



**REPUBLIC OF
THE MARSHALL ISLANDS**
MARITIME ADMINISTRATOR

Marine Notice

No. 2-015-1

Jan/2021

**TO: ALL SHIPOWNERS, OPERATORS, MASTERS AND OFFICERS OF
MERCHANT SHIPS, AND RECOGNIZED ORGANIZATIONS**

SUBJECT: Intact Stability, Damage Stability, and Strength of Vessels

- References:**
- (a) **SOLAS**, *International Convention for the Safety of Life at Sea, Consolidated Edition 2020*
 - (b) **MARPOL**, *International Convention for the Prevention of Pollution from Ships, Consolidated Edition 2017*
 - (c) **LL**, *International Convention on Load Lines, 2005 Edition, Part 3, Consolidated Text*
 - (d) **2008 IS Code**, *International Code on Intact Stability, 2008, 2020 Edition*
 - (e) **BLU Code**, *Code of Safe Practice for the Safe Loading and Unloading of Bulk Carriers, 2011 Edition*
 - (f) **IMO Resolution [MSC.415\(97\)](#)**, *Amendments to Part B of the International Code on Intact Stability, 2008 (2008 IS Code)*, adopted 25 November 2016
 - (g) **IMO Resolution [MSC.421\(98\)](#)**, *Amendments to the International Convention for the Safety of Life at Sea, 1974, as amended*, adopted 15 June 2017, as corrected by MSC.421(98)/23/Add.1/Corr.2, on 21 November 2017
 - (h) **IMO Resolution [MEPC.54\(32\)](#)**, *Guidelines for the Development of Shipboard Oil Pollution Emergency Plans*, adopted 6 March 1992, as amended by **IMO Resolution [MEPC.86\(44\)](#)**, adopted 13 March 2000
 - (i) **IMO Resolution [MEPC.85\(44\)](#)**, *Guidelines for the development of shipboard oil pollution emergency plans for oil and/or noxious liquid substances*, adopted 13 March 2000, as amended by **IMO Resolution [MEPC.137\(53\)](#)**, adopted 22 July 2005
 - (j) **IMO Circular [MSC.1/Circ.1108](#)**, *Guidelines for assessing the longitudinal strength of bulk carriers during loading, unloading and ballast water exchange*, issued 25 May 2004
 - (k) **IMO Circular [MSC.1/Circ.1400](#)**, *Guidelines on operational information for masters of passenger ships for safe return to port by own power or under tow*, issued 27 May 2011
 - (l) **IMO Circular [MSC.1/Circ.1461](#)**, *Guidelines for verification of damage stability requirements for tankers*, issued 8 July 2013
 - (m) **IMO Circular [MSC.1/Circ.1532/Rev.1](#)**, *Revised guidelines on operational information for masters of passenger ships for safe return to port*, issued 24 May 2018

- (n) **IMO Circular [MSC.1/Circ.1539/Rev.1](#)**, *Unified interpretations of SOLAS chapters II-1 and safe return to port requirements for flooding detection systems*, issued 4 July 2019
- (o) **IMO Circular [MSC.1/Circ.1589](#)**, *Guidelines on operational information for masters in case of flooding for passenger ships constructed before 1 January 2014*, issued 24 May 2018
- (p) **RMI Yacht Code ([MI-103](#))**
- (q) **RMI [Technical Circular 24](#)**, *Stability Instruments*
- (r) **ISGOTT**, *International Safety Guide for Oil Tankers and Terminals*, Fifth Edition, 2006

PURPOSE

This Notice clarifies the requirements for intact stability, damage stability, longitudinal strength, and damaged structural strength. It also summarizes the related recommendations that contain the details necessary for compliance.

This Notice supersedes Rev. Oct/2020. It has been amended to address Yachts Engaged in Trade (YETs), including those that are categorized as passenger ships. See Applicability (§1.b) and Stability Booklet (§1.3).

APPLICABILITY

This Notice applies to:

1. All vessels of 24 meters in length and over, as identified in the 2008 IS Code, including:
 - a. Commercial Yachts, including YETs, which fall into the category of cargo ships; and
 - b. Passenger Yachts (PAXYs), including YETs, which fall into the category of passenger ships.
2. Private Yachts Limited Charter (PYLC) which must be provided with a stability booklet under the Republic of the Marshall Islands (RMI) Yacht Code ([MI-103](#)).
3. Vessels less than 24 meters in length will be required to comply with the IS Code criteria as required by the RMI Maritime Administrator (the “Administrator”).

REQUIREMENTS

1.0 Stability Booklet

- 1.1 All ships’ Masters must be supplied with information to enable them to accurately assess the stability of the ship under varying conditions of service. See International Convention for the Safety of Life at Sea (SOLAS) II-1/5-1.
- 1.2 Each ship must be provided with a Stability Booklet which:
 - .1 contains sufficient information to enable the Master to obtain, by rapid and simple processes, accurate knowledge of the ship’s stability under varying conditions of service. (Refer to the 2008 IS Code¹); and

¹ See the 2008 IS Code, Part A – Mandatory Criteria: Chapter 2 (General criteria), and Chapter 3 (Special

.2 is approved on behalf of the Administrator by the Classification Society with which the ship is classed.

1.3 Commercial Yachts, PAXYs, YETs, and PYLCs must comply with the RMI Yacht Code ([MI-103](#)) Stability Booklet requirements.

2.0 Stability Instrument

2.1 A **stability instrument** comprises hardware and software and when installed on board provides the means by which it can be confirmed that the stability requirements specified for the ship in the Stability Booklet are met in any operational loading condition.

2.2 A stability instrument is not a substitute for the approved Stability Booklet but is intended to provide supplementary information to facilitate stability calculations. (See IS Code, Chapter 2, §2.1.5.)

2.3 The stability instrument must be approved by an Administrator-approved Recognized Organization (RO) listed in Marine Guideline [2-11-15](#), having regard to IMO recommended performance standards.

2.4 The compliance timetable for this requirement is:

Vessel Construction Date	Compliance
Before 01 January 2016	First scheduled renewal survey after 01 January 2016, but in no event later than 01 January 2021.
On or after 01 January 2016	At delivery.
International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code) vessels - before 01 July 2016	First scheduled renewal survey after 01 July 2016, but in no event later than 01 July 2021.
IGC Code vessels – keel laid on or after 01 July 2016	On delivery.

2.5 An existing stability instrument need not be replaced, provided it is capable of verifying compliance with the applicable intact and damage stability requirements to the satisfaction of the Administrator. Otherwise, the existing equipment must be upgraded, or a new, approved, and certified stability instrument installed.

2.6 See RMI [Technical Circular 24](#) for waivers from the requirement to be fitted with a stability instrument.

2.7 Beginning 1 January 2020, ships must comply with the SOLAS II-1/20 requirement for determining stability after loading.

3.0 Damage Stability

3.1 All ships 80 meters in length or more and all passenger ships, regardless of length, must comply with the SOLAS Regulation II-1/4 damage stability requirements.

criteria for certain types of ships), and Part B – Recommendations and Additional Guidelines: Chapter 3 (Guidance in preparing stability information).

- 3.2 Yachts must comply with the relevant sections on damage stability of the RMI Yacht Code ([MI-103](#)).
- 3.3 Oil tankers, chemical tankers, and gas carriers must take into account IMO Circular [MSC.1/Circ.1461](#). This provides guidelines for the verification of damage stability for tankers and sets education and training requirements for staff engaged in verifying damage stability.

4.0 Stability Considerations for ships engaged in certain types of operations

- 4.1 As stability is affected by external loading placed on a ship, Part B of the 2008 IS Code has been amended by IMO Resolution [MSC.415\(97\)](#) to address ships:
- .1 engaged in anchor handling operations;
 - .2 engaged in harbor towing, coastal or ocean-going towing and escort operations, or converted to carry out towing operations; or
 - .3 engaged in lifting operations or converted to carry out lifting operations.

These amendments, used by the Administrator as a basis for relevant safety standards, took effect 1 January 2020. They effect both new builds and converted ships.

5.0 Passenger Ship Stability

- 5.1 Due consideration must be given to IMO Circulars [MSC.1/Circ.1400](#) and [MSC.1/1532/Rev.1](#) which strongly recommend that all passenger ships should have at least two independent stability computers available at all times. They should be capable of receiving and processing the data necessary to provide operational information to the Master.
- 5.2 As required by SOLAS II-1/8-1.3, passenger ships constructed on or after 01 January 2014 must have an onboard stability computer or shore-based support to ensure that after a flooding casualty, operational information on residual damage stability is provided to the Master. Guidance for passenger ships constructed before 01 January 2014 is in IMO Circular [MSC.1/Circ.1589](#).
- 5.3 Beginning 1 January 2020, passenger ships must conduct damage control drills at least every three months. The entire crew need not participate in every drill, but only those crew members with damage control responsibilities. Drill records must be maintained. The muster list must include duties for damage control for flooding emergencies. See IMO Resolution [MSC.421\(98\)](#).
- 5.4 SOLAS II-2/21 establishes design criteria for the safe return to port under its own propulsion after a passenger ship² casualty. The Unified Interpretation provided in MSC.1/Circ.1539/Rev.1 clarifies that the safe return to port requirement for the flooding detection system (SOLAS II-2/21.4) should apply only to a passenger ship contracted for construction on or after 1 July 2019.

² Applies to a passenger ship of 120m or more or having three or more main vertical zones constructed on or after 1 July 2010.

6.0 Longitudinal Strength

6.1 All Ships

Every Master must be supplied with information for loading and ballasting to avoid creating unacceptable stresses in the ship's structure. This requirement need not be applied to a particular length, design, or class of ship, where the Administrator considers it to be unnecessary. See the *International Convention on Load Lines (LL)*, Annex I, Ch. II, Reg. 10.

6.2 Ships Carrying Cargo in Bulk

- .1 For any ship carrying cargo in bulk, the sequence of loading and discharging cargo affects overall strength and such operations must be monitored.
- .2 As required in SOLAS Regulation VI/7.3, the Master and terminal representative must agree on a plan to ensure that the permissible forces and moments on the ship are not exceeded during loading or unloading of any solid bulk cargo. The approved loading manual for the vessel must contain typical loading and unloading sequences, as well as part load conditions that may be relevant.
- .3 Where required to be installed, a loading instrument must be used to monitor actual hull bending and shear stresses during loading and unloading operations.

6.3 The following guidance, as applicable, must be considered when addressing longitudinal strength.

- .1 IMO Circular [MSC.1/Circ.1108](#) which provides guidance for assessing the longitudinal strength of bulk carriers during loading, unloading, and ballast water exchange operations.
- .2 *International Safety Guide for Oil Tankers and Terminals (ISGOTT)*, §11.2 which provides guidance for loading and discharging tankers, including ballast operations, to keep shear forces and bending moments within prescribed limits. See also IMO Circular MSC.1/Circ.1537/Rev.1 which provides a Unified Interpretation on assumptions for calculating loading conditions for tankers assigned with a tropical load line.
- .3 The *BLU Code – Code of Safe Practice for the Safe Loading and Unloading of Bulk Carriers* contains recommendations for loading and unloading plans to be reviewed jointly by the Master and terminal personnel prior to start of any cargo operations. These plans are then carefully followed, to ensure that the entire sequence stays within the stress limits of the ship.
- .4 IMO Resolution [MSC.238\(82\)](#), *Adoption of Amendments to the Code of Practice for the Safe Loading and Unloading of Bulk Carriers* amends the *BLU Code* to add grain carriers to the ships covered.

7.0 Shipboard Oil Pollution or Noxious Liquid Substances Emergency Plans

- 7.1 Every oil tanker of 150 gross tons (GT) and above, and every ship of 400 GT and above, must carry a shipboard oil pollution emergency plan (the **SOPEP**) approved by the Administrator. (See International Convention for the Prevention of Pollution from Ships (MARPOL) Regulation I/37). The SOPEP is intended to provide external support for the Master so that competent, informed decisions can be made, and proper action taken in situations involving structural damage to the ship.
- 7.2 The SOPEP must address stability and strength based on IMO Resolution [MEPC.54\(32\)](#), as amended or IMO Resolution [MEPC.85\(44\)](#), as amended. MEPC. 85(44) has been amended by [MEPC.137\(53\)](#).

8.0 Damaged Structural Strength

- 8.1 IMO Resolution [MEPC.54\(32\)](#) provides that a Master must have access to shore-based specialist support to assess the ship's structural strength when its primary structure is damaged. The Administrator advises owners and operators that this support maybe provided through their head office technical departments, independent organizations, or Classification Societies, as appropriate.
- 8.2 Specialist advice must be sought to verify a ship's continued structural integrity when it has suffered damage requiring reporting to the Administrator, Port State, and RO. To facilitate this effort, a dedicated set of basic emergency response plans must be kept immediately available for the ship. Such plans typically include:
- .1 lines plan;
 - .2 general arrangement;
 - .3 stability booklet and/or loading manual;
 - .4 tank capacity tables;
 - .5 table of watertight compartments with moulded volumes,
 - .6 centres of gravity,
 - .7 permeabilities;
 - .8 hydrostatic curves;
 - .9 cross curves of stability;
 - .10 key structural plans; and
 - .11 complete vessel dimensions (including frame spacings, deck heights, and the locations of opening points between compartments).

These plans must contain full contact details and a list of information that will be needed from the ship.

9.0 Office-Based Support

- 9.1 All oil tankers of 5,000 tons deadweight or more must have prompt access to shore-based, computerized damage stability and residual structural strength calculation programs. (See MARPOL Regulation I/37.4.) These programs satisfy the requirements for shore-based specialist support and contact details to be included in emergency response plans (see §7.0 and §8.0 of this Notice)
- 9.2 Passenger ship owners or operators must take into consideration the guidance contained in IMO Circulars [MSC.1/Circ.1400](#), [MSC.1/Circ.1532/Rev.1](#), and [MSC.1/Circ.1589](#). These circulars recommend that passenger ships have prearranged, prompt access to shore-based computerized, damage stability, and residual structural strength calculation programs, including the scope of support that must be provided.

10.0 Ballast Water Exchange

- 10.1 The Master must have continuous access to the necessary information to ensure that the vessel's stability and strength are not adversely affected during ballast water exchange operations.
- 10.2 See IMO Circular [MSC.1/Circ.1108](#) for guidance on assessing the longitudinal strength of bulk carriers during ballast water exchange operations.

APPENDIX

Ships Required to be Fitted With a Stability Instrument

SHIP TYPE	INSTRUMENT
All oil tankers	MARPOL , <i>International Convention for the Prevention of Pollution from Ships</i> , Consolidated Edition, 2017, Annex 1/28.6
All ships subject to the BCH Code	BCH Code , <i>Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk</i> , 2008 edition, Chapter II, Part A, subparagraph 2.2.1, as amended by: <ul style="list-style-type: none"> IMO Resolution MEPC.249(66), adopted 04 April 2014; and IMO Resolution MSC.376(93), adopted 22 May 2014
All ships subject to the IBC Code	IBC Code , <i>International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk</i> , 2016 edition, subparagraphs 2.2.6 and 2.2.7.
All ships subject to the GC Code	GC Code , <i>Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk</i> , Chapter II, subparagraph 2.2.4, as amended by: <ul style="list-style-type: none"> IMO Resolution MSC.377(93), adopted 22 May 2014
All ships subject to the EGC Code	EGC Code , <i>Code for Existing Ships Carrying Liquefied Gases in Bulk</i> , as amended <ul style="list-style-type: none"> See Annex 13, Report of the MSC on its 93rd Session
All ships subject to the revised IGC Code	IGC Code , <i>International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk</i> , 2016 Edition, subparagraph 2.26