



STATUTORY INSTRUMENTS.

S.I. No. 312 of 2024

MERCHANT SHIPPING (SOLAS V - NAVIGATIONAL EQUIPMENT)
(NO. 2) RULES 2024

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**MERCHANT SHIPPING (SOLAS V - NAVIGATIONAL EQUIPMENT)
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I, JACK CHAMBERS, Minister of State at the Department of Transport, in exercise of the powers conferred on me by section 18 (inserted by section 9 of the Merchant Shipping Act 2010 (No. 14 of 2010)) of the Merchant Shipping (Safety Convention) Act 1952 (No. 29 of 1952) (as adapted by the Transport, Tourism and Sport (Alteration of Name of Department and Title of Minister) Order 2020 (S.I. No. 351 of 2020)) and the Transport (Delegation of Ministerial Functions) Order 2024 (S.I. No. 225 of 2024), hereby make the following rules:

Citation

1. These Rules may be cited as the Merchant Shipping (SOLAS V - Navigational Equipment) (No. 2) Rules 2024.

Definitions

2. In these Rules-

“AIS” means an automatic identification system, which is an automated, short range, coastal tracking system used on ships and by vessel traffic services for identifying and locating vessels by electronically exchanging data with other nearby ships and vessel traffic service stations;

“approved testing centre” means a testing centre specified for the time being by the Minister as being approved;

“cargo ship” means a ship that is not a passenger ship and includes self-propelled mobile off-shore drilling units;

“constructed” in respect of a ship, means a stage of construction where:

- (a) the keel is laid;
- (b) construction identifiable with a specific ship begins; or
- (c) assembly of that ship has commenced comprising at least 50 tonnes or 1 per cent of the estimated mass of all structural material, whichever is less;

“contracted for construction” means the date on which the contract to build the ship is signed between the prospective owner and the shipbuilder;

“ECDIS” means an Electronic Chart Display and Information System;

“fishing vessel” means any sea-going ship or boat registered in the State, of any nature whatsoever, irrespective of the form of ownership, used or intended to be used for the purpose of commercial fishing;

“gross tonnage” means gross tonnage calculated in accordance with the tonnage measurement regulations contained in Annex 1 to the International Convention on Tonnage Measurement of Ships 1969;

“IMO” means the International Maritime Organisation;

“LRIT” means long-range identification and tracking of ships;

“partially smooth waters” means the waters of the areas specified in column 3 of the Schedule to the Merchant Shipping (SOLAS V – Ships Manning and Watchkeeping) Regulations, 2023 (S.I. No. 314 of 2023), with the restriction, if any, as to time and type of vessel specified in that column in relation to those waters;

“passenger ship” means a ship carrying more than 12 passengers;

“pleasure craft” means a vessel primarily used for sport or recreation;

“recognised organisation” means an organisation recognised in accordance with Regulation (EC) No. 391/2009 of the European Parliament and of the Council of 23 April 2009¹;

“sea” does not include any partially smooth waters;

“ship” means:

- (a) all sea-going Irish cargo ships of 150 gross tonnage or greater;
- (b) all Irish passenger ships regardless of size other than:
 - (i) passenger ships for which a certificate was issued under the European Union (Passenger Ships) Regulations 2019 (S.I. No. 676 of 2019),
 - (ii) the Merchant Shipping (Passenger Ships) Rules 2020 (S.I. No. 640 of 2020), or
 - (iii) passenger ships with a Passenger Certificate Class V;
- (c) other sea-going ships of 150 gross tonnage or greater while they are within the State or the territorial waters thereof;

but does not include warships, naval auxiliaries and other ships owned or operated by the State and used for non-commercial service, fishing vessels or pleasure craft not engaged in trade;

“VDR” means Voyage Data Recorder.

Application

3. (1) These rules apply to ships constructed on or after 1 July 2002.
- (2) A rigidly connected composite unit of a pushing vessel and associated pushed vessel, when designed as a dedicated and integrated tug and barge combination, shall be regarded as a single ship for the purpose of these Rules.

Compliance

4. (1) All navigational equipment and systems required under these Rules, including associated back-up arrangements where applicable, shall:

¹ OJ No. L 131, 28.5.2009, p. 11.

- (a) in respect of ships registered in the State, be of a type approved by the Minister or by a recognised organisation authorised to act on behalf of the Minister, and
 - (b) subject to paragraph (2), comply with performance standards and functional requirements not inferior to those adopted by the IMO.
- (2) The Minister may exempt a ship from complying in full with the performance standards adopted by the IMO where systems and equipment were installed prior to the adoption of such performance standards, once the Minister has due regard to the recommended criteria adopted by the IMO.
- (3) Paragraph (2) does not apply in the case of an ECDIS.
- (4) When navigational equipment for which performance standards have been developed by the IMO is carried on a ship in addition to the navigational equipment required under these Rules, such equipment shall –
- (a) in respect of ships registered in the State, be of a type approved by the Minister or by a recognised organisation authorised to act on behalf of the Minister, and
 - (b) as far as practicable, comply with performance standards not inferior to those adopted by the IMO.

Shipborne navigational systems and equipment

5. (1) Every ship, including those less than 150 gross tonnage, shall be fitted with:
- (a) a properly adjusted standard magnetic compass, independent of any power supply to determine the ship's heading and display the reading at the main steering position,
 - (b) a spare magnetic compass interchangeable with the magnetic compass referred to in subparagraph (a), or other means to perform the functions referred to in subparagraph (a) by means of replacement or duplicate equipment,
 - (c) a pelorus or compass bearing device, independent of any power supply to take bearings over an arc of the horizon of 360°,
 - (d) the means of correcting heading and bearings to true at all times,
 - (e) a receiver for a global navigation satellite system suitable for use at all times throughout the intended voyage to establish and update the ship's position by automatic means,
 - (f) where the ship is less than 150 gross tonnage, if practicable, a radar reflector, to enable detection by ships navigating by radar at both 9 GHz and 3 GHz,
 - (g) a sound reception system, to enable the officer in charge of the navigational watch to hear sound signals and determine their direction when the ship's bridge is totally enclosed,
 - (h) a telephone, or other means, to communicate heading information to the emergency steering position, if provided,

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- (i) a signalling daylight lamp, or other means to communicate by light during day and night using an energy source of electrical power not solely dependent upon the ship's power supply, and
 - (j) a bridge navigational watch alarm system which shall be in operation whenever the ship is underway at sea.
- (2) The Minister may exempt a ship from complying in full with the standards adopted by the IMO in relation to bridge navigational watch alarm systems, where such a system was installed prior to 1 July 2011.
- (3) A gyrocompass may be fitted as the “other means” referred to in paragraph 1(b), which shall be fed by both main and emergency power supply and be provided with a transitional source of power such as a battery. However, such a gyrocompass does not fulfil the requirements set out under Rule 8 for ships contracted for construction on or after 1 July 2007.

Echo sounding installation

6. Every ship of 300 gross tonnage or greater, and every passenger ship irrespective of size, shall be fitted with:
- (a) an echo sounding device, or other electronic means, to measure and display the available depth of water,
 - (b) a 9 GHz radar, 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,
 - (c) an electronic plotting aid, to plot electronically the range and bearing of targets to determine collision risk,
 - (d) a speed and distance measuring device, to indicate speed and distance through the water, and
 - (e) a properly adjusted transmitting heading device, to transmit heading information for input to the equipment referred to in paragraphs (b), (c) and (d).

Automatic identification system (AIS)

7. (1) Each of the following shall be fitted with an AIS:
- (a) ships of 300 gross tonnage or greater engaged on international voyages,
 - (b) cargo ships of 500 gross tonnage or greater not engaged on international voyages, and
 - (c) passenger ships, irrespective of size.
- (2) Every AIS shall:
- (a) provide automatically to appropriately equipped shore stations, other ships and aircraft information, including the ship's identity,

type, position, course, speed, navigational status and other safety related information;

- (b) receive automatically such information from similarly fitted ships;
- (c) monitor and track ships; and
- (d) exchange data with shore-based facilities.

(3) The requirements of paragraph (2) shall not apply where international agreements, rules or standards provide for the protection of navigational information.

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

(5) Every ship 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.

(6) For ships registered in the State, the AIS shall be subjected to an annual test to be conducted by the Minister, a recognised organisation or an approved testing centre on his or her behalf. A copy of the test report shall be retained on board the ship for inspection and shall at a minimum contain verification of the—

- (a) correct programming of the ship static information,
- (b) correct data exchange with connected sensors, and
- (c) radio performance by radio frequency measurement and on-air test.

Gyro compass

8. (1) Every ship of 500 gross tonnage or greater, shall be fitted with:

- (a) a gyro compass, to determine and display their heading by shipborne non-magnetic means and to transmit heading information for input to the equipment referred to in Rule 6(b), Rule 7 and subparagraph (e). The gyro compass shall be clearly readable by the helmsman at the main steering position;
- (b) a gyro compass heading repeater, or other means, to supply heading information visually at the emergency steering position if provided;
- (c) a gyro compass bearing repeater, to take bearings, over an arc of the horizon of 360° using the gyro compass referred to in subparagraph (a). Every ship less than 1,600 gross tonnage shall be fitted with such means as far as possible;
- (d) rudder, propeller, thrust, pitch and operational mode indicators, 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; and

- (e) an automatic tracking aid, to plot automatically the range and bearing of other targets to determine collision risk.
- (2) On every ship of 500 gross tonnage or greater, failure of one piece of equipment should not reduce the ship's ability to meet the requirements of subparagraphs (a) and (c) of Rule 5(1) and Regulation 7 of the Merchant Shipping (Carriage of Nautical Charts and Publications) Regulations 2021 (S.I. No. 149 of 2021).

Radar installation

9. (1) Every ship of 3,000 gross tonnage or greater shall be fitted with a 3 GHz radar or a second 9 GHz radar, 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 Rule 6(b).

(2) Every ship of 3,000 gross tonnage or greater but less than 10,000 gross tonnage shall be fitted with a second automatic tracking aid, to plot automatically the range and bearing of other targets to determine collision risk which are functionally independent of those referred to in Rule 8(1)(e).

Radar plotting aid

10. Every ship of 10,000 gross tonnage or greater shall be fitted with:

- (a) an automatic radar plotting aid, to automatically plot 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
- (b) a heading or track control system, to automatically control and keep to a heading and/or straight track.

Use of an automatic radar plotting aid to assist in the radar watch

11. (1) When a ship registered in the State fitted with an automatic radar plotting aid is at sea and a radar watch is being kept on the automatic radar plotting aid, the installation shall be under the control of a person qualified in the operational use of automatic radar plotting aids, who may be assisted by unqualified personnel.

(2) In paragraph (1), a person shall be deemed to be qualified in the operational use of automatic radar plotting aids if he or she holds a qualification referred to in Rule 14.

Siting of radar installation

12. (1) The antenna unit of the radar installation shall be sited so that satisfactory overall performance is achieved in relation to the:

- (a) avoidance of shadow sectors,

- (b) avoidance of false echoes caused by reflections from the ship's structure, and
 - (c) effect of antenna height on the amplitude and extent of sea-clutter.
- (2) The radar display shall be sited on the bridge from which the ship is normally navigated. The siting of one of the displays shall be such that:
- (a) an observer, when viewing the display, faces forward and is readily able to maintain visual lookout, and
 - (b) there is sufficient space for two observers to view the display simultaneously.
- (3) The radar installation shall, where practicable, be mounted so as to prevent the performance and reliability of the installation being adversely affected by vibration and so that the installation will not, whilst in service normally be subject to greater vibration than that specified in the Marine Radar Performance Standard.

Alignment of heading marker

13. The radar reading marker (and stern marker if fitted) shall be aligned to within 1° of the ship's fore-and-aft line as soon as practicable after the radar installation has been installed in the ship. Where inter-switching facilities are provided, the heading marker shall be aligned with all arrangements of units. The marker shall be realigned as soon as practicable whenever it is found to be substantially inaccurate.

Qualifications of radar observers and radar maintenance personnel

14. For the purposes of these Rules a person shall be deemed a "qualified radar observer" if he or she holds a:
- (a) valid Radar Observer's Certificate granted by the Minister,
 - (b) valid certificate of attendance granted at the conclusion of a programme for Navigation Aids and Equipment Simulator Training at the operational level (NAEST (O)) approved by the Minister,
 - (c) valid Electronic Navigation Systems Certificate granted by the Minister, or
 - (d) certificate recognised by the Minister as being equivalent to any of the certificates mentioned in paragraph (a), (b) or (c).

Speed and distance

15. Every ship of 50,000 gross tonnage or greater shall be fitted with:
- (a) a rate of turn indicator, to determine and display the rate of turn; and

- (b) a speed and distance measuring device, to indicate speed and distance over the ground in the forward and athwartships direction.

Emergency steering positions

16. (1) Every ship provided with emergency steering positions shall at least be provided with a telephone or other means of communication for relaying heading information to such positions.

(2) Every ship of 500 gross tonnage or greater, shall be provided with arrangements for supplying visual compass readings to the emergency steering position.

Electronic chart display and information system (ECDIS)

17. When engaged on an international voyage every ship in the following categories shall be fitted with an ECDIS:

- (a) passenger ships of 500 gross tonnage or greater;
- (b) tankers of 3,000 gross tonnage or greater;
- (c) cargo ships, other than tankers, of 3,000 gross tonnage or greater.

Installation and maintenance

18. (1) Navigational systems and equipment offering alternative modes of operation shall indicate the actual mode of use.

(2) Navigational systems and equipment referred to in these Rules shall be installed, tested and maintained in efficient working order, so as to minimize malfunction, and be in a satisfactory working condition whenever the ship goes to sea, provided that –

- (a) except in respect of a magnetic compass, this requirement shall not apply when a ship is going to sea from a place at which prompt maintenance is not available or practicable without delaying the ship; and
- (b) the master makes suitable arrangements 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.

Integrated bridge systems

19. (1) Integrated bridge systems shall be so arranged that failure of one sub-system is brought to the immediate attention of the officer in charge of the navigational watch by audible and visual alarms and does not cause failure to any other sub-system.

(2) In case of failure in one part of an integrated navigational system, it shall be possible to operate each other individual item of equipment or part of the system separately.

Electromagnetic compatibility

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

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

(3) The Minister, or a recognised organisation acting on his or her behalf, shall ensure that all electrical and electronic equipment on the bridge or in the vicinity of the bridge is tested for electromagnetic compatibility taking into account recommendations developed by the IMO.

Voyage Data Recorder (VDR)

21. (1) When engaged on an international voyage—

- (a) every passenger ship, and
- (b) every ship, other than a passenger ship, of 3,000 gross tonnage and greater, shall be fitted with a VDR.

(2) For ships registered in the State, the VDR system, including all sensors, shall be subjected to an annual performance test to be conducted by an approved testing centre in order to verify the accuracy, duration and recoverability of the recorded data. This shall include a test to determine the serviceability of all protective closures and devices fitted to aid location. A copy of the certificate of compliance issued by the testing centre, stating the date of compliance and the applicable performance standards, shall be retained on board the ship for inspection.

Long-Range Identification and Tracking of Ships (LRIT)

22. (1) When engaged on an international voyage, and subject to the provisions of paragraph (2), every cargo ship, including high speed craft of 300 gross tonnage or greater and mobile offshore drilling units, and every passenger ship must be fitted with a system to automatically transmit the following information:

- (a) the identity of the ship,
- (b) the position of the ship (Latitude and Longitude), and
- (c) the date and time of the position provided.

(2) Ships fitted with an AIS in line with Rule 7 and operated exclusively within sea area A1, as defined in Regulation IV/2.1.15 of the Safety Convention, do not have to comply with this Rule.

(3) Systems and equipment used to meet the requirements of this Rule, shall be capable of being switched off on board or be capable of ceasing the distribution of LRIT information –

- (a) where international agreements, rules or standards provide for the protection of navigational information; or
- (b) in exceptional circumstances and for the shortest duration possible where the operation is considered by the master to compromise the safety or security of the ship. The master shall inform the Minister without undue delay and make an entry in the record of navigational activities and incidents maintained in accordance with Regulation 28 of Chapter V of the Safety Convention, setting out the reasons for the decision and indicating the period during which the system or equipment was switched off.

(4) Ships which are using radiocommunications equipment for the purpose of transmitting LRIT information, and where duplicate sets of equipment are fitted on board, should use only one set of equipment for transmitting LRIT information.

(5) In this Rule, “cargo ship” includes FSO and FSU propelled by mechanical means of less than 300 gross tonnage engaged on international voyages.

(6) Systems and equipment used to meet the requirements of this rule shall conform to performance standards and functional requirements not inferior to those adopted by the IMO.

Provision of electrical energy

23. (1) There shall be provided in every ship at all times while the ship is at sea and at all reasonable times when it is in port, a supply of electrical energy suitable and sufficient for the operation of the navigational equipment installations required by these Rules, for testing purposes and for the charging of any rechargeable batteries which are a source of electrical energy for the navigational equipment installations.

(2) The supply of electrical energy shall not exceed the limits set out below:

AC supplies: variation from nominal voltage of $\pm 10\%$

variation from nominal frequency of $\pm 6\%$

DC supplies: variation from nominal voltage:

110/220V supplies, + 10%, -20%

24/32V supplies, + 30%, -10%

(3) Readily accessible means shall be provided for isolating each navigational equipment installation from its source of electrical energy without

causing any interruption to, or adversely affecting, the supply of electrical energy to any other equipment.

- (4) Where a ship is required to be provided with two radar installations—
 - (a) they shall be so installed that failure of either radar installation shall not cause the supply of electrical energy to the other radar installation to be interrupted or adversely affected; and
 - (b) both radar installations shall be capable of being operated one at a time from the ship's emergency source of electrical energy, if provided.

Charging of batteries

24. (1) If rechargeable batteries are provided on a ship as a source of electrical energy for any part of the navigational equipment installations, adequate means shall be provided on board the ship for the charging of such batteries from the ship's main source of electrical energy.

(2) Any such battery when not in use shall be capable of being fully charged within a period of not more than 16 hours by the means of charging required by paragraph (1).

(3) When any such battery is float-charged whilst in use, the voltage used for charging the battery shall be within the limits set out in paragraph (2) of Rule 23.

(4) If any navigational installation derives electrical energy for internal circuits from non-rechargeable batteries, failure of such batteries, where practicable, shall not cause malfunction of the installation. Where this is not practicable, the installation shall be provided with means to test the condition of such batteries.

Servicing and operating information

25. Adequate information and instructions as to the use and maintenance of every navigational equipment installation required by these Rules shall be provided by the owner and shall be available at all times for use when the particular installation is being operated, tested or serviced. Provided that in ships registered in the State such information and instructions shall be in English.

Exemptions

26. The Minister may grant to individual ships or classes of ships exemptions of a partial or conditional nature from any of the provisions of these Rules. Any such exemption may be granted where the length and nature of the voyage, the absence of general navigation hazards, the effect such an exemption would have upon the safety of all other ships and any other conditions affecting safety are such as to render the full application of the Rules unreasonable or unnecessary.

GIVEN under my hand,
25 June 2024

JACK CHAMBERS
Minister of State at the Department of Transport.

EXPLANATORY NOTE

(This note is not part of the Instrument and does not purport to be a legal interpretation.)

These Rules implement Regulations 16, 17, 18 (in part), 19, 19-1 and 20 of Chapter V of the International Convention for the Safety of Life at Sea (SOLAS) 1974, and subsequent Protocols and amendments, up to and including those adopted by the 99th Session of the Maritime Safety Committee of the IMO in May 2018. In particular, the Rules set out the requirements for installation and maintenance of navigational equipment for ships constructed on or after 1 July 2002. These Rules do not apply to fishing vessels.

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