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Date:28th October 2021

Marine Instruction (9 /2021)

SAFETY OF NAVIGATION FOR CERTAIN CATEGORIES OF SHIPS

Applicable to: **Shipowners, managers, operators , masters of Myanmar ships, and flag State surveyors**

Summary

This document provides the instruction for certain categories of Myanmar ships in respect of Safety of Navigation systems and equipment on board the ships.

1. For the Safety of Navigation as per the requirement of International Convention for the Safety of Life at Sea, 1974 (SOLAS74), as amended, cargo ships of 500 gross tonnage and above and all passenger ships, registered in Myanmar, engaged on international voyages are required to follow strictly as per the regulations mentioned in the chapter V of SOLAS 74, as amended.

2. Unless stated otherwise in the SOLAS Convention, in accordance with the regulation 1.4 of chapter V of SOLAS74, as amended, the DMA determines the scope of the provisions of each regulation in which some extent not to apply for following categories of ships:

(a) ships of less than 500 gross tonnage engaged on near coastal and international voyages;
(b) ships of any gross tonnage engaged on Myanmar coastal voyages;
(c) barges of any gross tonnage engaged on international voyages; and
(d) tankers of any gross tonnage engaged on 30-milelimit voyages or plying within the port.

3. The relevant requirements for the above mentioned categories of ships for the Safety of Navigation have been described in the Annex attached to this instruction and shipowners, managers, operators and masters of the ships are required to follow as per the Annex subject to their nature of voyage, ship type, gross tonnage and the date of construction.

Director General
Department of Marine Administration

ANNEX

SAFETY OF NAVIGATION FOR CERTAIN CATEGORIES OF SHIPS

Application

1.(a) Unless expressly provided otherwise, this Annex shall apply to the following ships:

(i) ships of less than 500 gross tonnage engaged on near coastal and international voyages;

(ii) ships of any gross tonnage engaged on Myanmar coastal voyages;

(iii) barges of any gross tonnage engaged on international voyages; and

(iv) tankers of any gross tonnage engaged on 30-mile limit voyages or plying within the port.

(b) This Annex shall not apply to:

(i) ships of war and troop ships;

(ii) wooden ships of primitive build such as dhows, junks, etc.;

(iii) pleasure yachts not engaged in trade;

(iv) fishing vessels; and

(v) Government vessels not used for commercial services.

Definitions

2. For the purpose of this Annex:

(a) Constructed in respect of a ship means a stage of construction where:

(i) the keel is laid;

(ii) construction identifiable with a specific ship begins; or

(iii) assembly of the ship has commenced comprising at least 50 tonnes or 1%of the estimated mass of all structural material whichever is less.

(b) Nautical chart or nautical publication is a special-purpose map or book, or a specially compiled database from which such a map or book is derived, that is issued officially by or on the authority of a Government, authorized Hydrographic Office or other relevant government institution and is designed to meet the requirements of marine navigation.

(c) All ships mean any ship irrespective of type and purpose.

(d) Length of a ship means its length overall.

(e) Search and rescue service. The performance of distress monitoring, communication, coordination and search and rescue functions, including provision of medical

advice, initial medical assistance, or medical evacuation, through the use of public and private resources including co-operating aircraft, ships, vessels and other craft and installations.

Exemption and equivalent

3. The Department of Marine Administration (DMA) may grant to individual ships exemptions or equivalents of a partial or conditional nature, when any such ship is engaged on a voyage where the maximum distance of the ship from the shore, the length and nature of the voyage, the absence of general navigational hazards, and other conditions affecting safety are such as to render the full application of this Annex unreasonable or unnecessary, provided that the DMA has taken into account the effect such exemptions and equivalents may have upon the safety of all other ships.

Ships manning

4.(a) All ships shall be sufficiently and efficiently manned for the safety of life at sea.

(b) The DMA shall issue an appropriate minimum safe manning document or equivalent as evidence of the minimum safe manning considered necessary to comply with the paragraph (a).

(c) On all ships, to ensure effective crew performance in safety matters, a working language shall be established and recorded in the ship's logbook.

Principles relating to bridge design, design and arrangement of navigational systems and equipment and bridge procedure

5. All decisions which are made for the purpose of applying the requirements of paragraphs 9, 10, 12, 13 and 15 and which affect bridge design, the design and arrangement of navigational systems and equipment on the bridge and bridge procedures, as adopted by IMO, shall be taken with the aim of:

(a) facilitating the tasks to be performed by the bridge team and the pilot in making full appraisal of the situation and in navigating the ship safety under all operational conditions;

(b) promoting effective and safe bridge resource management;

(c) enabling the bridge team and the pilot to have convenient and continuous access to essential information which is presented in a clear and unambiguous manner, using standardized symbols and coding systems for controls and displays;

(d) indicating the operational status of automated functions and integrated components, systems and/ or sub-systems;

(e) allowing for expeditious, continuous and effective information processing and decision-making by the bridge team and the pilot;

(f) preventing or minimizing excessive or unnecessary work and any conditions or distractions on the bridge which may cause fatigue or interfere with the vigilance of the bridge team and the pilot; and

(g) minimizing the risk of human error and detecting such error, if it occurs, through monitoring and alarm systems, in time for the bridge tem and the pilot to take appropriate action.

Maintenance of equipment

6.(a) The DMA shall be satisfied that adequate arrangements are in place to ensure that the performance of the equipment required by this Annex is maintained.

(b) Except as provided in the survey of life saving appliances and other equipment of cargo ships and survey of radio installation of cargo ships, while all reasonable steps shall be taken to maintain the equipment required by this Annex in efficient working order, malfunctions of that equipment shall not be considered as making the ship unseaworthy or as a reason for delaying the ship in ports where repair facilities are not readily available, provided suitable arrangements are made by the master to take the inoperative equipment or unavailable information into account in planning and executing a safe voyage to a port where repairs can take place.

Electromagnetic compatibility

7.(a) The DMA shall ensure that all electrical and electronic equipment on the bridge or in the vicinity of the bridge, on ships constructed on or after the issuing of this Annex, is tested for electromagnetic compatibility, taking into account the recommendations developed by the IMO.

(b) Electrical and electronic equipment shall be so installed that electromagnetic interference does not affect the proper function of navigational systems and equipment.

(c) Portable electrical and electronic equipment shall not be operated on the bridge if it may affect the proper function of navigational systems and equipment.

Approval, surveys and performance standards of navigational systems and equipment

8. Navigational systems and equipment shall have:

(a) to meet the requirements of paragraph 9 shall be of type approved by the DMA.

(b) associated back-up arrangements, where applicable, installed on or after the issuing of this Annex to perform the functional requirements of paragraph 9 shall conform to appropriate performance standards not inferior to those adopted by the Organization.

(c) replaced or added to on ships constructed before the issuing this Annex, in so far as is reasonable and practicable, comply with the requirements of subparagraph(b).

Carriage requirements for shipborne navigation systems and equipment

9.(a) Standard magnetic compass and deviation card

(i) Every ship shall have a properly adjusted standard magnetic compass, independent of any power supply, that may determine the ship’s heading and that displays the heading at the main steering position.

(ii) Every new ship engaged on Myanmar coastal voyages and every ship engaged on near coastal and international voyages shall have a valid deviation card. Whenever it becomes unreliable or the observed error consistently exceeds 5° limit, the compass shall be readjusted and the deviation card should be renewed.

(b) Spare magnetic compass

(i) Every ship engaged on near coastal and international voyages and every new ship engaged on Myanmar coastal voyages shall have a spare magnetic compass interchangeable with the magnetic compass, as referred to in paragraph 9(a), or other means to perform the function referred to in paragraph 9(a) by means of replacement or duplicate equipment.

(ii) Every existing ship engaged on Myanmar coastal voyages shall have spare magnetic compass interchangeable with the magnetic compass, as referred to in paragraph 9(a), or other means to perform the function referred to in paragraph 9(a) by means of replacement or duplicate equipment within two years from the date of the issuance of this Annex.

(c) Pelorus or compass bearing device or other means
Every ship of 300 gross tonnage and upwards shall have a pelorus or compass bearing device or other means, independent of any power supply, to take bearings over an arc of the horizon of 360°.

(d) Means of correcting heading and bearings to true
Every ship 300 gross tonnage and upwards engaged on all voyages shall have a means of correcting heading and bearings to true at all times.

(e) Nautical charts and nautical publications
Every ship on near coastal and international voyages shall have a set of updated nautical charts and publications, such as sailing directions, list of lights, notices to mariners, tide tables and all other nautical publications covering its intended voyage(s), shall be adequate and up to date.

(f) Back-up arrangements to meet the functional requirements of sub paragraph (d)
Every ship as specified in subparagraph (t) shall have back-up arrangements to meet the functional requirements of paragraph (d).

(g) Receiver for a global navigation satellite system or a terrestrial radio navigation system, or other means
Every ship shall be provided with a receiver for a global navigation satellite system or a terrestrial radio navigation system, or other means, suitable for use at all time throughout the intended voyage to establish and update the ship's position by automatic means.

(h) Radar reflector
Every ship of less than 150 gross tonnage and if practicable, a radar reflector, or other means, to enable detection by ships navigating by radar at both 9 and 3 GHz.

(i) Telephone, or other means, to communicate heading information to the emergency steering position, if provided.

Every ship, fitted with emergency steering arrangement, shall be provided with a telephone or other means to communicate heading information to the emergency steering position.

(j) Daylight signaling lamp or other means

Every ship of 150 gross tonnage and upwards shall be fitted with a daylight signaling lamp or other means to communicate by light during day and night usingan energy source of electrical power not solely dependent upon the ship's power supply.

(k) Bridge navigational watch alarm system (BNWAS)

(i) Every new ship of 3,000 gross tonnage and upwards engaged on Myanmar coastal voyages and every ship of 300 gross tonnage and upwards engaged on near coastal and international voyages shall be fitted with a bridge navigational watch alarm system.

(ii) The bridge navigational watch alarm system shall be in operation whenever the ship is underway at sea.

(iii) A bridge navigational watch alarm system (BNWAS) installed prior to 1 July 2011 may subsequently be exempted from full compliance with the standards adopted by the IMO, at the discretion of the DMA.

(l) Echo sounding device, or other electronic means

(i) Every existing ship shall have a hand lead line to measure the available depth of water.

(ii) Every new ship of 300 gross tonnage and upwards engaged on Myanmar coastal voyages and every ship of 300 gross tonnage and upwards engaged on near coastal and international voyages shall be fitted with an echo sounding device, or other electronic means, to measure and display the available depth of water, instead of the device as specified in paragraph(l)(i).

(m) 9 GHz radar, or other means

Every new ship of 3,000 gross tonnage engaged on Myanmar coastal voyages, every new ship of 300 gross tonnage and upwards engaged on near coastal and international voyages shall be fitted with a 9 GHz radar, or other means, to determine and display the range and bearing of radar transponders and of other surface craft, obstructions, buoys, shorelines and navigational marks to assist in navigation and in collision avoidance.

(n) Speed and distance measuring device, or other means,

Every ship of 10,000 gross tonnage and upwards engaged on Myanmar coastal voyages shall have a speed and distance measuring device, or other means to indicate speed and distance through the water.

(o) Automatic identification system (AIS)

(i) The required ships and the types of AIS are as follows;

(aa) AIS, Class A type

Every ship of 300 gross tonnage and upwards engaged on near coastal and international voyages and every ship of 500 gross tonnage and upwards engaged on Myanmar coastal voyages shall be fitted with an AIS of Class A type.

(bb) AIS, Class B– (SOTDMA)

Every ship of less than 500 gross tonnage engaged on Myanmar coastal voyages shall be fitted with an AIS of Class B (SOTDMA) type.

(cc) AIS, Class B – (CSTDMA)

Every ship of 50 gross tonnage and upwards engaged on Myanmar coastal voyages within 20 miles from the nearest land shall be fitted with an AIS of Class B (CSTDMA) type.

(ii) All types of AIS shall conform to their respective performance standard and technical specifications as prescribed by the DMA.

(iii) AIS shall be operated taking into account the guidelines adopted by the IMO. 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.

(p) Gyro compass, or other means

Every new ship of 3,000 gross tonnage and upwards engaged on Myanmar coastal voyages, in addition to meeting the requirements of sub paragraphs (a) and (b), shall have a gyro compass or other means to determine and display their heading by shipborne non-magnetic means, being clearly readable by the helmsman at the main steering position.

(q) Gyro-compass heading repeater

Every new ship of 3,000 gross tonnage and upwards engaged on Myanmar coastal voyages, a gyro-compass heading repeater, or other means, to supply heading information visually at the emergency steering position if provided.

(r) Rudder indicator and rudder, propeller, thrust, pitch and operational mode indicators

(i) Every ship of 500 gross tonnage and upwards engaged on Myanmar coastal voyages shall have a ruder indicator or other means, to determine and display rudder angle, readable from the conning position.

(ii) Every ship of 3,000 gross tonnage and upwards engaged on Myanmar coastal voyages shall have rudder, propeller, thrust, pitch and operational mode indicators, or other means, to determine and display rudder angle, propeller revolutions, the force and direction of thrust and, if applicable, the force and direction of lateral thrust and the pitch and operational mode, all to be readable from the conning position.

(s) 3 GHz radar

Every new ship of 3,000 gross tonnage and upwards engaged on Myanmar coastal voyages shall have a 3 GHz radar or where considered appropriate by the DMA a second 9 GHz radar, or other means, to determine and display the range and bearing

of other surface craft, obstructions, buoys, shorelines and navigational marks to assist in navigation and in collision avoidance which are functionally independent of those referred to in sub paragraph (m).

(t) Automatic radar plotting aid (ARPA), or other means and heading or track control system, or other means

Every new ship of 10,000 gross tonnage and upwards engaged on Myanmar coastal voyages shall have:

(i) an automatic radar plotting aid, or other means, to plot automatically the range and bearing of at least 20 other targets, connected to a device to indicate speed and distance through the water, to determine collision risks and simulate a trial manoeuvre; and

(ii) a heading or track control system, or other means, to automatically control and keep to a heading and/or straight track.

(u) Long-range identification and tracking of ships

(i) Every ship of 300 gross tonnage and upward engaged on near coastal and international voyages shall be fitted with a system to automatically transmit the following long-range identification and tracking information:

(aa) the identity of the ship;

(bb) the position of the ship (latitude and longitude); and

(cc) the date and time of the position provided.

(ii) Systems and equipment used to meet the requirements of this Regulation shall conform to performance standards and functional requirements not inferior to those adopted by the IMO. Any shipboard equipment shall be of a type approved by the DMA.

(v) International Code of Signals and IAMSAR Manual

Every ship of 300 gross tonnage and upwards shall carry:

(i) the International Code of Signals as may be amended by the IMO; and

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

Navigation bridge visibility

10.(a) Ships of not less than 55 m in length, as defined in paragraph 2(d), constructed on or after the issuing this Annex, shall meet the following requirements:

(i) The view of the sea surface from the conning position shall not be obscured by more than two ship lengths, or 500 m, whichever is the less, forward of the bow to 10° on either side under all conditions of draught, trim and deck cargo;

(ii) No blind sector caused by cargo, cargo gear or other obstructions outside of the wheelhouse forward of the beam which obstructs the view of the sea surface as seen from the conning position, shall exceed 10 degrees. The total arc of blind sectors

shall not exceed 20 degrees. The clear sectors between blind sectors shall be at least 5 degrees. However, in the view described in sub paragraph (a)(i), each individual blind sector shall not exceed 5 degrees;

(iii) The horizontal field of vision from the conning position shall extend over an arc of not less than 225 degrees that is from right ahead to not less than 22.5 degrees abaft the beam on either side of the ship;

(iv) From each bridge wing the horizontal field of vision shall extend over an arc at least 225 degrees that is from at least 45 degrees on the opposite bow through right ahead and then from right ahead to right astern through 180 degrees on the same side of the ship;

(v) From the main steering position the horizontal field of vision shall extend over an arc from right ahead to at least 60 degrees on each side of the ship;

(vi) The ship's side shall be visible from the bridge wing;

(vii) The height of the lower edge of the navigation bridge front windows above the bridge deck shall be kept as low as possible. In no case shall the lower edge present an obstruction to the forward view as described in this chapter;

(viii) The upper edge of the navigation bridge front windows shall allow a forward view of the horizon, for a person with a height of eye of 1,800 mm above the bridge deck at the conning position, when the ship is pitching in heavy seas. The DMA, may allow reduction of the height of eye but not less than 1,600 mm if impractical.

(ix) Windows shall meet the following requirements:

(aa) To help avoid reflections, the bridge front windows shall be inclined from the vertical plane top out, at an angle of not less than 10 degrees and not more than 25 degrees;

(bb) Framing between navigation bridge windows shall be kept to a minimum and not be installed immediately forward of any work station;

(cc) Polarized and tinted windows shall not be fitted;

(dd) A clear view through at least two of the navigation bridge front windows and, depending on the bridge configuration, an additional number of clear-view windows shall be provided at all times, regardless of weather conditions.

(b) Ships constructed before the issuing this Annex shall, where practicable, meet the requirements of paragraphs 10(a)(i) and 10(a)(ii). However, structural alterations or additional equipment need not be required.

(c) On ships of unconventional design which, in the opinion of the DMA, cannot comply with paragraph 10 (a), arrangements shall be provided to achieve a level of visibility that is as near as practical to that prescribed in paragraph 10(a).

(d) Notwithstanding the requirements of paragraphs 10(a)(i), 10(a)(iii), 10(a)(iv) and 10(a)(v), ballast water exchange may be undertaken provided that:

(i) 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;

(ii) the operation is conducted in accordance with the ship's ballast water management plan, taking into account the recommendations on ballast water exchange adopted by the Organization; and

(iii) the commencement and termination of the operation are recorded in the ship's record of navigational activities pursuant to paragraph 15.

Pilot transfer arrangement

11.(a) Every ship of 500 gross tonnage and upwards engaged on Myanmar coastal voyagesand every ship of 300 gross tonnage and upwards engaged on near coastal and international voyages in the course of which pilots may be employed shall be provided with pilot transfer arrangements.

(b) Equipment and arrangements for pilot transfer which are installed shall comply with the requirements of this paragraph, and due regard shall be paid to the standards adopted by the IMO.

Use of heading and/or track control systems

12.(a) In areas of high traffic density, in conditions of restricted visibility and in all other hazardous navigational situations where heading and/or track control systems are in use, it shall be possible to establish manual control of the ship's steering immediately.

(b) In circumstances as above, the officer in charge of the navigational watch shall have available without delay the services of a qualified helmsperson who shall be ready at all times to take over steering control.

(c) The change-over from automatic to manual steering and vice versa shall be made by or under the supervision of a responsible officer.

(d) The manual steering shall be tested after prolonged use of heading and/or track control systems, and before entering areas where navigation demands special caution.

Operation of steering gear

13. Every new ship of 3,000 gross tonnage and upwards on Myanmar Coastal Voyages and every ship of 300 gross tonnage and upwards engaged on near coastal and international voyages where navigation demands special caution, shall have more than one steering gear power unit in operation when such units are capable of simultaneous operation.

Steering gear, testing and drills

14.(a) This paragraph applies to every ship of 500 gross tonnage and upwards engaged on Myanmar coastal voyages and every ship of 300 gross tonnage and upwards engaged on near coastal and international voyages.

(b) Within 12 hours before departure, the ship's steering gear shall be checked and testedby the ship's crew. The test procedure shall include, where applicable, the operation of the following:

(i) the main steering gear;
(ii) the auxiliary steering gear;
(iii) the remote steering gear control systems;
(iv) the steering positions located on the navigation bridge;
(v) the emergency power supply;
(vi) the rudder angle indicators in relation to the actual position of the rudder;
(vii) the remote steering gear control system power failure alarms;
(viii) the steering gear power unit failure alarms; and
(ix) automatic isolating arrangements and other automatic equipment.

(c) The checks and tests shall include:
(i) the full movement of the rudder according to the required capabilities of the steering gear;
(ii) a visual inspection for the steering gear and its connecting linkage; and
(iii) the operation of the means of communication between the navigation bridge and steering gear compartment.

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

(ii) All ship's officers concerned with the operation and/or maintenance of steering gear shall be familiar with the operation of the steering systems fitted on the ship and with the procedures for changing from one system to another.

(e) In addition to the routine checks and tests prescribed in sub paragraphs (b) and (c), every ship, fitted with emergency steering, shall carry out emergency steering drills at least once every three months in order to practice emergency steering procedures.
These drills shall include direct control within the steering gear compartment, the communications procedure with the navigation bridge and, where applicable, the operation of alternative power supplies.

(f) The Department may waive the requirements to carry out the checks and tests prescribed in sub paragraphs (b) and (c) for ships which regularly engage on voyages of short duration. Such ships shall carry out these checks and tests at least once every week.

(g) The date upon which the checks and tests prescribed in sub paragraphs (b) and (c) are carried out and the date and details of emergency steering drills carried out under sub paragraph (e) shall be recorded.

Records of navigational activities and daily reporting

15. Every ship of 500 gross tonnage and upwards engaged on Myanmar coastal voyages and every ship of 300 gross tonnage and upwards engaged on near coastal and international voyages shall keep on board a record of navigational activities and incidents which are of importance to safety of navigation and which must contain sufficient detail to restore a complete record of the

voyage, taking into account the recommendations adopted by the IMO. When such information is not maintained in the ship's log-book, it shall maintained in another form approved by the DMA.

Life-saving signals to be used by ships, aircraft or persons in distress

16. Every new ship of 3,000 gross tonnage and upwards on Myanmar coastal voyage and every ship of 300 gross tonnage and upwards engaged on near coastal and international voyages shall have an illustrated table describing the life-saving signals, which shall be readily available to the officer of the watch of every ship to which this chapter applies. The signals shall be used by ships or persons in distress when communicating with life-saving stations, maritime rescue units and aircraft engaged on search and rescue operations.

Obligations and procedures in distress situations

17. The master of a ship at sea which is in a position to be able to provide assistance, on receiving information from any source that persons are in distress at sea, shall comply with the relevant section of Myanmar Merchant Shipping Act.

Safe navigation and avoidance of dangerous situations

18.(a) Prior to proceeding to sea, the master shall ensure that the intended voyage has been planned using the appropriate nautical charts and nautical publications for the area concerned, taking into account the guidelines and recommendations developed by the Organization.

(b) The voyage plan shall identify a route which:

(i) takes into account any relevant ships' routeing systems;

(ii) ensures sufficient sea room for the safe passage of the ship throughout the voyage;

(iii) anticipates all known navigational hazards and adverse weather conditions; and

(iv) takes into account the marine environmental protection measures that apply, and avoids as far as possible actions and activities which could cause damage to the environment.

Master's discretion

19. The owner, the charterer, the company operating the ship as defined in Regulation 1.2 of SOLAS Chapter IX, or any other person shall not prevent or restrict the master of the ship from taking or executing any decision which, in the master’s professional judgment, is necessary for safety of life at sea and protection of the marine environment.

Misuse of distress signals

20. The use of an international distress signal, except for the purpose of indicating that a person or persons are in distress, and the use of any signal which may be confused with an international distress signal are prohibited.