ST. VINCENT AND THE GRENADINES

MARITIME ADMINISTRATION

CIRCULAR N° SOL 038

Amendment to SOLAS Regulation II-1/3-4 (RES. MSC.256 (84) - Emergency Towing Arrangements and Procedures

TO: SHIPOWNERS, SHIPS' OPERATORS AND MANAGERS, MASTERS SURVEYORS TO FLAG STATE ADMINISTRATION RECOGNIZED ORGANIZATIONS

APPLICABLE TO: All ships
ENTRY INTO FORCE: 1st January 2010

Monaco, 29th September 2009.

An amendment to SOLAS Convention Chapter II-1 Regulation 3-4 regarding emergency towing procedures was adopted as Resolution MSC.256 (84) at the 84th session of the IMO Maritime Safety Committee (MSC 84) held in May 2008. At the same time, Guidelines for Owners/Operators on Preparing Emergency Towing Procedures were circulated as MSC.1/Circ.1255.

Application dates for Passenger and Cargo ships are as follows:

- All passenger ships, not later than 1st January 2010;
- Cargo ships built on or after 1st January 2010; and
- Cargo ships built before 1st January 2010, not later than 1st January 2012

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

A minimum of three copies should be kept on board at specified locations and a copy should be kept at hand by the owners/operators in order to facilitate the passing on of information to the towage company as early as possible in a situation of emergency. A copy should also be kept in a common electronic file format, which will allow faster distribution to the concerned parties. (Refer to the Guidelines for owners/operators on preparing emergency towing procedures (MSC.1/Circ.1255)).

Application dates for tankers are as follows:

For tankers built on or after 1st July 2002:

- The arrangements should, at all times, be capable of rapid deployment in the absence of main power on the ship to be towed and easy connection to the towing ship. At least one of the emergency towing arrangements should be pre-rigged ready for rapid deployment; and emergency towing arrangements at both ends should be of adequate strength taking into account the size and

deadweight of the ship, and the expected forces during bad weather conditions. The design and construction and prototype testing of emergency towing arrangements should be approved by the Administration, based on the Guidelines developed by the Organization (MSC.35 (63), as amended).

- For tankers built before 1st July 2002, the design and construction of emergency towing arrangements should be approved by the Administration, based on the Guidelines developed by the Organization (MSC.35 (63), as amended).

Emergency towing arrangements should be fitted at both ends on board every tanker of not less than 20,000 tons deadweight.

Approval by the Administration is delegated to Recognized Organizations to this Administration.

Owners/Operators of St Vincent and The Grenadines ships are requested to timely provide their ships with a ship-specific emergency towing procedure which should be carried aboard the ship for use in emergency situations and should be based on existing arrangements and equipment available on board the ship. In this respect MSC.1/Circ.1255, MSC.256 (84), MSC/Circ.1175 and MSC.35 (63) are annexed to this circular as guidelines.

The procedures should be considered as part of the emergency preparedness required by paragraph 8 of part A of the International Safety Management (ISM) Code.

Title	CIRCULAR / MSC.1/Circ.1255

Refer to 08 SOLAS Reg.II-1/3-4 (Emergency towing arrangements and procedures)

MSC.1/Circ.1255

27 May 2008

GUIDELINES FOR OWNERS/OPERATORS ON PREPARING EMERGENCY TOWING PROCEDURES

1 The Maritime Safety Committee, at its eighty-fourth session (7 to 16 May 2008), following a recommendation of the fiftieth session of the Sub-Committee on Ship Design and Equipment, approved Guidelines for owners/operators on preparing emergency towing procedures, set out in the annex, aimed at assisting owners/operators in preparing ship-specific emergency towing procedures for ships subject to SOLAS regulation II-1/3-4.

2 The Guidelines are intended to help owners/operators to carry out the necessary steps in establishing emergency towing procedures, provide information on the scope of the emergency towing booklet and give guidance towards creating procedures for towage.

3 The procedures developed by means of these Guidelines aim at supporting the crew in establishing the safest and most efficient course of action to be taken when confronted with an emergency that requires towing.

4 Member Governments are invited to bring the annexed Guidelines to the attention of all parties concerned for application in conjunction with SOLAS regulation II-1/3-4 (Emergency towing arrangements and procedures).

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ANNEX

GUIDELINES FOR OWNERS/OPERATORS ON PREPARING EMERGENCY TOWING PROCEDURES

1 PURPOSE

The purpose of these Guidelines is to assist owners/operators in preparing ship-specific emergency towing procedures for ships subject to SOLAS regulation II-1/3-4. The procedures should be considered as part of the emergency preparedness required by paragraph 8 of part A of the International Safety Management (ISM) Code.

2 OBSERVATIONS

2.1 Owners, operators and crews should take into consideration that the nature of an emergency does not allow time for deliberation. Accordingly, the procedures should be practiced beforehand.

2.2 The towing procedures should be maintained on board the ship for ready use by the ship's crew in preparing their ship for towage in an emergency.

2.3 The crew should have good knowledge of equipment stowage location and accessibility . Any identified improvements to stowage arrangements should be implemented.

2.4 Crew dealing with an emergency situation should be aware of power availability required for winches and tools, as well as for deck lighting (for bad/low visibility and night time situations).

2.5 It is recognized that not all ships will have the same degree of shipboard equipment, so that there may be limits to possible towing procedures. Nevertheless, the intention is to predetermine what can be accomplished, and provide this information to the ship's crew in a ready-to-use format (booklet, plans, poster, etc.).

3 SHIP EVALUATION

3.1 The owner/operator should ensure that the ship is inspected and its capability to be towed under emergency situations is evaluated. Both equipment on board and available procedures should be reviewed. Items that need to be inspected are described in the following paragraphs.

3.2 The ability of the ship to be towed from bow and stern should be evaluated, and the following items should be reviewed:

.1 line handling procedures (passing and receiving messenger lines, towlines, bridles); and

.2 layout, structural adequacy and safe working loads of connection points (fairleads chocks, winches, bitts, bollards), etc.

3.3 The on-board tools and equipment available for assembling the towing gear and their locations should be identified. These should include but not be limited to:

.1 chains;

.2 cables;

.3 shackles;

.4 stoppers;

.5 tools; and

.6 line throwing apparatus.

3.4 The availability and characteristics of radio equipment on board should be identified, in order to enable communication between deck crew, bridge and the towing/salvage ship.

3.5 Unless the safe working loads of connection points are known, these loads should be determined by an engineering analysis reflecting the on-board conditions of the ship. The Guidance on shipboard towing and mooring equipment (MSC/Circ.1175) may be used for guidance.

3.6 The evaluation should be performed by persons knowledgeable in towing equipment and operations.

4 EMERGENCY TOWING BOOKLET

4.1 The Emergency Towing Booklet (ETB) should be ship specific and be presented in a clear, concise and ready-to-use format (booklet, plan, poster, etc.).

4.2 Ship-specific data should include but not be limited to:

.1 ship’s name;

.2 call sign;

.3 IMO number;

.4 anchor details (shackle, connection details, weight, type, etc.);

.5 cable and chain details (lengths, connection details, proof load, etc.);

.6 height of mooring deck(s) above base;

.7 draft range; and

.8 displacement range.

4.3 All procedures developed in accordance with section 5 should be presented in a clear and easy to understand format, which will aid their smooth and swift application in an emergency situation.

4.4 Comprehensive diagrams and sketches should be available and include the following:

.1 assembly and rigging diagrams;

.2 towing equipment and strong point locations; and

.3 equipment and strong point capacities and safe working loads (SWLs).

4.5 A copy should be kept at hand by the owners/operators in order to facilitate the passing on of information to the towage company as early as possible in the emergency. A copy should also be kept in a common electronic file format, which will allow faster distribution to the concerned parties.

4.6 A minimum of three copies should be kept on board and located in:

.1 the bridge;

.2 a forecastle space; and

.3 the ship's office or cargo control room.

5 DEVELOPING PROCEDURES

5.1 Ship-specific procedures should be identified during the ship's evaluation and entered accordingly in the ETB. The procedures should include, as a minimum, the following:

.1 a quick-reference decision matrix that summarizes options under various emergency scenarios, such as weather conditions (mild, severe), availability of shipboard power (propulsion, on-deck power), imminent danger of grounding, etc.;

.2 organization of deck crew (personnel distribution, equipment distribution, including radios, safety equipment, etc.);

.3 organization of tasks (what needs to be done, how it should be done, what is needed for each task, etc.);

.4 diagrams for assembling and rigging bridles, tow lines, etc., showing possible emergency towing arrangements for both fore and aft. Rigged lines should be lead such that they avoid sharp corners, edges and other points of stress concentration;

.5 power shortages and dead ship situations, which must be taken into account, especially for the heaving across of heavy towing lines;

.6 a communications plan for contacting the salvage/towing ship . This plan should list all information that the ship's master needs to communicate to the salvage/towing ship. This list should include but not be limited to:

.1 damage or seaworthiness;

.2 status of ship steering;

.3 propulsion;

.4 on deck power systems;

.5 on-board towing equipment;

.6 existing emergency rapid disconnection system;

.7 forward and aft towing point locations;

.8 equipment, connection points, strong points and safe working loads (SWL);

.9 towing equipment dimensions and capacities; and

.10 ship particulars;

.7 evaluation of existing equipment, tools and arrangements on board the ship for possible use in rigging a towing bridle and securing a towline;

.8 identification of any minor tools or equipment providing significant improvements to the “towability” of the ship;

.9 inventory and location of equipment on board that can be used during an emergency towing situation;

.10 other preparations (locking rudder and propeller shaft, ballast and trim, etc.); and

.11 other relevant information (limiting sea states, towing speeds, etc.).

Title	Res / MSC / Res.MSC.35(63)
Amendment Status	Amended by Res.MSC.132(75), Supersedes Res.A.535(13)

IMO

RESOLUTION MSC.35(63)

(adopted on 20 May 1994)

ADOPTION OF GUIDELINES FOR EMERGENCY TOWING ARRANGEMENTS ON TANKERS

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO that the Assembly, at its thirteenth session, when adopting resolution A.535(13) concerning Recommendation on emergency towing requirements for tankers, requested the Committee to keep the Recommendation under review, in particular in respect to new towing concepts which may be introduced and to report as necessary to the Assembly,

NOTING that tankers, including oil tankers, gas carriers and chemical tankers, in emergencies such as complete mechanical breakdowns, may need to be towed out of danger, and that technologically advanced towing arrangements have been developed since the adoption of resolution A.535(13), whose provisions need revision to incorporate new towing concepts,

NOTHING ALSO that the new regulation V/15-1 of the International Convention for the Safety of Life at Sea, 1974, as adopted by the Committee in May 1994, requires that all tankers of not less than 20,000 tonnes deadweight shall be fitted with an emergency towing arrangement, the design and construction of which shall be approved by the Administration based on the Guidelines developed by the Organization,

HAVING CONSIDERED the recommendation made by the Sub-Committee on Ship Design and Equipment at its thirty-seventh session,

1. ADOPTS the Guidelines for Emergency Towing Arrangements on Tankers, the text of which is set out in the Annex to the present resolution and which supersedes resolution A.535(13) ;

2. RECOMMENDS that all Governments concerned take appropriate steps to implement the Guidelines.

ANNEX

GUIDELINES FOR EMERGENCY TOWING ARRANGEMENTS ON TANKERS

1. PURPOSE

1.1 Under regulation V/15-1 of the 1974 SOLAS Convention, as amended by resolution MSC.31(63) in 1994, new and existing tankers of 20,000 tonnes deadweight and above shall be fitted with an emergency towing arrangement, the design and construction of which shall be approved by the Administration, based on the Guidelines developed by the Organization.

1.2 The present Guidelines are intended to provide standards for the design and construction of emergency towing arrangements which Administrations are recommended to implement.

1.3 For existing tankers fitted with the emergency towing arrangements in accordance with resolution A.535(13), the existing towing arrangements forward of the ship may be retained, but the towing arrangements aft of the ship should be upgraded to comply with the requirements of the present Guidelines.

2 REQUIREMENTS FOR THE ARRANGEMENTS AND COMPONENTS

2.1 General

The emergency towing arrangements should be so designed as to facilitate salvage and emergency towing operations on tankers primarily to reduce the risk of pollution. The arrangements should at all times be capable of rapid deployment in the absence of main power on the ship to be towed and easy connection to the towing vessel. Figure 1 shows arrangements which may be used as reference.

2.2 Towing components

	Forward of ship*	Aft of ship	Strength requirements
Pick-up gear	optional	Yes	---
Towing pennant	optional	Yes	Yes
Chafing gear	Yes	Depending on design	Yes
Fairlead	Yes	Yes	Yes
Strongpoint	Yes	Yes	Yes
Roller pedestal	Yes	Depending on design	---

The major components of the towing arrangements should consist of the following:

* See paragraph 3.1.4.

2.3 Strength of the towing components

2.3.1 Towing components as specified in 2.2 for strength should have a working strength of at least 1,000 kN for tankers of 20,000 tonnes deadweight and over but less than 50,000 tonnes deadweight and at least 2,000 kN for tankers of 50,000 tonnes deadweight and over(working strength is defined as one half ultimate strength). The strength should be sufficient for all relevant angles of towline, i.e. up to 90° from the ship's centreline to port and starboard and 30° vertical downwards.

2.3.2 Other components should have a working strength sufficient to withstand the load to which such components may be subjected during the towing operation.

2.4 Length of towing pennant

The towing pennant should have a length of at least twice the lightest seagoing ballast freeboard at the fairlead plus 50 m.

2.5 Location of strongpoint and fairlead

The bow and stern strongpoint and fairleads should be located so as to facilitate towing from either side of the bow or stern and minimize the stress on the towing system.

2.6 Strongpoint

The inboard end fastening should be a stopper or bracket or other fitting of equivalent strength. The strongpoint can be designed integral with the fairlead.

2.7 Fairleads

2.7.1 Size

Fairleads should have an opening large enough to pass the largest portion of the chafing gear, towing

pennant or towing line.

2.7.2 Geometry

The fairlead should give adequate support for the towing pennant during towing operation which means bending 90°to port and to starboard side and 30°vertical downwards. The vending ratio(towing pennant bearing surface diameter to towing pennant diameter should be not less than 7 to 1.

2.7.3 Vertical location

The fairlead should be located as close as possible to the deck and, in any case, in such a position that the chafing chain is approximately parallel to the deck when it is under strain between the strongpoint and the fairlead.

2.8 Chafing chain

Different solutions on design of chafing gear can be used. If a chafing chain is to be used, it should have the following characteristics:

2.8.1 Type

The chafing chain should be stud link chain.

2.8.2 Length

The chafing chain should be long enough to ensure that the towing pennant remains outside the fairlead during the towing operation. A chain extending from the strongpoint to a point at least 3 m beyond the fairlead should meet this criterion.

2.8.3 Connecting limits

One end of the chafing chain should be suitable for connection to the strongpoint. The other end should be fitted with a standard pear-shaped open link allowing connection to a standard bow shackle.

2.8.4 Stowage

The chafing chain should be stowed in such a way that it can be rapidly connected to the strongpoint.

2.9 Towing connection

The towing pennant should have a hard eye-formed termination allowing connection to a standard bow shackle.

2.10 Prototype test (Refer to the IACS UI SC113)

Designs of emergency towing arrangements in accordance with these Guidelines should be prototype tested to the satisfaction of the Administration.

3 READY AVAILABILITY OF TOWING ARRANGEMENTS

3.1 To facilitate approval of such equipment and to ensure rapid deployment, emergency towing arrangements should comply with the following criteria:

.1 The aft emergency towing arrangement should be pre-rigged and be capable of being deployed in a controlled manner in harbour conditions in not more than 15 min.

.2 The pick-up gear for the aft towing pennant should be designed at least for manual operation by one person taking into account the absence of power and the potential for adverse environmental conditions that may prevail

during such emergency towing operations. The pick-up gear should be protected against the weather and other adverse conditions that may prevail.

.3 The forward emergency towing arrangement should be capable of being deployed in harbour conditions in not more than 1 h.

.4 The forward emergency towing arrangement should be designed at least with a means of securing a towline to the chafing gear using a suitably positioned pedestal toller to facilitate connection of the towing pennant.

.5 Forward emergency towing arrangements which comply with the requirements for aft emergency towing arrangements may be accepted.

.6 All emergency towing arrangements should be clearly marked to facilitate safe and effective use even in darkness and poor visibility.

3.2 All emergency towing components should be inspected by ship personnel at regular intervals and maintained in good working order.

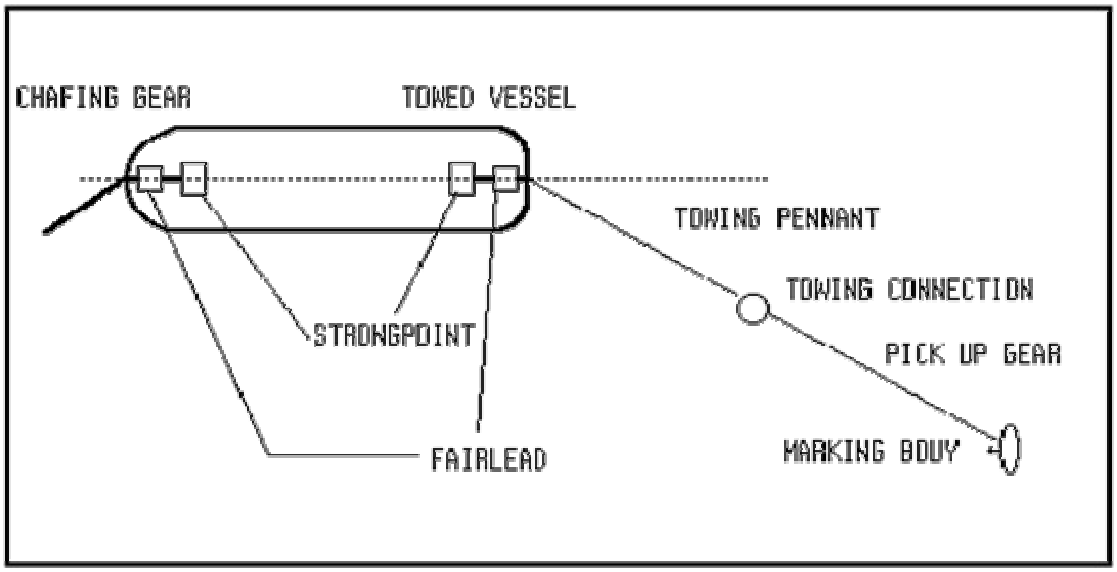

Figure 1 TYPICAL EMERGENCY TOWING ARRANGEMENTS

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Title	Res / MSC / Res.MSC.256(84)

ANNEX 2

RESOLUTION MSC.256(84)

(adopted on 16 May 2008)

ADOPTION OF AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974, AS AMENDED

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING FURTHER article VIII(b) of the International Convention for the Safety of Life at Sea (SOLAS), 1974 (hereinafter referred to as "the Convention"), concerning the amendment procedure applicable to the Annex to the Convention, other than to the provisions of chapter I thereof,

HAVING CONSIDERED, at its eighty-fourth session, amendments to the Convention, proposed and circulated in accordance with article VIII(b)(i) thereof,

1. ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the Convention, the text of which is set out in the Annex to the present resolution;

2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the said amendments shall be deemed to have been accepted on 1 July 2009, unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet, have notified their objections to the amendments;

3. INVITES SOLAS Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2010 upon their acceptance in accordance with paragraph 2 above;

4. RECOMMENDS the Contracting Governments concerned to issue certificates complying with the annexed amendments at the first renewal survey on or after 1 January 2010;

5. REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Contracting Governments to the Convention;

6. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organization, which are not Contracting Governments to the Convention.

ANNEX

AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974, AS AMENDED

CHAPTER II-1

CONSTRUCTION - STRUCTURE, SUBDIVISION AND STABILITY, MACHINERY AND ELECTRICAL INSTALLATIONS

Regulation 3-4 - Emergency towing arrangements on tankers

1 The existing regulation 3-4 is replaced by the following:

“Regulation 3-4 Emergency towing arrangements and procedures

1 Emergency towing arrangements on tankers

1.1 Emergency towing arrangements shall be fitted at both ends on board every tanker of not less than 20,000 tonnes deadweight.

1.2 For tankers constructed on or after 1 July 2002:

.1 the arrangements shall, at all times, be capable of rapid deployment in the absence of main power on the ship to be towed and easy connection to the towing ship. At least one of the emergency towing arrangements shall be pre-rigged ready for rapid deployment; and

.2 emergency towing arrangements at both ends shall be of adequate strength taking into account the size and deadweight of the ship, and the expected forces during bad weather conditions. The design and construction and prototype testing of emergency towing arrangements shall be approved by the Administration, based on the Guidelines developed by the Organization*.

1.3 For tankers constructed before 1 July 2002, the design and construction of emergency towing arrangements shall be approved by the Administration, based on the Guidelines developed by the Organization*.

* Refer to the Guidelines on emergency towing arrangements for tankers, adopted by the Maritime Safety Committee by resolution MSC.35(63), as amended.

2 Emergency towing procedures on ships

2.1 This paragraph applies to:

.1 all passenger ships, not later than 1 January 2010;

.2 cargo ships constructed on or after 1 January 2010; and

.3 cargo ships constructed before 1 January 2010, not later than 1 January 2012.

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

2.3 The procedure** shall include:

** Refer to the Guidelines for owners/operators on preparing emergency towing procedures (MSC.1/Circ.1255).

.1 drawings of fore and aft deck showing possible emergency towing arrangements;

.2 inventory of equipment on board that can be used for emergency towing;

.3 means and methods of communication; and

.4 sample procedures to facilitate the preparation for and conducting of emergency towing operations.”

2 The following new regulation 3-9 is added after the existing regulation 3-8:

“Regulation 3-9 Means of embarkation on and disembarkation from ships

1 Ships constructed on or after 1 January 2010 shall be provided with means of embarkation on and disembarkation

from ships for use in port and in port related operations, such as gangways and accommodation ladders, in accordance with paragraph 2, unless the Administration deems that compliance with a particular provision is unreasonable or impractical*.

* Circumstances where compliance may be deemed unreasonable or impractical may include where the ship:

.1 has small freeboards and is provided with boarding ramps; or

.2 is engaged in voyages between designated ports where appropriate shore accommodation/embarkation ladders (platforms) are provided.

2 The means of embarkation and disembarkation required in paragraph 1 shall be constructed and installed based on the guidelines developed by the Organization**.

3 For all ships the means of embarkation and disembarkation shall be inspected and maintained** in suitable condition for their intended purpose, taking into account any restrictions related to safe loading. All wires used to support the means of embarkation and disembarkation shall be maintained as specified in regulation III/20.4."

** Refer to the Guidelines for construction, installation, maintenance and inspection/survey of accommodation ladders and gangways, to be developed by the Organization.

CHAPTER II-2

CONSTRUCTION - FIRE PROTECTION, FIRE DETECTION AND FIRE EXTINCTION

Regulation 10 - Fire fighting

3 The following new paragraph 4.1.5 is added after the existing paragraph 4.1.4:

"4.1.5 By the first scheduled dry-docking after 1 January 2010, fixed carbon dioxide fire-extinguishing systems for the protection of machinery spaces and cargo pump-rooms on ships constructed before 1 July 2002 shall comply with the provisions of paragraph 2.2.2 of chapter 5 of the Fire Safety Systems Code."

Regulation 19 - Carriage of dangerous goods

4 In paragraph 4, the words ", as defined in regulation VII/2," are deleted.

Regulation 20 - Protection of vehicle, special category and ro-ro spaces

5 The existing paragraph 6.1.4 is replaced by the following paragraph 6.1.4 and new paragraph 6.1.5 is added after paragraph 6.1.4 as follows:

"6.1.4 The requirement of this paragraph shall apply to ships constructed on or after 1 January 2010. Ships constructed on or after 1 July 2002 and before 1 January 2010 shall comply with the previously applicable requirements of paragraph 6.1.4, as amended by resolution MSC.99(73). When fixed pressure waterspraying systems are fitted, in view of the serious loss of stability which could arise due to large quantities of water accumulating on the deck or decks during the operation of the fixed pressure water-spraying system, the following arrangements shall be provided:

.1 in passenger ships:

.1.1 in the spaces above the bulkhead deck, scuppers shall be fitted so as to ensure that such water is rapidly discharged directly overboard, taking into account the guidelines developed by the Organization*;

.1.2.1 in ro-ro passenger ships, discharge valves for scuppers, fitted with positive means of closing operable from a position above the bulkhead deck in accordance with the requirements of the International Convention on Load Lines in force, shall be kept open while the ships are at sea;

.1.2.2 any operation of valves referred to in paragraph 6.1.4.1.2.1 shall be recorded in the log-book;

.1.3 in the spaces below the bulkhead deck, the Administration may require pumping and drainage

facilities to be provided additional to the requirements of regulation II-1/35-1. In such case, the drainage system shall be sized to remove no less than 125% of the combined capacity of both the water-spraying system pumps and the required number of fire hose nozzles, taking into account the guidelines developed by the Organization*. The drainage system valves shall be operable from outside the protected space at a position in the vicinity of the extinguishing system controls. Bilge wells shall be of sufficient holding capacity and shall be arranged at the side shell of the ship at a distance from each other of not more than 40 m in each watertight compartment;

.2 in cargo ships, the drainage and pumping arrangements shall be such as to prevent the build-up of free surfaces. In such case, the drainage system shall be sized to remove no less than 125% of the combined capacity of both the water-spraying system pumps and the required number of fire hose nozzles, taking into account the guidelines developed by the Organization*. The drainage system valves shall be operable from outside the protected space at a position in the vicinity of the extinguishing system controls. Bilge wells shall be of sufficient holding capacity and shall be arranged at the side shell of the ship at a distance from each other of not more than 40 m in each watertight compartment. If this is not possible, the adverse effect upon stability of the added weight and free surface of water shall be taken into account to the extent deemed necessary by the Administration in its approval of the stability information**. Such information shall be included in the stability information supplied to the master as required by regulation II-1/5-1.

6.1.5 On all ships, for closed vehicles and ro-ro spaces and special category spaces, where fixed pressure water-spraying systems are fitted, means shall be provided to prevent the blockage of drainage arrangements, taking into account the guidelines developed by the Organization*. Ships constructed before 1 January 2010 shall comply with the requirements of this paragraph by the first survey after 1 January 2010."

* Refer to the Guidelines for drainage systems in closed vehicle and ro-ro spaces and special category spaces, to be developed by the Organization.

** Refer to the Recommendation on fixed fire-extinguishing systems for special category spaces, adopted by the Organization by resolution A.123(V).

CHAPTER III

LIFE-SAVING APPLIANCES AND ARRANGEMENTS

Regulation 6 - Communications

6 The existing paragraph 2.2 is replaced by the following:

"2.2 Search and rescue locating devices At least one search and rescue locating device shall be carried on each side of every passenger ship and of every cargo ship of 500 gross tonnage and upwards. At least one search and rescue locating device shall be carried on every cargo ship of 300 gross tonnage and upwards but less than 500 gross tonnage. Such search and rescue locating devices shall conform to the applicable performance standards not inferior to those adopted by the Organization*. The search and rescue locating devices** shall be stowed in such location that they can be rapidly placed in any survival craft other than the liferaft or liferafts required by regulation 31.1.4. Alternatively one search and rescue locating device shall be stowed in each survival craft other than those required by regulation 31.1.4. On ships carrying at least two search and rescue locating devices and equipped with free-fall lifeboats one of the search and rescue locating devices shall be stowed in a free-fall lifeboat and the other located in the immediate vicinity of the navigation bridge so that it can be utilized on board and ready for transfer to any of the other survival craft."

* Refer to the Recommendation on performance standards for survival craft radar transponders for use in search and rescue operations, adopted by the Organization by resolution MSC.247(83) (A.802(19)), as amended) and the Recommendation on performance standards for survival craft AIS Search and Rescue transmitter (AIS SART), adopted by the Organization by resolution MSC.246(83).

** One of these search and rescue locating devices may be the search and rescue locating device required by regulation IV/7.1.3.

Regulation 26 - Additional requirements for ro-ro passenger ships

7 The existing paragraph 2.5 is replaced by the following:

"2.5 Liferafts carried on ro-ro passenger ships shall be fitted with a search and rescue locating device in the ratio of one search and rescue locating device for every four liferafts. The search and rescue locating device shall be

mounted inside the liferaft so its antenna is more than one metre above the sea level when the liferaft is deployed, except that for canopied reversible liferafts the search and rescue locating device shall be so arranged as to be readily accessed and erected by survivors. Each search and rescue locating device shall be arranged to be manually erected when the liferaft is deployed. Containers of liferafts fitted with search and rescue locating devices shall be clearly marked."

CHAPTER IV

RADIOCOMMUNICATIONS

Regulation 7 - Radio equipment: General

8 In paragraph 1, subparagraph .3 is replaced by the following:

".3 a search and rescue locating device capable of operating either in the 9 GHz band or on frequencies dedicated for AIS, which:"

APPENDIX

CERTIFICATES

Record of Equipment for Passenger Ship Safety Certificate (Form P)

9 In the Record of Equipment for Passenger Ship Safety Certificate (Form P), in section 2, the existing item 11.1 is replaced by the following:

"11.1 Number of search and rescue locating devices

11.1.1 Radar search and rescue transponders (SART)

11.1.2 AIS search and rescue transmitters (AIS-SART)",

and in section 3, the existing item 6 is replaced by the following:

"6 Ship's search and rescue locating device

6.1 Radar search and rescue transponder (SART)

6.2 AIS search and rescue transmitter (AIS-SART)".

Record of Equipment for Cargo Ship Safety Equipment Certificate (Form E)

10 In the Record of Equipment for Cargo Ship Safety Equipment Certificate (Form E), in section 2, the existing item 9.1 is replaced by the following:

"9.1 Number of search and rescue locating devices

9.1.1 Radar search and rescue transponders (SART)

9.1.2 AIS search and rescue transmitters (AIS-SART)".

Record of Equipment for Cargo Ship Radio Certificate (Form R)

11 In the Record of Equipment for Cargo Ship Safety Radio Certificate (Form R), in section 2, the existing item 6 is

replaced by the following:

"6 Ship's search and rescue locating device

6.1 Radar search and rescue transponder (SART)

6.2 AIS search and rescue transmitter (AIS-SART)".

Record of Equipment for the Nuclear Passenger Ship Safety Certificate (Form PNUC)

12 In the Record of Equipment for Nuclear Passenger Ship Safety Certificate (Form PNUC), in section 2, the existing item 11.1 is replaced by the following:

"11.1 Number of search and rescue locating devices

11.1.1 Radar search and rescue transponders (SART)

11.1.2 AIS search and rescue transmitters (AIS-SART)",

and in section 3, the existing item 6 is replaced by the following:

"6 Ship's search and rescue locating device

6.1 Radar search and rescue transponder (SART)

6.2 AIS search and rescue transmitter (AIS-SART)".

Record of Equipment for the Nuclear Cargo Ship Safety Certificate (Form CNUC)

13 In the Record of Equipment for Nuclear Cargo Ship Safety Certificate (Form CNUC), in section 2, item 9 is deleted and items 10, 10.1 and 10.2 are renumbered as items 9, 9.1 and 9.2 respectively; and the renumbered item 9.1 is replaced by the following:

"9.1 Number of search and rescue locating devices

9.1.1 Radar search and rescue transponders (SART)

9.1.2 AIS search and rescue transmitters (AIS-SART)",

and in section 3, the existing item 6 is replaced by the following:

"6 Ship's search and rescue locating device

6.1 Radar search and rescue transponder (SART)

6.2 AIS search and rescue transmitter (AIS-SART)".

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Title	CIRCULAR / MSC/Circ.1175

MSC/Circ.1175

24 May 2005

GUIDANCE ON SHIPBOARD TOWING AND MOORING EQUIPMENT

1 The Maritime Safety Committee, at its eightieth session (11 to 20 May 2005), following the recommendations made by the Sub-Committee on Ship Design and Equipment at its forty-eighth session, approved guidance concerning shipboard equipment, fittings and supporting hull structures associated with towing and mooring, as set out in the annex, with a view to ensuring a uniform approach towards the application of the provisions of SOLAS regulation II-1/3-8, which is expected to become effective on 1 January 2007.

2 Member Governments are invited to use the annexed guidance when applying SOLAS regulation II-1/3-8, and to bring it to the attention of all parties concerned.

ANNEX

SHIPBOARD EQUIPMENT, FITTINGS AND SUPPORTING HULL STRUCTURES ASSOCIATED WITH TOWING AND MOORING

1 Application

1.1 Under regulation II-1/3-8 of the 1974 SOLAS Convention, as adopted by resolution MSC.194(80) in 2005, new displacement type ships, except high-speed craft and offshore units, shall be provided with arrangements, equipment and fittings of sufficient safe working load to enable the safe conduct of all towing and mooring operations associated with the normal operations of the ship. The arrangements, equipment and fittings shall meet the appropriate requirements of the Administration or an organization recognized by the Administration.

1.2 This circular is intended to provide standards for the design and construction of shipboard fittings and supporting hull structures associated with towing and mooring, which Administrations are recommended to implement. The provisions of this guidance do not require tow lines nor mandate standards for mooring lines onboard the ship.

1.3 Equipment that is used for both towing and mooring should be in accordance with sections 3 and 4.

2 Definitions

For the purpose of this guidance:

2.1 Shipboard fittings mean bollards and bitts, fairleads, stand rollers and chocks used for the normal mooring of the ship and similar components used for the normal towing of the ship. Other components such as capstans, winches, etc. are not covered by this guidance. Any weld, bolt or other fastening connecting the shipboard fitting to the supporting hull structure is part of the shipboard fitting and subject to any industry standard applicable to such fitting.

2.2 Supporting hull structure means that part of the ship structure on/in which the shipboard fitting is placed and which is directly submitted to the forces exerted on the shipboard fitting. The hull structure supporting capstans, winches, etc. used for the normal towing and mooring operations mentioned above should also be subject to this guidance.

2.3 Industry standard means international or national standards which are recognized in the country where the ship is built, subject to the approval of the Administration.

3 Towing fittings

3.1 Strength

The strength of shipboard fittings used for normal towing operations and their supporting hull structures should

comply with the provisions of 3.2 to 3.6.

3.2 Arrangements

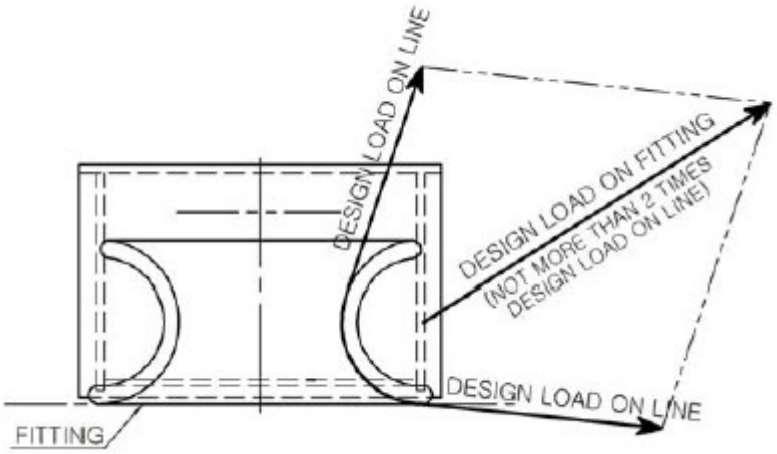
Shipboard fittings for towing should be located on longitudinals, beams and/or girders, which are part of the deck construction so as to facilitate efficient distribution of the towing load. Other equivalent arrangements may be accepted (for Panama chocks, etc.).

3.3 Load considerations

3.3.1 The design load used for normal towing operations (e.g. harbour/manoeuvring) should be 1.25 times the intended maximum towing load (e.g. static bollard pull) as indicated on the towing and mooring arrangements plan. The design load should be applied through the tow line according to the arrangement shown on the towing and mooring arrangements plan.

3.3.2 For other towage service (e.g. escort), the design load used for each fitting should be the nominal breaking strength of the tow line defined in table 1 based on the equipment number (EN) described in the appendix. The design load should be applied through the tow line according to the arrangement shown on the towing and mooring arrangements plan.

3.3.3 The method of application of the design load to the fittings and supporting hull structure should be taken into account such that the total load need not be more than twice the design load specified in 3.3.1 or 3.3.2, i.e. no more than one turn of one line (see figure below).



3.4 Shipboard fittings

The selection of shipboard fittings should be made by the shipyard in accordance with industry standards (e.g. ISO 3913:1977 Shipbuilding-Welded steel bollards) accepted by the Administration. When the shipboard fitting is not selected from an accepted industry standard, the design load used to assess its strength and its attachment to the ship should be in accordance with 3.3 above.

3.5 Supporting hull structure

Arrangement

3.5.1 The arrangement of the reinforced members (carling) beneath shipboard fittings should consider any variation of direction (laterally and vertically) of the towing forces (which should be not less than the design load as per 3.3) acting through the arrangement of connection to the shipboard fittings.

Acting point of towing force

3.5.2 The acting point of the towing force on shipboard fittings should be taken at the attachment point of a towing line or at a change in its direction.

Allowable stresses

3.5.3 Allowable bending stress: 100% of the specified yield point for the material used; allowable shearing stress: 60% of the specified yield point for the material used; no stress concentration factors being taken into account.

3.6 Safe working load (SWL)

3.6.1 The SWL used for normal towing operations (harbour/manoeuvring) should not exceed 80% of the design load as given in 3.3.1 and the SWL used for other towing operations (e.g. escort) should not exceed the design load as given in 3.3.2. For fittings used for both harbour and escort purposes, the greater of the design loads of 3.3.1 and 3.3.2 should be used.

3.6.2 The SWL of each shipboard fitting should be marked (by weld bead or equivalent) on the deck fittings used for towing.

3.6.3 The above provisions on SWL apply for a single post basis (no more than one turn of one line).

3.6.4 The towing and mooring arrangements plan described in section 5 should define the method of use of towing lines.

4 Mooring fittings

4.1 Strength

The strength of shipboard fittings used for mooring operations and their supporting hull structures should comply with the provisions of 4.2 to 4.6.

4.2 Arrangements

Shipboard fittings for mooring should be located on longitudinals, beams and/or girders, which are part of the deck construction so as to facilitate efficient distribution of the mooring load. Other equivalent arrangements may be accepted (for Panama chocks, etc.).

4.3 Load considerations

4.3.1 The design load applied to shipboard fittings and supporting hull structures should be 1.25 times the breaking strength of the mooring line provided in accordance with table 1 based on the equipment number (EN) described in the appendix. The design load should be applied through the mooring line according to the arrangement shown on the towing and mooring arrangements plan.

4.3.2 The design load applied to supporting hull structures for winches, etc. should be 1.25 times the breaking strength of the mooring line according to 4.3.1 above and, for capstans, 1.25 times the maximum hauling-in force. The design load should be applied through the mooring line according to the arrangement shown on the towing and mooring arrangements plan.

4.3.3 The method of application of the design load to the fittings and supporting hull structure should be taken into account such that the total load need not be more than twice the design load specified in 4.3.1, i.e. no more than one turn of one line.

4.4 Shipboard fittings

The selection of shipboard fittings should be made by the shipyard in accordance with industry standards (e.g. ISO 3913:1977 Shipbuilding-Welded steel bollards) accepted by the Administration. When the shipboard fitting is not selected from an accepted industry standard, the fittings should be equivalent to a recognized industry standard in compliance with the design load as per 4.3.

4.5 Supporting hull structure

Arrangement

4.5.1 The arrangement of the reinforced members (carling) beneath shipboard fittings should consider any variation of direction (laterally and vertically) of the mooring forces (which should be not less than the design load given in 4.3) acting through the arrangement of connection to the shipboard fittings.

Acting point of mooring force

4.5.2 The acting point of the mooring force on shipboard fittings should be taken at the attachment point of a mooring line or at a change in its direction.

Allowable stresses

4.5.3 Allowable bending stress: 100% of the specified yield point for the material used; allowable shearing stress: 60% of the specified yield point for the material used; no stress concentration factors being taken into account.

4.6 Safe working load (SWL)

4.6.1 The SWL should not exceed 80% of the design load given in 4.3.

4.6.2 The SWL of each shipboard fitting should be marked (by weld bead or equivalent) on the deck fittings used for mooring.

4.6.3 The above provisions on SWL apply for a single post basis (no more than one turn of one line).

4.6.4 The towing and mooring arrangements plan described in section 5 should define the method of use of mooring lines.

5 Towing and mooring arrangements plan

5.1 The SWL for the intended use for each shipboard fitting should be noted in the towing and mooring arrangements plan available on board for the guidance of the Master.

5.2 Information provided on the plan should include in respect of each shipboard fitting:

.1 location on the ship;

.2 fitting type;

.3 SWL;

.4 purpose (mooring/harbour towing/escort towing); and

.5 method of applying load of towing or mooring line including limiting fleet angles.

Table 1

MOORING AND TOW LINES

EQUIPMENT NUMBER		MOORING LINES	TOW LINE*
Exceeding	Not exceeding	Minimum breaking strength (kN)	Breaking strength (kN)
1	2	3	4
50	70	34	98
70	90	37	98
90	110	39	98
110	130	44	98
130	150	49	98

150	175	54	98
175	205	59	112
205	240	64	129
240	280	69	150
280	320	74	174
320	360	78	207
360	400	88	224
400	450	98	250
450	500	108	277
500	550	123	306
550	600	132	338
600	660	147	370
660	720	157	406
720	780	172	441
780	840	186	479
840	910	201	518
910	980	216	559
980	1060	230	603
1060	1140	250	647
1140	1220	270	691
1220	1300	284	738
1300	1390	309	786
1390	1480	324	836
1480	1570	324	888
1570	1670	333	941
1670	1790	353	1024
1790	1930	378	1109
1930	2080	402	1168
2080	2230	422	1259
2230	2380	451	1356
2380	2530	480	1453
2530	2700	480	1471
2700	2870	490	1471
2870	3040	500	1471
3040	3210	520	1471
3210	3400	554	1471

EQUIPMENT NUMBER		MOORING LINES	TOW LINE*
Exceeding	Not exceeding	Minimum breaking strength (kN)	Breaking strength (kN)
1	2	3	4
3400	3600	588	1471
3600	3800	618	1471
3800	3800	647	1471
4000	4200	647	1471
4200	4400	657	1471
4400	4600	667	1471
4600	4800	677	1471
4800	5000	686	1471
5000	5200	686	1471
5200	5500	696	1471
5500	5800	706	1471
5800	6100	706	1471
6100	6100	716	
6500	6900	726	
6900	7400	726	
7400	7900	726	
7900	8400	736	
8400	8900	736	

8900	9400	736	
9400	10000	736	
10000	10700	736	
10700	11500	736	
11500	12400	736	
12400	13400	736	
13400	14600	736	
14600	16000	736	

* Information is provided in relation to 3.3.2 and provision onboard of such a line is not necessary under this guidance.

APPENDIX

EQUIPMENT NUMBER

The equipment number (EN) should be calculated as follows:

$$EN = \Delta^{2/3} + 2.0hB + \frac{A}{10}$$

where:

Δ = moulded displacement, in tonnes, to the Summer Load Waterline

B = moulded breadth, in metres

h = effective height, in metres, from the Summer Load Waterline to the top of the uppermost house; for the lowest tier “h” should be measured at centreline from the upper deck or from a notional deck line where there is local discontinuity in the upper deck

$h = a + \Sigma hi$

where:

a = distance, in metres, from the Summer Load Waterline amidships to the upper deck

hi = height, in metres, on the centreline of each tier of houses having a breadth greater than B/4

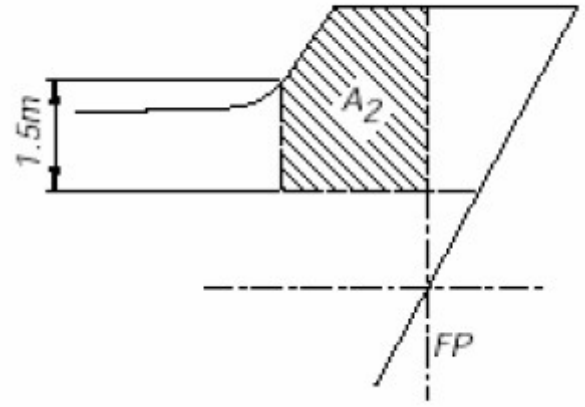
A = area, in square metres, in profile view, of the hull, superstructures and houses above the Summer Load Waterline which are within the equipment length of the ship and also have a breadth greater than B/4

NOTES

1 When calculating h, sheer and trim should be ignored, i.e. h is the sum of freeboard amidships plus the height (at centreline) of each tier of houses having a breadth greater than B/4.

2 If a house having a breadth greater than B/4 is above a house with a breadth of B/4 or less, then the wide house should be included but the narrow house ignored.

3 Screens or bulwarks 1.5 m or more in height should be regarded as parts of houses when determining h and A. The height of the hatch coamings and that of any deck cargo, such as containers, may be disregarded when determining h and A. With regard to determining A, when a bulwark is more than 1.5 m high, the area shown below as A2 should be included in A.



4 The equipment length of the ships is the length between perpendiculars but should not be less than 96% nor greater than 97% of the extreme length on the Summer Waterline (measured from the forward end of the waterline).