positions, the position of dampers and identification numbers of the ventilating fans serving each section. Alternatively, at the discretion of the Administration, the aforementioned details may be set out in a booklet, a copy of which shall be supplied to each officer, and one copy shall at all times be available on board in an accessible position. Plans and booklets shall be kept up to date; any alterations thereto shall be recorded as soon as practicable. Description in such plans and booklets shall be in the language or languages required by the Administration. If the language is neither English nor French, a translation into one of those languages shall be included.

2.4.2 A duplicate set of fire control plans or a booklet containing such plans shall be permanently stored in a prominently marked weathertight enclosure outside the deckhouse for the assistance of shore-side fire-fighting personnel.**

** Refer to the Guidance concerning the location of fire control plans for assistance of shoreside fire-fighting personnel (MSC/Circ.451).

3 Additional requirements for passenger ships

3.1.1 Fire drills

In addition to the requirement of paragraph 2.2.3, fire drills shall be conducted in accordance with the provisions of regulation III/30 having due regard to notification of passengers and movement of passengers to assembly stations and embarkation decks.

3.2 *Fire control plans*

In ships carrying more than 36 passengers, plans and booklets required by this regulation shall provide information regarding fire protection, fire detection and fire extinction based on the guidelines issued by the Organization.***

*** Refer to the Guidelines on the information to be provided with fire control plans and booklets required by SOLAS regulations II-2/20 and 41-2, adopted by the Organization by resolution A.756(18).

Regulation 16

Operations

1 Purpose

The purpose of this regulation is to provide information and instructions for proper ship and cargo handling operations in relation to fire safety. For this purpose, the following functional requirements shall be met:

.1 fire safety operational booklets shall be provided on board; and

.2 flammable vapour releases from cargo tank venting shall be controlled.

2 Fire safety operational booklets

2.1 The required fire safety operational booklet shall contain the necessary information and instructions for the safe operation of the ship and cargo handling operations in relation to fire safety. The booklet shall include information concerning the crew's responsibilities for the general fire safety of the ship while loading and discharging cargo and while underway. Necessary fire safety precautions for handling general cargoes shall be explained. For ships carrying dangerous goods and flammable bulk cargoes, the fire safety operational booklet shall also provide reference to the pertinent fire-fighting and emergency cargo handling instructions contained in the Code of Safe Practice for Solid Bulk Cargoes, the International Bulk Chemical Code, the International Gas Carrier Code and the International Maritime Dangerous Goods Code, as appropriate.

2.2 The fire safety operational booklet shall be provided in each crew mess room and recreation room or in each crew cabin.

2.3 The fire safety operational booklet shall be written in the working language of the ship.

2.4 The fire safety operational booklet may be combined with the training manuals required in regulation 15.2.3.

3 Additional requirements for tankers

3.1 *General*

The fire safety operational booklet referred to in paragraph 2 shall include provisions for preventing fire spread to the cargo area due to ignition of flammable vapours and include procedures of cargo tank gas-purging and/or gas-freeing taking into account the provisions in paragraph 3.2.

3.2 *Procedures for cargo tank purging and/or gas-freeing*

3.2.1 When the ship is provided with an inert gas system, the cargo tanks shall first be purged in accordance with the provisions of regulation 4.5.6 until the concentration of hydrocarbon vapours in the cargo tanks has been reduced to less than 2% by volume. Thereafter, gas-freeing may take place at the cargo tank deck level.

3.2.4 When the flammable vapour concentration at the outlet has been reduced to 30% of the lower flammable limit, gas-freeing may be continued at cargo tank deck level."

Regulations 10.4.1.3 and 10.6.4 for new installations only – Regulation 10.4.1.3 prohibits the installation of new Halon 1301 and perfluorocarbon fire extinguishing systems on new and existing ships. These types of fire extinguishing agents are detrimental to the ozone layer and have a significant global warming potential. This regulation does not require the replacement of existing installations.

Regulation 10.6.4 has requirements for the protection of deep fat cooking equipment. These requirements apply to existing ships only when new deep fat cooking equipment is installed. They are not applicable to existing cooking installations.

"Regulation 10

4.1.3 Fire-extinguishing systems using Halon 1211, 1301, and 2402 and perfluorocarbons shall be prohibited.

6.4 *Deep-fat cooking equipment*

Deep-fat cooking equipment shall be fitted with the following:

.1 an automatic or manual extinguishing system tested to an international standard acceptable to the Organization;*

.2 a primary and backup thermostat with an alarm to alert the operator in the event of failure of either thermostat;

.3 arrangements for automatically shutting off the electrical power upon activation of the extinguishing system;

.4 an alarm for indicating operation of the extinguishing system in the galley where the equipment is installed; and

.5 controls for manual operation of the extinguishing system which are clearly labeled for ready use by the crew.

* Refer to the recommendations by the International Organization for Standardization, in particular, Publication ISO 15371:2000 on *Fire-extinguishing systems for protection of galley deep-fat cooking equipment*."

Regulation 10.5.6 not later than 1 October 2005 for passenger ships of 2,000 gross tonnage and above

These new requirements list the criteria for fixed local application fire extinguishing systems for machinery spaces of Category A above 500 m^3 in volume. They are applicable to new cargo ships of 500 gross tonnage and above and new passenger ships of 2000 gross tonnage and above on July 1, 2002. For existing passenger ships of 2000 gross tonnage and above they become effective on October 1, 2005. The systems are required in addition to the total application systems required by existing regulation II-2/7. The supplemental systems are intended to provide a simple, rapidly discharged system that can be activated while the machinery is operating and personnel are present. A water-based agent has been specified because it is not considered detrimental to operating machinery or personnel and does not require ventilation shutdown in order to be effective. Application of water mist brings immediate cooling to the affected area to protect any crewmembers that may be present, and also aids in the thermal management of the fire while the crew prepares for the discharge of the main extinguishing system. These requirements are only applicable to existing passenger vessels. Existing cargo ships are not subject to these requirements.

"Regulation 10

5.6 *Fixed local application fire-fighting systems*

5.6.1 Paragraph 5.6 shall apply to passenger ships of 500 gross tonnage and above and cargo ships of 2000 gross tonnage and above.

5.6.2 Machinery spaces of category A above 500 m3 in volume shall, in addition to the fixed fire-extinguishing system required in paragraph 5.1.1, be protected by an approved type of fixed water-based or equivalent local application fire-fighting system, based on the guidelines developed by the Organization.** In the case of periodically unattended machinery spaces, the fire fighting system shall have both automatic and manual release capabilities. In the case of continuously manned machinery spaces, the fire-fighting system is only required to have a manual release capability.

** Refer to the Guidelines for the approval of fixed water-based local application fire-fighting systems for use in category A machinery spaces (MSC/Circ.913).

5.6.3 Fixed local application fire-fighting systems are to protect areas such as the following without the necessity of engine shutdown, personnel evacuation, or sealing of the spaces:

.1 the fire hazard portions of internal combustion machinery used for the ship's main propulsion and power generation;

.2 boiler fronts;

.3 the fire hazard portions of incinerators; and

.4 purifiers for heated fuel oil.

5.6.4 Activation of any local application system shall give a visual and distinct audible alarm in the protected space and at continuously manned stations. The alarm shall indicate the specific system activated. The system alarm requirements described within this paragraph are in addition to, and not a substitute for, the detection and fire alarm system required elsewhere in this chapter."

GUIDANCE ON THE CARRIAGE OF EMERGENCY ESCAPE BREATHING DEVICES ABOARD U.S. FLAG SOLAS VESSELS.

Effective July 1, 2002, all new SOLAS ships must have emergency escape breathing devices in accordance with regulations 13.3.4.2 to 13.3.4.5 and 13.4.3. Existing ships must have the required EEBDs no later than the first required survey after July 1, 2002.

EEBDs are intended to allow crewmembers and passengers to escape from smoke-filled areas, as well as areas where a total flooding carbon dioxide extinguishing system has been discharged. EEBDS are not intended to be used for confined space entry or for fire-fighting purposes, but spare units may be carried by the fire brigade to assist the escape of trapped personnel.

For carriage aboard U. S. Flag vessels, EEBDs are not required to have Coast Guard type approval. There is no approval category for such devices and a formal approval program is not planned. Instead, we will accept on a vessel-by-vessel basis, National Institute for Occupational Safety and Health (NIOSH) approved EEBDs that:

1. have a minimum service time of ten minutes, and

2. are supplied air or oxygen type devices, and

3. have a full face piece or hood that forms a complete seal to protect the eyes, nose and mouth, and contains a clear window for viewing.

The hood or face piece is required by SOLAS to be flame resistant. The Coast Guard has not established a flame resistance criteria for EEBDs, but will rely on industry practices such as the use of low flame spread polyimide films or equivalent, for these components.

EEBDs are intended as one-time use equipment, and are required to be marked with the manufacturing date and permissible shelf life. Many types are not required to undergo periodic testing or maintenance, only visual examination. However, units that use a compressed air or oxygen cylinder that is more than two inches in diameter require periodic hydrostatic retesting as specified by 49 CFR 173.34. Each manufacturer provides instructions for visual examination procedures or service that should be performed in accordance with recommended schedules.

EEBDs should not be exposed to extreme heat or environmental fluctuations. The instructions provided with the units provide recommendations on environmental exposure limits that should be followed.

Training in the use of EEBDs should be considered part of the crew's basic safety training. Any training units carried must be clearly marked as demonstration units.

The new SOLAS requirements do not clearly define the number of spare units to be carried or the placement and number of units required in machinery spaces. The Coast Guard has determined

that the following minimum criteria satisfy the intent of the new EEBD requirements for U.S. flag ships:

Accommodation areas	Number of EEBDs required
Cargo ships	At least two units plus one spare unit
Passenger ships ≤ 36 passengers	At least two units in each main vertical zone, plus two spare units per ship
Passenger ships > 36 passengers	At least four units in each main vertical zone, plus two spare units per ship

The term "accommodation areas" as used in this section is intended to mean the overall crew or passenger living area. The number of EEBDs listed is the number needed for the entire area. Two EEBDs are not required in each "accommodation space."

EEBDs for the accommodation areas should be stowed in the fire brigade equipment lockers to allow their use for the rescue of trapped persons, or they may be kept in a dedicated location at the ships fire control station or on the navigating bridge.

Machinery spaces	Number of EEBDs required
All ships	One EEBD for each crew member normally assigned to continuous or periodic duty in the machinery space and at least one spare EEBD such that any person visiting the machinery space will have access to a unit. Exceptions may be made for personnel assigned to duty stations immediately adjacent to a door providing a direct exit from the machinery space. The total number of EEBDs provided in the machinery space shall not be less than three, except that the number may be reduced to two for a small machinery space or a periodically unattended machinery space where no more than two persons will be present at any time.

Machinery space EEBDs should be kept at designated locations on each occupied level where they will be readily available for use. Recommended placement should be based on the layout of the engine room to ensure that the units are placed where they can be accessed from the normal

duty stations. Typical storage locations include control rooms, workshops, and along the normal escape path, particularly at the bottom of vertical ladders.

The number and location of EEBDs should be determined to the satisfaction of the OCMI at the vessel's first inspection after July 1, 2002. This information should be entered into MISLE as a special field note in the vessel description summary with an expiration date matching the expiration date on the EEBDs. If EEBDs with multiple expiration dates are provided, the earliest expiration date should be used for the field note.

ALTERNATIVE DESIGN AND ARRANGEMENTS.

New SOLAS regulation 17 permits the use of performance-based engineering evaluations to satisfy the fire-safety objectives and functional requirements of Chapter II-2. Designs that can be shown to satisfy the agreed-on objectives may deviate from the prescriptive fire safety requirements of Chapter II-2. The performance based option is intended for use in the approval of novel or unique ship designs and must be justified by an engineering analysis, specific to the ship and circumstances in question. Regulation 17 is not intended to be used for the type approval of individual materials or equipment that deviates from prescriptive standards or test methods.

IMO has developed guidelines with a recommended methodology for conducting the required engineering evaluations. The guidelines are contained in MSC/Circ.1002, which follows in enclosure (4). The guidelines are not intended to be used alone, but have been developed for use in conjunction with established fire safety engineering methods. The IMO guidelines provide the necessary considerations for adapting accepted shore-based building methodology for marine use.

For U.S. Flag SOLAS vessels, "The SFPE Engineering Guide to Performance-Based Fire Protection Analysis and Design of Buildings", published by the Society of Fire Protection Engineers and National Fire Protection Association, 1999, is recommended for use in conjunction with the IMO guidelines.

"PART F - ALTERNATIVE DESIGN AND ARRANGEMENTS

Regulation 17

Alternative design and arrangements

1 Purpose

The purpose of this regulation is to provide a methodology for alternative design and arrangements for fire safety.

2 General

2.1 Fire safety design and arrangements may deviate from the prescriptive requirements set out in parts B, C, D, E or G, provided that the design and arrangements meet the fire safety objectives and the functional requirements.

2.2 When fire safety design or arrangements deviate from the prescriptive requirements of this chapter, engineering analysis, evaluation and approval of the alternative design and arrangements shall be carried out in accordance with this regulation.

3 Engineering analysis

The engineering analysis shall be prepared and submitted to the Administration, based on the guidelines developed by the Organization* and shall include, as a minimum, the following elements:

* Refer to the Guidelines on Alternative Design and Arrangements for Fire Safety (MSC/Circ. 1002).

.1 determination of the ship type and space(s) concerned;

.2 identification of prescriptive requirement(s) with which the ship or the space(s) will not comply;

.3 identification of the fire and explosion hazards of the ship or the space(s) concerned;

.3.1 identification of the possible ignition sources;

.3.2 identification of the fire growth potential of each space concerned;

.3.3 identification of the smoke and toxic effluent generation potential for each space concerned;

.3.4 identification of the potential for the spread of fire, smoke or of toxic effluents from the space(s) concerned to other spaces;

.4 determination of the required fire safety performance criteria for the ships or the space(s) concerned addressed by the prescriptive requirement(s);

.4.1 performance criteria shall be based on the fire safety objectives and on the functional requirements of this chapter;

.4.2 performance criteria shall provide a degree of safety not less than that achieved by using the prescriptive requirements; and

.4.3 performance criteria shall be quantifiable and measurable;

.5 detailed description of the alternative design and arrangements, including a list of the assumptions used in the design and any proposed operational restrictions or conditions; and

.6 technical justification demonstrating that the alternative design and arrangements meet the required fire safety performance criteria.

4 Evaluation of the alternative design and arrangements

4.1 The engineering analysis required in paragraph 3 shall be evaluated and approved by the Administration taking into account the guidelines developed by the Organization.*

4.2 A copy of the documentation, as approved by the Administration, indicating that the alternative design and arrangements comply with this regulation shall be carried onboard the ship.

5 Exchange of information

The Administration shall communicate to the Organization pertinent information concerning alternative design and arrangements approved by them for circulation to all contracting governments.

6 Re-evaluation due to change of conditions

If the assumptions, and operational restrictions that were stipulated in the alternative design and arrangements are changed, the engineering analysis shall be carried out under the changed condition and shall be approved by the Administration."

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Ref.

MSC/Circ.1002
26 June 2001

GUIDELINES ON ALTERNATIVE DESIGN AND ARRANGEMENTS FOR FIRE SAFETY

1 The Maritime Safety Committee, at its seventy-fourth session (30 May to 8 June 2001), approved Guidelines on alternative design and arrangements for fire safety, as set out in the annex, developed to provide further guidance on SOLAS regulation II-2/17, which was adopted by resolution MSC.99(73) as part of the revised SOLAS chapter II-2 and is expected to enter into force on 1 July 2002.

2 The Guidelines serve to outline the methodology for the engineering analysis required by SOLAS regulation II-2/17 on Alternative design and arrangements, applying to a specific fire safety system, design or arrangements for which the approval of an alternative design deviating from the prescriptive requirements of SOLAS chapter II-2 is sought.

3 Member Governments are invited to bring the annexed Guidelines to the attention of ship owners, ship builders and designers for the facilitation of fire safety engineering design in the framework of SOLAS regulation II-2/17.

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MSC/Circ.1002

ANNEX

GUIDELINES ON ALTERNATIVE DESIGN AND ARRANGEMENTS FOR FIRE SAFETY

1 Application

1.1 These guidelines are intended for application of fire safety engineering design to provide technical justification for alternative design and arrangements to SOLAS chapter II-2. The guidelines serve to outline the methodology for the engineering analysis required by SOLAS regulation II-2/17 "Alternative design and arrangements", applying to a specific fire safety system, design or arrangements for which the approval of an alternative design deviating from the prescriptive requirements of SOLAS chapter II-2 is sought.

1.2 These guidelines are not intended to be applied to the type approval of individual materials and components.

1.3 These guidelines are not intended to serve as a stand-alone document, but should be used in conjunction with the fire safety engineering design guides and other literature, examples of which are referenced in section 3.

1.4 For the application of these guidelines to be successful, all interested parties, including the Administration or its designated representative, owners, operators, designers, and classification societies, should be in continuous communication from the onset of a specific proposal to utilise these guidelines. This approach usually requires significantly more time in calculation and documentation than a typical regulatory prescribed design because of increased engineering rigor. The potential benefits include more options, cost effective designs for unique applications and an improved knowledge of loss potential.

2 Definitions

For the purposes of these guidelines, the following definitions apply:

2.1 *Alternative design and arrangements* means fire safety measures which deviate from the prescriptive requirement(s) of SOLAS chapter II-2, but are suitable to satisfy the fire safety objective(s) and the functional requirements of that chapter. The term includes a wide range of measures, including alternative shipboard structures and systems based on novel or unique designs, as well as traditional shipboard structures and systems that are installed in alternative arrangements or configurations.

2.2 *Design fire* means an engineering description of the development and spread of fire for use in a design fire scenario. Design fire curves may be described in terms of heat release rate versus time.

2.3 *Design fire scenario* means a set of conditions that defines the fire development and the spread of fire within and through ship space(s) and describes factors such as ventilation conditions, ignition sources, arrangement and quantity of combustible materials and fire load accounting for the effects of fire detection, fire protection, fire control and suppression and fire mitigation measures.

2.4 *Functional requirements* explain, in general terms, what function the ship should provide to meet the fire safety objectives of SOLAS.

2.5 *Performance criteria* are measurable quantities stated in engineering terms to be used to judge the adequacy of trial designs.

2.6 *Prescriptive based design or prescriptive design* means a design of fire safety measures which comply with the prescriptive regulatory requirements set out in parts B, C, D, E or G of SOLAS chapter II-2.

2.7 *Safety margin* means adjustments made to compensate for uncertainties in the methods and assumptions used to evaluate the alternative design, e.g. in the determination of performance criteria or in the engineering models used to assess the consequences of fire.

2.8 *Sensitivity analysis* means an analysis to determine the effect of changes in individual input parameters on the results of a given model or calculation method.

2.9 *SOLAS* means the International Convention for the Safety of Life at Sea, 1974, as amended.

3 Engineering analysis

3.1 The engineering analysis used to show that the alternative design and arrangements provide the equivalent level of safety to the prescriptive requirements of SOLAS chapter II-2 should follow an established approach to fire safety design. This approach should be based on sound fire science and engineering practice incorporating widely accepted methods, empirical data, calculations, correlations and computer models as contained in engineering textbooks and technical literature.

3.2 Two examples of acceptable approaches to fire safety engineering are listed below:

.1 *The SFPE Engineering Guide to Performance-Based Fire Protection Analysis and Design of Buildings*, Society of Fire Protection Engineers and National Fire Protection Association, 1999.

.2 ISO/TR 13387-1 through 13387-8, *"Fire safety engineering"*, International Standards Organization, 1999.

Other fire safety engineering approaches recognized by the Administration may be used. See appendix C for guidance and a list of additional technical literature.

4 Design team

4.1 A design team acceptable to the Administration should be established by the owner, builder or designer and may include, as the alternative design and arrangements demand, a representative of the owner, builder or designer, and expert(s) having the necessary knowledge and experience in fire safety, design, and/or operation as necessary for the specific evaluation at hand. Other members may include marine surveyors, vessel operators, safety engineers, equipment manufacturers, human factors experts, naval architects and marine engineers.

4.2 The level of expertise that individuals should have to participate in the team may vary depending on the complexity of the alternative design and arrangements for which approval is sought. Since the evaluation, regardless of complexity, will have some effect on fire safety, at least one expert with knowledge and experience in fire safety should be included as a member of the team.

4.3 The design team should:

.1 appoint a co-ordinator serving as the primary contact;

.2 communicate with the Administration for advice on the acceptability of the engineering analysis of the alternative design and arrangements throughout the entire process;

.3 determine the safety margin at the outset of the design process and review and adjust it as necessary during the analysis;

.4 conduct a preliminary analysis to develop the conceptual design in qualitative terms. This includes a clear definition of the scope of the alternative design and arrangements and the regulations which affect the design; a clear understanding of the objectives and functional requirements of the regulations; the development of fire scenarios, and trial alternative designs. This portion of the process is documented in the form of a report that is reviewed and agreed by all interested parties and submitted to the Administration before the quantitative portion of the analysis is started;

.5 conduct a quantitative analysis to evaluate possible trial alternative designs using quantitative engineering analysis. This consists of the specification of design fires, development of performance criteria based upon the performance of an acceptable prescriptive design and evaluation of the trial alternative designs against the agreed performance criteria. From this step the final alternative design and arrangements are selected and the entire quantitative analysis is documented in a report; and

.6 prepare documentation, specifications, and a life-cycle maintenance programme. The alternative design and arrangements should be clearly documented, approved by the Administration, and a comprehensive report describing the alternative design and arrangements and required maintenance program should be kept on board the ship. An operations and maintenance manual should be developed for this purpose. The manual should include an outline of the design conditions that should be maintained over the life of the ship to ensure compliance with the approved design.

4.4 The fire safety objectives in SOLAS regulation II-2/2 and the purpose statements listed at the beginning of each individual regulation in chapter II-2 should be used to provide the basis for comparison of the alternative design and arrangements to the prescriptive regulations.

5 Preliminary analysis in qualitative terms

5.1 *Definitions of scope*

5.1.1 The ship, ship system(s), component(s), space(s) and/or equipment subject to the analysis should be thoroughly defined. This includes the ship or system(s) representing both the alternative design and arrangements and the regulatory prescribed design. Depending on the extent of the desired deviation from prescriptive requirements, some of the information that may be required includes: detailed ship plans, drawings, equipment information and drawings, fire test data and analysis results, ship operating characteristics and conditions of operation, operating and maintenance procedures, material properties, etc.

5.1.2 The regulations affecting the proposed alternative design and arrangements, along with their functional requirements, should be clearly understood and documented in the preliminary analysis report (see paragraph 5.4). This should form the basis for the comparative analysis referred to in paragraph 6.4.

5.2 *Development of fire scenarios*

5.2.1 Fire scenarios should provide the basis for analysis and trial alternative design evaluation and, therefore, are the backbone of the alternative design process. Proper fire scenario development is essential and depending on the extent of deviation from the prescribed design, may require a significant amount of time and resources. This process can be broken down into four areas:

.1 identification of fire hazards;

.2 enumeration of fire hazards;

.3 selection of fire hazards; and

.4 specification of design fire scenarios.

5.2.1.1 Identification of fire hazards

This step is crucial in the fire scenario development process as well as in the entire alternative design methodology. If a fire hazard or incident is omitted, then it will not be considered in the analysis and the resulting final design may be inadequate. Fire hazards may be identified using historical and statistical data, expert opinion and experience and hazard evaluation procedures. There are many hazard evaluation procedures available to help identify the fire hazards including HAZOP, PHA, FMEA, "what-if", etc. As a minimum, the following conditions and characteristics should be identified and considered:

.1 pre-fire situation: ship, platform, compartment, fuel load, environmental conditions;

.2 ignition sources: temperature, energy, time and area of contact with potential fuels;

.3 initial fuels: state (solid, liquid, gas, vapour, spray), surface area to mass ratio, rate of heat release;

.4 secondary fuels: proximity to initial fuels, amount, distribution;

.5 extension potential: beyond compartment, structure, area (if in open);

.6 target locations: note target items or areas associated with the performance parameters;

.7 critical factors: ventilation, environment, operational, time of day, etc.; and

.8 relevant statistical data: past fire history, probability of failure, frequency and severity rates, etc.

5.2.1.2 Enumeration of fire hazards

All of the fire hazards identified above should be grouped into one of three incident classes: localised, major, or catastrophic. A localised incident consists of a fire with a localised affect zone, limited to a specific area. A major incident consists of a fire with a medium affect zone, limited to the boundaries of the ship. A catastrophic incident consists of a fire with a large affect zone, beyond the ship and affecting surrounding ships or communities. In the majority of cases, only localised and/or major fire incidents need to be considered. Examples where the catastrophic incident class may be considered would include transport and/or offshore production of petroleum products or other hazardous materials where the incident effect zone is very likely to be beyond the ship vicinity. The fire hazards should be tabulated for future selection of a certain number of each of the incident classes.

5.2.1.3 Selection of fire hazards

The number and type of fire hazards that should be selected for the quantitative analysis is dependent on the complexity of the trial alternative design and arrangements. All of the fire hazards identified should be reviewed for selection of a range of incidents. In determining the selection, frequency of occurrence does not need to be fully quantified, but it can be utilised in a qualitative sense. The selection process should identify a range of incidents which cover the largest and most probable range of enumerated fire hazards. Because the engineering evaluation relies on a comparison of the proposed alternative design and arrangements with prescriptive designs, demonstration of equivalent performance during the major incidents should adequately demonstrate the design's equivalence for all lesser incidents and provide the commensurate level of safety. In selecting the fire hazards it is possible to lose perspective and to begin selecting highly unlikely or inconsequential hazards. Care should be taken to select the most appropriate incidents for inclusion in the selected range of incidents.

5.2.1.4 Specification of design fire scenarios

Based on the fire hazards selected, the fire scenarios to be used in the quantitative analysis should be clearly documented. The specification should include a qualitative description of the design fire (e.g., ignition source, fuel first ignited, location, etc.), description of the vessel, compartment of origin, fire protection systems installed, number of occupants, physical and mental status of occupants and available means of escape. The fire scenarios should consider possible future changes to the fire load and ventilation system in the affected areas. The design fire(s) will be characterised in more detail during the quantitative analysis for each trial alternative design.

5.3 *Development of trial alternative designs*

At this point in the analysis, one or more trial alternative designs should be developed so that it can be compared against the developed performance criteria. The trial alternative design should also take into consideration the importance of human factors, operations, and management as reflected in part E of SOLAS chapter II-2. It should be recognized that well defined operations and management procedures may play a big part in increasing the overall level of safety.

5.4 *Preliminary analysis report*

5.4.1 A report of the preliminary analysis should include clear documentation of all steps taken to this point, including identification of the design team, their qualifications, the scope of the alternative design analysis, the functional requirements to be met, the description of the fire scenarios and trial alternative designs selected for the quantitative analysis.

5.4.2 The preliminary analysis report should be submitted to the Administration for formal review and agreement prior to beginning the quantitative analysis. The report may also be

submitted to the port State for informational purposes, if the intended calling ports are known during the design stage. The key results of the preliminary analysis should include:

.1 a secured agreement from all parties to the design objectives and engineering evaluation;

.2 specified design fire scenario(s) acceptable to all parties; and

.3 trial alternative design(s) acceptable to all parties.

6 Quantitative analysis

6.1 The quantitative analysis is the most labour intensive from a fire safety engineering standpoint. It consists of quantifying the design fire scenarios, developing the performance criteria, verifying the acceptability of the selected safety margins and evaluating the performance of trial alternative designs against the prescriptive performance criteria.

6.1.1 The quantification of the design fire scenarios may include calculating the effects of fire detection, alarm and suppression methods, generating time lines from initiation of the fire until control or evacuation, and estimating consequences in terms of fire growth rate, heat fluxes, heat release rates, flame heights, smoke and toxic gas generation, etc. This information will then be utilised to evaluate the trial alternative designs selected during the preliminary analysis.

6.1.2 Risk assessment may play an important role in this process. It should be recognised that risk cannot ever be completely eliminated. Throughout the entire performance based design process, this fact should be kept in mind. The purpose of performance design is not to build the fail safe design, but to specify a design with reasonable confidence that it will perform its intended function(s) when necessary and in a manner equivalent to or better than the prescriptive fire safety requirements of SOLAS chapter II-2.

6.2 *Quantification of design fire scenarios*

6.2.1 After choosing an appropriate range of fire incidents, quantification of the fires should be accomplished for each of the incidents. Quantification will require specification of all factors that may affect the type and extent of the fire hazard. The fire scenarios should consider possible future changes to the fire load and ventilation system in the affected areas. This may include calculation of heat release rate curves, flame height, length, and tilt, radiant, conductive, and convective heat fluxes, smoke production rate, pool fire size, duration, time-lines, etc. References on suggested example correlations and models that may be of use are listed in appendix C. It should be noted that when using any of these or other tools, the limitations and assumptions of these models should be well understood and documented. This becomes very important when deciding on and applying safety margins. Documentation of the alternative design should explicitly identify the fire models used in the analysis and their applicability. Reference to the literature alone should not be considered as adequate documentation. The general procedure for

specifying design fires includes fire scenario development completed during the preliminary analysis, time-line analysis and consequence estimation which is detailed below.

6.2.2 For each of the identified fire hazards, a range of fire scenarios should be developed. Because the alternative design approach is based on a comparison against the regulatory prescribed design, the quantification can often be simplified. In many cases, it may only be necessary to analyse one or two scenarios if this provides enough information to evaluate the level of safety of the alternative design and arrangements against the required prescriptive design.

6.2.3 A time-line should be developed for each of the fire scenarios beginning with fire initiation. Timelines should include one or more of the following: ignition, established burning, fire detection, fire alarm, fire suppression/control system activation, personnel response, fire control, escape times (to Assembly stations, evacuation stations and lifeboats as necessary), manual fire response, untenable conditions, etc. The timeline should include fire size throughout the scenario, as determined by using the various correlations, models and fire data from the literature or actual fire tests.

6.2.4 Consequences of various fire scenarios should be quantified in fire engineering terms. This can be accomplished by using existing correlations and calculation procedures for determining fire characteristics such as heat release rate curves, flame height, length, tilt, radiant, conductive and convective heat fluxes, etc. In certain cases, live fire testing and experimentation may be necessary to properly predict the fire characteristics. Regardless of the calculation procedures utilised, a sensitivity analysis should be conducted to determine the effects of the uncertainties and limitations of the input parameters.

6.3 *Development performance criteria*

6.3.1 Performance criteria are quantitative expressions of the fire safety objectives and functional requirements of the SOLAS regulations. The required performance of the trial alternative designs are specified numerically in the form of performance criteria. Performance criteria may include tenability limits such as smoke obscuration, temperature, height of the smoke and hot gas layer in a compartment, evacuation time or other criteria necessary to ensure successful alternative design and arrangements.

6.3.2 Each of the regulations in SOLAS chapter II-2 state the purpose of the regulation and the functional requirements that the regulation meets. Compliance with the prescriptive regulations is one way to meet the stated functional requirements. The performance criteria for the alternative design and arrangements should be determined, taking into consideration the fire safety objectives, the purpose statements and the functional requirements of the regulations. The following example is an illustration of this:

"Example of a performance criterion drawn directly from the regulations in SOLAS chapter II-2:

Assume that a design team is developing performance criteria for preventing fire spread through a bulkhead separating a galley from an accommodation space. They are seeking a numerical form for this criteria.

(e.1) Regulation II-2/2 contains the fire safety objective "to contain, control, and suppress fire and explosion in their compartment of origin."

(e.2) One of the functional requirements in which this objective is manifest is "separation of accommodation spaces from the remainder of the ship by thermal and structural boundaries."

(e.3) Regulation II-2/9 contains the prescriptive requirements to achieve this functional requirement; in particular it requires an "A-60" class boundary between areas of high fire risk (like a machinery space or galley) and accommodation spaces.

(e.4) Regulation II-2/3 contains the definition of an "A" class division, which includes the maximum temperature rise criteria of 180 $_{o}$C at any one point, after a 60 minute fire exposure.

(e.5) Therefore, one possible performance criterion for this analysis is that "no point on the other side of the bulkhead shall rise more than 180°C above ambient temperature during a 60 minute fire exposure."

6.3.3 If the performance criteria for the alternative design and arrangements cannot be determined directly from the prescriptive regulations because of novel or unique features, they may be developed from an evaluation of the intended performance of a commonly used acceptable prescriptive design, provided that an equivalent level of fire safety is maintained.

6.3.4 Before evaluating the prescriptive design, the design team should agree on what specific performance criteria and safety margins should be established. Depending on the prescriptive requirements to which the approval of alternative design or arrangements is sought, these performance criteria could fall within one or more of the following areas:

.1 Life safety criteria - These criteria address the survivability of passengers and crew and may represent the effects of heat, smoke, toxicity, reduced visibility and evacuation time.

.2 Criteria for damage to ship structure and related systems - These criteria address the impact that fire and its effluents might have on the ship structure, mechanical systems, electrical systems, fire protection systems, evacuation systems, propulsion and manoeuvrability, etc. These criteria may represent thermal effects,

fire spread, smoke damage, fire barrier damage, degradation of structural integrity, etc.

.3 Criteria for damage to the environment - These criteria address the impact of heat, smoke and released pollutants on the atmosphere and marine environment.

6.3.5 The design team should consider the impact that one particular performance criterion might have on other areas that might not be specifically part of the alternative design. For example, the failure of a fire barrier may not only affect the life safety of passengers and crew in the adjacent space, but it may result in structural failure, exposure of essential equipment to heat and smoke, and the involvement of additional fuel in the fire.

6.3.6 Once all of the performance criteria have been established, the design team can then proceed with the evaluation of the trial alternative designs (see section 6.4).

6.4 *Evaluation of trial alternative designs*

6.4.1 All of the data and information generated during the preliminary analysis and specification of design fires should serve as input to the evaluation process. The evaluation process may differ depending on the level of evaluation necessary (based on the scope defined during the preliminary analysis), but should generally follow the process illustrated in figure 6.4.1.

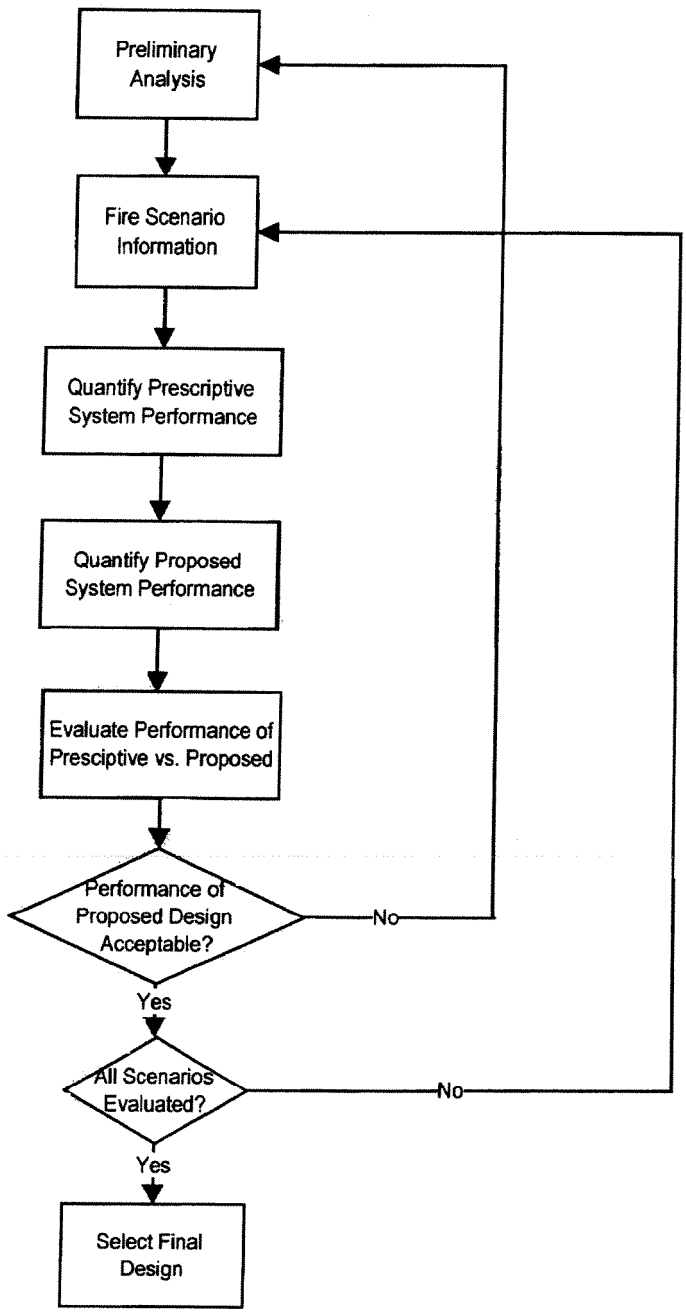

Figure 6.4.1 Alternative design and arrangements process flowchart

6.4.2 Each selected trial alternative design should be analysed against the selected design fire scenarios to demonstrate that it meets the performance criteria with the agreed safety margin, which in turn demonstrates equivalence to the prescriptive design.

6.4.3 The level of engineering rigor required in any particular analysis will depend on the level of analysis required to demonstrate equivalency of the proposed alternative design and arrangements to the prescriptive requirements. Obviously, the more components, systems, operations and parts of the ship that are affected by a particular alternative design, the larger the scope of the analysis.

6.4.4 The final alternative design and arrangements should be selected from the trial alternative designs that meet the selected performance criteria and safety margins.

7 Documentation

7.1 Because the alternative design process may involve substantial deviation from the regulatory prescribed requirements, the process should be thoroughly documented. This provides a record that will be required if future design changes to the ship are proposed or the ship transfers to the flag of another State and will also provide details and information that may be adapted for use in future designs. The following information should be provided for approval of the alternative design or arrangements:

.1 scope of the analysis or design;

.2 description of the alternative design(s) or arrangements(s), including drawings and specifications;

.3 results of the preliminary analysis, to include:

3.1 members of the design team (including qualifications);

3.2 description of the trial alternative design and arrangements being evaluated;

3.3 discussion of affected SOLAS chapter II-2 regulations and their functional requirements;

3.4 fire hazard identification;

3.5 enumeration of fire hazards;

3.6 selection of fire hazards; and

3.7 description of design fire scenarios;

.4 results of quantitative analysis:

4.1 design fire scenarios:

4.1.1 critical assumptions;

4.1.2 amount and composition of fire load;

4.1.3 engineering judgements;

4.1.4 calculation procedures;

4.1.5 test data;

4.1.6 sensitivity analysis; and

4.1.7 time-lines;

4.2 performance criteria;

4.3 evaluation of trial alternative designs against performance criteria;

4.4 description of final alternative design and arrangements;

4.5 test, inspection, and maintenance requirements; and

4.6 references.

7.2 Documentation of approval by the Administration and the following information should be maintained onboard the ship at all times:

.1 scope of the analysis or design, including the critical design assumptions and critical design features;

.2 description of the alternative design and arrangements, including drawings and specifications;

.3 listing of affected SOLAS chapter II-2 regulations;

.4 summary of the results of the engineering analysis and basis for approval; and

.5 test, inspection, and maintenance requirements.

7.3 *Reporting and approval forms*

7.3.1 When the Administration approves alternative design and arrangements for fire safety, pertinent technical information about the approval should be summarized on the reporting form given in appendix A and should be submitted to the International Maritime Organization for circulation to the Member Governments.

7.3.2 When the Administration approves alternative design and arrangements on fire safety, documentation should be provided as indicated in appendix B.

7.4 *Reference in SOLAS certificates*

A reference to the approved alternative design and arrangements should be included in the appropriate SOLAS certificate.

***

APPENDIX A

REPORT ON THE APPROVAL OF ALTERNATIVE DESIGN AND ARRANGEMENTS FOR FIRE SAFETY

The Government of ..... has approved on ..... an alternative design and arrangement in accordance with provisions of regulation II-2/17.5 of the International Convention for Safety of Life at Sea (SOLAS), 1974, as amended, as described below:

Name of ship .....

Port of registry .....

Ship type .....

IMO Number .....

1. **Scope of the analysis or design, including the critical design assumptions and critical design features:**

2. **Description of the alternative design and arrangements:**

3. **Conditions of approval, if any:**

4. **Listing of affected SOLAS chapter II-2 regulations:**

5. **Summary of the result of the engineering analysis and basis for approval, including performance criteria and design fire scenarios:**

6. **Test, inspection and maintenance requirements:**

APPENDIX B

DOCUMENT OF APPROVAL OF ALTERNATIVE DESIGN AND ARRANGEMENTS FOR FIRE SAFETY

Issued in accordance with provisions of regulation II-2/17.4 of the International Convention for Safety of Life at Sea (SOLAS), 1974, as amended, under the authority of the Government of ..... by ..... .
(name of State) (person or organization authorized)

Name of ship .....

Port of registry .....

Ship type .....

IMO Number .....

THIS IS TO CERTIFY that the following alternative design and arrangement applied to the above ship had been approved under the provisions of SOLAS regulation II-2/17.

1. **Scope of the analysis or design, including the critical design assumptions and critical design features:**

2. **Description of the alternative design and arrangements:**

3. **Conditions of approval, if any:**

4. **Listing of affected SOLAS chapter II-2 regulations:**

5. **Summary of the result of the engineering analysis and basis for approval, including performance criteria and design fire scenarios:**

6. **Test, inspection and maintenance requirements:**

7. **Drawings and specifications of the alternative design and arrangement:**

Issued at ..... on .....

.....
(signature of authorized official issuing the certificate)

(Seal or stamp of issuing authority, as appropriate)

APPENDIX C

TECHNICAL REFERENCES AND RESOURCES

1 Section 3 of the guidelines states that the fire safety engineering approach should be "based on sound fire science and engineering practice incorporating widely accepted methods, empirical data, calculations, correlations and computer models as contained in engineering textbooks and technical literature." There are literally thousands of technical resources that may be of use in a particular fire safety design. Therefore, it is very important that fire safety engineers and other members of the design team determine the acceptability of the sources and methodologies used for the particular applications in which they are used.

2 When determining the validity of the resources used, it is helpful to know the process through which the document was developed, reviewed and validated. For example, many codes and standards are developed under an open consensus process conducted by recognised professional societies, codes making organisations or governmental bodies. Other technical references are subject to a peer review process, such as many of the technical and engineering journals available. Also, engineering handbooks and textbooks provide widely recognised and technically solid information and calculation methods.

3 Additional guidance on selection of technical references and resources, along with lists of subject specific literature, can be found in:

.1 *The SFPE Engineering Guide to Performance-Based Fire Protection Analysis and Design of Buildings*, Society of Fire Protection Engineers and National Fire Protection Association, 1999.

.2 ISO/TR 13387-1 through 13387-8, *"Fire safety engineering"*, International Standards Organization, 1999.

4 Other important references include:

.1 *SFPE Handbook of Fire Protection Engineering*, 2nd Edition, P. J. DiNenno, ed., The Society of Fire Protection Engineers, Boston, MA, 1995.

.2 *Fire Protection Handbook,* 18th Edition, A. E. Cote, ed., National Fire Protection Association, Quincy, MA, 1997.

.3 Custer, R.L.P., and Meacham, B.J., *Introduction to Performance-Based Fire Safety*, Society of Fire Protection Engineers, USA, 1997.

.4 NFPA 550, *Guide to the Use of the Fire Safety Concepts Tree*, National Fire Protection Association, 1995.

CROSS REFERENCE LIST

Annex 1 provides a listing of existing chapter II-2 requirements against the new chapter II-2 and the FSS Code.

Annex 2 provides a listing of the new chapter II-2 requirements against the existing chapter II-2.

Annex 3 provides a listing of the FSS Code requirements against the existing chapter II-2.

ANNEX 1

Cross-reference list of SOLAS requirements

existing chapter II-2 SOLAS'74
versus
new chapter II-2 SOLAS'74 (2000Amendments) and Fire Safety Systems Code

existing requirements			*where the requirements of existing chapter II-2 have been transferred to*			
existing Chapter II-2		**Remarks**	**new Chapter II-2**		**new Fire Safety Systems Code**	
Part	**Regulation**		**Part**	**Regulation**	Chapter	Paragraph
A	1.1.1		A	1.1.1		
A	1.1.2		A	1.1.3		
A	1.1.2.1		A	1.1.3.1		
A	1.1.2.2		A	1.1.3.2		
A	1.1.3		A	1.1.2		
A	1.1.3.1		A	1.1.2.1		
A	1.1.3.2		A	1.1.2.2		
A	1.1.3.3		A	1.1.2.3		
A	1.2		A	1.2.1		
A	1.3.1		A	1.3.1, 1.3.2		
A	1.3.2	for existing ships		--		
A	1.3.2.1	for existing ships		--		
A	1.3.2.2	for existing ships		--		
A	1.4.1		A	1.4.1		
A	1.4.2		A	1.4.2		

A	1.4.2.1		A	1.4.2.1		
A	1.4.2.2		A	1.4.2.2		
A	2.1	covered by new reg. 2.1	A	(2.1)		
A	2.2	covered by new reg. 2.2	A	(2.2)		
A	2.2.1	see also new reg. 9.1.1	A	2.2.1.1		
A	2.2.2	see also new reg. 9.1.1	A	2.2.1.2		
A	2.2.3		A	2.2.1.3		
A	2.2.4		A	2.2.1.4		
A	2.2.5		A	2.2.1.5		
A	2.2.6		A	2.2.1.6		
A	2.2.7	see also new reg. 14.1.1	A	2.2.1.7		
A	2.2.8		A	2.2.1.8		
A	3	slightly modified	A	3		
A	3.1	1st sentence only; 2nd sent. see new reg. 3.15	A	3.33		
A	3.2		A	3.47		
A	3.3		A	3.2		
A	3.3.1		A	3.2.1		
A	3.3.2		A	3.2.2		
A	3.3.3		A	3.2.4		
A	3.3.4		A	3.2.3		
A	3.3.5		A	3.2.5		
A	3.4		A	3.4		
A	3.4.1		A	3.4.3		
A	3.4.2		A	3.4.2		
A	3.4.3		A	3.4.1		
A	3.4.4		A	3.4.4		
A	3.5		A	3.10		
A	3.6	slightly modified	A	3.16		
A	3.7	modified	A	3.43		
A	3.8		A	3.29		
A	3.9		A	3.32		
A	3.10		A	3.1		
A	3.11		A	3.39		
A	3.12		A	3.45		
A	3.13.	modified	A	3.8		
A	3.14	modified	A	3.41		
A	3.15	modified	A	3.35		
A	3.16	modified	A	3.12		
A	3.17		A	3.50		
A	3.18	modified	A	3.46		
A	3.19		A	3.31		
A	3.19.1		A	3.31.1		
A	3.19.2		A	3.31.2		

A	3.19.3	modified	A	3.31.3		
A	3.20		A	3.30		
A	3.21		A	3.34		
A	3.22	modified	A	3.18		
A	3.22-1		A	3.9		
A	3.22-1.1		A	3.9.1		
A	3.22-1.2		A	3.9.2		
A	3.22-1.3		A	3.9.3		
A	3.22-1.4		A	3.9.4		
A	3.22-1.5		A	3.9.5		
A	3.22-1.6		A	3.9.6		
A	3.22-1.7		A	3.9.7		
A	3.22-1.8		A	3.9.8		
A	3.22-1.9		A	3.9.9		
A	3.22-1.10		A	3.9.10		
A	3.22-2		A	3.17		
A	3.23		A	3.40		
A	3.23.1		A	3.40.1		
A	3.23.2		A	3.40.2		
A	3.23.3		A	3.40.3		
A	3.23.4		A	3.40.4		
A	3.23.5		A	3.40.5		
A	3.23.6		A	3.40.6		
A	3.23.7		A	3.40.7		
A	3.24		A	3.5		
A	3.25		A	3.21		
A	3.26		A	3.28		
A	3.27	modified	A	3.14		
A	3.28	modified	A	3.19		
A	3.28.1		A	3.19		
A	3.28.2		A	3.19		
A	3.29		A	3.20		
A	3.30	modified	A	3.11		
A	3.30.1	modified	A	3.11		
A	3.30.2	modified	A	3.11		
A	3.31	modified	A	3.25		
A	3.31.1	modified	A	3.25		
A	3.31.2	modified	A	3.25		
A	3.32	modified	A	3.6		
A	3.33		A	3.32		
A	3.34		A	3.42		
A	3.35		A	3.23		
A	4.1		C	10.2		
A	4.2		C	10.2.2.4		

A	4.2.1		C	10.2.2.4.1		
A	4.2.1.1		C	10.2.2.4.1.1		
A	4.2.1.2		C	10.2.2.4.1.2		
A	4.2.2		C	10.2.2.4.2		
A	4.3		C	10.2.2.3		
A	4.3.1		C	10.2.2.2		
A	4.3.1.1	modified	C	10.2.2.2.1		
A	4.3.1.2	modified	C C	10.2.2.2.1, 10.2.2.2.2		
A	4.3.1.3	modified	C	10.2.2.2.2		
A	4.3.2		C	10.2.2.1		
A	4.3.3		C	10.2.2.3.1		
A	4.3.3.1		C	10.2.2.3.1.1		
A A	4.3.3.2 4.3.3.2.1	modified and combined			12	2.2.1.1 incl. .1 to .2
A	4.3.3.2.2	modified			12	2.2.1.2
A	4.3.3.2.3				12	2.2.2.1
A	4.3.3.2.4	modified			12	2.2.2.2
A	4.3.3.2.5	modified			12	2.2.1.3
A	4.3.3.2.6	deleted, covered by new reg. 10.2.2.3.2.1		--		
A	4.3.3.2.7	modified	C	10.2.2.3.2.2		
A	4.3.3.2.8		C	10.2.2.3.2.3		
A	4.3.3.2.9		C	10.2.2.3.2.1		
A	4.3.3.3	modified	C	10.2.2.3.1.2		
A	4.3.3.3.1	modified and divided	C	10.2.2.3.1.2	12	2.1
A	4.3.3.4		C	10.2.2.3.3		
A	4.3.4	modified	C	10.2.1.2		
A	4.3.4.1	modified	C	10.2.1.2.1.1		
A	4.3.4.2	modified	C	10.2.1.2.1.2 10.2.1.2.2.1		
A	4.3.4.3	modified	C	10.2.1.2.2.2		
A	4.3.4.4		C	10.2.1.2.1.3		
A	4.3.5		C	10.2.1.4.3		
A	4.3.6		C	10.2.1.4.4		
A	4.4	modified	C	10.2.1.3		
A	4.4.1		C	10.2.1.3		
A	4.4.2	modified	C	10.2.1.6, 10.2.1.6.1, 10.2.1.6.2		
A	4.4.2.1	modified	C	10.2.1.6.1		
A	4.4.3		C	10.2.1.6.3		
A	4.5		C	10.2.1.5		
A	4.5.1	modified	C	10.2.1.5.1		

A	4.5.2	modified	C	10.2.1.5.2.1		
A	4.5.3	modified	C	10.2.1.5.2.2		
A	4.6	modified	C	10.2.1		
A	4.6.1		C	10.2.1.1, 10.2.3.1.2		
A	4.6.2	modified	C	10.2.1.4.2		
A	4.6.3	modified	C	10.2.1.4.1		
A	4.7		C	10.2.3		
A	4.7.1	modified	C	10.2.3.1.1		
A	4.7.2		C	10.2.3.2.1		
A	4.7.3		C	10.2.3.2.2		
A	4.7.4.1	modified	C	10.2.3.2.3.1		
A	4.7.4.2		C	10.2.3.2.3.2		
A	4.8		C	10.2.3.3		
A	4.8.1		C	10.2.3.3.1		
A	4.8.2		C	10.2.3.3.2		
A	4.8.3		C	10.2.3.3.3		
A	4.8.4	slightly modified	C	10.2.3.3.4		
A	4.9	modified	C	10.4.4		
A	5.1				5	2.1
A	5.1.1	modified			1	4
A	5.1.2	modified			5	2.1.3.1
A	5.1.3				5	2.1.2.1
A	5.1.4	modified	C	10.4.2	5	
A	5.1.5	modified			5	2.1.1.2
A	5.1.6	modified			5	2.1.3.2
A	5.1.7				5	2.1.3.3
A	5.1.8	modified			5	2.1.3.4
A	5.1.9	slightly modified			5	2.1.1.1
A	5.1.10	modified			5	2.1.2.2
A	5.1.11				5	2.1.1.3
A	5.1.12				5	2.1.1.4
A	5.1.13	modified	C	10.4.3		
A	5.1.14				5	2.1.2.3
A	5.2				5	2.2
A	5.2.1				5	2.2.1.1
A	5.2.2				5	2.2.1.2
A	5.2.2.1				5	2.2.1.2.1
A	5.2.2.2				5	2.2.1.2.2
A	5.2.2 cont.	modified			5	2.2.1.3
A	5.2.3				5	2.2.1.4
A	5.2.4				5	2.2.1.5
A	5.2.5	modified			5	2.2.2
A	5.2.5.1	modified			5	2.2.2.1

A	5.2.5.2				5	2.2.2.2
A	5.3	deleted, Halons are prohibited		--		
A	5.3.1	deleted, Halons are prohibited		--		
A	5.3.2	deleted, Halons are prohibited		--		
A	5.3.3	deleted, Halons are prohibited		--		
A	5.3.4	deleted, Halons are prohibited		--		
A	5.3.5	deleted, Halons are prohibited		--		
A	5.4	modified and divided	C	10.4.1.4	5	2.3
A	5.5	modified heading			5	2.4
A	5.5.1	modified and divided			5	2.4.1 2.4.2.1
A	5.5.2				5	2.4.2.2.1
A	5.5.3				5	2.4.2.2.2
A	6.1	modified			4	1.2
A	6.1.1				4	2.1.1.1
A	6.1.2				4	2.1.1.2
A	6.2	modified	C	10.3.3.1		
A	6.3	modified			1	4
A	6.4	modified			4	2.2
A	6.5	deleted		--		
A	6.6		C	10.3.2.2		
A	6.7		C	10.3.2.1		
A	7.1		C	10.5.1		
A	7.1.1	modified	C	10.4.1.1, 10.5.1.1		
A	7.1.1.1.		C	10.4.1.1.1		
A	7.1.1.2		C	10.4.1.1.2		
A	7.1.1.3		C	10.4.1.1.3		
A	7.1.2	modified	C	10.5.1.2.1		
A	7.1.3	modified	C	10.5.1.2.2		
A	7.1.4	modified	C	10.5.1.2.3		
A	7.2		C	10.5.2		
A	7.2.1		C	10.5.2.1		
A	7.2.2	modified	C	10.5.2.2.1		
A	7.2.3		C	10.5.2.2.2		
A	7.3		C	10.5.3.1		
A	7.3.1		C	10.5.3.2.1		
A	7.3.2		C	10.5.3.2.2		
A	7.3.3		C	10.5.3.1		
A	7.4		C	10.5.4		
A	7.5	modified	C	10.4.1.2		
A	7.6		C	10.5.5		
A	8.1	modified and divided			6	2.1 2.3.1.2 2.3.2.1

A	8.2				6	2.3.2.2
A	9.1.1				6	2.2.1.2
A	9.1.2				6	2.2.1.3
A	9.2				6	2.2.2.1
A	9.3	modified			6	2.2.2.2
A	9.4				6	2.2.2.3
A	10.1				7	2.1.1.1
A	10.2	divided			7	2.1.1.2 2.1.2.1
A	10.3	slightly modified			7	2.1.2.2
A	10.4				7	2.1.3
A	10.5	divided			7	2.1.1.4 2.1.2.3
A	10.6	modified			7	2.1.1.5
A	10.7				7	2.1.1.3
A	11.1		C C	9.5.1.1 8.3.1		
A	11.2.1		C	9.5.2.1		
A	11.2.2	1st sentence 2nd sentence	C C	9.5.2.2 8.3.2		
A	11.2.3		C	9.5.2.5		
A	11.3		C	9.5.2.6		
A	11.4.1		B	5.2.2.1		
A	11.4.2		C	8.3.3		
A	11.4.3		C	9.5.2.3		
A	11.4.4		B	5.2.2.2		
A	11.4.5		B	5.2.2.3		
A	11.5	modified and divided	C C B C C	8.3.3 9.5.2.3 5.2.2.5 8.3.4 9.5.2.4		
A	11.6	deleted		--		
A	11.7		B B	5.2.3.1 5.2.3.2		
A	11.8		C C	7.4.1 7.4.1.2		
A	11.8.1		C	7.4.1.2.1		
A	11.8.2		C	7.4.1.2.2		
A	12.1.1	modified and divided			8	2.1.1 2.4.1 2.5.1.1 2.5.1.2
A	12.1.2	modified			8	2.5.2.1

A	12.2.1				8	2.4.2.1
A	12.2.2	modified			8	2.4.2.2
A	12.2.3				8	2.4.2.5
A	12.2.4				8	2.3.1.1
A	12.2.5				8	2.5.2.4
A	12.3				8	2.5.2.3
A	12.4.1				8	2.3.2.1
A	12.4.2				8	2.3.2.2
A	12.5.1				8	2.3.3.1
A	12.5.2	modified			8	2.3.3.2
A	12.5.3				8	2.3.3.3
A	12.5.4				8	2.4.2.6
A	12.6				8	2.4.3
A	12.7.1	slightly modified			8	2.2.1
A	12.7.2	slightly modified			8	2.2.2
A	12.8				8	2.4.2.4
A	12.9.1				8	2.4.2.3
A	12.9.2				8	2.5.3
A	12.9.3				8	2.5.2.2
A	12.10	modified			8	2.3.1.2
A	13.1				9	2.1
A	13.1.1				9	2.1.1
A	13.1.2				9	2.5.1.2
A	13.1.3				9	2.2
A	13.1.4	divided			9	2.4.1.1 2.5.1.1
A	13.1.5	modified			9	2.5.1.2
A	13.1.6	modified			9	2.5.1.3
A	13.1.7				9	2.5.1.4
A	13.1.8	modified			9	2.4.1.3
A	13.1.9	modified			9	2.4.1.4
A	13.1.10	modified			9	2.4.1.2
A	13.1.11				9	2.3.1.1
A	13.1.12				9	2.5.2
A	13.1.13	1st sentence 2nd sentence	C	7.3.2	 9	 2.3.1.5
A	13.1.14	modified			9	2.1.2
A	13.1.15	modified and divided			9	2.1.4 incl. .1 to .4 2.4.3.2
A	13.2				9	2.4
A	13.2.1	modified	C	7.7		
A	13.2.2	modified	C	7.5.1		
A	13.2.3	modified	C	7.2.3		

A	13.2.4	modified			9	2.4.2.1
A	13.2.5	modified			9	2.4.2.2
A	13.2.6				9	2.4.3.1
A	13.3	modified heading			9	2.3
A	13.3.1				9	2.1.3
A	13.3.2	modified			9	2.3.1.2
A	13.3.3				9	2.3.1.3
A	13.3.4	modified			9	2.3.1.4
A	13-1.1				10	2.1
A	13-1.1.1				10	2.1.1
A	13-1.1.2				10	2.1.2
A	13-1.1.3				10	2.4.1.4
A	13-1.1.4				10	2.1.6
A	13-1.1.5	modified			10	2.4.1.1
A	13-1.1.6	modified			10	2.4.1.3
A	13-1.1.7				10	2.4.1.2
A	13-1.1.8				10	2.3.2.1
A	13-1.1.9				10	2.4.2
A	13-1.1.10	1st sentence 2nd sentence	C	7.3.2	10	2.1.5
A	13-1.1.11				10	2.1.3
A	13-1.2	heading			10	2.3
A	13-1.2.1				10	2.3.1.1
A	13-1.2.2				10	2.3.1.2
A	13-1.2.3				10	2.3.1.3
A	13-1.2.4				10	2.3.1.4
A	13-1.2.5				10	2.3.1.5
A	13-1.2.6				10	2.3.2.2
A	13-1.3	modified heading			10	2.2
A	13-1.3.1				10	2.1.4
A	13-1.3.2				10	2.2.1
A	13-1.3.3	modified			10	2.2.2
A	13-1.3.4				10	2.2.3
A	13-1.3.5				10	2.2.4
A	13-1.3.6				10	2.2.5
A	13-1.3.7				10	2.2.6
A	14.1		C	7.4.1 7.4.1.1		
A	14.2		C	7.4.2		
A	14.3	modified	C	7.3.1		
A	15		B	4.2		
A	15.1		B	4.2.1		
A	15.1.1		B	4.2.1.1		
A	15.1.2		B	4.2.1.2		

A	15.1.3	modified	B	4.2.1.3 incl. .3.1 to .3.4		
A	15.1.4		B	4.2.1.4		
A	15.2		B	4.2.2		
A	15.2.1		B	4.2.2.1		
A	15.2.2		B	4.2.2.2		
A	15.2.3		B	4.2.2.3.2		
A	15.2.4	1st sentence, modified 2nd sentence	B B	4.2.2.3.3 4.2.2.6.2		
A	15.2.5	modified	B	4.2.2.3.4		
A	15.2.6		B	4.2.2.3.5		
A	15.2.6.1		B	4.2.2.3.5.1		
A	15.2.6.1.1		B	4.2.2.3.5.1.1		
A	15.2.6.1.2		B	4.2.2.3.5.1.2		
A	15.2.6.1.3		B	4.2.2.3.5.1.3		
A	15.2.6.2		B	4.2.2.3.5.2		
A	15.2.6.2.1		B	4.2.2.3.5.2.1		
A	15.2.6.2.2		B	4.2.2.3.5.2.2		
A	15.2.6.3		B	4.2.2.3.5.3		
A	15.2.7	modified	B	4.2.2.4		
A	15.2.8	modified	B	4.2.2.5.1		
A	15.2.9	slightly modified	B	4.2.2.5.2		
A	15.2.10		B	4.2.2.6.1		
A	15.2.11	modified	B	4.2.2.5.3		
A	15.2.12	for existing ships		--		
A	15.3		B	4.2.3.1		
A	15.3.1		B	4.2.3.1.1		
A	15.3.2		B	4.2.3.1.2		
A	15.4	modified	B	4.2.4		
A	15.5		B	4.2.5		
A	15.5.1		B	4.2.5.1		
A	15.5.2		B	4.2.5.2		
A	15.6		B	4.2.2.3.1		
A	16.1		C	9.7.1.1		
A	16.1.1	slightly modified	C	9.7.1.1.1		
A	16.1.2	slightly modified	C	9.7.1.1.2		
A	16.1.3	slightly modified	C	9.7.1.1.3		
A	16.2	modified	C	9.7.3.1		
A	16.2.1	modified	C	9.7.3.1.1		
A	16.2.2	modified	C	9.7.3.1.2		
A	16.3	modified	C	9.7.2.1		
A	16.3.1.1		C	9.7.2.1.1.1		
A	16.3.1.2		C	9.7.2.1.1.2		
A	16.3.1.3		C	9.7.2.1.1.3		

A	16.3.1.4		C	9.7.2.1.1.4		
A	16.3.2.1		C	9.7.2.1.2.1		
A	16.3.2.2		C	9.7.2.1.2.2		
A	16.4		C	9.7.2.2		
A	16.4.1.1		C	9.7.2.2.1.1		
A	16.4.1.2		C	9.7.2.2.1.2		
A	16.4.1.3		C	9.7.2.2.1.3		
A	16.4.2.1		C	9.7.2.2.2.1		
A	16.4.2.2		C	9.7.2.2.2.2		
A	16.5		C	9.7.3.2		
A	16.6	modified	C	8.2		
A	16.7		C	9.7.5.2.1		
A	16.7.1		C	9.7.5.2.1.1		
A	16.7.2		C	9.7.5.2.1.2		
A	16.7.3		C	9.7.5.2.1.3		
A	16.7.4		C	9.7.5.2.1.4		
A	16.8		C	9.4.1.1.8		
A	16.9	modified	B	5.2.1.1		
A	16.10	1st and 2nd sentence	B B	5.2.1.2, 5.2.2.4		
A	16.11		C	9.7.1.2		
A	16.11.1		C	9.7.1.2.1		
A	16.11.2		C	9.7.1.2.2		
A	17.1	modified			3	2.1
A	17.1.1	modified			3	2.1.1
A	17.1.1.1				3	2.1.1.1
A	17.1.1.2	modified			3	2.1.1.2
A	17.1.1.3				3	2.1.1.3
A	17.1.1.4	modified			3	2.1.1.4
A	17.1.1.5	modified			3	2.1.1.5
A	17.1.2	modified heading			3	2.1.2
A	17.1.2.1	old-fashioned, eliminated		--		
A	17.1.2.2	divided	C	10.10.2.5	3	2.1.2
A	17.2	modified			3	2.1.3
A	17.3	slightly modified	C	10.10.2.1		
A	17.3.1		C	10.10.2.2		
A	17.3.1.1	modified	C	10.10.2.2.1		
A	17.3.1.2	slightly modified	C	10.10.2.3		
A	17.3.2		C	10.10.2.2.2		
A	17.3.3		C	10.10.2.4		
A	17.4	1st sentence, modified 2nd and 3rd sentences	C C	10.10.3.1 10.10.3.2		
A	18.1.1	modified	C	9.3.1		
A	18.1.2	modified	C	9.3.2		

				incl. .1 and .2		
A	18.2.1	modified	C	9.3.3		
A	18.2.2		B	4.2.2.5.6		
A	18.2.3		C	11.5		
A	18.2.4		C	9.6.5		
A	18.3		B	4.4.1		
A	18.4	old-fashioned, eliminated		--		
A	18.5	slightly modified	B	4.4.2		
A	18.6		B	4.4.3		
A	18.7	modified	C C C	10.6.3 10.6.3.1 incl. .1 to .4 10.6.3.2		
A	18.8		G	18		
A	19		C	10.2.1.7		
A	19.1		C	10.2.1.7.1		
A	19.2		C	10.2.1.7.2		
A	19.3				2	2.1
A	19.4				2	2.2
A	20	modified	E	15.2.4		
A	20.1	modified	E	15.2.4.1		
A	20.2	slightly modified	E	15.2.4.2		
A	20.3	modified	E	15.3.1		
A	20.4		E	15.3.2		
A	21	modified	E	14.2.1.2		
A	22.1	inserted in reg. 17 indirectly	F	17		
A	22.2	inserted in reg. 17 indirectly	F	17		
B	23.1		C	11.2		
B	23.2	modified	C	11.3		
B	23.2.1		C	11.3.1		
B	23.2.2		C	11.3.2		
B	23.2.2.1		C	11.3.2.1		
B	23.2.2.2		C	11.3.2.2		
B	23.3	modified	C	11.4.1		
B	24.1.1		C	9.2.2.1.1.1		
B	24.1.2		C	9.2.2.1.1.2		
B	24.2		C	9.2.2.1.2		
B	24.3		C	9.2.2.1.3		
B	24.4	modified	C	9.2.2.1.4		
B	24.5.1	modified	C	9.2.2.1.5.1		
B	24.5.2	slightly modified	C	9.2.2.1.5.2		
B	25.1.1	slightly modified	C	9.2.2.2.1		
B	25.1.2		C	9.2.2.2.2		

B	25.1.3	modified	B	5.3.2.1.1		
B	25.2		C	9.2.2.2.2		
B	25.2.1		C	9.2.2.2.2.1		
B	25.2.2	modified	C	9.2.2.2.2.2		
B	25.3	modified	C	9.2.2.2.3		
B	26.1	slightly modified	C	9.2.2.3.1		
B	26.2		C	9.2.2.3.2		
B	26.2.1		C	9.2.2.3.2.1		
B	26.2.2 (1) to (14)	modified, modifications in categories (1), (2), (3), (4), (5), (8), (14)	C	9.2.2.3.2.2		
B	26.2.3		C	9.2.2.3.2.3		
B	26.2.4		C	9.2.2.3.2.4		
B	26.2.5		C	9.2.2.3.2.5		
B	26.3		C	9.2.2.3.3		
B	26.4	modified	C	9.3.4		
B	27.1	modified	C	9.2.2.4.1		
B	27.2		C	9.2.2.4.2		
B	27.2.1		C	9.2.2.4.2.1		
B	27.2.2 (1) to (11)	modified modifications in categories (1), (4), (7), (9), (10), (11)	C	9.2.2.4.2.2		
B	27.2.3	modified	C	9.2.2.4.2.3		
B	27.2.4	modified	C	9.2.2.4.2.4		
B	27.3		C	9.2.2.4.3		
B	27.4		C	9.2.2.4.4		
B	28	heading	D	13		
B	28.1	slightly modified	D	13.3.1.1		
B	28.1.1	modified, see also new 13.2.1	D	13.3.2.1 13.3.2.1.1		
B	28.1.2	see also new 13.2.1	D	13.3.2.2		
B	28.1.3	see also new 13.2.1	D	13.3.1.4		
B	28.1.4	modified	D	13.3.1.2		
B	28.1.5	modified, except last sentence last sentence	D D	13.3.2.4.1 13.3.2.4.5		
B	28.1.5.1	sentence 1, 3, 5, modified 6 sentence 2, modified 4			13 13	2.1.1 2.2.1
B	28.1.5.2				13	2.2.2
B	28.1.5.3				13	2.3.1
B	28.1.5.4				13	2.2.3
B	28.1.5.5				13	2.2.4
B	28.1.6	modified	D	13.3.2.4.2		
B	28.1.7		D	13.3.2.4.3		
B	28.1.8	modified, see also new 13.2.1	D	13.3.2.4.4		

B	28.1.9		D	13.3.2.1.2		
B	28.1.10	modified	D	13.3.2.5.1		
B	28.1.11	slightly modified	D	13.3.2.5.2		
B	28.2.1	modified	D	13.5.1		
B	28.2.2		D	13.5.2		
B	28.3.1	modified	D	13.4.1		
B	28.3.1.1		D	13.4.1.1		
B	28.3.1.1.1	modified	D	13.4.1.1.1		
B	28.3.1.1.2		D	13.4.1.1.2		
B	28.3.1.2		D	13.4.1.2		
B	28.3.2		D	13.4.1.3		
B	28.3.3	see also new 13.2.1	D	13.4.1.4		
B	28.4	modified	D	13.2.2		
B	28-1-1	modified heading	D	13.7		
B	28-1.1.1	1st sentence, remaining part for existing ships deleted	D	13.7		
B	28-1.1.2	slightly modified	D	13.7.3.1		
B	28-1.1.3		D	13.7.1.5		
B	28-1.1.4	modified	D	13.7.1.1		
B	28-1.1.5		D	13.7.1.4		
B	28-1.1.6		D	13.7.2.1		
B	28-1.1.7		D	13.7.2.2		
B	28-1.1.8		D	13.3.2.6.1		
B	28-1.2.1		D	13.7.3.2		
B	28-1.2.2		D	13.7.1.2		
B	28-1.2.3		D	13.7.1.3		
B	28-1.3	slightly modified	D	13.7.4		
B	29	slightly modified	C	9.2.2.5		
B	29.1	part part	C D	9.2.2.5.1 13.3.1.3		
B	29.1.1	modified	C	9.2.2.5.1.1		
B	29.1.2		C	9.2.2.5.1.2		
B	29.2	modified	D	13.3.2.3		
B	29.3	modified	C	9.2.2.5.2		
B	30		C	9.4.1.1.		
B	30.1	slightly modified	C	9.4.1.1.1		
B	30.2	slightly modified	C	9.4.1.1.2		
B	30.3		C	9.4.1.1.3		
B	30.4		C	9.4.1.1.4		
B	30.4.1		C	9.4.1.1.4.1		
B	30.4.2		C	9.4.1.1.4.2		
B	30.4.3	modified	C	9.4.1.1.4.3		
B	30.4.4		C	9.4.1.1.4.4		
B	30.4.5		C	9.4.1.1.4.5		

B	30.4.6	modified	C	9.4.1.1.4.6		
B	30.4.7	modified	C	9.4.1.1.4.7		
B	30.4.8	modified	C	9.4.1.1.4.8		
B	30.4.9	modified	C	9.4.1.1.4.9		
B	30.4.10	slightly modified	C	9.4.1.1.4.10		
B	30.4.11		C	9.4.1.1.4.11		
B	30.4.12	slightly modified	C	9.4.1.1.4.12		
B	30.4.13		C	9.4.1.1.4.13		
B	30.4.14		C	9.4.1.1.4.14		
B	30.4.15	slightly modified	C	9.4.1.1.4.15		
B	30.4.15.1		C	9.4.1.1.4.15.1		
B	30.4.15.2		C	9.4.1.1.4.15.2		
B	30.4.15.3		C	9.4.1.1.4.15.3		
B	30.5	modified	C	9.4.1.1.5		
B	30.6		C	9.4.1.1.6		
B	30.7	modified	C	9.4.1.1.7		
B	31		C	9.4.1.2		
B	31.1.1	modified	C	9.4.1.2.1		
B	31.1.2		C	9.4.1.2.2		
B	31.2		C	9.4.1.2.3		
B	31.3	modified	C	9.4.1.2.4		
B	31.3.1		C	9.4.1.2.4.1		
B	31.3.2		C	9.4.1.2.4.2		
B	32		C	9.7		
B	32.1.	modified	C	9.7.4		
B	32.1.1	modified	C	9.7.4.1		
B	32.1.2		C	9.7.4.2		
B	32.1.3		C	9.7.4.3		
B	32.1.4		C	9.7.4.4		
B	32.1.4.1	slightly modified	C	9.7.4.4.1		
B	32.1.4.2	slightly modified	C	9.7.4.4.2		
B	32.1.4.3	slightly modified	C	9.7.4.4.3		
B	32.1.4.3.1		C	9.7.4.4.3.1		
B	32.1.4.3.2		C	9.7.4.4.3.2		
B	32.1.4.3.3		C	9.7.4.4.3.3		
B	32.1.5	slightly modified	C	9.7.4.5		
B	32.1.6	modified, 1st and 3rd sentence 2nd sentence	B B	5.2.1.3 5.2.2.2		
B	32.1.7	modified	C	8.5		
B	32.1.8	modified	C	9.7.4.6		
B	32.1.9	modified	C	9.7.5.1		
B	32.1.9.1		C	9.7.5.1.1		
B	32.1.9.2		C	9.7.5.1.2		
B	32.1.9.3		C	9.7.5.1.3		

B	32.1.9.4	modified	C	9.7.5.1.4		
B	32.1.9.5		C	9.7.5.1.5		
B	32.2.1	covered by reg. 9.7		--		
B	33		C	9.4.1.3		
B	33.1	modified	C	9.4.1.3.1		
B	33.2		C	9.4.1.3.2		
B	33.3	modified	C	9.4.1.3.3 incl. .1 and .2		
B	34	modified	B	5.3.1		
B	34.1	part of 1st sentence 2nd sentence	B B	5.3.1.1 5.3.1.2.1		
B	34.2		B	5.3.1.1		
B	34.3	modified	B	5.3.2.4		
B	34.3.1	modified	B	5.3.2.4.1.1		
B	34.3.2	modified	B	5.3.2.4.1.2		
B	34.4	1st sentence, modified 1st sentence, modified, 2nd sentence, modified	B B B	5.3.2.1.1 5.3.2.3.1 5.3.2.3.2		
B	34.5	modified	B	5.3.2.2		
B	34.6	modified	B	5.3.3		
B	34.7		B	6.2		
B	34.8	modified modified	B B	4.4.4 6.3		
B	35.1	modified and combined	C	8.4		
B	35.1.1					
B	35.1.2					
B	35.2		C	7.8.2		
B	36.1	modified	C	7.5.3		
B	36.1.1	modified	C	7.5.3.1		
B	36.1.2	modified	C C	7.5.3.2 10.6.1.2		
B	36.2	sent.3, 4, 5 partly, modified sent.1, 2, 5 partly, modified	C C	7.5.2 10.6.1.1		
B	37.1.1	slightly modified	G	20.2		
B	37.1.1.1	modified	G	20.2.2.1		
B	37.1.1.2	modified	G	20.2.2.3		
B	37.1.2	heading	G	20.5		
B	37.1.2.1	modified modified	C G	9.6.1 20.5		
B	37.1.2.2		C	9.6.2		
B	37.1.2.3	modified	C	9.6.4		
B	37.1.3	divided and modified	G G	20.6.1.2 incl. .1 to .4 20.6.1.3		

B	37.1.4.1	divided and modified	G G	20.4.1 20.4.3.1		
B	37.1.4.2		G	20.4.3.2		
B	37.1.5	modified	G	20.6.2.2		
B	37.1.5.1		G	20.6.2.2.1		
B	37.1.5.2	modified	G	20.6.2.2.2		
B	37.1.5.3	modified	G	20.6.2.1		
B	37.1.6.1	1st and 3rd sentence, modified 1st sentence, modified 2nd, 4th and 5th sentence, mod.	G G G	20.3.1.1 20.3.1.1.1 20.3.1.2.1		
B	37.1.6.2		G	20.3.1.2.3		
B	37.1.6.3		G	20.3.1.3		
B	37.1.6.4	modified	G	20.3.1.4.1		
B	37.1.6.5	modified	G	20.3.1.4.2		
B	37.2.1.1	modified	G G G	20.6.1.4 20.6.1.4.1 20.6.1.4.1.1		
B	37.2.1.2.1		G	20.6.1.4.1.2.1		
B	37.2.1.2.2		G	20.6.1.4.1.2.2		
B	37.2.2.1	divided and modified	G G	20.3.2.1 20.3.2.2		
B	37.2.2.2		G	20.3.3		
B	37.3.1	modified	G	20.6.1.4.1.3		
B	37.3.2.1	divided and modified	G G	20.3.2.1 20.3.4		
B	37.3.2.2		G	20.3.3		
B	37.4	modified	G	20.3.1.5		
B	38.1	divided and modified	G G	20.4.1 20.4.2		
B	38.2	heading modified	G	20.6.1		
B	38.2.1	divided and modified modified	G G G	20.6.1 20.6.1.1.1 20.6.1.1.2		
B	38.2.2	modified	G	20.6.1.1.3		
B	38.2.3	modified	G	20.6.2.1		
B	38.3.1	1st sentence, modified 1st sentence, modified 2nd, 3rd and 4th sentence, mod.	G G G	20.3.1.1 20.3.1.1.1 20.3.1.2.1		
B	38.3.2		G	20.3.1.2.3		
B	38.3.3		G	20.3.1.3		
B	38.3.4	modified	G	20.3.1.4.1		
B	38.3.5	modified	G	20.3.1.4.2		
B	38.4.1	1st sentence partly, modified 2nd sentence, modified	G G	20.3.2.1 20.3.4		

B	38.4.2		G	20.3.3		
B	38.4.3		G	20.3.5		
B	38.5	modified	G	20.3.1.5		
B	38.6	modified	G G	20.2.2.2 20.5		
B	38-1.1.1	modified	G	20.2.2.2		
B	38-1.1.2	modified modified	C G	9.6.1 20.5		
B	38-1.1.3		C	9.6.3		
B	38-1.1.4		G	20.3.1.5		
B	38-1.2	covered by new regulations: 20.4.1, 20.4.2, 20.6.1.1, 20.6.1.1.1, 20.6.1.1.2, 20.6.1.1.3, 20.6.2.1, 20.3.1.1, 20.3.1.1.1, 20.3.1.2.1, 20.3.1.2.3, 20.3.1.3, 20.3.1.4.1, 20.3.1.4.2	G	see remarks		
B	38-1.3	covered by new regulations: 20.6.1.2 incl. .1 to .4, 20.6.1.3, 20.6.1.4, 20.6.1.4.1, 20.6.1.4.1.2.1, 20.6.1.4.1.2.2, 20.4.1, 20.6.2.1	G	see remarks		
B	39.1	modified	C	10.7.1.1		
B	39.2	modified	C	10.7.1.2		
B	39.3	modified	C	10.7.2		
B	40.1	modified	C	7.7		
B	40.2	modified	C	7.6		
B	40.3	modified	C	7.9.1		
B	40.4		C	7.9.4		
B	40.5	modified	D	12.3		
B	40.6	divided	C	7.8.1, 7.8.3		
B	40.7	modified	C	7.5.4		
B	40.7.1		C	7.9.3		
B	40.7.2	modified	C	7.9.2		
B	41	covered by new reg. 19		19.2.1		
B	41-1	for existing ships		--		
B	41-2	for existing ships		--		
C	42.1	modified	C	11.2		
C	42.2		C	11.3.1		
C	42.3		C	11.3.2		
C	42.3.1		C	11.3.2.1		
C	42.3.2		C	11.3.2.2		
C	42.4	modified	C	11.4.1		
C	42.5		C	9.2.3.1.1		
C	42.5.1		C	9.2.3.1.1.1		
C	42.5.2	see also 10.6.2	C	9.2.3.1.1.2		
C	42.5.3		C	9.2.3.1.1.3		
C	42.6	slightly modified	C	9.2.3.1.2		

C	43		C	9.2.3.2		
C	43.1	slightly modified	C	9.2.3.2.1		
C	43.2	slightly modified	C	9.2.3.2.2		
C	43.3	slightly modified	C	9.2.3.2.3		
C	43.4	slightly modified	C	9.2.3.2.4		
C	44		C	9.2.3.3		
C	44.1	slightly modified	C	9.2.3.3.1		
C	44.2		C	9.2.3.3.2		
C	44.2.1		C	9.2.3.3.2.1		
C	44.2.2 (1) to (11)	modified, modifications in categories (1), (4), (7), (9), (10), (11)	C	9.2.3.3.2.2		
C	44.3		C	9.2.3.3.3		
C	44.4	slightly modified	C	9.2.3.3.4		
C	45		D	13		
C	45.1		D	13.3.1.1		
C	45.1.1	modified	D D	13.2.1 13.3.3.1		
C	45.1.2.1		D	13.3.3.2		
C	45.1.2.2		D	13.3.3.3		
C	45.1.3	modified	D	13.3.3.6		
C	45.1.4	1st sentence only	D	13.3.3.4		
C	45.1.5	modified	D	13.3.3.5		
C	45.1.6		D	13.3.1.4		
C	45.2	modified modified	D D	13.2.1 13.6		
C	45.3	modified modified	D D	13.2.1 13.4.2		
C	45.3.1	modified modified	D D	13.4.2.1 13.4.2.1.1		
C	45.3.2	modified	D D	13.4.2.1 13.4.2.1.2		
C	45.4	modified	D	13.4.2.2		
C	45.5	modified	D	13.4.2.3		
C	45.6		D	13.2.2		
C	46		C	9.2.3.4		
C	46.1	slightly modified	C	9.2.3.4.1		
C	46.2	modified	C	9.2.3.4.2		
C	46.3	modified	D	13.3.1.3		
C	47.1	modified	C	9.4.2.1		
C	47.2		C	9.4.2.2		
C	47.3	modified	C	9.4.2.3		
C	47.4		C	9.4.2.4		
C	48	covered by new regs. 9.7, 8.2, 5.2.1.1 and		see remarks		

		5.2.1.2				
C	49.1		B B	5.3.2.4 5.3.2.4.2 incl. .1 and .2		
C	49.2		B	6.2		
C	49.3	partly, modified partly, modified	B B	4.4.4 6.3		
C C	50.1 50.2	combined and modified	B	5.3.1.2.2 incl. .1 and .2		
C	50.3.1	modified	B	5.3.1.1		
C	50.3.2	modified	B B	5.3.2.1.2 5.3.2.2		
C	50.3.3	modified	B B	5.3.2.1.2 5.3.2.3.1		
C	50.3.4		C	8.4		
C	51		B	4.3		
C	52.1	partly, modified partly, modified partly, modified	C C C	7.5.5 7.5.5.1 7.7		
C	52.2	partly, modified partly, modified partly, modified 1st sentence, modified	C C C C	7.5.5 7.5.5.2 7.7 10.6.2		
C	52.3	partly, modified partly, modified partly, modified	C C C	7.5.5 7.5.5.3 7.7		
C	53.1.1	modified	C	10.7.1.3		
C	53.1.2	modified	C	10.7.2		
C	53.1.3	slightly modified	C	10.7.1.4		
C	53.2.1	modified	G	20.4.1		
C	53.2.2.1	modified	G	20.6.1.1		
C	53.2.2.1.1		G	20.6.1.1.1		
C	53.2.2.1.2	deleted due to prohibition of Halon		--		
C	53.2.2.1.3			20.6.1.1.2		
C	53.2.2.1.4	1st sentence only remaining part		20.6.1.1.3 20.6.1.4.2		
C	53.2.2.2	modified modified		20.6.1.4 20.6.1.4.2		
C	53.2.2.3	modified		20.6.2.1		
C	53.2.2.4	modified		20.6.2.2		
C	53.2.2.4.1			20.6.2.2.1		
C	53.2.2.4.2			20.6.2.2.2		
C	53.2.3.1	modified modified		20.3.1.1 20.3.1.1.2		

		modified		20.3.1.2.2		
C	53.2.3.2			20.3.1.2.3		
C	53.2.3.3			20.3.1.3		
C	53.2.3.4	modified		20.3.1.4.1		
C	53.2.3.5	modified		20.3.1.4.2		
C	53.2.4	modified		20.3		
C	53.2.4.1			20.3.2.1		
C	53.2.4.2	modified		20.3.2.2		
C	53.2.4.3			20.3.4		
C	53.2.4.4			20.3.3		
C	53.2.4.5			20.3.5		
	53.2.5	modified		20.3.1.5		
C	53.3	covered by new regulations: 20.3, 20.3.1.1, 20.3.1.1.2, 20.3.1.2.2, 20.3.1.2.3, 20.3.1.3, 20.3.1.4.1, 20.3.1.4.2, 20.3.1.5, 20.3.2.1, 20.3.2.2, 20.3.3, 20.3.4, 20.3.5, 20.4.1, 20.4.2, 20.6.1.1, 20.6.1.1.1, 20.6.1.1.2, 20.6.1.1.3, 20.6.1.4, 20.6.1.4.2, and 20.6.2.1	G	see remarks		
C	54.1.1	modified	G	19.2.1		
C	54.1.2			19.2.2		
C	54.1.2.1			19.2.2.1		
C	54.1.2.2			19.2.2.2		
C	54.1.2.3	slightly modified		19.2.2.3		
C	54.1.2.4			19.2.2.4		
C	54.1.2.5			19.2.2.5		
C	54.2	slightly modified		19.3.		
C	54.2.1			19.3.1		
C	54.2.1.1			19.3.1.1		
C	54.2.1.2			19.3.1.2		
C	54.2.1.3	modified		19.3.1.3		
C	54.2.1.4			19.3.1.4		
C	54.2.2	modified		19.3.2		
C	54.2.3	modified		19.3.3.		
C	54.2.4			19.3.4.		
C	54.2.4.1			19.3.4.1		
C	54.2.4.2			19.3.4.2		
C	54.2.4.3			19.3.4.3		
C	54.2.5	modified, last sent. deleted		19.3.5.1		
C	54.2.6			19.3.6.		
C	54.2.6.1			19.3.6.1		
C	54.2.6.2	modified		19.3.6.2		
C	54.2.7			19.3.7.		
C	54.2.8	slightly modified		19.3.8.		
C	54.2.9	modified		19.3.9.		
C	54.2.10	slightly modified		19.3.10.1		

C	54.2.11	slightly modified		19.3.10.2.		
C	54.3			19.4		
C	table 54.1	footnotes 3 and 5 slightly modified		table 19.1		
C	table 54.2	footnote 8 slightly modified		table 19.2		
C	table 54 3	top line (class 3.1, 3.2, 3.3) slightly modified; footnote 13 slightly modified; footnote 15 new		table 19.3		
D	55.1	modified	A	1.6.1		
D	55.2	modified	A	1.6.2		
D	55.3	modified	A	1.6.5		
D	55.4	modified	A	1.6.4		
D	55.5	modified	B	4.5.5.2		
D	55.5.1	modified	B	4.5.5.2.1		
D	55.5.2	for existing ships		--		
D	55.5.3	modified	B	4.5.5.2.1		
D	55.5.4	modified	B	4.5.5.2.2		
D	55.5.4.1	for existing ships		--		
D	55.5.4.2	modified	B	4.5.5.2.2		
D	55.6	modified	A	1.6.6		
D	56.1	modified	B	4.5.1.1		
D	56.2	slightly modified	B	4.5.1.2		
D	56.3	modified	B	4.5.1.3		
D	56.4		B	4.5.1.4		
D	56.4.1	modified	B	4.5.1.4.1		
D	56.4.2	modified	B	4.5.1.4.2		
D	56.4.3	slightly modified	B	4.5.1.4.3		
D	56.4.4	modified	B	4.5.1.4.4		
D	56.5	modified	B	4.5.1.5		
D	56.6	modified	B	4.5.1.6		
D	56.7	modified	C	9.2.4.2.5		
D	56.8.1		B	4.5.2.1		
D	56.8.2	slightly modified	B	4.5.2.2		
D	56.8.3		B	4.5.2.3		
D	56.9	modified	B	4.5.2.4		
D	56.9.1		B	4.5.2.4.1		
D	56.9.2		B	4.5.2.4.2		
D	57.1	modified	C	9.2.4.1		
D	57.2		C	9.2.4.2.6		
D	58		C	9.2.4.2		
D	58.1	slightly modified	C	9.2.4.2.1		
D	58.2		C	9.2.4.2.2		

D	58.2.1		C	9.2.4.2.2.1		
D	58.2.2 (1) to (10)	modified, modifications in categories (1), (4), (7), (9), (10)	C	9.2.4.2.2.2		
D	58.3		C	9.2.4.2.3		
D	58.4	slightly modified	C	9.2.4.2.4		
D	58.5		B	4.5.2.5		
D	59.1		B	4.5.3		
D	59.1.1		B	4.5.3.1		
D	59.1.2		C	11.6.1		
D	59.1.2.1		C	11.6.1.1		
D	59.1.2.2		C	11.6.1.2		
D	59.1.2.3		C	11.6.3.2		
D	59.1.3.1		B	4.5.3.2.1		
D	59.1.3.2		B	4.5.3.2.2		
D	59.1.3.3		B	4.5.3.2.3		
D	59.1.4		B	4.5.3.2.4		
D	59.1.5	modified	B	4.5.3.3		
D	59.1.6	modified	C	11.6.3.1		
D	59.1.7		C	11.6.2		
D	59.1.7.1		C	11.6.2.1		
D	59.1.7.2	modified	C	11.6.2.2		
D	59.1.8		C	11.6.3.3		
D	59.1.9		B	4.5.3.4.1		
D	59.1.9.1.1		B	4.5.3.4.1.1.1		
D	59.1.9.1.2		B	4.5.3.4.1.1.2		
D	59.1.9.2		B	4.5.3.4.1.2		
D	59.1.9.3	modified	B	4.5.3.4.1.3		
D	59.1.9.4	modified	B	4.5.3.4.1.4		
D	59.1.9.5		C	11.6.4		
D	59.1.10		B	4.5.3.5		
D	59.1.11	for existing ships		--		
D	59.2	1st sentence last sentence	B E	4.5.6.1 16.3.2.4		
D	59.2.1		E	16.3.2.1		
D	59.2.2		E	16.3.2.2		
D	59.2.2.1		E	16.3.2.2.1		
D	59.2.2.2		E	16.3.2.2.2		
D	59.2.2.3		E	16.3.2.2.3		
D	59.3		B	4.5.4		
D	59.3.1		B	4.5.4.1		
D	59.3.2		B	4.5.2.6		
D	59.3.3		B	4.5.4.2		
D	59.4.1	for existing ships		--		

D	59.4.2		B	4.5.8		
D	59.4.3	modified	B	4.5.5.1.3		
D	59.4.3.1		B	4.5.5.1.3.1		
D	59.4.3.2		B	4.5.5.1.3.2		
D	59.4.3.3		B	4.5.5.1.3.3		
D	59.4.4.1		B	4.5.7.2.1		
D	59.4.4.2		B	4.5.7.2.2		
D	59.4.4.3		B	4.5.7.2.3		
D	59.5	slightly modified	B	4.5.7.1		
D	60.1	divided and modified	B C	4.5.5.1.1 10.8.1.1		
D	60.2	modified	C	10.8.1.2		
D	60.2.1		C	10.8.1.2.1		
D	60.2.2		C	10.8.1.2.2		
D	60.3	modified	B	4.5.5.4.1		
D	60.3.1		B	4.5.5.4.1.1		
D	60.3.2		B	4.5.5.4.1.2		
D	60.4	for existing ships		--		
D	60.4.1	for existing ships		--		
D	60.4.2	for existing ships		--		
D	60.5	for existing ships		--		
D	60.5.1	for existing ships		--		
D	60.5.2	for existing ships		--		
D	60.6	modified	B	4.5.5.1.2		
D	60.7	slightly modified	B	4.5.5.3.3		
D	60.8	modified	C	10.8.1.3		
D	61.1				14	2.1.1
D	61.2	1st sentence 2nd sentence			14 14	2.1.2 2.3.1
D	61.3				14	2.2.1.1
D	61.3.1				14	2.2.1.1.1
D	61.3.2				14	2.2.1.1.2
D	61.3.3				14	2.2.1.1.3
D	61.4				14	2.2.1.2
D	61.5				14	2.2.2.1
D	61.6.1	2nd sentence 1st sentence			14 14	2.2.2.2 2.3.2.1
D	61.6.2				14	2.3.2.2
D	61.7				14	2.3.2.3
D	61.8	2nd sentence 3rd and 4th sentence 1st sentence			14	2.2.2.3 2.3.3.1 2.3.3.2
D	61.9				14	2.3.4
D	61.10				14	2.1.3

D	62.1	only 1st sentence, modified modified, incl 1st sentence	B	4.5.5.3.2	15	2.1.2
D	62.2	modified, general sentence no change	B	4.5.5.3.1	15	2.1.3
D	62.2.1				15	2.1.3.1
D	62.2.2				15	2.1.3.2
D	62.2.3				15	2.1.3.3
D	62.2.4				15	2.1.3.4
D	62.3.1				15	2.2.1.2
D	62.3.2				15	2.2.1.3
D	62.4	slightly modified			15	2.2.1.1
D	62.5				15	2.3.1.1
D	62.6.1				15	2.2.2.1
D	62.6.2				15	2.2.2.2
D	62.6.3				15	2.2.2.3
D	62.7.1	slightly modified			15	2.2.3.1
D	62.7.2				15	2.2.1.4
D	62.7.3				15	2.2.3.2
D	62.7.4				15	2.2.3.3
D	62.8.1				15	2.3.1.2.1
D	62.8.2				15	2.3.1.2.2
D	62.9.1				15	2.3.1.3.1
D	62.9.2				15	2.3.1.3.2
D	62.10.1				15	2.3.1.4.1
D	62.10.2				15	2.3.1.4.2
D	62.10.3				15	2.2.4.1
D	62.10.4				15	2.2.4.2
D	62.10.5				15	2.2.4.3
D	62.10.6				15	2.2.4.4
D	62.10.7				15	2.2.4.5
D	62.10.8				15	2.3.1.4.3
D	62.10.9				15	2.3.1.4.4
D	62.11.1				15	2.3.2.1
D	62.11.2.1	modified			15	2.3.2.2
D	62.11.2.2				15	2.3.2.3
D	62.11.3				15	2.3.2.4
D	62.11.4				15	2.3.2.5
D	62.11.5	modified			15	2.3.2.6
D	62.12	slightly modified	B	4.5.3.4.2		
D	62.13		B	4.5.6.3		
D	62.13.1		B	4.5.6.3.1		
D	62.13.2		B	4.5.6.3.2		
D	62.13.3		B	4.5.6.3.3		
D	62.13.4.1				15	2.3.2.7

D	62.13.4.2				15	2.3.2.8
D	62.14.1	1st sentence		11.6.3.4		
D	62.14.1.1			11.6.3.4.1		
D	62.14.1.2			11.6.3.4.2		
D	62.14.2	as last sentence		11.6.3.4		
D	62.15				15	2.4.1
D	62.16.1				15	2.4.2.1
D	62.16.1.1				15	2.4.2.1.1
D	62.16.1.2				15	2.4.2.1.2
D	62.16.2				15	2.4.2.2
D	62.16.3				15	2.4.2.3
D	62.16.3.1				15	2.4.2.3.1
D	62.16.3.2				15	2.4.2.3.2
D	62.17				15	2.4.2.4
D	62.18				15	2.4.2.5
D	62.19.1				15	2.4.3.1
D	62.19.1.1				15	2.4.3.1.1
D	62.19.1.2				15	2.4.3.1.2
D	62.19.1.3				15	2.4.3.1.3
D	62.19.1.4				15	2.4.3.1.4
D	62.19.1.5				15	2.4.3.1.5
D	62.19.1.6				15	2.4.3.1.6
D	62.19.1.7				15	2.4.3.1.7
D	62.19.1.8				15	2.4.3.1.8
D	62.19.1.9				15	2.4.3.1.9
D	62.19.2				15	2.4.3.2
D	62.19.2.1				15	2.4.3.2.1
D	62.19.2.2				15	2.4.3.2.2
D	62.19.2.3				15	2.4.3.2.3
D	62.19.3				15	2.3.1.5.1
D	62.19.4				15	2.3.1.5.2
D	62.19.5				15	2.3.1.6
D	62.19.6				15	2.4.3.3
D	62.19.7				15	2.2.4.6
D	62.19.8				15	2.4.3.4
D	62.20	for existing ships		--		
D	62.20.1	for existing ships		--		
D	62.20.2	for existing ships		--		
D	62.21				15	2.4.4
D	63.1			10.9.1		
D	63.1.1	modified, (Halon deleted)		10.9.1.1		
D	63.1.1.1	modified		10.9.1.1.1		
D	63.1.1.2			10.9.1.1.2		
D	63.1.2	modified		10.9.1.2		

D	63.1.3	modified		10.9.1.3		
D	63.2			10.9.2		

ANNEX 2

Cross-reference list of SOLAS requirements

new chapter II-2 SOLAS'74 (2000 Amendments)
versus
existing chapter II-2 SOLAS'74 and related IMO-papers

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
A	1.1				heading
A	1.1.1	A	1.1.1		modified
A	1.1.2	A	1.1.3		
A	1.1.2.1	A	1.1.3.1		
A	1.1.2.2	A	1.1.3.2		modified
A	1.1.2.3	A	1.1.3.3		
A	1.1.3	A	1.1.2		
A	1.1.3.1	A	1.1.2.1		
A	1.1.3.2	A	1.1.2.2		
A	1.2				heading
A	1.2.1	A	1.2		modified
A	1.2.2		new	MSC72/23 MSC72/WP.14	see paragraph 12.10 modified by para 1 annex 1
A	1.2.2.1		new		
A	1.2.2.2		new		
A	1.2.2.3		new		
A	1.2.2.4		new		
A	1.3				heading
A	1.3.1	A	1.3.1		sentences 1 and 2
A	1.3.2	A	1.3.1	MSC/Circ.847	sentence 3, int.to 1.3.1
A	1.4				heading
A	1.4.1	A	1.4.1		modified
A	1.4.2	A	1.4.2		
A	1.4.2.1	A	1.4.2.1		
A	1.4.2.2	A	1.4.2.2		
A	1.5		new		heading
A	1.5.1		new		
A	1.5.2		new		

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
A	1.6				heading
A	1.6.1	D	55.1		modified
A	1.6.2	D	55.2		modified
A	1.6.2.1		new	MSC/Circ.847	Int. (1) to 55.2
A	1.6.2.1.1		new	MSC/Circ.847	Int. (1.1) to 55.2
A	1.6.2.1.2		new		
A	1.6.2.1.3		new	MSC/Circ.847	Int. (1.2) to 55.2
A	1.6.2.2		new	MSC/Circ.847	Int. (3) to 55.2
A	1.6.3		new	MSC/Circ.847	Int. (2) to 55.2
A	1.6.4	D	55.4		modified
A	1.6.5	D	55.3		modified
A	1.6.6	D	55.6		modified, slightly
A	1.6.7		new	MSC72/WP.14	added by para 2 annex 1 and see new 4.5.10.1.3
A	2.1				heading
A	2.1.1		new		
A	2.1.1.1		new		
A	2.1.1.2		new		
A	2.1.1.3		new		
A	2.1.1.4		new		
A	2.1.1.5		new		
A	2.2				heading
A	2.2.1		new		
A	2.2.1.1	A	2.2.1		modified
A	2.2.1.2	A	2.2.2		
A	2.2.1.3	A	2.2.3		
A	2.2.1.4	A	2.2.4		
A	2.2.1.5	A	2.2.5		
A	2.2.1.6	A	2.2.6		modified, slightly
A	2.2.1.7	A	2.2.7		
A	2.2.1.8	A	2.2.8		
A	2.3				heading
A	2.3.1		new		
A	2.3.2		new		
A	2.3.3		new		
A	3	A	3		modified, slightly
A	3.1	A	3.10		

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
A	3.2	A	3.3		
A	3.2.1	A	3.3.1		
A	3.2.2	A	3.3.2		
A	3.2.3	A	3.3.4		
A	3.2.4	A	3.3.3		
A	3.2.5	A	3.3.5		
A	3.3		new		part of R. 40.7
A	3.4	A	3.4		
A	3.4.1	A	3.4.3		
A	3.4.2	A	3.4.2		
A	3.4.3	A	3.4.1		
A	3.4.4	A	3.4.4		
A	3.5	A	3.24		
A	3.6	A	3.32		slightly modified
A	3.7		new		
A	3.8	A	3.13	MSC/Circ.847	modified incl. int. to 3.13
A	3.9	A	3.22-1		
A	3.9.1	A	3.22-1.1		
A	3.9.2	A	3.22-1.2		
A	3.9.3	A	3.22-1.3		
A	3.9.4	A	3.22-1.4		
A	3.9.5	A	3.22-1.5		
A	3.9.6	A	3.22-1.6		
A	3.9.7	A	3.22-1.7		
A	3.9.8	A	3.22-1.8		
A	3.9.9	A	3.22-1.9		
A	3.9.10	A	3.22-1.10		
A	3.10	A	3.5		
A	3.11	A	3.30		modified
A	3.12	A	3.16		modified
A	3.13	A	new		
A	3.14	A	3.27		modified
A	3.15	A	3.1		2nd sentence only
A	3.16	A	3.6		modified, slightly
A	3.17	A	3.22-2		
A	3.18	A	3.22		modified

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
A	3.19	A	3.28	MSC72/WP.14	modified by para 3 annex 1
A	3.20	A	3.29		
A	3.21	A	3.25		
A	3.22		new		
A	3.23	A	3.35		
A	3.24		new	MSC72/WP.14	added by para 4 annex 1
A	3.25	A	3.31		modified
A	3.26		new	Res. A.855(20)	annex, paragraph 1.1
A	3.27		new	Res. A.855(20)	annex, paragraph 1.2
A	3.28	A	3.26		
A	3.29	A	3.8		
A	3.30	A	3.20		
A	3.31	A	3.19		
A	3.31.1	A	3.19.1		
A	3.31.2	A	3.19.2		
A	3.31.3	A	3.19.3	MSC/Circ.847	modified incl. int. to 3.19
A	3.32	A	3.33		(or 3.9 modified)
A	3.33	A	3.1		1st sentence only
A	3.34	A	3.21		
A	3.35	A	3.15	MSC/Circ.847	modified incl. int. to 3.15
A	3.36		new		
A	3.37		new	MSC72/WP.14	added by para 5 annex 1
A	3.38		new		
A	3.39	A	3.11		
A	3.40	A	3.23		
A	3.40.1	A	3.23.1		"all" deleted
A	3.40.2	A	3.23.2		"all" deleted
A	3.40.3	A	3.23.3		"all" deleted
A	3.40.4	A	3.23.4		"all" deleted
A	3.40.5	A	3.23.5		"all" deleted
A	3.40.6	A	3.23.6		"all" deleted
A	3.40.7	A	3.23.7		"all" deleted
A	3.41	A	3.14		modified
A	3.42	A	3.34		

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
A	3.43	A	3.7		modified
A	3.44		new	MSC/Circ.847	int. (1) to 26.2.2(8)
A	3.45	A	3.12		
A	3.46	A	3.18		modified
A	3.47	A	3.2		modified
A	3.48		new	MSC72/WP.14	added by para 6 annex 1
A	3.49		new		
A	3.50	A	3.17		
B	4.1		new		
B	4.1.1		new		
B	4.1.2		new		
B	4.1.3		new		
B	4.1.4		new		
B	4.1.5		new		
B	4.1.6		new		
B	4.2	A	15		
B	4.2.1	A	15.1		
B	4.2.1.1	A	15.1.1		
B	4.2.1.2	A	15.1.2		
B	4.2.1.3		(15.1.3)	MSC/Circ 847	int. to 15.1.3
B	4.2.1.3.1			MSC/Circ 847	int. .1
B	4.2.1.3.2			MSC/Circ 847	int. .2
B	4.2.1.3.3			MSC/Circ 847	int. .3
B	4.2.1.3.4			MSC/Circ 847	int. .4
B	4.2.1.4	A	15.1.4		
B	4.2.2	A	15.2		
B	4.2.2.1	A	15.2.1		
B	4.2.2.2	A	15.2.2		
B	4.2.2.3				heading
B	4.2.2.3.1	A	15.6		
B	4.2.2.3.2	A	15.2.3		
B	4.2.2.3.3	A	15.2.4		1st sentence only, modified
B	4.2.2.3.4	A	15.2.5	MSC/Circ 847	modified, ints. (1) and (2) to 15 2 5
B	4.2.2.3.5	A	15.2.6		
B	4.2.2.3.5.1	A	15.2.6.1		

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
B	4.2.2.3.5.1.1	A	15.2.6.1.1		slightly modified
B	4.2.2.3.5.1.2	A	15.2.6.1.2		
B	4.2.2.3.5.1.3	A	15.2.6.1.3		
B	4.2.2.3.5.2	A	15.2.6.2		modified
B	4.2.2.3.5.2.1	A	15.2.6.2.1		
B	4.2.2.3.5.2.2	A	15.2.6.2.2		
B	4.2.2.3.5.3	A	15.2.6.3		
B	4.2.2.4	A	15.2.7	MSC/Circ 847	modified, int. (1) to 15.2.7
B	4.2.2.5				heading
B	4.2.2.5.1	A	15.2.8	MSC/Circ 847	modified, int. to 15.2.8
B	4.2.2.5.2	A	15.2.9		
B	4.2.2.5.3	A	15.2.11		modified
B	4.2.2.5.4		new	MSC69/6/2	see annex, item 2, modified
B	4.2.2.5.5		new	MSC69/6/2	see annex, item 4, modified
B	4.2.2.5.6	A	18.2.2		
B	4.2.2.6				heading
B	4.2.2.6.1	A	15.2.10		
B	4.2.2.6.2	A	15.2.4		2nd sentence only
B	4.2.3				heading
B	4.2.3.1	A	15.3		
B	4.2.3.1.1	A	15.3.1		
B	4.2.3.1.2	A	15.3.2		
B	4.2.3.2		new	MSC/Circ 847	int. (1) to 15.3
B	4.2.4	A	15.4	MSC/Circ 847	modified, int. (2) to 15.3
B	4.2.5	A	15.5		
B	4.2.5.1	A	15.5.1		
B	4.2.5.2	A	15.5.2		
B	4.3	C	51	MSC/Circ 847	modified, int. to 51
B	4.4				heading
B	4.4.1	A	18.3		
B	4.4.2	A	18.5		slightly modified
B	4.4.3	A	18.6		
B	4.4.4	B C	34.8 49.3		modified

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
B	4.5				heading
B	4.5.1	D	56		heading modified
B	4.5.1.1	D	56.1	MSC72/WP.14 MSC/Circ 847	modified by para 7 annex 1, modified by MSC72/WP.14int. to 56.1
B	4.5.1.2	D	56.2		
B	4.5.1.3	D	56.3	MSC/Circ 847	modified, int. .1 to 56.3
B	4.5.1.4	D	56.4		
B	4.5.1.4.1	D	56.4.1	MSC/Circ 847	modified, int. to 56.4.1
B	4.5.1.4.2	D	56.4.2	MSC/Circ 847	modified, int. to 56.4.2
B	4.5.1.4.3	D	56.4.3		slightly modified
B	4.5.1.4.4	D	56.4.4		modified
B	4.5.1.5	D	56.5		modified
B	4.5.1.6	D	56.6	MSC/Circ 847	modified, int. to 56.6
B	4.5.2				heading
B	4.5.2.1	D	56.8.1		
B	4.5.2.2	D	56.8.2		modified
B	4.5.2.3	D	56.8.3		
B	4.5.2.4	D	56.9		
B	4.5.2.4.1	D	56.9.1		
B	4.5.2.4.2	D	56.9.2		
B	4.5.2.5	D	58.5		
B	4.5.2.6	D	59.3.2		
B	4.5.3	D	59.1		heading
B	4.5.3.1	D	59.1.1		
B	4.5.3.2				heading
B	4.5.3.2.1	D	59.1.3.1		
B	4.5.3.2.2	D	59.1.3.2		
B	4.5.3.2.3	D	59.1.3.3		
B	4.5.3.2.4	D	59.1.4		
B	4.5.3.3	D	59.1.5	MSC/Circ 847	modified, int. (2) to 59.1.5
B	4.5.3.4				heading
B	4.5.3.4.1	D	59.1.9		
B	4.5.3.4.1.1.1	D	59.1.9.1.1		

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
B	4.5.3.4.1.1.2	D	59.1.9.1.2		
B	4.5.3.4.1.2	D	59.1.9.2		
B	4.5.3.4.1.3	D	59.1.9.3	MSC72/WP.14 MSC/Circ 847	modified by para 8 annex 1, mod. by int. (1) to 59.1.9.4
B	4.5.3.4.1.4	D	59.1.9.4	MSC72/WP.14 MSC/Circ 847	modified by para 10 annex 1 mod. by MSC72/WP.14 int. (1) to 59.1.9.4
B	4.5.3.4.2	D	62.12		
B	4.5.3.5	D	59.1.10		
B	4.5.4	D	59.3		heading
B	4.5.4.1	D	59.3.1		
B	4.5.4.2	D	59.3.3		
B	4.5.5	D	62		heading
B	4.5.5.1				heading
B	4.5.5.1.1	D	60.1		modified
B	4.5.5.1.2	D	60.6		
B	4.5.5.1.3	D	59.4.3		modified
B	4.5.5.1.3.1	D	59.4.3.1		
B	4.5.5.1.3.2	D	59.4.3.2		
B	4.5.5.1.3.3	D	59.4.3.3		
B	4.5.5.2	D	55.5		modified
B	4.5.5.2.1	D D	55.5.1 55.5.3		modified and combined
B	4.5.5.2.2	D D	55.5.4 55.5.4.2		modified and combined
B	4.5.5.3				heading
B	4.5.5.3.1	D D D D	62.2 62.2.1 62.2.2 62.2.4		partly, modified and combined
B	4.5.5.3.2	D	62.1		1st sentence only, modified
B	4.5.5.3.3	D	60.7		
B	4.5.5.4				heading

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
B	4.5.5.4.1	D	60.3		modified
B	4.5.5.4.1.1	D	60.3.1		
B	4.5.5.4.1.2	D	60.3.2		
B	4.5.6	D	59.2		modified heading
B	4.5.6.1	D	59.2		modified
B	4.5.6.2		new		
B	4.5.6.3	D	62.13		
B	4.5.6.3.1	D	62.13.1		
B	4.5.6.3.2	D	62.13.2		
B	4.5.6.3.3	D	62.13.3		
B	4.5.7				heading
B	4.5.7.1	D	59.5		slightly modified
B	4.5.7.2				heading
B	4.5.7.2.1	D	59.4.4.1		
B	4.5.7.2.2	D	59.4.4.2		
B	4.5.7.2.3	D	59.4.4.3		
B	4.5.8	D	59.4.2		
B	4.5.9		new	MSC/Circ 847	ints. (1) and (2) to 60
B	4.5.10		new		heading
B	4.5.10.1		new	MSC72/WP.14	added by para 14 annex 1
B	4.5.10.1.1		new	MSC72/WP.14	added by para 14 annex 1
B	4.5.10.1.2		new	MSC72/WP.14	added by para 14 annex 1
B	4.5.10.1.3		new	MSC72/WP.14	added by para 14 annex 1
B	4.5.10.1.4		new	MSC72/WP.14	added by para 14 annex 1
B	5.1		new		
B	5.1.1		new		
B	5.1.2		new		
B	5.1.3		new		
B	5.2				heading
B	5.2.1				heading
B	5.2.1.1	A	16.9	MSC/Circ 847	modified, int. to 16.9
B	5.2.1.2	A	16.10		1st and 2nd sentence only

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
B	5.2.1.3	A	32.1.6		1st and 3rd sentence, modif.
B	5.2.2				heading
B	5.2.2.1	A A	11.4 11.4.1		
B	5.2.2.2	A A B	11.4.4 16.10 32.1.6		11.4.4 : 1st sentence 16.10: 3rd sentence 32.1.6: 2nd sentence
B	5.2.2.3	A A	11.4 11.4.4	MSC72/WP.14 MSC/Circ 847	modified by para 15 annex 1 modified by int. to 11.4.5
B	5.2.2.4	A	16.10		modified sentence 1 and 2
B	5.2.2.5	A	11.5		2nd and 3rd sentence, modif.
B	5.2.3				heading
B	5.2.3.1		new		similar 17.3.3, 6.7
B	5.2.3.2		new		
B	5.3				heading
B	5.3.1		34		heading
B	5.3.1.1	B B C	34.1 34.2 50.3.1		34.1: 1st sentence partly
B	5.3.1.2				heading
B	5.3.1.2.1	B	34.1		modified
B	5.3.1.2.2	C	50.1, 50.2		modified
B	5.3.1.2.2.1	C	50.1		modified
B	5.3.1.2.2.2	C	50.2		modified
B	5.3.2				heading
B	5.3.2.1				heading
B	5.3.2.1.1	B B	25.1.3 34.4	MSC72/WP.14	modified by para 17 annex 1 see also new regulations 9.2.2.3.4.3 and 9.2.2.3.4.4
B	5.3.2.1.2	C C	50.3.2 50.3.3	 MSC72/WP.14	modified, and also modified by para 18

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
					annex 1
B	5.3.2.2	B C	34.5 50.3.2	MSC/Circ 847	modified; int. to 34.5 modified
B	5.3.2.3		new		(opening sentence)
B	5.3.2.3.1	B C	34.4 50.3.3		34.4: 1st sentence, modified
B	5.3.2.3.2	B	34.4		2nd sentence, modified
B	5.3.2.4	B C	34.3 49.1		modified
B	5.3.2.4.1		new		
B	5.3.2.4.1.1	B	34.3.1		modified
B	5.3.2.4.1.2	B	34.3.2		modified
B	5.3.2.4.2	C	49.1		modified
B	5.3.2.4.2.1	C	49.1		modified
B	5.3.2.4.2.2	C	49.1		modified
B	5.3.3	B	34.6	MSC/Circ 847	modified; ints. (1) and (2) to34.6
B	6.1		new		
B	6.2	B C	34.7 49.2		
B	6.3	B C	34.8 49.3		modified
C	7.1		new		
C	7.1.1		new		
C	7.1.2		new		
C	7.1.3		new		
C	7.2				heading
C	7.2.1		new		
C	7.2.2	A B	14.1 36.1.1		modified modified
C	7.2.3	A	13.2.3		
C	7.3				heading
C	7.3.1	A	14.3		modified
C	7.3.2	A A	13.1.13 13-1.1.10		13.1.13: 1st sentence
C	7.4				heading
C	7.4.1	A	11.8, 14.1		each partly

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
C	7.4.1.1	A	14.1		partly
C	7.4.1.2	A	11.8		partly
C	7.4.1.2.1	A	11.8.1		
C	7.4.1.2.2	A	11.8.2		
C	7.4.2	A	14.2		
C	7.5				heading
C	7.5.1	A	13.2.2		modified
C	7.5.2	B	36.2		sentence 3, 4, 5; modified
C	7.5.3	B	36.1		
C	7.5.3.1	B	36.1.1		modified
C	7.5.3.2	B	36.1.2		modified
C	7.5.4	B	40.7		partly, see also R. 3.3
C	7.5.5	C	52.1, 52.2, 52.3		modified (opening sentence)
C	7.5.5.1	C	52.1		modified
C	7.5.5.2	C	52.2		modified
C	7.5.5.3	C	52.3		modified
C	7.6	B	40.2		
C	7.7	A B C	13.2.1 40.1 52.1, 52.2, 52.3		modified
C	7.8				heading
C	7.8.1	B	40.6		1st sentence
C	7.8.2	B	35.2		
C	7.8.3	B	40.6		2nd sentence
C	7.9				heading
C	7.9.1	B	40.3		
C	7.9.2	B	40.7.2		modified
C	7.9.3	B	40.7.1		
C	7.9.4	B	40.4		
C	8.1		new		
C	8.2	A	16.6		slightly modified
C	8.3				heading
C	8.3.1	A	11.1		
C	8.3.2	A	11.2.2	MSC/Circ. 847	1st sentence, modified

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
					2nd sent., int. to 11.2.2, mod.
C	8.3.3	A A	11.4.2 11.5		11.5: 1st sentence
C	8.3.4	A	11.5		2nd and 3rd sentence
C	8.4	B B B C	35.1 35.1.1 35.1.2 50.3.4		
C	8.5	B	32.1.7		modified
C	9.1		new		
C	9.1.1		new		see also new regs. 2.2.1.1 and 2.2.1.2
C	9.1.2		new		
C	9.1.3		new		
C	9.2				heading
C	9.2.1	(A)	(2.2.1, 2.2.2)		new, similar to reg. 2
C	9.2.2				heading
C	9.2.2.1				heading
C	9.2.2.1.1.1	B	24.1.1		
C	9.2.2.1.1.2	B	24.1.2		
C	9.2.2.1.2	B	24.2		
C	9.2.2.1.3	B	24.3		
C	9.2.2.1.4	B	24.4		modified
C	9.2.2.1.5.1	B	24.5.1	MSC/Circ. 847	modified, int. (2) to 24.5.1
C	9.2.2.1.5.2	B	24.5.2		
C	9.2.2.2	B	25		heading
C	9.2.2.2.1	B	25.1.1		
C	9.2.2.2.2	B	25.1.2, 25.2		
C	9.2.2.2.2.1	B	25.2.1		
C	9.2.2.2.2.2		25.2.2	MSC/Circ. 847	modified, int. (1) and (2) to 25.2.2
C	9.2.2.2.3	B	25.3		modified
C	9.2.2.3	B	26		heading
C	9.2.2.3.1	B	26.1		

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
C	9.2.2.3.2	B	26.2		
C	9.2.2.3.2.1	B	26.2.1		
C	9.2.2.3.2.2	B	26.2.2	MSC/Circ. 847	modified, int.(1) to 26.2; int.(1) to 26.2.2
C	9.2.2.3.2.2 (1)	B	26.2.2 (1)		slightly modified
C	9.2.2.3.2.2 (2)	B	26.2.2 (2)	MSC/Circ. 847	modified, int. to 26.2.2 (2)
C	9.2.2.3.2.2 (3)	B	26.2.2 (3)		modified
C	9.2.2.3.2.2 (4)	B	26.2.2 (4)		slightly modified
C	9.2.2.3.2.2 (5)	B	26.2.2 (5)	MSC/Circ. 847	modified, int. (2) to 26.2
C	9.2.2.3.2.2 (6)	B	26.2.2 (6)		
C	9.2.2.3.2.2 (7)	B	26.2.2 (7)		
C	9.2.2.3.2.2 (8)	B	26.2.2 (8)		modified, "saunas" added
C	9.2.2.3.2.2 (9)	B	26.2.2 (9)		
C	9.2.2.3.2.2 (10)	B	26.2.2 (10)		
C	9.2.2.3.2.2 (11)	B	26.2.2 (11)		
C	9.2.2.3.2.2 (12)	B	26.2.2 (12)		
C	9.2.2.3.2.2 (13)	B	26.2.2 (13)		
C	9.2.2.3.2.2 (14)	B	26.2.2 (14)		modified
C	9.2.2.3.2.3	B	26.2.3		
C	9.2.2.3.2.4	B	26.2.4		
C	9.2.2.3.2.5	B	26.2.5		
C	table 9.1	B	table 26.1		
C	table 9.2	B	table 26.2		
C	notes a-d	B	notes a-d		no change

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
C	9.2.2.3.3	B	26.3		
C	9.2.2.3.4		new	MSC/Circ. 847	heading
C	9.2.2.3.4.1		new	MSC/Circ. 847	int. (2) to 26.2.2 (8)
C	9.2.2.3.4.2		new	MSC/Circ. 847	int. (3) to 26.2.2 (8)
C	9.2.2.3.4.3		new	MSC/Circ. 847	int. (4) to 26.2.2 (8)
C	9.2.2.3.4.4		new	MSC/Circ. 847	int. (5) to 26.2.2 (8)
C	9.2.2.3.4.5		new	MSC/Circ. 847	int. (6) to 26.2.2 (8)
C	9.2.2.3.4.6		new	MSC/Circ. 847	int. (7) to 26.2.2 (8)
C	9.2.2.4	B	27		heading
C	9.2.2.4.1	B	27.1		
C	9.2.2.4.2	B	27.2		
C	9.2.2.4.2.1	B	27.2.1		
C	9.2.2.4.2.2	B	27.2.2	MSC/Circ. 847	modified, ints. to 27.2 and 27.2.2
C	9.2.2.4.2.2 (1)	B	27.2.2 (1)		slightly modified
C	9.2.2.4.2.2 (2)	B	27.2.2 (2)		
C	9.2.2.4.2.2 (3)	B	27.2.2 (3)		
C	9.2.2.4.2.2 (4)	B	27.2.2 (4)	MSC/Circ. 847	modified, int. to 27.2.2 (4)
C	9.2.2.4.2.2 (5)	B	27.2.2 (5)		
C	9.2.2.4.2.2 (6)	B	27.2.2 (6)		
C	9.2.2.4.2.2 (7)	B	27.2.2 (7)	MSC/Circ. 847	modified, int. to 44.2.2 (7)
C	9.2.2.4.2.2 (8)	B	27.2.2 (8)		
C	9.2.2.4.2.2 (9)	B	27.2.2 (9)		modified, "saunas" added
C	9.2.2.4.2.2 (10)	B	27.2.2 (10)	MSC/Circ. 847	modified, int.to 27.2 or int (2) to 26.2
C	9.2.2.4.2.2 (11)	B	27.2.2 (11)		modified
C	9.2.2.4.2.3	B	27.2.3		

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
C	9.2.2.4.2.4	B	27.2.4		slightly modified
C	9.2.2.4.3	B	27.3		
C	9.2.2.4.4	B	27.4		slightly modified
C	9.2.2.4.5		new	MSC/Circ. 847	int. to 27.2.2 (9)
C	table 9.3	B	table 27.1		
C	table 9.4	B	table 27.2		
C	notes a-f	B	notes a-f		
C	note *	B	note *	MSC/Circ. 847	int. (2) to tables 27.1/27.2 int. to table 44.1
C	9.2.2.5	B	29		heading
C	9.2.2.5.1	B	29.1		modified, partly
C	9.2.2.5.1.1	B	29.1.1	MSC/Circ. 847	modified, int. to 29.1.1
C	9.2.2.5.1.2	B	29.1.2		
C	9.2.2.5.2	B	29.3	MSC/Circ. 847	modified, ints. (1) and (2) to 29.3
C	9.2.3				heading
C	9.2.3.1				heading
C	9.2.3.1.1	C	42.5		
C	9.2.3.1.1.1	C	42.5.1		
C	9.2.3.1.1.2	C	42.5.2		
C	9.2.3.1.1.3	C	42.5.3		
C	9.2.3.1.2	C	42.6		
C	9.2.3.2	C	43		heading, modified
C	9.2.3.2.1	C	43.1		
C	9.2.3.2.2	C	43.2		
C	9.2.3.2.3	C	43.3		
C	9.2.3.2.4	C	43.4		
C	9.2.3.3	C	44		heading
C	9.2.3.3.1	C	44.1		
C	9.2.3.3.2	C	44.2		
C	9.2.3.3.2.1	C	44.2.1		
C	9.2.3.3.2.2	C	44.2.2	MSC/Circ. 847	modified, int.(1) to 44.2.2; int.(1) to 44.2
C	9.2.3.3.2.2 (1)	C	44.2.2. (1)		slightly modified
C	9.2.3.3.2.2	C	44.2.2. (2)		

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
	(2)				
C	9.2.3.3.2.2 (3)	C	44.2.2. (3)		
C	9.2.3.3.2.2 (4)	C	44.2.2. (4)	MSC/Circ. 847	modified, int. to 44.2.2 (4)
C	9.2.3.3.2.2 (5)	C	44.2.2. (5)		
C	9.2.3.3.2.2 (6)	C	44.2.2. (6)		
C	9.2.3.3.2.2 (7)	C	44.2.2. (7)	MSC/Circ. 847	modified, int. to 44.2.2 (7)
C	9.2.3.3.2.2 (8)	C	44.2.2. (8)		
C	9.2.3.3.2.2 (9)	C	44.2.2. (9)		modified, "saunas" added
C	9.2.3.3.2.2 (10)	C	44.2.2. (10)	MSC/Circ. 847	modified, int.(2) to 44.2 or int.(2) to 26.2
C	9.2.3.3.2.2 (11)	C	44.2.2. (11)		modified
C	table 9.5	C	table 44.1		
C	table 9.6	C	table 44.2		
C	notes a-i	C	notes a-i		notes h and i: sl. modified
C	note *	C	note *	MSC/Circ. 847	modified, ints. to tables 44.1 and 44.2
C	9.2.3.3.3	C	44.3		
C	9.2.3.3.4	C	44.4		
C	9.2.3.3.5		new	MSC/Circ. 847	int. to 44.2.2 (9)
C	9.2.3.4	C	46		heading
C	9.2.3.4.1	C	46.1		
C	9.2.3.4.2	C	46.2	MSC/Circ. 847	modified, int. to 46.2
C	9.2.4				heading
C	9.2.4.1	D	57.1		modified
C	9.2.4.2	D	58		
C	9.2.4.2.1	D	58.1		slightly modified
C	9.2.4.2.2	D	58.2		
C	9.2.4.2.2.1	D	58.2.1		

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
C	9.2.4.2.2.2	D	58.2.2	MSC/Circ. 847	modified, int.(1) to 58.2.2; int.(1) to 58.2
C	9.2.4.2.2.2 (1)	D	58.2.2 (1)		slightly modified
C	9.2.4.2.2.2 (2)	D	58.2.2 (2)		
C	9.2.4.2.2.2 (3)	D	58.2.2 (3)		
C	9.2.4.2.2.2 (4)	D	58.2.2 (4)	MSC/Circ. 847	modified, int. to 58.2.2.(4)
C	9.2.4.2.2.2 (5)	D	58.2.2 (5)		
C	9.2.4.2.2.2 (6)	D	58.2.2 (6)		
C	9.2.4.2.2.2 (7)	D	58.2.2 (7)	MSC/Circ. 847	modified, int. to 58.2.2.(7)
C	9.2.4.2.2.2 (8)	D	58.2.2 (8)		
C	9.2.4.2.2.2 (9)	D	58.2.2 (9)		modified, "saunas" added
C	9.2.4.2.2.2 (10)	D	58.2.2 (10)	MSC/Circ. 847	modified, int.(2) to 58.2 or int.(2) to 26.2
C	9.2.4.2.3	D	58.3		
C	9.2.4.2.4	D	58.4		slightly modified
C	9.2.4.2.5	D	56.7	MSC/Circ. 847	modified, int. to 56.7
C	9.2.4.2.6	D	57.2		
C	9.2.4.2.7		new	MSC/Circ. 847	int. to 58.2.2 (9)
C	table 9.7	D	table 58.1		
C	table 9.8	D	table 58.2		
C	notes a-e	D	notes a-e		note h: slightly modified
C	note *	D	note *	MSC/Circ. 847	ints. to tables 58.1 and 58.2
C	9.3				heading
C	9.3.1	A	18.1.1	MSC/Circ. 847	modified, int.(1).1.2 to 18.2.1
C	9.3.2	A A	18.1.2 18.2.1	MSC/Circ. 847	modified int. (1).2 to 18.2.1
C	9.3.2.1		new	MSC/Circ. 847	int. (1).2.1 to 18.2.1

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
C	9.3.2.2		new	MSC/Circ. 847	int. (1).2.2 to 18.2.1
C	9.3.3	A	18.2.1	MSC/Circ. 847	modified, int. (2) to18.2.1
C	9.3.4	B	26.4	MSC/Circ. 847	modified, int. (1) and (2) to 26.4
C	9.4				heading
C	9.4.1				heading
C	9.4.1.1	B	30		heading
C	9.4.1.1.1	B	30.1		
C	9.4.1.1.2	B	30.2		modified
C	9.4.1.1.3	B	30.3		
C	9.4.1.1.4	B	30.4		
C	9.4.1.1.4.1	B	30.4.1		
C	9.4.1.1.4.2	B	30.4.2		
C	9.4.1.1.4.3	B	30.4.3		modified
C	9.4.1.1.4.4	B	30.4.4		
C	9.4.1.1.4.5	B	30.4.5		
C	9.4.1.1.4.6	B	30.4.6		modified
C	9.4.1.1.4.7	B	30.4.7		modified
C	9.4.1.1.4.8	B	30.4.8		modified
C	9.4.1.1.4.9	B	30.4.9		modified
C	9.4.1.1.4.10	B	30.4.10		
C	9.4.1.1.4.11	B	30.4.11		
C	9.4.1.1.4.12	B	30.4.12		slightly modified
C	9.4.1.1.4.13	B	30.4.13		
C	9.4.1.1.4.14	B	30.4.14		
C	9.4.1.1.4.15	B	30.4.15		slightly modified
C	9.4.1.1.4.15.1	B	30.4.15.1		
C	9.4.1.1.4.15.2	B	30.4.15.2		
C	9.4.1.1.4.15.3	B	30.4.15.3		
C	9.4.1.1.5	B	30.5		slightly modified
C	9.4.1.1.6	B	30.6		
C	9.4.1.1.7	B	30.7	MSC/Circ. 847	modified, int. to 30.7
C	9.4.1.1.8	A	16.8		
C	9.4.1.2	B	31		heading
C	9.4.1.2.1	B	31.1.1	MSC/Circ. 847	sl. modified, int. to 31.1.1

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
C	9.4.1.2.2	B	31.1.2		
C	9.4.1.2.3	B	31.2		
C	9.4.1.2.4	B	31.3		slightly modified
C	9.4.1.2.4.1	B	31.3.1		
C	9.4.1.2.4.2	B	31.3.2		
C	9.4.1.3	B	33		heading
C	9.4.1.3.1	B	33.1		modified
C	9.4.1.3.2	B	33.2		
C	9.4.1.3.3	B	33.3		
C	9.4.1.3.3.1		new	MSC/Circ. 847	int. to 33.3
C	9.4.1.3.3.2		new	MSC/Circ. 847	int. to 33.3
C	9.4.2	C	47		heading
C	9.4.2.1	C	47.1		modified
C	9.4.2.2	C	47.2		
C	9.4.2.3	C	47.3	MSC/Circ. 847	modified, ints. (1) and (2) to 47.3
C	9.4.2.4	C	47.4		
C	9.5				heading
C	9.5.1				heading
C	9.5.1.1		new		
C	9.5.2				heading
C	9.5.2.1	A	11.2.1		
C	9.5.2.2	A	11.2.2		1st sentence only
C	9.5.2.3	A A	11.4.3 11.5		11.5: 1st sentence only
C	9.5.2.4	A	11.5		2nd and 3rd sentences, modif.
C	9.5.2.5	A	11.2.3		modified
C	9.5.2.6	A	11.3		
C	9.6				heading
C	9.6.1	B B	37.1.2.1, 38-1.1.2		
C	9.6.2	B	37.1.2.2		
C	9.6.3	B	38-1.1.3		
C	9.6.4	B	37.1.2.3		
C	9.6.5	A	18.2.4		
C	9.7	B	32		heading

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
C	9.7.1				heading
C	9.7.1.1	A	16.1		slightly modified
C	note *		new	MSC/Circ. 847	int. (1) to 16.2
C	9.7.1.1.1	A	16.1.1		
C	9.7.1.1.2	A	16.1.2		
C	9.7.1.1.3	A	16.1.3		
C	9.7.1.2	A	16.11		
C	9.7.1.2.1	A	16.11.1		
C	9.7.1.2.2	A	16.11.2		
C	9.7.2				heading
C	9.7.2.1	A	16.3	MSC/Circ. 847	modified, ints. (1) and (2) to 16.3
C	9.7.2.1.1.1	A	16.3.1.1		
C	9.7.2.1.1.2	A	16.3.1.2		
C	9.7.2.1.1.3	A	16.3.1.3		
C	9.7.2.1.1.4	A	16.3.1.4		modified
C	9.7.2.1.2.1	A	16.3.2.1		
C	9.7.2.1.2.2	A	16.3.2.2		
C	9.7.2.2	A	16.4		modified
C	9.7.2.2.1.1	A	16.4.1.1		
C	9.7.2.2.1.2	A	16.4.1.2		
C	9.7.2.2.1.3	A	16.4.1.3		modified
C	9.7.2.2.2.1	A	16.4.2.1		
C	9.7.2.2.2.2	A	16.4.2.2		modified
C	9.7.3				heading
C	9.7.3.1	A	16.2	MSC/Circ. 847	modified, int. (2) to 16.2
C	9.7.3.1.1	A	16.2.1		modified
C	9.7.3.1.2	A	16.2.2	MSC/Circ. 847	modified, int. (2) to 16.2.2
C	9.7.3.2	A	16.5		
C	9.7.4	B	32.1		heading, modified
C	9.7.4.1	B	32.1.1		modified
C	9.7.4.2	B	32.1.2		
C	9.7.4.3	B	32.1.3		
C	9.7.4.4	B	32.1.4		
C	9.7.4.4.1	B	32.1.4.1		slightly modified
C	9.7.4.4.2	B	32.1.4.2		slightly modified

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
C	9.7.4.4.3	B	32.1.4.3		slightly modified
C	9.7.4.4.3.1	B	32.1.4.3.1		
C	9.7.4.4.3.2	B	32.1.4.3.2		
C	9.7.4.4.3.3	B	32.1.4.3.3		
C	9.7.4.5	B	32.1.5		slightly modified
C	9.7.4.6	B	32.1.8	MSC/Circ. 847	modified, int. to 32.1.8
C	9.7.5				heading
C	9.7.5.1	B	32.1.9		heading
C	9.7.5.1.1	B	32.1.9.1		modified
C	9.7.5.1.2	B	32.1.9.2		
C	9.7.5.1.3	B	32.1.9.3		
C	9.7.5.1.4	B	32.1.9.4	MSC/Circ. 847	modified, int. to 32.1.9.4
C	9.7.5.1.5	B	32.1.9.5		
C	9.7.5.2	(A)	(16)		heading
C	9.7.5.2.1	A	16.7		
C	9.7.5.2.1.1	A	16.7.1		
C	9.7.5.2.1.2	A	16.7.2		
C	9.7.5.2.1.3	A	16.7.3		
C	9.7.5.2.1.4	A	16.7.4		
C	10.1		new		
C	10.1.1		new		
C	10.1.2		new		
C	10.2	A	4.1		
C	10.2.1	A	4.6		heading, modified
C	10.2.1.1	A	4.6.1	MSC/Circ. 847	modified, int. to 4.6.1 (4.6.1: without last sentence)
C	10.2.1.2	A	4.3.4		
C	10.2.1.2.1	A A	4.3.4.1 4.3.4.2		partly
C	10.2.1.2.1.1	A	4.3.4.1	MSC/Circ. 847	modified, int. (1) to 4.3.4.1
C	10.2.1.2.1.2	A	4.3.4.2	MSC/Circ. 847	modified, int. to 4.3.4.2
C	10.2.1.2.1.3	A	4.3.4.4		
C	10.2.1.2.2	A A	4.3.4.2 4.3.4.3		partly
C	10.2.1.2.2.1	A	4.3.4.2		

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
C	10.2.1.2.2.2	A	4.3.4.3		modified
C	10.2.1.3	A	4.4.1		
C	10.2.1.4				heading
C	10.2.1.4.1	A	4.6.3	MSC/Circ. 847	modified, int. to 4.6.3
C	10.2.1.4.2	A	4.6.2		modified
C	10.2.1.4.3	A	4.3.5		
C	10.2.1.4.4	A	4.3.6		
C	10.2.1.5	A	4.5		heading
C	10.2.1.5.1	A	4.5.1		modified
C	10.2.1.5.2	A	4.5.2 4.5.3		partly
C	10.2.1.5.2.1	A	4.5.2		
C	10.2.1.5.2.2	A	4.5.3		
C	10.2.1.6	A	4.4.2		
C	10.2.1.6.1	A	4.4.2.1		
C	10.2.1.6.2	A	4.4.2		
C	10.2.1.6.3	A	4.4.3		
C	10.2.1.7	A	19		heading
C	10.2.1.7.1	A	19.1		
C	10.2.1.7.2	A	19.2		
C	10.2.2				heading
C	10.2.2.1	A	4.3.2		
C	10.2.2.2	A	4.3.1		
C	10.2.2.2.1	A A	4.3.1.1 4.3.1.2		modified
C	10.2.2.2.2	A A	4.3.1.2 4.3.1.3	MSC/Circ. 847	modified, int. to 4.3.1.3
C	10.2.2.3	A	4.3		
C	10.2.2.3.1	A	4.3.3		
C	10.2.2.3.1.1	A	4.3.3.1		
C	10.2.2.3.1.2	A	4.3.3.3	MSC/Circ. 847	modified, int. to 4.3.3.3 mod.
C	10.2.2.3.2				heading
C	10.2.2.3.2.1	A	4.3.3.2.9		
C	10.2.2.3.2.2	A	4.3.3.2.7	MSC/Circ. 847	modified, int. to 4.3.3.2.7
C	10.2.2.3.2.3	A	4.3.3.2.8		

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
C	10.2.2.3.3	A	4.3.3.4		
C	10.2.2.4	A	4.2		heading
C	10.2.2.4.1	A	4.2.1		
C	10.2.2.4.1.1	A	4.2.1.1		modified
C	10.2.2.4.1.2	A	4.2.1.2		modified
C	10.2.2.4.2	A	4.2.2	MSC/Circ. 847	modified, int. to 4.2.2
C	10.2.3	A	4.7, 4.8		heading
C	10.2.3.1				heading
C	10.2.3.1.1	A	4.7.1	MSC/Circ. 847	modified, int. to 4.7.1
C	10.2.3.1.1.1		new	MSC/Circ. 847	int. to 4.7.1
C	10.2.3.1.1.2		new	MSC/Circ. 847	int. to 4.7.1
C	10.2.3.1.1.3		new	MSC/Circ. 847	int. to 4.7.1
C	10.2.3.1.2	A	4.6.1		last sentence
C	10.2.3.2		4.7		heading, modified
C	10.2.3.2.1	A	4.7.2		
C	10.2.3.2.2.	A	4.7.3		
C	10.2.3.2.3	A	4.7.4.1		partly
C	10.2.3.2.3.1	A	4.7.4.1	MSC/Circ. 847	modified, int. to 4.7.4.1
C	10.2.3.2.3.2	A	4.7.4.2	MSC/Circ. 847	modified by int. to 4.7.4.2
C	10.2.3.3		4.8		heading, modified
C	10.2.3.3.1	A	4.8.1		
C	10.2.3.3.2	A	4.8.2		
C	10.2.3.3.3	A	4.8.3		
C	10.2.3.3.4	A	4.8.4		slightly modified
C	10.3	A	6		heading
C	10.3.1		new		
C	10.3.2				heading
C	10.3.2.1	A	6.7		
C	10.3.2.2	A	6.6		
C	10.3.2.3		new	MSC/Circ. 847	int. (1) to 6.7
C	10.3.2.4		new	MSC/Circ. 847	int. (2) to 6.7
C	10.3.3				heading
C	10.3.3.1	A	6.2	MSC/Circ. 847	modified by int. (1) and (3) to 6.2 (first sentence only)
C	10.3.3.2		new	MSC/Circ. 847	int. (2) to 6.2

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
C	10.4	A	5		heading, modified
C	10.4.1				heading
C	10.4.1.1	A A	7.1.1 7.2		modified
C	10.4.1.1.1	A A	7.1.1.1 7.2.1		
C	10.4.1.1.2	A A	7.1.1.2 7.2.1		
C	10.4.1.1.3	A A	7.1.1.3 7.2.1		
C	10.4.1.2	A	7.5	MSC/Circ. 847	modified, int. to 7.5
C	10.4.1.3		new	MSC72/WP.14	modified by para 25 annex 1
C	10.4.1.4	A	5.4		modified
C	10.4.2	A	5.1.4	MSC/Circ. 847	modified, int. to 5.1.4
C	10.4.3	A	5.1.13	MSC/Circ. 847	modified, ints. (1) and (2) to5.1.13
C	10.4.4	A	4.9		modified
C	10.5	A	7		heading
C	10.5.1	A	7.1		heading, modified
C	10.5.1.1	A	7.1.1		modified
C	10.5.1.2				heading
C	10.5.1.2.1	A	7.1.2	MSC/Circ. 847	modified, int. to 7.1.2
C	10.5.1.2.2	A	7.1.3	MSC/Circ. 847	modified int. to 7.1.3
C	10.5.1.2.3	A	7.1.4	MSC/Circ. 847	modified, ints. (1) and (2) to 7.1.4
C	10.5.2	A	7.2		heading, modified
C	10.5.2.1	A	7.2.1		modified
C	10.5.2.2				heading
C	10.5.2.2.1	A	7.2.2		modified
C	10.5.2.2.2	A	7.2.3		
C	10.5.3	A	7.3		heading, modified
C	10.5.3.1	A A	7.3 7.3.3		
C	10.5.3.2				heading
C	10.5.3.2.1	A	7.3.1		
C	10.5.3.2.2	A	7.3.2		

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
C	10.5.4	A	7.4		
C	10.5.5	A	7.6		
C	10.5.6		new		
C	10.5.6.1		new	MSC72/WP.14	added/modified by para 27 annex 1
C	10.5.6.2		new		
C	10.5.6.3		new		
C	10.5.6.3.1		new		
C	10.5.6.3.2		new		
C	10.5.6.3.3		new		
C	10.5.6.3.4		new		
C	10.5.6.4		new		
C	10.6				heading
C	10.6.1				heading
C	10.6.1.1	A	36.2	MSC/Circ. 847	sentences 1, 2 and 5, modified, int. (2) to 36.2
C	10.6.1.2	A	36.1.2		modified
C	10.6.2	C C	42.5.2 52.2		modified
C	10.6.3				heading
C	10.6.3.1	A	18.7	MSC/Circ. 847	modified by ints. to 18.7
C	10.6.3.1.1		new	MSC/Circ. 847	int.(2)
C	10.6.3.1.2		new	MSC/Circ. 847	int. (2)
C	10.6.3.1.3		new	MSC/Circ. 847	ints. (2) and (3)
C	10.6.3.1.4		new	MSC/Circ. 847	int. (4)
C	10.6.3.2	A	18.7		modified
C	10.6.3.3		new	MSC/Circ. 847	int. (5) to 18.7
C	10.6.4		new		
C	10.6.4.1		new		
C	10.6.4.2		new		
C	10.6.4.3		new		
C	10.6.4.4		new		
C	10.6.4.5		new		
C	10.7				heading
C	10.7.1				heading
C	10.7.1.1	B	39.1		modified
C	10.7.1.2	B	39.2	MSC/Circ. 847	modified, int. to 39.2

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
C	10.7.1.3	C	53.1.1		modified
C	10.7.1.4	C	53.1.3		
C	10.7.2	B C	39.3 53.1.2		modified
C	10.8	D	60		heading
C	10.8.1	D	61		heading
C	10.8.1.1	D	60.1		modified
C	10.8.1.2	D	60.2		modified
C	10.8.1.2.1	D	60.2.1		
C	10.8.1.2.2	D	60.2.2		
C	10.8.1.3	D	60.8		modified
C	10.9	D	63		heading, modified
C	10.9.1	D	63.1		
C	10.9.1.1	D	63.1.1		modified
C	10.9.1.1.1	D	63.1.1.1		
C	10.9.1.1.2	D	63.1.1.2		
C	10.9.1.2	D	63.1.2		modified
C	10.9.1.3	D	63.1.3		modified
C	10.9.2	D	63.2		
C	10.10	A	17		heading
C	10.10.1	A	17.3		modified
C	10.10.2				heading
C	10.10.2.1	A	17.3		modified
C	10.10.2.2	A	17.3.1		modified
C	10.10.2.2.1	A	17.3.1.1		modified
C	10.10.2.2.2	A	17.3.2		
C	10.10.2.3	A	17.3.1.2		modified
C	10.10.2.4	A	17.3.3		
C	10.10.2.5	A	17.1.2.2	MSC/Circ. 847	modified, ints. (1) and (2) to 17.1.2.2
C	10.10.3				heading
C	10.10.3.1	A	17.4		1st sentence, int. to 17.4
C	10.10.3.2	A	17.4		2nd and 3rd sentence
C	11.1		new		
C	11.2	B C	23.1 42.1		42.1: modified

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
C	11.3	B	23.2		modified
C	11.3.1	B C	23.2.1 42.2		
C	11.3.2	B C	23.2.2 42.3		
C	11.3.2.1	B C	23.2.2.1 42.3.1		
C	11.3.2.2	B C	23.2.2.2 42.3.2		
C	11.4				heading
C	11.4.1	B C	23.3 42.4		modified
C	11.4.2		new	MSC/Circ. 847	int. (1) to 34.1
C	11.5	A	18.2.3		
C	11.6				heading
C	11.6.1	D	59.1.2		
C	11.6.1.1	D	59.1.2.1		
C	11.6.1.2	D	59.1.2.2		
C	11.6.2	D	59.1.7		
C	11.6.2.1	D	59.1.7.1		
C	11.6.2.2	D	59.1.7.2	MSC/Circ. 847	modified, int. (2) to 59.1.9.3 or int. (1) to 59.1.9.4
C	11.6.3				heading
C	11.6.3.1	D	59.1.6	MSC/Circ. 847	modified, ints. (1) and (2) to 59.1.6
C	11.6.3.2	D	59.1.2.3		
C	11.6.3.3	D	59.1.8		
C	11.6.3.4	D	62.14.1		1st sentence
C	11.6.3.4.1	D	62.14.1.1		
C	11.6.3.4.2	D	62.14.1.2		
C	11.6.3.4 cont.		62.14.2		and last sentence of 62.14.1
C	11.6.4	D D	59.1.9 59.1.9.5		
D	12.1		new		
D	12.2		new		

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
D	12.3	B	40.5		modified
D	13	B C	28 45		heading
D	13.1		new		
D	13.1.1		new		
D	13.1.2		new		
D	13.1.3		new		
D	13.2				heading
D	13.2.1	C C C	45.1.1 45.2 45.3		modified
D	13.2.2	B C	28.4 45.6		
D	13.3				heading
D	13.3.1				heading
D	13.3.1.1	B C	28.1 45.1		modified
D	13.3.1.2	B	28.1.4	MSC/Circ 847	modified; ints. (1) and (2) to 28.1.4
D	13.3.1.3	B C	29.1 46.3		modified, partly
D	13.3.1.4	B C	28.1.3 45.1.6		
D	13.3.1.5		new	MSC/Circ 847	int. to 28
D	13.3.1.5.1		new	MSC/Circ 847	int. .1 to 28
D	13.3.1.5.2		new	MSC/Circ 847	int. .2 to 28
D	13.3.2				heading
D	13.3.2.1				heading
D	13.3.2.1.1	B	28.1.1	MSC/Circ 847	modified; int. to 28.1.1
D	13.3.2.1.2	B	28.1.9		
D	13.3.2.2	B	28.1.2		
D	13.3.2.3	B	29.2	MSC/Circ 847	modified; ints. (1) and (2) to 29.2
D	13.3.2.4				heading
D	13.3.2.4.1	B	28.1.5		slightly modified (except last sentence)
D	13.3.2.4.2	B	28.1.6	MSC/Circ 847	modified; int. to 28.1.6

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
D	13.3.2.4.3	B	28.1.7		
D	13.3.2.4.4	B	28.1.8		modified
D	13.3.2.4.5	B	28.1.5		modified, last sentence
D	13.3.2.5				heading
D	13.3.2.5.1	B	28.1.10		modified
D	13.3.2.5.2	B	28.1.11		slightly modified
D	13.3.2.6				heading
D	13.3.2.6.1		28-1.1.8		
D	13.3.2.6.2		new	MSC72/WP.14	modified by para 31 annex 1
D	13.3.2.6.2.1		new		
D	13.3.2.6.2.2		new		
D	13.3.2.6.2.3		new		
D	13.3.3				heading
D	13.3.3.1	C	45.1.1		
D	13.3.3.2	C	45.1.2.1		
D	13.3.3.3	C	45.1.2.2		
D	13.3.3.4	C	45.1.4		1st sentence only
D	13.3.3.5	C	45.1.5		modified
D	13.3.3.6	C	45.1.3	MSC/Circ 847	modified; int.(1) to 45.1.3
D	13.3.4		new	MSC69/22	heading; in principle adopted by MSC MSC69/22 para 6.12 and MSC69/22Add.1 annex 13
D	13.3.4.1		new	MSC69/22	
D	13.3.4.2		new	MSC69/22	
D	13.3.4.3		new	MSC69/22	
D	13.3.4.4		new	MSC69/22	
D	13.3.4.5		new	MSC69/22	
D	13.4				heading
D	13.4.1	B	28.3.1		modified
D	13.4.1.1	B	28.3.1.1		
D	13.4.1.1.1	B	28.3.1.1.1	MSC/Circ 847	modified; int.(1) to 28.3.1.1.1
D	13.4.1.1.2	B	28.3.1.1.2		
D	13.4.1.2	B	28.3.1.2		
D	13.4.1.3	B	28.3.2		modified;

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
				MSC/Circ 847	ints.(1) and (2) to 28.3.2
D	13.4.1.4	B	28.3.3		
D	13.4.2		new		
D	13.4.2.1	C	45.3		
D	13.4.2.1.1	C	45.3.1	MSC/Circ 847	modified; int. (1) to 45.3.1
D	13.4.2.1.2	C	45.3.2		
D	13.4.2.2	C	45.4	MSC/Circ 847	modified; int. to 45.4 and int. (2) to 45.1.3
D	13.4.2.3	C	45.5	MSC/Circ 847	modified; int. to 45.5
D	13.4.3		new	MSC69/22	in principle adopted by MSC MSC69/22 para 6.12 and MSC69/22Add.1 annex 13
D	13.4.3.1		new	MSC69/22	
D	13.4.3.2		new	MSC69/22	
D	13.4.3.3		new	MSC69/22	
D	13.5				heading
D	13.5.1	B	28.2.1	MSC/Circ 847	modified; int. to 28.2.1 and int. (1) to 45.2
D	13.5.2	B	28.2.2		
D	13.6	(B) (B) C	(28-1.1) (28-1.1.1) 45.2	MSC72/WP.14 MSC/Circ 847	modified by para 34 annex 1 modified; int. (2) to 45.2
D	13.7				heading
D	13.7.1				heading
D	13.7.1.1	B	28-1.1.4		modified
D	13.7.1.2	B	28-1.2.2		
D	13.7.1.3	B	28-1.2.3		
D	13.7.1.4	B	28-1.1.5		
D	13.7.1.5	B	28-1.1.3		
D	13.7.2				heading
D	13.7.2.1	B	28-1.1.6		
D	13.7.2.2	B	28-1.1.7		
D	13.7.3				heading
D	13.7.3.1	B	28-1.1.2		slightly modified
D	13.7.3.2	B	28-1-2-1		
D	13.7.4	B	28-1.3		slightly modified

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
E	14		new		approved by MSC72/23, para 12.10
E	14.1		new		
E	14.1.1		new		see also new reg. 2.2.1.7
E	14.1.2		new		
E	14.2		new		
E	14.2 .1		new		
E	14.2 .2		new		
E	14.2 .3		new		
E	14.2.1		new		
E	14.2.1.1		new		
E	14.2.1.1.1		new		
E	14.2.1.1.2		new		
E	14.2.1.1.3		new		
E	14.2.1.2	A	21		1st sentence only, modified
E	14.2.2		new		
E	14.2.2.1		new		
E	14.2.2.2		new		
E	14.2.2.3		new		
E	14.2.2.3.1		new		
E	14.2.2.3.2		new		
E	14.2.2.3.3		new		
E	14.2.2.3.4		new		
E	14.2.2.3.5		new		
E	14.2.2.3.6		new		
E	14.2.2.3.7		new		
E	14.2.2.3.8		new		
E	14.2.2.3.9		new		
E	14.2.2.3.10		new		
E	14.2.2.3.11		new		
E	14.2.2.4		new		
E	14.3		new		
E	14.4		new		
E	14.4.1		new		
E	14.4.2		new		
E	14.4.3		new		

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
E	14.4.4		new		
E	15		new		approved by MSC72/23, para 12.10
E	15.1		new		
E	15.2		new		
E	15.2.1		new		
E	15.2.1.1		new		
E	15.2.1.2		new		
E	15.2.1.3		new		
E	15.2.2		new		
E	15.2.2.1		new		
E	15.2.2.2		new		
E	15.2.2.3		new		
E	15.2.2.4		new		
E	15.2.2.5		new		
E	15.2.3		new		
E	15.2.3.1		new		
E	15.2.3.2		new		
E	15.2.3.3		new		
E	15.2.3.4		new		
E	15.2.3.4.1		new		
E	15.2.3.4.2		new		
E	15.2.3.4.3		new		
E	15.2.3.4.4		new		
E	15.2.3.4.5		new		
E	15.2.3.4.6		new		
E	15.2.3.4.7		new		
E	15.2.4	A	20		heading, modified
E	15.2.4.1	A	20.1		modified, without last sent.
E	15.2.4.2	A	20.2		slightly modified
E	15.3		new		heading
E	15.3.1	A	20.3		modified
E	15.3.2	A	20.4		
E	16		new		approved by MSC72/23, para 12.10
E	16.1		new		

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
E	16.1.1		new		
E	16.1.2		new		
E	16.2		new		
E	16.2.1		new		
E	16.2.2		new		
E	16.2.3		new		
E	16.2.4		new		
E	16.3		new		heading
E	16.3.1		new		
E	16.3.2	D	59.2		heading modified
E	16.3.2.1	D	59.2.1		
E	16.3.2.2	D	59.2.2		
E	16.3.2.2.1	D	59.2.2.1		
E	16.3.2.2.2	D	59.2.2.2		
E	16.3.2.2.3	D	59.2.2.3		
E	16.3.2.3		new	MSC/Circ. 847	int. (1) to 59.2; see 59.1.9.3 or new 4.5.3.4.1.3
E	16.3.2.4	D	59.2		last sentence, slightly modified
F	17	(A)	(22.1, 22.2)		covered indirectly
F	17.1		new		
F	17.2		new		
F	17.2.1		new		
F	17.2.2		new		
F	17.3		new		
F	17.3.1		new		
F	17.3.2		new		
F	17.3.3		new		
F	17.3.3.1		new		
F	17.3.3.2		new		
F	17.3.3.3		new		
F	17.3.3.4		new		
F	17.3.4		new		
F	17.3.4.1		new		
F	17.3.4.2		new		
F	17.3.4.3		new		

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
F	17.3.5		new		
F	17.3.6		new		
F	17.4		new		
F	17.4.1		new		
F	17.4.2		new		
F	17.5		new		
F	17.6		new		
G	18	A	18.8		heading
G	18.1	A	18.8		modified
G	18.1.1		new		
G	18.1.2		new		
G	18.1.3		new		
G	18.1.4		new		
G	18.2		new		heading
G	18.2.1		new	MSC72/WP.14	modified by para 39 annex 1
G	18.2.2		new	MSC72/WP.14	modified by para 39 annex 1
G	18.2.3		new	MSC72/WP.14	modified by para 39 annex 1
G	18.3		new	Res. A.855(20)	heading, para 2
G	18.3.1		new	Res. A.855(20)	para 2.1
G	18.3.2		new	Res. A.855(20)	para 2.2
G	18.3.2.1		new	Res. A.855(20)	para 2.2.1
G	18.3.2.2		new	Res. A.855(20)	para 2.2.2
G	18.3.2.2.1		new	Res. A.855(20)	para 2.2.2.1
G	18.3.2.2.2		new	Res. A.855(20)	para 2.2.2.2
G	18.3.2.2.3		new	Res. A.855(20)	para 2.2.2.3
G	18.4		new	Res. A.855(20)	para 2.3
G	18.5		new	Res. A.855(20)	heading, para 3
G	18.5.1		new	Res. A.855(20)	para 3.1
G	18.5.1.1		new	Res. A.855(20)	para 3.1.1
G	18.5.1.2		new	Res. A.855(20)	para 3.1.2
G	18.5.1.3		new	Res. A.855(20)	para 3.1.3
G	18.5.1.4		new	Res. A.855(20)	footnote to table
G	18.5.1.5		new	Res. A.855(20)	para 3.1.4
G	18.5.1.6		new	Res. A.855(20)	para 3.1.5, modified

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
G	18.5.1.7		new	Res. A.855(20)	para 3.1.6
G	18.6		new	Res. A.855(20)	para 3.2
G	18.7		new	Res. A.855(20)	para 4
G	18.7.1		new	Res. A.855(20)	para 4.1
G	18.7.1.1		new	Res. A.855(20)	para 4.1.1
G	18.7.1.2		new	Res. A.855(20)	para 4.1.2
G	18.7.2		new	Res. A.855(20)	para 4.2
G	18.7.3		new	Res. A.855(20)	para 4.3
G	18.7.4		new	Res. A.855(20)	para 4.4
G	18.7.4.1		new	Res. A.855(20)	para 4.4.1
G	18.7.4.2		new	Res. A.855(20)	para 4.4.2
G	18.7.4.3		new	Res. A.855(20)	para 4.4.3
G	18.7.4.4		new	Res. A.855(20)	para 4.4.4
G	18.7.5		new	Res. A.855(20)	para 4.5
G	18.7.6		new	Res. A.855(20)	para 4.6
G	18.7.7		new	Res. A.855(20)	para 4.7
G	18.7.8		new	Res. A.855(20)	para 4.8
G	18.7.9		new	Res. A.855(20)	para 4.9
G	18.7.10		new	Res. A.855(20)	para 4.10
G	18.7.11		new	Res. A.855(20)	para 4.11
G	18.7.12		new	Res. A.855(20)	para 4.12, modified
G	18.7.13		new	Res. A.855(20)	para 4.13, modified
G	18.8		new	Res. A.855(20)	heading, para 6
G	18.8.1		new	Res. A.855(20)	para 6.1
G	18.8.2		new	Res. A.855(20)	para 6.2
G	18.8.3		new	Res. A.855(20)	para 6.3
G	18.8.4		new	Res. A.855(20)	para 6.4
G	18.8.5		new	Res. A.855(20)	para 6.5
G	19.1		new		
G	19.1.1		new		
G	19.1.2		new		
G	19.1.3		new		
G	19.2	C	54.1		heading, modified
G	19.2.1	B C	41 54.1.1		modified
G	19.2.2	C	54.1.2		
G	19.2.2.1	C	54.1.2.1		

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
G	19.2.2.2	C	54.1.2.2		
G	19.2.2.3	C	54.1.2.3		slightly modified
G	19.2.2.4	C	54.1.2.4		slightly modified
G	19.2.2.5	C	54.1.2.5		
G	19.3	C	54.2		slightly modified
G	19.3.1	C	54.2.1		heading
G	19.3.1.1	C	54.2.1.1		
G	19.3.1.2	C	54.2.1.2		
G	19.3.1.3	C	54.2.1.3	MSC/Circ.847	modified; ints. (2) and (3) to 54.2.1.3
G	19.3.1.4	C	54.2.1.4		
G	19.3.1.5		new	MSC/Circ.847	int. to 54.2.1.2
G	19.3.2	C	54.2.2		modified
G	19.3.3	C	54.2.3		modified
G	19.3.4	C	54.2.4		heading
G	19.3.4.1	C	54.2.4.1		
G	19.3.4.2	C	54.2.4.2		
G	19.3.4.3	C	54.2.4.3		
G	19.3.5	C	54.2.5		heading
G	19.3.5.1	C	54.2.5		modified, without 3rd sent.
G	19.3.5.2		new	MSC/Circ.847	int.(1) to 54.2.5, 1st and 2nd sentence
G	19.3.5.3		new	MSC/Circ.847	int.(1) to 54.2.5, 3rd sentence
G	19.3.5.4		new	MSC/Circ.847	int.(3) to 54.2.5, without 2nd sentence
G	19.3.5.5		new	MSC/Circ.847	ints. (2) and (4) to 54.2.5
G	19.3.6	C	54.2.6		heading
G	19.3.6.1	C	54.2.6.1		
G	19.3.6.2	C	54.2.6.2	MSC/Circ.847	modified; int. to 54.2.6.2
G	19.3.7	C	54.2.7		
G	19.3.8	C	54.2.8		slightly modified
G	19.3.9	C	54.2.9	MSC/Circ.847	modified; int. (2) to 54.2.9
G	19.3.10		new		heading
G	19.3.10.1	C	54.2.10		slightly modified

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
G	19.3.10.2	C	54.2.11		slightly modified
G	19.4	C	54.3	MSC/Circ.847	modified; int. (3) to 54.3
G	table 19.1	C	table 54.1		
G	notes 1 to 5	C	notes 1 to 5		notes 3 and 5 slightly mod.
G	table 19.2	C	table 54.2		
G	notes 6 to 10	C	notes 6 to 10		note 8 slightly modified
G	table 19.3	C	table 54.3		top line (class 3.1, 3.2, 3.3) slightly modified
G	notes 11 to 15	C	notes 11 to 15		note 13 slightly modified, note 15 added
G	20.1		new		
G	20.1.1		new		
G	20.1.2		new		
G	20.1.3		new		
G	20.2	B	37.1.1		heading, modified
G	20.2.1		new		
G	20.2.2		new		heading
G	20.2.2.1	B	37.1.1.1		modified
G	20.2.2.2	B B	38.6 38-1.1.1		
G	20.2.2.3	B	37.1.1.2		modified
G	20.3	B B C	37.2.2 38.4 53.2.4		heading, modified
G	20.3.1	B B	37.1.6 38.3		heading
G	20.3.1.1	B B C	37.1.6.1 38.3.1 53.2.3.1		modified
G	20.3.1.1.1	B B	37.1.6.1 38.3.1		modified
G	20.3.1.1.2	C	53.2.3.1		modified
G	20.3.1.2		new		heading
G	20.3.1.2.1	B B	37.1.6.1 38.3.1		modified

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
G	20.3.1.2.2	C	53.2.3.1		modified
G	20.3.1.2.3	B B C	37.1.6.2 38.3.2 53.2.3.2		
G	20.3.1.3	B B C	37.1.6.3 38.3.3 53.2.3.3		
G	20.3.1.4		new		heading
G	20.3.1.4.1	B B C	37.1.6.4 38.3.4 53.2.3.4	MSC/Circ.847	modified, int. to 37.1.6.4 and 38.3.4
G	20.3.1.4.2	B B C	37.1.6.5 38.3.5 53.2.3.5	MSC/Circ.847	modified, int. to 37.1.6.5 and 38.3.5
G	20.3.1.5	B B B C	37.4 38.5 38-1.1.4 53.2.5		modified
G	20.3.2	B	new		heading
G	20.3.2.1	B B B C	37.2.2.1 37.3.2.1 38.4.1 53.2.4.1		modified
G	20.3.2.2	B C	37.2.2.1 53.2.4.2		modified
G	20.3.3	B B B C	37.2.2.2 37.3.2.2 38.4.2 53.2.4.4		
G	20.3.4	B B C	37.3.2.1 38.4.1 53.2.4.3		2nd sentence
G	20.3.5	B C	38.4.3 53.2.4.5		
G	20.4		new		heading
G	20.4.1	B B C	37.1.4.1 38.1 53.2.1		modified

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
G	20.4.2	B	38.1		modified
G	20.4.3		new		heading
G	20.4.3.1	B	37.1.4.1		modified
G	20.4.3.2	B	37.1.4.2	MSC/Circ.847	modified, int. to 37.1.4.2
G	20.5	B B B	37.1.2.1 38.6 38-1.1.2		modified
G	20.6		new		heading
G	20.6.1	B	38.2		heading, modified
G	20.6.1.1	B C	38.2.1 53.2.2.1		modified
G	20.6.1.1.1	B C	38.2.1 53.2.2.1.1		modified
G	20.6.1.1.2	B	38.2.1 53.2.2.1.3		modified
G	20.6.1.1.3	B	38.2.2 53.2.2.1.4		modified
G	20.6.1.2	B	37.1.3	MSC/Circ.847	first part, modified
G	20.6.1.2.1		new	MSC/Circ.847	int. (2) .1 to 37.1.3
G	20.6.1.2.2		new	MSC/Circ.847	int. (2) .1 to 37.1.3
G	20.6.1.2.3		new	MSC/Circ.847	int. (2) .2 to 37.1.3
G	20.6.1.2.4		new	MSC/Circ.847	int. (2) .3 to 37.1.3
G	20.6.1.3	B	37.1.3		second part
G	20.6.1.4	B	37.2.1.1 53.2.2.2		modified
G	20.6.1.4.1		new		
G	20.6.1.4.1.1	B	37.2.1.1		modified
G	20.6.1.4.1.2.1	B	37.2.1.2.1		slightly modified
G	20.6.1.4.1.2.2	B	37.2.1.2.2		
G	20.6.1.4.1.3	B	37.3.1	MSC/Circ.847	modified, int. (2) to 37.3.1
G	20.6.1.4.2	C C	53.2.2.1.4, 53.2.2.2	MSC/Circ.847	modified, int. to 53.2.2.1.4 and 53.2.2.2
G	20.6.2		new		heading
G	20.6.2.1	B B C	37.1.5.3 38.2.3 53.2.2.3	MSC/Circ.847	modified, int. (1) to 37.1.5.3 or 38.2.3 and int. to 53.2.2.3

new requirements		*where the requirements in new chapter II-2 come from*			
new Chapter II-2		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Part	**Regulation**	**Part**	**Regulation**		
G	20.6.2.2	B C	37.1.5 53.2.2.4		
G	20.6.2.2.1	B C	37.1.5.1 53.2.2.4.1		
G	20.6.2.2.2	B C	37.1.5.2 53.2.2.4.2		modified

ANNEX 3

Cross-reference list of SOLAS requirements

new Fire Safety Systems Code (Resolution MSC.98(73))
versus
existing chapter II-2 SOLAS'74, as amended, and
related IMO-papers (Resolutions, Circulars)

new requirements		*where the requirements in the new FSS Code come from*			
new FSS Code		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Chapter	**Paragraph**	**Part**	**Regulation**		
1	1		new		heading
1	1.1		new		
1	1.2		new		
1	2	(A)	(3)		heading
1	2.1			SOLAS'74	reg. I/2(b)
1	2.2		new		
1	2.3		new	SOLAS'74	see new reg. II-2/3.22
1	2.4		new		
1	3		new		similar to reg. II-2/22 (old)
1	4	A A	5.1.1 6.3		modified
2	1		new		
2	2		new		heading
2	2.1	A	19.3		
2	2.2	A	19.4		modified
3	1		new		
3	2		new		
3	2.1	A	17.1		modified
3	2.1.1	A	17.1.1		modified
3	2.1.1.1	A	17.1.1.1		
3	2.1.1.2	A	17.1.1.2		modified
3	2.1.1.3	A	17.1.1.3		
3	2.1.1.4	A	17.1.1.4	MSC/Circ.847	modified incl. int. to 17.1.1.4
3	2.1.1.5	A	17.1.1.5	MSC/Circ.847	modified, incl. int. to 17.1.1.5
3	2.1.2	A	17.1.2		modified

new requirements		*where the requirements in the new FSS Code come from*			
new FSS Code		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Chapter	**Paragraph**	**Part**	**Regulation**		
		A	17.1.2.2		
3	2.1.3	A	17.2		modified incl. int. to 17.2
3	2.2		new		heading
3	2.2.1		new		heading
3	2.2.1.1		new		
3	2.2.1.2		new		
3	2.2.2		new		heading
3	2.2.2.1		new		
3	2.2.2.2		new		
3	2.2.2.3		new		
3	2.2.3		new		heading
3	2.2.3.1		new		
3	2.2.3.2		new		
3	2.2.3.3		new		
3	2.2.3.4		new		
3	2.2.3.5		new		
3	2.2.4		new		
4	1		new		
4	1.2	A	6.1		modified
4	2		new		heading
4	2.1		new		heading
4	2.1.1		new		heading
4	2.1.1.1	A	6.1.1	MSC/Circ.847	modified incl. ints. (1) and (2) to 6.1.1
4	2.1.1.2	A	6.1.2		
4	2.1.2		new	MSC/Circ.847	part of int. (3) to 6.2
4	2.2	A	6.4		modified
5	1		new		
5	2		new		heading
5	2.1		new		heading
5	2.1.1		new		heading
5	2.1.1.1	A	5.1.9		slightly modified
5	2.1.1.2	A	5.1.5	MSC/Circ.847	modified incl. int. to 5.1.5
5	2.1.1.3	A	5.1.11		slightly modified

new requirements		*where the requirements in the new FSS Code come from*			
new FSS Code		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Chapter	**Paragraph**	**Part**	**Regulation**		
5	2.1.1.4	A	5.1.12		
5	2.1.2		new		heading
5	2.1.2.1	A	5.1.3		
5	2.1.2.2	A	5.1.10		modified
5	2.1.2.3	A	5.1.14		
5	2.1.3		new		heading
5	2.1.3.1	A	5.1.2	MSC/Circ.847	modified incl. int. to 5.1.2
5	2.1.3.2	A	5.1.6	MSC/Circ.847	modified incl. ints. (1), (2) and (3) to 5.1.6
5	2.1.3.3	A	5.1.7		
5	2.1.3.4	A	5.1.8		modified
5	2.2		new		heading
5	2.2.1		new		heading
5	2.2.1.1	A	5.2.1		
5	2.2.1.2	A	5.2.2		except last part
5	2.2.1.2.1	A	5.2.2.1		
5	2.2.1.2.2	A	5.2.2.2		
5	2.2.1.3	A	5.2.2		last part, modified
5	2.2.1.4	A	5.2.3		
5	2.2.1.5	A	5.2.4		
5	2.2.2	A	5.2.5		modified
5	2.2.2.1	A	5.2.5.1		slightly modified
5	2.2.2.2	A	5.2.5.2		
5	2.3	A	5.4		second part
5	2.4		new		heading
5	2.4.1	A	5.5.1		modified, first part
5	2.4.2		new		heading
5	2.4.2.1	A	5.5.1		modified, second part
5	2.4.2.2		new		heading
5	2.4.2.2.1	A	5.5.2		
5	2.4.2.2.2	A	5.5.3		
5	2.5		new		
6	1		new		
6	2		new		heading
6	2.1	A	8.1		modified 2nd sentence
6	2.2		new		heading

new requirements		*where the requirements in the new FSS Code come from*			
new FSS Code		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Chapter	**Paragraph**	**Part**	**Regulation**		
6	2.2.1		new		heading
6	2.2.1.1		new		
6	2.2.1.2	A	9.1.1		
6	2.2.1.3	A	9.1.2		
6	2.2.2		new		heading
6	2.2.2.1	A	9.2		
6	2.2.2.2	A	9.3	MSC/Circ.847	int. to 9.3
6	2.2.2.3	A	9.4		
6	2.3		new		heading
6	2.3.1		new		heading
6	2.3.1.1		new		
6	2.3.1.2	A	8.1		modified 1st sentence and last sentence
6	2.3.2		new		heading
6	2.3.2.1	A	8.1		3rd sentence, modified
6	2.3.2.2	A	8.2		
7	1		new		
7	2		new		heading
7	2.1		new		heading
7	2.1.1		new		heading
7	2.1.1.1	A	10.1		
7	2.1.1.2	A	10.2		1st and 2nd sentence
7	2.1.1.3	A	10.7		
7	2.1.1.4	A	10.5		1st sentence
7	2.1.1.5	A	10.6		modified
7	2.1.2		new		heading
7	2.1.2.1	A	10.2		3rd sentence
7	2.1.2.2	A	10.3		slightly modified
7	2.1.2.3	A	10.5		2nd and 3rd sentence
7	2.1.3	A	10.4		
7	2.2		new		
8	1		new		
8	2		new		heading
8	2.1		new		heading
8	2.1.1	A	12.1.1	MSC/Circ.847	modified 2nd sentence incl. int. (1) and (2) to
8	2.1.2		new		

new requirements		*where the requirements in the new FSS Code come from*			
new FSS Code		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Chapter	**Paragraph**	**Part**	**Regulation**		
8	2.2		new		heading
8	2.2.1	A	12.7.1		slightly modified
8	2.2.2	A	12.7.2		slightly modified
8	2.3		new		heading
8	2.3.1		new		heading
8	2.3.1.1	A	12.2.4		
8	2.3.1.2	A	12.10	MSC/Circ.847	modified incl. int. to 12.10
8	2.3.2		new		heading
8	2.3.2.1	A	12.4.1		slightly modified
8	2.3.2.2	A	12.4.2		
8	2.3.3		new		heading
8	2.3.3.1	A	12.5.1		
8	2.3.3.2	A	12.5.2	MSC/Circ.847	modified incl. int. 12.5.2
8	2.3.3.3	A	12.5.3		slightly modified
8	2.4		new		heading
8	2.4.1	A	12.1.1		3rd sentence
8	2.4.2		new		heading
8	2.4.2.1	A	12.2.1		
8	2.4.2.2	A	12.2.2	MSC/Circ.847	modified incl. int. to 12.2.2
8	2.4.2.3	A	12.9.1		
8	2.4.2.4	A	12.8		
8	2.4.2.5	A	12.2.3		
8	2.4.2.6	A	12.5.4		
8	2.4.3	A	12.6		
8	2.5		new		heading
8	2.5.1		new		heading
8	2.5.1.1	A	12.1.1		1st sentence
8	2.5.1.2	A	12.1.1		modified last sentence
8	2.5.2		new		heading
8	2.5.2.1	A	12.1.2		modified
8	2.5.2.2	A	12.9.3		
8	2.5.2.3	A	12.3		
8	2.5.2.4	A	12.2.5		
8	2.5.3	A	12.9.2		

new requirements		*where the requirements in the new FSS Code come from*			
new FSS Code		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Chapter	**Paragraph**	**Part**	**Regulation**		
9	1		new		
9	2		new		
9	2.1	A	13.1		
9	2.1.1	A	13.1.1		
9	2.1.2	A	13.1.14		modified
9	2.1.3	A	13.3.1		
9	2.1.4	A	13.1.15		modified
9	2.1.4.1	A	13.1.15		dash 2
9	2.1.4.2	A	13.1.15		dash 3 (slightly modified)
9	2.1.4.3	A	13.1.15		dash 4 (slightly modified)
9	2.1.4.4		new	MSC/Circ.847	int. to 13.1.15, modified
9	2.2	A	13.1.3		
9	2.3		new		heading
9	2.3.1		new		heading
9	2.3.1.1	A	13.1.11		
9	2.3.1.2	A	13.3.2		modified
9	2.3.1.3	A	13.3.3		
9	2.3.1.4	A	13.3.4		modified incl. int. to 13.3.4
9	2.3.1.5	A	13.1.13		last sentence
9	2.4		new		heading
9	2.4.1		new		heading
9	2.4.1.1	A	13.1.4		1st sentence only
9	2.4.1.2	A	13.1.10	MSC/Circ.847	modified incl. int. to 13.1.10
9	2.4.1.3	A	13.1.8		modified
9	2.4.1.4	A	13.1.9		modified incl. int. to 13.1.9
9	2.4.2		new		heading
9	2.4.2.1	A	13.2.4		modified incl. int. to 13.2.4
9	2.4.2.2	A	13.2.5		modified
9	2.4.3		new		heading
9	2.4.3.1	A	13.2.6		
9	2.4.3.2	A	13.1.15		modified dash 1

new requirements		*where the requirements in the new FSS Code come from*			
new FSS Code		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Chapter	**Paragraph**	**Part**	**Regulation**		
9	2.5		new		heading
9	2.5.1		new		heading
9	2.5.1.1	A	13.1.4		without 1st sentence
9	2.5.1.2	A	13.1.5		modified
9	2.5.1.3	A	13.1.6		modified
9	2.5.1.4	A	13.1.7		
9	2.5.1.5	A	13.1.2		
9	2.5.2	A	13.1.12		
10	1		new		
10	2		new		
10	2.1	A	13-1.1		
10	2.1.1	A	13-1.1.1		
10	2.1.2	A	13-1.1.2		
10	2.1.3	A	13-1.1.11		
10	2.1.4	A	13-1.3.1		
10	2.1.5	A	13-1.1.10		2nd sentence only
10	2.1.6	A	13-1.1.4		
10	2.2		new		heading
10	2.2.1	A	13-1.3.2		
10	2.2.2	A	13-1.3.3		modified
10	2.2.3	A	13-1.3.4		
10	2.2.4	A	13-1.3.5		
10	2.2.5	A	13-1.3.6		
10	2.2.6	A	13-1.3.7		
10	2.3		new		heading
10	2.3.1		new		heading
10	2.3.1.1	A	13-1.2.1		
10	2.3.1.2	A	13-1.2.2		
10	2.3.1.3	A	13-1.2.3		
10	2.3.1.4	A	13-1.2.4		
10	2.3.1.5	A	13-1.2.5		
10	2.3.2		new		heading
10	2.3.2.1	A	13-1.1.8		
10	2.3.2.2	A	13-1.2.6		
10	2.4		new		heading
10	2.4.1		new		heading
10	2.4.1.1	A	13-1.1.5		modified

new requirements		*where the requirements in the new FSS Code come from*			
new FSS Code		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Chapter	**Paragraph**	**Part**	**Regulation**		
10	2.4.1.2	A	13-1.1.7		
10	2.4.1.3	A	13-1.1.6		modified
10	2.4.1.4	A	13-1.1.3		
10	2.4.2	A	13-1.1.9		
11	1		new		
11	2		new		heading
11	2.1		new		
12	1		new		
12	2		new		heading
12	2.1	A	4.3.3.3.1		modified
12	2.2		new		heading
12	2.2.1		new		heading
12	2.2.1.1	A	4.3.3.2.1		modified
12	2.2.1.1.1	A	4.3.3.2.1	MSC/Circ.847	modified incl. int. to 4.3.3.3
12	2.2.1.1.2		new	MSC/Circ.847	int. to 4.3.3.3
12	2.2.1.2	A	4.3.3.2.2		modified
12	2.2.1.3	A	4.3.3.2.5	MSC/Circ.847	modified incl. int. to 4.3.3.2.5
12	2.2.2		new		heading
12	2.2.2.1	A	4.3.3.2.3		slightly modified
12	2.2.2.2	A	4.3.3.2.4		modified
13	1		new		
13	2		new		heading
13	2.1		new		heading
13	2.1.1	B	28.1.5.1		1st, 3rd, 5th, and modified 6th sentence
13	2.1.2		new		heading
13	2.1.2.1		new		heading
13	2.1.2.1.1		new	A.757(18)	para 1.5 modified
13	2.1.2.1.2		new	A.757(18)	para 1.3
13	2.1.2.1.3		new	A.757(18)	para 1.4
13	2.1.2.1.4		new	A.757(18)	para 3.1
13	2.1.2.2		new		heading
13	2.1.2.2.1		new	A.757(18)	para 2.1 incl. figs. 1 and 2
13	2.1.2.2.2		new		heading

new requirements		*where the requirements in the new FSS Code come from*			
new FSS Code		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Chapter	**Paragraph**	**Part**	**Regulation**		
13	2.1.2.2.2.1		new	A.757(18)	para 3.2 incl. fig. 3
13	2.1.2.2.2.2		new	A.757(18)	para 3.3
13	2.1.3		new	A.757(18)	para 2.2
13	2.2		new		heading
13	2.2.1	B	28.1.5.1		2nd and modified 4th sentence
13	2.2.2	B	28.1.5.2		
13	2.2.3	B	28.1.5.4		
13	2.2.4	B	28.1.5.5		
13	2.3		new		heading
13	2.3.1	B	28.1.5.3		
13	2.3.2		new	A.757(18)	para 4.1
13	2.4		new		heading
13	2.4.1		new	A.757(18)	para 1.2 modified
13	2.4.2		new	A.757(18)	para 2.3
13	2.5		new		heading
13	2.5.1		new	A.757(18)	para 4.3
13	2.5.1.1		new	A.757(18)	para 4.3.1
13	2.5.1.2		new	A.757(18)	para 4.3.2
13	2.5.1.3		new	A.757(18)	para 4.3.3
13	2.5.1.4		new	A.757(18)	para 4.3.4
13	2.5.1.5		new	A.757(18)	para 4.3.5
13	2.5.2		new	A.757(18)	para 4.4
13	3		new	MSC/Circ.847	ints. (1) and (2)
14	1		new		
14	2		new		heading
14	2.1		new		heading
14	2.1.1	D	61.1		
14	2.1.2	D	61.2		1st sentence only
14	2.1.3	D	61.10		
14	2.2		new		heading
14	2.2.1		new		heading
14	2.2.1.1	D	61.3		
14	2.2.1.1.1	D	61.3.1		
14	2.2.1.1.2	D	61.3.2		
14	2.2.1.1.3	D	61.3.3		
14	2.2.1.2	D	61.4		slightly modified

new requirements			*where the requirements in the new FSS Code come from*			
new FSS Code			**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Chapter	**Paragraph**		**Part**	**Regulation**		
14	2.2.2			new		heading
14	2.2.2.1		D	61.5		
14	2.2.2.2		D	61.6.1		2nd and 3rd sentence
14	2.2.2.3		D	61.8		2nd sentence only
14	2.3			new		heading
14	2.3.1		D	61.2		2nd sentence only
14	2.3.2			new		heading
14	2.3.2.1		D	61.6.1		1st sentence only
14	2.3.2.2		D	61.6.2		
14	2.3.2.3		D	61.7		
14	2.3.3		D	new		heading
14	2.3.3.1		D	61.8		3rd and 4th sentence
14	2.3.3.2		D	61.8		1st sentence only
14	2.3.4		D	61.9		
15	1			new		
15	2			new		heading
15	2.1			new		heading
15	2.1.1		D	footnote to 62.1		
15	2.1.2		D	62.1		modified
15	2.1.3		D	62.2		
15	2.1.3.1		D	62.2.1		
15	2.1.3.2		D	62.2.2		
15	2.1.3.3		D	62.2.3		
15	2.1.3.4		D	62.2.4		
15	2.2			new		heading
15	2.2.1			new		heading
15	2.2.1.1		D	62.4		slightly modified
15	2.2.1.2		D	62.3.1		
15	2.2.1.3		D	62.3.2		
15	2.2.1.4		D	62.7.2		
15	2.2.2			new		heading
15	2.2.2.1		D	62.6.1		
15	2.2.2.2		D	62.6.2		
15	2.2.2.3		D	62.6.3		
15	2.2.3			new		heading
15	2.2.3.1		D	62.7.1		modified
15	2.2.3.2		D	62.7.3		

new requirements		*where the requirements in the new FSS Code come from*			
new FSS Code		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Chapter	**Paragraph**	**Part**	**Regulation**		
15	2.2.3.3	D	62.7.4		
15	2.2.4		new		heading
15	2.2.4.1	D	62.10.3		
15	2.2.4.2	D	62.10.4		
15	2.2.4.3	D	62.10.5		
15	2.2.4.4	D	62.10.6		
15	2.2.4.5	D	62.10.7		
15	2.2.4.6	D	62.19.7		
15	2.3		new		heading
15	2.3.1		new		heading
15	2.3.1.1	D	62.5		
15	2.3.1.2		new		heading
15	2.3.1.2.1	D	62.8.1		
15	2.3.1.2.2	D	62.8.2		
15	2.3.1.3		new		heading
15	2.3.1.3.1	D	62.9.1		
15	2.3.1.3.2	D	62.9.2		
15	2.3.1.4		new		heading
15	2.3.1.4.1	D	62.10.1		
15	2.3.1.4.2	D	62.10.2		
15	2.3.1.4.3	D	62.10.8		
15	2.3.1.4.4	D	62.10.9		
15	2.3.1.5		new		heading
15	2.3.1.5.1	D	62.19.3		
15	2.3.1.5.2	D	62.19.4		
15	2.3.1.6	D	62.19.5		
15	2.3.2		new		heading
15	2.3.2.1	D	62.11.1		
15	2.3.2.2	D	62.11.2.1		modified
15	2.3.2.3	D	62.11.2.2		
15	2.3.2.4	D	62.11.3		
15	2.3.2.5	D	62.11.4		
15	2.3.2.6	D	62.11.5	MSC/Circ.847	modified incl. int. to 62.11.5
15	2.3.2.7	D	62.13.4.1		
15	2.3.2.8	D	62.13.4.2		
15	2.4		new		heading

new requirements		*where the requirements in the new FSS Code come from*			
new FSS Code		**existing Chapter II-2**		**MSC-Circulars Assembly-Res. MSC-Documents**	**Remarks**
Chapter	**Paragraph**	**Part**	**Regulation**		
15	2.4.1	D	62.15		
15	2.4.2		new		heading
15	2.4.2.1	D	62.16.1		slightly modified
15	2.4.2.1.1	D	62.16.1.1		
15	2.4.2.1.2	D	62.16.1.2		
15	2.4.2.2	D	62.16.2		
15	2.4.2.3	D	62.16.3		
15	2.4.2.3.1	D	62.16.3.1		
15	2.4.2.3.2	D	62.16.3.2		
15	2.4.2.4	D	62.17		
15	2.4.2.5	D	62.18		
15	2.4.3		new		heading
15	2.4.3.1	D	62.19.1		
15	2.4.3.1.1	D	62.19.1.1		
15	2.4.3.1.2	D	62.19.1.2		
15	2.4.3.1.3	D	62.19.1.3		
15	2.4.3.1.4	D	62.19.1.4		
15	2.4.3.1.5	D	62.19.1.5		
15	2.4.3.1.6	D	62.19.1.6		
15	2.4.3.1.7	D	62.19.1.7		
15	2.4.3.1.8	D	62.19.1.8		
15	2.4.3.1.9	D	62.19.1.9		
15	2.4.3.2	D	62.19.2		
15	2.4.3.2.1	D	62.19.2.1		
15	2.4.3.2.2	D	62.19.2.2		slightly modified
15	2.4.3.2.3	D	62.19.2.3		
15	2.4.3.3	D	62.19.6		
15	2.4.3.4	D	62.19.8		
15	2.4.4	D	62.21		