



**MARITIME AND PORT AUTHORITY OF  
SINGAPORE  
SHIPPING CIRCULAR TO SHIPOWNERS  
NO. 6 OF 2012**

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**Applicable to:** This circular should be brought to the attention of classification societies, shipowners, managers, operators and masters of Singapore-registered ships.

**2012 LIST OF CERTIFICATES, DOCUMENTS AND PUBLICATIONS  
REQUIRED TO BE CARRIED ON BOARD SINGAPORE FLAG SHIPS**

1 In 2009, MPA issued Shipping Circular No. 18 of 2009 (*List of certificates, documents and publications required to be carried on Singapore ships (2009)*), based on a circular issued by the IMO. The Facilitation (FAL) Committee of IMO has now further updated the IMO circular, incorporating a number of new certificates and documents that have been introduced as a result of amendments to mandatory instruments or new conventions since the last update.

2 The Annex to this circular is an updated list of the certificates, documents and publications required to be carried on board Singapore-registered ships, together with extracts of the regulatory text from the source instruments. Applicability and application dates may vary according to the type, size and date built of vessels and shipowners, managers, operators and Masters should consult the source conventions and codes mentioned for details.

**Format of the Annex**

3 The list of certificates, documents and publications follows closely the various IMO instruments that Singapore is Party to, and in the case of SOLAS, its individual chapters. Preparatory documents and records required for initial tests when a ship is first constructed are not included. The list is divided into three parts:

- a. Part I: Ships on international voyages (Passenger ships, cargo ships, tankers and bulk carriers)
  - (1) Certificates and documents

- (2) Publications
- b. Part II: Other types of vessels on international voyages (HSC, WIG, SPS, OSV, MODU)
  - (1) Certificates and documents
  - (2) Recommended Publications
- c. Part III: Non-convention ships and Special Limits Passenger ships
  - (1) Certificates
  - (2) Documents

## **Digital Versions of Publications**

4 With the increasing availability and convenience of use of digital publications, MPA has no objections to their use in lieu of the hard copy, where indicated in the Annex to this circular. All publications on board ships, regardless of format, should be the latest editions or duly corrected up to date. Please refer to [MSC-MEPC.2/Circ.2 IMO requirements on carriage of publications on board ships](#) for more details. Masters are to ensure that the digital publications are easily available for reference by ship officers and crew.

5 Computers used on board for digital publications should meet the requirements of [MSC/Circ.891 Guidelines for the on-board use and application of computers](#).

### SOLAS Chapter V: Digital charts and publications

6 Please refer to [Shipping Circular No. 3 of 2011](#) on the new SOLAS requirements for the carriage of ECDIS and digital nautical charts. Although MPA allows for paperless operation with dual ECDIS, it should be noted that raster charts do not have the full functionality of ECDIS and can only be used with an appropriate folio of up-to-date paper charts (see [SN/Circ.207, Rev 1](#)).

7 As the ECDIS regulation does not include digital nautical publications, such as Tide Tables and List of Lights, shipowners shall continue to seek MPA's approval for equivalence, as detailed in [Shipping Circular No. 29 of 2006](#).

### Publications for Emergency use

8 Publications essential for emergency use shall always be available on board in the form of hard copy, even if the vessel carries the digital versions, bearing in mind that such publications need to be readily available for use in case of emergency without being restricted to a specific place and by the availability of a computer. These are, at least:

- a. International Code of Signals (SOLAS V/21.1); and
- b. IAMSAR Manual Volume III (SOLAS V/21.2),

and any other publication or document deemed crucial for emergency use by the company and vessel.

## Radio Regulations

9 The certificates and documents required to be carried on board come under the purview of the International Telecommunications Union (ITU). The list contained in this circular is updated with the modification to Appendix 16 (*Documents with which stations on board ships and aircraft shall be provided*) of the Radio Regulations (RR) (2008 edition) by the World Radiocommunications Conference, 2007 (WRC-07)<sup>1</sup>. International Morse Code Communications have drawn to an end and therefore the regulations pertaining to Morse code have been deleted in the RR.

10 The modification to Appendix 16 also allows for the carriage in digital format of the more voluminous publications, namely:

- a. List of Ship Stations and Maritime Mobile Service Identity Assignments;
- b. List of Coast Stations and Special Service Stations; and
- c. Manual for Use by the Maritime Mobile and Maritime Mobile-Satellite Services.

11 It should be noted that the sole purpose of the “Manual for Use by the Maritime Mobile and Maritime Mobile-Satellite Services” has been to provide the shipping community with a compilation of treaty and regulatory and other ITU texts relevant to the maritime mobile and maritime mobile-satellite services, and is not aimed at being a “manual” describing the GMDSS and/or other maritime operational procedures. This is to be found in another publication, published separately by the IMO (“GMDSS Manual”, latest edition Sep 2011), and is also available in digital format.

## Shipping circulars

12 MPA encourages the shipping community to maintain the shipping circulars on board in digital format. There is no need to retain a paper copy, as long as shipowners ensure that the digital shipping circulars are easily accessible by ship officers and crew. MPA has been issuing circulars in PDF format, for ease of downloading from MPA’s website and distribution to the companies and ships.

## **Endorsement of Documents**

13 The conventions require the carriage of certain records and documents relating to the regulations, for example, oil record book and garbage management plan. These are usually published generically by commercial publishers in the format given in the conventions. Shipowners seeking for these to be endorsed and stamped by MPA should instead approach our ROs directly for the endorsement and stamp on MPA’s behalf. To date, MPA has not approved those publications that are legal documents and records under the conventions or national legislation to be kept in digital format.

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<sup>1</sup> This was reported by the COMSAR subcommittee ([COMSAR 12/4](#)).

## **Maritime Labour Convention (MLC)**

14 Singapore acceded to the MLC in 2011 and the list of MLC-related certificates, documents and records contained in the Annex to this circular is a *preliminary* list for the shipping community's advance preparation. The carriage of MLC-related certificates, documents and records will become mandatory upon entry into force of the convention. A further shipping circular will be issued in due course providing information on the convention requirements that are specific to Singapore.

## **Purchase of National Legislation Publications**

15 MPA does not stock or sell the maritime legislation publications of Singapore. These may be purchased from:

### **Toppan Leefung Pte Ltd**

Legal Publication

Great World City

East Tower, #18-01/06

1, Kim Seng Promenade

Singapore 237994

Tel: 6826 9691

Fax: 6820 3341

e-mail: [legalpub@toppanleefung.com](mailto:legalpub@toppanleefung.com)

website: [www.toppanleefung.com/webshop](http://www.toppanleefung.com/webshop)

Mon–Fri: 9.30am–6pm

Sat, Sun and Public Holidays: Closed.

16 This circular updates and supersedes Shipping Circular No. 18 of 2009 (*List of certificates, documents and publications required to be carried on Singapore ships (2009)*).

17 Any queries relating to this circular should be directed to Mr Ong Hua Siong (Tel: 6375 6210; email: [shipping@mpa.gov.sg](mailto:shipping@mpa.gov.sg)).

CHEONG KENG SOON  
DIRECTOR OF MARINE  
MARITIME AND PORT AUTHORITY OF SINGAPORE

ANNEX

**2012**  
**CERTIFICATES, DOCUMENTS AND PUBLICATIONS**  
**REQUIRED TO BE CARRIED ON BOARD**  
**DIFFERENT TYPES OF SINGAPORE SHIPS**

*(Note: All certificates to be carried on board must be originals)*

**PART I: SHIPS ON INTERNATIONAL VOYAGES**  
**(PASSENGER SHIPS, CARGO SHIPS, TANKERS, BULK CARRIERS)**

**1. CERTIFICATES AND DOCUMENTS**

**A. Merchant Shipping Act (CAP. 179) – Registry**

**i. Certificate of Registry**

On completion of the registry of a ship, the Registrar shall grant a Certificate of Registry which shall state the particulars entered in the register.

*(Merchant Shipping Act, Section 16(1))*

Every State shall issue to ships to which it has granted the right to fly its Flag documents to that effect.

*(UNCLOS article 91.2)*

**B. Merchant Shipping (Official Log Books) Regulations**

**i. Official Log Book**

Unless otherwise stated, an official log book shall be kept in every ship.

*(Merchant Shipping (Official Log Books) Regulations, regulation 3(1))*

**C. Merchant Shipping (Tonnage) Regulations (TONNAGE 69)**

**i. International Tonnage Certificate** *(for ships of 24 m in length and above)*

An International Tonnage Certificate (1969) shall be issued to every ship, the gross and net tonnage of which have been determined in accordance with the International Tonnage Convention, 1969.

*(Tonnage Convention, article 7)*

**ii. Singapore Tonnage Certificate** *(for ships of less than 24 m in length registered on or after 6 Sep 85)*

A Singapore Tonnage Certificate shall be issued to every ship less than 24 metres in length, the gross and net tonnages of which have been determined in accordance with Part II of the Merchant Shipping (Tonnage) Regulations.

*(Merchant Shipping (Tonnage) Regulations, regulation 7(1)(b))*

## **D. Merchant Shipping (Load Line) Regulations (1988 LOAD LINE PROTOCOL)**

### **i. International Load Line Certificate**

An International Load Line Certificate shall be issued under the provisions of the International Convention on Load Lines, 1966, as modified by the 1988 LL Protocol for ships of 24 metres in length and above.

*(Load Line 88 Protocol, article 18)*

### **ii. Singapore Load Line Certificate**

A Singapore Load Line Certificate shall be issued to every new ship of less than 24 metres in length or every existing ship of less than 150 tons gross tonnage which has been surveyed and marked in accordance with the Merchant Shipping (Load Lines) Regulations.

*(Merchant Shipping (Load Lines) Regulations, regulation 16(2))*

### **iii. International Load Line Exemption Certificate or Singapore Load Line Exemption Certificate**, as appropriate *(when an exemption has been granted)*

An International Load Line Exemption Certificate, or Singapore Load Line Exemption Certificate shall be issued to any to which an exemption has been granted under and in accordance with the provisions of the International Convention on Load Lines, 1966, as modified by the 1988 LL Protocol or the Merchant Shipping (Load Lines) Regulations, as appropriate.

*(Load Line Protocol, article 18; Merchant Shipping (Load Lines) Regulations, regulation 16(3))*

### **iv. Approved Loading and Ballasting Information**

The master of every new ship shall be supplied with information to arrange for the loading and ballasting of his ship in such a way as to avoid the creation of any unacceptable stresses in the ship's structure, provided that this requirement need not apply to any particular length, design or class of ship where the Administration considers it to be unnecessary. Information shall be provided to the master in a form that is approved by the Administration or a recognized organization.

*(1988 Load Line Protocol, regulation 10)*

see also "Ballast Water Management Plan"

## **E. Merchant Shipping (Prevention of Collisions at Sea) Regulations (COLREG 72)**

### **i. Dispensation Certificate from the technical requirements of the International Regulations for Preventing Collisions at Sea, 1972 (COLREG) (when a dispensation has been granted)**

A dispensation certificate shall be issued when it has been determined that a vessel of special construction or purpose cannot comply fully with the provisions of any of these Rules.

*(COLREG Rule 1(e))*

### **ii. Certificates of Approval/Plans and Specification for Navigational Lights**

The lights and shapes specified in these Rules shall comply with the provisions of Annex I to these Regulations.

*(COLREG Rule 20)*

The construction of lanterns and shapes and the installation of lanterns on board the vessel shall be to the satisfaction of the appropriate authority of the State whose flag the vessel is entitled to fly.  
(COLREG Annex I/14)

## **F. Merchant Shipping (Safety Convention) Regulations (SOLAS 74) – Certificates**

### **i. Passenger Ship Safety Certificate** *(supplemented by its Record of Equipment)*

A certificate called a Passenger Ship Safety Certificate shall be issued after inspection and survey of a passenger ship which complies with the requirements of chapters II-1, II-2, III and IV and any other relevant requirements of SOLAS 1974. A Record of Equipment for the Passenger Ship Safety Certificate (Form P) shall be permanently attached.

*(SOLAS 1974, regulation I/12, appendix)*

Application: Passenger ships

### **ii. Cargo Ship Safety Construction Certificate** *(for ships of 500 GT and above)*

A certificate called a Cargo Ship Safety Construction Certificate shall be issued after survey to a cargo ship of 500 gross tonnage and over which satisfies the requirements for cargo ships on survey, set out in regulation I/10 of SOLAS 1974, and complies with the applicable requirements of chapters II-1 and II-2, other than those relating to fire-extinguishing appliances and fire control plans.

*(SOLAS 1974, regulation I/12, appendix)*

Application: Cargo ships

### **iii. Cargo Ship Safety Equipment Certificate** *(for ships of 500 GT and above and the certificate to be supplemented by its Record of Equipment)*

A certificate called a Cargo Ship Safety Equipment Certificate shall be issued after survey to a cargo ship of 500 gross tonnage and over which complies with the relevant requirements of chapters II-1 and II-2 and III and any other relevant requirements of SOLAS 1974. A Record of Equipment for the Cargo Ship Safety Equipment Certificate (Form E) shall be permanently attached to the Certificate.

*(SOLAS 1974, regulation I/12, appendix)*

Application: Cargo ships

### **iv. Cargo Ship Safety Radio Certificate** *(for ships of 300 GT and above and the certificate to be supplemented by its Record of Equipment)*

A certificate called a Cargo Ship Safety Radio Certificate shall be issued after survey to cargo ship of 300 gross tonnage and over, fitted with a radio installation, including those used in life-saving appliances which complies with the requirements of chapters III and IV and any other relevant requirements of SOLAS 1974. A Record of Equipment for the Cargo Ship Safety Radio Certificate (Form R) shall be permanently attached to the Certificate.

*(SOLAS 1974, regulation I/12, appendix)*

Application: Cargo ships

[**Cargo Ship Safety Certificate**, as an alternative to Cargo Ship Safety Construction, Equipment and Radio certificates above

A certificate called a Cargo Ship Safety Certificate may be issued after survey to a cargo ship which complies with the relevant requirements of chapters II-1, II-2, III, IV and V



and other relevant requirements of SOLAS 1974 as modified by the 1988 SOLAS Protocol, as an alternative to the above cargo ship safety certificates.  
(1988 SOLAS Protocol, regulation I/12(a)(v), appendix)]

**NOTE:** Although the SOLAS 1988 Protocol has provision for a single safety certificate, Singapore does not exercise this option nor issue such a certificate.  
(SOLAS regulation I/12(a)(v) has not been transposed into the Merchant Shipping (Safety Convention) Regulations)]

**v. Exemption Certificate or Letter of Dispensation** (*when an exemption dispensation has been granted under the provisions of SOLAS 74 as amended*)

When an exemption is granted to a ship under and in accordance with the provisions of SOLAS 1974, a certificate called an Exemption Certificate shall be issued in addition to the certificates listed above.

(SOLAS 1974, regulation I/12)

## **G. Merchant Shipping (Safety Convention) Regulations (SOLAS 74) – Structure, Subdivision and Stability/2008 IS Code**

**i. Certificates of Class**, accompanied by, as appropriate:

- a. Drawings, Plans and Instruction manuals, including Oxygen Analysis and Gas Detection Equipment, as appropriate, necessary for the safe operation of the ship concerned (see also SOLAS 1974, regulation II-1/3-7)
- b. Reports and Records of Periodical Surveys of Hull, Machinery, Boilers and Safety Valves and Equipment

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 regulation XI-1/1, or with applicable national standards of the Administration which provide an equivalent level of safety.

(SOLAS 1974, regulation II-1/3-1)

**ii. Evidence of seaworthiness**

The following documents may be accepted by the Registrar as evidence that a ship is in a seaworthy condition for registry under section 12 or 13 of the Act: (a) a classification certificate issued by a classification society which has been authorized to issue certificates on behalf of the Government; and (b) such other documents relating to the seaworthiness of the ship as the Registrar may determine.

(Merchant Shipping (Registration of ships) Regulations, regulation 14(1))

Application: new registration.

**iii. Intact Stability Booklet**

Every passenger ship regardless of size and every cargo ship having a length (L) of 24 m and upwards, shall be inclined upon its completion and the elements of its stability determined. In addition to any other applicable requirements of the present regulations, ships having a length of 24 m and upwards constructed on or after 1 July 2010 shall as a minimum comply with the requirements of part A of the 2008 IS Code.

(SOLAS 1974, regulation II-1/5.1)

Each ship shall be provided with a stability booklet, approved by the Administration, which contains sufficient information (see part B, 3.6) to enable the master to operate the ship in compliance with the applicable requirements contained in the Code. If a stability



instrument is used as a supplement to the stability booklet for the purpose of determining compliance with the relevant stability criteria such instrument shall be subject to the approval by the Administration.

*(International Code on Intact Stability, 2008 (2008 IS Code), paragraph 2.1.6)*

**iv. Stability Instrument Approved test conditions and Operation Manual (Approval Procedure)**

The satisfactory operation of the stability instrument is to be verified by testing upon installation (refer to 4.1.8). A copy of the approved test conditions and the operation manual for the stability instrument are to be available on board.

*(International Code on Intact Stability, 2008 (2008 IS Code), paragraph 4.1.6)*

**v. Stability Instrument test condition results (Periodical testing)**

It is the responsibility of the ship's master to check the accuracy of the stability instrument at each annual survey by applying at least one approved test condition. If an Administration's representative is not present for the stability instrument check, a copy of the test condition results obtained by this check should be retained on board as documentation of satisfactory testing for the Administration's representative's verification.

*(International Code on Intact Stability, 2008 (2008 IS Code), paragraph 4.1.9.1)*

**vi. Stability information to be supplied to the master**

The master shall be supplied with such information satisfactory to the Administration as is necessary to enable him by rapid and simple processes to obtain accurate guidance as to the stability of the ship under varying conditions of service. A copy of the stability information shall be furnished to the Administration.

*(SOLAS 1974, regulation II-1/5-1)*

Referring to SOLAS chapter II-1, regulation 19, the necessity to provide the crew with the relevant information regarding the subdivision of the ship is expressed, therefore plans should be provided and permanently exhibited for the guidance of the officer in charge. These plans should clearly show for each deck and hold the boundaries of the watertight compartments, the openings therein with means of closure and position of any controls thereof, and the arrangements for the correction of any list due to flooding. In addition, Damage Control Booklets containing the aforementioned information should be available.

*(Explanatory Notes to SOLAS chapter II-1, paragraph 1.2.3)*

**vii. Damage Control Plans and Booklet**

There shall be permanently exhibited, or readily available on the navigation bridge, for the guidance of the officer in charge of the ship, plans showing clearly for each deck and hold the boundaries of the watertight compartments, the openings therein with the means of closure and position of any controls thereof, and the arrangements for the correction of any list due to flooding. In addition, booklets containing the aforementioned information shall be made available to the officers of the ship.

*(SOLAS 1974, regulations II-1/19.1)*

**viii. Damage Stability information**

In case of ships to which damage stability requirements of part B-1 apply, damage stability information shall provide the master a simple and easily understandable way of assessing the ship's survivability in all damage cases involving a compartment or group of compartments.

*(SOLAS 1974, regulations II-1/19.5)*

**ix. Records of closure of doors at sea**

The closure of cargo loading doors and the opening and closing of any doors at sea required for the operation of the ship or the embarking and disembarking of passengers shall be recorded in the logbook.

*(SOLAS 1974, regulation II-1/22)*

**x. Manoeuvring Information**

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. The stopping times, ship headings and distances recorded on trials, together with the results of trials to determine the ability of ships having multiple propellers to navigate and manoeuvre with one or more propellers inoperative, shall be available on board for the use of the master or designated personnel.

*(SOLAS 1974, regulation II-1/28)*

**xi. Emergency towing procedures on ships**

Ships shall be provided with a ship-specific emergency towing procedure. Such a procedure shall be carried aboard the ship for use in emergency situations and shall be based on existing arrangements and equipment available on board the ship.

*(SOLAS regulation II-1/3-4, paragraph 2)*

**xii. Emergency towing booklet**

The Emergency Towing Booklet (ETB) should be ship specific and be presented in a clear, concise and ready-to-use format. A copy should be kept at hand by the owners/operators in order to facilitate the passing on of information to the towage company as early as possible in the emergency. A copy should also be kept in a common electronic file format, which will allow faster distribution to the concerned parties. A minimum of three copies should be kept on board and located in: 1. the bridge; 2. a forecabin space; and 3. the ship's office or cargo control room.

*(MSC.1/Circ.1255 – Guidelines for Owners/Operators on preparing Emergency Towing Procedures, paragraph 4)*

**xiii. Towing and Mooring Arrangements Plan**

Ships shall be provided with arrangements, equipment and fittings of sufficient safe working load to enable the safe conduct of all towing and mooring operations associated with the normal operation of the ship. The SWL for the intended use for each shipboard fitting should be noted in the towing and mooring arrangements plan available on board for the guidance of the Master.

*(SOLAS 1974, regulation II-1/3-8; MSC/Circ.1175 – Guidance on Shipboard Towing and Mooring Equipment, paragraph 5)*

**xiv. Documentary Evidence of Fitness of Ship to Operate with Periodically Unattended Machinery Spaces**

Every ship shall be provided with documentary evidence, to the satisfaction of the administration, of its fitness to operate with periodically unattended machinery spaces.

*(SOLAS 1974, regulation II-1/46.3)*

**xv. Ship Structure Access Manual**

A ship's means of access to carry out overall and close-up inspections and thickness measurements shall be described in a Ship structure access manual approved by the Administration, an updated copy of which shall be kept on board.

*(SOLAS 1974, regulation II-1/3-6)*

Application: Oil tankers and bulk carriers

**xvi. Construction drawings to be maintained on board and ashore**

A set of as-built construction drawings and other plans showing any subsequent structural alterations shall be kept on board a ship constructed on or after 1 January 2007. An additional set of such drawings shall be kept ashore by the Company, as defined in regulation IX/1.2.

- .1 Main plans –
  - .1 General arrangement;
  - .2 Capacity plan;
  - .3 Hydrostatic curves; and
  - .4 Loading Manual, where required.
- .2 Steel plans –
  - .1 Midship section;
  - .2 Scantling plan;
  - .3 Decks;
  - .4 Shell expansion;
  - .5 Transverse bulkheads;
  - .6 Rudder and rudder stock; and
  - .7 Cargo hatch covers, where applicable.
- .3 Bilge, ballast and cargo piping diagrams.

*(SOLAS 1974, regulation II-1/3-7; MSC/Circ.1135 – As-built construction drawings to be maintained on board the ship and ashore)*

**xvii. Special requirements for ro-ro passenger ships**

Documented operating procedures for closing and securing all shell doors, loading doors and other closing appliances which, if left open or not properly secured, could, in the opinion of the Administration, lead to flooding of a special category space or ro-ro space, shall be kept on board and posted at an appropriate place.

*(SOLAS 1974, regulation II-1/23)*

Application: Ro-ro passenger ships

**xviii. Coating Technical File (CTF) (Seawater ballast tanks)**

All dedicated seawater ballast tanks arranged in ships and double-side skin spaces arranged in bulk carriers of 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.

The Coating Technical File shall be kept on board and maintained throughout the life of the ship.

*(SOLAS 1974 regulation II-1/3-2; resolution MSC.215(82) – Performance Standard for Protective Coatings for Dedicated Seawater Ballast Tanks in all types of Ships and Double-Side Skin Spaces of Bulk Carriers, paragraph 3.4)*

Application: All ships and double-side skin of bulk carriers

**xix. Coating Technical File (Crude Oil Tankers)**

The Coating Technical File shall be kept on board and maintained throughout the life of the ship.

*(Performance Standard for Protective Coatings for Cargo Oil Tanks of Crude Oil Tankers, MSC.288(87), paragraph 3.4.4)*

Application: Crude oil tankers

**xx. Technical File** (*Crude Oil Tankers – alternate means of protection*)

The Technical File shall be kept on board and maintained throughout the life of the ship.  
(*Performance Standard for Alternative Means of Corrosion Protection for Cargo Oil Tanks of Crude Oil Tankers, MSC.289(87), paragraph 2.2.2*)

Application: Crude oil tankers

**xxi. Coating Technical file** (*Void spaces*)

Specification of the coating system applied to void spaces in bulk carriers and oil tankers, records of the shipyard's and shipowner's coating work, detailed criteria for coating selection, job specifications, inspection, maintenance and repair should be documented in the Coating Technical File (CTF), which should be reviewed by the Administration or an organization recognized by the Administration.

The Coating Technical File should be kept on board and maintained throughout the life of the ship.

(*Resolution MSC.244(83) – Performance Standard for Protective Coatings for Void Spaces on Bulk Carriers and Oil Tankers, Section 3.4.5*)

Application: Bulk carriers and oil tankers

**xxii. Ship Construction File** (*Goal-based Standards*)

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/or 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.

(*SOLAS 1974, regulation II-1/3-10.4*)

Application: Bulk carriers and oil tankers

Application dates, see MSC.290(87)

**PERFORMANCE STANDARDS FOR WATER LEVEL DETECTORS**  
**(MSC.188(79))**

Application: Bulk carriers and Single hold cargo ships

**i. Test records**

Each detector alarm should be tested to verify that the pre-alarm and main alarm levels operate for every space where they are installed and indicate correctly. Also, the fault monitoring arrangements should be tested as far as practicable.

Records of testing of alarm systems should be retained on board.

(*MSC.188(79), Section 3.3*)

**ii. Manuals**

Documented operating and maintenance procedures for the water level detection system should be kept on board and be readily accessible.

(*MSC.188(79), Section 3.5*)

## **H. Merchant Shipping (Safety Convention) Regulations (SOLAS 74) – Fire Safety/FSS Code**

### **i. Maintenance Plan**

The maintenance plan shall include the necessary information about fire protection systems and fire-fighting systems and appliances as required under regulation II-2/14.2.2. For tankers, additional requirements are referred to in regulation II-2/14.4.

*(SOLAS 1974, regulations II-2/14.2.2 and II-2/14.4 )*

### **ii. Fire safety training manual**

A training manual shall be written in the working language of the ship and shall be provided in each crew mess room and recreation room or in each crew cabin. The manual shall contain the instructions and information required in regulation II-2/15.2.3.4. Part of such information may be provided in the form of audio-visual aids in lieu of the manual.

*(SOLAS 1974, regulation II-2/15.2.3)*

### **iii. Fire Control plan/booklet, and also Duplicates of Plans or Booklets on either side of ship outside deckhouse in prominently marked weathertight containers**

General arrangement plans shall be permanently exhibited for the guidance of the ship's officers, showing clearly for each deck the control stations, the various fire sections together with particulars of the fire detection and fire alarm systems and the fire-extinguishing appliances etc. Alternatively, the aforementioned details may be set out in a booklet, a copy of which shall be supplied to each officer, and one copy shall at all times be available on board in an accessible position. Plans and booklets shall be kept up to date; any alterations shall be recorded as soon as practicable. A duplicate set of fire control plans or a booklet containing such plans shall be permanently stored in a prominently marked weathertight enclosure outside the deckhouse for the assistance of shore-side fire-fighting personnel.

*(SOLAS 1974, regulation II-2/15.2.4)*

### **iv. Records of On-board training and drills**

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

*(SOLAS 1974, regulation II-2/15.2.2.5)*

### **v. Fire safety operational booklet**

The fire safety operational booklet shall contain the necessary information and instructions for the safe operation of the ship and cargo handling operations in relation to fire safety. The booklet shall be written in the working language of the ship and be provided in each crew mess room and recreation room or in each crew cabin. The booklet may be combined with the fire safety training manuals required in regulation II-2/15.2.3.

*(SOLAS 1974, regulation II-2/16.2)*

### **vi. Document of Compliance with the Special Requirements for Ships Carrying Dangerous Goods** *(for ships carrying dangerous goods in packaged form or in solid form in bulk) (also applicable to ships of less than 500 gross tons constructed on or after 1 Feb 92)*

The Administration shall provide the ship with an appropriate document as evidence of compliance of construction and equipment with the requirements of regulation II-2/19 of SOLAS 1974. Certification for dangerous goods, except solid dangerous goods in bulk, is not required for those cargoes specified as class 6.2 and 7 and dangerous goods in limited quantities.

(SOLAS 1974, regulation II-2/19.4 (or II-2/54.3))

**vii. Inert Gas Systems: Instruction manuals**

Detailed instruction manuals shall be provided on board, covering the operations, safety and maintenance requirements and occupational health hazards relevant to the inert gas system and its application to the cargo tank system. The manuals shall include guidance on procedures to be followed in the event of a fault or failure of the inert gas system.

(FSS Code, Section 2.4.4)

Application: tankers

**viii. Fixed high-expansion foam fire-extinguishing systems: Plans and manuals**

Installation plans and operating manuals shall be supplied to the ship and be readily available on board. A list or plan shall be displayed showing spaces covered and the location of the zone in respect of each section. Instructions for testing and maintenance shall be available on board.

(FSS Code, Section 6.3.1.16)

Application: Amendments to be adopted by MSC 90 in May 2012

**ix. Certificates of Approval for Fire-Fighting Appliances**

NOTES:

1. Throughout SOLAS chapter II-2, various fire fighting appliances “shall be approved by the Administration”; such appliances shall be accompanied by Certificates of Approval. (SOLAS 1974, chapter II-2)
2. MPA accepts equipment with class type approval of our ROs to be installed on board Singapore ships.

**x. Installation plans and operating manuals of Sprinkler Systems**

Installation plans and operating manuals should be supplied to the ship and be readily available on board. A list or plan should be displayed showing the spaces covered and the location of the zone in respect of each section. Instructions for testing and maintenance should also be available on board. The maintenance instructions should include provisions for a flow test of each section at least annually to check for possible clogging or deterioration in the discharge piping.

Existing type approvals compliant to A.800(19) expires 9 May 2014.

(Resolution A.800(19), as amended by MSC.265(84) – Revised Guidelines for Approval of Sprinkler Systems equivalent to that referred to in SOLAS regulation II-2/12, Section 3)

NOTE: Existing installations are permitted to remain in service as long as they are serviceable.

**I. Merchant Shipping (Safety Convention) Regulations (SOLAS 74) – Life-Saving Appliances (LSA)**

**i. Muster Lists**

Muster lists and emergency instructions complying with the requirements of regulation 37 shall be exhibited in conspicuous places throughout the ship including the navigation bridge, engine-room and crew accommodation spaces.

(SOLAS 1974, regulation III/8.3)



## **ii. Emergency Instructions for each person on board**

Clear instructions to be followed in the event of an emergency shall be provided for every person on board. In the case of passenger ships these instructions shall be drawn up in the language or languages required by the ship's flag State and in the English language.

*(SOLAS 1974, regulation III/8.2)*

## **iii. Records of Emergency training and drills**

The date when musters are held, details of abandon ship drills and fire drills, drills of other life-saving appliances and on board training shall be recorded in such log-book as may be prescribed by the Administration. If a full muster, drill or training session is not held at the appointed time, an entry shall be made in the log-book stating the circumstances and the extent of the muster, drill or training session held.

*(SOLAS 1974, regulation III/19.5)*

## **iv. Instructions for On-Board Maintenance of Life-Saving Appliances**

Instructions for on-board maintenance of life-saving appliances complying with regulation 36 shall be provided and maintenance shall be carried out accordingly.

The Administration may accept, in compliance with the requirements of paragraph 3.2, a shipboard planned maintenance programme, which includes the requirements of regulation 36.

*(SOLAS 1974, regulation III/20)*

## **v. Decision Support System for Masters**

In all passenger ships, a decision support system for emergency management shall be provided on the navigation bridge.

*(SOLAS 1974, regulation III/29)*

Application: Passenger ships

## **vi. Training Manuals for Life-Saving Appliances**

A training manual complying with the requirements of paragraph 3 shall be provided in each crew mess room and recreation room or in each crew cabin.

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

*(SOLAS 1974, regulation III/35)*

## **vii. Certificates of Approval for Life-Saving Appliances**

Except as provided in paragraphs 5 and 6, life-saving appliances and arrangements required by this chapter shall be approved by the Administration.

*(SOLAS 1974, regulation III/4.1)*

NOTE: MPA accepts equipment with class type approval of our ROs to be installed on board Singapore ships.

## **J. Merchant Shipping (Safety Convention) Regulations (SOLAS 74) – Radiocommunications**

### **i. Radio Records**

A record shall be kept, to the satisfaction of the administration and as required by the Radio Regulations, of all incidents connected with the radiocommunication service which appear to be of importance to safety of life at sea.



Radio records may be kept in the form of incident records or journal entries. The records should be kept on board the ship for at least a year.  
(*SOLAS 1974, regulation IV/17; Marine Circular 6 of 2003 dated 29 Apr 03*)

### **Telecommunications Act (CAP 323, Section 74)**

#### **Telecommunications (Radio-communication) Regulations**

(Authority: Info-communications Development Authority of Singapore (IDA))

#### **ii. Ship's Station Licence**

A Ship Station Licence may be granted by the Authority if—

- (a) the ship on which the station is to be carried has a valid internationally recognized Safety Radio certificate;
- (b) the station is operated by an appropriate number and category of radio operators holding a Certificate of Competency granted under the Telecommunications (Certificates of Competency for Ship Station Operators) Regulations (Rg 1) or a competent foreign authority recognised by the Authority, except where the vessel is used solely or principally for pleasure purposes;
- (c) the ship has an accounting authority acceptable to the Authority; and
- (d) the ship complies with such other requirements as may be determined by the Authority from time to time.

(*Telecommunications (Radio-communication) Regulations, regulation 29(1)*)

#### **iii. Documents required by the Radio Regulations**

A Ship Station licensee shall —

- (a) provide on board the ship all documents either considered necessary by the Authority or required under the Radio Regulations for the efficient operation of the station carried on board the ship; and
- (b) comply with the working procedures set out in the Radio Regulations and with such other requirements as the Authority may determine.

(*Telecommunications (Radio-communication) Regulations, regulation 31 – see below*)

### **RADIO REGULATIONS (2008 Edition)**

#### **APPENDIX 16 (Rev.WRC-07)**

*Documents with which stations on board ships and aircraft shall be provided*

*(See Articles 42 and 51)*

#### **Section I – Ship stations for which a Global Maritime Distress and Safety System installation is required by international agreement**

These stations shall be provided with:

- 1 the **licence** prescribed by Article 18<sup>1</sup>;
- 2 certificates of the operator or operators;
- 3 a **log** in which the following are recorded as they occur, together with the time of the occurrence, unless administrations have adopted other arrangements for recording all information which the log should contain:
  - a) a summary of communications relating to distress, urgency and safety traffic;
  - b) a reference to important service incidents;

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<sup>1</sup> Article 18 of the Radio Regulations provides that radio transmitting stations are to be licensed by “the country to which the station in question is subject”. In the case of a radio transmitting station on board a ship, this is the state of registry of the ship.

- 4 the **List of Ship Stations and Maritime Mobile Service Identity Assignments** (see Article 20) in either printed or electronic format;
- 5 the **List of Coast Stations and Special Service Stations** (see Article 20) in either printed or electronic format;
- 6 the **Manual for Use by the Maritime Mobile and Maritime Mobile-Satellite Services** (see Article 20) in either printed or electronic format.

NOTE – An administration may exempt a ship from the carriage of the documents mentioned in items 5 and 6 above under various circumstances (for example, when that ship carries equivalent information for the ship’s specified trading area).

Section II – Other ship stations for which a radio installation is required by regional or international agreement

These stations shall be provided with:

- 1 the **licence** prescribed by Article 18 (see footnote to Section I);
- 2 certificates of the operator or operators;
- 3 a **log** or other arrangements which the administration may have adopted for that purpose, in which a summary of communications related to distress, urgency and safety traffic shall be recorded together with the time of their occurrence;
- 4 the **List of Coast Stations and Special Service Stations** (see Article 20) in either printed or electronic format;
- 5 the relevant rules and procedures of radiocommunications, e.g. **Manual for Use by the Maritime Mobile and Maritime Mobile-Satellite Services** (paper or electronic format) (see Article 20).

NOTE – An administration may exempt a ship from the carriage of the documents mentioned in items 4 and 5 above under various circumstances (for example, when that ship carries equivalent information for the ship’s specified trading area).

Section III – Other ship stations

These stations shall be provided with:

- 1 the documents mentioned in items 1 and 2 of Section II;
- 2 the documents mentioned in items 4 and 5 of Section II, in accordance with the requirements of the administrations concerned.

NOTE – An administration may exempt a ship from the carriage of the documents mentioned in item 2 above under various circumstances (for example, when that ship carries equivalent information for the ship’s specified trading area). Administrations may also, by mutual agreement, exempt ships travelling only between their national jurisdictions from the licensing prescribed by Article 18 and the carriage of the documents mentioned in item 1 above, provided those vessels are otherwise licensed or authorized by regulation.

## **K. Merchant Shipping (Safety Convention) Regulations (SOLAS 74) – Safety of Navigation**

### **i. Deck Log Book and Engine Log Book**

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 thereof shall be made available to the Director as and when required.

*(Merchant Shipping (Safety Convention) Regulations, regulation V/13)*

**NOTE:** This regulation is specific to Singapore flag ships. There is no corresponding regulation in SOLAS.

### **ii. Records of navigational activities and daily reporting**

All ships engaged on international voyages shall keep on board a record of navigational activities and incidents which are of importance to safety of navigation and which must contain sufficient detail to restore a complete record of the voyage, taking into account the recommendations adopted by the Organization.

*(SOLAS 1974, regulation 28.1)*

### **iii. Search and Rescue Co-operation Plan**

Passenger ships to which chapter I of the Convention applies, trading on fixed routes, shall have on board a plan for co-operation with appropriate search and rescue services in event of an emergency.

*(SOLAS 1974, regulation V/7.3)*

Application: Passenger ships

### **iv. Minimum Safe Manning Document**

Every ship to which chapter I of the Convention applies shall be provided with an appropriate safe manning document or equivalent issued by the administration as evidence of the minimum safe manning.

*(SOLAS 1974, regulation V/14.2)*

### **v. Integrated Navigation Systems (INS)**

Material enabling onboard familiarization training should be provided for the INS. The onboard familiarization material should explain all configuration, functions, limitations, controls, displays, alerts and indications of the INS. Guidance and recommendations to the equipment manufacturers for the provision of onboard familiarization material are given in Appendix 2.

*(SOLAS 1974, regulation V/15; resolution MSC.252(83) – Revised Performance Standards for INS, Section 30)*

### **vi. Illustrated Table of Life-Saving Signals**

An illustrated table describing the life-saving signals shall be readily available to the officer of the watch of every ship to which this chapter applies.

*(SOLAS 1974, regulation V/16)*

**vii. Voyage data recorder system – Certificate of Compliance**

The voyage data recorder system, including all sensors, shall be subjected to an annual performance test. The test shall be conducted by an approved testing or servicing facility to verify the accuracy, duration and recoverability of the recorded data. In addition, tests and inspections shall be conducted to determine the serviceability of all protective enclosures and devices fitted to aid location. A copy of the certificate of compliance issued by the testing facility, stating the date of compliance and the applicable performance standards, shall be retained on board the ship.

*(SOLAS 1974, regulation V/18.8)*

**viii. Test report of AIS annual testing**

The automatic identification system (AIS) shall be subjected to an annual test. The test shall be conducted by an approved surveyor or an approved testing or servicing facility. The test shall verify the correct programming of the ship static information, correct data exchange with connected sensors as well as verifying the radio performance by radio frequency measurement and on-air test using, e.g., a Vessel Traffic Service (VTS). A copy of the test report shall be retained on board the ship.

*(SOLAS 1974, regulation V/18.9) (MSC.308(88))*

Application: Enters into force on 1 July 2012

**ix. Table or Curve of Residual Deviations of each Standard and Steering Magnetic Compass**

...check that the required documentation has been placed on board should consist of... table or curve of residual deviations for the magnetic compass has been provided, and that a diagram of the radar installations shadow sectors is displayed

*(SOLAS 1974, regulation V/19)*

*(Resolution A.1053(27) – Survey Guidelines under the Harmonized System of Survey and Certification, 2011)*

**x. Long range identification and tracking of ships – Results of LRIT Conformance Test; LRIT Conformance Test Report**

A Conformance test report should be issued, on satisfactory completion of a conformance test, by the Administration or the ASP who conducted the test acting on behalf of the Administration and should be in accordance with the model set out in appendix 2.

*(SOLAS 1974, regulation V/19-1; MSC.1/Circ.1296)*

**NOTES:**

1. MPA issues a LRIT Conformance Test Report as attestation to the successful completion of the conformance test.
2. Vessels operating exclusively in Sea Area A1 and fitted with AIS do not need to comply with the regulation.

**xi. Pilot Ladder Maintenance Record**

All pilot ladders used for pilot transfer shall be clearly identified with tags or other permanent marking so as to enable identification of each appliance for the purposes of survey, inspection and record keeping. A record shall be kept on the ship as to the date the identified ladder is placed into service and any repairs effected.

*(SOLAS 1974, regulation V/23.2.4)*

Application: Enters into force on 1 July 2012.

## **xii. Steering Gear change-over Procedures**

Simple operating instructions with a block diagram showing the change-over procedures for remote steering gear control systems and steering gear power units shall be permanently displayed on the navigation bridge and in the steering compartment.

*(SOLAS 1974, regulation V/26.3.1)*

## **xiii. Records of Steering Gear tests and drills**

The date upon which the checks and tests prescribed in paragraphs 1 and 2 are carried out and the date and details of emergency steering drills carried out under paragraph 4, shall be recorded.

*(SOLAS 1974, regulation V/26.6)*

## **xiv. List of Operational Limitations**

Passenger ships to which chapter I of the Convention applies shall keep on board a list of all limitations on the operation of the ship, including exemptions from any of the SOLAS regulations, restrictions in operating areas, weather restrictions, sea state restrictions, restrictions in permissible loads, trim, speed and any other limitations, whether imposed by the administration or established during the design or the building stages.

*(SOLAS 1974, regulation V/30)*

Application: Passenger ships

## **xv. Certificates of Approval for Navigational Aids**

Systems and equipment required to meet the requirements of regulations 19 and 20 shall be of a type approved by the Administration.

*(SOLAS 1974, regulation V/18.1)*

**NOTE:** MPA accepts equipment with class type approval of our ROs to be installed on board Singapore ships.

## **L. Merchant Shipping (Safety Convention) Regulations (SOLAS 74) – Carriage of cargo/Grain Code**

### **i. Cargo Securing Manual**

All cargoes, other than solid and liquid bulk cargoes, cargo units and cargo transport units, shall be loaded, stowed and secured throughout the voyage in accordance with the Cargo Securing Manual approved by the administration. In ships with ro-ro spaces, as defined in regulation II-2/3.41, all securing of such cargoes, cargo units and cargo transport units, in accordance with the Cargo Securing Manual, shall be completed before the ship leaves the berth. The Cargo Securing Manual is required on all types of ships engaged in the carriage of all cargoes other than solid and liquid bulk cargoes, which shall be drawn up to a standard at least equivalent to the guidelines developed by the Organization.

*(SOLAS 1974, regulations VI/5.6 and VII/5; MSC/Circ.745)*

### **ii. Material Safety Data Sheets (MSDS)**

Ships carrying MARPOL Annex I cargoes, as defined in Appendix I to Annex I of the Protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships, 1973, and marine fuel oils shall be provided with a material safety data sheet prior to the loading of such cargoes based on the recommendations developed by the Organization.

*(SOLAS 1974, regulation VI/5-1)*

**iii. Cargo Information and appropriate Shipping Documents including a Certificate or Declaration on the Carriage of Cargoes for ships carrying Dangerous Goods in Packaged Form or in Solid Form in Bulk or carrying Harmful Substances in Packaged Form**

The shipper shall provide the master or his representative with appropriate information on the cargo sufficiently in advance of loading to enable the precautions which may be necessary for proper stowage and safe carriage of the cargo to be put into effect. Such information shall be confirmed in writing and by appropriate shipping documents prior to loading the cargo on the ship. For the purpose of this regulation the cargo information required in sub-chapter 1.9 of the Code of Safe Practice for Cargo Stowage and Securing, adopted by the Organization by resolution A.714(17), as may be amended, shall be provided.

*(SOLAS 1974, regulation VI/2 and XII/10)*

**iv. Bulk Carrier Booklet**

To enable the master to prevent excessive stress in the ship's structure, the ship loading and unloading of solid bulk cargoes shall be provided with a booklet referred to in SOLAS regulation VI/7.2. As an alternative to a separate booklet, the required information may be contained in the intact stability booklet (see 3.2.1 above).

*(SOLAS 1974 regulations VI/7 and XII/8; the Code of Practice for the Safe Loading and Unloading of Bulk Carriers (BLU Code))*

Application: Bulk carriers

**v. Document of Authorization for the Carriage of Grain and Grain Loading Stability Booklet (for ships carrying grain)**

A document of authorization shall be issued for every ship loaded in accordance with the regulations of the International Code for the Safe Carriage of Grain in Bulk either by the administration or an organization recognized by it or by a Contracting Government on behalf of the administration. The document shall accompany or be incorporated into the grain loading manual provided to enable the master to meet the stability requirements of the Code.

*(SOLAS 1974, regulation VI/9; International Code for the Safe Carriage of Grain in Bulk, section 3)*

**vi. Loading/Unloading Plan**

Before a solid bulk cargo is loaded or unloaded, the master and the terminal representative shall agree on a plan which shall ensure that the permissible forces and moments on the ship are not exceeded during loading or unloading, and shall include the sequence, quantity and rate of loading or unloading, taking into consideration the speed of loading or unloading, the number of pours and the deballasting or ballasting capability of the ship.

*(SOLAS 1974, regulation VI/7.3)*

**Code of Safe Practice for Ships carrying Timber Deck Cargoes, 2011 (2011 TDC Code)**

**vii. Procedures and Checklists**

Procedures should be established for the preparation of plans and instructions, including checklists as appropriate, for key shipboard operations. Guidance is provided in Annex A to assist the development of such checklists.

*(2011 TDC Code, Section 2.1.3)*



Application: ships carrying timber deck cargoes

**M. Merchant Shipping (Safety Convention) Regulations (SOLAS 74) – Carriage of solid bulk cargo/IMSBC Code**

(for ships carrying solid bulk cargo)

**i. Exemption from particular provision of IMSBC Code**

Where this Code requires that a particular provision for the transport of solid bulk cargoes shall be complied with, a competent authority or competent authorities (port State of departure, port State of arrival or flag State) may authorize any other provision by exemption if satisfied that such provision is at least as effective and safe as that required by this Code.

A copy of the exemption or an electronic copy thereof shall be maintained on board each ship transporting solid bulk cargoes in accordance with the exemption, as appropriate.

*(IMSBC Code, paragraph 1.5.1 and 1.5.4)*

**ii. Stability Information Booklet**

Having regard to regulation II-1/22.1 of SOLAS Convention, a stability information booklet shall be provided aboard all ships subject to the Convention. The master shall be able to calculate the stability for the anticipated worst conditions during the voyage as well as that on departure and demonstrate that the stability is adequate.

*(IMSBC Code, paragraph 2.1.3.1)*

**iii. Instructions on Emergency Response and Medical First Aid**

A copy of the instructions on emergency response and medical first aid relevant to incidents involving dangerous goods in solid form in bulk shall be on board.

*(IMSBC Code, paragraph 3.1.2)*

Refer to the Medical First Aid guide for Use in Accidents involving Dangerous Goods (MFAG)

**iv. Dangerous Goods Manifest or Stowage Plan** *(for ships carrying dangerous goods in solid form in bulk or harmful substances in bulk)*

Each ship carrying dangerous goods in solid form in bulk shall have a special list or manifest setting forth the dangerous goods on board and the location thereof, in accordance with SOLAS regulation VII/7-2.2. A detailed stowage plan, which identifies by class and sets out the location of all dangerous goods on board, may be used in place of such a special list or manifest.

*(IMSBC Code, section 4.8.1) See also SOLAS 1974, regulation VII/4.2 and MARPOL Annex III, regulation 4)*

**v. Instructions on Emergency Response and Medical First Aid**

When dangerous goods in solid form in bulk are carried appropriate instructions on emergency response to incidents involving the cargoes shall be on board.

*(IMSBC Code, paragraph 4.8.2)*

**vi. Document of Compliance**

Cargo ships of 500 gross tonnage and over constructed on or after 1 September 1984 and cargo ships of less than 500 gross tonnage constructed on or after 1 February 1992, subject to SOLAS regulation II-2/19.4 (or II-2/54.3), shall have a Document of compliance when carrying dangerous goods in solid form in bulk except class 6.2 and class 7.



*(IMSBC Code, paragraph 4.8.3)*

**vii. Records of quantitative measurements of hydrogen, phosphine, arsine, oxygen, ammonia, acetylene or other flammable and toxic gases mentioned in the carriage requirements of a particular cargo.**

The concentrations of these gases in the cargo spaces carrying this cargo shall be measured regularly, during voyage, and the results of the measurements shall be recorded and kept on board.

*(IMSBC Code, various individual schedules in Appendix 1)*

**N. Merchant Shipping (Safety Convention) Regulations (SOLAS 74) – Carriage of dangerous goods/INF cargo**

(for ships carrying dangerous goods/INF cargo)

**i. Transport information/Packing Certificate**

Transport information relating to the carriage of dangerous goods in packaged form and the container/vehicle packing certificate shall be in accordance with the relevant provisions of the IMDG Code and shall be made available to the person or organization designated by the port State authority.

*(SOLAS 1974, regulation VII/4.1)*

Application: Amendment to be adopted by MSC 90 in May 2012

**ii. List/manifest or Stowage Plan**

Each ship carrying dangerous goods in packaged form shall have a special list, manifest or stowage plan setting forth, in accordance with the relevant provisions of the IMDG Code, the dangerous goods on board and the location thereof. A copy of one of these documents shall be made available before departure to the person or organization designated by the port State authority.

*(SOLAS 1974, regulation VII/4.2)*

Application: Amendment to be adopted by MSC 90 in May 2012

See also IMSBC Code, section 4.8.1 and MARPOL Annex III, regulation 4

**iii. Relevant Sections of the International Maritime Dangerous Goods Code** when carrying dangerous goods in packaged form

**iv. International Certificate of Fitness for the Carriage of INF Cargo**

A ship carrying INF cargo shall comply with the requirements of the International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on Board Ships (INF Code) in addition to any other applicable requirements of the SOLAS regulations and shall be surveyed and be provided with the International Certificate of Fitness for the Carriage of INF Cargo.

*(SOLAS 1974, regulation VII/16; INF Code (resolution MSC.88(71)), paragraph 1.3 )*

**Nuclear Ships**

**i. Nuclear Cargo Ship Safety Certificate or Nuclear Passenger Ship Safety Certificate**, in place of the Cargo Ship Safety Certificate or Passenger Ship Safety Certificate, as appropriate.

Every Nuclear powered ship shall be issued with the certificate required by SOLAS chapter VIII.

*(SOLAS 1974, regulation VIII/10)*

## **O. Merchant Shipping (Safety Convention) Regulations (SOLAS 74) – Carriage of Dangerous Chemicals in Bulk/IBC Code**

(for chemical tankers)

### **i. Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk** *(for ships which comply with the Bulk Chemical (BC) Code)*

A certificate called a Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk, the model form of which is set out in the appendix to the Bulk Chemical Code, should be issued after an initial or periodical survey to a chemical tanker engaged in international voyages which complies with the relevant requirements of the Code.

*(BCH Code, section 1.6)*

Application: The Code is mandatory under Annex II of MARPOL 73/78 for chemical tankers constructed before 1 July 1986.

### **ii. International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk** *(for ships which comply with the International Bulk Chemical (IBC) Code)*

A certificate called an International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk, the model form of which is set out in the appendix to the International Bulk Chemical Code, should be issued after an initial or periodical survey to a chemical tanker engaged in international voyages which complies with the relevant requirements of the Code.

*(IBC Code, section 1.5)*

Application: The IBC Code is mandatory under chapter VII of SOLAS 1974 and Annex II of MARPOL 73/78 for chemical tankers constructed on or after 1 July 1986.

### **iii. Loading and Stability information booklet**

The master of the ship shall be supplied with a loading and stability information booklet. This booklet shall contain details of typical service and ballast conditions, provisions for evaluating other conditions of loading and a summary of the ship's survival capabilities. In addition, the booklet shall contain sufficient information to enable the master to load and operate the ship in a safe and seaworthy manner.

*(IBC Code, chapter 2)*

### **iv. Information on Conditions of loading in Connection with Damage Assumptions** *(for chemical tankers complying with the Bulk Chemical Code)*

Damage survival capability shall be investigated on the basis of loading information submitted to the Administration for all anticipated conditions of loading and variations in draught and trim. Ballast conditions where the chemical tanker is not carrying products covered by the Code, or is carrying only residues of such products, need not be considered.

*(IBC Code, chapter 2)*

### **v. Cargo Information**

Information shall be on board, and available to all concerned, giving the necessary data for the safe carriage of the cargo in bulk. Such information shall include a cargo stowage plan, to be kept in an accessible place, indicating all cargo on board, including for each dangerous chemical carried:

- .1 a full description of the physical and chemical properties, including reactivity, necessary for the safe containment of the cargo;
- .2 action to be taken in the event of spills or leaks;
- .3 countermeasures against accidental personal contact;
- .4 fire-fighting procedures and fire-fighting media; and

.5 procedures for cargo transfer, tank cleaning, gas-freeing and ballasting  
(IBC Code, section 16.2.3.1)

**vi. Compatibility Information**

The shipper of the cargo is responsible for providing compatibility information to the ship operator and/or master. This must be done in a timely manner before transportation of the product. The cargo shall be compatible with all materials of construction.

(IBC Code, chapter 6)

**IBC CODE: Specific carriage requirements**

(Note: this list is not exhaustive)

**i. Carbon disulphide: Tank filling limits**

The maximum allowable tank filling limits for each cargo tank shall be indicated for each loading temperature which may be applied, and for the applicable maximum reference temperature, on a list approved by the Administration. A copy of the list shall be permanently kept on board by the master.

(IBC Code, Section 15.3.24)

**ii. Carbon disulphide: Cargo handling plan**

The product shall be transported only in accordance with a cargo handling plan that has been approved by the Administration. Cargo handling plans shall show the entire cargo piping system. A copy of the approved cargo handling plan shall be available on board. The International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk shall be endorsed to include reference to the approved cargo handling plan.

(IBC Code, Section 15.3.27)

**iii. Hydrogen peroxide solutions: Certification of standard**

Only those hydrogen peroxide solutions which have a maximum decomposition rate of 1% per year at 25°C shall be carried. Certification from the shipper that the product meets this standard shall be presented to the master and kept on board. A technical representative of the manufacturer shall be on board to monitor the transfer operations and have the capability to test the stability of the hydrogen peroxide. He shall certify to the master that the cargo has been loaded in a stable condition.

(IBC Code, Section 15.5.1.11)

**iv. Hydrogen peroxide solutions: Procedures for inspection, cleaning, passivation and loading**

Hydrogen peroxide shall be carried in tanks thoroughly and effectively cleaned of all traces of previous cargoes and their vapours or ballast. Procedures for inspection, cleaning, passivation and loading of tanks shall be in accordance with MSC/Circ.394. A certificate shall be on board the vessel indicating that the procedures in the circular have been followed. The passivation requirement may be waived by an Administration for domestic shipments of short duration. Particular care in this respect is essential to ensure the safe carriage of hydrogen peroxide

(IBC Code, Section 15.5.2.2)

**v. Propylene oxide or ethylene oxide/propylene oxide mixtures (<30% mass): Cargo-handling plan**

Cargo-handling plans shall show the entire cargo piping system and the locations for installation of blank flanges needed to meet the above piping separation requirements. A copy of each approved cargo-handling plan shall be maintained on board the ship. The

International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk shall be endorsed to include reference to the approved cargo-handling plans.  
(IBC Code, Section 15.8.25.2)

**vi. Propylene oxide or ethylene oxide/propylene oxide mixtures (<30% mass):  
Certification of piping separation**

Before each initial loading of these products and before every subsequent return to such service, certification verifying that the required piping separation has been achieved shall be obtained from a responsible person acceptable to the port Administration and carried on board the ship.  
(IBC Code, Section 15.8.25.3)

**vii. IBC Code (publication)**

A copy of this Code, or national regulations incorporating the provisions of this Code, shall be on board every ship covered by this Code.  
(IBC Code, Section 16.2.1)

**viii. Cargo information**

Information shall be on board, and available to all concerned, giving the necessary data for the safe carriage of the cargo in bulk. Such information shall include a cargo stowage plan, to be kept in an accessible place, indicating all cargo on board, including each dangerous chemical carried  
(IBC Code, Section 16.2.3)

**ix. Waste movement document**

In addition to the documentation specified in 16.2 of this Code, ships engaged in transboundary movement of liquid chemical wastes shall carry on board a waste movement document issued by the competent authority of the country of origin.  
(IBC Code, Section 20.5.1)

**P. Merchant Shipping (Safety Convention) Regulations (SOLAS 74) – IGC Code**  
(for gas carriers)

**i. Certificate of Fitness for the Carriage of Liquefied Gases in Bulk**

A certificate called a Certificate of Fitness for the Carriage of Liquefied Gases in Bulk, the model form of which is set out in the appendix to the Gas Carrier Code, should be issued after an initial or periodical survey to a gas carrier which complies with the relevant requirements of the Code.  
(GC Code, section 1.6) *For ships which comply with the Gas Carrier Code*

**ii. International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk**  
(for ships which comply with the International Gas Carrier Code)

A certificate called an International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk, the model form of which is set out in the appendix to the International Gas Carrier Code, should be issued after an initial or periodical survey to a gas carrier which complies with the relevant requirements of the Code.  
(IGC Code, section 1.5)

Application: The Code is mandatory under chapter VII of SOLAS 1974 for gas carriers constructed on or after 1 July 1986.

### **iii. Information on Cargo system valving and Overflow control**

Information about the closing time of the valves and their operating characteristics should be available on board and the valve closure time should be verifiable and reproducible.

*(IGC Code, chapters 5 and 13)*

### **iv. Information on Loading limits**

The maximum allowable loading limits for each cargo tank should be indicated for each product which may be carried, for each loading temperature which may be applied and for the applicable maximum reference temperature, on a list to be approved by the Administration...A copy of the list should be permanently kept on board by the master.

*(IGC Code, chapter 15)*

### **v. Information on Compatibility**

The master should ascertain that the quantity and characteristics of each product to be loaded are within the limits indicated in the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk provided for in 1.5 and in the Loading and Stability Information booklet provided for in 2.2.5 and that products are listed in the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk as required under section 3 of the Certificate.

*(IGC Code, chapter 18)*

### **vi. Loading and Stability Information booklet**

The master of the ship should be supplied with a Loading and Stability Information booklet. This booklet should contain details of typical service conditions, loading, unloading and ballasting operations, provisions for evaluating other conditions of loading and a summary of the ship's survival capabilities. In addition, the booklet should contain sufficient information to enable the master to load and operate the ship in a safe and seaworthy manner.

*(IGC Code, chapter 2)*

### **vii. Cargo information**

Information should be on board and available to all concerned, giving the necessary data for the safe carriage of cargo.

*(IGC Code, chapter 18)*

## **Q. Merchant Shipping (Safety Convention) Regulations (SOLAS 74) – Special Measures to enhance Maritime Safety/2011 ESP Code**

### **i. Continuous Synopsis Record (CSR)**

Every ship to which chapter I of the Convention applies shall be issued with a Continuous Synopsis Record. The Continuous Synopsis Record provides an on-board record of the history of the ship with respect to the information recorded therein.

*(SOLAS 1974, regulation XI-1/5)*

### **ii. Enhanced Surveys: Documentation on board/Survey Report File**

Bulk carriers as defined in regulation IX/1.6 and oil tankers as defined in regulation II-1/2.22 shall be subject to an enhanced programme of inspections in accordance with the International Code on the Enhanced Programme of Inspections during Surveys of Bulk Carriers and Oil Tankers, 2011 (2011 ESP Code), adopted by the Assembly of the Organization by resolution A.1049(27), as may be amended by the Organization...

*(SOLAS 1974, regulation XI-1/2)*

### **2011 ESP CODE**

Application: The corresponding amendment to SOLAS 74 is to be adopted by MSC 90 in May 2012

Application: Bulk carriers and oil tankers

The owner should obtain, supply and maintain on board documentation as specified in 6.2 and 6.3, which should be readily available for the surveyor. The condition evaluation report referred to in 6.2 should include a translation into English.

The documentation should be kept on board for the lifetime of the ship.

*(2011 ESP Code, Annex A (Parts A and B) and Annex B (Parts A and B), section 6)*

#### **i. Survey report file**

A survey report file should be a part of the documentation on board consisting of:

- .1 reports of structural surveys (annex 6)
- .2 condition evaluation report (annex 7); and
- .3 thickness measurement reports (annex 8).

The survey report file should be available also in the owner's and the Administration offices.

#### **ii. Supporting documents**

The following additional documentation should be available on board:

- .1 survey programme as required under 5.1 until such time as the renewal survey, or intermediate survey, as applicable, has been completed.
- .2 main structural plans of cargo holds and ballast tanks
- .3 previous repair history
- .4 cargo and ballast history
- .5 inspections by ship's personnel with reference to:
  - .1 structural deterioration in general
  - .2 leakages in bulkheads and piping
  - .3 condition of coating or corrosion prevention system, if any. Guidance for reporting is shown in annex 3; and
- .6 any other information that would help to identify critical structural areas and/or suspect areas requiring inspection.

*(2011 ESP Code, Section 6)*

#### **iii. Condition Evaluation Report**

A condition evaluation report of the survey and results should be issued to the owner as shown in annex 7 and placed on board the ship for reference at future surveys. The condition evaluation report should be endorsed by the Administration or by the recognized organization on behalf of the Administration.

*(2011 ESP Code, Section 8)*

## **R. Merchant Shipping (Safety Convention) Regulations (SOLAS 74) – ISM Code**

### **i. Document of Compliance**

A document of compliance shall be issued to every company which complies with the requirements of the ISM Code. A copy of the document shall be kept on board.

*(SOLAS 1974, regulation IX/4; ISM Code, paragraph 13)*



## **ii. Safety Management Certificate**

A Safety Management Certificate shall be issued to every ship by the administration or an organization recognized by the administration. The administration or an organization recognized by it shall, before issuing the Safety Management Certificate, verify that the company and its shipboard management operate in accordance with the approved safety management system.

*(SOLAS 1974, regulation IX/4; ISM Code, paragraph 13)*

## **iii. Documents and publications specified in the ship's Safety Management Manual (SMM)**

The Company should ensure that:

- .1 valid documents are available at all relevant locations;

*(ISM Code, Section 11.2.1)*

The documents used to describe and implement the SMS may be referred to as the "Safety Management Manual". Documentation should be kept in a form that the Company considers most effective. Each ship should carry on board all documentation relevant to that ship.

*(ISM Code, Section 11.3)*

## **S. Merchant Shipping (Safety Convention) Regulations (SOLAS 74) – ISPS Code**

### **i. International Ship Security Certificate (ISSC) or Interim International Ship Security Certificate**

An International Ship Security Certificate (ISSC) shall be issued to every ship by the Administration or an organization recognized by it to verify that the ship complies with the maritime security provisions of SOLAS chapter XI-2 and part A of the ISPS Code. An interim ISSC may be issued under the ISPS Code part A, section 19.4.

*(SOLAS 1974, regulation XI-2/9.1.1; ISPS Code part A, section 19 and appendices)*

### **ii. Ship Security Plan and associated records**

Each ship shall carry on board a ship security plan approved by the Administration. The plan shall make provisions for the three security levels as defined in part A of the ISPS Code. Records of the following activities addressed in the ship security plan shall be kept on board for at least the minimum period specified by the Administration:

- .1 training, drills and exercises;
- .2 security threats and security incidents;
- .3 breaches of security;
- .4 changes in security level;
- .5 communications relating to the direct security of the ship such as specific threats to the ship or to port facilities the ship is, or has been, in;
- .6 internal audits and reviews of security activities;
- .7 periodic review of the ship security assessment;
- .8 periodic review of the ship security plan;
- .9 implementation of any amendments to the plan; and
- .10 maintenance, calibration and testing of any security equipment provided on board, including testing of the ship security alert system.

*(SOLAS 1974, regulation XI-2/9; ISPS Code part A, sections 9 and 10)*

### **iii. Record of changes to Ship Security Plan**

The nature of the changes to the ship security plan or the security equipment that have been specifically approved by the Administration, pursuant to section 9.5, shall be



documented in a manner that clearly indicates such approval. This approval shall be available on board and shall be presented together with the International Ship Security Certificate (or the Interim International Ship Security Certificate).  
(ISPS Code, Section 9.5.1)

#### **iv. List of Passengers and Crew**

Examples of other practical security related information that may be required as a condition of entry into port in order to assist with ensuring the safety and security of persons, port facilities, ships and other property include:

- .1 information contained in the Continuous Synopsis Record;
- .2 location of the ship at the time the report is made;
- .3 expected time of arrival of the ship in port;
- .4 crew list;
- .5 general description of cargo aboard the ship;
- .6 passenger list; and
- .7 information required to be carried under regulation XI-2/5.

(SOLAS 1974, regulation XI-2/9.2.1.6 and paragraph B/4.39.6 of the ISPS Code)

### **T. Merchant Shipping (Safety Convention) Regulations (SOLAS 74) – Alternative Design and Arrangements**

#### **i. Structure, Subdivision and Stability, Machinery and Electrical Installations: Alternative Arrangements**

The engineering analysis required in paragraph 3 shall be evaluated and approved by the Administration, taking into account the guidelines developed by the Organization. A copy of the documentation, as approved by the Administration, indicating that the alternative design and arrangements comply with this regulation, shall be carried on board the ship.

(SOLAS 1974 regulation II-1/55)

Refer to the Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III (MSC.1/Circ.1212).

#### **ii. Fire Protection, Fire Detection, Fire Extinction: Alternative Arrangements**

The engineering analysis required in paragraph 3 shall be evaluated and approved by the Administration, taking into account the guidelines developed by the Organization. A copy of the documentation, as approved by the Administration, indicating that the alternative design and arrangements comply with this regulation, shall be carried on board the ship.

(SOLAS 1974 regulation II-2/17)

Refer to the Guidelines on alternative design and arrangements for fire safety (MSC/Circ.1002).

#### **iii. Life-saving Appliances: Alternative Arrangements**

The engineering analysis required in paragraph 3 shall be evaluated and approved by the Administration, taking into account the guidelines developed by the Organization. A copy of the documentation, as approved by the Administration, indicating that the alternative design and arrangements comply with this regulation, shall be carried on board the ship.

(SOLAS 1974 regulation III/38, paragraph 4)

Refer to the Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III (MSC.1/Circ.1212).

## **U. Prevention of Pollution of the Sea (Oil) Regulations 2006 (MARPOL Annex I)**

### **i. International Oil Pollution Prevention (IOPP) Certificate**

An International Oil Pollution Prevention Certificate shall be issued, after survey in accordance with regulation 6 of Annex I of MARPOL 73/78, to any oil tanker of 150 gross tonnage and above and any other ship of 400 gross tonnage and above which are engaged in voyages to ports or offshore terminals under the jurisdiction of other Parties to MARPOL 73/78. The certificate is supplemented with a Record of Construction and Equipment for Ships other than Oil Tankers (Form A) or Record of Construction and Equipment for Oil Tankers (Form B), as appropriate.

*(MARPOL 73/78, Annex I, regulation 7)*

### **ii. Singapore Oil Pollution Prevention (SOPP) Certificate**

The Director of Marine or an authorised organisation shall, after a survey in accordance with the provisions of regulation 6 of Annex I which relates to — (a) an oil tanker of 150 gross tonnage and above; or (b) any other ship of 400 gross tonnage and above, which operates within Singapore waters and is not engaged in voyages to ports or offshore terminals under the jurisdiction of other Contracting Parties, issue in relation to that ship a SOPP Certificate in such form as the Director may determine; and the annual survey requirements of regulation 6 of Annex I shall not apply to such ships.

*(Prevention of Pollution of the Sea (Oil) Regulations 2006, regulation 8(1))*

### **iii. Oil Record Book**

Every oil tanker of 150 gross tonnage and above and every ship other than an oil tanker of 400 gross tonnage and above shall be provided with an Oil Record Book, Part I (Machinery space operations). Every oil tanker of 150 gross tonnage and above shall also be provided with an Oil Record Book, Part II (Cargo/ballast operations).

*(MARPOL 73/78, Annex I, regulations 17 and 36)*

### **iv. Dedicated Clean Ballast Tank Operation Manual**

Every product carrier operating with dedicated clean ballast tanks shall be provided with a Dedicated Clean Ballast Tank Operation Manual detailing the system and specifying operational procedures. Such a Manual shall be to the satisfaction of the Administration and shall contain all the information set out in the Specifications referred to in subparagraph 8.2 of this regulation. If an alteration affecting the dedicated clean ballast tank system is made, the Operation Manual shall be revised accordingly.

*(MARPOL 73/78, Annex I, regulation 18.8)*

Application: Oil tankers

### **v. Condition Assessment Scheme (CAS) Statement of Compliance, CAS Final Report and Review Record**

A Category 2 or 3 oil tanker of 15 years and over after the date of its delivery shall comply with the Condition Assessment Scheme adopted by the Marine Environment Protection Committee by resolution MEPC.94(46), as amended, provided that such amendments shall be adopted, brought into force and take effect in accordance with the provisions of article 16 of the present Convention relating to amendment procedures applicable to an appendix to an Annex.

A Statement of Compliance shall be issued by the Administration to every oil tanker which has been surveyed in accordance with the requirements of the Condition Assessment Scheme (CAS) (resolution MEPC.94(46), as amended) and found to be in compliance with these requirements. In addition, a copy of the CAS Final Report which was reviewed by the Administration for the issue of the Statement of Compliance and a

copy of the relevant Review Record shall be placed on board to accompany the Statement of Compliance.

*(MARPOL 73/78, Annex I, regulation 20)*

Application: Oil tankers

**vi. Subdivision and stability information**

Every oil tanker delivered after 31 December 1979, as defined in regulation 1.28.2, of 150 gross tonnage and above, shall comply with the subdivision and damage stability criteria as specified in paragraph 3 of this regulation, after the assumed side or bottom damage as specified in paragraph 2 of this regulation, for any operating draught reflecting actual partial or full load conditions consistent with trim and strength of the ship as well as relative densities of the cargo.

*(MARPOL 73/78, Annex I, regulation 28)*

Application: Oil tankers

**vii. Record of oil discharge monitoring and control system for the last ballast voyage**

Subject to the provisions of paragraphs 4 and 5 of regulation 3 of MARPOL Annex I, every oil tanker of 150 gross tonnage and above shall be equipped with an oil discharge monitoring and control system approved by the Administration. The system shall be fitted with a recording device to provide a continuous record of the discharge in litres per nautical mile and total quantity discharged, or the oil content and rate of discharge. The record shall be identifiable as to time and date and shall be kept for at least three years.

*(MARPOL 73/78, Annex I, regulation 31.2)*

Application: Oil tankers

**viii. Oil Discharge Monitoring and Control (ODMC) Operational Manual**

Instructions as to the operation of the Oil discharge monitoring and control system shall be in accordance with an operational manual approved by the Administration. They shall cover manual as well as automatic operations and shall be intended to ensure that at no time shall oil be discharged except in compliance with the conditions specified in regulation 34 of this Annex.

*(MARPOL 73/78, Annex I, regulation 31.4)*

Application: Oil tankers

**ix. Crude Oil Washing Operations and Equipment Manual (COW Manual)**

Every oil tanker operating with crude oil washing systems shall be provided with an Operations and Equipment Manual detailing the system and equipment and specifying operational procedures. Such a Manual shall be to the satisfaction of the Administration and shall contain all the information set out in the specifications referred to in paragraph 2 of regulation 33 of this Annex. If an alteration affecting the crude oil washing system is made, the Operations and Equipment Manual shall be revised accordingly.

*(MARPOL 73/78, Annex I, regulation 35.1)*

Application: Oil tankers

**x. Shipboard Oil Pollution Emergency Plan (SOPEP)**

Every oil tanker of 150 gross tonnage and above and every ship other than an oil tanker of 400 gross tonnage and above shall carry on board a Shipboard Oil Pollution Emergency Plan approved by the administration.

*(MARPOL 73/78, Annex I, regulation 37)*

**xi. Transfer of oil cargo between oil tankers at sea: STS operations Plan**

Any oil tanker involved in STS operations shall carry on board a Plan prescribing how to conduct STS operations (STS operations Plan) not later than the date of the first annual, intermediate or renewal survey of the ship to be carried out on or after 1 January 2011.

(MARPOL 73/78, Annex I, regulation 41)

Application: Oil tankers

**xii. Certificates of Approval for Oil Pollution Prevention Equipment**

...checking the certificates for the type approval of the oil pollution prevention equipment, such as the oily-water separating equipment, oil filtering equipment, process units, oil content meters and oil/water interface detectors and sighting the records of the various oil discharge monitoring equipment, as applicable (MARPOL 73/78/90 Annex I reg.14)

(Resolution A.1053(27) – Survey Guidelines under the Harmonized System of Survey and Certification, 2011)

See also MEPC.107(49)

**Revised Guidelines and Specifications for Pollution Prevention Equipment for Machinery Spaces of Ships (MEPC.107(49))**

(oily water separators)

**xiii. Records of data**

The 15 ppm Bilge Alarm should record date, time and alarm status, and operating status of the 15 ppm Bilge Separator. The recording device should also store data for at least eighteen months and should be able to display or print a protocol for official inspections as required. In the event the 15 ppm Bilge Alarm is replaced, means should be provided to ensure the data recorded remains available on board for 18 months.

(MEPC.107(49), paragraph 4.2.9)

**xiv. Calibration Certificate**

The accuracy of the 15 ppm Bilge Alarms should be checked at IOPP Certificate renewal surveys according to the manufacturer's instructions. Alternatively the unit may be replaced by a calibrated 15 ppm Bilge Alarm. The calibration certificate for the 15 ppm Bilge Alarm, certifying date of last calibration check, should be retained onboard for inspection purposes.

(MEPC.107(49), paragraph 4.2.11)

**xv. Certificate of Type Approval**

Pollution prevention equipment which in every respect fulfils the requirements of these Guidelines and Specifications may be approved by the Administration for fitting on board ships. The approval should take the form of a certificate of type approval specifying the main particulars of the apparatus and any limiting conditions on its usage necessary to ensure its proper performance. A copy of the certificate of type approval for pollution prevention should be carried on board ships fitted with such equipment at all times.

(MEPC.107(49), paragraph 5.2.1)

**xvi. Operating and Maintenance Manuals**

A vessel fitted with a 15 ppm Bilge Separator should, at all times, have on board a copy of the Operating and Maintenance manuals.

(MEPC.107(49), paragraph 6.1.4)

**V. Prevention of Pollution of the Sea (Noxious Liquid Substances in Bulk) Regulations 2006 (MARPOL Annex II)**

(for ships carrying noxious liquid substances in bulk)

**i. International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk**

An International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk shall be issued, after an initial or renewal survey in accordance with the provisions of regulation 8 of this Annex, to any ship intended to carry Noxious Liquid Substances in bulk and which is engaged in voyages to ports or terminals under the jurisdiction of other Parties to the Convention.

Notwithstanding the provisions of regulations 8, 9, and 10 of this Annex, chemical tankers which have been surveyed and certified by States Parties to the present Convention in accordance with the provisions of the International Bulk Chemical (IBC) Code or the Bulk Chemical (BC) Code, as applicable, shall be deemed to have complied with the provisions of the said regulations, and the certificate issued under that Code shall have the same force and receive the same recognition as the certificate issued under regulation 9 of this Annex.

*(MARPOL 73/78, Annex II, regulations 9 and 7)*

**ii. Cargo Record Book**

Every ship to which this Annex applies shall be provided with a Cargo Record Book, whether as part of the ship's official logbook or otherwise, in the form specified in appendix 2 to this Annex.

*(MARPOL 73/78, Annex II, regulation 15)*

**iii. Procedures and Arrangements Manual (P & A Manual)**

Every ship certified to carry substances of Category X, Y or Z shall have on board a Manual approved by the Administration. The Manual shall have a standard format in compliance with appendix 4 to this Annex. The main purpose of the Manual is to identify for the ship's officers the physical arrangements and all the operational procedures with respect to cargo handling, tank cleaning, slops handling and cargo tank ballasting and deballasting which must be followed in order to comply with the requirements of this Annex.

*(MARPOL 73/78, Annex II, regulation 14)*

**iv. Shipboard Marine Pollution Emergency Plan for Noxious Liquid Substances**

Every ship of 150 gross tonnage and above certified to carry Noxious Liquid Substances in bulk shall carry on board a shipboard marine pollution emergency plan for Noxious Liquid Substances approved by the Administration.

*(MARPOL 73/78, Annex II, regulation 17)*

**v. Pollution Incident Emergency Plan for Hazardous and Noxious Substances (HNS)**

The owner, agent or Master of (a) any hazardous and noxious substances tankers of over 150 GT; (b) any ship in Singapore waters carrying hazardous and noxious substances; and (c) any Singapore ship carrying hazardous and noxious substances, whether in Singapore waters or elsewhere, shall ensure that there is carried on board a pollution incident emergency plan.

*(Prevention of Pollution of the Sea (Hazardous and Noxious Substances Pollution Preparedness, Response and Co-operation) Regulations 2004, regulation 8)*

## **W. Prevention of Pollution of the Sea (Sewage) Regulations 2005 (MARPOL Annex IV)**

### **i. International Sewage Pollution Prevention (ISPP) Certificate**

An International Sewage Pollution Prevention Certificate shall be issued, after an initial or renewal survey in accordance with the provisions of regulation 4 of Annex IV of MARPOL 73/78, to any ship which is required to comply with the provisions of the Annex and is engaged in voyages to ports or offshore terminals under the jurisdiction of other Parties to the Convention.

*(MARPOL 73/78, Annex IV, regulation 5; MEPC/Circ.408)*

### **ii. Operational and Maintenance Manual**

Administrations should examine the manufacturer's installation, operating and maintenance manuals for adequacy and completeness. The ship should have on board at all times a manual detailing the operational and maintenance procedures for the sewage treatment plant.

*(Revised Guidelines on Implementation of Effluent Standards and Performance Tests for Sewage Treatment Plants, Section 5.10.2)*

### **iii. Certificate of Type Approval for Sewage Treatment Plants**

A copy of this Certificate shall be carried on board any ship equipped with the above described sewage treatment plant.

*(Revised Guidelines on Implementation of Effluent Standards and Performance Tests for Sewage Treatment Plants, Annex)*

## **X. Prevention of Pollution of the Sea (Garbage) Regulations (MARPOL Annex V)**

### **i. Garbage Management Plan**

Every ship of 100 gross tonnage and above, and every ship which is certified to carry 15 or more persons, and fixed or floating platforms shall carry a garbage management plan which the crew shall follow. This plan shall provide written procedures for minimizing, collecting, storing, processing and disposing of garbage, including the use of the equipment on board. It shall also designate the person or persons in charge of carrying out the plan.

*(MARPOL 73/78, Annex V, regulation 10.2)*

### **ii. Garbage Record Book**

Every ship of 400 gross tonnage and above and every ship which is certified to carry 15 persons or more engaged in voyages to ports or offshore terminals under the jurisdiction of other Parties to the Convention and every fixed and floating platform engaged in exploration and exploitation of the sea-bed shall be provided with a Garbage Record Book.

The Garbage Record Book shall be kept on board the ship or the fixed or floating platform, and in such a place as to be readily available for inspection at all reasonable times. This document shall be preserved for a period of at least two years from the date of the last entry made in it.

*(MARPOL 73/78, Annex V, regulation 10.3)*



### **iii. Placards**

Every ship of 12 m or more in length overall and fixed or floating platforms shall display placards which notify the crew and passengers of the discharge requirements of regulations 3, 4, 5 and 6 of this Annex, as applicable.

*(MARPOL 73/78, Annex V, regulation 10.1)*

## **Y. Prevention of Pollution of the Sea (Air) Regulations 2005 (MARPOL Annex VI/NOx Code)**

### **i. International Air Pollution Prevention (IAPP) Certificate**

An International Air Pollution Prevention Certificate shall be issued, after an initial or renewal survey in accordance with the provisions of regulation 5 of this Annex, to:

- .1 any ship of 400 gross tonnage and above engaged in voyages to ports or offshore terminals under the jurisdiction of other Parties; and
- .2 platforms and drilling rigs engaged in voyages to waters under the sovereignty or jurisdiction of other Parties.

*(MARPOL 73/78, Annex VI, regulation 6)*

### **ii. Singapore Air Pollution Prevention (SAPP) Certificate**

The Director of Marine or an authorized organization shall, after a survey in accordance with the provisions of regulation 5 of Annex VI which relates to all ships of 400 gross tonnage and above which operate within Singapore waters and are not engaged in voyages to ports or offshore terminals under the jurisdiction of other Parties to the Convention, issue in relation to that ship a SAPP Certificate in such form as the Director may determine.

*(Prevention of Pollution of the Sea (Air) Regulations, regulation 8)*

### **iii. Engine International Air Pollution Prevention (EIAPP) Certificate**

When an engine is manufactured outside the country of the Administration of the ship on which it will be installed, the Administration of the ship may request the Administration of the country in which the engine is manufactured to survey the engine. Upon satisfaction that the applicable requirements of regulation 13 are complied with pursuant to this Code, the Administration of the country in which the engine is manufactured shall issue or authorize the issuance of the EIAPP Certificate.

*(Technical Code on Control of Emission of Nitrogen Oxides from Marine Diesel Engines (NOX Code 2008), paragraph 2.2.8)*

### **iv. Technical File**

Every marine diesel engine installed on board a ship shall be provided with a Technical File. The Technical File shall be prepared by the applicant for engine certification and approved by the Administration, and is required to accompany an engine throughout its life on board ships. The Technical File shall contain the information as specified in 2.4.1.

*(Technical Code on Control of Emission of Nitrogen Oxides from Marine Diesel Engines (NOX Code 2008), paragraph 2.3.4)*

### **v. Record Book of Engine Parameters**

The shipowner or person responsible for a ship equipped with a marine diesel engine required to undergo an Engine Parameter Check method shall maintain on board the following documentation in relation to the onboard NOx verification procedures:



- .1 a Record Book of Engine Parameters for recording all changes, including like for like replacements, and adjustments within the approved ranges made relative to an engine's components and settings;
- .2 an engine parameter list of an engine's designated components and settings and/or the documentation of an engine's load-dependent operating values submitted by an applicant for engine certification and approved by the Administration; and
- .3 technical documentation of an engine component modification when such a modification is made to any of the engine's designated engine components.

*(Technical Code on Control of Emission of Nitrogen Oxides from Marine Diesel Engines (NOx Code 2008), paragraph 2.3.4)*

NOTE: Equivalence. See *Guidelines for Exhaust Gas Cleaning (EGC) Systems 2009* (MEPC.184(59))

#### **vi. List of Ozone depleting equipment**

Each ship subject to regulation 6.1 shall maintain a list of equipment containing ozone depleting substances.

*(MARPOL 73/78, Annex VI, regulation 12.5)*

#### **vii. Ozone Depleting Substances Record Book**

Each ship subject to regulation 6.1 which has rechargeable systems that contain ozone depleting substances shall maintain an Ozone Depleting Substances Record Book. This Record Book may form part of an existing log-book or electronic recording system as approved by the Administration.

*(MARPOL 73/78, Annex VI, regulation 12.6)*

#### **viii. Approved Method File**

Notwithstanding paragraph 1.1.1 of this regulation, a marine diesel engine with a power output of more than 5,000 kW and a per cylinder displacement at or above 90 litres installed on a ship constructed on or after 1 January 1990 but prior to 1 January 2000 shall comply with the emission limits set forth in subparagraph 7.4 of this paragraph, provided that an Approved Method for that engine has been certified by an Administration of a Party ....

*(MARPOL 73/78, Annex VI, regulation 13.7)*

#### **ix. Procedures for Fuel oil change over operations**

Those ships using separate fuel oils to comply with paragraph 4 of this regulation and entering or leaving an Emission Control Area set forth in paragraph 3 of this regulation shall carry a written procedure showing how the fuel oil change-over is to be done, allowing sufficient time for the fuel oil service system to be fully flushed of all fuel oils exceeding the applicable sulphur content specified in paragraph 4 of this regulation prior to entry into an Emission Control Area.

*(MARPOL 73/78, Annex VI, regulation 14.6)*

#### **x. VOC Management Plan**

A tanker carrying crude oil shall have on board and implement a VOC Management Plan approved by the Administration. Such a plan shall be prepared taking into account the guidelines developed by the Organization.

*(MARPOL Annex VI, regulation 15.6)*

**xi. Type approval certificate of shipboard incinerator**

Ships incinerators described in regulation 16.6.1 on board shall possess an IMO type approval certificate for each incinerator.

*(MARPOL 73/78, Annex VI, regulation 16, Appendix IV)*

**xii. Manufacturer's Operating Manual for Incinerators**

Incinerators installed in accordance with the requirements of MARPOL Annex VI regulation 16.6.1 shall be provided with a Manufacturer's Operating Manual, which is to be retained with the unit.

*(MARPOL Annex VI, regulation 16.7)*

**xiii. Bunker Delivery Note**

For each ship subject to regulations 5 and 6 of MARPOL Annex VI, details of fuel oil for combustion purposes delivered to and used on board shall be recorded by means of a bunker delivery note which shall contain at least the information specified in appendix V to this Annex. The bunker delivery note shall be kept on board the ship in such a place as to be readily available for inspection at all reasonable times. It shall be retained for a period of three years after the fuel oil has been delivered on board.

*(MARPOL Annex VI, regulation 18.3, 18.4)*

**xiv. Documentary Evidence of non-compliant fuel oil**

A ship shall notify its Administration and the competent authority of the relevant port of destination when it cannot purchase compliant fuel oil.

A Party shall notify the Organization when a ship has presented evidence of the non-availability of compliant fuel oil.

*(MARPOL Annex VI, regulation 18.2)*

**MARPOL: AIR POLLUTION – ENERGY EFFICIENCY REGULATIONS**

**xv. International Energy Efficiency Certificate (IEE Certificate) and Record of Construction relating to Energy Efficiency**

An International Energy Efficiency Certificate for the ship shall be issued after a survey in accordance with the provisions of regulation 5.4 to any ship of 400 gross tonnage and above before that ship may engage in voyages to ports or offshore terminals under the jurisdiction of other Parties.

*(MARPOL 73/78, Annex VI, regulation 6)*

Application: Entry into force: 1 Jan 2013

**xvi. Ship Energy Efficiency Management Plan (SEEMP)**

Each ship shall keep on board a ship specific Ship Energy Efficiency Management Plan (SEEMP). This may form part of the ship's Safety Management System (SMS).

*(MARPOL 73/78, Annex VI, regulation 22)*

**MARPOL: AIR POLLUTION – GUIDELINES FOR EXHAUST GAS CLEANING (EGC) SYSTEMS (MEPC.184(59))**

**xvii. Required documents**, where applicable:

1. SO<sub>x</sub> Emissions Compliance Plan
2. SO<sub>x</sub> Emissions Compliance Certificate
3. ETM Scheme A or ETM Scheme B
4. Onboard Monitoring Manual
5. EGC Record Book or Electronic Logging System

(MEPC.184(59), Section 2.3)

**xviii. Records of data**

Data should be retained for a period of not less than 18 months from the date of recording. If the unit is changed over that period, the shipowner should ensure that the required data is retained on board and available as required.

(MEPC.184(59), Section 7.4)

**Z. Prevention of Pollution of the Sea (Harmful Anti-Fouling Systems) Regulations 2010 (AFS Convention)**

**i. International Anti-fouling System Certificate**

Issue or Endorsement of an International Anti-fouling System Certificate —(1) The Administration shall require that a ship to which regulation 1 applies is issued with a Certificate after successful completion of a survey in accordance with regulation 1.

(*International Convention on the Control of Harmful Anti-Fouling Systems (AFS) on Ships, 2001, Annex 4, regulation 2*)

Application: Applies to ships of 400 gross tonnage and above engaged in international voyages, excluding fixed or floating platforms, FSUs, and FPSOs

NOTE: This certificate shall be supplemented by a Record of Anti-fouling Systems

**ii. Declaration on Anti-Fouling System**

The Administration shall require a ship of 24 meters or more in length, but less than 400 gross tonnage engaged in international voyages and to which article 3(1)(a) applies (excluding fixed or floating platforms, FSUs, and FPSOs) to carry a Declaration signed by the owner or owner authorized agent. Such Declaration shall be accompanied by appropriate documentation (such as a paint receipt or a contractor invoice) or contain appropriate endorsement.

(*International Convention on the Control of Harmful Anti-Fouling Systems (AFS) on Ships, 2001, Annex 4, regulation 5*)

**AA. Merchant Shipping (Maritime Labour Convention) [Act] 20xx (MARITIME LABOUR CONVENTION (MLC) AND CREW MATTERS)**

NOTE: Singapore acceded to the MLC in 2011. The list is a *preliminary* list, provided to give our shipowners awareness of the types of certificates and documents required by MLC. Some documents are not new, having been required under existing laws.

**i. Official Log Book**

Unless otherwise stated, an official log book shall be kept in every ship.

(*Merchant Shipping (Official Log Books) Regulations, regulation 3(1)*)

**ii. Articles of Agreement, consisting of Forms Marine 68A, 68B 68C and 68D**

An agreement in writing shall be made between each person employed as a seaman on a ship and the person employing him and shall be signed both by him and by or on behalf of the person employing him. A crew agreement shall be carried in the ship to which the agreement relates whenever the ship goes to sea.

(*Merchant Shipping Act, section 53*)

### **iii. Statement of Account of Wages of Seaman/Allotment Note**

The master of every ship shall deliver to every seaman employed on the ship under a crew agreement an account of wages due to him under that crew agreement and of the deductions subject to which the wages are payable.

*(Merchant Shipping Act, section 57)*

Subject to this section, a seaman may, by means of an allotment note issued in accordance with regulations, allot to any person part of the wages to which he will become entitled in the course of his employment on a ship.

*(Merchant Shipping Act, section 62)*

### **iv. Account of Changes in the Crew of a Singapore Ship (Form Eng 2A); Certificate of Discharge**

The master or employer shall notify the Director in a form approved by the Director of any subsequent engagement or discharge of a seaman under an existing agreement.

*(Merchant Shipping (Crew Agreements, Lists of Crew and Discharge of Seamen) Regulations, regulation 4(1)(b))*

### **v. Return of Births and Deaths**

A return of a birth or of a death required to be made under regulation 3, 4 or 5—

- (a) shall be in writing
- (b) shall be signed by the master of the ship as informant; and
- (c) shall contain —
  - (i) in the case of a birth, the particulars specified in the First Schedule; and
  - (ii) in the case of a death, the particulars specified in the Second Schedule.

*(Merchant Shipping (Returns of Births and Deaths) Regulations, regulation 7)*

### **vi. Order of Druggist (Medical Supplies Certificate)**

The medicines and medical stores shall be inspected at least once in every 12 months by a registered pharmacist, who, on being satisfied that the ship is provided with medicines and medical stores in accordance with the appropriate scale, shall issue a certificate to that effect.

*(Merchant Shipping (Medical Stores) Regulations, regulation 10)*

### **vii. Minimum Safe Manning Document**

Every ship to which chapter I of the Convention applies shall be provided with an appropriate safe manning document or equivalent issued by the administration as evidence of the minimum safe manning.

*(SOLAS 1974, regulation V/14.2)*

### **viii. Maritime Labour Certificate (MLC)**

Each Member shall require ships that fly its flag to carry and maintain a maritime labour certificate certifying that the working and living conditions of seafarers on the ship, including measures for ongoing compliance to be included in the declaration of maritime labour compliance referred to in paragraph 4 of this Regulation, have been inspected and meet the requirements of national laws or regulations or other measures implementing this Convention.

*(MLC 2006, regulation 5.1.3.3)*

### **ix. Declaration of Maritime Labour Compliance (DMLC)**

Each Member shall require ships that fly its flag to carry and maintain a declaration of maritime labour compliance stating the national requirements implementing this Convention for the working and living conditions for seafarers and setting out the

measures adopted by the shipowner to ensure compliance with the requirements on the ship or ships concerned.

*(MLC 2006, regulation 5.1.3.4)*

**x. License to Recruit Seafarers**

The competent authority shall closely supervise and control all seafarer recruitment and placement services operating in the territory of the Member concerned. Any licences or certificates or similar authorizations for the operation of private services in the territory are granted or renewed only after verification that the seafarer recruitment and placement service concerned meets the requirements of national laws and regulations.

*(MLC 2006, standard A1.4)*

**xi. Up-to-date list of medical advice via radio stations**

All ships should carry a complete and up-to-date list of radio stations through which medical advice can be obtained; and, if equipped with a system of satellite communication, carry an up-to-date and complete list of coast earth stations through which medical advice can be obtained. Seafarers with responsibility for medical care or medical first aid on board should be instructed in the use of the ship's medical guide and the medical section of the most recent edition of the International Code of Signals so as to enable them to understand the type of information needed by the advising doctor as well as the advice received.

*(MLC 2006, guideline B4.1)*

**xii. Seafarer Employment Contract**

The terms and conditions for employment of a seafarer shall be set out or referred to in a clear written legally enforceable agreement and shall be consistent with the standards set out in the Code.

*(MLC 2006, regulation 2.1)*

**xiii. AB and Cook Certificates (originals)**

Shipowners shall ensure that seafarers who are engaged as ships' cooks are trained, qualified and found competent for the position in accordance with requirements set out in the laws and regulations of the Member concerned.

*(MLC 2006, standard A3.2)*

**xiv. Seafarer's valid Medical Fitness Certificate**

Seafarers shall not work on a ship unless they are certified as medically fit to perform their duties.

*(MLC 2006, regulation 1.2)*

**xv. Records of Seafarers' hours of rest**

Each Member shall require that records of seafarers' daily hours of work or of their daily hours of rest be maintained to allow monitoring of compliance with paragraphs 5 to 11 inclusive of this Standard.

*(MLC 2006, standard A2.3)*

Records of daily hours of rest of seafarers shall be maintained on board.

*(STCW Code, section A-VIII/1) See also STCW Convention*

**xvi. Shipboard Working Arrangement**

Each Member shall require the posting, in an easily accessible place, of a table with the shipboard working arrangements, which shall contain for every position at least:

- (a) the schedule of service at sea and service in port; and

- (b) the maximum hours of work or the minimum hours of rest required by national laws or regulations or applicable collective agreements.  
(*MLC 2006, standard A2.3*)

**xvii. On board and Onshore seafarer complaint handling procedures**

Each Member shall require that ships that fly its flag have on-board procedures for the fair, effective and expeditious handling of seafarer complaints alleging breaches of the requirements of this Convention (including seafarers' rights).  
(*MLC 2006, regulation 5.1.5*)

**xviii. Training and Qualifications**

1. Seafarers shall not work on a ship unless they are trained or certified as competent or otherwise qualified to perform their duties.
2. Seafarers shall not be permitted to work on a ship unless they have successfully completed training for personal safety on board ship.
3. Training and certification in accordance with the mandatory instruments adopted by the International Maritime Organization shall be considered as meeting the requirements of paragraphs 1 and 2 of this Regulation.  
(*MLC 2006, regulation 1.3*)

**AB. Merchant Shipping (Training, Certification and Manning) Regulations**

NOTE: The Merchant Shipping (Training, Certification and Manning) Regulations is not a direct transposition of the STCW Convention into national legislation. The Regulations give effect to the STCW Convention.

**i. Certificates of officers**

Any certificate required by the Convention to be held by any officer shall be kept available in its original form on board the ship on which the qualified officer is serving.  
(*Merchant Shipping (Training, Certification and Manning) Regulations, regulation 4(2)*)

**ii. Certificates of ratings**

Any certificate required by the Convention to be held by a rating shall be kept available in its original form on board the ship on which the certificated rating is serving.  
(*Merchant Shipping (Training, Certification and Manning) Regulations, regulation 18(2)*)

**iii. Certificates of the Ship Station Operator or Operators**

Crew performing designated radio duties shall be —

(a) qualified in accordance with the relevant provisions of the Radio-communication (Certificates of Competency for Ship Station Operators) Regulations (Cap. 323, Rg 2<sup>2</sup>);  
or

(b) certified in accordance with the International Convention for the Safety of Life at Sea and the Constitution and Convention of the International Telecommunication Union.  
(*Merchant Shipping (Training, Certification and Manning) Regulations, regulation 17*)

**iv. GMDSS certificates of the Operator or Operators (if a GMDSS installation is required)**

Passenger ships of all sizes and cargo ships of 300 gross tonnage and upwards installed with GMDSS shall carry personnel qualified for distress and safety radio communications.

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<sup>2</sup> Authority: Info-communications Development Authority of Singapore (IDA).



- (a) Every ship shall carry personnel qualified for distress and safety radio-communication purposes to the satisfaction of the Director of Marine. The personnel shall be holders of certificates specified in the Radio Regulations as appropriate, any one of whom shall be designated to have primary responsibility for radio-communications during distress incidents.
- (b) In passenger ships, at least one person qualified in accordance with paragraph (a) shall be assigned to perform only radio-communication duties during distress incidents.

*(Merchant Shipping (Safety Convention) Regulations, regulation IV/16)*

## **STCW CONVENTION**

### **i. Certificates for Master, Officers or Ratings**

Certificates for masters, officers or ratings shall be issued, as applicable, to those seafarers who, to the satisfaction of the administration, meet the requirements for service, age, medical fitness, training, qualifications and examinations in accordance with the provisions of the STCW Code annexed to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended. Formats of certificates are given in section A-I/2 of the STCW Code. Certificates must be kept available in their original form on board the ships on which the holder is serving.

*(STCW 1978 (1995 amendments), article VI, regulation I/2, STCW Code, section A-I/2)*

### **ii. Certificates of Proficiency for Ship Security Officers**

Administrations shall ensure that every person found qualified under the provisions of this regulation is issued with a certificate of proficiency.

*(STCW 1978, as amended by MSC.203(81), regulation VI/5, STCW Code, section A-VI/5)*

### **iii. Certificates of Endorsement (COE)**

An Administration which recognizes a certificate under regulation I/10 shall endorse such certificate to attest its recognition. Subject to the provisions of regulation I/10, paragraph 5, any certificate required by the Convention must be kept available in its original form on board the ship on which the holder is serving.

*(STCW 1978, regulation I/2)*

### **iv. Tanker Endorsement**

Officers and ratings assigned specific duties and responsibilities related to cargo or cargo equipment on oil or chemical tankers shall hold a certificate in basic training for oil and chemical tanker cargo operations.

*(STCW 1978, regulation V/1-1.1)*

Masters, chief engineer officers, chief mates, second engineer officers and any person with immediate responsibility for loading, discharging, care in transit, handling of cargo, tank cleaning or other cargo-related operations on oil tankers shall hold a certificate in advanced training for oil tanker cargo operations.

*(STCW 1978, regulation V/1-1.3)*

Administrations shall ensure that a certificate of proficiency is issued to seafarers, who are qualified in accordance with paragraphs 2, 4 or 6 as appropriate, or that an existing certificate of competency or certificate of proficiency is duly endorsed.

*(STCW 1978, regulation V/1-1.7)*

Application: oil and chemical tankers.

Officers and ratings assigned specific duties and responsibilities related to cargo or cargo equipment on liquefied gas tankers shall hold a certificate in basic training for liquefied gas tanker cargo operations.

*(STCW 1978, regulation V/1-2.1)*

Masters, chief engineer officers, chief mates, second engineer officers and any person with immediate responsibility for loading, discharging, care in transit, handling of cargo, tank cleaning or other cargo-related operations on liquefied gas tankers shall hold a certificate in advanced training for liquefied gas tanker cargo operations.

*(STCW 1978, regulation V/1-2.3)*

Administrations shall ensure that a certificate of proficiency is issued to seafarers, who are qualified in accordance with paragraphs 2 or 4 as appropriate, or that an existing certificate of competency or certificate of proficiency is duly endorsed.

*(STCW 1978, regulation V/1-2.5)*

Application: liquefied gas tankers

#### **v. Watch Schedules**

Administrations shall require that watch schedules be posted where they are easily accessible. The schedules shall be established in a standardized format\* in the working language or languages of the ship and in English.

*(STCW Code A-VIII/1.5)*

#### **vi. Records of hours of rest**

Administrations shall require that records of daily hours of rest of seafarers be maintained in a standardized format, in the working language or languages of the ship and in English, to allow monitoring and verification of compliance with the provisions of this section. The seafarers shall receive a copy of the records pertaining to them, which shall be endorsed by the master or by a person authorized by the master and by the seafarers.

*(STCW Code A-VIII/1.7)*

*(MLC 2006, standard A2.3) See also MLC*

### **AC. Merchant Shipping (Crew Accommodation) Regulations**

#### **i. Crew Accommodation Certificate**

After a survey under regulation 5(2) of the Merchant Shipping (Crew Accommodation) Regulations, a ship which complies with these Regulations shall be issued with a crew accommodation certificate.

*(Merchant Shipping (Crew Accommodation) Regulations, regulation 5(3))*

#### **ii. Crew Accommodation Exemption Certificate**

When a ship is exempted from any of the Merchant Shipping (Crew Accommodation) Regulations under regulation 3, an exemption certificate for crew accommodation in respect of the ship shall be issued.

*(Merchant Shipping (Crew Accommodation) Regulations, regulation 5(5))*

## **AD. Infectious Diseases (Quarantine) Regulations (INTERNATIONAL HEALTH REGULATIONS (IHR) 2005)**

(Authority: Ministry of the Environment and Water Resources (MEWR)/National Environment Agency (NEA))

The World Health Organisation administers the IHR.

### **i. Ship Sanitation Control Certificate or Ship Sanitation Control Exemption Certificate**

The master, owner or agent of every ship shall, on the ship's arrival at and departure from Singapore, produce a valid ship sanitation control certificate or valid ship sanitation control exemption certificate, as the case may be.

A ship sanitation control certificate or ship sanitation control exemption certificate, as the case may be, shall be issued only by the health authority of a port designated for that purpose by its national health administration and shall be in Form E set out in the Fifth Schedule.

Every ship sanitation control certificate or ship sanitation control exemption certificate produced under paragraph (2) shall be valid for 6 months and may be extended for a period of one month in the case of a ship proceeding to any port if the control or inspection, as the case may be, would be facilitated by the emptying of the holds due to take place at that port.

The master, owner or agent of a ship shall, before the expiry of the existing ship sanitation control certificate or ship sanitation control exemption certificate referred to in paragraph (2), apply to a Port Health Officer for the issue of a new ship sanitation control certificate or ship sanitation control exemption certificate, as the case may be.

*(Infectious Diseases (Quarantine) Regulations, regulation 28A)*

*(International Health Regulations 2005, Article 39)*

### **ii. Entry Declaration/Maritime Declaration of Health**

For the purpose of section 23 of the Act, the master or surgeon of any ship arriving in Singapore shall make and sign an entry declaration according to the Form set out in the Fourth Schedule as to the number of crew and passengers, the presence or prevalence of any infectious disease on board during the voyage, the number of deaths and such other particulars as are required in that Form.

Such a declaration purporting to be signed by the master or surgeon shall be deemed to have been so signed.

*(Infectious Diseases (Quarantine) Regulations, regulation 12)*

The master of a ship, before arrival at its first port of call in the territory of a State Party, shall ascertain the state of health on board, and, except when that State Party does not require it, the master shall, on arrival, or in advance of the vessel's arrival if the vessel is so equipped and the State Party requires such advance delivery, complete and deliver to the competent authority for that port a Maritime Declaration of Health which shall be countersigned by the ship's surgeon, if one is carried.

*(International Health Regulations 2005, Article 37)*

### **iii. International Certificates of vaccination or other prophylaxis of ship's crew**

Vaccines and prophylaxis for travellers administered pursuant to these Regulations, or to recommendations and certificates relating thereto, shall conform to the provisions of Annex 6 and, when applicable, Annex 7 with regard to specific diseases.

*(International Health Regulations 2005, Article 36)*

## **AE. PORT STATE CONTROL**

### **i. Records of Port State Control**

Port State authorities should ensure that, at the conclusion of an inspection, the master of the ship is provided with a document showing the results of the inspection, details of any action taken by the PSCO, and a list of any corrective action to be initiated by the master and/or company. Such reports should be made in accordance with the format in appendix 13.

*(A.1052(27) – Procedures for Port State Control, 2011, chapter 4.1)*

## **AF. (I) Merchant Shipping (Civil Liability and Compensation for Oil Pollution) (Compulsory Insurance) Regulations**

### **(II) Merchant Shipping (Civil Liability and Compensation for Bunker Oil Pollution) (Compulsory Insurance) Regulations**

#### **i. Certificate of insurance or other financial security in respect of civil liability for oil pollution damage**

A certificate attesting that insurance or other financial security is in force in accordance with the provisions of the International Convention on Civil Liability for Oil Pollution Damage, 1992 (CLC 92), shall be issued to each ship carrying more than 2,000 metric tonnes of oil in bulk as cargo after the appropriate authority of a Contracting State has determined that the requirements of article VII, paragraph 1, of the Convention have been complied with. With respect to a ship registered in a Contracting State, such certificate shall be issued by the appropriate authority of the State of the ship's registry; with respect to a ship not registered in a Contracting State, it may be issued or certified by the appropriate authority of any Contracting State.

*(CLC 1992, article VII)*

Application: Oil tankers

#### **ii. Certificate of Insurance or other Financial Security in respect of Civil Liability for Bunker Oil Pollution Damage**

A certificate attesting that insurance or other financial security is in force in accordance with the provisions of this Convention shall be issued to each ship after the appropriate authority of a State Party has determined that the requirements of paragraph 1 have been complied with. With respect to a ship registered in a State Party such certificate shall be issued or certified by the appropriate authority of the State of the ship's registry; with respect to a ship not registered in a State Party it may be issued or certified by the appropriate authority of any State Party.

The certificate shall be carried on board the ship and a copy shall be deposited with the authorities who keep the record of the ship's registry or, if the ship is not registered in a State Party, with the authorities issuing or certifying the certificate.

*(International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001, Articles 7(2) and 7(5))*

## **AG. BALLAST WATER MANAGEMENT CONVENTION**

(The Convention has not entered into force. Ships will be required to comply with its regulations when it enters into force.)

### **i. Ballast Water Management Plan (A.868(20))**

Every ship that carries ballast water should be provided with a ballast water management plan to assist in the minimization of transfer of harmful aquatic organisms and pathogens. The intent of the plan should be to provide safe and effective procedures for ballast water management.

*(A.868(20) – Guidelines for the control and management of ships’ ballast water to minimize the transfer of harmful aquatic organisms and pathogens, section 7; MSC/Circ.1145 – Precautionary Advice to Masters when undertaking Ballast Water Exchange Operations)*

(see also “Approved Loading and Ballasting Information”)

### **NOTES:**

1. Although resolution A.868(20) is not a mandatory guideline, a number of States have applied it as a port entry requirement. For example, ships are required to conduct ballast water exchange before they can enter their ports, using a Ballast Water Management Plan and submitting a Ballast Water Reporting Form to their authorities. Singapore flag ships intending to enter such ports should comply with their local requirements.
2. As of Feb 2012, the International Convention for the Control and Management of Ships’ Ballast Water and Sediments, 2004 (BWM Convention) has not yet entered into force. Ships will be required to comply with its regulations when it enters into force, including the following certificates and documents:
  - 1) Ballast Water Management Plan
  - 2) International Ballast Water Management Certificate
  - 3) Ballast Water Record Book

### **ii. International Ballast Water Management Certificate**

The Administration shall ensure that a ship to which regulation E-1 applies is issued a Certificate after successful completion of a survey conducted in accordance with regulation E-1. A Certificate issued under the authority of a Party shall be accepted by the other Parties and regarded for all purposes covered by this Convention as having the same validity as a Certificate issued by them.

*(Ballast Water Management Convention, regulation E-2.1)*

### **iii. Ballast Water Management Plan**

The Plan is required to be onboard the ship and available to guide personnel in safe operation of the Ballast Water Management system employed on a particular ship. Effective planning ensures that the necessary actions are taken in a structured, logical, and safe manner.

*(Guidelines for Ballast Water Management and Development of Ballast Water Management Plans (G4), paragraph 2.2.1)*

### **iv. Ballast Water Management Record Book**

To facilitate the administration of ballast water management and treatment procedures on board each ship, a responsible officer is to be designated in accordance with Regulation B-1 to ensure the maintenance of appropriate records and to ensure that ballast water management and/or treatment procedures are followed and recorded.

When carrying out any ballast water operation the details are to be recorded in the Ballast Water Record Book together with any exemptions granted in accordance with Regulation B-3 or C-1.

*(Guidelines for Ballast Water Management and Development of Ballast Water Management Plans (G4), paragraph 2.1.1)*

**v. Calibration Certificate**

Facilities should be provided for checking, at the renewal surveys and according to the manufacturer's instructions, the performance of the BWMS components that take measurements. A calibration certificate certifying the date of the last calibration check should be retained on board for inspection purposes. Only the manufacturer or persons authorized by the manufacturer should perform the accuracy checks.

*(Guidelines for Approval of BW Management Systems (G8), paragraph 4.6)*

**vi. Records of data of Control equipment**

To facilitate compliance with regulation B-2, the control equipment should also be able to store data for at least 24 months, and should be able to display or print a record for official inspections as required. In the event the control equipment is replaced, means should be provided to ensure the data recorded prior to replacement remains available on board for 24 months.

*(Guidelines for Approval of BW Management Systems (G8), paragraph 4.13)*

**vii. Type Approval Certificate**

A BWMS which in every respect fulfils the requirements of these Guidelines may be approved by the Administration for fitting on board ships. The approval should take the form of a Type Approval Certificate of BWMS, specifying the main particulars of the apparatus and any limiting conditions on its usage necessary to ensure its proper performance. A copy of the Type Approval Certificate of BWMS should be carried on board ships fitted with such a system at all times.

*(Guidelines for Approval of BW Management Systems (G8), paragraph 6.1)*

**viii. Installation Survey and Commissioning Procedures**

Section 8 provides a list of documentation which is to be verified before the commencement of installation and commissioning.

*(Guidelines for Approval of BW Management Systems (G8), Section 8)*

**AH. SHIP RECYCLING CONVENTION**

(The Convention has not entered into force. Ships will be required to comply with its regulations when it enters into force.)

**i. Green Passport for ships (A.962(23))**

The Green Passport for ships is a document facilitating the application of these Guidelines providing information with regard to materials known to be potentially hazardous utilized in the construction of the ship, its equipment and systems. This should accompany the ship throughout its operating life. Successive owners of the ship should maintain the accuracy of the Green Passport and incorporate into it all relevant design and equipment changes, with the final owner delivering the document, with the ship, to the recycling facility.

*(A.962(23) – IMO Guidelines on Ship Recycling, section 5)*



NOTE: Shipowners may apply on a voluntary basis the IMO resolution A.962(23), where practicable.

**ii. Inventory of Hazardous Materials**

Each new ship shall have on board an Inventory of Hazardous Materials. The Inventory shall be verified either by the Administration or by any person or organization authorized by it taking into account guidelines, including any threshold values and exemptions contained in those guidelines, developed by the Organization.

*(Ship Recycling Convention, regulation 5.1)*

**iii. Ship Recycling Plan**

A ship-specific Ship Recycling Plan shall be developed by the Ship Recycling Facility(ies) prior to any recycling of a ship, taking into account the guidelines developed by the Organization.

*(Ship Recycling Convention, regulation 9)*

**iv. International Certificate on Inventory of Hazardous Materials**

An International Certificate on Inventory of Hazardous Materials shall be issued either by the Administration or by any person or organization authorized by it after successful completion of an initial or renewal survey conducted in accordance with regulation 10, to any ships to which regulation 10 applies, except for existing ships for which both an initial survey and a final survey are conducted at the same time, taking into account the guidelines developed by the Organization.

*(Ship Recycling Convention, regulation 11.1)*

**v. International Ready for Recycling Certificate**

An International Ready for Recycling Certificate shall be issued either by the Administration or by any person or organization authorized by it, after successful completion of a final survey in accordance with the provisions of regulation 10, to any ships to which regulation 10 applies, taking into account the authorization of the Ship Recycling Facility and the guidelines developed by the Organization.

*(Ship Recycling Convention, regulation 11.11)*

**AI. Natural Gas-fuelled Engine Installations**

(The Guidelines are not mandatory. IMO is currently developing the International Code of Safety for Gas-fuelled Ships (IGF Code), for ships, other than gas carriers, that use gas as fuel)

**i. Training Manual**

A training manual should be developed and a training programme and exercises should be specially designed for each individual vessel and its gas installations

*(MSC.285(86) – Interim Guidelines on Safety for Natural Gas-Fuelled Engine Installations in Ships, paragraph 8.1.4)*

**ii. Maintenance Manual**

A special maintenance manual should be prepared for the gas supply system on board.

*(MSC.285(86) – Interim Guidelines on Safety for Natural Gas-Fuelled Engine Installations in Ships, paragraph 8.3.1)*

## 2. **PUBLICATIONS**

### **A. NATIONAL LEGISLATION**

#### **i. The Merchant Shipping Act, Chapter 179, and its subsidiary legislation (SL), as amended**

NOTE: The equivalent IMO publications, as amended, (Load Lines, COLREG, SOLAS and Tonnage) of SL Regulations 5 (Load Line), 10 (Prevention of Collisions at Sea), 11 (Safety Convention) and 12 (Tonnage), respectively, may be carried on board in place of these regulations.

Digital copy is acceptable.

#### **ii. Prevention of Pollution of the Sea Act, Chapter 243 and its subsidiary legislation (SL), as amended**

NOTE: The annexes of MARPOL 73/78, as amended, equivalent to the SL regulations of the Act may be carried on board in place of these regulations.

Digital copy is acceptable.

#### **iii. Merchant Shipping (Training, Certification and Manning) Regulations**

##### NOTES:

1. The Regulations gives effect to the STCW Convention, but is not a direct transposition of the convention text. Therefore, the Regulations is required to be carried on board.
2. The STCW Convention publication is optional (see “Optional Publications” below).
3. Digital copy is acceptable

#### **iv. Merchant Shipping (Maritime Labour Convention) [Act] 20xx**

(Not yet enter into force)

The [Act] gives effect to the MLC, and is not a direct transposition of the convention text.

Digital copy is acceptable

### **B. MANDATORY AND REFERENCE PUBLICATIONS**

#### **i. International Code of Signals**

All ships which, in accordance with the present Convention, are required to carry radio installations shall carry the International Code of Signals. This publication shall also be carried by any other ship which, in the opinion of the Administration, has a need to use it. (*SOLAS regulation V/21.1*)

NOTE: Hard copy is required for emergency use

#### **ii. IAMSAR Manual Volume III**

All ships shall carry an up-to-date copy of Volume III of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual.

(*SOLAS regulation V/21.2*)

NOTE: Hard copy is required for emergency use

**iii. Nautical charts and publications necessary for intended voyage**, may include:

- .1 Adequate and up-to-date charts (for the intended voyage) (including ENCs)
- .2 Sailing Directions
- .3 List of Lights
- .4 Notices to mariners
- .5 Tide Tables
- .6 Mariner's Handbook
- .7 Nautical Almanac
- .8 Navigational Tables
- .9 List of radio signals
- .10 Tidal Stream Atlases; and
- .11 Ocean Passages of the World.

Ships engaged on international voyages shall be fitted with an Electronic Chart Display and Information System (ECDIS) [from 2012 onwards]

*(SOLAS 1974, regulation V/19.2.10)*

Nautical charts and nautical publications, such as sailing directions, lists of lights, notices to mariners, tide tables and all other nautical publications necessary for the intended voyage, shall be adequate and up to date.

*(SOLAS 1974, regulation V/27)*

**NOTES**

1. See also Shipping circular [No. 3 of 2011](#) for a list of ECDIS-related IMO, IHO and IEC supporting documents and publications.
2. MPA currently allows for the above publications in digital format, on a case-by-case basis. Shipowners may apply to MPA for approval for their ships to carry the digital publications (see Shipping Circular [No. 29 of 2006](#) on digital equivalence).
3. The Admiralty Digital Catalogue/Chart Catalogue is not considered to be a nautical publication needed to comply with SOLAS requirements, but to be used as a reference guide and supporting publication to the other publications. No specific approval or equivalence is required from MPA.

**iv. Publications specifically mentioned to be carried by the ship's SMS Manual**

The documents used to describe and implement the SMS may be referred to as the "Safety Management Manual". Documentation should be kept in a form that the Company considers most effective. Each ship should carry on board all documentation relevant to that ship.

*(ISM Code, section 11.3)*

Digital copy is acceptable

**v. Mandatory codes**

- .1 International Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code)
- .2 International Life-saving Appliance Code (LSA Code)
- .3 International Code for Fire Safety Systems (FSS Code)
- .4 International Ship and Port Facility Security Code (ISPS Code)

**NOTE:** The codes are mandatory under SOLAS 74. They contain technical details not found in the text of their respective conventions or SL. As such, copies of these codes shall be carried on board for reference.

Digital copy is acceptable.

## **vi. Codes on carriage of cargo**

- .1 International Grain Code (for ships carrying grain)
- .2 International Maritime Dangerous Goods (IMDG) Code (IMDG Code) (for ships carrying dangerous goods)
- .3 Medical First Aid Guide (MFAG) (for ships carrying dangerous cargoes)
- .4 International Maritime Solid Bulk Cargoes (IMSBC) Code (for ships carrying bulk cargoes)
- .5 Code of Practice for the Safe Loading and Unloading of Bulk Cargoes (BLU Code) (for ships carrying bulk cargoes)
- .6 International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on Board Ships (INF Code) (for ships carrying INF cargoes)
- .7 Code of Safe Practice for Ships carrying Timber Deck Cargoes (2011 TDC Code) (for ships carrying timber deck cargoes)
- .8 Code of Safe Practice for Cargo Stowage and Securing (for ships carrying cargoes other than solid and liquid bulk cargoes and timber stowed on deck)

**NOTE:** The codes are either mandatory or referred to in SOLAS 74. They contain technical details not found in the text of their respective conventions or SL. As such, copies of these codes shall be carried on board for reference, as appropriate. Digital copy is acceptable.

## **vii. Chemical and Gas Codes**

- .1 Bulk Chemical Code (BCH Code)  
A copy of this Code or national regulations incorporating the provisions of the Code should be on board every ship covered by this Code.  
(*BCH Code, Section 5.2.1*)  
Application: Chemical tankers constructed before 1 Jul 86.
- .2 International Bulk Chemical Code (IBC Code)  
A copy of this Code, or national regulations incorporating the provisions of this Code, should be on board every ship covered by this Code.  
(*IBC Code, Section 16.2*)  
Application: Chemical tankers constructed on or after 1 Jul 86.
- .3 International Gas Carrier Code (IGC Code)  
A copy of this Code or national regulations incorporating the provisions of this Code should be on board every ship covered by this Code.  
(*IGC Code, section 18.1.3*)  
Application: Gas carriers constructed on or after 1 Jul 86
- .4 Gas Carrier Code (GC Code)  
For gas carriers constructed before 1 Jul 86
- .5 Code for Existing Ships Carrying Liquefied Gases in Bulk.  
For gas carriers constructed before 31 Oct 76

Digital copy is acceptable

## **viii. MPA Shipping circulars**

Shipping circulars contain important information on MPA policies on the implementation and clarification of regulations and ship operation and all ships shall carry them on board. MPA encourages shipowners to carry the digital versions on board ship and there is no need to carry the paper copy. Shipping circulars are now issued in PDF format for ease of distribution to companies and ships.

Shipping circulars can be downloaded from:

[http://www.mpa.gov.sg/sites/port\\_and\\_shipping/circulars\\_and\\_notices/shipping\\_circular\\_s.page](http://www.mpa.gov.sg/sites/port_and_shipping/circulars_and_notices/shipping_circular_s.page)

### **C. OPTIONAL PUBLICATIONS**

- .1 SOLAS Convention
- .2 MARPOL Convention
- .3 Load Lines Convention
- .4 COLREG Convention
- .5 STCW Convention and Code
- .6 Tonnage Measurement Convention
- .7 IMO Standard Marine Communication Phrases (SMCP)
- .8 Maritime Labour Convention (MLC) (published by ILO)
- .9 International Health Regulations (2005) (published by WHO)
- .10 Guide to Helicopter/Ship operations (published by ICF)

#### **NOTES:**

1. These publications are optional, unless such publications are required in the ship's SMS manual or are carried in lieu of the equivalent SL regulations of the Merchant Shipping Act or Prevention of Pollution of the Sea Act. All publications on board ships, regardless of format, should be the latest editions or duly corrected up to date.
2. The MLC may be downloaded free of charge from ILO website.
3. The IHR 2005 may be downloaded free of charge from WHO website.
4. Digital copy is acceptable.

## **PART II: OTHER SHIPS ON INTERNATIONAL VOYAGES** **(HSC, WIG CRAFT, SPS, OSV, MODU)**

(The 1994 and 2000 HSC Codes are mandatory under SOLAS 74. The other instruments are recommendatory.)

### **1. CERTIFICATES AND DOCUMENTS**

(In addition to the Certificates, Documents and Publications in PART I, where applicable)

#### **A. Merchant Shipping (Safety Convention) Regulations – HIGH SPEED CRAFT (1994 and 2000 HSC CODES, DSC CODE)**

##### **i. Dynamically Supported Craft Construction and Equipment Certificate**

To be issued after survey carried out in accordance with paragraph 1.5.1(a) of the Code of Safety for Dynamically Supported Craft.

*(Resolution A.373(X), section 1.6)*

##### **ii. Dynamically Supported Craft Permit to Operate**

Dynamically Supported Craft Permit to Operate to be issued if the MPA is satisfied that all requirements of the DSC Code have been met.

*(A.373(X), section 1.6)*

##### **iii. High-Speed Craft Safety Certificate**

A Certificate called a High-Speed Craft Safety Certificate is issued after completion of an initial or renewal survey to a craft which complies with the requirements of the Code.

*(1994/2000 HSC Codes, Section 1.8)*

##### **iv. Permit to Operate High-Speed Craft**

The craft shall not operate commercially unless a Permit to Operate High-Speed Craft is issued and valid in addition to the High-Speed Craft Safety Certificate. Transit voyage without passengers or cargo may be undertaken without the Permit to Operate High-Speed Craft.

*(1994/2000 HSC Codes, Section 1.9)*

##### **v. Report of lightweight survey**

A report of each inclining or lightweight survey carried out in accordance with this chapter and of the calculation therefrom of the lightweight condition particulars shall be submitted to the Administration for approval, together with a copy for their retention. The approved report shall be placed on board the craft by the owner in the custody of the master and shall incorporate such additions and amendments as the Administration may in any particular case require.

*(2000 HSC Code, Section 2.7.5)*

##### **vi. Stability information**

Stability information demonstrating compliance with this chapter shall be furnished in the form of a stability information book which shall be kept on board the craft at all times in the custody of the master.

*(2000 HSC Code, Section 2.7.7)*



**vii. Instructions and information**

Instructions and information required for inclusion in the craft's training manual and in the instructions for on-board maintenance should be in a form suitable for inclusion in such training manual and instructions for on-board maintenance. Instructions and information should be in a clear and concise form.

*(1994 HSC Code, Section 6)*

**viii. Craft operational control**

The High-Speed Craft Safety Certificate, the Permit to Operate High-Speed Craft or certified copies thereof, and copies of the route operational manual, craft operating manual, and a copy of such elements of the maintenance manual as the Administration may require shall be carried on board.

*(2000 HSC Code, Section 18.1)*

**ix. HSC manuals**

The company shall ensure that the craft is provided with adequate information and guidance in the form of technical manual(s) to enable the craft to be operated and maintained safely. The technical manual(s) shall consist of a route operational manual, craft operating manual, training manual, maintenance manual and servicing schedule. Arrangements shall be made for such information to be updated as necessary.

*(1994/2000 HSC Codes, Section 18.2)*

**x. Emergency instructions**

Emergency instructions including a general diagram of the craft showing the location of all exits, routes of evacuation, assigned assembly stations, emergency equipment, life-saving equipment and appliances and illustration of lifejacket donning shall be available to each passenger and crew member in appropriate languages. It shall be placed near each passenger and crew seat and conspicuously displayed at assembly stations and other passenger spaces.

*(2000 HSC Code, Section 18.5)*

**xi. Muster and Drills Records**

The date when musters are held, details of abandon craft drills and fire drills, drills of other life-saving appliances and on-board training shall be recorded in such log-book as may be prescribed by the Administration.

The master shall ensure, before the craft leaves the berth on any voyage, that a record is made of the time of the last closing of the accesses referred to in 2.2.4.2 and 2.2.4.3.

*(2000 HSC Code, Section 18.5.7)*

**xii. Information on passengers**

All persons on board passenger craft shall be counted prior to departure.

Details of persons who have declared a need for special care or assistance in emergency situations shall be recorded and communicated to the master prior to departure.

*(2000 HSC Code, Section 18.2.5)*

**xiii. Type Rating Certificates for masters and officers serving on High Speed Craft**

A type rating certificate shall be issued to the master and all officers having an operational role following an appropriate period of operational/simulator training and on the conclusion of an examination including practical test commensurate with the operational tasks on board the particular type and model of craft concerned and the route followed.

*(DSC Code section 17.2.3; 1994/2000 HSC Codes section 18.3.3)*

## **B. Merchant Shipping (Wing-in-Ground Craft) Regulations 2010 (WING-IN-GROUND (WIG) CRAFT)**

### **i. Wing-in-ground Craft Safety Certificate**

A certificate called a WIG Craft Safety Certificate should be issued after completion of an initial or renewal survey to a craft, which complies with the provisions of the Interim Guidelines for WIG craft.

*(MSC/Circ.1054, section 9)*

The Director or an authorised organisation may, after a survey of a Singapore WIG craft in accordance with the provisions of the WIG Craft Guidelines, issue, in relation to the Singapore WIG craft, a WIG craft safety certificate, if the WIG craft complies with the provisions of the WIG Craft Guidelines.

*(Merchant Shipping (Wing-In-Ground Craft) Regulations 2010, section 6(1))*

### **ii. Permit to Operate WIG Craft**

A permit to operate should be issued by the Administration to certify compliance with the provisions of the Interim Guidelines for WIG craft.

*(MSC/Circ.1054, section 10)*

The Director or an authorised organisation may, after consulting the relevant administration of the port State where a Singapore WIG craft intends to operate, issue, in relation to the Singapore WIG craft, a permit to operate WIG craft, if the WIG craft complies with the provisions of 2.1.2 to 2.1.7 of Part A of the WIG Craft Guidelines.

*(Merchant Shipping (Wing-In-Ground Craft) Regulations 2010, section 7(1))*

## **C. SPECIAL PURPOSE SHIPS (2008 SPS Code)**

### **i. SPS Certificate**

A certificate may be issued after survey in accordance with 1.6 either by the Administration or by any person or organization duly authorized by it. In every case the Administration assumes full responsibility for the certificate.

*(2008 SPS Code, Section 1.7)*

### **ii. Approved Damage Stability Information and Booklet for Special Purpose Ships**

All special purpose ships should comply with SOLAS regulations II-1/9, II-1/13, II-1/19, II-1/20, II-1/21 and II-1/35-1, as though the ship is a passenger ship.

*(Code of Safety for Special Purpose Ships, 2008, paragraph 2.5)*

**NOTE:** SOLAS regulation II-1/19 – There shall be permanently exhibited, or readily available on the navigation bridge, for the guidance of the officer in charge of the ship, plans showing clearly for each deck and hold the boundaries of the watertight compartments, the openings therein with the means of closure and position of any controls thereof, and the arrangements for the correction of any list due to flooding. In addition, booklets containing the aforementioned information shall be made available to the officers of the ship.

## **D. OFFSHORE SUPPORT VESSELS (REVISED OSV GUIDELINES)**

### **i. Offshore Supply Vessel Document of Compliance**

The Document of Compliance should be issued after satisfied that the vessel complies with the provisions of the Guidelines for the design and construction of Offshore Supply Vessels, 2006.

*((Guidelines for the Design and Construction of Offshore Supply Vessels, 2006, section 8))*

## **LHNS Guidelines**

### **ii. Certificate of Fitness for the Transportation and Handling of Limited Amounts of Hazardous and Liquid Noxious Substances in Bulk**

Following a satisfactory initial survey of an offshore support vessel, the Administration or its duly authorized organization should issue a certificate, the model form of which is set out in appendix 2, suitably endorsed to certify compliance with the provisions of the Guidelines. If the language used is not English, French or Spanish, the text should include the translation into one of these languages. The certificate should indicate the cargoes regulated by these Guide-lines that the vessel is permitted to carry with any relevant carriage conditions and should have a period of validity not to exceed five years. *(Resolution A.673(16) – LHNS Guidelines, as amended by MSC.236(82), Section 1.5)*

### **iii. International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk endorsed for offshore supply vessels carrying only such cargoes** *(this certificate may be issued instead of the above Certificate of Fitness)*

If an offshore support vessel carries only noxious liquid substances, a suitably endorsed International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk may be issued instead of the above Certificate of Fitness.

*(A.673(16), as amended by MSC.236(82) and MEPC.158(55); MARPOL 73/78, Annex II, regulation 11(2))*

### **iv. Cargo Record Book**

Each ship certified to carry noxious liquid substances should be provided with a Cargo Record Book, a Procedure and Arrangements Manual and a Shipboard Marine Emergency Plan developed for the ship in accordance with Annex II to MARPOL 73/78 and approved by the Administration.

*(resolution A.673(16) – LHNS Guidelines, as amended by MSC.236(82), Section 4)*

## **E. MODU CODE, as amended**

### **i. Mobile Offshore Drilling Unit Safety Certificate**

To be issued after survey carried out in accordance with the provisions of the Code for the Construction and Equipment of Mobile Offshore Drilling Units, 1979, or, for units constructed on or after 1 May 1991, the Code for the Construction and Equipment of Drilling Units, 1989.

*(Resolution A.414(XI), section 1.6; resolution A.649(16) section 1.6; resolution A.649(16) as modified by resolution MSC.38(63), section 1.6, 2009 MODU Code (resolution A.1023(26)))*

## **F. SPECIAL TRADE PASSENGER SHIPS (STP 71)**

### **i. Special Trade Passenger Ship Safety Certificate, Special Trade Passenger Ship Space Certificate**, where applicable

A Special Trade Passenger Ship Safety Certificate shall be issued under the provisions of the Special Trade Passenger Ships Agreement, 1971.

A certificate called a Special Trade Passenger Ship Space Certificate shall be issued under the provisions of the Protocol on Space Requirements for Special Trade Passenger Ships, 1973.

*(STP 71, rule 5; SSTP 73, rule 5)*

## **G. OTHERS**

### **i. Diving System Safety Certificate**

A certificate should be issued either by the Administration or any person or organization duly authorized by it after survey or inspection to a diving system which complies with the requirements of the Code of Safety for Diving Systems. In every case, the Administration should assume full responsibility for the certificate.

*(Resolution A.536(13), section 1.6 )*

### **ii. Noise Survey Report**

A noise survey report should be made for each ship in accordance with the Code on Noise Levels on Board Ships.

*(A.468(XII), section 4.3)*

## **2. RECOMMENDED PUBLICATIONS**

- .1 DSC Code (Dynamically supported craft)
- .2 HSC Code, 1994 (High speed craft built after 1 January 1996 and before 1 July 2002)
- .3 HSC Code, 2000 (High speed craft built after 1 July 2002)
- .4 MODU Code, 1979 (Mobile offshore drilling unit built before 1 May 1991)
- .5 MODU Code, 1989 (Mobile offshore drilling unit built after 1 May 1991).

Digital copy is acceptable.

**PART III: NON-CONVENTION SHIPS**  
**(NON-CONVENTION VESSELS, SPECIAL LIMIT PASSENGER SHIPS)**  
(In addition to the Certificates, Documents and Publications in Part I, where applicable)

**1. CERTIFICATES**

**A. Merchant Shipping (Non-Convention Ships) Safety Regulations**

(Applicable to cargo ships below 500 gt)

- .1 **Cargo Ship Safety Construction Certificate**
- .2 **Cargo Ship Safety Equipment Certificate**
- .3 **Cargo Ship Safety Radiotelephony or Radiotelegraphy Certificate**
- .4 **Exemption Certificate or Letter of Dispensation** (when an exemption or dispensation has been granted)

**B. Merchant Shipping (Special Limits Passenger Ships) Safety Regulations**

(Applicable to passenger ships operating beyond the port limit but solely within the 30-mile limit)

- .1 **30-Mile Limit Passenger Ship Safety Certificate**; or
- .2 **Passenger Ship Safety Certificate** (supplemented by its Record of Equipment)
- .3 **Exemption Certificate or Letter of Dispensation** (when an exemption or dispensation has been granted).

**2. DOCUMENTS**

- .1 **Approved Intact Stability Booklet**
- .2 **Approved Damage Stability Booklet**
- .3 **Chartlet of the Special Limit Area** (after 31 Mar 95)
- .4 **Plan of the Layout of Passenger Spaces** showing the Arrangement of Seats and Escape Routes (for ships constructed on or after 1 Apr 95)



Ref. T1/11.01

MSC-MEPC.2/Circ.2  
1 June 2006

## GENERAL MATTERS

### IMO requirements on carriage of publications on board ships

1 The Maritime Safety Committee, at its eighty-first session (10 to 19 May 2006), and the Marine Environment Protection Committee, at its fifty-third session (18 to 22 July 2005), in order to give guidance on the carriage of publications on board ships, approved the IMO requirements on carriage of publications on board ships as set out in the annex.

2 The Marine Environment Protection Committee and the Maritime Safety Committee will review and update, where necessary, the list of publications contained in the appendix to the annex.

3 Member Governments are invited to bring this circular to the attention of port State Control officers, Companies and audit teams according to the ISM Code, organizations performing the ISM Code certification, ship operators and all other parties concerned.

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**ANNEX****IMO REQUIREMENTS ON CARRIAGE OF PUBLICATIONS ON BOARD SHIPS**

1 The main purpose of this circular is to provide guidance in a concise form to Administrations, shipowners/operators, port State control officers (PSCOs), companies and audit teams according to the ISM Code and organizations performing the ISM Code certification of IMO requirements on carriage of publications. The publications explicitly required by IMO instruments to be carried on board ships are listed in the appendix.

2 IMO instruments such as the SOLAS, MARPOL, LL, COLREG and STCW Conventions deal with many operational aspects, *inter alia*, navigational responsibilities, safety-related training/drills on board, safe cargo handling, oil spill prevention, collision avoidance activities and watchkeeping standards. Therefore, these publications, although not expressly required by IMO instruments, may need to be carried on board in order to improve the crew's knowledge and to enhance the implementation of IMO instruments. No deficiency or non-conformity should be filed by port State control authorities and/or ISM auditors against ships not carrying such publications on board unless otherwise required by the ship's Safety Management System (SMS) manual.

3 In circumstances where copies of national regulations incorporating the provisions of the required instruments are provided on board, relevant publications need not be carried. Similarly, nothing in the IMO requirements preclude ships from carrying publications required by IMO instruments and published by Administrations.

4 The publications may be carried in the form of electronic media such as CD-ROM in lieu of hard copies. Acceptable publications in electronic form should be those issued by IMO or an Administration or a body authorized by an Administration to ensure correctness of their contents and to safeguard against illegal copying. A medium could either contain a publication or as many publications as possible. In any case, the media should be treated in accordance with the document control procedures in the ship's SMS including procedures for timely update.

5 Notwithstanding paragraph 4 above, the publications for emergency use, such as the International Code of Signals and the IAMSAR Manual should always be available in the form of hard copies, bearing in mind that such publications need to be readily available for use in case of emergency without being restricted to a specific place and by the availability of a computer.

APPENDIX

**Publications required to be carried on board ships\***

<b>Name of publication</b>	<b>Required by</b>	<b>Applicable ship</b>	<b>Remarks</b>
IBC Code	IBC, paragraph 16.2.1	Chemical Tankers	Built after 1 July 1986
BCH Code	BCH, paragraph 5.2.1	Chemical Tankers	Built before 1 July 1986
IGC Code	IGC, paragraph 18.1.3	Gas Carrier	Built after 1 July 1986
International Code of Signals**	SOLAS V/21.1	All ships	
IAMSAR Manual Volume III**	SOLAS V/21.2	All ships	
Nautical Charts & Publications	SOLAS V/19.2.1 & V/27	All ships	
Publications required by ISM Code	ISM Code, paragraphs 1.2.3 and 11.3	All ships	Required publications are those specifically mentioned to be carried by the ship's SMS manual.

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Note: \* All publications on board ships, regardless of format, should be the latest editions or duly corrected up to date. In case where copies of national regulations incorporating the provisions of the required instruments are provided on board, publications of such instruments need not be carried on board.

\*\* These publications for emergency use should always be available on board ships in the form of hard copy.

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Ref.T1/3.02

MSC/Circ.891  
21 December 1998

## GUIDELINES FOR THE ON-BOARD USE AND APPLICATION OF COMPUTERS

1 The Maritime Safety Committee, at its seventieth session 7 to 11 December 1998, approved the Guidelines for the on-board use and application of computers given in the annex. Also, the Committee, at its sixty-ninth session (11 to 20 May 1998), approved MSC/Circ.854 on Guidelines for shipboard loading and stability computer programmes and instructed the Secretariat to annex them to the aforementioned Guidelines for the on-board use and application of computers, once approved. The former have, therefore, been attached to the latter and are set out in the appendix to the annex.

2 The advent of inexpensive personal computers has resulted in rapidly-growing usage aboard merchant marine vessels for many shipboard applications, including cargo loading and trim and stability calculations. To the extent that these programmes rely upon human input of data and interpretation of output, they are potentially vulnerable to human factor errors. Although such errors will most likely emerge in the user such as shipboard officers, the actual roots of the errors might be found in other shoreside sectors; software developers who might not anticipate human factor needs, or shipping company management.

3 Requirements as to the performance of such software will depend on the person/organization involved as follows:

- .1 *For users (ship officers):* greater consistency among programmes from different vendors, which will make familiarization and proficiency easier and faster to achieve;
- .2 *For ship owners/operators:* availability of well-conceived software products that include appropriate materials for training and also documentation for revising programme or data when necessary, for instance to reflect any changes in the ship's weight and moment characteristics;
- .3 *For software developers:* the benefit of a broader experience base than just their own corporate experience, and a consistent uniform standard reflecting customer expectations; and
- .4 *For Administrations:* assurance that sophisticated programmes are developed and introduced into service and that they will reflect human factor considerations and minimize chances for human error.

4 These Guidelines for the on-board use and application of computers have been developed to provide an international standard for the design, approval and testing of such systems and should be construed as supplementary to the relevant regulations of the SOLAS Convention. However, it should be noted that certain applications of computers are defined in Performance Standards adopted by the Organization which take precedence over these Guidelines.

5 Taking into account that the number and types of computer-based systems available for on-board use is strongly increasing, that such systems are under fast development and the fact that they have considerable effect on the safety at sea, the international harmonization should be beneficial to manufacturers, ship builders, ship owners and ship operators, maritime administrations and organizations acting on their behalf, seafarers, passengers and other users of marine services.

6 The Guidelines are not intended to prohibit the use of any existing computer-based systems on board existing ships if such systems do not fully comply with these Guidelines. Many existing ships have operated their computer-based systems successfully and safely for a long period of time, and their operating history should be considered in evaluating their suitability to continue contributing to their safe operation.

7 For existing systems, the Guidelines should be made applicable to a reasonable extent when major modifications are carried out.

8 Where these Guidelines refer to the Administration, this is the flag State Administration or a recognized organization authorized to act on its behalf in accordance with SOLAS regulation XI/1.

9 Member Governments, CIRM, IEC, IACS, ICS and all other interested parties are requested to bring the attached Guidelines to the attention of all concerned.

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**ANNEX****GUIDELINES FOR THE ON-BOARD USE AND  
APPLICATION OF COMPUTERS****1 Scope**

- 1.1 These Guidelines are applicable where computer-based systems are used to perform essential functions, such as:
- a) - propulsion, steering and manoeuvring
  - navigation and communication
  - cargo loading, discharging and control
  - safety of passengers and crew (e.g. fire safety systems and general alarm); and
  - b) essential calculations, such as ship's stability and loading.
- 1.2 The Guidelines are not applicable to equipment or systems for which relevant specific Performance Standards of the Organization exist.
- 1.3 The Guidelines should also be applied to non-essential functions where loss of control could result in serious damage to the ship or its machinery, or serious injury to personnel, e.g. explosion of domestic water boilers.

**2 Definitions**

In addition to the definitions in the SOLAS Convention the following are necessary for these guidelines:

**2.1 Computer**

A programmable electronic device for storing and processing data, making calculations, or performing control.

**Notes:**

1. For the purposes of this document the term "computer" means a "digital computer".
2. A computer may consist of a stand-alone unit or may consist of several interconnected units and includes any programmable electronic system (PES), including main-frame, mini-computer or micro-computer.

**2.2 Computer-based system**

A system of one or more computers, associated software, peripherals and interfaces.



## **2.3 Integrated system**

A combination of computer-based systems which are interconnected in order to allow centralised access to sensor information and/or command/control.

### **Notes:**

Integrated systems may, for example, perform one or more of the following operations:

- passage execution (e.g. steering, speed control, traffic surveillance, voyage planning);
- communications (e.g. radiotelephone, radiotelex, GMDSS);
- machinery (e.g. power management, machinery monitoring, fuel oil/lubrication oil transfer);
- cargo (e.g. cargo monitoring, inert gas generation, loading/discharging);
- safety and security (e.g. fire detection, fire pump control, watertight doors).

## **2.4 Interface**

A transfer point at which information is exchanged.

### **Note:**

Examples of Interfaces include:

- Input/output interface (used for interconnection with sensors and actuators);
- Man/machine interface (e.g. visual display units, keyboards, tracker-balls, and dedicated controls and instruments used for communication between the operator and the computer);
- Communications interface (used to enable serial communications/networking with other computers or peripherals).

## **2.5 Node**

A point of interconnection to a data communication link.

## **2.6 Peripheral**

A device performing an auxiliary action in the system, e.g. printer, data storage device.

## **2.7 Software**

Programs, data and documentation associated with the operation of a computer-based system.

# **3 General Requirements**

## **3.1 General**

3.1.1 Computer-based systems should fulfill the functional requirements of the system under control for all operating conditions including emergency conditions, taking into account:

- Danger to persons
- Environmental impact
- Damage to equipment

- Usability
- Operability of non-computer devices and systems, etc.

3.1.2 If process times for functions of the system are shorter than the reaction times of the operator and therefore damage cannot be prevented by manual intervention, means of automatic intervention should be provided.

3.1.3 A computer-based system should have sufficient capability to:

- perform necessary autonomous operations,
- accept user commands,
- inform the user correctly,

under all operating conditions including emergency.

3.1.4 System capability should provide adequate response times for all functions, taking into consideration the maximum load and maximum number of simultaneous tasks, including network communication speed, under normal and abnormal process conditions.

3.1.5 Computer-based systems should be designed in such a way that they can be used without special previous knowledge, otherwise appropriate assistance should be provided for the user, as specified in section 6 - Training.

3.1.6 Computer-based systems should be protected against unintentional or unauthorized modification of programs and data.

## **3.2 Hardware**

3.2.1 Hardware should be suitably designed to withstand supply voltage variations and transients, ambient temperature changes, vibration, humidity, electromagnetic interference and corrosion normally encountered in ships.

3.2.2 The design of the hardware should ensure ease of access to interchangeable parts for repairs and maintenance.

3.2.3 Each replaceable part should be simple to replace and should be constructed for easy and safe handling. All replaceable parts should be so arranged that it is not possible to connect them incorrectly or to use incorrect replacements. Where this is not practicable, the replaceable parts, including their means of electrical connection, should be clearly marked.

## **3.3 Software**

3.3.1 Systematic procedures should be followed during all phases of the software life cycle (development, installation and subsequent modification).

3.3.2 System tests should be specified, performed and documented. These tests should include all software functions and important combinations of functions, performance, dependability and usability requirements under all modes of operation including emergency conditions and behaviour under failure conditions.

3.3.3 Modifications of program contents and data, as well as a change of version, should be documented.

**Note:** ISO 9000-3 gives guidelines for the application of ISO 9001 to the development, supply and maintenance of software.

## **4 System Configuration**

### **4.1 General**

4.1.1 The hardware and software should be of a modular, hierarchical, design in order to maximise the fault tolerance of the system.

4.1.2 The selection of the computer equipment should be consistent with safe operation of the system under control.

### **4.2 Self-test**

4.2.1 Computer-based systems should be monitored for correct operation and an alarm should be given for an abnormal condition.

### **4.3 Power supply**

4.3.1 The power supply should be monitored for failure and should give an alarm in the event of an abnormal condition.

4.3.2 Program and data held in the system should be protected from corruption by loss of power.

4.3.3 Redundant systems should be selectively fed and separately protected against short circuits and overloads.

### **4.4 Installation**

4.4.1 Equipment and its associated cabling should be installed in accordance with an appropriate code of practice to minimize electromagnetic interference between the equipment concerned and other equipment on board.

### **4.5 Cables**

4.5.1 Cables used for data communication should be of adequate mechanical strength, suitably supported and also protected from mechanical damage.

### **4.6 Data communication**

4.6.1 The data communication link should be continuously self-checking, for detecting failures on the link itself and data communication failure on nodes and should give an alarm in the event of an abnormal condition.

- 4.6.2 When the same data communication link is used for two or more essential functions, this link should be redundant. Redundant data communication links should be routed with as much separation as practical.
- 4.6.3 Switching between redundant links should not disturb data communication or continuous operation of functions.
- 4.6.4 To ensure that data can be exchanged between various systems, standardized interfaces should be used.

#### **4.7 Failure to safety**

- 4.7.1 In the event of a failure of a computer-based system, that system should automatically revert to the least hazardous condition.
- 4.7.2 The failure and restarting of computer-based systems should not cause processes to enter undefined or critical states.
- 4.7.3 Control, alarm and safety functions should be arranged such that a single failure will not affect more than one of these functions.

#### **4.8 Integration of systems**

- 4.8.1 Operation with an integrated system should be at least as effective as it would be with individual, stand-alone equipment. Where multifunction displays and controls are used they should be duplicated and interchangeable.
- 4.8.2 Failure of one part (individual module, equipment or subsystem) of the integrated system should not affect the functionality of other parts, except for those functions directly dependent upon information from the defective part.
- 4.8.3 A complete failure in connectivity between parts should not affect their independent functionality.
- 4.8.4 An alternative means of operation, independent of the integration, should be available for all essential functions.
- 4.8.5 When systems under control are required to be duplicated and in separate compartments this should also be applied to computer-based systems.

### **5 User interface**

#### **5.1 General**

- 5.1.1 Computer-based systems should be designed for ease of handling and user-friendliness and should follow ergonomic principles.
- 5.1.2 The operational status of a computer-based system should be easily recognizable.

5.1.3 A user guide should be provided. This user guide should describe for example:

- function keys
- menu displays
- computer-guided dialogue steps, etc.

5.1.4 An alarm should be displayed at relevant operator stations for failure or shutdown of a subsystem.

## **5.2 Input devices**

5.2.1 Input devices should have clearly definable functions, be reliable in use and operate safely under all conditions. The acknowledgement of the instruction given should be recognizable.

5.2.2 Dedicated function keys should be provided for frequently recurring commands and for commands which must be available for rapid execution. If multiple functions are assigned to keys, it should be possible to recognize which of the assigned functions is active.

5.2.3 Control panels on the bridge should be provided with separate lighting. The level of lighting and the brightness of visual display units should be controllable.

5.2.4 Where equipment operations or functions may be changed via keyboards appropriate measures should be employed so as to limit access of such operations to authorized personnel only.

5.2.5 If the operation of a key is able to cause dangerous operating conditions, measures should be taken to prevent the instruction in question from being executed by a single action such as:

- use of a special key lock,
- use of two or more keys.

5.2.6 Conflicting control interventions should be prevented by means of interlocks or warnings. The active control status should be recognizable.

5.2.7 The operation of input devices should be logical and correspond to the direction of action of the controlled equipment.

## **5.3 Output devices**

5.3.1 The size, colour and density of text and graphic information displayed on a visual display unit should be such that it may be easily read from the normal operator position under all operational lighting conditions. The brightness and contrast should be capable of being adjusted to the prevailing ambient conditions.

5.3.2 Information should be displayed in a logical priority.

5.3.3 If alarm messages are displayed on colour monitors, the distinctions in the alarm status should be ensured even in the event of failure of a primary colour.

## **5.4 Graphical user interface**

- 5.4.1 Information should be presented clearly and intelligibly according to its functional significance and association. Screen contents should be logically structured and their representation should be restricted to the data which is directly relevant for the user.
- 5.4.2 When using general purpose graphical user interfaces, only the functions necessary for the respective process should be available.
- 5.4.3 Alarms should be visually and audibly presented with priority over other information in every operating mode of the system; they should be clearly distinguishable from other information.
- 5.4.4 All display and control functions in control stations operated by the same operators should adopt a consistent user interface. Particular attention should be paid to:
- symbols;
  - colours;
  - controls;
  - information priorities;
  - layout.

## **6 Training**

- 6.1 Training should be provided at a level required to effectively operate and maintain the system and should cover normal, abnormal and emergency conditions. The user interface for training should correspond with the real system.
- 6.2 Documentation should be provided to support the training and should be available for repeated use on board.
- 6.3 Where a training mode is incorporated in a computer-based system it should be clearly indicated when the training mode is active.
- 6.4 Whilst in the training mode the operation of the system should not be impaired, and neither should any system alarms or indications be inhibited.

## **7 Testing**

- 7.1 Evidence should be furnished to the satisfaction of the Administration that the installed computer-based systems have been designed, manufactured and tested in accordance with these Guidelines.\* In the case of any integrated systems such evidence should be furnished by a single party responsible for the integration.

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\*Reference is also made to the following International Electrotechnical Commission (IEC) Publications:  
92 - *Electrical Installation in Ships*.  
533 - *Electromagnetic compatibility of electrical and electronic installation in ships*.  
945 - *Marine navigational equipment - General requirements - Methods of testing and required results*.



- 7.2 In addition to these Guidelines manufacturers should ensure by means of a quality control system that their products meet with their specifications.
- 7.3 Tests and inspections should be carried out with the aim of establishing the correct operation and the quality of a product (see also 3.3.2).
- 7.4 Modifications of program contents and data, as well as a change of version, should be tested (see also 3.3.3).

## APPENDIX

### GUIDELINES FOR SHIPBOARD LOADING AND STABILITY COMPUTER PROGRAMS

#### 1 Scope

These guidelines may be applied where computer-based systems are used to perform functions, such as:

- predicting draughts and trim and verifying that limiting stability parameters, such as "required  $GM_T$ " are met;
- tank instrumentation systems used to provide direct electronic input of liquid loads (cargo, fuel, ballast, etc.) into the computer, bypassing the human measurement and data entry steps;
- operators of containerships may want to verify that over-the-bow bridge visibility requirements are met;
- operators of chemical parcel tankers may want to integrate chemical compatibility data to create voyage-specific/cargo-specific loading plans, thereby optimizing cargo flexibility;
- similarly, OBO operators may want a system which can accommodate multiple bulk cargoes of different densities and compute bending stresses with more precision;
- a program system could be used to monitor real-time hull bending stresses during loading/discharging operations, or due to sea conditions while under way via sensor systems that provide direct input to the computer; and
- a calculating damage stability conditions integrating loading data and flooded compartment characteristics.

#### 2 General requirements

2.1 *Units:* Basic stability calculations are performed using weights, typically Ltons or Mtons. However, some cargoes are more commonly measured in short tons, TEUs, or barrels. Other liquid loads (fuel and ballast) might be initially measured as soundings or ullages. The program developer may wish to make its program more convenient for the user to enter data in these alternate units. If so, the program should minimize chances for unit confusion and, wherever possible, weight conversions should be calculated by the computer. Screen displays and print-outs should then present both the entered value and the computational weight value side-by-side.

2.2 *Data and program protection:* Although the program should be flexible enough to allow the user to override default data, certain data, such as lightship characteristics, allowable bending stress, required GM, as well as the program itself, should be protected against user revision. This could be achieved by furnishing the ship with compiled or read-only versions.

2.3 *Back-up of data:* Copies of all constant data residing in computer files, such as ship geometry and tables, should be available on independent storage units, such as tape or floppy disks. The number of such copies should not be less than two.

### **3 User interface**

3.1 *"Home" screen:* The program should have a simple command (keystroke/icon) that returns the user directly to a familiar "home" screen from any of the loading screens. This allows a "lost" user (who may have got disoriented among various loading screens) to quickly re-establish their orientation.

3.2 *"Help" functions:* The program should have easily-accessed "help" functions such as designated function keys, or an on-screen menu bar.

3.3 *Default loading:* A default loading condition should reflect any special loading or operating requirements imposed by the ship's stability booklet (such as locked-in ballast requirements).

3.4 *Input and output data screening:* The program should check data entered by the user for reasonableness in order to screen out possible input errors, for example, a cargo tank entry which exceeds the capacity of the tank. The program should not reject the entry as there may be special loading scenarios where unusual data must be entered, but it should clearly indicate to the user that the entry is out of expected bounds. Similarly, the program should alert the user if an output parameter such as "predicted GM" is out of expected bounds.

3.5 *Alerts:* The system should alert the user if an output indicates a critical, or possibly dangerous situation. Alerts should, when possible, be augmented by audio signals. It is recommended that the graphical presentation and audio signals are different in case of critical events and user errors.

3.6 *Extra loading entry lines:* In most cases, load entries will be of the fixed-location type where LCGs, VCGs, etc., are pre-displayed and the user only needs to enter a weight value. However, the program should include several extra blank lines to allow additional non-fixed load entries where the user can enter VCG, LCG, TCG, etc. Examples of non-fixed load entries might be an unusual deck cargo, temporary ballast or damaged stability calculations (where a flooded compartment could be entered as if it were a tank).

3.7 *Print-outs:* Each loading condition print-out should automatically contain the name of the ship and the date of print-out; user should be prompted to enter a title for the condition as well. This information should be repeated on each page of the print-out.

### **4 Training and documentation**

4.1 *User training:* Training/tutorial material should be provided, as appropriate, for the sophistication of the program. This may range from formal classroom sessions to tutorial videotapes and/or self-study lesson plans.

4.2 *Documentation:* The software should be accompanied by a user's manual and a programmer's manual.

4.2.1 The user's manual should be written for the direct user (ship's officers) and should include the following elements:

- .1 *Identification:* the manual should have a unique identification number that matches an on-screen ID number in the program. It should also clearly identify the stability booklet from which the lightship data is taken.

- .2 *System requirements:* identifies computer system hardware and software requirements such as compatible computers, operating system, memory requirements and other special requirements, such as video graphics, mouse, printer, etc.
- .3 *File management:* a list of all relevant software files, giving name, size, date and a brief description of each. The manual should also explain how any user-generated files, such as saved loading conditions, are named. These measures should allow the user to review the disk directory and verify that the correct current files are present.
- .4 *Instructions:* a clear explanation of how to install, use, and troubleshoot the program. The instructions should be user-friendly, recognizing that the user is a ship officer.
- .5 *Information sources:* a list of all ship-specific plans, drawings, tables, other documents, etc., which provided information used in the program. In most cases, this information will probably come from the ship's approved stability booklet; however, other sources should be clearly identified. Ideally, all such information sources should themselves be annotated to the effect that they were used in developing the program (so that future revisions to the drawing will also prompt a review of the program).

4.2.2 *The programmer's manual* is not expected to be furnished to the ship; it is for use by select persons familiar with programming (but who may not necessarily be the original program writers) when it becomes necessary to revise the program as a consequence of changes to the ship. The programmer's manual should carefully document the program's workings, and include a flowchart and an annotated program listing. This manual should explain how to edit the program, especially to revise ship-specific data (lightship data, hydrostatic characteristics, weight and moment data, tank capacities, etc.).

4.3 *Program and documentation control:* A careful procedure should be established so that revisions to the program are properly tracked and forwarded to the ship. Each revision delivered to the ship should include change pages to the user's manual and instructions on how to delete obsolete files and install replacement (revised) files. The process should include an "action complete" report back to shoreside management.

## **5 Program functionality**

*Program functionality:* A manner for independently verifying the program's functioning should be provided. Ideally, the opening screen (when the program is first brought up) should present a self-diagnostic report on program functioning. Alternatively, a range of sample loading conditions can be furnished (on paper) which can be manually entered into the program for comparison with correct draughts, trim and available GM. The sample conditions may be the same as found in the ship's approved stability booklet, or separate samples included in the program's user manual.



Ref. T2-OSS/2.7

SN.1/Circ.207/Rev.1  
22 October 2007

## DIFFERENCES BETWEEN RCDS AND ECDIS

1 The Maritime Safety Committee, at its eighty-third session (3 to 12 October 2007), adopted revised performance standards for Electronic Chart Display and Information Systems (ECDIS) and accordingly agreed to the revision of SN/Circ.207 on difference between Raster Chart Display System (RCDS) and ECDIS.

2 ECDIS has the ability to operate in two modes:

- .1 the ECDIS mode when Electronic Navigational Charts (ENCs) are used; and
- .2 the RCDS mode when ENCs are not available and Raster Navigational Charts (RNCs) are used instead.

However, the RCDS mode does not have the full functionality of ECDIS, and can only be used together with an appropriate portfolio of up-to-date paper charts.

3 The mariners' attention is therefore drawn to the following limitations of the RCDS mode:

- .1 unlike ENC, where there are no displayed boundaries, RNCs are based on paper charts and as such have boundaries which are evident in ECDIS;
- .2 RNCs will not trigger automatic alarms (e.g., anti-grounding). However alarms and indications can be generated with the manual addition, during passage planning, e.g., of clearing lines, ship safety contour lines, isolated danger markers and danger areas to mitigate these limitations;
- .3 horizontal datums and chart projections may differ between RNCs. Mariners should understand how a chart's horizontal datum relates to the datum of the position fixing system in use. In some instances, this may appear as a shift in position. This difference may be most noticeable at grid intersections;
- .4 a number of RNCs cannot be referenced to either WGS-84 or PE 90 geodetic datums. Where this is the case, ECDIS should give a continuous indication;
- .5 the display of RNCs features cannot be simplified by the removal of features to suit a particular navigational circumstance or task at hand. This could affect the superimposition of radar/ARPA;
- .6 without selecting different scale charts the look-ahead capability may be limited. This may lead to inconvenience when determining range and bearing or the identity of distant objects;

- .7 orientation of the RCDS display to other than chart-up, may affect the readability of chart text and symbols (e.g., course-up, route-up);
  - .8 it is not possible to interrogate RNC features to gain additional information about charted objects. Whether using ENC or RNC, in the planning process a navigator should consult all relevant publications (such as sailing directions, etc.);
  - .9 with RNC it is not possible to display a ship's safety contour or safety depth and highlight it on the display, unless these features are manually entered during route planning;
  - .10 depending on the source of the RNC, different colours may be used to show similar chart information. There may also be differences in colours used during day and night time;
  - .11 an RNC is intended to be used at the scale of the equivalent paper chart. Excessive zooming in or zooming out can seriously degrade the displayed image. If the RNC is displayed at a larger scale than the equivalent paper chart, the ECDIS will provide an indication; and
  - .12 ECDIS provides an indication in the ENC which allows a determination of the quality of hydrographic the data. When using RNCs, mariners are invited to consult the source diagram or the zone of confidence diagram, if available.
- 4 Member Governments are requested to bring this information to the attention of the relevant authorities and all seafarers for guidance and action, as appropriate.





SUB-COMMITTEE ON  
RADIOCOMMUNICATIONS AND  
SEARCH AND RESCUE  
12th session  
Agenda item 4.2

COMSAR 12/4  
30 November 2007  
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## ITU MARITIME RADIOCOMMUNICATION MATTERS

### ITU World Radiocommunication Conference

#### Outcome of the World Radiocommunication Conference, 2007 (WRC-07)

#### Note by the Secretariat

#### SUMMARY

**Executive summary:** This document provides information on the outcome of the ITU World Radiocommunication Conference, 2007, on issues of relevance to IMO

**Action to be taken:** Paragraph 15

**Related documents:** MSC 78/26, paragraph 16.6;  
MSC 80/24, paragraph 13.6;  
MSC 81/25, paragraphs 15.4 and 15.5 and annex 37;  
MSC 82/8/3 annex 4;  
MSC 82/24, paragraphs 8.69 to 8.71;  
COMSAR 8/18, paragraph 4.4 and annex 3;  
COMSAR 9/19, paragraphs 4.12 to 4.16; and  
COMSAR 10/16, paragraphs 4.3 to 4.20 and annexes 7 and 8

#### Introduction

1 Having considered the proposal by COMSAR 8, MSC 78 approved the establishment of a Joint IMO/ITU experts group (the group) for preparation of an IMO position to WRC-07, with the terms of reference given in annex 3 to COMSAR 8/18. MSC 80 and MSC 81 re-established the group following proposals by COMSAR 9 and COMSAR 10 and in total the group met three times. The group drafted a draft IMO position to WRC-07 at its meetings in June 2004 and June 2005 and a draft Supplementary advice at its meeting in July 2006.

2 COMSAR 10 prepared the draft IMO position on relevant agenda items of WRC-07 for submission to MSC 81 for approval.

3 MSC 81 approved the draft IMO position on WRC-07 agenda items concerning matters relating to maritime services, set out in MSC 81/25 annex 37 and authorized the Secretariat to convey the approved IMO position to the appropriate ITU bodies for consideration.

4 MSC 82 approved the Supplementary advice on the IMO position paper and instructed the Secretariat to submit it to the appropriate ITU bodies for consideration.

5 As instructed by the Committee, the Secretariat conveyed the IMO position and the Supplementary advice to ITU. For the second Conference Preparatory Meeting for WRC-07 (CPM-07-2), the IMO position was made available as document CPM07-2/5 dated 14 November 2006 and for the WRC-07 as “IMO information paper” document 21 dated 27 June 2007.

6 CPM-07-2 took place in Geneva, Switzerland, from 19 February to 2 March 2007. The IMO Secretariat was not able to attend CPM-07-2 because the meeting was held partly in parallel with COMSAR 11, after ITU had rescheduled CPM-07-2. WRC-07 took place in Geneva, Switzerland, from 22 October to 16 November 2007. The IMO Secretariat participated in the WRC-07 as an observer from 22 to 26 October and from 31 October to 6 November 2007.

7 For the maritime services most important agenda item of WRC-07 was Agenda item 1.14 ‘to review the operational procedures and requirements of the GMDSS and other related provisions of the Radio Regulations and the continued transition to the GMDSS, the experience since its introduction, and the needs of all classes of ships’. The provisions of Chapter VII of the Radio Regulations (Distress and safety communications) have been aligned with decisions taken in IMO after the introduction of the GMDSS, in line with the IMO position on this agenda item. Appendix 13, dealing with the pre-GMDSS radio procedures, has been deleted and still the relevant parts of this appendix have been incorporated into Chapter VII of the Radio Regulations (RR). The satellite detection of AIS on the existing two frequencies has been allocated and regulatory protection has been added for the use of DSC Channel 70.

8 Under agenda item 1.3 (X band/9-10 GHz) the Radiolocation service has been upgraded in parts of the band to primary and primary allocations have been added in parts of the band to the Earth Exploration-Satellite Service and the Space Research Service. In all cases a footnote has been added requiring that these services shall not cause harmful interference to, nor claim protection from the Maritime Radionavigation Service. This is similar to the result of WRC-03 where radiolocation was raised to primary in the S band.

9 Agenda item 1.4 was to consider frequency-related matters for the future development of IMT-2000 and systems beyond IMT-2000 (IMT/International Mobile Telecommunication). Additional spectrum for IMT-2000 has been allocated in the frequency range 3.4 – 3.6 GHz. Footnotes have been added to protect the existing services in this band, including the fixed satellite service in which Inmarsat feeder links are operating.

10 Agenda item 1.13 was to review the allocations to all services in the HF bands between 4 MHz and 10 MHz. Among other issues, under this agenda item the Conference had to consider the outcome of studies on Resolutions 351 (WRC-03), dealing with the review of the frequency and channel arrangements in the MF and HF bands allocated to the maritime mobile service with a view to improving efficiency by considering the use of new digital technology by the maritime mobile service. The controversial issue concerning proposals for extra spectrum for broadcasting was discussed for weeks, resulting in a ‘No Change’ in the end. Accordingly the proposed changes to Appendix 17 to re-plan the HF maritime bands channels were also not accepted and Resolution 351 was retained with a new agenda item for WRC-11.

11 Agenda item 1.16 was to consider the regulatory and operational provisions for Maritime Mobile Service Identities (MMSIs) for equipment other than shipborne mobile equipment. The Conference noted the fact that there is an increase in the use of MMSIs for all kind of applications (for instance AIS) and incorporated the relevant Recommendation ITU-R M.585-4 by reference into Article 19 of the RR with the view to further develop this recommendation in (the new) Study group 5, as appropriate.

12 A provisional agenda for WRC-11 was developed under Agenda item 7.2. In general, to identify any threats to spectrum currently in use by maritime services, it is important to monitor closely what is happening in the development of proposals for almost all WRC agenda items. There are several items on the provisional agenda for WRC-11 of relevance to the maritime service, *inter alia*:

- .1 to revise frequencies and channelling arrangements of Appendix 17 to the Radio Regulations, in accordance with Resolution 351 (Rev.WRC-07), in order to implement new digital technologies for the maritime mobile service (agenda item 1.9); and
- .2 to examine the frequency allocation requirements with regard to operation of safety systems for ships and ports and the related regulatory provisions, in accordance with Resolution [COM6/10] (WRC-07) (agenda item 1.10).

13 Based on Provisional Final Acts, WRC-07's decisions on issues of relevance to the Organization are annexed as follows:

- .1 modified Articles 4, 5, 19, 20, 28, 30, 31, 32, 33, 34, 41, 47, 50, 51, 52, 54, 55, 56 and 57 (annex 1);
- .2 suppression of Appendix 13 and 19, and modified Appendixes 14, 15, 16, 17 and 18 (annex 2);
- .3 revised Resolution 18 (Rev. WRC-07) – Relating to the procedure for identifying and announcing the position of ships and aircraft of States not parties to an armed conflict (annex 3);
- .4 revised Resolution 222 (Rev. WRC-07) – Use of the bands 1 525-1 559 MHz and 1 626.5-1 660.5 MHz by the mobile-satellite service, and studies to ensure long-term spectrum availability for the aeronautical mobile-satellite (R) service (annex 4);
- .5 revised Resolution 331 (Rev. WRC-07) – Transition to the Global Maritime Distress and Safety System (GMDSS) (annex 5);
- .6 revised Resolution 339 (Rev. WRC-07) – Co-ordination of NAVTEX services (annex 6);
- .7 suppression of Resolution 340 (Rev. WRC-97) – Need for additional search and rescue information in databases (annex 7);
- .8 revised Resolution 351 (Rev. WRC-07) – Review of the frequency and channel arrangements in the HF bands allocated to the maritime mobile service contained in Appendix 17 with a view to improving efficiency through the use of new digital technology by the maritime mobile service (annex 8);
- .9 suppression of Resolution 353 (WRC-03) – Maritime mobile service identities for equipment other than shipborne mobile equipment (annex 9);

- .10 suppression of Resolution 747 (WRC-03) – Possible upgrade of the radiolocation service to primary allocation status in the frequency bands 9 000-9 200 MHz and 9 300-9 500 MHz, and possible extension of the existing primary allocations to the Earth exploration-satellite service (active) and the space research service (active) in the band 9 500-9 800 MHz (annex 10);
- .11 Resolution [COM4/3] (WRC-07) – Distress and safety radiotelephony procedures for 2 182 kHz (annex 11);
- .12 Resolution [COM4/6] (WRC-07) – Content, formats and periodicity of the maritime related service publications (annex 12);
- .13 Resolution [COM4/10] (WRC-07) – ITU maritime service information registration (annex 13);
- .14 Resolution [COM6/7] (WRC-07) – Agenda for the 2011 World Radiocommunication Conference (annex 14);
- .15 Resolution [COM6/10] (WRC-07) – Consideration of regulatory provisions and spectrum allocations for use by enhanced maritime safety systems for ships and ports (annex 15);
- .16 Resolution [COM6/14] (WRC-07) – Use of portion of the VHF band by the radiolocation service (annex 16);
- .17 Resolution [COM6/15] (WRC-07) – Use of the radiolocation service between 3 and 50 MHz to support high-frequency oceanographic radar operations (annex 17); and
- .18 Resolution [COM6/22] (WRC-07) – Preliminary agenda for the 2015 World Radiocommunication Conference (annex 18).

14 As reflected above, most of IMO positions were taken into account by the Conference.

#### **Action requested of the Sub-Committee**

- 15 The Sub-Committee is invited to:
- .1 consider the outcome of WRC-07 as provided in this document and take action, as appropriate; and
  - .2 consider the need for the establishment of a joint IMO/ITU working group to start the preparation of an IMO position on maritime issues for WRC-11.

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**Legend:**

- AERO-SAR** These aeronautical carrier (reference) frequencies may be used for distress and safety purposes by mobile stations engaged in co-ordinated search and rescue operations.
- D&S-OPS** The use of these bands is limited to distress and safety operations of satellite emergency position-indicating radio beacons (EPIRBs).
- SAT-COM** These frequency bands are available for distress and safety purposes in the maritime mobile-satellite service (see Notes).
- VHF-CH#** These VHF frequencies are used for distress and safety purposes. The channel number (CH#) refers to the VHF channel as listed in Appendix 18, which should also be consulted.
- AIS** These frequencies are used by automatic identification systems (AIS), which should operate in accordance with the most recent version of Recommendation ITU-R M.1371. (WRC-07)

\* Except as provided in these Regulations, any emission capable of causing harmful interference to distress, alarm, urgency or safety communications on the frequencies denoted by an asterisk (\*) is prohibited. Any emission causing harmful interference to distress and safety communications on any of the discrete frequencies identified in this Appendix is prohibited. (WRC-07)

**MOD** COM4/332/177 (B14/365/40) (R7/411/210)

APPENDIX 16 (Rev.WRC-07)  
(See Articles 42 and 51)

**Section I – Ship stations for which a Global Maritime Distress and Safety System installation is required by international agreement**

These stations shall be provided with:

- 1 the licence prescribed by Article 18;
- 2 certificates of the operator or operators;
- 3 a log in which the following are recorded as they occur, together with the time of the occurrence, unless administrations have adopted other arrangements for recording all information which the log should contain:
  - a) a summary of communications relating to distress, urgency and safety traffic;
  - b) a reference to important service incidents;
- 4 the *List of Ship Stations and Maritime Mobile Service Identity Assignments* (see Article 20) in either printed or electronic format;
- 5 the *List of Coast Stations and Special Service Stations* (see Article 20) in either printed or electronic format;

6 the *Manual for Use by the Maritime Mobile and Maritime Mobile-Satellite Services* (see Article 20) in either printed or electronic format.

NOTE – An administration may exempt a ship from the carriage of the documents mentioned in items 5 and 6 above under various circumstances (for example, when that ship carries equivalent information for the ship's specified trading area).

## **Section II – Other ship stations for which a radio installation is required by regional or international agreement**

These stations shall be provided with:

- 1 the licence prescribed by Article 18;
- 2 certificates of the operator or operators;
- 3 a log or other arrangements which the administration may have adopted for that purpose, in which a summary of communications related to distress, urgency and safety traffic shall be recorded together with the time of their occurrence;
- 4 the *List of Coast Stations and Special Service Stations* (see Article 20) in either printed or electronic format;
- 5 the relevant rules and procedures of radiocommunications, e.g. *Manual for Use by the Maritime Mobile and Maritime Mobile-Satellite Services* (paper or electronic format) (see Article 20).

NOTE – An administration may exempt a ship from the carriage of the documents mentioned in items 4 and 5 above under various circumstances (for example, when that ship carries equivalent information for the ship's specified trading area).

## **Section III – Other ship stations**

These stations shall be provided with:

- 1 the documents mentioned in items 1 and 2 of Section II;
- 2 the documents mentioned in items 4 and 5 of Section II, in accordance with the requirements of the administrations concerned.

NOTE – An administration may exempt a ship from the carriage of the documents mentioned in item 2 above under various circumstances (for example, when that ship carries equivalent information for the ship's specified trading area). Administrations may also, by mutual agreement, exempt ships travelling only between their national jurisdictions from the licensing prescribed by Article 18 and the carriage of the documents mentioned in item 1 above, provided those vessels are otherwise licensed or authorized by regulation.