

REPUBLIC OF PALAU

SHIPPING SAFETY REGULATIONS (2024)

# Contents

<b>CHAPTER 1</b> .....	6
<b>Regulation 1.1 – Application</b> .....	6
<b>Regulation 1.2 –Definitions</b> .....	6
For the purpose of these Regulations, unless otherwise expressly provided: .....	6
<b>Regulation 1.3 – Exceptions</b> .....	7
<b>Regulation 1.4 – Exemptions</b> .....	7
<b>Regulation 1.5 – Equivalents</b> .....	8
<b>CHAPTER 2: Surveys and Certificates</b> .....	8
<b>Regulation 2.1 – Inspection and Survey</b> .....	8
<b>Regulation 2.2 – Survey of Passenger Ships</b> .....	9
<b>Regulation 2.3 –Surveys of Life-Saving Appliances and Equipment of Cargo Ships</b> .....	10
<b>Regulation 2.4 – Surveys of Radio Installations of Cargo Ships</b> .....	10
<b>Regulation 2.5 – Surveys of Structure, Machinery and Equipment of Cargo Ships</b> .....	11
<b>Regulation 2.6 – Maintenance of Conditions after Survey</b> .....	12
<b>Regulation 2.7 – Issue or Endorsement of Certificates</b> .....	13
<b>Regulation 2.8 – Issue or Endorsement of Certificates by another Government</b> .....	14
<b>Regulation 2.9 – Duration and Validity of Certificates</b> .....	14
<b>Regulation 2.10 –Forms of Certificates and Records of Equipment</b> .....	16
<b>Regulation 2.11 – Availability of Certificates</b> .....	16
<b>Regulation 2.12 – Acceptance of Certificates</b> .....	16
<b>Regulation 2.13 – Control</b> .....	17
<b>CHAPTER 3: CASUALTIES</b> .....	17
<b>Regulation 3.1 – Casualties</b> .....	17
<b>CHAPTER 4: PENALTY</b> .....	17
<b>Regulation 4.1 – Penalty</b> .....	17
<b>CHAPTER 5: CONSTRUCTION: STRUCTURE, SUBDIVISION AND STABILITY, MACHINERY AND ELECTRICAL INSTALLATION</b> .....	17
<b>Regulation 5.1 – Application</b> .....	17
<b>Regulation 5.2 – Definitions</b> .....	19
<b>CHAPTER 6: STRUCTURE OF SHIPS</b> .....	23
<b>Regulation 6.1 –Structural, Mechanical and Electrical Requirements for Ships</b> .....	23
<b>Regulation 6.2 –Protective Coatings of Dedicated Seawater Ballast Tanks in All Types of Ships and Double-side Skin Spaces of Bulk Carriers</b> .....	23
<b>Regulation 6.3 – Safe Access to Tanker Bows</b> .....	23

Regulation 6.4 – Emergency towing arrangements and procedures.....	23
Regulation 6.5 –New Installation of Materials containing Asbestos .....	24
Regulation 6.6 – Access to and within Spaces in, and forward of, the Cargo Area of Oil Tankers and Bulk Carriers .....	24
Regulation 6.7 – Construction Drawings Maintained on Board and Ashore.....	26
Regulation 6.8 – Towing and Mooring Equipment.....	26
Regulation 6.9 – Means of Embarkation on and Disembarkation from Ships.....	26
Regulation 6.10 – Goal-based Ship Construction Standards for Bulk Carriers and Oil Tankers .....	26
Regulation 6.11 – Corrosion Protection of Cargo Oil Tanks of Crude Oil Tankers .....	27
Chapter 7: Subdivision and Stability.....	28
Regulation 7.1– General.....	28
Chapter 8: Machinery Installations.....	30
Regulation 8.1 –General.....	30
Regulation 8.2 – Machinery.....	30
Regulation 8.3 – Means of Going Astern .....	31
Regulation 8.4 –Steering Gear.....	31
Regulation 8.5 –Additional Requirements for Electric and Electrohydraulic Steering Gear.....	32
Regulation 8.6 – Machinery Controls .....	32
Regulation 8.7 – Steam Boilers and Boilers Feed Systems.....	33
Regulation 8.8 – Steam Pipe Systems.....	33
Regulation 8.9 – Air Pressure Systems .....	33
Regulation 8.10 – Ventilating Systems in Machinery Spaces.....	33
Regulation 8.11 – Communication between Navigating Bridge and Machinery Space .....	33
Regulation 8.12 – Engineer’s Alarm .....	34
Regulation 8.13 – Location of Emergency Installations in Passenger Ships.....	34
CHAPTER 9: Electrical Installations.....	34
Regulation 9 –General.....	34
Regulation 9.1 – Main Source of Electrical Power and Lighting Systems.....	34
Regulation 9.2 – Emergency Source of Electrical Power in Passenger Ships.....	34
Regulation 9.3 – Emergency Source of Electrical Power in Cargo Ships .....	36
Regulation 9.4 – Starting Arrangements for Emergency Generating Sets.....	37
Regulation 9.5 – Precautions against Shock, Fire and other Hazards of Electrical Origin. ....	37
CHAPTER 10 – Additional Requirements for Periodically Unattended Machinery Spaces.....	38
Regulation 10.1 – General.....	38
Regulation 10.2 – Fire Precautions .....	39

Regulation 10.3 – Protection against Flooding.....	39
Regulation 10.4 – Control of Propulsion Machinery from the Navigating Bridge .....	39
Regulation 10.5 – Communication .....	39
Regulation 10.6 – Alarm Systems.....	40
Regulation 10.7 – Safety Systems .....	40
Regulation 10.8 – Special Requirements for Machinery, Boiler and Electrical Installations.....	40
Regulation 10.9 – Special Consideration in Respect of Passenger Ships .....	40
CHAPTER 11 Alternative Design and Arrangements .....	40
Regulation 11 – Alternative design and arrangements .....	40
CHAPTER 12 Ships Using Low-flashpoint Fuels.....	41
Regulation 12 .....	41
Regulation 12.2 – Requirements for Ships Using Low-flashpoint Fuels.....	42
CHAPTER 13 CONSTRUCTION, FIRE PROTECTION, FIRE DETECTION AND FIRE EXTINGUISHING	42
Regulation 13 – Application.....	42
Regulation 14.1 – Fire Safety Objective and Functional Requirements .....	44
Regulation 14.2 – Definitions .....	44
For this Chapter, the following terms are defined below: .....	44
Regulation 14.3 – Probability of Ignition.....	46
Regulation 14.4 – Fire Growth Potential.....	46
Regulation 14.5 – Smoke Generation Potential and Toxicity .....	48
CHAPTER 15 SUPPRESSION OF FIRE.....	49
Regulation 15.1 – Detection and Alarm .....	49
Regulation 15.2 – Control of Smoke Spread .....	50
Regulation 15.3 – Containment of Fire.....	50
Regulation 15.4 – Fire Fighting .....	51
Regulation 15.5 – Structural Integrity.....	53
Regulation 15.6 – Notification of crew and passengers .....	53
Regulation 15.7 – Means of Escape .....	53
CHAPTER 16 OPERATIONAL REQUIREMENTS .....	54
Regulation 16 – Operational readiness and maintenance .....	54
Regulation 16.2 – Instructions on board training and drills.....	54
CHAPTER 17 ALTERNATIVE DESIGN AND ARRANGEMENTS .....	54
CHAPTER 18 SPECIAL REQUIREMENTS.....	54
CHAPTER 19 LIFE-SAVING APPLIANCES AND ARRANGEMENTS .....	54

Regulation 19.1 – Application.....	54
Regulation 19.2 – Exemption.....	55
Regulation 19.3 – Evaluation, testing and approval of life-saving appliances and arrangements.....	55
<b>CHAPTER 20 REQUIREMENTS OF SHIPS AND LIFE-SAVING APPLIANCES .....</b>	<b>55</b>
Regulation 20.1 – Requirements for ships and life-saving appliances .....	55
<b>CHAPTER 21 RADIOCOMMUNICATIONS .....</b>	<b>56</b>
Regulation 21.1 – Application.....	56
<b>CHAPTER 22 SAFETY OF NAVIGATION .....</b>	<b>57</b>
Regulation 22.1 – Application.....	57
<b>22.1.14 All ships shall maintain navigational and engineering watches. Masters, chief engineers and watchkeeping personnel shall observe the basic principles in watchkeeping outlined in Chapter VIII of the Regulations annexed to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (1978), as amended on 7July 1995 and any amendment thereto which has come into force and has been accepted by the Palau Government. ....</b>	<b>58</b>
<b>CHAPTER 23 CARRIAGE OF CARGOES AND OIL FUELS .....</b>	<b>58</b>
Regulation 23.1 – Application.....	58
<b>CHAPTER 24 BULK CARGOES OTHER THAN GRAIN.....</b>	<b>59</b>
Regulation 24.1 – General Requirements.....	59
<b>CHAPTER 25 CARRIAGE OF DANGEROUS GOODS.....</b>	<b>60</b>
Regulation 25.2 – Carriage of Dangerous Goods in Solid Form in Bulk.....	60
Regulation 25.3 – Carriage of Dangerous Goods in Liquid Form in Bulk.....	61
<b>CHAPTER 27 NUCLEAR SHIPS .....</b>	<b>61</b>
<b>CHAPTER 28 MANAGEMENT FOR THE SAFE OPERATION OF SHIPS.....</b>	<b>61</b>
<b>CHAPTER 29 SAFETY MEASURES FOR HIGH-SPEED CRAFT.....</b>	<b>61</b>
<b>CHAPTER 30 SPECIAL MEASURES TO ENHANCE MARITIME SAFETY .....</b>	<b>62</b>
Regulation 30.2 – Investigation of Marine Casualties and Incidents.....	62
<b>CHAPTER 31 – SPECIAL MEASURES TO ENHANCE MARITIME SECURITY .....</b>	<b>62</b>

# SHIPPING SAFETY REGULATIONS

These Regulations may be cited as the Shipping Safety Regulations (2020).

## CHAPTER 1

### Regulation 1.1 – Application

Unless expressly provided otherwise, the International Convention for the Safety of Life at Sea, 1974, as amended, (SOLAS) shall apply only to ships to which SOLAS applies and which are engaged on international voyages as stated in these Regulations.

### Regulation 1.2 –Definitions

For the purpose of these Regulations, unless otherwise expressly provided:

- a. **“Administration”** shall mean the Ministry of Public Infrastructure, Industries and Commerce.
- b. **“Age of ship”** means the elapsed period of time determined from the year of build or the date on which the keel was laid, whichever is sooner, as indicated on the ship’s registry papers or Builder’s Certificate.
- c. **“Anniversary date”** means the day and the month of each year which will correspond to the date of issue of the relevant certificate.
- d. **“Recognized Organization”** means an organization authorized by the Administration for the survey or inspection of Palau ships and for the issue of Safety Certificates on behalf of the Administration.
- e. **“Cargo ship”** means any ship to which these Regulations apply which is not a passenger ship.
- f. **“Contracting State”** means the government of a country which is a party to the Convention.
- g. **“Convention”** or **“present Convention”** means the International Convention for the Safety of Life at Sea, 1974, and any amendment thereto which has come into force.
- h. **“High-speed craft”** is a high-speed water vessel for civilian use; also called a fast craft or fast ferr;
- i. **“International voyage”** means a voyage:
  - i. from Palau to a port or place outside Palau, or conversely; or
  - ii. a voyage outside Palau between two ports or places located in two different countries.

- j. ***“Nuclear Ships”*** *A nuclear ship is a ship provided with a nuclear power plant*
- k. ***“Passenger”*** means every person other than:
  - i. the master and the members of the crew or other persons employed or engaged in any capacity on board a ship on the business of that ship; or
  - ii. a child under one (1) year of age.
- l. ***“Passenger ship”*** means a ship which carries more than twelve (12) passengers.
- m. ***“Recognized Organization”*** means an organization recognized by the Administration to act on its behalf.
- n. ***“Tanker”*** means a cargo ship constructed or adapted for the carriage in bulk of liquid cargoes of an inflammable nature.

### **Regulation 1.3 – Exceptions**

These Regulations, unless expressly provided otherwise, do not apply to:

- a. Ships of war and troopships,
- b. Cargo ships of less than five hundred(500) tons,
- c. Ships not propelled by mechanical means,
- d. Wooden ships of primitive build,
- e. Pleasure yachts not engaged in trade, or
- f. Fishing vessels.

### **Regulation 1.4 – Exemptions**

**1.4.1** A ship which is not normally engaged on international voyages but which, in exceptional circumstances, is required to undertake a single international voyage may be exempted by the Administration from any of the requirements of these Regulations if it complies with safety requirements which are adequate in the opinion of the Administration for the voyage which is to be undertaken by the ship.

**1.4.2** The Administration may exempt any ship which embodies features of a novel kind from any of the provisions of these Regulations the application of which might seriously impede research into the development of such features and their incorporation in ships engaged on international voyages. Any such ship shall, however, comply with safety requirements which, in the opinion of the Administration, are adequate for the service for which it is intended and are such as to ensure the overall safety of the ship.

**1.4.3** For the purpose of paragraph 1.4.2 the requirements of the following Codes wherever applicable shall be complied with to the satisfaction of the Administration:

- a. Dynamically supported craft shall comply with the Code of Safety for Dynamically Supported Craft adopted by the Organization by resolution A.373 (X) as amended from time to time.

- b. Special purpose ships of not less than 500 tons carrying more than twelve (12) special personnel shall comply with the Code of Safety for Special Purpose Ships adopted by the Organization by resolution A.534 (XIII) as amended from time to time; and
- c. Mobile offshore drilling units shall comply with the Code for Mobile Offshore Drilling Units adopted by the Organization by resolution A 414 (XI).

### **Regulation 1.5 – Equivalent**

Where the SOLAS Regulations require that a particular fitting, material, appliance or apparatus, or type thereof, shall be fitted or carried in a ship, or that any particular provision shall be made, the Administration may allow any other fitting, material, appliance or apparatus, or type thereof, to be fitted or carried, or any other provision to be made in that ship, if the Administration is satisfied by trial thereof or otherwise that such fitting, material, appliance or apparatus, or type thereof, or provision, is at least as effective as that required by these Regulations.

## **CHAPTER 2: Surveys and Certificates**

### **Regulation 2.1 – Inspection and Survey**

**2.1.1** Inspections and surveys of ships should be done for the enforcement and compliance with the provisions of the International Convention for the Safety of Life at Sea (SOLAS).

**2.1.2** Issuance of exemptions on regards to these Regulations shall be reviewed, approved, and issued by the Administration or on its behalf.

**2.1.3** Recognized Organizations (RO) shall be approved by the Administration to carry out survey and inspections and to certify Palau registered vessels as found in compliance with SOLAS.

**2.1.4** When an authorized RO determines that the condition of the ship or its equipment does not correspond substantially with the particulars of the certificate or is such that the ship is not fit to proceed to sea without danger to the ship, or persons on board, such organization shall immediately ensure that corrective action is taken. If such corrective action is not taken within the reasonable period specified by the RO, the validity of the relevant certificate is liable to be suspended by the RO until such time the corrective action has been taken to the satisfaction of the RO. The Administration and the owner or master shall be notified immediately of any suspension or revalidation of a certificate, and, if the ship is in a foreign port, the appropriate authorities of the Port State shall also be notified immediately

**2.1.5** The RO shall contact the Administration confirming the intended survey or inspection scheduled to be carried out on board the ship.

**2.1.6** The Administration accepts requests for dry dock extensions. Upon receipt of the formal request including updated survey status and underwater survey in order to determine if the extension can be granted, the request will be reviewed, and dry dock extension can be granted if



the request is approved.

## **Regulation 2.2 – Survey of Passenger Ships**

**2.2.1** A passenger ship shall be subject to the surveys specified below:

- a. An Initial survey before the ship is put in service.
- b. A renewal survey once every twelve (12) months, except where Regulation 14.2, 14.5, 14.6 and 14.7 is applicable; and
- c. Additional surveys, as required.

**2.2.2** The surveys referred to above shall be carried out as follows:

- a. The initial survey shall be conducted on dry dock and shall include a complete inspection of the ship's structure, machinery, and equipment, including the outside of the ship's bottom and the inside and outside of the boilers. This survey shall be such as to ensure that the arrangements, materials and scantlings of the structure, boilers and other pressure vessels and their appurtenances, main and auxiliary machinery, electrical installation, radio installations including those used in life-saving appliances, fire protection, fire safety systems and appliances, life-saving appliances and arrangements, ship borne navigational equipment, nautical publications, means of embarkation for pilots and other equipment, fully comply with the requirements of these Regulations for ships of the service for which it is intended. The survey shall also be such as to ensure that the workmanship of all parts of the ship and its equipment is in all respects satisfactory, and that the ship is provided with the lights, shapes, means of making sound signals and distress signals as required by the provisions of these Regulations and of the Palau Maritime Regulations.
- b. The renewal survey shall include an inspection of the structure, boilers and other pressure vessels, machinery, and equipment, including the outside of the ship's bottom. The survey shall be such as to ensure that the ship, as regards to the structure, boilers and other pressure vessels and their appurtenances, main and auxiliary machinery, electrical installation, radio installations including those used in life-saving appliances, fire protection, fire safety systems and appliances, life-saving appliances and arrangements, ship borne navigational equipment, nautical publications, means of embarkation for pilots and other equipment is in satisfactory condition and is fit for the service for which it is intended, and that it complies with the requirements of these Regulations. The lights, shapes, means of making sound signals and distress signals carried by the ship shall also be subject to the abovementioned survey for the purpose of ensuring that they comply with the requirements of these Regulations and of the Prevention of Collisions at Sea Regulations in force.
- c. An additional survey, either general or partial according to the circumstances, shall be made after a repair resulting from a casualty, or whenever any important repairs or renewals are made. The survey shall be such as to ensure that the necessary repairs or renewals have been effectively made, that the material and workmanship of such repairs or renewals are all in respects satisfactory, and that the ship complies in all

respects with the provisions of these Regulations and of the Prevention of Collisions at Sea Regulations in force, and such that the ship is fit for the service for which it is intended.

**2.2.3** For the purpose of compliance with this Regulation, the rules for the construction and survey of a vessel shall be the rules of the Recognized Organization under which the vessel is classed, insofar as such rules are not in conflict with the requirements of these Regulations or any rule or directive made by the Administration.

**2.2.4** In the case of an initial delivery voyage where any passenger ship requirements remain outstanding, the Administration may consider issuing cargo ship safety and load line certificates to the vessel. The same action can be taken for passenger vessels that are not in service or for transit voyages to repair yards, etc. Any such decision will be made by the Administration based upon the one or more of the below:

- a. The company has a valid ISM Document of Compliance for the operation of cargo ships,
- b. The vessel has a valid SMC (Safety Management Certificate) as a cargo ship,
- c. The vessel has a valid ISSC (International Ship Security Certificate); and/or
- d. The crew has valid Crew Endorsement Certificates in compliance with the STCW Convention.

**2.2.5** The Administration requires that passenger ships bottom inspection in dry dock is carried out twice in any five-year period, as determined by the Load Line Certificate. Any deviations will be ascertained by the Administration through the review of the vessel's age, trading area, previous dry dock reports and underwater surveys carried out.

### **Regulation 2.3 – Surveys of Life-Saving Appliances and Equipment of Cargo Ships**

The life-saving appliances and other equipment of cargo ships of five hundred (500) tons and upwards shall be subject to the surveys specified below:

- a. An initial survey before the ship is put in service.
- b. A renewal survey at intervals of five (5) years, or as stated by the manufacturer
- c. A periodical survey within three (3) months before or after the second anniversary date or within three (3) months before or after the third anniversary date of the Cargo Ship Safety Equipment Certificate.
- d. An annual survey within three (3) months before or after each anniversary date of the Cargo Ship Safety Equipment Certificate; and

### **Regulation 2.4 – Surveys of Radio Installations of Cargo Ships**

**2.4.1** The radio installations, including those used in life-saving appliances, of cargo ships to which Chapters III and IV of SOLAS apply shall be subject to the surveys specified below:

- a. An Initial survey before the ship is put in service.

- b. A renewal survey at intervals of five (5) years, and
- c. A periodical survey within three (3) months before or after each anniversary date of the Cargo Ship Safety Radio Certificate.

**2.4.2** The surveys referred to in **2.4.1** shall be carried out as follows:

- a. The initial survey shall include a complete inspection of the radio installations of cargo ships, including those used in life-saving appliances, to ensure that they comply with the requirements of these Regulations.
- b. The renewal and periodical surveys shall include an inspection of the radio installations of cargo ships, including those used in life-saving appliances, to ensure that they comply with the requirements of these Regulations.

**2.4.3** The periodical surveys referred to in **2.4.1(c)** shall be endorsed on the Cargo Ship Safety Radio Certificate.

### **Regulation 2.5 – Surveys of Structure, Machinery and Equipment of Cargo Ships**

**2.5.1** The structure, machinery, and equipment (other than items in respect of which a Cargo Ship Safety Equipment Certificate and a Cargo Ship Safety Radio Certificate are issued) of a cargo ship as referred to in paragraph 10.2 (a) shall be subject to the surveys and inspections specified below:

- a. An initial survey including an inspection of the outside of the ship's bottom before the ship is put in service.
- b. A renewal survey at intervals of five (5) years,
- c. An intermediate survey within three (3) months before or after the second anniversary date or within three (3) months before or after the third anniversary date of the Cargo Ship Safety Construction Certificate, which shall take the place of one of the annual surveys specified in sub-paragraph below.
- d. An annual survey within three (3) months before or after each anniversary date of the Cargo Ship Safety Construction Certificate;
- e. A minimum of two (2) inspections of the outside of the ship's bottom during any five (5) year period..In which case, this five (5) year period may be extended to coincide with the extended period of validity of the certificate. In all cases, the interval between any two (2) such inspections shall not exceed thirty-six (36) months.

**2.5.2** The surveys and inspections referred to in **2.5.1(a)** shall be carried out as follows:

- a. The initial survey shall include a complete inspection of the structure, machinery, and equipment. This survey shall be such as to ensure that the arrangements, materials, scantlings and workmanship of the structure, boilers and other pressure vessels, their appurtenances, main and auxiliary machinery including steering gear and associated control systems, electrical installation and other equipment comply with the requirements of these Regulations, are in satisfactory condition and are fit for the service for which the ship is intended and that the required stability information is provided. In the case of tankers, such a survey shall also include an inspection of the

pump rooms, cargo, bunker and ventilation piping systems and associated safety devices.

- b. The renewal survey shall include an inspection of the structure, machinery and equipment as referred to in sub-paragraph above to ensure that they comply with the requirements of these Regulations, are in satisfactory condition and are fit for the service for which the ship is intended.
- c. The intermediate survey shall include an inspection of the structure, boilers and other pressure vessels, machinery and equipment, the steering gear and the associated control systems and electrical installation to ensure that they remain satisfactory for the service for which the ship is intended. In the case of tankers, the survey shall also include an inspection of the pump rooms, cargo, bunker and ventilation piping systems and associated safety devices and the testing of insulation resistance of electrical installation in dangerous zones;
- d. The annual survey shall include a general inspection of the structure, machinery and equipment referred to in 2.5.2(a) above to ensure that they have been maintained and that they remain satisfactory for the service for which the ship is intended;
- e. The inspection of the outside of the ship's bottom and the survey of related items inspected at the same time shall be such as to ensure that they remain satisfactory for the service for which the ship is intended.

**2.5.3** The intermediate and annual surveys and the inspections of the outside of the ship's bottom shall be endorsed on the Cargo Ship Safety Construction Certificate.

**2.5.4** An additional survey, either general or partial according to the circumstances, shall be made when required after an investigation is conducted, or whenever any important repairs or renewals are made. The survey shall be such as to ensure that the necessary repairs or renewals have been effectively made, that the material and workmanship of such repairs or renewals are in all respects satisfactory, and that the ship is fit to proceed to sea without danger to the ship or persons on board.

**2.5.5** The rules for the construction and survey of a vessel shall be the rules of the Recognized Organization under which the vessel is classed, insofar as such rules are not in conflict with the requirements of these Regulations or any rule or directive made by the Palau Ship Registry Administrator

## **Regulation 2.6 – Maintenance of Conditions after Survey**

The owner or master of every ship in relation to which these Regulations apply shall ensure that:

- a. The condition of the ship and its equipment is maintained to conform with the provisions of these Regulations to ensure that the ship in all respects will remain fit to proceed to sea without danger to the ship or persons on board.

- b. After any survey of the ship under Regulation 2.5 has been completed, no change shall be made in the structural arrangements, machinery, equipment and other items covered by the survey, without the sanction of the Palau Ship Registry Administrator; and
- c. Whenever an accident occurs to a ship or a defect is discovered, either of which affects the safety of the ship or the efficiency or completeness of its life-saving appliances or other equipment, a request is made immediately to the Administration and the RO responsible for issuing the relevant certificate for a survey as may be required to be carried out as soon as practicable. The Recognized Organization shall thereafter submit the survey report to the Administration. If the ship is in a port of a Contracting State, the master or owner shall also report immediately to the appropriate authorities of that State and the Recognized Organization shall ascertain that such a report has been made. If the ship is in Palau, the master or owner shall also report immediately to the Director of Marine Transportation.

## **Regulation 2.7 – Issue or Endorsement of Certificates**

### **2.7.1 Certification and Endorsement of Certificate shall be as follows:**

- a. A certificate called a Passenger Ship Safety Certificate shall be issued after an initial or renewal survey to a passenger ship which complies with the relevant requirements of this Regulation and any other relevant requirements as per the Convention.
- b. A certificate called a Cargo Ship Safety Construction Certificate shall be issued after an initial or renewal survey to a cargo ship which complies with the relevant requirements of SOLAS Chapters II-1 and II-2 (other than those relating to fire safety systems and appliances and fire control plans) and any other relevant requirements of these Regulations.
- c. A certificate called a Cargo Ship Safety Equipment Certificate shall be issued after an initial or renewal survey to a cargo ship which complies with the relevant requirements of SOLAS Chapters II-1, II-2, III and V and any other relevant requirements of these Regulations.
- d. A certificate called a Cargo Ship Safety Radio Certificate shall be issued after an initial or renewal survey to a cargo ship which complies with the relevant requirements of SOLAS Chapter IV and any other relevant requirements of these Regulations.
- e. A certificate called a Cargo Ship Safety Certificate may be issued after an initial or renewal survey to a cargo ship which complies with the relevant requirements of SOLAS Chapters II-1, II-2, III, IV and V and any other relevant requirements of these Regulations, as an alternative to the certificates referred to sub-paragraphs (b), (c) and (d).

### **2.7.2 A reference in this Chapter to a Cargo Ship Safety Construction Certificate, Cargo Ship Safety Equipment Certificate or Cargo Ship Safety Radio Certificate shall, in the case where a**

Cargo Ship Safety Certificate is issued under Regulation 2.7, include a reference to a Cargo Ship Safety Certificate.

**2.7.3** The Passenger Ship Safety Certificate, the Cargo Ship Safety Equipment Certificate and the Cargo Ship Safety Radio Certificate referred to in sub-paragraphs (a), (c) and (d), or the Cargo Ship Safety Certificate referred to in sub-paragraph (e), as the case may be, shall be supplemented by a Record of Equipment.

**2.7.4** When an exemption is granted to a ship under and in accordance with the provisions of these Regulations, a certificate referred to as an Exemption Certificate shall be issued in addition to the certificates prescribed in this paragraph.

**2.7.5** The certificates referred to in this Regulation shall be issued or endorsed either by the Administration or on its behalf or by a Recognized Organization;

#### **Regulation 2.8 – Issue or Endorsement of Certificates by another Government**

**2.8.1** The Administration may, at the request of a Contracting State, cause a foreign ship in Palau to be surveyed and, if satisfied that the requirements of these Regulations are complied with, shall issue or authorize the issue of certificates to the ship and, where appropriate, endorse or authorize the endorsement of certificates on the ship in accordance with these Regulations.

**2.8.2** Any certificate so issued or endorsed shall contain a statement to the effect that it has been issued at the request of the Government of the State the flag of which the ship is entitled to fly, and it shall have the same force and receive the same recognition as a certificate issued under Regulation 2.7

#### **Regulation 2.9 – Duration and Validity of Certificates**

**2.9.1** A Passenger Ship Safety Certificate shall be issued for a period not exceeding twelve (12) months.

**2.9.2** A Cargo Ship Safety Construction Certificate, Cargo Ship Safety Equipment Certificate and Cargo Ship Safety Radio Certificate shall be issued for a period not exceeding five (5) years.

**2.9.3** An Exemption Certificate shall not be valid for longer than the period of the certificate to which it refers.

**2.9.4** Notwithstanding the requirements of Chapter 2 when the renewal survey is completed within three (3) months before the expiry date of the existing certificate, the new certificate shall be valid from the date of completion of the renewal survey to:

- a. For a passenger ship, a date not exceeding twelve (12) months from the date of expiry of the existing certificate.
- b. For a cargo ship, a date not exceeding five (5) years from the date of expiry of the existing certificate.

**2.9.5** When the renewal survey is completed after the expiry date of the existing certificate, the new certificate shall be valid from the date of completion of the renewal survey to:

- a. For a passenger ship, a date not exceeding twelve (12) months from the date of expiry of the existing certificate.
- b. For a cargo ship, a date not exceeding five (5) years from the date of expiry of the existing certificate.

**2.9.6** When the renewal survey is completed more than three (3) months before the expiry date of the existing certificate, the new certificate shall be valid from the date of completion of the renewal survey to:

- a. For a passenger ship, a date not exceeding twelve (12) months from the date of completion of the renewal survey.
- b. For a cargo ship, a date not exceeding five (5) years from the date of completion of the renewal survey.

**2.9.7** If a certificate other than a Passenger Ship Safety Certificate is issued for a period of less than five (5) years, the Recognized Organization with the approval of the Administration may extend the validity of the certificate beyond the expiry date to the maximum period,, provided that the surveys referred to in this Chapter as applicable when a certificate is issued for a period of five (5) years are carried out as appropriate.

**2.9.8** If a renewal survey has been completed and a new certificate cannot be issued or placed on board the ship before the expiry date of the existing certificate, the Recognized Organization may endorse the existing certificate and such a certificate shall be accepted as valid for a further period which shall not exceed five (5) months from the expiry date.

**2.9.9** If a ship at the time when a certificate expires is not in a port in which it is to be surveyed, the Recognized Organization with the approval of the Administration may extend the period of validity of the certificate but this extension shall be granted only for the purpose of allowing the ship to complete its voyage to the port in which it is to be surveyed, and then only in cases where it appears proper and reasonable to do so. No certificate shall be extended for a period longer than three (3) months, and a ship to which an extension is granted shall not, on its arrival in the port in which it is to be surveyed, be entitled by virtue of such extension to leave that port without having a new certificate. When the renewal survey is completed, the new certificate shall be valid to:

- a. For a passenger ship, a date not exceeding twelve (12) months from the date of expiry of the existing certificate before the extension was granted.
- b. For a cargo ship, a date not exceeding five (5) years from the date of expiry of the existing certificate before the extension was granted.

**2.9.10** A certificate issued to a ship engaged on short voyages which has not been extended under the foregoing provisions of this Regulation may be extended by Recognized Organization as approved by the from the date of expiry stated on it. When the renewal survey is completed, the new certificate shall be valid to:

- a. For a passenger ship, a date not exceeding twelve (12) months from the date of expiry of the existing certificate before the extension was granted.
- b. For a cargo ship, a date not exceeding five (5) years from the date of expiry of the existing certificate before the extension was granted.

**2.9.11** In special circumstances, as determined by the Recognized Organization with the approval of the Palau Ship Registry Administrator, a new certificate need not be dated from the date of expiry of the existing certificate. In these special circumstances, the new certificate shall be valid to:

- a. For a passenger ship, a date not exceeding twelve (12) months from the date of completion of the renewal survey.
- b. For a cargo ship, a date not exceeding five (5) years from the date of completion of the renewal survey.

**2.9.12** If an annual, intermediate or periodical survey is completed before the period specified in the relevant Regulations then:

- a. The anniversary date shown on the relevant certificate shall be amended by endorsement to a date which shall not be more than three (3) months later than the date on which the survey was completed;
- b. The subsequent annual, intermediate or periodical survey required by the relevant Regulations shall be completed at the intervals prescribed by these Regulations using the new anniversary date;
- c. The expiry date may remain unchanged provided one or more annual, intermediate or periodical surveys, as appropriate, are carried out so that the maximum intervals between the surveys prescribed by the relevant Regulations are not exceeded.

**2.9.13** A certificate issued under this Chapter shall cease to be valid in any of the following cases:

- a. If the relevant surveys and inspections are not completed within the periods specified under this Chapter.
- b. If the certificate is not endorsed in accordance with these Regulations; or
- c. Upon transfer of the ship to the flag of another country.

#### **Regulation 2.10 – Forms of Certificates and Records of Equipment**

The Certificates and records of equipment shall be in the forms set out the models given in the appendix to the annex to the present Convention.

#### **Regulation 2.11 – Availability of Certificates**

The Certificates issued under this Chapter shall be readily available on board for examination at all times.

#### **Regulation 2.12 – Acceptance of Certificates**



Certificates and Records of Equipment issued in accordance with the Convention under the authority of a country to which the SOLAS Convention applies shall be accepted by the Administration for the purposes of these Regulations

### **Regulation 2.13 – Control**

Every ship when in a port of another Contracting State is subject to control by officers duly authorized by such State in so far as this control is directed towards verifying that the Certificates issued under this Regulations are valid.

## **CHAPTER 3: CASUALTIES**

### **Regulation 3.1 – Casualties**

**3.1.1** The master and owner of a Palau ship shall, in the event of an accident to the ship resulting in loss of life or in the ship being materially damaged, stranded, abandoned or lost, immediately inform the Palau Ship Registry Administrator.

**3.1.2** The Administration having issued Marine Notices and Circulars regarding Marine Casualties and the owner, manager and Master of Palau registered vessel shall be familiar with such and follow such requirements in case of a marine casualty or incident.

## **CHAPTER 4: PENALTY**

### **Regulation 4.1 – Penalty**

Any owner or master who contravenes these Regulations shall be guilty of an offence and shall be liable on conviction to a fine not exceeding ten thousand dollars (\$10,000) and the ship may be detained by the Flag through Official Letter until a Flag Inspection is carried out by this Administration

## **CHAPTER 5: CONSTRUCTION: STRUCTURE, SUBDIVISION AND STABILITY, MACHINERY AND ELECTRICAL INSTALLATION**

### **Regulation 5.1 – Application**

Unless expressly provided otherwise, this Chapter shall apply to ships the keels of which are laid or which are at a similar stage of construction on or after 1st January 2009.

- a. For the purpose of this Chapter, the term “a similar stage of construction” means the stage at which:
  1. Construction identifiable with a specific ship begins; and
  2. Assembly of that ship has commenced comprising at least fifty (50) tones or one percent (1%) of the estimated mass of all structural material, whichever is less.

- b. For the purpose of this Chapter:
1. "ships constructed" means ships the keels of which are laid or which are at a similar stage of construction;
  2. "all ships" means ships constructed before, on or after 1st January 2009;
  3. a cargo ship, whenever built, which is converted to a passenger ship shall be treated as a passenger ship constructed on the date on which such a conversion commences;
  4. "alterations and modifications of a major character" means, in the context of cargo ship subdivision and stability, any modification to the construction which affects the level of subdivision of that ship. Where a cargo ship is subject to such modification, it shall be demonstrated that the A/R ratio calculated for the ship after such modifications is not less than the A/R ratio calculated for the ship before the modification. However, in those cases where the ship's A/R ratio before modification is equal to or greater than unity, it is only necessary that the ship after modification has an "A" value which is not less than "R", calculated for the modified ship.
- c. Unless expressly provided otherwise, ships constructed before 1st January 2009 shall comply with the requirements which are applicable under this Chapter in force immediately before that date.
- d. 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 the date on which any relevant amendments enter into force, 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. Repairs, alterations and modifications of a major character and outfitting related thereto shall meet the requirements for ships constructed on or after the date on which any relevant amendments enter into force, in so far as the Administration deems reasonable and practicable.
- e. The Administration may, if he considers that the sheltered nature and conditions of the voyage are such as to render the application of any specific requirements of this Chapter unreasonable or unnecessary, exempt from those requirements individual Palau ships or classes of Palau ships which, in the course of their voyage, do not proceed more than twenty (20) miles from the nearest land.
- f. In the case of passenger ships which are employed in special trades for the carriage of large numbers of special trade passengers, such as the pilgrim trade, the Palau Ship Registry Administrator, if satisfied that it is impracticable to enforce compliance with the requirements of this Chapter, may exempt such ships from those requirements, provided that they comply fully with the provisions of:
- i. The rules annexed to the Special Trade Passenger Ships Agreement (1971);

- and
- ii. The rules annexed to the Protocol on Space Requirements for Special Trade Passenger Ships (1973).

### Regulation 5.2 – Definitions

For the purpose of this Chapter, unless expressly provided otherwise:

- a. “**2008 IS Code**” means the International Code on Intact Stability (2008), consisting of an introduction, Part A (the provisions of which shall be treated as mandatory) and Part B (the provisions of which shall be treated as recommendatory), as adopted by resolution MSC.267 (85), and any amendment thereto which has come into force and has been accepted by the Government.
- b. An “**aft terminal**” is the aft limit of the subdivision length.
- c. “**Amid ship**” is at the middle of the length (“L”).
- d. The “**auxiliary steering gear**” is the equipment other than any part of the main steering gear necessary to steer the ship in the event of failure of the main steering gear but not including the tiller, quadrant or components serving the same purpose.
- e. “**Breadth**” (“B”) is the greatest moulded breadth of the ship at or below the deepest subdivision draught.
- f. The “**bulkhead deck**” in a passenger ship means the uppermost deck at any point in the subdivision length (“Ls”) to which the main bulkheads and the ship’s shell are carried watertight and the lowermost deck from which passenger and crew evacuation will not be impeded by water in any stage of flooding for damage cases defined in Regulation 8 and in Part B-2 of SOLAS. The bulkhead deck may be a stepped deck. In a cargo ship the freeboard deck may be taken as the bulkhead deck.
- g. A “**bulk carrier**” means a bulk carrier as defined in SOLAS Regulation 1.1 of Chapter XII.
- h. “**Dead ship condition**” is the condition under which the main propulsion plant, boilers and auxiliaries are not in operation due to the absence of power.
- i. “**Deadweight**” is the difference in tones between the displacement of a ship in water of a specific gravity of 1.025 at the draught corresponding to the assigned summer freeboard and the lightweight of the ship.
- j. The “**deepest subdivision draught**” (“ds”) is the waterline which corresponds to the summer load line draught of the ship.
- k. “**Design pressure**” means the hydrostatic pressure for which each structure or

appliance assumed watertight in the intact and damage stability calculations is designed to withstand.

- l. “**Draught**” (“d”) is the vertical distance from the keel line at mid-length to the waterline in question.
- m. An “**emergency condition**” is a condition under which any services needed for normal operational and habitable conditions are not in working order due to failure of the main source of electrical power.
- n. An “**emergency source of electrical power**” is a source of electrical power, intended to supply the emergency switchboard in the event of a failure of the supply from the main source of electrical power.
- o. An “**emergency switchboard**” is a switchboard which in the event of failure of the main electrical power supply system is directly supplied by the emergency source of electrical power or the transitional source of emergency power and is intended to distribute electrical energy to the emergency services.
- p. A “**freeboard deck**” is the deck as defined in the International Convention on Load Lines in force.
- q. “**Forward perpendicular**” is the forward perpendicular as defined in the International Convention on Load Lines in force.
- r. “**Forward terminal**” is the forward limit of the subdivision length
- s. “**Goal-based Ship Construction Standards for Bulk Carriers and Oil Tankers**” means the International Goal-based Ship Construction Standards for Bulk Carriers and Oil Tankers, adopted by the Maritime Safety Committee by resolution MSC.287 (87), and any amendment thereto which has come into force and has been accepted by the Government.
- t. “**IGF Code**” means the International Code of Safety for Ships Using Gases or Other Low-flashpoint Fuels as adopted by the Maritime Safety Committee of the Organization by resolution MSC.391 (95), as may be amended by the Organization, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the Annex to the Convention other than in SOLAS Chapter I.
- u. A “**keel line**” is a line parallel to the slope of the keel passing amidships through:
  1. the top of the keel at centerline or line of intersection of the inside of shell plating with the keel if a bar keel extends below that line, on a ship with a metal shell; or
  2. in the case of wood ships and composite ships, the lower edge of the keel rabbet. When the form at the lower part of the mid-ship section is of a hollow character, or

where thick garboards are fitted, keel line means a line parallel to the slope of the keel passing amidships through the line of the flat of the bottom continued inward where it intersects the centerline amidships.

- v. “**Length**” (“L”) is the length as defined in the International Convention on Load Lines in force.
- w. “**Lightweight**” is the displacement of a ship in tones without cargo, fuel, lubricating oil, ballast water, fresh water and feed water in tanks, consumable stores, and passengers and crew and their effects.
- x. “**Light service draught** (“dl”) is the service draught corresponding to the lightest anticipated loading and associated tankage, including, however, such ballast as may be necessary for stability or immersion or both. Passenger ships should include the full complement of passengers and crew on board.
- y. “**Low-flashpoint fuel**” means gaseous or liquid fuel having a flashpoint lower than permitted under SOLAS Regulation 4.2 of Chapter II-2.
- z. “**Machinery spaces**” are spaces between the watertight boundaries of a space containing the main and auxiliary propulsion machinery, including boilers, generators and electric motors primarily intended for propulsion. In the case of unusual arrangements, the Administration may define the limits of the machinery spaces.
  - aa. The “**main source of electrical power**” is a source intended to supply electrical power to the main switchboard for distribution to all services necessary for maintaining the ship in normal operational and habitable conditions.
  - bb. The “**main generating station**” is the space in which the main source of electrical power is situated.
  - cc. The “**main steering gear**” is the machinery, rudder actuators, steering gear, power units, if any, and ancillary equipment and the means of applying torque to the rudder stock (e.g. tiller or quadrant) necessary for effecting movement of the rudder for the purpose of steering the ship under normal service conditions.
  - dd. The “**main switchboard**” is a switchboard which is directly supplied by the main source of electrical power and is intended to distribute electrical energy to the ship’s services.
  - ee. “**Mid-length**” is the mid-point of the subdivision length of the ship.
  - ff. “**Normal operational and habitable condition**” is a condition under which the ship as a whole, the machinery, services, means and aids ensuring propulsion, ability to steer, safe navigation, fire and flooding safety, internal and external communications and signals, means of escape, and emergency boat winches, as well as the designed comfortable conditions of habitability are in working order and functioning normally.

- gg. An “**oil tanker**” means an oil tanker as defined in Regulation 1 of Annex I of the Protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships (1973).
- hh. “**Partial subdivision draught**” (“dp”) is the light service draught plus sixty percent (60%) of the difference between the light service draught and the deepest subdivision draught.
- ii. “**Permeability**” (“ $\mu$ ”) of a space is the proportion of the immersed volume of that space which can be occupied by water.
- jj. A “**power actuating system**” is the hydraulic equipment provided for supplying power to turn the rudder stock, comprising a steering gear power unit or units, together with the associated pipes and fittings, and a rudder actuator. The power actuating systems may share common mechanical components (i.e. tiller, quadrant and rudderstock) or components serving the same purpose).
- kk. A “**ro-ro passenger ship**” means a passenger ship with ro-ro spaces or special category spaces as defined in SOLAS Regulation 3 of Chapter II-2.
- ll. A “**steering gear control system**” is the equipment by which orders are transmitted from the navigating bridge to the steering gear power units. Steering gear control systems comprise transmitters, receivers, hydraulic control pumps and their associated motors, motor controllers, piping and cables.
- mm. A “**steering gear power unit**” is:
1. in the case of electric steering gear, an electric motor and its associated electrical equipment;
  2. in the case of electro hydraulic steering gear, an electric motor and its associated electrical equipment and connected pump; or
  3. in the case of other hydraulic steering gear, a driving engine and connected pump.
- nn. The “**subdivision length**” (“Ls”) of the ship is the greatest projected moulded length of that part of the ship at or below deck or decks limiting the vertical extent of flooding with the ship at the deepest subdivision draught.
- oo. “**Trim**” is the difference between the draught forward and the draught aft, where the draughts are measured at the forward and aft terminals respectively, disregarding any rake of keel.
- pp. “**Watertight**” means having scantlings and arrangements capable of preventing the passage of water in any direction under the head of water likely to occur in intact and damaged conditions. In the damaged condition, the head of water is to be considered in the worst situation at equilibrium, including intermediate stages of flooding.

qq. “**Weathertight**” means that in any sea conditions water will not penetrate into the ship.

## **CHAPTER 6: STRUCTURE OF SHIPS**

### **Regulation 6.1 –Structural, Mechanical and Electrical Requirements for Ships**

In addition to the requirements contained elsewhere in the present regulations, ships shall be designed, constructed and maintained in compliance with the structural, mechanical and electrical requirements of a classification society which is recognized by the Administration in accordance with the provisions of SOLAS Regulation 1 of Chapter XI-1.

### **Regulation 6.2 –Protective Coatings of Dedicated Seawater Ballast Tanks in All Types of Ships and Double-side Skin Spaces of Bulk Carriers**

**6.2.1** All dedicated seawater ballast tanks arranged in ships and double-side skin spaces arranged in bulk carriers of one hundred fifty meters (150 m) in length and upwards shall be coated during construction in accordance with the Performance Standard for Protective Coatings for Dedicated Seawater Ballast Tanks in All Types of Ships and Double-side Skin Spaces of Bulk Carriers, adopted by the Maritime Safety Committee by resolution MSC.215(82), as may be amended by the Organization, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the Annex other than Chapter I.

**6.2.2** All dedicated seawater ballast tanks arranged in oil tankers and bulk carriers constructed on or after 1st July 1998, for which paragraph (b) is not applicable, shall have an efficient corrosion prevention system, such as hard protective coatings or equivalent. The coatings should preferably be of a light color. The scheme for the selection, application and maintenance of the system shall be approved by the Administration based on the guidelines adopted by the Organization. Where appropriate, sacrificial anodes shall also be used.

**6.2.3** Maintenance of the protective coating system shall be included in the overall ship’s maintenance scheme. The effectiveness of the protective coating system shall be verified during the life of a ship by an authorized organization based on the guidelines developed by the Organization.

### **Regulation 6.3 – Safe Access to Tanker Bows**

For the purpose of this Regulation and SOLAS Regulation 3-4, tankers include oil tankers as defined in Regulation 2.12 of SOLAS, chemical tankers as defined in SOLAS Chapter VII Regulation 8.2 of and gas carriers as defined in SOLAS Chapter VII, Regulation 11.2, shall comply with the Guidelines adopted by the Organization by Resolution A.798 (19) and Resolution MSC.62(67).

### **Regulation 6.4 – Emergency towing arrangements and procedures**

Emergency towing arrangements on tankers shall be in compliance with Regulation 3-4 of SOLAS and following the Guidelines on emergency towing arrangements for tankers adopted by the Maritime Safety Committee by Resolution MSC.35 (63), as may be amended.

#### **Regulation 6.5 –New Installation of Materials containing Asbestos**

This regulation shall apply to materials used for structure, machinery, electrical installations and equipment covered by the present Convention. For all ships, new installation of materials which contain asbestos shall be prohibited, except as allowed in SOLAS Regulation II-1, Regulation 3-5.

#### **Regulation 6.6 – Access to and within Spaces in, and forward of, the Cargo Area of Oil Tankers and Bulk Carriers**

##### **6.6.1 Application**

This Regulation shall apply to:

- a. Oil tankers of not less than five hundred (500) tones; and bulk carriers, as defined in SOLAS Regulation 1 of Chapter IX, of not less than twenty thousand (20,000) tons that are constructed on or after January 1st, 2006.
- b. Oil tankers of not less than five hundred (500) tons; and bulk carriers, as defined in SOLAS Regulation 1 of Chapter IX, of not less than twenty thousand (20,000) tons that are constructed on or after 1st January 2005 but before 1st January 2006 shall comply with the Requirements as set out in IMO Resolution MSC 134(76), MSC 158(78) and MSC 151(78).

##### **6.6.2 Means of access to cargo and other spaces**

- a. Each space of a ship shall be provided with means of access to enable, throughout the life of the ship, overall and close-up inspections and thickness measurements of the ship's structure to be carried out by:
  - i. Any Recognized Organization as defined in Regulation 1 of Chapter I;
  - ii. The Company, as defined in Regulation 1 of Chapter IX;
  - iii. The ship's personnel; or
  - iv. Other persons.
- b. Each permanent means of access shall comply with:
  - i. The requirements of paragraph (a); and/or



- ii. The technical provisions for means of access for inspections adopted by the Maritime Safety Committee by resolution MSC.158 (78), MSC 134(76), and MSC 151(78) as amended by any amendment made by the Organization that has been adopted and brought into force, and that has taken effect, in accordance with article VIII of the Convention concerning the amendment procedures applicable to the Annex other than Chapter I.

#### **6.6.3 Safe access to cargo holds, cargo tanks, ballast tanks and other spaces.**

- a. Safe access to any cargo hold, cargo tank, cofferdam, ballast tank or other space in the cargo area shall be provided direct from the open deck and allow the complete inspection of the cargo hold, cargo tank, cofferdam, ballast tank or space in the cargo area, as the case may be.
- b. Safe access to any double bottom space or to forward ballast tanks may be provided from a pump-room, deep cofferdam, pipe tunnel, cargo hold, double hull space or any similar compartment not intended for the carriage of oil or hazardous cargoes.
- c. Each cargo hold shall be provided with at least two means of access, which shall be located as far apart as practicable and in general, should be arranged diagonally, for example, one near the forward bulkhead on the port side, and another near the aft bulkhead on the starboard side.
- d. Refer to the Recommendations for entering enclosed spaces aboard ships, adopted by the Organization by Resolution A.864 (20).

#### **6.6.4 Ship Structure Access Manual.**

The Ship Structure Access Manual shall be approved on behalf of the Palau Ship Registry Administrator. The contents of a ship structure access manual shall include the following for each space:

- a. plans showing the means of access to the space, with the appropriate technical specifications and dimensions;
- b. plans showing the means of access within the space to enable an overall inspection to be carried out, with the appropriate technical specifications and dimensions, and indicating from where each area in the space can be inspected;
- c. plans showing the means of access within the space to enable a close-up inspection to be carried out, with the appropriate technical specifications and dimensions, and indicating the position of each critical structural area, whether each means of access is permanent or portable, and from where each area in the space can be inspected;
- d. instructions for inspecting and maintaining the structural strength of all means of access and all means of attachment, taking into account any corrosive atmosphere that may be within the space;
- e. instructions for safety guidance when rafting is used for close-up inspections and thickness measurements;
- f. instructions for the rigging and use of any portable means of access in a safe manner;

- g. an inventory of all portable means of access; and
- h. records of periodical inspections and maintenance of all means of access.

#### **6.6.5 General technical specifications:**

Vessels shall comply with SOLAS Chapter II-1, Regulation 3-6.5.

#### **Regulation 6.7 – Construction Drawings Maintained on Board and Ashore**

Refer to MSC/Circ.1135 on as-built construction drawings to be maintained on board the ship and ashore.

#### **Regulation 6.8 – Towing and Mooring Equipment**

- a. This Regulation applies to ships constructed on or after 1st January 2007, but does not apply to emergency towing arrangements provided in accordance with SOLAS II-1 Regulation 3-4.
- b. Refer to MSC/Circ. 1175 on Guidance on shipboard towing and mooring equipment.

#### **Regulation 6.9 – Means of Embarkation on and Disembarkation from Ships**

- a. Ships constructed on or after 1st January 2010 shall be provided with means of embarkation on and disembarkation from ships for use in port and in port-related operations, such as gangways and accommodation ladders, in accordance with paragraph (b), unless the Administration deems that compliance with a particular provision is unreasonable or impractical.
- b. The means of embarkation and disembarkation required in paragraph (a) shall be constructed and installed based on the Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation set out in circular MSC.1/Circ.1331 issued by the Organization.

#### **Regulation 6.10 – Goal-based Ship Construction Standards for Bulk Carriers and Oil Tankers**

- a. This Regulation shall apply to oil tankers of one hundred fifty meters 150 m in length and above and to bulk carriers of one hundred fifty meters (150 m) in length and above, constructed with single deck, top-side tanks and hopper side tanks in cargo spaces, excluding ore carriers and combination carriers:
  - i. for which the building contract is placed on or after 1st July 2016;
  - ii. in the absence of a building contract, the keels of which are laid or which are at a similar stage of construction on or after 1st July 2017; or
  - iii. the delivery of which is on or after 1st July 2020.

- b. Ships shall be designed and constructed for a specified design life to be safe and environmentally friendly, when properly operated and maintained under the specified operating and environmental conditions, in intact and specified damage conditions, throughout their life and the same shall be achieved through satisfying applicable structural requirements of an organization which is recognized by the Administration in accordance with the provisions of SOLAS Regulation 1 of Chapter XI-1, conforming to the functional requirements of the Goal-based Ship Construction Standards for Bulk Carriers and Oil Tankers.
- c. A Ship Construction File with specific information on how the functional requirements of the Goal-based Ship Construction Standards for Bulk Carriers and Oil Tankers have been applied in the ship design and construction shall be provided upon delivery of a new ship, and kept on board the ship and ashore and updated as appropriate throughout the ship's service. The contents of the Ship Construction File shall, at least, conform to the guidelines developed by the Organization MSC.1/Circ.1343.

#### **Regulation 6.11 – Corrosion Protection of Cargo Oil Tanks of Crude Oil Tankers**

All cargo oil tanks of crude oil tankers shall be:

- a. coated during the construction of the ship in accordance with the Performance Standard for Protective Coatings for Cargo Oil Tanks of Crude Oil Tankers, adopted by the Maritime Safety Committee by Resolution MSC.288(87), and any amendment thereto which has come into force and has been accepted by the Government; or
- b. protected by alternative means of corrosion protection or utilization of corrosion resistance material to maintain required structural integrity for twenty-five (25) years in accordance with the Performance Standard for Alternative Means of Corrosion Protection for Cargo Oil Tanks of Crude Oil Tankers, adopted by the Maritime Safety Committee by Resolution MSC.289 (87), and any amendment thereto which has come into force and has been accepted by the Government.

#### **Regulation 6.12 – Peak and Machinery Space Bulkheads, Shaft Tunnels, etc.**

Vessels are to comply with the requirements of SOLS Chapter II-1 Regulation 3-12.

#### **Regulation 6.13 – Openings in Watertight Bulkheads below the Bulkhead Deck in Passenger Ships**

Vessels are to comply with the requirements of SOLS Chapter II-1 Regulation 3-13.

- a. Each power operating sliding watertight door shall be fitted with the necessary equipment to open and close the door using electrical power, hydraulic power, or any other form of power, including:

1. The power gear of doors shall have either a centralized hydraulic system with two (2) independent power sources each consisting of a motor and pump capable of simultaneously closing all doors. In addition, there shall be the whole installation hydraulic accumulators of sufficient capacity to operate all the doors at least three (3) times, i.e. closed – open – closed; or
  2. An independent hydraulic system for each door with each power source consisting of a motor and pump capable of opening and closing the door. In addition, there shall be a hydraulic accumulator of sufficient capacity to operate the door at least three (3) times, i.e. closed – open – closed; or
  3. An independent electrical system and motor for each door with each power source consisting of a motor capable of opening and closing the door. The power source shall be capable of being automatically supplied by a transitional emergency source of electrical power, in the event of failure of either the main or emergency source of electrical power and with sufficient capacity to operate the door at least three (3) times; i.e. closed – open – closed.
- b. The capacity of the battery serving as transitional source of electrical power shall be sufficient for supplying the services listed below during thirty (30) minutes:
1. lighting and necessary navigation lights;
  2. internal communication and announcing systems required in an emergency;
  3. general alarm system, fire detection and alarm systems, control devices of fire doors and indicators showing the position of fire;
  4. daylight signaling lamps, sound signal means (whistles, gongs, etc), and other types of signals required under emergency conditions;
  5. arrangements for closing watertight doors, their position indicators and signals warning of their closing with sequential closing permitted; and
  6. ship's security alarm system and AIS installation.

## **Chapter 7: Subdivision and Stability**

### **Regulation 7.1– General**

The damage stability requirements in Parts B-1 through B-4 of SOLAS shall apply to cargo ships of eighty (80) meters in length (L) and upwards and to all passenger ships regardless of length except for those cargo ships which comply with subdivision and damage stability regulations as shown below:

- a. Annex I to MARPOL 73/78, except that combination carriers with type B freeboards are not excluded;
- b. The International Bulk Chemical Code;
- c. The International Gas Carrier Code;
- d. The Guidelines for the design and construction of offshore supply vessels in Resolution A.469 (XII);

- e. The Code of Safety for Special Purpose Ships in resolution A.534(13), as amended;
- f. The Damage stability requirements for Regulation 27 of the 1966 Load Lines Convention as applied in compliance with Resolutions A.320(IX) and A.514(13), provided that in the case of cargo ships to which Regulation 27(9) applies, main transverse watertight bulkheads, to be considered effective, are spaced according to paragraph (12)(f) of Resolution A.320(IX), except that ships intended for the carriage of deck cargo are not excluded; and
- g. The Damage stability requirements of Regulation 27 of the 1988 Load Lines Protocol, except that ships intended for the carriage of deck cargo are not excluded.

## **Regulation 7.2**

The Administration may, for a particular ship or group of ships, accept alternative methodologies if satisfied that at least the same degree of safety as represented by these Regulations is achieved.

- a. Stability Information is developed on basis of the following IMO Requirements:
  - 1. MSC/Circ. 456 – Guidelines for the preparation of intact stability information;
  - 2. MSC/Circ.706 – Guidance on intact stability of existing tankers during transfer operations; and/or
  - 3. MSC/Circ. 1228 – Revised guidance to the Master for avoiding dangerous situations in following and quartering seas.
- a. The inclining test of an individual cargo ship to be dispensed with provided basic stability data available from the inclining test or a sister ship and it is shown that reliable stability information for the exempted ship can be obtained. However, the following cases cannot be excluded and the inclining test must be carried out:
  - 1. Every ship of non-series construction;
  - 2. Every ship after construction;
  - 3. Ships after major repair, alteration or modification;
  - 4. Ships after installation of permanent solid ballast;
  - 5. Ships whose stability is unknown or gives rise to doubts;
  - 6. Passenger ships in service at intervals not exceeding five (5) years;
  - 7. Fishing vessels in service of thirty (30) meters length and less at intervals not exceeding fifteen (15) years;
  - 8. Series-built ship (the first ship, then every fifth ship of the series). However, a series-built ship is to be inclined if structural alteration therein exists compared with the first ship of the series, and these alteration exceed those allowable limit as per Paragraph 2 of SOLAS Regulation II-1/5 as amended by IMO Res. MSC.2016(82)
- b. When considering the progressive flooding due to submergence of the openings, which lead to undamaged spaces, for the purpose of determination of the

probability  $s$ , the components of ship's damage trim and stability at additional flooding of the appropriate undamaged spaces shall be taken into account.

### **Regulation 7.3**

Openings in the Shell Plating below the Bulkhead Deck of Passenger Ships and the Freeboard Deck of Cargo Ships

**7.3.1** For the treatment of steps in the bulkhead deck of passenger ships see Explanatory Notes for Regulation II-1/13-1.

**7.3.2** For the treatment of steps in the freeboard deck of cargo ships see Explanatory Notes for Regulation II-1/13-1:

- a. If the transverse watertight bulkheads in a region of the ship are carried to a higher deck than in the remainder of the ship, openings located in the bulkhead at the step may be considered as being located above the freeboard deck.
- b. All openings in the shell plating below the upper deck throughout that region of the ship should be treated as being below the freeboard deck, similar to the bulkhead deck for passenger ships, see SOLAS Regulation II-1/13 (Openings in watertight bulkheads below the bulkhead deck in passenger ships), and the provisions of Regulation II-1/15 (Openings in the shell plating below the bulkhead deck of passenger ships and the freeboard deck of cargo ships) should be applied.

## **Chapter 8: Machinery Installations**

### **Regulation 8.1 –General**

The machinery, boilers and other pressure vessels, associated piping systems and fittings shall be of a design and construction adequate for the service for which they are intended and shall be so installed and protected as to reduce to a minimum any danger to persons on board, due regard being paid to moving parts, hot surfaces and other hazards. The design shall have regard to materials used in construction, the purpose for which the equipment is intended, the working conditions to which it will be subjected and the environmental conditions on board. Vessels shall comply with the provisions of SOLAS Chapter II-1, Part C, and Regulation 26.

### **Regulation 8.2 – Machinery**

- a. Where risk from over speeding of machinery exists, means shall be provided to ensure that the safe speed is not exceeded.
- b. Where main or auxiliary machinery including pressure vessels or any parts of such machinery are subject to internal pressure and may be subject to dangerous overpressure, means shall be provided where practicable to protect against such excessive pressure.
- c. All gearing and every shaft and coupling used for transmission of power to machinery

essential for the propulsion and safety of the ship or for the safety of persons on board shall be so designed and constructed that they will withstand the maximum working stresses to which they may be subjected in all service conditions, and due consideration shall be given to the type of engines by which they are driven or of which they form part.

### **Regulation 8.3 – Means of Going Astern**

- a. Sufficient power for going astern shall be provided to secure proper control of the ship in all normal circumstances. The ability of the machinery to reverse the direction of thrust of the propeller in sufficient time, and so to bring the ship to rest within a reasonable distance from maximum ahead service speed, shall be demonstrated and recorded. Reference is made to the Recommendation on Information to be Included in the Maneuvering Booklets adopted by the Organization by Resolution A.601(15).
- b. Where the ship is provided with supplementary means for maneuvering or stopping, the effectiveness of such means shall be demonstrated and recorded.

### **Regulation 8.4 –Steering Gear**

- a) Unless expressly provided otherwise, every ship shall be provided with a main steering gear and an auxiliary steering gear to the satisfaction of the Palau Ship Registry Administrator. The main steering gear and the auxiliary steering gear shall be so arranged that the failure of one of them will not render the other one inoperative.
- b) For a ship fitted with multiple steering systems, such as but not limited to azimuth on propulsion or water jet propulsion systems, the requirements in SOLAS Regulation II-1/29.1 is considered satisfied if each of the steering systems is equipped with its own dedicated steering gear.
- c) Vessels shall comply with SOLAS Chapter II-1, Chapter 29.
- d) All components used in steering arrangements for ship directional control should be of sound reliable construction to the satisfaction of the classification society. Special consideration should be given to the suitability of any essential component which is not duplicated. Any such essential component should, where appropriate, utilize anti-friction bearing such as ball bearings, roller bearings or sleeve bearings which should be permanently lubricated or provided with lubrication fittings.
- e) All components used in steering arrangements for ship directional control should be of sound reliable construction to the satisfaction of the classification society. Special consideration should be given to the suitability of any essential component which is not duplicated. Any such essential component should, where appropriate, utilize anti-friction bearing such as ball bearings, roller bearings or sleeve bearings which should be permanently lubricated or provided with lubrication fittings.
- f) The main steering arrangements for ship directional control should be:

1. Of adequate strength and capable of steering the ship at maximum ahead service speed which should be demonstrated.
  2. Capable of changing direction of the ship's directional control system from one side to the other at declared steering angle limits at an average rotational speed of not less than 2.3%/s with the ship running ahead at maximum ahead service speed.
  3. For all ships, operated by power; and
  4. So designed that they will not be damaged at maximum astern speed.
- g) Refer to Resolution A.415(XI) on improved steering gear standards for passenger and cargo ships and resolution A.416(XI) on examination of steering gears on existing tankers.
- h) The auxiliary steering arrangements for ship directional control should be:
1. Of adequate strength and capable of steering the ship at navigable speed and of being brought speedily into action in an emergency;
  2. Capable of changing direction of the ship's directional control system from one side to the other at declared steering angle limits at an average rotational speed, of not less than 0.5%/s; with the ship running ahead at one half of the maximum ahead service speed or seven (7) knots, whichever is the greater; and
  3. For all ships, operated by power where necessary to meet the requirements of 29.4.2 and if any ship having power of more than 2,500 kW propulsion power per thruster unit.

**Regulation 8.5 – Additional Requirements for Electric and Electro hydraulic Steering Gear**

Vessels shall comply with SOLAS Chapter II-1, Chapter 30.

**Regulation 8.6 – Machinery Controls**

- a. Main and auxiliary machinery essential for the propulsion and safety of the ship shall be provided with effective means for its operation and control.
- b. Where the main propulsion and associated machinery, including sources of main electrical supply, are provided with various degrees of automatic or remote control and are under continuous manual supervision from a control room the arrangements and controls shall be so designed, equipped and installed that the machinery operation will be as safe and effective as if it were under direct supervision; for this purpose SOLAS Chapter II-1 Regulations 46 to 50 shall apply as appropriate. Particular consideration shall be given to protect such spaces against fire and flooding.
- c. In general, automatic starting, operational and control systems shall include provisions for manually overriding the automatic controls. Failure of any part of such systems shall not prevent the use of the manual override.



- d. Vessels shall comply with SOLAS Chapter II-1, Chapter 31.

#### **Regulation 8.7 – Steam Boilers and Boilers Feed Systems**

Vessels shall comply with SOLAS Chapter II-1, Chapter 32.

#### **Regulation 8.8 – Steam Pipe Systems**

Vessels shall comply with SOLAS Chapter II-1, Chapter 33.

#### **Regulation 8.9 – Air Pressure Systems**

- a. In every ship means shall be provided to prevent overpressure in any part of compressed air systems and wherever water jackets or casings of air compressors and coolers might be subjected to dangerous overpressure due to leakage into them from air pressure parts. Suitable pressure relief arrangements shall be provided for all systems.
- b. The main starting air arrangements for main propulsion internal combustion engines shall be adequately protected against the effects of backfiring and internal explosion in the starting air pipes.
- c. All discharge pipes from starting air compressors shall lead directly to the starting air receivers, and all starting pipes from the air receivers to main or auxiliary engines shall be entirely separate from the compressor discharge pipe system.
- d. Provision shall be made to reduce to a minimum the entry of oil into the air pressure system and to drain these systems.

#### **Regulation 8.10 – Ventilating Systems in Machinery Spaces**

Machinery spaces of category A shall be adequately ventilated so as to ensure that when machinery or boilers therein are operating at full power in all weather conditions including heavy weather, an adequate supply of air is maintained to the space for the safety and comfort of personnel and the operation of the machinery. Any other machinery space shall be adequately ventilated appropriate for the purpose of that machinery space.

#### **Regulation 8.11 – Communication between Navigating Bridge and Machinery Space**

- a. At least two (2) independent means shall be provided for communicating orders from the navigating bridge to the position in the machinery space or in the control room from which the engines are normally controlled: one of these shall be an engine room telegraph which provides visual indication of the orders and means of communication shall be provided to any other positions from which the engines may be controlled.
- b. For ships constructed on or after 1st October 1994, in lieu of the requirements of paragraph (a), there shall be provided at least two (2) independent means for

communicating orders from the navigating bridge to the position in the machinery space or in the control room from which the speed and direction of thrust of the propellers are normally controlled; one of these shall be an engine room telegraph which provides visual indication of the orders and responses both in the machinery spaces and on the navigating bridge.

- c. Appropriate means of communication shall be provided from the navigating bridge and the engine room to any other position from which the speed or direction of thrust of the propellers may be controlled.

#### **Regulation 8.12 – Engineer’s Alarm**

An engineers’ alarm shall be provided to be operated from the engine control room or at the maneuvering platform as appropriate and shall be clearly audible in the engineers’ accommodation.

#### **Regulation 8.13 – Location of Emergency Installations in Passenger Ships**

Emergency sources of electrical power, fire pumps, bilge pumps except those specifically serving the spaces forward of the collision bulkhead, any fixed fire-extinguishing system required by Chapter II-2 and other emergency installations which are essential for the safety of the ship, except anchor windlasses, shall not be installed forward of the collision bulkhead.

### **CHAPTER 9: Electrical Installations**

#### **Regulation 9 – General**

The Administration shall take appropriate steps to ensure uniformity in the implementation and application of the provisions of this Part in respect of electrical installations. Kindly refer to the Recommendations published by the International Electro Technical Commission and, in particular, Publication 92 — Electrical Installations in Ships.

#### **Regulation 9.1 – Main Source of Electrical Power and Lighting Systems**

A main source of electrical power of sufficient capacity to supply all those services mentioned in SOLAS Regulation 40 shall be provided. This main source of electrical power shall consist of at least two (2) generating sets.

#### **Regulation 9.2 – Emergency Source of Electrical Power in Passenger Ships**

**9.2.1** A self-contained emergency source of electrical power shall be provided in accordance with SOLAS Chapter 42.

**9.2.2** The location of the emergency source of electrical power and associated transforming equipment, if any, and the main switchboard shall be such as to ensure that a fire or other casualty in spaces containing the main source of electrical power, associated transforming equipment, if any, and the main switchboard or in any machinery space of category A will not interfere with the supply, control and distribution of emergency electrical power. As far as practicable, the space

containing the emergency source of electrical power, associated transforming equipment, if any, the transitional source of emergency power and the emergency switchboard shall not be contiguous to the boundaries of machinery spaces of category A or those spaces containing the main source of electrical power, associated transforming equipment, if any, or the main switchboard.

**9.2.3** The electrical power available shall be sufficient to supply all those services that are essential for safety in an emergency, due regard being paid to such services as may have to be operated simultaneously. The emergency source of electrical power shall be capable, having regard to starting currents and the transitory nature of certain loads, of supplying simultaneously at least the following services for the periods specified hereinafter, if they depend upon an electrical source for their operation:

a. For emergency lighting, a period of thirty-six (36) hours:

1. at every muster and embarkation station and over the sides;
2. in alleyways, stairways and exits giving access to the muster and embarkation stations;
3. in all service and accommodation alleyways, stairways and exists, personnel lift cars;
4. in the machinery spaces and main generating stations including their control positions;
5. in all control stations, machinery control rooms, and at each main and emergency switchboard;
6. at all stowage positions for firemen's outfits;
7. at the steering gear; and
8. at the fire pump, the sprinkler pump and the emergency bilge pump.

b. For a period of thirty-six (36) hours:

1. the navigation lights and other lights required by the International Regulations for Preventing Collisions at Sea in force;
2. all internal communication equipment required in an emergency;
3. the fire detection and fire alarm system, and the fire door holding and release system;
4. for intermittent operation of the daylight signaling lamp, the ship's whistle, the manually operated call points and all internal signals that are required in an emergency;
5. the automatic sprinkler pump, if any; and
6. the emergency bilge pump and all the equipment essential for the operation of electrically powered remote controlled bilge valves.

c. For a period of thirty (30) minutes:

1. any watertight doors required by SOLAS Chapter II-1, Regulation 15 to be power operated together with their indicators and warning signals; and
2. the emergency arrangements to bring the lift cars to deck level for the escape of persons. The passenger lift cars may be brought to deck level sequentially in an emergency.

**9.2.4** Vessels shall comply with SOLAS Chapter II-1, Chapter 42

**Regulation 9.3 – Emergency Source of Electrical Power in Cargo Ships**

**9.3.1** A self-contained emergency source of electrical power shall be provided. The emergency source of electrical power, associated transforming equipment, if any, transitional source of emergency power, emergency switchboard and emergency lighting switchboard shall be located above the uppermost continuous deck and shall be readily accessible from the open deck. They shall not be located forward of the collision bulkhead, except where permitted by the Palau in exceptional circumstances.

**9.3.2** The location of the emergency source of electrical power, associated transforming equipment, if any, the transitional source of emergency power, the emergency switchboard and the emergency lighting switchboard in relation to the main source of electrical power, associated transforming equipment, if any, and the main switchboard shall be such as to ensure to the satisfaction of the Palau Ship Registry Administrator that a fire or other casualty in the space containing the main source of electrical power, associated transforming equipment, if any, and the main switchboard, or in any machinery space of category A will not interfere with the supply, control and distribution of emergency electrical power. As far as practicable the space containing the emergency source of electrical power, associated transforming equipment, if any, the transitional source of emergency electrical power and the emergency switchboard shall not be contiguous to the boundaries of machinery spaces of category A or those spaces containing the main source of electrical power, associated transforming equipment, if any, and the main switchboard.

**9.3.3** The electrical power available shall be sufficient to supply all those services that are essential for safety in an emergency, due regard being paid to such services as may have to be operated simultaneously. The emergency source of electrical power shall be capable, having regard to starting currents and the transitory nature of certain loads, of supplying simultaneously at least the following services for the periods specified hereinafter, if they depend upon an electrical source for their operation:

- a. For a period of three (3) hours, emergency lighting at every muster and embarkation station and over the sides as required by SOLAS, Chapter III, Regulation 11 and 16.
- b. For a period of eighteen (18) hours:
  1. Emergency lighting in all service and accommodation alleyways, stairways and exits, personnel lift cars, and personnel lift trunks;
  2. Emergency lighting in the machinery spaces and main generating stations including their control positions;
  3. Emergency lighting in all control stations, machinery control rooms, and at each main and emergency switchboard;
  4. Emergency lighting at all stowage positions for firemen's outfits;
  5. Emergency lighting at the steering gear;
  6. Emergency lighting at the fire pump and if any at the sprinkler and emergency

- bilge pump;
7. Emergency lighting in all cargo pump-rooms of tankers constructed on or after July 1st 2002;
  8. The navigational lights and other lights required by the COLREG;
  9. On ships constructed on or after February 1st 1995, the VHF radio installation required by SOLAS Chapter IV, Regulation 7;
  10. all International communication equipment as required in an emergency;
  11. The fire detection and fire alarm system; and
  12. Intermittent operation of the daylight signaling lamp, the ship's whistle, the manually operated call points and all internal signals that are required in an emergency.

**9.3.4** The emergency source of electrical power may be either a generator or an accumulator battery.

**9.3.5** The emergency switchboard shall be installed as near as is practicable to the emergency source of electrical power. Where the emergency source of electrical power is a generator, the emergency switchboard shall be located in the same space unless the operation of the emergency switchboard would thereby be impaired. The emergency switchboard shall be supplied during normal operation from the main switchboard by an interconnector feeder which is to be adequately protected at the main switchboard against overload and short circuit and which is to be disconnected automatically at the emergency switchboard upon failure of the main source of electrical power. Where the system is arranged for feedback operation, the interconnector feeder is also to be protected at the emergency switchboard at least against short circuit.

**9.3.6** In order to ensure ready availability of the emergency source of electrical power, arrangements shall be made where necessary to disconnect automatically non-emergency circuits from the emergency switchboard to ensure that electrical power shall be available automatically to the emergency circuits. The emergency generator and its prime-mover and any emergency accumulator battery shall be so designed and arranged as to ensure that they will function at full rated power when the ship is upright and when inclined at any angle of list up to 22.5° or when inclined up to 10° either in the fore or aft direction, or is in any combination of angles within those limits. Provision shall be made for the periodic testing of the complete emergency system and shall include the testing of automatic starting arrangements.

**9.3.7** Vessels shall comply with SOLAS Chapter II-1, Chapter 43.

#### **Regulation 9.4 – Starting Arrangements for Emergency Generating Sets**

Vessels shall comply with SOLAS Chapter II-1, Chapter 44.

#### **Regulation 9.5 – Precautions against Shock, Fire and other Hazards of Electrical Origin.**

**9.5.1** Exposed metal parts of electrical machines or equipment which are not intended to be live but which are liable under fault conditions to become live shall be earthed unless the machines or equipment are:

- a. supplied at a voltage not exceeding 50 V direct current or 50 V, root mean square between conductors; auto-transformers shall not be used for the purpose of achieving this voltage;
- b. supplied at a voltage not exceeding 250 V by safety isolating transformers supplying only one consuming device; or
- c. constructed in accordance with the principle of double insulation.

All electrical apparatus shall be so constructed and so installed as not to cause injury when handled or touched in the normal manner.

**9.5.2** Main and emergency switchboards shall be so arranged as to give easy access as may be needed to apparatus and equipment, without danger to personnel. The sides and the rear and, where necessary, the front of switchboards shall be suitably guarded. Exposed live parts having voltages to earth exceeding a voltage to be specified by the Administration shall not be installed on the front of such switchboards. Where necessary, non-conducting mats or gratings shall be provided at the front and rear of the switchboard.

**9.5.3** Where the hull return system is used, all final sub circuits, i.e. all circuits fitted after the last protective device, shall be two-wire and special precautions shall be taken to the satisfaction of the Palau Ship Registry Administrator.

**9.5.4** When a distribution system, whether primary or secondary, for power, heating or lighting, with no connection to earth is used, a device capable of continuously monitoring the insulation level to earth and of giving an audible or visual indication of abnormally low insulation values shall be provided.

**9.5.5** Except as permitted by the Administration in exceptional circumstances, all metal sheaths and armor of cables shall be electrically continuous and shall be earthed. All electric cables and wiring external to equipment shall be at least of a flame retardant type and shall be so installed as not to impair their original flame retarding properties. Where necessary for particular applications the Administration may permit the use of special types of cables such as radio frequency cables, which do not comply with the foregoing. Cables and wiring serving essential or emergency power, lighting, internal communications or signals shall so far as practicable be routed clear of galleys, laundries, machinery spaces of category A and their casings and other high fire risk areas. In ro/ro passenger ships, cabling for emergency alarms and public address systems installed on or after 1st July 1998 shall be approved by the Administration having regard to the recommendations developed by the Organization. Cables connecting fire pumps to the emergency switchboard shall be of a fire resistant type where they pass through high fire risk areas. Where practicable all such cables should be run in such a manner as to preclude their being rendered unserviceable by heating of the bulkheads that maybe caused by a fire in an adjacent space.

**9.5.6** Accumulator batteries shall not be located in sleeping quarters, unless the batteries are hermetically sealed.

**9.5.7** Vessels shall comply with SOLAS Chapter II-1, Chapter 45.

## **CHAPTER 10 – Additional Requirements for Periodically Unattended Machinery Spaces**

### **Regulation 10.1 – General**

- a. The arrangements provided shall be such as to ensure that the safety of the ship in all sailing conditions, including maneuvering, is equivalent to that of a ship having the machinery spaces manned.
- b. Measures shall be taken to the satisfaction of the Administration to ensure that the equipment is functioning in a reliable manner and that satisfactory arrangements are made for regular inspections and routine tests to ensure continuous reliable operation. Recognized Organizations should consider instructions like the IEC 60092 standards when developing normative documents aimed to supervise fulfillment of the SOLAS Convention requirements.
- c. Every ship shall be provided with documentary evidence of its fitness to operate with periodically unattended machinery spaces.

#### **Regulation 10.2 – Fire Precautions**

- a. Means shall be provided to detect and give alarms at an early stage in case of fires in boiler air supply casings and exhausts (uptakes) and in scavenging air belts of propulsion machinery.
- b. Internal combustion engines of 2,250 kW and above or having cylinders of more than 300 mm bore shall be provided with crankcase oil mist detectors or engine bearing temperature monitors or equivalent devices.

#### **Regulation 10.3 – Protection against Flooding**

Vessels shall comply with SOLAS Chapter II-1, Chapter 48

#### **Regulation 10.4 – Control of Propulsion Machinery from the Navigating Bridge**

- a. Under all sailing conditions, including maneuvering, the speed, direction of thrust and, if applicable, the pitch of the propeller shall be fully controllable from the navigating bridge.
- b. Propulsion machinery orders from the navigating bridge shall be indicated in the main machinery control room or at the propulsion machinery control position as appropriate.
- c. Remote control of the propulsion machinery shall be possible only from one location at a time; at such locations interconnected control positions are permitted. At each location there shall be an indicator showing which location is in control of the propulsion machinery. The transfer of control between the navigating bridge and machinery spaces shall be possible only in the main machinery space or in the main machinery control room. The system shall include means to prevent the propelling thrust from altering significantly when transferring control from one location to another.

#### **Regulation 10.5 – Communication**

A reliable means of vocal communication shall be provided between the main machinery control room or the propulsion machinery control position as appropriate, the navigating bridge and the engineer officers' accommodation.

#### **Regulation 10.6 – Alarm Systems**

An alarm system shall be provided indicating any fault requiring attention and shall:

- a. be capable of sounding an audible alarm in the main machinery control room or at the propulsion machinery control position, and indicate visually each separate alarm function at a suitable position;
- b. have a connection to the engineers' public rooms and to each of the engineers' cabins through a selector switch, to ensure connection to at least one of those cabins;
- c. activate an audible and visual alarm on the navigating bridge for any situation which requires action by or attention of the officer on watch;
- d. as far as is practicable be designed on the fail-to-safety principle; and
- e. activate the engineers' alarm required by SOLAS Chapter II-2 Regulation 38 if an alarm function has not received attention locally within a limited time.

#### **Regulation 10.7 – Safety Systems**

A safety system shall be provided to ensure that serious malfunction in machinery or boiler operations, which presents an immediate danger, shall initiate the automatic shut-down of that part of the plant and that an alarm shall be given. Shut-down of the propulsion system shall not be automatically activated except in cases which could lead to serious damage, complete breakdown, or explosion. Where arrangements for overriding the shut-down of the main propelling machinery are fitted, these shall be such as to preclude inadvertent operation. Visual means shall be provided to indicate when the override has been activated.

#### **Regulation 10.8 – Special Requirements for Machinery, Boiler and Electrical Installations**

The Vessels shall comply with SOLAS Chapter II-1, Chapter 53.

#### **Regulation 10.9 – Special Consideration in Respect of Passenger Ships**

Passenger ships shall be specially considered by the Administration as to whether or not their machinery spaces may be periodically unattended and if so whether additional requirements to those stipulated in these Regulations are necessary to achieve equivalent safety to that of normally attended machinery spaces.

### **CHAPTER 11          Alternative Design and Arrangements**

#### **Regulation 11 – Alternative design and arrangements**



**11.1.1** Machinery, electrical installation and low-flashpoint fuel storage and distribution systems design and arrangements may deviate from the requirements set out in SOLAS, Part C, D, E or G, provided that the alternative design and arrangements meet the intent of the requirements concerned and provide an equivalent level of safety to this Chapter.

**11.1.2** When any alternative design or arrangement deviates from the prescriptive requirements of SOLAS Part C, D, E, or G, an engineering analysis, evaluation and approval of the design and arrangement must be carried out in accordance with this Regulation.

**11.1.3** The engineering analysis must be prepared and submitted to the Recognized Organization for approval on behalf of the Administration and must include, as a minimum, all of the following elements:

- a. a determination of the ship type, machinery, electrical installations, low-flashpoint fuel storage and distribution systems, and spaces concerned;
- b. an identification of the prescriptive requirements with which the machinery, electrical installations and low-flashpoint fuel storage and distribution systems will not comply;
- c. an identification of the reason why the proposed design will not meet the prescriptive requirements supported by compliance with other recognized engineering or industry standards;
- d. a determination of the performance criteria for the ship, machinery, electrical installation, low-flashpoint fuel storage and distribution system;
- e. a 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;
- f. a technical justification demonstrating that the alternative design and arrangements meet the safety performance criteria; and
- g. a risk assessment based on identification of the potential faults and hazards associated with the proposal.

## **CHAPTER 12      Ships Using Low-flashpoint Fuels**

### **Regulation 12**

**12.1.1** Except as provided for in paragraphs (d) and (e) from section below, this Chapter applies to any ship using low-flashpoint fuels:

- a. for which the building contract is placed on or after 1 January 2017;
- b. in the absence of a building contract, the keels of which are laid or which are at a similar stage of construction on or after 1 July 2017; or

- c. the delivery of which is on or after 1 January 2021.

Every such ship using low-flashpoint fuels must comply with the requirements of this Chapter in addition to any other applicable requirements of these Regulations.

**12.1.2** Except as provided for in SOLAS Regulation 56 paragraphs (d) and (e), a ship, irrespective of the date of construction, including one constructed before 1 January 2009, which converts to using low-flashpoint fuels on or after 1 January 2017 must be treated as a ship using low-flashpoint fuels on the date on which such conversion commenced.

**12.1.3** Except as provided for in paragraphs (d) and (e), a ship using low-flashpoint fuels, irrespective of the date of construction, including one constructed before 1 January 2009, which, on or after 1 January 2017, undertakes to use low-flashpoint fuels different from those which it was originally approved to use before 1 January 2017 must be treated as a ship using low-flashpoint fuels on the date on which such undertaking commenced.

**12.1.4** This Part does not apply to gas carriers, as defined in Regulation 11(b) of SOLAS, Chapter VII:

- a. using their cargoes as fuel and complying with the requirements of the IGC Code, as defined in Regulation 11(a) of SOLAS, Chapter VII; or
- b. using other low-flashpoint gaseous fuels, provided that the fuel storage and distribution systems design and arrangements for such gaseous fuels comply with the requirements of the IGC Code for gas as a cargo.

**12.1.5** This Chapter does not apply to ships owned or operated by a Contracting Government and used, for the time being, only in Government non-commercial service. However, ships owned or operated by a Contracting Government and used, for the time being, only in Government non-commercial service are encouraged to act in a manner consistent, so far as reasonable and practicable, with this Chapter.

### **Regulation 12.2 – Requirements for Ships Using Low-flashpoint Fuels**

Except as provided in SOLAS Chapter II-2 Regulation 56(d) and (e), ships using low-flashpoint fuels must comply with the requirements of the IGF Code.

## **CHAPTER 13 CONSTRUCTION, FIRE PROTECTION, FIRE DETECTION AND FIRE EXTINCTION**

### **Regulation 13 – Application**

**13.1.1** Unless expressly provided otherwise, SOLAS, Chapter II-2 shall apply to ships constructed on or after 1 July 2012.

**13.1.2** Unless expressly provided otherwise, for ships constructed before 1 July 2012, the Palau

Ship Registry Administrator shall ensure that the requirements which are applicable under Chapter II-2 of these Regulations in force before 1 July 2012 are complied with.

**13.1.3** 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 2012, 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.

**13.1.4** 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 2012 in so far as the Administration deems reasonable and practicable. Substantial alteration of the passenger accommodation spaces: a vehicle deck converted to passenger accommodation spaces; new accommodation spaces should comply with SOLAS Chapter II-2, as amended.

**13.1.5** The Administration may, if he considers that the sheltered nature and conditions of the voyage are such as to render the application of any specific requirements of this Chapter unreasonable or unnecessary, exempt from those requirements individual ships or classes of ships entitled to fly the flag of its State, provided that such ships, which, in the course of their voyage, do not sail at distances of more than twenty (20) miles from the nearest land.

**13.1.6** In the case of passenger ships which are employed in special trades for the carriage of large numbers of special trade passengers, such as the pilgrim trade, the Palau Ship Registry Administrator, if satisfied that it is impracticable to enforce compliance with the requirements of this Chapter, may exempt such ships from those requirements, provided that they comply fully with the provisions of:

- a. the rules annexed to the Special Trade Passenger Ships Agreement (1971); and
- b. the rules annexed to the Protocol on Space Requirements for Special Trade Passenger Ships (1973).

**13.1.7** Requirements for tankers in SOLAS Chapter 11-2 shall apply to tankers carrying crude oil or petroleum products having a flashpoint not exceeding 60°C (closed cup test), as determined by an approved flashpoint apparatus, and a Reid vapor pressure which is below the atmospheric pressure or other liquid products having a similar fire hazard.

**13.1.8** Where liquid cargoes other than those referred to in paragraph 13.1.9 or liquefied gases which introduce additional fire hazards are intended to be carried, additional safety measures shall be required, having due regard to the provisions of the International Bulk Chemical Code, as defined in Regulation 8(a) of Chapter VII, the Bulk Chemical Code, the International Gas Carrier Code, as defined in Regulation 11(a) of Chapter VII, and the Gas Carrier Code, as appropriate.

**13.1.9** Liquid cargoes with a flashpoint exceeding 60°C other than oil products or liquid cargoes subject to the requirements of the International Bulk Chemical Code are considered to constitute a low fire risk, not requiring the protection of a fixed foam extinguishing system.

**13.1.10** 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 approved by the Administration considering the guidelines developed by the Organization.

**13.1.11** Chemical tankers and gas carriers shall comply with the requirements for tankers, except where alternative and supplementary arrangements are provided to the satisfaction of the Palau Ship Registry Administrator, having due regard to the provisions of the International Bulk Chemical Code and the International Gas Carrier Code, as appropriate.

#### **Regulation 14.1 – Fire Safety Objective and Functional Requirements**

The following functional requirements are embodied in the Regulations of this Chapter as appropriate:

- a. division of the ship into main vertical and horizontal zones by thermal and structural boundaries;
- b. separation of accommodation spaces from the remainder of the ship by thermal and structural boundaries;
- c. restricted use of combustible materials;
- d. detection of any fire in the zone of origin;
- e. containment and extinction of any fire in the space of origin;
- f. protection of means of escape and access for fire-fighting;
- g. ready availability of fire-extinguishing appliances; and
- h. minimization of possibility of ignition of flammable cargo vapor.

#### **Regulation 14.2 – Definitions**

For this Chapter, the following terms are defined below:

- a. “**Accommodation spaces**” are those spaces used for public spaces, corridors, lavatories, cabins, offices, hospitals, cinemas, game and hobby rooms, barber shops, pantries containing no cooking appliances and similar spaces;
- b. “**Bulkhead deck**” is the uppermost deck up to which the transverse watertight bulkheads are carried.
- c. “**Cargo area**” is that part of the ship that contains cargo holds, cargo tanks, slop tanks and cargo pump-rooms, including pump-rooms, cofferdams, ballast and void spaces adjacent

to cargo tanks and also deck areas throughout the entire length and breadth of the part of the ship over the abovementioned spaces.

d. **“A” class divisions** are those divisions formed by bulkheads and decks which comply with the following criteria:

1. constructed of steel or other equivalent material;
2. are suitably stiffened;
3. are insulated with approved non-combustible materials such that the average temperature of the unexposed side will not rise more than 140°C above the original temperature, nor will the temperature, at any one point, including any joint, rise more than 180°C above the original temperature, within the time listed below:

class “A-60”	60 min
class “A-30”	30 min
class “A-15”	15 min
class “A-0”	0 min

4. constructed as to be capable of preventing the passage of smoke and flame to the end of the one hour standard fire test; and
5. the Administration has required a test of a prototype bulkhead or deck in accordance with the Fire Test Procedures Code to ensure that it meets the above requirements for integrity and temperature rise.

e. **“B” class divisions** are those divisions formed by bulkheads, decks, ceilings or linings which comply with the following criteria:

1. constructed of approved non-combustible materials and all materials used in the construction and erection of “B” class divisions are non-combustible, with the exception that combustible veneers may be permitted provided they meet other appropriate requirements of this Chapter;
2. have an insulation value such that the average temperature of the unexposed side will not rise more than 140°C above the original temperature, nor will the temperature at any one point, including any joint, rise more than 225°C above the original temperature, within the time listed below:

class “B-15”	15 min
class “B-0”	0 min

3. they are constructed as to be capable of preventing the passage of flame to the end of the first half hour of the standard fire test; and
4. the Administration has required a test of a prototype division in accordance with the Fire

Test Procedures Code to ensure that it meets the above requirements for integrity and temperature rise.

f. ““C” class divisions” are divisions constructed of approved non-combustible materials. They need meet neither requirements relative to the passage of smoke and flame nor limitations relative to the temperature rise. Combustible veneers are permitted provided they meet the requirements of this Chapter.

### **Regulation 14.3 – Probability of Ignition**

The following limitations shall apply to the use of oil as fuel:

- a. except as otherwise permitted by this paragraph, no oil fuel with a flashpoint of less than 60°C shall be used;
  1. in emergency generators oil fuel with a flashpoint of not less than 43°C may be used;
  2. the use of oil fuel having a flashpoint of less than 60°C but not less than 43°C may be permitted (e.g., for feeding the emergency fire pump’s engines and the auxiliary machines which are not located in the machinery spaces of category A) subject to the following:
    3. fuel oil tanks except those arranged in double bottom compartments shall be located outside of machinery spaces of category A;
    4. provisions for the measurement of oil temperature are provided on the suction pipe of the oil fuel pump;
    5. stop valves and/or cocks are provided on the inlet side and outlet side of the oil fuel strainers; and
    6. pipe joints of welded construction or of circular cone type or spherical type union joint are applied as much as possible.
- b. in cargo ships, to which Part G of SOLAS Chapter II-1 is not applicable, the use of oil fuel having a lower flashpoint than otherwise specified in sub-paragraph (1), for example crude oil, may be permitted provided that such fuel is not stored in any machinery space and subject to the approval by the Administration of the complete installation; and
- c. in ships, to which Part G of SOLAS Chapter II-1 is applicable, the use of oil fuel having a lower flashpoint than otherwise specified in sub-paragraph (14.3.a.1) is permitted.

### **Regulation 14.4 – Fire Growth Potential**

#### **14.4.1 Closing appliances and stopping devices of ventilation:**

- a. The main inlets and outlets of all ventilation systems shall be capable of being closed from

outside the spaces being ventilated. The means of closing shall be easily accessible as well as prominently and permanently marked and shall indicate whether the shut-off is open or closed.

- b. Power ventilation of accommodation spaces, service spaces, cargo spaces, control stations and machinery spaces shall be capable of being stopped from an easily accessible position outside the space being served. This position shall not be readily cut off in the event of a fire in the spaces served.
- c. In passenger ships carrying more than thirty-six (36) passengers, power ventilation, except machinery space and cargo space ventilation and any alternative system which may be required shall be fitted with controls so grouped that all fans may be stopped from either of two separate positions which shall be situated as far apart as practicable. Fans serving power ventilation systems to cargo spaces shall be capable of being stopped from a safe position outside such spaces.

**14.4.2** Means of control shall be provided for opening and closure of skylights, closure of openings in funnels which normally allow exhaust ventilation and closure of ventilator dampers. Means of control shall be provided for stopping ventilating fans. Controls provided for the power ventilation serving machinery spaces shall be grouped so as to be operable from two positions, one of which shall be outside such spaces. The means provided for stopping the power ventilation of the machinery spaces shall be entirely separate from the means provided for stopping ventilation of other spaces.

**14.4.3** For periodically unattended machinery spaces, the Administration shall give special consideration to maintaining the fire integrity of the machinery spaces, the location and centralization of the fire-extinguishing system controls, the required shutdown arrangements (e.g. ventilation, fuel pumps, etc.) and that additional fire-extinguishing appliances and other fire-fighting equipment and breathing apparatus may be required. In passenger ships, these requirements shall be at least equivalent to those of machinery spaces normally attended.

**14.4.4** Insulating materials shall be non-combustible, except in cargo spaces, mail rooms, baggage rooms and refrigerated compartments of service spaces. Vapor barriers and adhesives used in conjunction with insulation, as well as the insulation of pipe fittings for cold service systems, need not be of non-combustible materials, but they shall be kept to the minimum quantity practicable and their exposed surfaces shall have low flame-spread characteristics.

**14.4.5** The following surfaces shall have low flame-spread characteristics in accordance with the Fire Test Procedures Code in passenger vessels:

- a. exposed surfaces in corridors and stairway enclosures and of bulkhead and ceiling linings in accommodation and service spaces (except saunas) and control stations;
- b. surfaces and grounds in concealed or inaccessible spaces in accommodation and service spaces and control stations; and
- c. exposed surfaces of cabin balconies, except for natural hard wood decking systems.

**14.4.6** The following surfaces shall have low flame-spread characteristics in accordance with the Fire Test Procedures Code in cargo ships:

- a. exposed surfaces in corridors and stairway enclosures and of ceilings in accommodation and service spaces (except saunas) and control stations; and
- b. surfaces and grounds in concealed or inaccessible spaces in accommodation and service spaces and control stations.

**14.4.7** Furniture in stairway enclosures shall be limited to seating. It shall be fixed, limited to six seats on each deck in each stairway enclosure, be of restricted fire risk determined in accordance with the Fire Test Procedures Code, and shall not restrict the passenger escape route. The Administration may permit additional seating in the main reception area within a stairway enclosure if it is fixed, non-combustible and does not restrict the passenger escape route. Furniture shall not be permitted in passenger and crew corridors forming escape routes in cabin areas. In addition to the above, lockers of non-combustible material, providing storage for non-hazardous safety equipment required by these Regulations, may be permitted. Drinking water dispensers and ice cube machines may be permitted in corridors provided they are fixed and do not restrict the width of the escape routes. This applies as well to decorative flower or plant arrangements, statues or other objects of art such as paintings and tapestries in corridors and stairways.

**14.4.8** Inert gas systems contained in the Fire Safety Systems Code need not be applied to:

- a. Chemical tankers and gas carriers when carrying crude oil or petroleum products having a flashpoint not exceeding 60°C, provided that they are equipped with inert gas systems satisfying Rules in accordance with Regulation on Inert Gas System on Chemical Tankers, as adopted by IMO Res. A.567(14) Corr.1.
- b. Chemical tankers and gas carriers when carrying flammable cargoes other than crude oil or petroleum products such as cargoes listed in Chapter 17 and 148 of the International Bulk Chemical Code, provided that the capacity of tanks used for their carriage does not exceed 3,000 m<sup>3</sup> and the individual nozzle capacities of tank washing machines do not exceed 17.5 m<sup>3</sup>/h and the total combined throughout from the number of machines in use in a cargo tank at any one time does not exceed m<sup>3</sup>/h.

**14.4.9** On combination carriers cargo oil lines below deck shall be placed in special ducts equipped with draining and ventilation arrangements.

#### **Regulation 14.5 – Smoke Generation Potential and Toxicity**

**14.5.1** Paints, varnishes and other finishes used on exposed interior surfaces shall not be capable of producing excessive quantities of smoke and toxic products, this being determined in accordance with the Fire Test Procedures Code.

**14.5.2** On passenger ships constructed on or after 1 July 2008, paints, varnishes and other finishes



used on exposed surfaces of cabin balconies, excluding natural hard wood decking systems, shall not be capable of producing excessive quantities of smoke and toxic products, this being determined in accordance with the Fire Test Procedures Code.

**14.5.3** Primary deck coverings, if applied within accommodation and service spaces and control stations, shall be of approved material which will not give rise to smoke or toxic or explosive hazards at elevated temperatures, this being determined in accordance with the Fire Test Procedures Code.

**14.5.4** On passenger ships constructed on or after 1 July 2008, primary deck coverings on cabin balconies shall not give rise to smoke, toxic or explosive hazards at elevated temperatures, this being determined in accordance with the Fire Test Procedures Code.

**14.5.5** Paint lockers, regardless of their use, cannot be located above the tanks and spaces defined in SOLAS II-2/4.5.1.2 for oil tankers and the cargo area for chemical tankers.

## **CHAPTER 15 SUPPRESSION OF FIRE**

### **Regulation 15.1 – Detection and Alarm**

**15.1.1** Vessels shall comply with SOLAS Chapter II-2, Regulation 7.

**15.1.2** Pursuant to SOLAS Reg. II-2/7.3.2, the Administration requires that the ability of detector testing shall be assured. Testing shall be carried out by means of equipment producing hot air at the appropriate temperature, or smoke or aerosol particles having the appropriate range of density or particle size, or other phenomena associated with incipient fires to which the detector is designed to respond.

**15.1.3** Pursuant to SOLAS Reg. II-2/7.3.2, the Administration requires that on passenger ships carrying not more than thirty-six (36) passengers in throughout each separate zone, whether vertical or horizontal, in all accommodation and service spaces and, where it is considered necessary by the Palau Ship Registry Administrator, in control stations, except spaces which afford no substantial fire risk such as void spaces, sanitary spaces, etc., there shall be installed either:

- a. A fixed fire detection and fire alarm system so installed and arranged as to detect the presence of fire in such spaces and providing smoke detection in corridors, stairways and escape routes within accommodation spaces; or
- b. An automatic sprinkler, fire detection and fire alarm system of an approved type complying with the relevant requirements of the fire Safety System Code and so installed and arranged as to protect such spaces and, in addition, a fixed fire detection and fire alarm system and so installed and arranged as to provide smoke detection in corridors, stairways and escape routes within accommodation spaces.

**15.1.4** Pursuant to SOLAS Reg. II-2/7.3.2 the Administration requires that a fixed fire detection and fire alarm system or a sample extraction smoke detection system shall be provided in any

cargo space which is not accessible, except where it is shown that the ship is engaged on voyages of such short duration that it would be unreasonable to apply this requirement.

### **Regulation 15.2 – Control of Smoke Spread**

**15.2.1** Practicable measures shall be taken for control stations outside machinery spaces in order to ensure that ventilation, visibility and freedom from smoke are maintained so that, in the event of fire, the machinery and equipment contained therein may be supervised and continue to function effectively. Alternative and separate means of air supply shall be provided and air inlets of the two sources of supply shall be so disposed that the risk of both inlets drawing in smoke simultaneously is minimized. At the discretion of the Palau Ship Registry Administrator, such requirements need not apply to control stations situated on, and opening on to, an open deck or where local closing arrangements would be equally effective. The ventilation system serving safety centers may be derived from the ventilation system serving the navigation bridge, unless located in an adjacent main vertical zone.

**15.2.2** Suitable arrangements shall be made to permit the release of smoke, in the event of fire, from the space to be protected, subject to the provisions of SOLAS Regulation 9. The normal ventilation systems may be acceptable for this purpose. Means of control shall be provided for permitting the release of smoke and such controls shall be located outside the space concerned so that, in the event of fire, they will not be cut off from the space they serve. In passenger ships, the controls required shall be situated at one control position or grouped in as few positions as possible to the satisfaction of the Palau Ship Registry Administrator. Such positions shall have a safe access from the open deck.

**15.2.3** Air spaces enclosed behind ceilings, paneling or linings shall be divided by close-fitting draught stops spaced not more than fourteen (14) meters apart. In the vertical direction, such enclosed air spaces, including those behind linings of stairways, trunks, etc., shall be closed at each deck.

**15.2.4** Atriums shall be equipped with a smoke extraction system. The smoke extraction system shall be activated by the required smoke detection system and be capable of manual control. The fans shall be sized such that the entire volume within space can be exhausted in ten (10) minutes or less.

### **Regulation 15.3– Containment of Fire**

**15.3.1** Vessels shall comply with SOLAS Chapter II-2, Regulation 9.

**15.3.2** Construction of extended bulkhead behind continuous ceilings or linings, the extension of the bulkhead should be made of non-combustible material and the construction of the extension should correspond to the fire class of the extended bulkhead. If the extended bulkhead is of B-0, then the extension may be made of thin steel plates of 1 mm thickness and tightened (e.g., with mineral wool). Alternatively, B-0 class extensions may be constructed of a suitably supported mineral wool (density at least 100kg/m<sup>3</sup>, thickness at least 50mm).

**15.3.3** In pursuance of SOLAS Reg. II-2/9.2.2.3, the Administration requires on passenger ships

carrying not more than thirty-six (36) passengers the minimum fire integrity of all bulkheads and decks shall be complying with the requirements set in other regulations of SOLAS Part II-2, but shall satisfy specific provisions be as prescribed in tables 9.1 and 9.2 of the Reg. 9/11-2. Where, due to any particular structural arrangements in the ship, difficulty is experienced in determining from the tables the minimum fire integrity value of any divisions, such values shall be agreed with the Administration in every particular case.

**15.3.4** In pursuance of SOLAS Reg. II-2/9.2.2.3.2.5, the Administration determines that in respect of category (5) spaces the insulation values in table 9.1 shall apply to ends of deckhouses and superstructures. The insulation values in table 9.2 shall apply to weather decks. The requirements of categories (5) of tables 9.1 or 9.2 do not necessitate enclosure of spaces if this proven to the Administration and agreed.

**15.3.5** In pursuance of SOLAS Reg. II-2/9.2.3.3.4, the Administration determines that external boundaries to be of steel or other equivalent material may be pierced for the fitting of windows and side scuttles provided that there is no requirements for such boundaries of cargo ships to have "A" class integrity. Similarly, in such boundaries which are not required to have "A" class integrity, doors shall be constructed or other materials agreed by the Palau Ship Registry Administrator.

**15.3.6** In pursuance of SOLAS Reg. II-2/9.2.4.2.4, the Administration determines that external boundaries on tankers which are required to be of steel or other equivalent material may be pierced for the fitting of windows and sides cuttles provided that there is no requirement for such boundaries of tankers to have "A" class integrity. Similarly, in such boundaries which may not be required to have "A" class integrity, doors may be constructed of materials which are to be agreed by the Palau Ship Registry Administrator.

#### **Regulation 15.4 – Fire Fighting**

**15.4.1** Vessels shall comply with SOLAS Chapter II-2, Regulation 10.

**15.4.2** In pursuance of SOLAS Reg. II-2/10.2.1.2.1.3 the Administration determines that in all passenger ships fitted with periodically unattended machinery spaces fixed water fire-extinguishing arrangement shall be installed which is at least complying with requirements to those for normally attended machinery spaces.

**15.4.3** In pursuance of SOLAS Reg. II-2/10.2.3.2.1, the Administration determines that:

- a. In passenger ships, there shall be provided at least one fire hose for each of the hydrant.
- b. On cargo ships of 1000 GRT or more, the number of fire hoses is determined one fire hose per each thirty (30) meters of length and one spare fire hose, but not less than five (5) hoses per ship. This number doesn't include any hoses required for machinery or boiler spaces. A ship carrying dangerous good shall be equipped with three (3) additional hoses and nozzles in excess of those required above.
- c. On cargo ships of less than 1000 GRT, the number of fire hoses shall be not less than

three (3) and is calculated in accordance with item (b) above.

d. Internal diameter of fire hoses shall be not less than 64mm.

**15.4.4** In pursuance of SOLAS Reg. II-2/10.3.2.1, the Administration determines that the minimum number of fire extinguishers at control stations, accommodation and service spaces shall be determined on the basis of two (2) fire extinguishers for every 30m or part thereof, of the deck length on which such spaces are situated, but not less than the number required in accordance with the following provisions:

- a. Control stations: one (1) foam fire extinguisher for each space. One (1) fire extinguisher being permitted to be filled in the corridor for a group of small spaces with a total area of up to 50 m<sup>2</sup>, provided that the entrances to the spaces are adjacent and situated in the same corridor; One (1) carbon dioxide fire extinguisher for each space or group of spaces as specified in item (b) below containing electrical or radio equipment, as also for chart houses and chart compartments. One (1) foam fire extinguisher for each space containing an emergency diesel-generator or a fire diesel-driven pump.
- b. Accommodation and service spaces: One (1) foam fire extinguisher for every 30m, or part thereof, of the length of the corridors communicating with accommodation and service spaces, One (1) foam fire extinguisher for every 100m, or part thereof, of area of public spaces. For spaces less than 15m in area fire extinguishers fitted near them may be used. One (1) foam fire extinguisher in galleys and bakeries with oil-fired equipment. In galleys and bakeries with electrical, steam, coal- or gas-fire equipment, having the area of more than 50 m<sup>2</sup>, one (1) foam or carbon dioxide fire extinguisher.
- c. One (1) foam fire extinguisher in other domestic service spaces (where fire extinguishers are available in the corridor, at the entrance to the space, provision of fire extinguishers within the space is not compulsory).

**15.4.5** Pursuant to SOLAS Reg. II-2/10.5.4 the Administration determines that in other machinery spaces as they determined in above mentioned Regulation the following portable fire extinguishers shall be provided:

- a. One (1) carbon dioxide fire extinguisher, for spaces containing main internal combustion or steam machinery, if the total power of the main machinery is equal to, or more than, 740 kW.
- b. Two (2) carbon dioxide fire extinguishers, for spaces containing main internal combustion or steam machinery, if the total power of the main machinery is equal to, or more than, 740 kw
- c. Two (2) carbon dioxide fire extinguishers per space containing switchboards (in space having an area of 15 m<sup>2</sup>, One (1) carbon dioxide fire extinguisher, near the entrance to the space).

**15.4.6** Pursuant to SOLAS Reg. II-2/10.7.1.2, the Administration determines that spaces for

general cargoes except dangerous goods may not be fitted with fixed fire extinguishing systems in the following cases:

- a. In passenger ships engaged in short voyages;
- b. In passenger ships of less than 1000 GRT, provided the ship is fitted with portable fire-fighting equipment for cargo spaces, as well as with steel hatch covers and effective closing appliances of all ventilating and other openings leading to cargo spaces.

### **Regulation 15.5 – Structural Integrity**

Vessels shall comply with SOLAS Chapter II-2, Regulation 11.

### **Regulation 15.6 – Notification of crew and passengers**

A general emergency alarm system required by Regulation 6, Chapter III of SOLAS shall be used for notifying crew and passengers of a fire.

### **Regulation 15.7 – Means of Escape**

**15.7.1** Vessels shall comply with SOLAS Chapter II-2, Regulation 13.

**15.7.2** Pursuant to SOLAS Reg. II-2/13.3.4 the Administration determines the below minimum requirements to Emergency Escape Breathing Device (EEBD) to be available aboard on Palau registered vessels:

- a. Within Accommodation Spaces:
  1. of ships of any type, at least two pieces.
  2. In passenger ships, two pieces in each main vertical zone.
  3. In passenger ships carrying more than thirty-six (36) passengers, in addition to those required in a.2 above, two additional EEBD shall be provided in each main vertical zone.
- b. Within Machinery Spaces: In machinery spaces of ships of all types such number of EEBD shall be available, which shall be not less than the number of ship personnel of persons usually manning the space.
- c. Spare EEBD: Provision shall be made for at least two (2) spare EEBD for passenger ships and at least one spare EEBD for cargo ships.
- d. EEBD for training purposes: At least one (1) EEBD exclusively for training purposes shall be available in ship of any type. EEBD for training purpose should be provided with relevant marking.
- e. EEBD complying with the requirements of the Fire Safety Systems Code and approved by the Administration may be applied in Palau registered vessels. Number and location of the

EEBD onboard shall be agreed by the Administration and shall be indicated on the Fire Control Plan.

## **CHAPTER 16 OPERATIONAL REQUIREMENTS**

### **Regulation 16 – Operational readiness and maintenance**

**16.1.1** At all times while the ship is in service, the requirements of SOLAS Chapter II-2, Regulation 16.1.2 shall be complied with. A ship is not in service when:

- a. it is in for repairs or lay-up (either at anchor or in port) or in dry-dock;
- b. it is declared not in service by the owner or the owner's representative; and
- c. in the case of passenger ships, there are no passengers on board.

**16.1.2** Vessels shall comply with SOLAS Chapter II-2, Regulation 14.

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

### **Regulation 16.2 –Instructions on board training and drills**

**16.2.1** Vessels shall comply with SOLAS Chapter II-2, Regulation 15.

**16.2.2** Refer to Graphical symbols for fire control plans, adopted by the Organization by Resolution A.952 (23). Fire Control Plans are to be approved by the Recognized Organization and in accordance with Resolution A.756 (18).

**16.2.3** Pursuant to SOLAS Reg. II-2/15.2.4.1, the Administration determines that general arrangement plans shall be permanently exhibited for the guidance of the ship's officers, as required by above Regulation, however, details of general arrangement plans 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 in the English language.

## **CHAPTER 17 ALTERNATIVE DESIGN AND ARRANGEMENTS**

**Regulation 17:** Vessels shall comply with SOLAS, Chapter II-2, Regulation 17.

## **CHAPTER 18 SPECIAL REQUIREMENTS**

**Regulation 18:** Vessels shall comply with SOLAS, Chapter II-2, Regulation 18, Regulation 19 and Regulation 20.

## **CHAPTER 19 LIFE-SAVING APPLIANCES AND ARRANGEMENTS**

### **Regulation 19.1 –Application**

**19.1.1** Unless expressly provided otherwise, this Chapter shall apply to ships the keels of which

are laid or which are at a similar stage of construction on or after 1 July 1998.

**19.1.2** Ships constructed before 1 July 1998 shall:

- a. subject to the provisions of sub-paragraph b, comply with the requirements which are applicable under Chapter III of the Convention in force prior to 1st July 1998 to new or existing ships as prescribed by that Chapter; and
- b. when the life-saving appliances or arrangements on such ships are replaced or when such ships undergo repairs, alterations or modifications of a major character which involve replacement of, or any addition to, their existing life-saving appliances or arrangements, such life-saving appliances or arrangements, in so far as is reasonable and practicable, comply with the requirements of this Chapter. However, if a survival craft other than an inflatable life raft is replaced without replacing its launching appliance, or vice versa, the survival craft or launching appliance may be of the same type as that replaced.

**Regulation 19.2 – Exemption**

The Administration may, if he considers that the sheltered nature and conditions of the voyage are such as to render the application of any specific requirements of this Chapter unreasonable or unnecessary, exempt from those requirements individual ships or classes of ships which, in the course of their voyage, do not proceed more than twenty (20) miles from the nearest land.

**Regulation 19.3 – Evaluation, testing and approval of life-saving appliances and arrangements**

**19.3.1** Evaluation, testing and approval of life-saving appliances and arrangements shall be done in accordance with SOLAS Chapter III, Regulation 4.

**19.3.2** The Palau Ship Registry Administration will refer to the Recommendation on testing of life-saving appliances adopted by the Organization by Resolution A.689 (17) and Resolution MSC.81(70).

**CHAPTER 20            REQUIREMENTS OF SHIPS AND LIFE-SAVING APPLIANCES**

**Regulation 20.1 – Requirements for ships and life-saving appliances**

**20.1.1** Palau registered vessels shall comply with SOLAS, Chapter III, Part B and with Marine Notices and Marine Circulars as promoted by the Palau Ship Registry Administrator.

**20.1.2** The Master has discretion to modify or postpone drills that are required under SOLAS Chapter III. The justification for such an action is to be entered into the Official Log Book and the required drill is to be carried out at the earliest practical opportunity thereafter.

**20.1.3** Simulated launch of free-fall lifeboats is only acceptable if the guidelines for simulated launching contained within the Appendix to Annex II of MSC.1/Circ.1206 Rev.1 are satisfied.

**20.1.4** Replacement of on-load release gear shall be allowed following MSC.1/Circ.1392. Lifeboat or Rescue boat on-load release mechanisms not complying with paragraphs 4.4.7.6.4 to 4.4.7.6.6. of the LSA Code shall be replaced with equipment that complies accordingly. The Palau Maritime Administration interprets paragraph 21 of the Annex to MSC.1/Circ.1392 to mean that the hook fixed structural connections of the release mechanism and supporting structure which are not made of materials corrosion resistant in the marine environment and which are installed on the outside of the lifeboat should be replaced.

## **CHAPTER 21           RADIOCOMMUNICATIONS**

### **Regulation 21.1 – Application**

These Regulations apply to all Palau registered vessels of three hundred (300) tons or more.

**21.1.1** All Palau registered vessels to which this Chapter applies shall comply with SOLAS Chapter IV.

**21.1.2** The Administration may grant partial or conditional exemptions to individual ships from the requirements of SOLAS, Chapter IV, Regulations 7 to 11 provided such ships comply with the functional requirements of SOLAS Chapter IV, Regulation 4, provided that:

- a. if the conditions affecting safety are such as to render the full application of SOLAS Chapter IV Regulations 7 to 11 unreasonable or unnecessary; or
- b. in exceptional circumstances, for a single voyage outside the sea area or sea areas for which the ship is equipped.

**21.1.3** SOLAS IV/7.2 requires an aeronautical VHF to be carried on board all passenger vessels in accordance with SOLAS IV Reg.14, of a type approved by the Palau Ship Registry Administration in accordance with IMO Resolutions A.694 (17) & MSC.80(70) and the ICAO Convention. The Palau Ship Registry Administrator has been made aware that there are currently no suitably approved units in the market and will therefore grant a general exemption from formal type approval of the Aeronautical VHF, as long as no type approved equipment is found in the market and provided that the Recognized Organization carries out a technical case-by-case approval of the equipment.

**21.1.4** Applications for exemption from type approval requirements should be made directly to the Palau Ship Registry Administrator for review and approval.

**21.1.5** The master shall ensure that the ship keeps its courses on a voyage within the sea areas for which the radio equipment placed on board and as detailed in the Ship Radio Station License Certificate certifies are provided except in the event of an emergency or unless expressly permitted by the Palau Ship Registry Administrator to go beyond the appropriate sea areas.

**21.1.6** The master or owner of every ship shall register their Global Maritime Distress and Safety System (GMDSS) identities with the Palau Ship Registry Administrator.



## **CHAPTER 22 SAFETY OF NAVIGATION**

### **Regulation 22.1 – Application**

Unless expressly provided otherwise, this Chapter shall apply to all ships on all voyages, except for warships, naval auxiliaries and other ships owned or operated by a Contracting State and used only on government non-commercial service.

**22.1.1** The Administration may decide to what extent this Chapter shall apply to ships operating solely in waters landward of the baselines which are established in accordance with international law.

**22.1.2** The Administration shall determine to what extent the provisions of SOLAS Chapter V Regulations 15 to 28 do not apply to the following categories of ships:

- a. ships below one hundred fifty (150) tons engaged on any voyage; and
- b. ships below five hundred (500) tons not engaged on international voyages.

**22.1.3** For vessels registered with the Palau Flag for which this Chapter applies, vessels shall comply with the requirements of SOLAS V.

**22.1.4** The Administration may grant general exemptions to ships without mechanical means of propulsion from the requirements of SOLAS Chapter IV, Regulations 15, 17, 18, 19 (except 19 (b)(i) (7)), 20, 22 and 24 to 28.

**22.1.5** The Administration may grant to individual ships exemptions or equivalents of a partial or conditional nature, when any such ship is engaged on a voyage where the maximum distance of the ship from the shore, the length and nature of the voyage, the absence of general navigational hazards, and other conditions affecting safety are such as to render the full application of this Chapter unreasonable or unnecessary, provided that the Administration has taken into account the effect such exemptions and equivalents may have upon the safety of all other ships.

**22.1.6** Passenger ships to which SOLAS Chapter I applies shall have on board a plan for co-operation with appropriate search and rescue services in the event of an emergency. The plan shall be developed in co-operation between the ship, the company, as defined in Regulation 1 of SOLAS, Chapter IX and the search and rescue services. The plan shall include provisions for periodic exercises to be undertaken to test its effectiveness. The plan shall be developed based on the guidelines developed by the Organization.

**22.1.7** Life-saving signals shall be used by life-saving stations, maritime rescue units, and aircraft engaged in search and rescue operations when communicating with ships or persons in distress or to direct ships, and by ships or persons in distress when communicating with life-saving stations, maritime rescue units, and aircraft engaged in search and rescue operations. An illustrated table describing the life-saving signals shall be readily available to the officers of the watch of every ship to which this Chapter applies.

**22.1.8** Such life-saving signals are described the IMO Search and Rescue Manual (IMOSAR) (Assembly resolution A.439 (XI), as amended) and illustrated in the International Code of Signals, as amended.

**22.1.9** The Administration may provide such nautical and hydrographic services as he deems necessary for the purposes of aiding navigation.

**22.1.10** A ship shall use a mandatory ships' routing system adopted by the Organization as required for its category or cargo carried and in accordance with the relevant provisions in force unless there are compelling reasons not to use a particular ships' routing system. Any such reason shall be recorded in the ships' official log book.

**22.1.11** Vessel traffic services (VTS) contribute to the safety of life at sea, safety and efficiency of navigation and the protection of the marine environment, adjacent shore areas, work sites and offshore installations from possible adverse effects of maritime traffic. The master of a Palau ship shall participate in and comply with the provisions of VTS, if any, while the ship is in the waters of a Contracting State.

**22.1.12** All ships shall carry deck and engine log books in which, or other means by which, the performance of the ship, her machinery, boilers and other daily events including such data as the ship's position, speed, course, weather conditions, fuel consumption, tank soundings, machinery operating pressures, and temperatures and any incidents which may appear to be of importance to safety of life at sea, prevention of pollution to the marine environment, etc., shall be recorded indelibly in English. Such logs when entered by hand shall be signed daily by the officers of the watch and countersigned by the master or chief engineer as appropriate. Such logs or copies shall be made available to the Palau Ship Registry Administrator as and when required.

**22.1.13** The owner, the charterer, the company operating the ship as defined in SOLAS Regulation 1 of Chapter IX, or any other person shall not prevent or restrict the master of the ship from taking or executing any decision which, in the master's professional judgment, is necessary for safety of life at sea and protection of the marine environment.

**22.1.14** All ships shall maintain navigational and engineering watches. Masters, chief engineers and watchkeeping personnel shall observe the basic principles in watchkeeping outlined in Chapter VIII of the Regulations annexed to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (1978), as amended on 7 July 1995 and any amendment thereto which has come into force and has been accepted by the Palau Government.

## **CHAPTER 23 CARRIAGE OF CARGOES AND OIL FUELS**

### **Regulation 23.1 – Application**

**23.1.1** Unless expressly provided otherwise, this Chapter applies to the carriage of cargoes (except liquids in bulk, gases in bulk and those aspects of carriage covered by other Chapters) which, owing to their particular hazards to ships or persons on board, may require special precautions in all ships to which the present Regulations apply and in cargo ships of less than five

hundred (500) tons. However, for cargo ships of less than five hundred (500) tons, the Palau Ship Registry Administrator, if he considers that the sheltered nature and conditions of voyage are such as to render the application of any specific requirements of SOLAS Chapter VI, unreasonable or unnecessary, may take other effective measures to ensure the required safety for these ships.

**23.1.2** For the purposes of SOLAS Chapter VI, the following Codes shall be complied with wherever applicable:

- a. the Code of Safe Practice for Cargo Stowage and Securing adopted by the Organization;
- b. the Code of Safe Practice for Ships Carrying Timber Deck Cargoes adopted by the Organization.
- c. the Code of Safe Practice for Solid Bulk Cargoes (BC Code) adopted by the Organization.

**23.1.3** The physical blending of bulk liquid cargoes during sea voyages is prohibited. Physical blending refers to the process whereby the ship's cargo pumps and pipelines are used to internally circulate two (2) or more different cargoes with the intent to achieve a cargo with a new product designation. This prohibition does not preclude the master from undertaking cargo transfers for the safety of the ship or protection of the marine environment.

**23.1.4** The prohibition in 23.1.3 does not apply to the blending of products for use in the search and exploitation of seabed mineral resources on board ships used to facilitate such operations.

**23.1.5** Any production process on board a ship during sea voyages is prohibited. Production processes refer to any deliberate operations whereby a chemical reaction between a ship's cargo and any other substance or cargo takes place.

**23.1.6** The prohibition in 23.1.5 does not apply to the production processes of cargoes for use in the search and exploitation of seabed mineral resources on board ships used to facilitate such operations.

## **CHAPTER 24            BULK CARGOES OTHER THAN GRAIN**

### **Regulation 24.1 – General Requirements**

Prior to loading a solid bulk cargo, the master shall be in possession of comprehensive information on the ship's stability and on the distribution of cargo for the standard loading conditions. The method of providing such information shall be to the satisfaction of the Palau Ship Registry Administrator. In order to obtain the satisfaction of the Administration reference should be made to:

- a. Recommendation on Intact Stability for Passenger and Cargo Ships under one hundred (100)meters in Length, adopted by the Organization by resolution A. 167(ES. IV) and amendments to this Recommendation, adopted by the Organization by resolution A. 206 (VII); and

- b. the Recommendation on a Severe Wind and Rolling Criterion (Weather Criterion) for the Intact Stability of Passenger and Cargo Ships of twenty-four (24) meters in Length and Over, adopted by the Organization by resolution A. 562 (14).

24.1.1 Vessels to which this Chapter applies shall comply with SOLAS Chapter VI, Part B and Part C.

## **CHAPTER 25            CARRIAGE OF DANGEROUS GOODS**

### **Regulation 25.1 – Carriage of Dangerous Goods in Packaged Form**

25.1.1 Unless expressly provided otherwise, this Chapter applies to the carriage of cargoes (except liquids in bulk, gases in bulk and those aspects of carriage covered by other Chapters) which, owing to their particular hazards to ships or persons on board, may require special precautions in all ships to which the present Regulations apply and in cargo ships of less than five hundred (500) tons. However, for cargo ships of less than five hundred (500) tons, the Palau Ship Registry Administrator, if he considers that the sheltered nature and conditions of voyage are such as to render the application of any specific requirements of this Part unreasonable or unnecessary, may take other effective measures to ensure the required safety for these ships.

25.1.2 For the above purpose, the below Codes shall be complied with wherever applicable:

- a. the Code of Safe Practice for Cargo Stowage and Securing adopted by the Organization; and
- b. the Code of Safe Practice for Ships Carrying Timber Deck Cargoes adopted by the Organization.

25.1.3 Cargo Securing Manual shall be prepared following the Guidelines for the preparation of the Cargo Securing Manual MSC/Circ.745.

25.1.4 Vessels carrying Dangerous Good in packaged form shall comply with SOLAS Chapter VII, Part A.

### **Regulation 25.2 – Carriage of Dangerous Goods in Solid Form in Bulk**

25.2.1 Unless expressly provided otherwise, this Part applies to the carriage of dangerous goods in solid form in bulk in all ships to which these Regulations apply and in cargo ships of less than five hundred (500) tons.

25.2.2 The carriage of dangerous goods in solid form in bulk is prohibited except in accordance with the provisions of this Regulation.

25.2.3 In addition to the provisions of this Part, the Medical First Aid Guide for Use in Accidents involving Dangerous Goods (MFAG) shall be complied with.

25.2.4 Vessels for which this section applies shall comply with SOLAS Chapter VII, Part A-1.

**25.2.5** The carriage of dangerous goods in solid form in bulk shall be in compliance with the relevant provisions of the IMSBC Code, as defined in paragraph (a) of Regulation 1-1 of Chapter VI.

### **Regulation 25.3 – Carriage of Dangerous Goods in Liquid Form in Bulk**

**25.3.1** Unless expressly provided otherwise, this Regulation applies to chemical tankers constructed on or after 1 July 1986 including those of less than five hundred (500) tons. Such tankers shall comply with the requirements of this Regulation in addition to any other applicable requirements of these Regulations.

**25.3.2** Vessels for which this Regulation applies shall comply with SOLAS Chapter VII, Part B.

## **CHAPTER 26 CONSTRUCTION AND EQUIPMENT OF SHIPS CARRYING LIQUEFIED GASES IN BULK**

**26.1.1** Unless expressly provided otherwise, this Regulation applies to gas carriers constructed on or after 1st July 1986 including those of less than 500 tons. Such gas carriers shall comply with the requirements of this Regulation in addition to any other applicable requirements of these Regulations.

**26.1.2** Vessels for which this Regulation applies shall comply with SOLAS Chapter VII, Part C.

## **CHAPTER 27 NUCLEAR SHIPS**

**Regulation 27:** Vessels for which this section applies shall comply with SOLAS Chapter VIII.

## **CHAPTER 28 MANAGEMENT FOR THE SAFE OPERATION OF SHIPS**

**Regulation 28.1:** This Chapter applies to ships, regardless of the date of construction, as follows:

- a. passenger ships including passenger high speed craft, not later than 1st July 1998;
- b. oil tankers, chemical tankers, gas carriers, bulk carriers and cargo high speed craft of five hundred (500) tons and upwards, not later than 1 July 1998; and
- c. other cargo ships and mobile offshore drilling units of five hundred (500) tons and upwards, not later than 1 July 2002.

This Chapter does not apply to government-operated ships used for non-commercial purposes.

**28.1.1** Vessels for which this Chapter applies shall comply with SOLAS Chapter IX.

## **CHAPTER 29 SAFETY MEASURES FOR HIGH-SPEED CRAFT**

**Regulation 29:** Vessels for which this Chapter applies shall comply with SOLAS Chapter X.

## **CHAPTER 30 SPECIAL MEASURES TO ENHANCE MARITIME SAFETY**

**Regulation 30.1:** Vessels for which this section applies shall comply with SOLAS Chapter XI.

**30.1.1** This Regulation applies to Companies and registered owners of ships to which SOLAS Chapter I applies.

**30.1.2** For the purpose of this Regulation, registered owner shall be as specified by the Palau Ship Registry Administrator and Company as defined in SOLAS Regulation 1 of Chapter IX.

**30.1.3** Every Company and registered owner shall be provided with an identification number which conforms to the IMO Unique Company and Registered Owner Identification Number Scheme adopted by the Organization. Refer to resolution MSC.160 (78) entitled "Adoption of the IMO Unique Company and Registered Owner Identification Number Scheme".

**30.1.4** The Company identification number shall be inserted on the certificates and certified copies thereof issued under SOLAS Regulation 4 of Chapter IX and Section 19.2 or 19.4 of Part A of the ISPS Code.

**30.1.5** This Regulation shall take effect when the certificates referred to in 30.1.4 are issued or renewed on or after 1 January 2009.

### **Regulation 30.2 – Investigation of Marine Casualties and Incidents**

Taking into account SOLAS, Chapter I, Regulation 21, the Administration shall conduct investigations of marine casualties and incidents in accordance with these Regulations, as supplemented by the Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident (Casualty Investigation Code) adopted by the Organization by resolution MSC.255(84), and any amendment thereto which has come into force and has been accepted by the Government.

## **CHAPTER 31 – SPECIAL MEASURES TO ENHANCE MARITIME SECURITY**

**Regulation 31.1:** Vessels of 500 GT or more for which this section applies shall comply with SOLAS Chapter XI-2.

### **Chapter 32. Amendments**

32.1 Amendments adopted by the Maritime Safety Committee (MSC) are listed in MSC Resolution and compliance will be carried out through Marine Notices.

32.2 Additions and amendments to this Code will be done as necessary and will be listed below for clarification.

Approved for publication by the Minister of Public Infrastructure and Industries

  
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Charles I. Obichang, Minister  
Minister, Ministry of Public Infrastructure and Industries

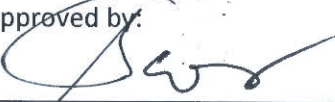
5/07/24  
Date

Adopted following publication by the Minister of Public Infrastructure and Industries:

  
\_\_\_\_\_  
Charles Obichang  
Minister, Ministry of Public Infrastructure and Industries

6/7/24  
Date

Approved by:

  
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6/11/24  
Date