International Regulation News Update
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Maritime Safety Committee’s
94th Session
17 to 21 November 2014

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(+ “ships” are all self propelled vessels)
The IMO Maritime Safety Committee held its 94th session from 17 to 21 November 2014, as summarized below. A number of amendments to SOLAS and the MODU Code were adopted and will enter into force on 1 July 2016. A new Polar Code was adopted and a Code for Gas Fueled Ships was approved in principle.

**ADOPTED SOLAS REVISIONS**

**Container Weight Verification**

A new requirement for shippers to verify the gross mass of cargo containers on/after 1 July 2016 was added to SOLAS Chapter VI, Regulation 2 by the adoption of Resolution MSC.380(94). Containers include tank-containers, flat-racks, bulk containers, etc, but exclude offshore containers (defined in MSC/Circ.860).

MSC.1/Circ.1475 provides guidelines for verifying the gross mass of a container carrying cargo. Two options are available:

- weighing the packed container using calibrated and certified equipment; or
- weighing all packages and cargo items, including pallets, dunnage and other securing material, and adding the sum of these weights to the tare mass of the container using a certified method approved by the competent authority of the State in which packing of the container was completed.

This verification does not apply to containers carried on a chassis or a trailer when driven onboard ro-ro ships engaged in short international voyages (not more than 200 miles from port). The shipping document, signed by the shipper, is to be submitted to the master or his representative and to the terminal in advance for use in preparation of the ship’s stowage plan. In the absence of documentation from the shipper, the container shall not be loaded unless the master or his representative and the terminal representative have obtained the verified gross mass through other means.

**Portable Gas Detection**

Resolution MSC.380(94) also revises Chapter XI-1 of SOLAS by adding a new Regulation 7 that requires, on/after 1 July 2016, cargo ships and passenger ships operating internationally to carry portable atmosphere testing instrument(s) for use prior to entry into enclosed spaces. They are to be capable of measuring concentrations of oxygen, flammable gases/vapours, hydrogen sulphide and carbon monoxide. Guidelines for selecting these instruments are contained in MSC.1/Circ.1477. Reference is also made to the recommendations and safety procedures aimed at preventing casualties to ships’ personnel entering enclosed spaces where there may be an oxygen-deficient, oxygen-enriched, flammable and/or toxic atmospheres, contained in resolution A.1050(27).

Instruments carried onboard to comply with other statutory requirements may be used to satisfy this regulation. Means to calibrate these instruments according to the manufacturer’s instructions are also to be provided onboard.

**ESP Code Revisions**

The Enhanced Program of Inspections During Surveys of Bulk Carriers and Oil Tankers (ESP Code) was revised by the adoption of resolution MSC.381(94). These amendments allow cargo tank testing on oil tankers to be carried out by the vessel’s crew under the direction of the Master, subject to certain conditions. The testing is to occur within the special survey “window” - not more than 3 months prior to the date of the survey on which the overall or close up survey is completed.

Acceptance of such testing by the RO’s surveyor is also contingent on the tank testing having been satisfactorily carried out in accordance with an approved testing procedure. Additionally, there shall have been no record of leakage, distortion or substantial corrosion that would affect the structural integrity of the tank.

An additional revision calls for the survey to check that any addition and/or renewal of materials used for the construction of the hull structure are documented within the Ship Construction File list of materials.

**NEW POLAR CODE**

**Application**

The Committee adopted resolution MSC.386(94) which amends SOLAS by adding a new chapter XIV – Safety Measures for Ships Operating in Polar Waters. The new regulations require all SOLAS-certified cargo ships ≥ 500 gt and passenger ships operating in Arctic waters and the Antarctic area to comply with the safety-related provisions of the new International Code for Ships Operating in Polar Waters (Polar Code), which was adopted by resolution MSC.385(94).

New ships constructed on/after 1 January 2017 will need to comply with relevant requirements upon delivery.
Existing ships, constructed before 1 January 2017, will need to comply with relevant requirements by the first intermediate or renewal survey of the Safety Construction Certificate, whichever comes first, after 1 January 2018.

In October 2014, the Marine Environment Protection Committee (MEPC) approved the environment-related provisions of the Polar Code (Parts II-A and II-B) and associated amendments to MARPOL, which will be considered for adoption at MEPC 68 in May 2015 (see ABS RegNews Update, February 2015).

Safety provisions
Safety provisions, including the extent of ice strengthening (which refers to IACS Unified Requirements for Polar Class Ships), are applied to three categories of ships which are dependent on the ice conditions within which the ship is designed to operate.

Part I-A of the Code contains the mandatory safety provisions which include:

- a Polar Water Operational Manual containing ship-specific capabilities and limitations with specific procedures for normal operations, avoiding conditions that exceed the ship’s capabilities, and responding to incidents;
- maintaining adequate weathertight and watertight integrity through additional measures, such as preventing freezing of closing appliances;
- icing allowances for intact stability, and residual damage stability after withstanding flooding resulting from hull penetration due to ice impact based on the application of unique damage penetration extents;
- protection of machinery, life-saving arrangements & appliances and firefighting equipment with regard to ice accretion, snow accumulation, ice ingestion from seawater, freezing/increased viscosity of liquids and seawater intake temperature, with additional measures for ships intending to operate in low air temperatures and ice;
- additional safety of navigation and communication provisions;
- advanced training for Master and Chief Mate and basic training for officers in charge of a navigational watch on ships operating in ice-covered waters; and
- a conditional provision to allow an ice advisor (someone other than the Master, Chief Mate, or navigational watch officers) to satisfy the training requirements.

Part I-B contains non-mandatory safety recommendations on:

- assignment of limiting ice capabilities;
- carrying out the operational assessment;
- personal and group survival equipment;
- safety of navigation;
- life-saving arrangements and appliances;
- determining equivalency of ship structure;
- Polar Water Operational Manual;
- icebreaker assistance; and
- voyage planning.

Miscellaneous
In order to relieve some burden, the Code allows cargo ships to obtain a Polar Code Certificate without an onboard survey if no additional hardware (structural modifications and/or equipment) is required for compliance with the Code. This would typically be the case for ships that are undertaking one-off voyages in Polar Waters during warm seasons when no ice, low air temperature, or ice accretion is encountered.

Guidance is currently under development for a methodology to determine limitations for operation in ice for structural risk assessment and inclusion in the ship’s operational documentation. IACS has been developing the Polar Operational Limit Assessment Risk Indexing System (POLARIS) which will be submitted to MSC 95, in June 2015, with the view that it be published as an MSC Circular.

APPROVED SOLAS REVISIONS
The following amendments to SOLAS were approved by the Committee and, subject to adoption at MSC 95 in June 2015, are expected to enter into force on 1 January 2017.

Cargo tank venting arrangements
Arrangements for secondary means of venting on new oil tankers will require full flow relief of cargo or inert gas vapors at all times including in the event of damage to, or inadvertent closing of, the primary means of venting.

More specifically:

- **Isolating valves** - fitted in cargo tank venting arrangements that are combined with other cargo tanks are to be so arranged to permit the passage of large volumes of vapour, air or inert gas mixtures during cargo loading and ballasting, or during discharging operations;
Secondary means for pressure/vacuum relief is required, in the event of damage to, or inadvertent closing of, the required tank isolation valve arrangement noted above. Two are specified: (1) a secondary means of venting capable of preventing over-pressure or under-pressure; or (2) pressure sensors fitted in each tank which are to be monitored and alarmed at the ship’s cargo control room or the position from which cargo operations are normally carried out.

Openings for small flow by thermal variations will require a minimum discharge velocity of 30 m/s is now required and that flammable vapors are to be released at least 6 m above the cargo tank deck (for free flow of vapor mixtures) or at least 2 m above the cargo tank deck (for high-velocity discharges). Previously, the release needed to be 2 m above the cargo tank deck and 5 m from the nearest air intakes and openings to enclosed spaces containing a source of ignition.

Power ventilation systems
Currently, power ventilation systems serving vehicle, special category and ro-ro spaces on new passenger and cargo ships are to deliver the specified number of air changes (6 or 10 air changes per hour depending on ship type and space served as specified in SOLAS) at all times when vehicles are in such spaces.

The approved amendments will allow this rate to be reduced if an air quality control system complying with the provisions in MSC/Circ.729 is provided. Such systems, when fitted onboard passenger ships, are to be separate from other ventilation systems.

IGF CODE

Scope of Application
The Committee approved “in principle” the Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code) as well as amendments to SOLAS Chapters II-1 and II-2, specifically:

- introducing a new Part G to Chapter II-1 which mandates the application of the IGF Code to cargo ships ≥ 500gt and passenger ships using natural gas fuel; and
- revising Part F, Regulation 55, of Chapter II-1 to account for the IGF Code requirement that ships using other low-flashpoint fuels (methanol, propane, butane, ethanol, hydrogen, dimethyl ether, etc.) need to comply with the functional requirements of the Code through the alternative design regulation based on an engineering analysis. Operationally-dependent alternatives are not permitted.

If adopted at MSC 95 in June 2015, it is expected that the mandatory provisions will enter into force on 1 January 2017 and will apply to new ships:

- with a building contract placed on or after 1 January 2017; or
- in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or after 1 July 2017; and
- regardless of the building contract or keel laying date, the delivery is on or after 1 January 2021.

Ships which commence a conversion on/after 1 January 2017 to use low-flashpoint fuels or use additional or different low-flashpoint fuels other than those for which it was originally certified will need to comply with the IGF Code. The IGF Code is not intended to apply to gas carriers.

Additional Initiatives
IMO plans to develop additional parts of the IGF Code to provide detailed requirements for other specific low flashpoint fuels, such as methanol, LPG, etc., at a later date as industry experience develops.

Currently, low-flashpoint fuel means gaseous or liquid fuel having a flashpoint lower than 60°C. The Sub-committee on Ship Systems and Equipment has been tasked to review the minimum flashpoint requirements for oil fuel after considering a proposal by the USA and Canada to lower it to 52°C.

The basis of the proposal is to achieve consistency with widely available automotive diesel fuels, in light of the SOx ECA requirements for use of fuel oils with a maximum sulphur content being reduced to 0.10% m/m as of 1 January 2015.

Despite the debate concerning the SOLAS threshold of 60°C for low flashpoint fuels, it has been recognized by the IGF Code working group that it is not the intent to apply the IGF Code to conventional liquid low flashpoint fuels, such as those permitted under SOLAS II-2/4.2.1.2 for use in emergency generators which have a 43°C threshold.
Significant provisions of the IGF Code

The more significant provisions of the IGF Code include:

- **Risk assessment** – conducted to ensure that risks arising from the use of gas-fuel or low-flashpoint fuels affecting persons on board, the environment, the structural strength or the integrity of the ship are addressed. Consideration is to be given to the hazards associated with physical layout, operation and maintenance, following any reasonably foreseeable failure. The scope and methodology of this risk assessment remains to be clarified and IACS is in the process of developing a unified requirement on this.

- **Machinery spaces** – are to be either “gas safe” (a single failure cannot lead to release of fuel gas) or “ESD-protected” (in the event of an abnormal gas hazard, all non-safe equipment/ignition sources and machinery is automatically shutdown while equipment or machinery in use or active during these conditions is to be of a certified safe type). Engines for generating propulsion power and electric power shall be located in two or more machinery spaces.

- **Fuel system protection (deterministic)** – the IGF Code includes deterministic tank location criteria requiring that tanks are not to be located:
  - within B/5 or 11.5 m, whichever is less, from the side shell at the load line draft
  - closer to the side shell or aft terminal of the ship than B/10 for passenger ships and 0.8m to 2.0m depending on the gross design volume of the individual fuel tank at 20°C
  - within B/15 or 2.0 m, whichever is less, from of the bottom shell plating; and
  - within 8% of the ships length from the forward length of the ship.

  Fuel pipes are not to be located less than 800 mm from the ship’s side. Single fuel supply systems are to be fully redundant and segregated so that a leakage in one system does not lead to an unacceptable loss of power.

- **Limit state design** - structural elements of the fuel containment system are to be evaluated with respect to possible failure modes taking into account the possibility of plastic deformation, buckling, fatigue and loss of liquid and gas tightness.

- **Fuel system protection (probabilistic)** – a probabilistic alternative to the deterministic protection is included in the Code. This alternative may permit tank location closer to the side shell with different acceptability threshold (fcn) values for passenger and cargo ships of 0.02 and 0.04, respectively. As previously decided by the IMO, the location of fuel tanks below accommodations is not prohibited, but is subject to satisfactory risk assessment.

- **Air locks** - direct access between non-hazardous and hazardous spaces is prohibited except where necessary for operational reasons, through a mechanically ventilated air lock with self-closing doors. Such an air lock is also required for accesses between ESD-protected machinery spaces and other enclosed spaces.

- **Hazardous areas** - the IGF Code applies IEC principles for the classification of hazardous areas. It should be noted that the hazardous areas associated with tank relief valve vents are smaller than those in the IGC Code.

- **Gas detection** – is required at ventilation inlets to accommodation and machinery spaces if required by the risk assessment.

Training Requirements

The Committee approved revisions to the STCW Convention containing minimum requirements for the training and qualifications of masters, officers, ratings and other personnel on IGF Code ships.

- Seafarers responsible for designated safety duties associated with the care, use or in emergency response to gas fuel are to hold a certificate in basic training for service on IGF Code certified ships. Seafarers who have been qualified and certified under the STW Code for LNG tankers are considered as having met these requirements.

- Masters, engineer officers and all personnel with immediate responsibility for the care and use of gas fuels/systems are, in addition to the basic training addressed above, required to hold a certificate in advanced training and are to have completed at least one month of approved seagoing service that includes a minimum of three bunkering operations on board IGF Code certified ships.

These amendments are subject to adoption with the IGF Code at MSC 95 in June 2015.
MODU CODE REVISIONS

**Portable atmosphere testing instrument**

All three versions of the MODU Code (1979, 1989 and 2009) have been revised to require MODUs to carry aboard, as of 1 July 2016, portable atmosphere testing instrument(s).

These instruments are to be capable of measuring concentrations of oxygen, flammable gases or vapours, hydrogen sulphide and carbon monoxide prior to entry into enclosed spaces. Means to calibrate these instruments are also to be provided. These amendments coincide with the amendment to SOLAS Regulation XI-1/7.

**Lifeboat launching**

Alternative provisions for the requirements to launch and maneuver davit-launched lifeboats at least once every three months will be permitted for units subject to the 2009 MODU Code constructed ≥ 18 November 2014. A new MSC.1/Circ.1486 contains guidelines for these alternative provisions and recommends that:

- lifeboats be lowered to just above the water and returned to the original stowed position on a monthly basis;
- a comprehensive maintenance and inspection plan (see MSC.1/Circ.1206/Rev.1) be reviewed by the Administration and included in unit's operating procedures and implemented onboard; and
- crew undergo specific training and familiarization.

Administrations may also consider applying these guidelines to MODUs constructed prior to 18 November 2014.

**CSS Code Interpretations**

The Committee approved amendments to Annex 14 of the Code of Safe Practice for Cargo Stowage and Securing (CSS Code), set forth under a revised MSC circular cover note (MSC.1/Circ.1352, Rev.1).

Specifically, interpretations are provided for the dimensions and arrangements of dedicated container ships and arrangements on other types of ships which are specifically designed and fitted to carry containers on deck. For example, refer to Figure 1, below, where C1 (distance from lashing bridge fencing to container stack) and F (width of lashing bridge between top rails of fencing) are illustrated.

**Fire Main Isolation Valve Location**

To preserve the integrity of the fire main system in case of fire or explosion, SOLAS requires isolation valves to be fitted in the fire main at the front of the accommodation block in a protected position and on the tank deck at intervals of not more than 40 m. The Committee agreed IACS’ proposal and issued new MSC.1/Circ.1492 which clarifies the location of the valve at the front of the accommodation block should be within an accommodation space, service spaces or control station.

**MISCELLANEOUS**

**Remotely Located Liferafts**

The Committee approved a new MSC.1/Circ.1490 which allows for alternative arrangements with regard to the location of the embarkation station and stowed position of the remotely located liferaft (which is required on cargo ships when the stern of the ship to the nearest survival craft is more than 100 m).

For some ships, in particular container ships and bulk carriers, where the arrangement of the main deck forward may not allow the liferaft to be readily moved from one side of the ship to the other, the Circular allows the liferaft to be stowed on the focsle deck provided:

- the liferaft can be relocated after launching, using the painter, to the embarkation ladder if so positioned on another deck; and
- two crew members are able to carry out preparations for embarkation and launching in less than 5 minutes.
However, the valve may be located on the open deck provided that the valve is located:

- at least 5 m aft of the aft end of the aftermost cargo tank; or
- within 5 m aft of the aft end of the aftermost cargo tank provided the valve is protected by a permanent steel obstruction.