

Adoption: 1 November 1974
Entry into force: 25 May 1980

[Introduction and history](#)
[Amendment procedure](#)
[Technical provisions](#)
[Chapter I - General Provisions](#)
[Chapter II-1 - Construction - Subdivision and stability, machinery and electrical installations](#)
[Chapter II-2 - Fire protection, fire detection and fire extinction](#)
[Chapter III - Life-saving appliances and arrangements](#)
[Chapter IV - Radiocommunications](#)
[Chapter V - Safety of navigation](#)
[Chapter VI - Carriage of Passengers](#)
[Chapter VII - Carriage of dangerous goods](#)
[Chapter VIII - Nuclear ships](#)
[Chapter IX - Management for the Safe Operation of Ships](#)
[Chapter X - Safety measures for high-speed craft](#)
[Chapter XI-1 - Special measures to enhance maritime safety](#)
[Chapter XI-2 - Special measures to enhance maritime security](#)
[Chapter XII - Additional safety measures for bulk carriers](#)

[Amendments year by year](#)

Introduction and history

The SOLAS Convention in its successive forms is generally regarded as the most important of all international treaties concerning the safety of merchant ships. The first version was adopted in 1914, in response to the **Titanic** disaster, the second in 1929, the third in 1948, and the fourth in 1960.

The **1960** Convention - which was adopted on 17 June 1960 and entered into force on 26 May 1965 - was the first major task for IMO after the Organization's creation and it represented a considerable step forward in modernizing regulations and in keeping pace with technical developments in the shipping industry.

The intention was to keep the Convention up to date by periodic amendments but in practice the amendments procedure proved to be very slow. It became clear that it would be impossible to secure the entry into force of amendments within a reasonable period of time.

As a result, a completely new Convention was adopted in 1974 which included not only the amendments agreed up until that date but a new amendment procedure - the tacit acceptance procedure - designed to ensure that changes could be made within a specified (and acceptably short) period of time.

Instead of requiring that an amendment shall enter into force after being accepted by, for example, two thirds of the Parties, the tacit acceptance procedure provides that an amendment shall enter into force on a specified date unless, before that date, objections to the amendment are received from an agreed number of Parties.

As a result the 1974 Convention has been updated and amended on numerous occasions. The Convention in force today is sometimes referred to as SOLAS, 1974, as amended.

Amendment procedure

Article VIII of the SOLAS 1974 Convention states that amendments can be made either:

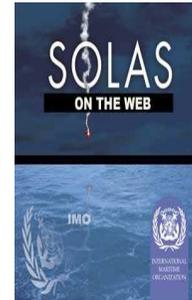
After consideration within IMO

Amendments proposed by a Contracting Government are circulated at least six months before consideration by the Maritime Safety Committee (MSC) - which may refer discussions to one or more IMO Sub-Committees - and amendments are adopted by a two-thirds majority of Contracting Governments present and voting in the MSC. Contracting Governments of SOLAS, whether or not Members of IMO are entitled to participate in the consideration of amendments in the so-called "expanded MSC".

Amendments by a Conference

A Conference of Contracting Governments is called when a Contracting Government requests the holding of a Conference and at least one-third of Contracting Governments agree to hold the Conference. Amendments are adopted by a two-thirds majority of Contracting Governments present and voting.

In the case of both a Conference and the expanded MSC, amendments (other than to Chapter I) are deemed to have been accepted at the end of a set period of time following communication of the adopted amendments to Contracting Governments, unless a specified number of Contracting Governments object. The length of time from communication of amendments to deemed acceptance is set at two years unless another period of time - which must not be less than one year - is determined by two-thirds of Contracting Governments at the time of adoption. Amendments to Chapter I are deemed accepted after positive acceptance by two-thirds of Contracting Governments.



- ▶ Conventions
- ▶ Depository Information on IMO Conventions
- ▶ Status of Conventions - Summary
- ▶ Status of Conventions by country
- ▶ Convention on the International Maritime Organization
- ▶ Latest Ratifications
- ▶ Action Dates (Entry into force dates)
- ▶ SOLAS
- ▶ COLREG
- ▶ STCW
- ▶ SAR
- ▶ SUA
- ▶ Load Lines
- ▶ MARPOL
- ▶ Ship Recycling Convention
- ▶ Removal of Wrecks
- ▶ Anti-fouling Systems
- ▶ Ballast Water Management
- ▶ Liability and Compensation Conventions
- ▶ Maritime Safety Conventions
- ▶ Maritime Security
- ▶ Prevention of Marine Pollution Conventions
- ▶ Other IMO Conventions
- ▶ List of Conventions
- ▶ Abbreviations of Conventions
- ▶ Sources and citations

Amendments enter into force six months after their deemed acceptance.

The minimum length of time from circulation of proposed amendments through entry into force is 24 months - circulation: six months, adoption to deemed acceptance date: 12 months minimum; deemed acceptance to entry into force: six months.

However, a resolution adopted in 1994 makes provision for an accelerated amendment procedure to be used in exceptional circumstances - allowing for the length of time from communication of amendments to deemed acceptance to be cut to six months in exceptional circumstances and when this is decided by a Conference. In practice to date, the expanded MSC has adopted most amendments to SOLAS, while Conferences have been held on several occasions - notably to adopt whole new Chapters to SOLAS or to adopt amendments proposed in response to a specific incident.

Technical provisions

The main objective of the SOLAS Convention is to specify minimum standards for the construction, equipment and operation of ships, compatible with their safety. Flag States are responsible for ensuring that ships under their flag comply with its requirements, and a number of certificates are prescribed in the Convention as proof that this has been done. Control provisions also allow Contracting Governments to inspect ships of other Contracting States if there are clear grounds for believing that the ship and its equipment do not substantially comply with the requirements of the Convention - this procedure is known as port State control. The current SOLAS Convention includes Articles setting out general obligations, amendment procedure and so on, followed by an Annex divided into 12 Chapters.

Chapter I - General Provisions

Includes regulations concerning the survey of the various types of ships and the issuing of documents signifying that the ship meets the requirements of the Convention. The Chapter also includes provisions for the control of ships in ports of other Contracting Governments.

Chapter II-1 - Construction - Subdivision and stability, machinery and electrical installations

The subdivision of passenger ships into watertight compartments must be such that after assumed damage to the ship's hull the vessel will remain afloat and stable. Requirements for watertight integrity and bilge pumping arrangements for passenger ships are also laid down as well as stability requirements for both passenger and cargo ships.

The degree of subdivision - measured by the maximum permissible distance between two adjacent bulkheads - varies with ship's length and the service in which it is engaged. The highest degree of subdivision applies to passenger ships.

Requirements covering machinery and electrical installations are designed to ensure that services which are essential for the safety of the ship, passengers and crew are maintained under various emergency conditions. The steering gear requirements of this Chapter are particularly important.

Chapter II-2 - Fire protection, fire detection and fire extinction

Includes detailed fire safety provisions for all ships and specific measures for passenger ships, cargo ships and tankers.

They include the following principles: division of the ship into main and vertical zones by thermal and structural boundaries; separation of accommodation spaces from the remainder of the ship by thermal and structural boundaries; restricted use of combustible materials; detection of any fire in the zone of origin; containment and extinction of any fire in the space of origin; protection of the means of escape or of access for fire-fighting purposes; ready availability of fire-extinguishing appliances; minimization of the possibility of ignition of flammable cargo vapour.

Chapter III - Life-saving appliances and arrangements

The Chapter includes requirements for life-saving appliances and arrangements, including requirements for life boats, rescue boats and life jackets according to type of ship.

The International Life-Saving Appliance (LSA) Code gives specific technical requirements for LSAs and is mandatory under Regulation 34, which states that all life-saving appliances and arrangements shall comply with the applicable requirements of the LSA Code.

Chapter IV - Radiocommunications

The Chapter incorporates the Global Maritime Distress and Safety System (GMDSS). All passenger ships and all cargo ships of 300 gross tonnage and upwards on international voyages are required to carry equipment designed to improve the chances of rescue following an accident, including satellite emergency position indicating radio beacons (EPIRBs) and search and rescue transponders (SARTs) for the location of the ship or survival craft.

Regulations in Chapter IV cover undertakings by contracting governments to provide radiocommunication services as well as ship requirements for carriage of radiocommunications

equipment. The Chapter is closely linked to the Radio Regulations of the International Telecommunication Union.

Chapter V - Safety of navigation

Chapter V identifies certain navigation safety services which should be provided by Contracting Governments and sets forth provisions of an operational nature applicable in general to all ships on all voyages. This is in contrast to the Convention as a whole, which only applies to certain classes of ship engaged on international voyages.

The subjects covered include the maintenance of meteorological services for ships; the ice patrol service; routing of ships; and the maintenance of search and rescue services.

This Chapter also includes a general obligation for masters to proceed to the assistance of those in distress and for Contracting Governments to ensure that all ships shall be sufficiently and efficiently manned from a safety point of view.

The chapter makes mandatory the carriage of voyage data recorders (VDRs) and automatic ship identification systems (AIS) for certain ships.

Chapter VI - Carriage of Cargoes

The Chapter covers all types of cargo (except liquids and gases in bulk) "which, owing to their particular hazards to ships or persons on board, may require special precautions".

The regulations include requirements for stowage and securing of cargo or cargo units (such as containers).

The Chapter requires cargo ships carrying grain to comply with the International Grain Code.

Chapter VII - Carriage of dangerous goods

The regulations are contained in three parts:

Part A - Carriage of dangerous goods in packaged form - includes provisions for the classification, packing, marking, labelling and placarding, documentation and stowage of dangerous goods. Contracting Governments are required to issue instructions at the national level and the Chapter makes mandatory the International Maritime Dangerous Goods (IMDG) Code, developed by IMO, which is constantly updated to accommodate new dangerous goods and to supplement or revise existing provisions.

Part A-1 - Carriage of dangerous goods in solid form in bulk - covers the documentation, stowage and segregation requirements for these goods and requires reporting of incidents involving such goods.

Part B covers Construction and equipment of ships carrying dangerous liquid chemicals in bulk and requires chemical tankers built after 1 July 1986 to comply with the International Bulk Chemical Code (IBC Code).

Part C covers Construction and equipment of ships carrying liquefied gases in bulk and gas carriers constructed after 1 July 1986 to comply with the requirements of the International Gas Carrier Code (IGC Code).

Part D includes special requirements for the carriage of packaged irradiated nuclear fuel, plutonium and high-level radioactive wastes on board ships and requires ships carrying such products to comply with the International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on Board Ships (INF Code).

The chapter requires carriage of dangerous goods to be in compliance with the relevant provisions of the International Maritime Dangerous Goods Code (IMDG Code). The IMDG Code was first adopted by IMO in 1965 and has been kept up to date by regular amendments, including those needed to keep it in line with United Nations Recommendations on the Transport of Dangerous Goods which sets the basic requirements for all the transport modes

Chapter VIII - Nuclear ships

Gives basic requirements for nuclear-powered ships and is particularly concerned with radiation hazards. It refers to detailed and comprehensive Code of Safety for Nuclear Merchant Ships which was adopted by the IMO Assembly in 1981.

Chapter IX - Management for the Safe Operation of Ships

The Chapter makes mandatory the International Safety Management (ISM) Code, which requires a safety management system to be established by the shipowner or any person who has assumed responsibility for the ship (the "Company").

Chapter X - Safety measures for high-speed craft

The Chapter makes mandatory the International Code of Safety for High-Speed Craft (HSC Code).

Chapter XI-1 - Special measures to enhance maritime safety

The Chapter clarifies requirements relating to authorization of recognized organizations (responsible for carrying out surveys and inspections on Administrations' behalves); enhanced surveys; ship identification number scheme; and port State control on operational requirements.

Chapter XI-2 - Special measures to enhance maritime security

The Chapter was adopted in December 2002 and entered into force on 1 July 2004. Regulation XI-2/3 of the new chapter enshrines the International Ship and Port Facilities Security Code (ISPS Code). Part A of the Code is mandatory and part B contains guidance as to how best to comply with the mandatory requirements. The regulation requires Administrations to set security levels and ensure the provision of security level information to ships entitled to fly their flag. Prior to entering a port, or whilst in a port, within the territory of a Contracting Government, a ship shall comply with the requirements for the security level set by that Contracting Government, if that security level is higher than the security level set by the Administration for that ship.

Regulation XI-2/8 confirms the role of the Master in exercising his professional judgement over decisions necessary to maintain the security of the ship. It says he shall not be constrained by the Company, the charterer or any other person in this respect.

Regulation XI-2/5 requires all ships to be provided with a ship security alert system, according to a strict timetable that will see most vessels fitted by 2004 and the remainder by 2006. When activated the ship security alert system shall initiate and transmit a ship-to-shore security alert to a competent authority designated by the Administration, identifying the ship, its location and indicating that the security of the ship is under threat or it has been compromised. The system will not raise any alarm on-board the ship. The ship security alert system shall be capable of being activated from the navigation bridge and in at least one other location.

Regulation XI-2/6 covers requirements for port facilities, providing among other things for Contracting Governments to ensure that port facility security assessments are carried out and that port facility security plans are developed, implemented and reviewed in accordance with the ISPS Code.

Other regulations in this chapter cover the provision of information to IMO, the control of ships in port, (including measures such as the delay, detention, restriction of operations including movement within the port, or expulsion of a ship from port), and the specific responsibility of Companies.

Chapter XII - Additional safety measures for bulk carriers

The Chapter includes structural requirements for bulk carriers over 150 metres in length.

Amendments year by year

[The Protocol of 1978 - Tanker safety and pollution prevention](#)
[The 1981 amendments -chapter II-1 and II-2 updated](#)
[The 1983 amendments -revised chapter III](#)
[The 1988 \(April\) amendments - post Herald of Free Enterprise](#)
[The 1988 \(October\) amendments - stability of passenger ships](#)
[The 1988 Protocol - HSSC](#)
[The 1988 amendments - GMDSS](#)
[The 1989 amendments - chapters II-1 and II-2](#)
[The 1990 amendments - subdivision and stability: probabilistic approach](#)
[The 1991 amendments - revised chapter VI](#)
[The April 1992 amendments - measures for existing ro-ro passenger ships](#)
[The December 1992 amendments - fire safety of new passenger ships](#)
[The May 1994 amendments \(Conference\) - Accelerated amendment procedure](#)
[New Chapter IX - Management for the Safe Operation of Ships](#)
[New Chapter X - Safety measures for high-speed craft](#)
[New Chapter XI - Special measures to enhance maritime safety](#)
[The May 1994 amendments \(MSC\) - emergency towing, ship reporting systems](#)
[The December 1994 amendments - cargo code made mandatory](#)
[The May 1995 amendments - ships routing systems made mandatory](#)
[The November 1995 amendments \(Conference\) - ro-ro safety post-Estonia](#)
[The June 1996 amendments - revised chapter III](#)
[The December 1996 amendments - new Fire Test Procedures Code](#)
[The June 1997 amendments - Vessel Traffic Services regulation](#)
[The November 1997 amendments \(Conference\) - New chapter XII bulk carrier safety](#)
[The May 1998 amendments - amendments to chapters II-1, IV, VI](#)
[The May 1999 amendments - IBC Code made mandatory](#)
[The May 2000 amendment - helicopter landing areas](#)
[The December 2000 amendments - VDRs, AIS made mandatory in revised chapter V, revised chapter II-1](#)
[The June 2001 amendments - ch VII, ch IX](#)
[The May 2002 amendments - IMDG Code made mandatory](#)
[The December 2002 amendments \(Conference\) - measures to enhance maritime security](#)
[The December 2002 amendments - bulk carrier new regulations](#)
[The June 2003 amendments - ch V](#)
[May 2004 amendments - persons in distress at sea, accidents with lifeboats](#)
[December 2004 amendments - bulk carriers, free-fall lifeboats, S-VDRs](#)
[May 2005 amendments - revised chapter II-1](#)
[May 2006 amendments - LRIT](#)
[May 2006 amendments - other issues](#)
[December 2006 amendments - passenger ship safety](#)
[October 2007 amendments - GMDSS providers](#)
[May 2008 - mandatory casualty investigation code](#)
[December 2008 - mandatory IS code](#)
[December 2008 - mandatory IMSBC code](#)
[June 2009 - ECDIS](#)
[May 2010 - GBS](#)

The Protocol of 1978

Adoption: 17 February 1978

Entry into force: 1 May 1981

The 1978 Protocol was adopted at the International Conference on Tanker Safety and Pollution Prevention, which was convened in response to a spate of tanker accidents in 1976-1977.

The conference adopted measures affecting tanker design and operation, which were incorporated into both the SOLAS Protocol of 1978 as well as the Protocol of 1978 relating to the 1973 International Convention for the Prevention of Pollution from Ships (1978 MARPOL Protocol).

The 1978 SOLAS Protocol made a number of important changes to Chapter I, including the introduction of unscheduled inspections and/or mandatory annual surveys and the strengthening of port State control requirements. Chapter II-1, Chapter II-2 and Chapter V were also improved. The main amendments included the following:

New crude oil carriers and product carriers of 20,000 dwt and above were required to be fitted with an inert gas system.

An inert gas system became mandatory for existing crude oil carriers of 70,000 dwt and above by 1 May 1983, and by 1 May 1985 for ships of 20,000-70,000 dwt.

In the case of crude oil carriers of 20-40,000 dwt there was provision for exemption by flag States where it was considered unreasonable or impracticable to fit an inert gas system and high-capacity fixed washing machines are not used. But an inert gas system is always required when crude oil washing is operated.

An inert gas system was required on existing product carriers from 1 May 1983 and by 1 May 1985 for ships of 40-70,000 dwt and down to 20,000 dwt which were fitted with high capacity washing machines.

In addition to requiring that all ships of 1,600 grt and above be fitted with radar, the Protocol required that all ships of 10,000 grt and above have two radars, each capable of being operated independently.

All tankers of 10,000 grt and above to have two remote steering gear control systems, each operable separately from the navigating bridge.

The main steering gear of new tankers of 10,000 grt and above to comprise two or more identical power units, and be capable of operating the rudder with one or more power units.

The 1981 amendments

Adoption: 20 November 1981

Entry into force: 1 September 1984

Chapters II-1 and II-2 were re-written and updated.

In Chapter II-1, the provisions of resolution A.325(IX) Recommendation concerning regulations for machinery and electrical installations in passenger and cargo ships (adopted in November 1975) were incorporated and made mandatory. Changes to regulations 29 and 30 on steering gear introduced the concept of duplication of steering gear control systems in tankers. These measures were agreed taking into account concerns following the 1978 Amoco Cadiz disaster and relevant provisions in the 1978 SOLAS Protocol.

Chapter II-2 was re-arranged to take into account strengthened fire safety requirements for cargo ships and passenger ships.

The revised Chapter II-2 incorporated the requirements of resolution A.327(IX) *Recommendation concerning fire safety requirements for cargo ships*, which included 21 regulations based on the principles of: separation of accommodation spaces from the remainder of the ship by thermal and structural boundaries; protection of means of escape; early detection, containment or extinction of any fire; and restricted use of combustible materials. Other amendments to Chapter II-2 related to provisions for halogenated hydrocarbon extinguishing systems, special requirements for ships carrying dangerous goods, and a new regulation 62 on inert gas systems.

Some important changes were also made to Chapter V, including the addition of new requirements concerning the carriage of shipborne navigational equipment, covering such matters as gyro and magnetic compasses; the mandatory carriage of two radars and of automatic radar plotting aids in ships of 10,000 grt and above; echo-sounders; devices to indicate speed and distance; rudder angle indicators; propeller revolution indicators; rate of turn indicators; radio-direction finding apparatus; and equipment for homing on the radiotelephone distress frequency.

In addition, a few minor changes were made to Chapter III; seven regulations in Chapter IV were replaced, amended or added and a number of small changes were made to Chapter VII.

The 1983 amendments

Adoption: 17 June 1983

Entry into force: 1 July 1986

The most extensive changes involved Chapter III, which was completely rewritten. The Chapter in the 1974 Convention differed little from the texts which appeared in the 1960 and 1948 SOLAS

Conventions and the amendments were designed not only to take into account the many technical advances which had taken place since then but also to expedite the evaluation and introduction of further improvements.

There were also a few minor changes to Chapter II-1 and some further changes to Chapter II-2 (including improvements to the 1981 amendments) designed particularly to increase the safety of bulk carriers and passenger ships. Some small changes were made to Chapter IV.

Amendments to Chapter VII extended its application to chemical tankers and liquefied gas carriers by making reference to two new Codes, the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code) and the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code). Both apply to ships built on or after 1 July 1986.

The 1988 (April) amendments

Adoption: 21 April 1988

Entry into force: 22 October 1989

In March 1987 the car ferry **Herald of Free Enterprise** capsized shortly after leaving Zeebrugge in Belgium and sank with the loss of 193 lives. The United Kingdom proposed a series of measures designed to prevent a recurrence, the first package of which was adopted in April 1988.

They included new regulations 23-2 and 42-1 of Chapter II-1 intended to improve monitoring of doors and cargo areas and to improve emergency lighting.

The 1988 (October) amendments

Adoption: 28 October 1988

Entry into force: 29 April 1990

Some of these amendments also resulted from the **Herald of Free Enterprise** disaster and included details of how stability of passenger ships in a damaged condition should be determined and a requirement for all cargo loading doors to be locked before a ship leaves the berth.

The amendments also made it compulsory for passenger ships to have a lightweight survey at least every five years to ensure their stability has not been adversely affected by the accumulation of extra weight or any alterations to the superstructure.

Other amendments concerning the stability of passenger ships in the damaged condition were also adopted. These regulations had been in preparation before the **Herald of Free Enterprise** incident and their adoption was brought forward.

The 1988 Protocol (HSSC)

Adoption: 11 November 1988

Entry into force: 3 February 2000

The Protocol introduced a new harmonized system of surveys and certification (HSSC) to harmonize with two other Conventions, Load Lines and MARPOL 73/78. The aim is to alleviate problems caused by the fact that as requirements in the three instruments vary, ships may be obliged to go into dry-dock for a survey required by one convention shortly after being surveyed in connection with another.

By enabling the required surveys to be carried out at the same time, the system is intended to reduce costs for shipowners and administrations alike.

The 1988 (GMDSS) amendments

Adoption: 11 November 1988

Entry into force: 1 February 1992

IMO had begun work on the Global Maritime Distress and Safety System (GMDSS) in the 1970s and its introduction marked the biggest change to maritime communications since the invention of radio.

The amendments which replaced the existing Chapter IV phased in the introduction of the GMDSS in stages between 1993 and 1 February 1999. The basic concept of the system is that search and rescue authorities ashore, as well as ships in the vicinity, will be rapidly alerted in the event of an emergency.

The GMDSS makes great use of the satellite communications provided by Inmarsat but also uses terrestrial radio.

The equipment required by ships varies according to the sea area in which they operate - ships travelling to the high seas must carry more communications equipment than those which remain within reach of specified shore-based radio facilities. In addition to distress communications, the GMDSS also provides for the dissemination of general maritime safety information (such as

navigational and meteorological warnings and urgent information to ships).

The 1989 amendments

Adoption: 11 April 1989

Entry into force: 1 February 1992

The main changes concern Chapter II-1 and II-2 of the Convention and deal with ships' construction and with fire protection, detection and extinction.

In Chapter II-1, one of the most important amendments is designed to reduce the number and size of openings in watertight bulkheads in passenger ships and to ensure that they are closed in the event of an emergency.

In Chapter II-2, improvements were made to regulations concerning fixed gas fire-extinguishing systems, smoke detection systems, arrangements for fuel and other oils, the location and separation of spaces and several other regulations.

The International Gas Carrier Code - which is mandatory under SOLAS - was also amended.

The 1990 amendments

Adoption: May 1990

Entry into force: 1 February 1992

Important changes were made to the way in which the subdivision and stability of dry cargo ships is determined. They apply to ships of 100 metres or more in length built on or after 1 February 1992.

The amendments introduced a new part B-1 of Chapter II-1 containing subdivision and damage stability requirements for cargo ships based upon the so-called "probabilistic" concept of survival, which was originally developed through study of data relating to collisions collected by IMO.

This showed a pattern in accidents which could be used in improving the design of ships: most damage, for example, is sustained in the forward part of ships and it seemed logical, therefore, to improve the standard of subdivision there rather than towards the stern. Because it is based on statistical evidence as to what actually happens when ships collide, the probabilistic concept provides a far more realistic scenario than the earlier "deterministic" method, whose principles regarding the subdivision of passenger ships are theoretical rather than practical in concept.

Amendments were also made to the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code) and the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code).

The 1991 amendments

Adoption: 24 May 1991

Entry into force: 1 January 1994

Chapter VI (Carriage of grain) was completely revised to extend it to include other cargoes and it was retitled Carriage of cargoes. The text is shorter, but the Chapter is backed up by two new Codes. The International Grain Code is mandatory while the Code of Safe Practice for Cargo Stowage and Securing is recommended. The Chapter also refers to the Code of Safe Practice for Ships Carrying Timber Deck Cargoes and the Code of Safe Practice for Solid Bulk Cargoes. In Chapter II-2, fire safety requirements for passenger ships were improved and other changes were made to Chapter III and Chapter V.

The April 1992 amendments

Adoption: 10 April 1992

Entry into force: 1 October 1994

New standards concerning the stability of existing ro-ro passenger ships after damage were included in amendments to Chapter II-1. They were based on measures to improve the damage stability of new ro-ro passenger ships which came into force on 29 April 1990 but were slightly modified. The measures were phased in over an 11-year period beginning 1 October 1994.

A number of other amendments to SOLAS were adopted, including improved fire safety measures for existing passenger ships carrying more than 36 passengers, including mandatory requirements for smoke detection and alarm and sprinkler systems in accommodation and service spaces, stairway enclosures and corridors. Other improvements involved the provision of emergency lighting, general emergency alarm systems and other means of communication.

Some of these measures became applicable for existing ships on 1 October 1994. Those dealing with smoke detection and alarm systems and sprinklers applied from 1 October 1997. Requirements concerning stairways of steel-frame construction, for fire-extinguishing systems in machinery spaces and for fire doors were mandatory from 1 October 2000.

The April 1992 amendments were particularly important because they applied to existing ships. In the past, major changes to SOLAS had been restricted to new ships by so-called "grandfather clauses". The reason for this is that major changes involve expensive modifications to most ships, and there had previously been a reluctance to make such measures retroactive.

The December 1992 amendments

Adoption: 11 December 1992

Entry into force: 1 October 1994

The most important amendments were concerned with the fire safety of new passenger ships. They made it mandatory for new ships (i.e. those built after 1 October 1994) carrying more than 36 passengers to be fitted with automatic sprinklers and a fire detection and alarm system centralized in a continuously-manned remote control station. Controls for the remote closing of fire doors and shutting down of ventilation fans must be located at the same place.

New standards for the fire integrity of bulkheads and decks were introduced and improvements made to standards for corridors and stairways used as a means of escape in case of fire. Emergency lighting which can be used by passengers to identify escape routes is required.

Other amendments affected the fire safety of ships carrying 36 passengers or less and also oil tanker fire safety.

Three Codes were also amended. Amendments to the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code) and the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code) entered into force on 1 July 1994 and affect ships built after that date.

Amendments to the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (BCH Code) entered into force on 1 July 1994. The Code is voluntary and applies to existing ships.

The May 1994 amendments (Conference)

Adoption: 24 May 1994

Entry into force: 1 January 1996 (Chapters X, XI) 1 July 1998 (Chapter IX)

The Conference adopted three new SOLAS Chapters as well as a resolution on an accelerated amendment procedure.

Accelerated amendment procedure

The Conference adopted a resolution on an accelerated amendment procedure to be used in exceptional circumstances. It states that a Conference of Contracting Governments can reduce the period after which an amendment to the technical Chapters of the Convention (which excludes the articles and Chapter I) is deemed to have been accepted from 12 months to six months, in exceptional circumstances.

Article VIII of SOLAS deals with the procedures for amending the Convention. The existing text says that proposed amendments have to be circulated to Governments at least six months prior to adoption and cannot enter into force until at least 18 months after adoption. This makes a total of 24 months, from circulation (six months), through adoption, to deemed acceptance date (12 months after adoption), to entry into force (six months after deemed acceptance date).

The resolution adopted by the conference states that the circulation period will remain at six months as will the period between the date on which the amendment is deemed to have been accepted and the date of entry into force. But the period between adoption and deemed acceptance date can be reduced to six months from 12. The total period between circulation of an amendment and its entry into force could thus be reduced from 24 months to 18 - in exceptional circumstances.

Chapter IX: Management for the Safe Operation of Ships

This new Chapter to the Convention was designed to make mandatory the International Safety Management Code, which was adopted by IMO in November 1993 (Assembly resolution A.741(18)).

The amendments introducing the new Chapter IX entered into force on 1 July 1998. The Chapter applies to passenger ships and tankers from that date and to cargo ships and mobile drilling units of 500 gross tonnage and above from 1 July 2002.

The Code establishes safety management objectives which are:

- to provide for safe practices in ship operation and a safe working environment;
- to establish safeguards against all identified risks;

- to continuously improve safety management skills of personnel, including preparing for emergencies.

The Code requires a safety management system (SMS) to be established by "the Company", which is defined as the shipowner or any person, such as the manager or bareboat charterer, who has assumed responsibility for operating the ship.

The company is then required to establish and implement a policy for achieving these objectives. This includes providing the necessary resources and shore-based support. Every company is expected "to designate a person or persons ashore having direct access to the highest level of management".

The procedures required by the ISM Code should be documented and compiled in a Safety Management Manual, a copy of which should be kept on board.

Chapter X: Safety Measures for High Speed Craft

The new Chapter made mandatory the International Code of Safety for High-Speed Craft.

Chapter XI: Special Measures to Enhance Safety:

The new Chapter entered into force on 1 January 1996.

Regulation 1 states that organizations entrusted by an Administration with the responsibility for carrying out surveys and inspections shall comply with the guidelines adopted by IMO in resolution A.739(18) in November 1993.

Regulation 2 extends to bulk carriers aged five years and above, the enhanced programme of surveys applicable to tankers under MARPOL 73/78. The enhanced surveys should be carried out during the periodical, annual and intermediate surveys prescribed by the MARPOL and SOLAS Conventions.

The related guidelines on enhanced surveys pay special attention to corrosion. Coatings and tank corrosion prevention systems must be thoroughly checked and measurements must also be carried out to check the thickness of plates.

Regulation 3 provides that all passenger ships of 100 gross tonnage and above and all cargo ships of 300 gross tonnage and above shall be provided with an identification number conforming to the IMO ship identification number scheme, as adopted by resolution A.600(15) in 1987.

Regulation 4 makes it possible for port State control officers inspecting foreign ships to check operational requirements "when there are clear grounds for believing that the master or crew are not familiar with essential shipboard procedures relating to the safety of ships"

Reference is made to resolution A.742(18), adopted in November 1993. The resolution acknowledges the need for port States to be able to monitor not only the way in which foreign ships comply with IMO standards but also to be able to assess "the ability of ships' crews in respect of operational requirements relevant to their duties, especially with regard to passenger ships and ships which may present a special hazard"

The "clear grounds" referred to are defined in the annex to the resolution. They include such factors as operational shortcomings, cargo operations not being conducted properly, the involvement of the ship in incidents caused by operational mistakes, absence of an up-to-date muster list and indications that crew members may not be able to communicate with each other.

Port State control inspections are normally limited to checking certificates and documents. But if certificates are not valid or if there are clear grounds for believing that the condition of the ship or of its equipment, or its crew, does not substantially meet the requirements of a relevant instrument, a more detailed inspection may be carried out.

The operations and procedures selected for special attention include ascertaining that crew members are aware of their duties as indicated in the muster list; communications; fire and abandon ship drills; familiarity with the ship's damage control and fire control plans; bridge, cargo and machinery operations; and ability to understand manuals and other instructions.

The May 1994 amendments

Adoption: 25 May 1994

Entry into force: 1 January 1996

Three new regulations were added to Chapter V:

Regulation 15.1 required all tankers of 20,000 dwt and above built after 1 January 1996 to be fitted with an emergency towing arrangement to be fitted at both ends of the ship. Tankers built before that date had to be fitted with a similar arrangement not later than 1 January 1999.

Regulation 22 was aimed at improving navigation bridge visibility.

Regulation 8.1 made mandatory the use of ship reporting systems approved by IMO. General principles for ship reporting systems were previously adopted by IMO in 1989 as a recommendation. The systems are used to provide, gather or exchange information through radio reports.

The regulation made it mandatory for ships entering areas covered by ship reporting systems to report in to the coastal authorities giving details of sailing plans.

In Chapter II-2 improvements were made to regulation 15, which deals with fire protection arrangements for fuel oil, lubrication oil and other flammable oils.

Amendments to the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code) and the Code for the Construction and Equipment of Ships Carrying Liquefied Gases (Gas Carrier Code) relate to the filling limits for cargo tanks.

The December 1994 amendments

Adoption: 9 December 1994

Entry into force: 1 July 1996

In Chapter VI (Carriage of Cargoes), the Code of Safe Practice for Cargo Stowage and Securing was made mandatory. The Code was adopted as a recommendation in 1991. The amendments made it mandatory to provide the cargo information required by the Code and for cargo units, including containers, to be loaded, stowed and secured in accordance with a manual that must be at least equivalent to the Code.

The Code was also made mandatory under Chapter VII (Carriage of dangerous goods).

The May 1995 amendments

Adoption: 16 May 1995

Entry into force: 1 January 1997

Regulation 8 of Chapter V was amended to make ships' routing systems compulsory. Governments are responsible for submitting proposals for ships' routing systems to IMO in accordance with amendments to the General Provisions on Ships' Routing, which were adopted at the same time.

The November 1995 amendments (Conference)

Adopted: 29 November 1995

Entry into force: 1 July 1997

The conference adopted a series of amendments to SOLAS, based on proposals put forward by the Panel of Experts on the safety of roll on-roll off passenger ships which was established in December 1994 following the sinking of the ferry **Estonia**.

The most important changes relate to the stability of ro-ro passenger ships in Chapter II-1.

The SOLAS 90 damage stability standard, which had applied to all ro-ro passenger ships built since 1990, was extended to existing ships in accordance with an agreed phase-in programme. Ships that only meet 85% of the standard had to comply fully by 1 October 1998 and those meeting 97.5% or above, by 1 October 2005. (The SOLAS 90 standard refers to the damage stability standard in the 1988 (October) amendments to SOLAS adopted 28 October 1988 and entering into force on 29 April 1990.)

The conference also adopted a new regulation 8-2, containing special requirements for ro-ro passenger ships carrying 400 passengers or more. This is intended to phase out ships built to a one-compartment standard and ensure that they can survive without capsizing with two main compartments flooded following damage.

Amendments to other Chapters in the SOLAS Convention included changes to Chapter III, which deals with life saving appliances and arrangements, including the addition of a section requiring ro-ro passenger ships to be fitted with public address systems, a regulation providing improved requirements for life-saving appliances and arrangements and a requirement for all passenger ships to have full information on the details of passengers on board and requirements for the provision of a helicopter pick-up or landing area.

Other amendments were made to Chapter IV (radiocommunications); Chapter V (safety of navigation) - including a requirement that all ro-ro passenger ships should have an established working language - and Chapter VI (carriage of cargoes).

The conference also adopted a resolution which permits regional arrangements to be made on special safety requirements for ro-ro passenger ships.

The June 1996 amendments

Adoption: 4 June 1996

Entry into force: 1 July 1998

A completely revised Chapter III on life-saving appliances and arrangements was adopted. The amendments take into account changes in technology since the Chapter had been last re-written in 1983.

Many of the technical requirements were transferred to a new International Life-Saving Appliance (LSA) Code, applicable to all ships built on or after 1 July 1998. Some of the amendments apply to existing ships as well as new ones.

Other SOLAS Chapters were also amended.

In Chapter II-1, a new part A-1 dealing with the structure of ships was added. Regulation 3-1 requires ships to be designed, constructed and maintained in compliance with structural requirements of a recognized classification society or with applicable requirements by the Administration. Regulation 3-2 deals with corrosion prevention of seawater ballast tanks and other amendments to Chapter II-1 concern the stability of passenger and cargo ships in the damaged condition.

In Chapter VI, Regulation 7 was replaced by a new text dealing with the loading, unloading and stowage of bulk cargoes. It is intended to ensure that no excessive stress is placed on the ship's structure during such operations. The ship must be provided with a booklet giving advice on cargo handling operations and the master and terminal representative must agree on a plan to ensure that loading and unloading is carried out safely.

In Chapter XI, an amendment was made regarding authorization of recognized organizations.

The International Bulk Chemicals (IBC) and Bulk Chemicals (BCH) Codes were also amended. The IBC Code is mandatory under SOLAS and applies to ships carrying dangerous chemicals in bulk that were built after 1 July 1986. The BCH is recommended and applies to ships built before that date.

The December 1996 amendments

Adoption: 6 December 1996

Entry into force: 1 July 1998

Chapter II-2 was considerably modified, with changes to the general introduction, Part B (fire safety measures for passenger ships), Part C (fire safety measures for cargo ships) and Part D (fire safety measures for tankers). The changes made mandatory a new International Code for Application of Fire Test Procedures intended to be used by Administrations when approving products for installation in ships flying their flag.

Amendments to Chapter II-1 included a requirement for ships to be fitted with a system to ensure that the equipment necessary for propulsion and steering are maintained or immediately restored in the case of loss of any one of the generators in service.

An amendment to Chapter V aims to ensure that the crew can gain safe access to the ship's bow, even in severe weather conditions. Amendments were also made to two regulations in Chapter VII relating to carriage of dangerous goods and the IBC Code was also amended.

The June 1997 amendments

Adoption: 4 June 1997

Entry into force: 1 July 1999

The amendments included a new Regulation 8.2 on Vessel Traffic Services (VTS) in Chapter V. VTS are traffic management systems, for example those used in busy straits. This Regulation sets out when VTS can be implemented. It says Vessel Traffic Services should be designed to contribute to the safety of life at sea, safety and efficiency of navigation and the protection of the marine environment, adjacent shore areas, worksites and offshore installations from possible adverse effects of maritime traffic.

Governments may establish VTS when, in their opinion, the volume of traffic or the degree of risk justifies such services. But no VTS should prejudice the "rights and duties of governments under international law" and a VTS may only be made mandatory in sea areas within a State's territorial waters.

In Chapter II-1, a new regulation 8.3 on "Special requirements for passenger ships, other than ro-ro passenger ships, carrying 400 persons or more" effectively makes these ships comply with the special requirements for ro-ro passenger ships in Regulation 8.2 which were adopted in November 1995. The special requirements are aimed at ensuring the ships can survive without capsizing with two main compartments flooded following damage.

The November 1997 amendments (Conference)

Adoption: 27 November 1997

Entry into force: 1 July 1999

The Conference adopted a Protocol adding a new Chapter XII to the Convention entitled Additional Safety Measures for Bulk Carriers.

The regulations state that all new bulk carriers 150 metres or more in length (built after 1 July 1999) carrying cargoes with a density of 1,000 kg/m³ and above should have sufficient strength to withstand flooding of any one cargo hold, taking into account dynamic effects resulting from presence of water in the hold and taking into account the recommendations adopted by IMO.

For existing ships (built before 1 July 1999) carrying bulk cargoes with a density of 1,780 kg/m³ and above, the transverse watertight bulkhead between the two foremost cargo holds and the double bottom of the foremost cargo hold should have sufficient strength to withstand flooding and the related dynamic effects in the foremost cargo hold.

Cargoes with a density of 1,780 kg/m³ and above (heavy cargoes) include iron ore, pig iron, steel, bauxite and cement. Lighter cargoes, but with a density of more than 1,000 kg/m³, include grains such as wheat and rice, and timber.

The amendments take into account a study into bulk carrier survivability carried out by the International Association of Classification Societies (IACS) at the request of IMO. IACS found that if a ship is flooded in the forward hold, the bulkhead between the two foremost holds may not be able to withstand the pressure that results from the sloshing mixture of cargo and water, especially if the ship is loaded in alternate holds with high density cargoes (such as iron ore). If the bulkhead between one hold and the next collapses, progressive flooding could rapidly occur throughout the length of the ship and the vessel would sink in a matter of minutes.

IACS concluded that the most vulnerable areas are the bulkhead between numbers one and two holds at the forward end of the vessel and the double bottom of the ship at this location. During special surveys of ships, particular attention should be paid to these areas and, where necessary, reinforcements should be carried out.

The criteria and formulae used to assess whether a ship currently meets the new requirements, for example in terms of the thickness of the steel used for bulkhead structures, or whether reinforcement is necessary, are laid out in IMO standards adopted by the 1997 Conference.

Under Chapter XII, surveyors can take into account restrictions on the cargo carried in considering the need for, and the extent of, strengthening of the transverse watertight bulkhead or double bottom. When restrictions on cargoes are imposed, the bulk carrier should be permanently marked with a solid triangle on its side shell. The date of application of the new Chapter to existing bulk carriers depends on their age. Bulk carriers which are 20 years old and over on 1 July 1999 have to comply by the date of the first intermediate or periodic survey after that date, whichever is sooner. Bulk carriers aged 15-20 years must comply by the first periodical survey after 1 July 1999, but not later than 1 July 2002. Bulk carriers less than 15 years old must comply by the date of the first periodical survey after the ship reaches 15 years of age, but not later than the date on which the ship reaches 17 years of age.

The May 1998 amendments

Adoption: 18 May 1998

Entry into force: 1 July 2002

Amendments were made to regulation 14 on Construction and initial testing of watertight bulkheads, etc., in passenger ships and cargo ships in Chapter II-1. Paragraph 3 is replaced to allow visual examination of welded connections, where filling with water or a hose test are not practicable.

In Chapter IV, the amendments included:

- a new regulation 5-1 requiring Contracting Governments to ensure suitable arrangements are in place for registering Global Maritime Distress and Safety System (GMDSS) identities (including ship's call sign, Inmarsat identities) and making the information available 24 hours a day to Rescue Co-ordination Centres;
- a new paragraph 9 to regulation 15 Maintenance requirements covering testing intervals for satellite emergency position indicating radio beacons (EPIRBs);
- a new regulation 18 on Position updating requiring automatic provision of information regarding the ship's position where two-way communication equipment is capable of providing automatically the ship's position in the distress alert.

Amendments in Chapter VI to paragraph 6 of regulation 5 *Stowage and securing* make it clear that "all cargoes, other than solid and liquid bulk cargoes" should be loaded, stowed and secured in accordance with the Cargo Securing Manual. A similar amendment was adopted for Regulation 6 of Chapter VII, also covering Stowage and securing.

The May 1999 amendments

Adoption: 27 May 1999

Entry into force: 1 January 2001

Amendments to Chapter VII make the International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on Board Ships (INF Code) mandatory.

The INF Code sets out how the material covered by the Code should be carried, including specifications for ships. The material covered by the code includes:

- *Irradiated nuclear fuel* - material containing uranium, thorium and/or plutonium isotopes which has been used to maintain a self-sustaining nuclear chain reaction.
- *Plutonium* - the resultant mixture of isotopes of that material extracted from irradiated nuclear fuel from reprocessing
- *High-level radioactive wastes* - liquid wastes resulting from the operation of the first stage extraction system or the concentrated wastes from subsequent extraction stages, in a facility for reprocessing irradiated fuel, or solids into which such liquid wastes have been converted.

The INF Code applies to all ships regardless of the date of construction and size, including cargo ships of less than 500 gross tonnage, engaged in the carriage of INF cargo. The INF Code does not apply to warships, naval auxiliary or other ships used only on government non-commercial service, although Administrations are expected to ensure such ships are in compliance with the Code.

Specific regulations in the Code cover a number of issues, including: damage stability, fire protection, temperature control of cargo spaces, structural consideration, cargo securing arrangements, electrical supplies, radiological protection equipment and management, training and shipboard emergency plans.

Ships carrying INF cargo are assigned to one of three classes, depending on the total radioactivity of INF cargo which is carried on board, and regulations vary slightly according to the Class:

Class INF 1 ship - Ships which are certified to carry INF cargo with an aggregate activity less than 4,000 TBq (TeraBecquerel - measurement of radioactivity).

Class INF 2 ship - Ships which are certified to carry irradiated nuclear fuel or high-level radioactive wastes with an aggregate activity less than 2×10^6 TBq and ships which are certified to carry plutonium with an aggregate activity less than 2×10^5 TBq.

Class INF 3 ship - Ships which are certified to carry irradiated nuclear fuel or high-level radioactive wastes and ships which are certified to carry plutonium with no restriction of the maximum aggregate activity of the materials.

The INF Code was first adopted as a recommendatory Code by the eighteenth session of the Assembly on 4 November 1993 (resolution A.748(18)). The twentieth session of the Assembly adopted amendments to the INF Code to include specific requirements for shipboard emergency plans and notification in the event of an incident (resolution A.853(20), adopted on 27 November 1997).

The Maritime Safety Committee also adopted a redrafted text of the INF Code incorporating amendments reflecting its mandatory nature.

The May 2000 amendment

Adoption: 26 May 2000

Entry into force: 1 January 2002

SOLAS Chapter III, regulation 28.2 for helicopter landing areas is amended to require a helicopter landing area **only for ro-ro passenger ships**. Regulation 28.1 of SOLAS Chapter III requires all ro-ro passenger ships to be provided with a helicopter pick-up area and existing ro-ro passenger ships were required to comply with this regulation not later than the first periodical survey after 1 July 1997.

The requirement for a helicopter landing area for all passenger ships of 130 metres in length and upwards was deferred to 1 July 1999 but it was decided to amend the regulation to make this requirement applicable to ro-ro passenger ships only.

The December 2000 amendments

Adoption: 6 December 2000

Entry into force: 1 July 2002

A number of amendments were adopted.

A revised SOLAS **chapter V (Safety of Navigation)** brings in a new mandatory requirement for voyage data recorders voyage data recorders (VDRs) to assist in accident investigations. Regulation 20 requires the following ships to fit VDRs:

- passenger ships constructed on or after 1 July 2002;
- ro-ro passenger ships constructed before 1 July 2002 not later than the first survey on or after 1 July 2002;
- passenger ships other than ro-ro passenger ships constructed before 1 July 2002 not later than 1 January 2004; and
- ships, other than passenger ships, of 3,000 gross tonnage and upwards constructed on or after 1 July 2002.

The new chapter also requires automatic identification systems (AIS), capable of providing information about the ship to other ships and to coastal authorities automatically, to be fitted aboard all ships of 300 gross tonnage and upwards engaged on international voyages, cargo ships of 500 gross tonnage and upwards not engaged on international voyages and passenger ships irrespective of size built on or after 1 July 2002.

It also applies to ships engaged on international voyages constructed before 1 July 2002, according to the following timetable:

- passenger ships, not later than 1 July 2003;
- tankers, not later than the first survey for safety equipment on or after 1 July 2003;
- ships, other than passenger ships and tankers, of 50,000 gross tonnage and upwards, not later than 1 July 2004;
- ships, other than passenger ships and tankers, of 10,000 gross tonnage and upwards but less than 50,000 gross tonnage, not later than 1 July 2005;
- ships, other than passenger ships and tankers, of 3,000 gross tonnage and upwards but less than 10,000 gross tonnage, not later than 1 July 2006; and
- ships, other than passenger ships and tankers, of 300 gross tonnage and upwards but less than 3,000 gross tonnage, not later than 1 July 2007.

[Note: the phase-in schedule for AIS on ships 300 gross tonnage and upwards was amended by the 2002 amendments to a final date of 2004 \(see below\).](#)

Amendments to SOLAS chapter X (Safety measures for high-speed craft) make mandatory for new ships the High-Speed Craft Code 2000. The 2000 HSC Code updates the mandatory High-Speed Craft Code adopted in 1994. The 2000 HSC will apply to all HSC built after the date of entry into force, 1 July 2002. The original HSC Code was adopted by IMO in May 1994, but the rapid pace of development in this sector of shipping has meant an early revision of the Code. The original Code will continue to apply to existing high-speed craft. The changes incorporated in the new Code are intended to bring it into line with amendments to SOLAS and new recommendations that have been adopted in the past four years - for example, requirements covering public address systems and helicopter pick-up areas

A revised **SOLAS chapter II-2 (Construction, - Fire protection, fire detection and fire extinction)** as well as a new **International Code for Fire Safety Systems (FSS Code)** were adopted. The revised chapter is intended to be clear, concise and user-friendly, incorporating the substantial changes introduced in recent years following a number of serious fire casualties. The revised chapter includes seven parts, each including requirements applicable to all or specified ship types, while the Fire Safety Systems (FSS) Code, which is made mandatory under the new chapter, includes detailed specifications for fire safety systems in 15 Chapters.

A new regulation in SOLAS Chapter II-1 (Construction - Structure, subdivision and stability, machinery and electrical installations) **prohibits the new installation of materials which contain asbestos on all ships**. The new regulation 3-5 is included in SOLAS Chapter II-1 (Construction - Structure, Subdivision and stability, machinery and electrical installations).

Amendments to the **1988 SOLAS Protocol** include amendments to reflect the changes to SOLAS chapter V, such as the details of navigational systems and equipment referred to in the records of equipment attached to certificates.

Amendments to the **International Code for the Application of Fire Test Procedures (FTP Code)** add new parts 10 and 11 to annex 1 on Test for fire-restricting material for high-speed craft and test for fire-resisting divisions of high-speed craft.

Amendments to the International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk (**IBC Code**) and the Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk (**BCH Code**) relate to cargo hose requirements, protection of personnel and carriage of carbon disulphide. Entry into force 1 July 2002.

Amendments to the International Safety Management Code (**ISM Code**) include the replacement of Chapter 13 Certification, verification and control with chapters 13 Certification; and adding of chapters 14 Interim Certification; 15 Forms of Certificate; and 16 Verification; as well as a new appendix giving forms of documents and certificates.

Amendments to the Code for the Construction and equipment of ships carrying dangerous chemicals in bulk (**BCH Code**) relate to ship's cargo hoses, tank vent systems, safety equipment, operational requirements; and amendments to the Code for the construction and equipment of ships carrying liquefied gases in bulk (**GC Code**) relate to ship's cargo hoses, personnel protection and operating requirements.

The June 2001 Amendments

Adoption: June 2001

Entry into force: 1 January 2003

Amendments to Chapter VII - Carriage of Dangerous Goods - and to the International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on Board Ships (INF Code) to align them with Amendment 30 to the International Maritime Dangerous Goods (IMDG) Code.

Also amendments to the International Code of Safety for High-Speed Craft (1994 HSC Code) to bring the provisions for navigational equipment of the 1994 HSC Code in line with the relevant provisions of the 2000 HSC Code (which enters into force on 1 July 2002 for ships built after that date). In particular the amendments relate to carriage of voyage data recorders and carriage of automatic identification systems (AIS).

The May 2002 amendments

Adoption: 24 May 2002

Entry into force: 1 January 2004

The amendments to chapter SOLAS VII (Carriage of Dangerous Goods) make the International Maritime Dangerous Goods Code (IMDG Code) mandatory and separated requirements for packaged goods and goods in solid form in bulk into two Parts A and A-1. The IMDG Code was adopted in a mandatory form.

However, the provisions of the following parts of the Code will remain recommendatory:

- chapter 1.3 (Training);
- chapter 2.1 (Explosives, Introductory Notes 1 to 4 only);
- chapter 2.3, section 2.3.3 (Determination of flashpoint only);
- chapter 3.2 (columns 15 and 17 of the Dangerous Goods List only);
- chapter 3.5 (Transport schedule for Class 7 radioactive material only);
- chapter 5.4, section 5.4.5 (Multimodal dangerous goods form), insofar as layout of the form is concerned; and
- chapter 7.3 (Special requirements in the event of an incident and fire precautions involving dangerous goods only).

In practice, this means that from the legal point of view, the whole of the IMDG Code is made mandatory, but provisions of recommendatory nature are editorially expressed in the Code (e.g. using the word "should" instead of "shall") to clarify their status.

The mandatory IMDG Code incorporates certain changes relating to specific products, as well as relevant elements of the amendments to the UN Recommendations on the Transport of Dangerous Goods, Model Regulations adopted by the UN Committee of Experts on the Transport of Dangerous Goods at its twenty-first session in Geneva from 4 to 13 December 2000.

Also, amendments to the 1978 SOLAS Protocol, make changes to the Record of Equipment for the Passenger Ship Safety Certificate (Form P); Record of Equipment for the Cargo Ship Safety Radio Certificate (Form R); and Record of Equipment for the Cargo Ship Safety Certificate (Form C).

The December 2002 amendments (Conference) - Measures to enhance maritime security

Adoption: 13 December 2002

Entry into force: 1 July 2004

The amendments to the 1974 SOLAS Convention were adopted by a [Diplomatic Conference on Maritime Security](#) and are aimed at enhancing maritime security on board ships and at ship/port interface areas. Among other things, these amendments create a new SOLAS chapter dealing specifically with maritime

security, which in turn contains the mandatory requirement for ships to comply with the the new International Ship and Port Facility Security Code (ISPS Code). The Code contains detailed security-related requirements for Governments, port authorities and shipping companies in a mandatory section (Part A), together with a series of guidelines about how to meet these requirements in a second, non-mandatory section (Part B). The Conference also adopted a series of resolutions designed to add weight to the amendments, encourage the application of the measures to ships and port facilities not covered by the Code and pave the way for future work on the subject..

Modifications to Chapter V (Safety of Navigation) contain a new timetable for the fitting of Automatic Information Systems (AIS). Ships, other than passenger ships and tankers, of 300 gross tonnage and upwards but less than 50,000 gross tonnage, will be required to fit AIS not later than the first safety equipment survey after 1 July 2004 or by 31 December 2004, whichever occurs earlier. Ships fitted with AIS shall maintain AIS in operation at all times except where international agreements, rules or standards provide for the protection of navigational information."

The existing SOLAS Chapter XI (Special measures to enhance maritime safety) has been re-numbered as Chapter XI-1. Regulation XI-1/3 is modified to require ships' identification numbers to be permanently marked in a visible place either on the ship's hull or superstructure. Passenger ships should carry the marking on a horizontal surface visible from the air. Ships should also be marked with their ID numbers internally.

And a new regulation XI-1/5 requires ships to be issued with a Continuous Synopsis Record (CSR) which is intended to provide an on-board record of the history of the ship. The CSR shall be issued by the Administration and shall contain information such as the name of the ship and of the State whose flag the ship is entitled to fly, the date on which the ship was registered with that State, the ship's identification number, the port at which the ship is registered and the name of the registered owner(s) and their registered address. Any changes shall be recorded in the CSR so as to provide updated and current information together with the history of the changes.

New Chapter XI-2 (Special measures to enhance maritime security)

A brand-new Chapter XI-2 (Special measures to enhance maritime security) is added after the renumbered Chapter XI-1.

This chapter applies to passenger ships and cargo ships of 500 gross tonnage and upwards, including high speed craft, mobile offshore drilling units and port facilities serving such ships engaged on international voyages.

Regulation XI-2/2 of the new chapter enshrines the International Ship and Port Facilities Security Code (ISPS Code). Part A of this Code is mandatory and part B contains guidance as to how best to comply with the mandatory requirements.

The regulation requires Administrations to set security levels and ensure the provision of security level information to ships entitled to fly their flag. Prior to entering a port, or whilst in a port, within the territory of a Contracting Government, a ship shall comply with the requirements for the security level set by that Contracting Government, if that security level is higher than the security level set by the Administration for that ship.

Regulation XI-2/8 confirms the role of the Master in exercising his professional judgement over decisions necessary to maintain the security of the ship. It says he shall not be constrained by the Company, the charterer or any other person in this respect.

Regulation XI-2/6 requires all ships to be provided with a ship security alert system, according to a strict timetable that will see most vessels fitted by 2004 and the remainder by 2006. When activated the ship security alert system shall initiate and transmit a ship-to-shore security alert to a competent authority designated by the Administration, identifying the ship, its location and indicating that the security of the ship is under threat or it has been compromised. The system will not raise any alarm on-board the ship. The ship security alert system shall be capable of being activated from the navigation bridge and in at least one other location.

Regulation XI-2/10 covers requirements for port facilities, providing among other things for Contracting Governments to ensure that port facility security assessments are carried out and that port facility security plans are developed, implemented and reviewed in accordance with the ISPS Code.

Other regulations in this chapter cover the provision of information to IMO, the control of ships in port, (including measures such as the delay, detention, restriction of operations including movement within the port, or expulsion of a ship from port), and the specific responsibility of Companies.

The December 2002 amendments (by the expanded MSC)

Adoption: 12 December 2002

Entry into force: 1 July 2004

Chapter XII (Additional Safety Measures for Bulk Carriers)

- New regulation XII/12 on Hold, ballast and dry space water level detectors require the fitting of high level alarms and level monitoring systems on all bulk carriers, in order to detect water ingress. The regulation requires the fitting of such alarms on all bulk carriers regardless of their date of construction.
- New regulation XII/13 on Availability of pumping systems would require the means for draining and pumping dry space bilges and ballast tanks any part of which is located forward of the collision bulkhead to be capable of being brought into operation from a readily accessible enclosed space.

SOLAS chapter II-1 (Construction - structure, subdivision and stability, machinery and electrical installations)

- In Part B (Subdivision and stability), new regulation II-1/3-6 Access to spaces in cargo areas of oil tankers and bulk carriers is intended to ensure that vessels can be properly inspected throughout their lifespan, by designing and building the ship to provide suitable means for access. Associated Technical provisions for means of access for inspections are mandatory under the regulation. Without adequate access, the structural condition of the vessel can deteriorate undetected and major structural failure can arise. The regulation requires each space within the cargo area to be provided with an appropriate means of access to enable, throughout the life of a ship, overall and close-up inspections and thickness measurements of the ship's structures to be carried out by the Administration, the Company, and the ship's personnel and others as necessary.
- In Part C (Machinery Installation), new paragraph added to regulation 31 - Machinery control, to require automation systems to be designed in a manner which ensures that threshold warning of impending or imminent slowdown or shutdown of the propulsion system is given to the officer in charge of the navigational watch in time to assess navigational circumstances in an emergency.

Chapter II-2 (Fire protection, fire detection and fire extinction)

- The amendments concern references to the IMDG Code and reflect amendments to SOLAS chapter VII (Carriage of Dangerous Goods) adopted in May 2002 which make the International Maritime Dangerous Goods Code (IMDG Code) mandatory.

Chapter III - Life-saving appliances and arrangements

- The amendments to Regulation 26 - Additional requirements for ro-ro passenger ships, requires liferafts carried on ro-ro passenger ships to be fitted with a radar transponder in the ratio of one transponder for every four liferafts. The regulation is made applicable to existing ships as well as new ships.

Also adopted, amendments to the International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on board Ships (**INF Code**) - The amendments in the sections on definitions and application reflect amendments to SOLAS chapter VII (Carriage of Dangerous Goods) adopted in May 2002 which make the IMDG Code mandatory.

The June 2003 amendments
Adoption: June 2003
Entry into force: 1 July 2006

Chapter V - Safety of Navigation

Amendments to SOLAS regulations V/2 Definitions and V/22 Navigation Bridge Visibility add the definition of "length" to regulation V/2 and a consequential editorial change is made to regulation V/22. The definition states that "length of a ship means its length overall".

Amendments to SOLAS regulation V/28 on Records of navigational activities add a new paragraph on daily reporting. The amendment will require all ships of 500 gross tonnage and above, engaged on international voyages exceeding 48 hours, to submit a daily report to their company, to include ship's position; ship's course and speed; and details of any external or internal conditions that are affecting the ship's voyage or the normal safe operation of the ship. The aim of the amendments is to address the responsibilities of ship operators to provide information of benefit to those responsible for mounting rescue operations.

The May 2004 amendments
Adoption: May 2004
Entry into force: 1 January 2006

Access to and within spaces in the cargo area of oil tankers and bulk carriers - Amendments to regulation II-1/3-6 mainly to allow the provision of non-permanent means of access onboard ships (the requirements for provision of permanent means of access were introduced in the December 2002 amendments).

Entry into force: 1 July 2006

Persons in distress at sea

Amendments to chapter V (*Safety of Navigation*) - to add a definition of search and rescue services; to set an obligation to provide assistance, regardless of nationality or status of persons in distress, and mandate co-ordination and co-operation between States to assist the ship's master in delivering persons rescued at sea to a place of safety; and to add a new regulation on master's discretion.

Accidents with lifeboats

Amendments to SOLAS chapter III (*Life-saving appliances and arrangements*) which are intended to help prevent accidents with lifeboats during drills. The amendments, which are expected to enter into force on 1 July 2006, stem from work by the Sub-Committee on Ship Design and Equipment (DE) intended to address the unacceptably high number of accidents with lifeboats that have been occurring over recent years. Crew have been injured, sometimes fatally, while participating in lifeboat drills and/or inspections.

The amendments to Regulation 19 (*Emergency training and drills*) and Regulation 20 (*Operational readiness, maintenance and inspections*) concern the conditions in which lifeboat emergency training and drills should be conducted and introduce changes to the operational tests to be conducted during the weekly and monthly inspections, so as not to require the assigned crew to be on board in all cases.

Carriage of immersion suits

Amendments to SOLAS chapter III Regulation 32 - *Personal life-saving appliances* to make changes to the number of immersion suits to be carried on all cargo ships. The amendments introduce carriage requirements for one immersion suit per person on board all cargo ships, including bulk carriers. At present, the regulation requires carriage of at least three immersion suits for each lifeboat on a cargo ship, as well as thermal protective aids for persons not provided with immersion suits.

With the adoption of the amendments, immersion suits become, as lifejackets, a personal life-saving appliance for each person on board thus offering better thermal protection and improved chance of survival and rescue. The MSC also adopted consequential amendments to the 1988 SOLAS Protocol relating to the records of equipment.

IMDG Code amendments

Amendments to the International Maritime Dangerous Goods (IMDG) Code update several sections of the Code relating to the carriage of dangerous goods and also include a new chapter 1.4 on Security Provisions intended to address the security of dangerous goods being transported by sea. The amendments are expected to enter into force on **1 January 2006**, but may be applied on a voluntary basis from 1 January 2005.

December 2004 amendments

Adoption: December 2004
Entry into force: 1 July 2006

Bulk carrier safety

A new text for SOLAS chapter XII (*Additional safety measures for bulk carriers*) incorporates revisions to some regulations and new requirements relating to double-side skin bulk carriers.

The amendments include the addition of a new regulation 14 on restrictions from sailing with any hold empty and requirements for double-side skin construction as an optional alternative to single-side skin construction. The option of double-side skin construction will apply to new bulk carriers of 150m in length and over, carrying solid bulk cargoes having a density of 1,000 kg/m³ and above.

Free-fall lifeboats on bulk carriers

an amendment to regulation 31 in SOLAS chapter III (*Life-saving appliances and arrangements*) makes mandatory the carriage of free-fall lifeboats on bulk carriers.

Simplified Voyage Data Recorders

Amendments to regulation 20 of SOLAS chapter V (*Safety of Navigation*) give a phased-in carriage requirement for a shipborne simplified voyage data recorder (S-VDR).

The regulation requires a VDR, which may be an S-VDR, to be fitted on existing cargo ships of 3,000 gross tonnage and upwards, phasing in the requirement for cargo ships of 20,000 gross tonnage and upwards first, to be followed by cargo ships of 3,000 gross tonnage and upwards.

The S-VDR is not required to store the same level of detailed data as a standard VDR, but nonetheless should maintain a store, in a secure and retrievable form, of information concerning the position, movement, physical status, command and control of a vessel over the period leading up to and following an incident.

May 2005 amendments

Adoption: May 2005

Entry into force: 1 January 2007/1 January 2009

A revised SOLAS chapter II-1 was adopted with entry into force set for 1 January 2009. The revision of SOLAS chapter II-1 is intended to harmonize the provisions on subdivision and damage stability for passenger and cargo ships. The revised provisions in parts A, B and B-1 will be applicable to new ships built after the expected entry into force date of 1 January 2009. The amendments, which have been intensively developed over the past decade, are based on the "probabilistic" method of determining damage stability, which is itself based on the detailed study of data collected by IMO relating to collisions. Because it is based on statistical evidence concerning what actually happens when ships collide, the probabilistic concept is believed to be far more realistic than the previously-used "deterministic" method.

The revision has taken into account the results of the HARDER (Harmonisation of Rules and Design Rational) research project: a project undertaken by a consortium of European industrial, research and academic institutions to study the probabilistic approach for assessing a ship's damage stability and to develop new criteria and indexes for subdivision based on probability of survival, taking into account effects from waves, heeling moments, cargo shift, transient effects and equalization arrangements.

Other amendments to SOLAS, with an expected entry into force date of 1 January 2007, including:

- New SOLAS regulation II-1/3-7 to require ship construction drawings to be maintained on board and ashore.
- New SOLAS regulation II-1/3-8 concerning towing and mooring equipment. The regulation will require all ships to 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.
- New SOLAS regulation II-1/23-3 concerning water level detectors in the cargo hold(s) on new single hold cargo ships other than bulk carriers.
- Amendment to SOLAS regulation II-1/31 Machinery control to restrict the application of propulsion control automation systems to new ships only.

Also, with expected entry into force of 1 January 2009, new SOLAS regulations XI-1/3-1 and amendments to regulation XI-1/5 on the mandatory company and registered owner identification number.

May 2006 amendments LRIT

Adoption: May 2006

Entry into force: 1 January 2008

The new regulation on LRIT is included in SOLAS chapter V on Safety of Navigation, through which LRIT will be introduced as a mandatory requirement for the following ships on international voyages: passenger ships, including high-speed craft; cargo ships, including high-speed craft, of 300 gross tonnage and upwards; and mobile offshore drilling units.

The SOLAS regulation on LRIT establishes a multilateral agreement for sharing LRIT information for security and search and rescue purposes, amongst SOLAS Contracting Governments, in order to meet the maritime security needs and other concerns of such Governments. It maintains the right of flag States to protect information about the ships entitled to fly their flag, where appropriate, while allowing coastal States access to information about ships navigating off their coasts. The SOLAS regulation on LRIT does not create or affirm any new rights of States over ships beyond those existing in international law, particularly, the United Nations Convention on the Law of the Sea (UNCLOS), nor does it alter or affect the rights, jurisdiction, duties and obligations of States in connection with UNCLOS.

The LRIT information ships will be required to transmit include the ship's identity, location and date and time of the position. There will be no interface between LRIT and AIS. One of the more important distinctions between LRIT and AIS, apart from the obvious one of range, is that, whereas AIS is a broadcast system, data derived through LRIT will be available only to the recipients who are entitled to receive such information and safeguards concerning the confidentiality of those data have been built into the regulatory provisions. SOLAS Contracting Governments will be entitled to receive information about ships navigating within a distance not exceeding 1000 nautical miles off their coast.

The regulation foresees a phased-in implementation schedule for ships constructed before its expected entry into force date of 1 January 2008 and an exemption for ships operating exclusively in sea area A1 from the requirement to transmit LRIT information, since such ships are already fitted with AIS. It also identifies which authorities may have access to LRIT information.

Also adopted were *performance standards and functional requirements for LRIT* and an MSC resolution on *Arrangements for the timely establishment of the long range identification and tracking system*.

May 2006 amendments

Adoption: May 2006

Entry into force: 1 July 2010

Amendments to SOLAS Chapter II-2 - Fire protection

These include amendments relating to Regulation 9 - Containment of fire, so as to include a requirement for water-mist nozzles which should be tested and approved in accordance with the guidelines approved by the Organization; and in Regulation 15 - Arrangements for oil fuel, lubricating oil and other flammable oils, new text relating to the application of the regulation to ships constructed on or after 1 February 1992 and on or after 1 July 1998.

Amendments to SOLAS Chapter III - Life-saving appliances and arrangements

In Regulation 7 - Personal life-saving appliances, the amendments add a new requirement for infant lifejackets. For passenger ships on voyages of less than 24 hours, a number of infant lifejackets equal to at least 2.5% of the number of passengers on board is to be provided; and for passenger ships on voyages of 24 hours or greater, infant lifejackets are to be provided for each infant on board. A further amendment relates to the provision of lifejackets for larger passengers and states that, if the adult lifejackets provided are not designed to fit persons with a chest girth of up to 1,750 mm, a sufficient number of suitable accessories are to be available on board to allow them to be secured to such persons.

Amendments to SOLAS Chapter IV - Radiocommunications

The amendments relate to the provision of radio equipment, in Regulation 7, to require ships to carry an EPIRB capable of transmitting a distress alert through the polar orbiting satellite service (COSPAS-SARSAT) operating in the 406 MHz band; and, in Regulations 9 and 10, to clarify that the means of initiating ship-to-shore distress alerts may be through the Inmarsat geostationary satellite service by a ship earth station.

Amendments to SOLAS Chapter V - Safety of navigation

The amendment adds a new paragraph to Regulation 22 - *Navigation bridge visibility* to allow ballast water exchange at sea, provided that the master has determined that it is safe to do so and takes into consideration any increased blind sectors or reduced horizontal fields of vision resulting from the operation to ensure that a proper lookout is maintained at all times. The operation should be conducted in accordance with the ship's ballast water management plan, taking into account the recommendations on ballast water exchange. The commencement and termination of the operation should be recorded in the ship's record of navigational activities.

Amendments to the International Code for Fire Safety Systems (FSS Code)

The amendments replace the text of Chapter 5 Fixed gas fire-extinguishing systems with a revised text.

Amendments to the International Life-Saving Appliance Code (LSA Code)

The amendments include the requirement that all life saving appliances should withstand in stowage an air temperature range of 30°C to +65°C and personal life-saving appliances should remain operational throughout an air temperature range of -15°C to +40°C. The colour of life-saving appliances is now specified to be "of international or vivid reddish orange, or a comparably highly visible colour on all parts where this will assist detection at sea". The existing section 2.2 on General requirements for lifejackets is revised and replaced. Further amendments relate to specifications for immersion suits and anti-exposure suits.

Amendments to Guidelines for the authorization of organizations acting on behalf of the Administration (Resolution A.739(18))

The amendments to the guidelines, which are mandatory under SOLAS chapter XI-1, add a new paragraph 2-1 to require the use of only exclusive surveyors and auditors for surveys and certification, although radio surveys may be subcontracted to non-exclusive surveyors.

December 2006 amendments

Adoption: December 2006

Entry into force: 1 July 2008/1 July 2010

Revised passenger ship safety standards

The package of amendments to SOLAS were the result of a comprehensive review of passenger ship safety initiated in 2000 with the aim of assessing whether the current regulations were adequate, in particular for the large passenger ships now being built.

The work in developing the new and amended regulations has based its guiding philosophy on the dual premise that the regulatory framework should place more emphasis on the prevention of a casualty from occurring in the first place and that future passenger ships should be designed for improved survivability so that, in the event of a casualty, persons can stay safely on board as the ship proceeds to port.

The amendments include new concepts such as the incorporation of criteria for the casualty threshold (the amount of damage a ship is able to withstand, according to the design basis, and still safely return to port) into SOLAS chapters II-1 and II-2. The amendments also provide regulatory flexibility so that ship designers can meet any safety challenges the future may bring. The amendments include:

- alternative designs and arrangements;
- safe areas and the essential systems to be maintained while a ship proceeds to port after a casualty, which will require redundancy of propulsion and other essential systems;
- on-board safety centres, from where safety systems can be controlled, operated and monitored;
- fixed fire detection and alarm systems, including requirements for fire detectors and manually operated call points to be capable of being remotely and individually identified;
- fire prevention, including amendments aimed at enhancing the fire safety of atriums, the means of escape in case of fire and ventilation systems; and
- time for orderly evacuation and abandonment, including requirements for the essential systems that must remain operational in case any one main vertical zone is unserviceable due to fire.

The amendments are expected to enter into force on **1 July 2010**.

Fire regulations on balconies

Amendments to SOLAS chapter II-2 and to the International Code for Fire Safety Systems (FSS Code) to strengthen the fire protection arrangements in relation to cabin balconies on passenger vessels were developed in response to the fire aboard the cruise ship **Star Princess**, while on passage between Grand Cayman and Montego Bay, Jamaica, in March 2006. The fire began on an external balcony and spread over several decks.

The amendments to SOLAS chapter II-2 are aimed at ensuring that existing regulations 4.4 (Primary deck coverings), 5.3.1.2 (Ceilings and linings), 5.3.2 (Use of combustible materials) and 6 (Smoke generation potential and toxicity) are also applied to cabin balconies on new passenger ships.

For existing passenger ships, relevant provisions require that furniture on cabin balconies be of restricted fire risk unless fixed water spraying systems, fixed fire detection and fire alarm systems are fitted and that partitions separating balconies be constructed of non combustible materials, similar to the provisions for new passenger ships.

The amendments are expected to enter into force on **1 July 2008**.

Prevention of accidents involving lifeboats

An amendment to SOLAS regulation III/19.3.3.4 concerns provisions for the launch of free-fall lifeboats during abandon-ship drills. The amendment will allow, during the abandon-ship drill, for the lifeboat to either be free-fall launched with only the required operating crew on board, or lowered into the water by means of the secondary means of launching without the operating crew on board, and then manoeuvred in the water by the operating crew. The aim is to prevent accidents with lifeboats occurring during abandon-ship drills. The amendment is expected to enter into force on **1 July 2008**.

Protective coatings

Amendments to SOLAS regulations II-1/3-2 make mandatory *Performance standard for protective coatings of dedicated seawater ballast tanks on all new ships and of double-side skin spaces of bulk carriers.*

The SOLAS amendments are expected to enter into force on 1 July 2008 and the performance standard will apply to ships for which the building contract is placed on or after **1 July 2008**; or, in the absence of a building contract, the keels of which are laid on or after 1 January 2009, or the delivery of which is on or after 1 July 2012.

Other amendments

- amendments to the FSS Code relating to fire extinguishers, specifically portable foam applicators; fixed foam fire-extinguishing systems; fixed-pressure water-spraying and water-mist fire-extinguishing systems, fixed fire detection and fire alarm systems for cabin balconies. Entry into force on 1 July 2008.
- amendments to the International Life-Saving Appliance Code (LSA Code), including those related to life rafts, life boats and rescue boats, particularly in relation to stowage and release mechanisms. Entry into force on 1 July 2008.
- amendments to the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code), relating to fire protection and fire extinction, and the revised chapters 17 (Summary of minimum requirements), 18 (List of products to which the code does not apply) and 19 (Index of Products Carried in Bulk). Entry into force on 1 January 2009.
- amendments to the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code), to update the references to SOLAS regulations and to add two more chemicals to the list of products in chapter 19 (Summary of minimum requirements). Entry into force on 1 July 2008.
- amendments to the International Codes of Safety for High-Speed Craft (1994 HSC Code and the 2000 HSC Code), to update them in line with relevant SOLAS amendments and, in the case of the 2000 HSC Code, to revise requirements relating to testing and calculations for buoyancy, stability and subdivision. Entry into force on 1 July 2008.
- amendments to the Protocol of 1988, relating to the International Convention for the Safety of Life at Sea, 1974, to include in the Record of equipment for the relevant safety certificate an entry regarding the long-range identification and tracking system. Entry into force on 1 July 2008.
- amendments to the Protocol of 1988 relating to the International Convention on Load Lines, 1966, including amendments of a reference in regulation 22 (Scuppers, inlets and discharges) and an amendment in regulation 39 (Minimum bow height and reserve buoyancy). Entry into force on 1 July 2008.
- amendments to the Dynamically Supported Craft (DSC) Code to update it in line with relevant amendments to SOLAS. Will become effective on 1 July 2008.
- amendments to the Gas Carrier (GC) Code, to update it in line with certain fire safety requirements in SOLAS. Will become effective on 1 July 2008.
- amendments to the Revised recommendation on testing of life-saving appliances (resolution MSC.81(70)), including revisions to prototype tests for lifebuoys, lifejackets, immersion suits, anti-exposure suits and thermal protective aids, liferafts, lifeboats, rescue boats and fast rescue boats, launching and embarkation appliances, position-indicating lights for life-saving appliances and hydrostatic release units; and revisions to production and installation tests for survival craft, launching and stowage arrangements. The amendments will become effective on 1 July 2008.

October 2007 amendments

Entry into force: 1 July 2009

Amendment to SOLAS chapter IV, to add a new regulation 4-1 on GMDSS satellite providers. The new regulation provides for the MSC to determine the criteria, procedures and arrangements for the evaluation, recognition, review and oversight of the provision of mobile satellite communication services in the Global Maritime Distress and Safety System (GMDSS).

Amendment to SOLAS chapter VI, to add a new regulation 5-1 on material safety data sheets (MSDS), to require ships carrying MARPOL Annex I cargoes (oil) and marine fuel oils to be provided with a material safety data sheet prior to loading such cargoes. The regulation refers to the Recommendation for material safety data sheets (MSDS) for MARPOL Annex I cargoes and marine fuel oils, adopted by the Organization through resolution MSC.150(77).

Amendments to forms contained in the appendix to the Annex to the 1988 SOLAS Protocol to add a section to cover alternative design and arrangements (Passenger Ship Safety Certificate, Cargo Ship Safety Certificate, Cargo Ship Safety Construction Certificate and Cargo Ship Safety Equipment Certificate). Also, similar amendments to the forms for the Nuclear Passenger Safety

Certificate and the Nuclear Cargo Ship Safety Certificate contained in the appendix to the Annex to the 1974 SOLAS Convention.

May 2008 amendments
Entry into force: 1 January 2010

Amendments to SOLAS chapter II-2, regarding drainage of special category and ro-ro spaces to prevent accumulation of water on the vehicle deck of ro-ro ships;

Amendments to SOLAS Chapter XI 1 to add a new Regulation 6 (Additional requirements for the investigation of marine casualties and incidents) to make mandatory parts I and II of the new Casualty Investigation Code;

A new SOLAS regulation II-1/3-9 (Means of embarkation on and disembarkation from ships), to require ships built after its adoption and entry into force to be provided with means of embarkation and disembarkation, such as gangways and accommodation ladders;

A new SOLAS regulation and amendments to SOLAS regulation II-1/3-4 (Emergency towing arrangements on tankers), to extend the regulation to ships other than tankers. The MSC also approved Guidelines for owners/operators on preparing emergency towing procedures; and

Amendments to regulations III/6, III/26 and IV/7 to replace requirements for "radar transponders" with a requirement for a "search and rescue locating device".

Amendments to 1988 SOLAS Protocol

Amendments to the 1988 SOLAS Protocol, to replace the reference to "radar transponders" with a reference to "search and rescue locating devices", in the form of safety certificate for passenger ships and forms of safety certificate for cargo ships.

December 2008 amendments
Entry into force: 1 July 2010

Amendments to the SOLAS Convention and to the 1988 Load Lines Protocol to make mandatory the International Code on Intact Stability, 2008 (2008 IS Code).

The 2008 IS Code provides, in a single document, both mandatory requirements and recommended provisions relating to intact stability, taking into account technical developments, in particular regarding the dynamic stability phenomena in waves, based on state-of-the-art concepts. The Code's mandatory status, under both the SOLAS Convention and the 1988 Load Lines Protocol, will significantly influence the design and the overall safety of ships.

December 2008 amendments
Entry into force: 1 January 2011

Amendments to SOLAS chapter VI to make mandatory the International Maritime Solid Bulk Cargoes Code (IMSBC Code) The IMSBC Code will replace the Code of Safe Practice for Solid Bulk Cargoes (BC Code), which was first adopted as a recommendatory code in 1965 and has been updated at regular intervals since then.

The aim of the mandatory IMSBC Code is to facilitate the safe stowage and shipment of solid bulk cargoes by providing information on the dangers associated with the shipment of certain types of cargo and instructions on the appropriate procedures to be adopted.

June 2009 amendment
Entry into force: 1 January 2011

ECDIS and BNWAS to be made mandatory under SOLAS

Amendments to SOLAS regulation V/19, to make mandatory the carriage of Electronic Chart Display and Information Systems (ECDIS) and Bridge Navigational Watch Alarm Systems (BNWAS), under SOLAS chapter V, *Safety of Navigation*. The requirements will be mandatory for new ships and phased-in for existing ships.

Other SOLAS amendments

- an amendment to SOLAS regulation II-1/3-5.2, to prohibit all new installations of asbestos on board ships, without exceptions; and

- amendments to the title of Chapter VI to read, *Carriage of Cargoes "and Oil Fuels"* and to Regulation VI/5-1 on *Material safety data sheets* (MSDS) to require MSDS to be provided for ships carrying oil or oil fuel, prior to the loading of such oil as cargo in bulk or bunkering of oil fuel. The MSC also approved *Recommendations for material safety data sheets (MSDS) for MARPOL Annex I type cargoes and oil fuels*.

May 2010 amendment
Entry into force: 1 January 2012

"Goal-based standards" (GBS) for oil tankers and bulk carriers

International Goal based Ship Construction Standards for Bulk Carriers and Oil Tankers, along with amendments to Chapter II-1. The new SOLAS regulation II-1/3-10 will apply to oil tankers and bulk carriers of 150m in length and above. It will require new ships to be designed and constructed for a specified design life and to be safe and environmentally friendly, in intact and specified damage conditions, throughout their life. Under the regulation, ships should have adequate strength, integrity and stability to minimize the risk of loss of the ship or pollution to the marine environment due to structural failure, including collapse, resulting in flooding or loss of watertight integrity.

Other SOLAS amendments:

Corrosion protection of cargo oil tanks

A new SOLAS regulation II-1/3-11 on Corrosion protection of cargo oil tanks of crude oil tankers, to require all such tanks to be protected against corrosion, with related performance standards also adopted;

Fire protection

Amendments to SOLAS regulation II-2/4.5.7 on Gas measurement and detection and to SOLAS regulation II-2/7.4.1 relating to fixed fire detection and fire alarm systems. Amendments to the International Code for Fire Safety Systems (FSS Code) were also adopted.