

# Maritime Rules

## Part 45: Navigational Equipment

MNZ Consolidation

1 July 2016

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## **Part objective**

Part 45 contains requirements relating to the provision of navigational equipment on commercial ships. It updates and replaces the Ships' Compasses Regulations 1971 and the Shipping (Electronic Navigational Equipment) Regulations 1989.

Part 45 incorporates a number of the requirements for shipborne navigational equipment contained in Chapter V of the International Convention for the Safety of Life at Sea 1974 (SOLAS) where these are not otherwise incorporated into Part 40B, and the requirements for similar equipment on non-SOLAS ships. Rule 45.35 sets out the criteria for recognition by the Director of a person as a compass adjuster.

The authority for making Part 45 is found in sections 36(b), (f), (o) and (t) of the Maritime Transport Act 1994.

Maritime Rules are disallowable instruments under the Legislation Act 2012. Under that Act, the rules are required to be tabled in the House of Representatives. The House of Representatives may, by resolution, disallow any rules. The Regulations Review Committee is the select committee responsible for considering rules under that Act.

### **Disclaimer:**

This document is the current consolidated version of Maritime Rules Part 45 produced by Maritime New Zealand, and serves as a reference only. It has been compiled from the official rules that have been signed into law by the Minister of Transport. Copies of the official rule and amendments as signed by the Minister of Transport may be downloaded from the Maritime New Zealand website. [www.maritimenz.govt.nz](http://www.maritimenz.govt.nz)

## History of Part 45

Part 45 first came into force on 1 February 2000 and now incorporates the following amendments:

<b>Amendment</b>	<b>Effective Date</b>
Amendment 1	27 May 2004
Amendment 2	4 September 2008
Amendment 3	1 April 2014
Amendment 4	1 July 2014
Amendment 5	1 July 2016

### Summary of Amendments

#### **Amendment 1**

Maritime Amendments Parts 20-90

Part Objective – insert new paragraph  
Appendix, Clause (b)(2)(b) – amended

#### **Amendment 2**

Maritime (Various Amendments) Rules 200

45.2 – substituted definition “restricted  
waterway”

#### **Amendment 3**

Parts 20, 31, 32, 34 and 35: Consequential Amendments

45.2, 45.22, 45.35, Appendix to Part  
45 a(2)(b)

#### **Amendment 4**

Parts 19 and 44: Consequential Amendments

45.2, Appendix – Compass  
adjustment

#### **Amendment 5**

Various SOLAS-related Amendments 2016

Part Objective, 45.2, 45.8, 45.10,  
45.15, 45.16, 45.17 45.18A,

All signed rules can be found on our website:

<http://www.maritimenz.govt.nz/Rules/List-of-all-rules/Part45-maritime-rule.asp>

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## General

### 45.1 Entry into force

Part 45 comes into force on 1 February 2000.

### 45.2 Definitions

In Part 45:

**Act** means the Maritime Transport Act 1994:

**ARPA** means Automatic Radar Plotting Aid:

**Coastal limits** has the same meaning as in Part 20:

**Commercial ship** means a ship that is not –

- (a) a pleasure craft; or
- (b) solely powered manually; or
- (c) solely powered by sail:

**Compass adjuster** means a person who holds a valid maritime document as a compass adjuster issued in accordance with rule 45.35:

**Constructed** in respect of a ship means a stage of construction where –

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

**Daylight hours** means the hours between sunrise and sunset:

**Director** means the person who is for the time being the Director of Maritime Safety under section 439 of the Act:

**Enclosed water limits** has the same meaning as in Part 20:

**Equipment** includes, but is not limited to, a sextant, chronometer, binoculars, compass, emergency steering position, radar installation, radar plotter, ARPA, echo-sounding device, device to indicate speed and distance, rudder angle indicator, propeller revolution indicator, rate-of-turn indicator, radio direction-finding apparatus, and signalling lamp:

**first survey** means the initial survey, the first annual survey, the first periodical survey, or the first renewal survey whichever is due first after the date specified in the relevant rule:

**Fishing ship** means a fishing ship registered under section 57 of the Fisheries Act 1983 or section 103 of the Fisheries Act 1996:

**Foreign ship** means any ship that is not a New Zealand ship:

**IMO Resolution MSC.64(67), annex 4** means the resolution adopted by the International Maritime Organization Assembly, titled *Recommendation on Performance Standards for Radar Equipment*:

**IMO Resolution MSC.192(79)** means the resolution adopted by the International Maritime Organization Assembly, titled *Adoption of the Revised Performance Standards for Radar Equipment*:

**IMO Resolution MSC.116(73)** means the resolution adopted by the International Maritime Organization Assembly, titled *Recommendations on Performance Standards for Marine Transmitting Heading Devices (THDs)*:

**IMO Resolution A.1021(26)** means the resolution adopted by the International Maritime Organization Assembly, titled *Code on Alerts and Indicators*:

**IMO Resolution A.526(13)** means the resolution adopted by the International Maritime Organization Assembly, titled *Performance Standards for Rate-of-turn indicators*:

**IMO Resolution A.1046(27)** means the resolution adopted by the International Maritime Organization Assembly, titled *Recommendation on Worldwide Radionavigation System*:

**IMO Resolution A.818(19)** means the resolution adopted by the International Maritime Organization Assembly, titled *Recommendation on performance standards for shipborne Loran-C and Chayka receivers*:

**IMO Resolution A.819(19)** means the resolution adopted by the International Maritime Organization Assembly, and as amended by resolution MSC.112(73), titled *Recommendation on performance standards for shipborne global positioning system receiver equipment*:

**IMO Resolution MSC.53(66)** means the resolution adopted by the International Maritime Organization Assembly, and as amended by resolution MSC.113(73), titled *Recommendation on performance standards for shipborne GLONASS receiver equipment*:

**IMO Resolution MSC.64(67), annex 2** means the resolution adopted by the International Maritime Organization Assembly, and as amended by resolution MSC.114(73), titled *Recommendation on performance standards for shipborne DGPS and DGLONASS maritime radio beacon receiver equipment*:

**IMO Resolution MSC.74(69), annex 1** means the resolution adopted by the International Maritime Organization Assembly, and as amended by resolution MSC.115(73), titled *Recommendation on performance standards for combined GPS/ GLONASS receiver equipment*:

**Inshore limits** has the same meaning as in Part 20:

**International voyage** means a voyage from New Zealand to a port outside New Zealand or the converse:

**maritime transport operation** has the same meaning as in Part 19:

**Master** means any person (except a pilot) having command or charge of any ship:

**New Zealand inland waters** means all rivers and other inland waters of New Zealand, which are navigable:

**New Zealand ship** means a ship that is registered under the Ship Registration Act 1992; and includes a ship that is not registered under that Act but is required or entitled to be registered under that Act:

**Non-passenger ship** means any ship that is not a passenger ship or a fishing ship:

**Offshore limits** has the same meaning as in Part 20:

**Owner –**

- (a) in relation to a ship registered in New Zealand under the Ship Registration Act 1992, means the registered owner of the ship:
- (b) in relation to a ship registered in any place outside New Zealand, means the registered owner of the ship:
- (c) in relation to a fishing ship, other than one to which paragraph (a) or paragraph (b) of this definition applies, means the person registered as the owner under section 57 of the Fisheries Act 1983 or section 103 of the Fisheries Act 1996:



- (d) in relation to a ship to which paragraph (a) or paragraph (b) or paragraph (c) of this definition applies, where, by virtue of any charter or demise or for any other reason, the registered owner is not responsible for the management of the ship, includes the charterer or other person who is for the time being so responsible:
- (e) in relation to an unregistered ship or a registered ship that does not have a registered owner, means the person who is for the time being responsible for the management of the ship:

**Part** means a group of rules made under the Act:

**Passenger** means any person carried on a ship, other than –

- (a) the master and members of the crew, and any other person employed or engaged in any capacity on board the ship on the business of the ship:
- (b) a person on board the ship either in pursuance of an obligation laid upon the master to carry shipwrecked, distressed, or other persons, or by reason of any circumstance that neither the master nor the owner nor the charterer (if any) could have prevented or forestalled:
- (c) a child under the age of 1 year:

**Passenger ship** means a ship which carries more than 12 passengers on a voyage beyond restricted limits, or any passengers on a voyage within restricted limits:

**Pleasure craft** means a ship that is used exclusively for the owner's pleasure or as the owner's residence, and is not offered or used for hire or reward; but does not include –

- (a) a ship that is provided for transport or sport or recreation by or on behalf of any institution, hotel, motel, place of entertainment, or other establishment or business:
- (b) a ship that is used on any voyage for pleasure if it is normally used or intended to be normally used as a fishing ship or for the carriage of passengers or cargo for hire or reward:
- (c) a ship that is operated or provided by any club, incorporated society, trust, or business:

**Restricted limits** has the same meaning as in Part 20:

**Restricted waterway** includes, but is not limited to, lakes of less than 100 km<sup>2</sup>, an artificial watercourse such as a canal for the supply of water for the generation of electricity, a water supply race, and an irrigation canal:

**Rules** includes maritime rules and marine protection rules:

**Radar installation** means equipment consisting of a scanner, a transmitter, a receiver, and one or more display units:

**Ship** means every description of boat or craft used in navigation, whether or not it has any means of propulsion; and includes -

- (a) a barge, lighter, or other like vessel:
- (b) a hovercraft or other thing deriving full or partial support in the atmosphere from the reaction of air against the surface of the water over which it operates:
- (c) a submarine or other submersible:

**SOLAS** means the International Convention for the Safety of Life at Sea 1974:

**SOLAS ship** means any ship to which the International Convention for the Safety of Life at Sea 1974 applies; namely –

- (a) a passenger ship engaged on an international voyage; or
- (b) a non-passenger ship of 500 tons gross tonnage or more engaged on an international voyage:

**Standard compass** means a magnetic compass used for navigation:

**Steering compass** means a magnetic compass used for steering purposes:

**Unlimited area** has the same meaning as in Part 20.

## **Section 1 -All New Zealand ships**

### **45.3 Application of rules 45.4 to 45.5**

- (1) Rules 45.4 to 45.5 inclusive apply to any New Zealand ship that is a commercial ship.
- (2) Rules 45.4 to 45.5 inclusive do not apply to pleasure craft or to barges.

### **45.4 Responsibility of the owner and the master**

- (1) Where Part 45 requires a ship to be fitted or provided with any equipment, it is the responsibility of the owner of that ship to fit or provide such equipment.
- (2) Where Part 45 requires a ship to be fitted or provided with any equipment, it is the responsibility of the master of that ship to ensure that –
  - (a) the ship does not go to sea unless such equipment is on board; and
  - (b) all the equipment required for that ship under Part 45 is tested to ensure that it is in good working order and condition whenever the ship commences any voyage.
- (3) Where Part 45 requires a ship to be fitted or provided with any equipment, it is the responsibility of the owner and the master of that ship to ensure, subject to rule 45.4(4), that at all times –
  - (a) such equipment –
    - (i) is in good working order and condition; and
    - (ii) is fit in all respects for its intended use; and
    - (iii) meets all the applicable requirements of Part 45; and
  - (b) there are provided –
    - (i) special tools and other items necessary for the maintenance of the equipment; and
    - (ii) spare parts likely to be required during any intended voyage; and
  - (c) adequate information and instructions on the use and maintenance of all such equipment are provided on the ship in printed form in English.
- (4) Compliance with rule 45.4(3) is not required where there is a defect in the equipment and either –
  - (a) maintenance is being carried out; or
  - (b) maintenance is not practicable given the location of the ship.
- (5) Where a ship has been fitted or provided with navigational equipment that is not required by this Part, it is the responsibility of the owner and the master to ensure that the equipment meets any relevant standards prescribed by this Part.

### **45.5 Sextant, chronometer, and binoculars**

- (1) A ship which proceeds into the unlimited area must be provided with at least one sextant.<sup>1</sup>
- (2) A ship which proceeds into the unlimited area must be provided with at least one chronometer.
- (3) A ship, except a vessel of under six metres in length that only operates in daylight hours, must be provided with a pair of binoculars fitted with a neck strap.

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<sup>1</sup>. Part 25 of the Maritime Rules requires vessels operating in the unlimited area to carry nautical charts and nautical publications necessary for the calculation of the ship's position.

## All ships to which SOLAS is applied

### 45.6 Application of rules 45.7 to 45.18

- (1) Rules 45.7 to 45.18 inclusive apply to any New Zealand ship that is a commercial ship and that is –
  - (a) a SOLAS ship; or
  - (b) a passenger ship of 45 metres or more in length that proceeds beyond restricted limits; or
  - (c) a non-passenger ship of 45 metres or more in length that proceeds beyond restricted limits; or
  - (d) a self-propelled mobile offshore drilling unit of 500 tons gross tonnage or more.
- (2) Rules 45.7 to 45.18 inclusive do not apply to pleasure craft or to barges.

### 45.7 Magnetic compasses

- (1) A ship of 150 tons gross tonnage or more must –
  - (a) be fitted with two compasses in one of the following combinations –
    - (i) a standard magnetic compass and a steering magnetic compass; or
    - (ii) a standard magnetic compass with heading information clearly readable by the helmsperson at the main steering position, and a spare magnetic compass interchangeable with the standard compass; or
    - (iii) a standard magnetic compass and a gyro-compass; and
  - (b) be fitted with adequate means of communication between the standard compass position and the normal navigation control position; and
  - (c) be provided with means such as an azimuth mirror or azimuth circle or sight vane for taking bearings as near as practicable over an arc of the horizon of 360°.
- (2) The owner and the master of a ship must ensure that every magnetic compass fitted to that ship –
  - (a) is properly adjusted as set out in section (a) of the Appendix; and
  - (b) has an appropriate table or curve of residual deviations that is available on the bridge at all times.
- (3) A ship of less than 150 tons gross tonnage must –
  - (a) be fitted with a steering compass; and
  - (b) have a means for taking bearings; and
  - (c) have its compass properly adjusted as set out in section (a) of the Appendix; and
  - (d) have an appropriate table of residual deviations available on the bridge at all times.
- (4) The owner and the master of a ship must ensure that compass installations, compass repositioning, and compass repairs are made in consultation with a compass adjuster.
- (5) The owner and the master of a ship must ensure that each compass fitted to that ship meets the requirements of the International Maritime Organization Assembly Resolution A.382(X).

### 45.8 Gyro-compasses

- (1) A ship that is –
  - (a) 500 tons gross tonnage or more that is constructed on or after 1 September 1984; or
  - (b) 1,600 tons gross tonnage or more and engaged on an international voyage;must be fitted with a gyro-compass that meets the requirements of the International Maritime Organization Assembly Resolution A.424(XI).

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- (2) A ship of 1,600 tons gross tonnage or more must meet the following requirements –
  - (a) a gyro repeater or gyro repeaters must be fitted; and
  - (b) the gyro repeater or gyro repeaters must be suitably placed for taking bearings as near as practicable to an arc of the horizon of 360°; and
  - (c) an appliance such as an azimuth mirror or azimuth circle or sight vane must be provided to enable bearings to be taken from the gyro repeater or gyro repeaters.
- (3) The owner and the master of a ship must ensure that the master gyro-compass or a gyro repeater fitted to that ship is clearly readable by the helmsperson at the main steering position.
- (4) The owner and master of a ship must ensure that gyro-compasses fitted after 1 January 2017 transmit heading information for input to other equipment as required by Regulation 19.2.5.1 of Chapter V of SOLAS.

### **45.9 Emergency steering position**

- (1) A ship which has an emergency steering position must be provided with a telephone or other means of communication for relaying heading information to the emergency steering position.
- (2) A ship of 500 tons gross tonnage or more that is constructed on or after 1 February 1992 must be provided with equipment for supplying visual compass readings to the emergency steering position.

### **45.10 Radar installations**

- (1) For a ship of 10,000 tons gross tonnage or more –
  - (a) two radar installations, each capable of being operated independently of the other, must be fitted; and
  - (b) if the ship is engaged in voyages in the unlimited area, at least one of the radar installations referred to in rule 45.10(1)(a) must be capable of operating in the 9 GHz frequency band.
- (2) A ship that is a ship not referred to in rule 45.10(1) that is –
  - (a) a passenger ship engaged in voyages in the unlimited area; or
  - (b) a non-passenger ship of 300 tons gross tonnage or more engaged in voyages in the unlimited area;must be fitted with a radar installation that is capable of operating in the 9 GHz frequency band.
- (3) A ship that is a ship not referred to in rule 45.10(1) or (2) that is –
  - (a) a ship of 500 tons gross tonnage or more that is constructed on or after 1 September 1984; or
  - (b) a ship of 1,600 tons gross tonnage or more;must be fitted with a radar installation.
- (4) The owner and the master of a ship must ensure that radar installations fitted to that ship before 1 September 1984 meet the requirements of the International Maritime Organization Assembly Resolution A.222(VII).
- (5) The owner and the master of a ship must ensure that radar installations fitted to that ship on or after 1 September 1984 meet the requirements of the International Maritime Organization Assembly Resolution A.477(XII).
- (6) The owner and master of a ship must ensure that radar installations fitted to the ship on or after 1 January 2017 meet the requirements of IMO Resolution MSC.64(67) Annex 4 and Maritime Safety Committee Resolution MSC.192(79).

- (7) The owner and master of a ship constructed on or after 1 January 2017 or, for an existing ship, not later than the first survey on or after 1 January 2017, must ensure that a properly adjusted transmitting heading device—
- (a) is fitted to the ship that transmits heading information for input to the equipment referred to in rule 45.10 (1), (2), or (3), rule 45.11 and rule 45.14; and
  - (b) complies with International Maritime Organization Maritime Safety Committee Resolution MSC.116(73).

**45.11 Plotting equipment**

- (1) A ship required by rule 45.10(1), (2) or (3) to be fitted with a radar installation must be provided with plotting equipment for plotting radar readings on the navigating bridge.<sup>2</sup>
- (2) On a ship that is 1,600 tons gross tonnage or more that is constructed on or after 1 September 1984, the plotting equipment required by rule 45.11(1) must be at least as effective as a reflection plotter.

**45.12 ARPAs**

- (1) A ship that is –
- (a) over 15,000 tons gross tonnage; or
  - (b) 10,000 tons gross tonnage or more that is constructed on or after 1 September 1984; or
  - (c) a tanker of 10,000 tons gross tonnage or more;
- must be fitted with an ARPA.
- (2) The owner and the master of a ship must ensure that an ARPA fitted to that ship before 1 January 1997 meets the requirements of the International Maritime Organization Assembly Resolution A.422(XI).
- (3) The owner and the master of a ship must ensure that an ARPA fitted to that ship on or after 1 January 1997 meets the requirements of the International Maritime Organization Assembly Resolution A.823(19).

**45.13 Echo-sounding devices**

A ship that is –

- (a) 1,600 tons gross tonnage or more; or
- (b) 500 tons gross tonnage or more that is constructed on or after 25 May 1980;

must be fitted with an echo-sounding device that meets the requirements of the International Maritime Organization Assembly Resolution A.224(VII).

**45.14 Devices to indicate speed and distance**

- (1) A ship that is –
- (a) engaged in a voyage in the unlimited area; and
  - (b) of 500 tons gross tonnage or more; and
  - (c) constructed on or after 1 September 1984;
- must be fitted with a device to indicate speed and distance.
- (2) A ship required by rule 45.12(1) to be fitted with an ARPA must be fitted with a device to indicate speed and distance through the water.

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<sup>2</sup> This may be an ARPA.

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- (3) The owner and the master of a ship must ensure that devices to indicate speed and distance fitted to that ship before 1 January 1997 meet the requirements of the International Maritime Organization Assembly Resolution A.478(XII).
- (4) The owner and the master of a ship must ensure that devices to indicate speed and distance fitted to that ship on or after 1 January 1997 meet the requirements of the International Maritime Organization Assembly Resolution A.824(19).

### **45.15 Rudder angle indicator and propeller revolution indicator**

- (1) Rule 45.15 applies to a ship that is –
  - (a) 1,600 tons gross tonnage or more; or
  - (b) 500 tons gross tonnage or more that is constructed on or after 1 September 1984.
- (2) A ship must be fitted with the following indicators –
  - (a) rudder angle; and
  - (b) rate of revolution of all propellers fitted; and
  - (c) where the ship has variable pitch propellers, pitch and operational mode of variable pitch propellers; and
  - (d) where the ship has lateral thrust propellers, pitch and operational mode of lateral thrust propellers.
- (3) The owner and the master of a ship must ensure that the indicators referred to in rule 45.15(2) and fitted to that ship meet the requirements of IMO Resolution A.1021(26).
- (4) The owner and the master of a ship must ensure that the indicators referred to in rule 45.15(2) and fitted to that ship are readable from the conning position.

### **45.16 Rate-of-turn indicator**

- (a) A ship of 100,000 tons gross tonnage or more that is constructed on or after 1 September 1984 but before 1 July 2002 must be fitted with a rate-of-turn indicator that meets the requirements of IMO Resolution A.526(13).
- (b) A ship of 50,000 gross tonnage or more that is constructed on or after 1 July 2002 must be fitted with a rate-of-turn indicator that meets the requirements of IMO Resolution A.526(13) not later than 1 January 2017.

### **45.17 Positioning receiving systems**

- (1) Rule 45.17 applies—
  - (a) in relation to a ship constructed on or after 1 January 2017, as at its date of construction; and
  - (b) in relation to a ship constructed before 1 January 2017 but after 25 May 1980, as at the first survey of the ship occurring on or after 1 January 2017.
- (2) The owner and master of a ship must ensure that the ship is fitted with a receiver for a global satellite system or a terrestrial radionavigation system, or other means suitable for use at all times throughout the intended voyage to establish and update the ship's position by automatic means.
- (3) The owner and master of a ship must ensure that the global satellite system or terrestrial radionavigation system meets the standards applicable to the ship in the following resolutions of the International Maritime Organization:
  - (a) IMO Resolution A.1046(27):
  - (b) IMO Resolution A.818(19):
  - (c) IMO Resolution A.819(19):
  - (d) IMO Resolution MSC.53(66):
  - (e) IMO Resolution MSC.64(67), annex 2:
  - (f) IMO Resolution MSC.74(69), annex 1.

**45.18 Signalling lamps**

A ship that is over 150 tons gross tonnage must be provided with an efficient daylight signalling lamp which is not solely dependent upon the ship's main source of electrical power.

**45.18A Back-up arrangements**

The owner and the master of a ship to which rules 45.7 to 45.18 apply must ensure that the ship has associated back-up arrangements in accordance with Regulation 19 of Chapter V of SOLAS.

**All ships to which SOLAS is not applied<sup>3</sup>**

**45.19 Application of rules 45.20 to 45.25**

- (1) Rules 45.20 to 45.25 inclusive apply to any New Zealand ship that is a commercial ship not referred to in rule 45.6.
- (2) Rules 45.20 to 45.25 inclusive do not apply to pleasure craft or to barges.

**45.20 Magnetic compasses - passenger ships of 150 tons gross tonnage or more that proceed outside restricted limits**

- (1) A passenger ship of 150 tons gross tonnage or more that proceeds outside restricted limits must be fitted with two compasses, in one of the following combinations –
  - (a) a standard magnetic compass and a steering magnetic compass; or
  - (b) a standard magnetic compass with heading information clearly readable by the helms person at the main steering position, and a spare magnetic compass interchangeable with the standard compass; or
  - (c) a standard magnetic compass and a gyro-compass.
- (2) The owner and the master of a ship must ensure that each compass required by rule 45.20(1) is sited as near as practicable to the ship's centreline.
- (3) The owner and the master of a ship must ensure that –
  - (a) one of the compasses required by rule 45.20(1) is for use as a steering compass and is sited at the normal steering position; and
  - (b) the other compass required by rule 45.20(1) is for use as a standard compass and is sited in a position from which the view of the horizon is least obstructed.
- (4) The owner and the master of a ship must ensure that a magnetic compass required by rule 45.20(1) –
  - (a) is mounted in a binnacle with proper means for making adjustments; and
  - (b) meets the requirements of the International Maritime Organization Assembly Resolution A.382(X).
- (5) The owner and the master of a ship must ensure that the compass required by rule 45.20(3)(b) is provided with means, such as an azimuth mirror, azimuth circle, or sight vane, for taking accurate observations and bearings of terrestrial and celestial objects.

**45.21 Magnetic compasses - small passenger and non-passenger ships, and fishing ships**

- (1) Subject to rule 45.21(5), a ship that is –
  - (a) a passenger ship that is either:
    - (i) less than 150 tons gross tonnage and proceeds beyond restricted limits; or
    - (ii) six metres or more in length and does not proceed beyond restricted limits; and
  - (b) a non-passenger ship that is either

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Footnote <sup>3</sup> is reserved.

- (i) less than 45 metres in length and proceeds beyond restricted limits; or
  - (ii) twelve metres or more in length and does not proceed beyond restricted limits; and
- (c) a fishing ship that either –
- (i) proceeds beyond restricted limits but does not proceed beyond the offshore limit; or
  - (ii) is twelve metres or more in length and does not proceed beyond restricted limits;
- must be fitted with a magnetic compass that is capable of being adjusted.
- (2) Except as provided in rule 45.21(3), the owner and the master of a ship must ensure that the compass required by rule 45.21(1) is sited –
- (a) forward of the steering wheel or main control position of the ship; and
  - (b) as near as practicable to the centre line of the ship; and
  - (c) in a position from which the view of the horizon is least obstructed.
- (3) If any of the requirements contained in rule 45.21(2) cannot be complied with when a compass is fitted to a ship to which rule 45.21(1) applies, the owner and the master of that ship must ensure that a second compass is fitted to that ship so that all of the requirements contained in rule 45.21(2) are complied with.
- (4) The owner and the master of a ship must ensure that all compasses fitted to that ship –
- (a) are fitted with an efficient means of illumination and a device for dimming that illumination; and
  - (b) have an apparent card diameter of not less than 100 millimetres readable from the steering position; and
  - (c) are adjusted so as to have no more than 5° deviation on any heading unless a greater deviation is specifically approved by a compass adjuster; and
  - (d) are suspended by gimbals or have internal gimbaling; and
  - (e) are permanently fitted on a shelf or stand with suitable fittings for placing the necessary correctors, or is fitted with correctors which can be suitably adjusted; and
  - (f) are placed so that any electrical devices, electronic devices, items of magnetic material, or other equipment likely to exert disturbing influences, are located –
    - (i) as far away as is practicable from the compass; and
    - (ii) at least as far away as recommended in manufacturing instructions; and
    - (iii) in any case, not less than half a metre away; and
  - (g) in the case of a ship with a steel wheelhouse, is mounted in such a way that it can be properly adjusted, if necessary on the wheelhouse top, with a protective cover and fitted with a device by which it can be read from the normal steering position with the cover in place.
- (5) A ship which operates only on a river or other restricted waterway need not be fitted with a compass.

**45.22 Magnetic compasses - small passenger ships, non-passenger ships, and fishing ships, to which rule 45.21 does not apply**

- (1) Subject to rule 45.22(3), a ship that is –
- (a) a passenger ship of less than six metres in length that does not proceed beyond restricted limits; or
  - (b) a non-passenger ship of six metres or more but less than twelve metres in length that does not proceed beyond restricted limits; or
  - (c) a fishing ship that is six metres or more but less than twelve metres in length and does not proceed beyond inshore fishing limits;



must be fitted with a magnetic compass permanently mounted as near as practicable to the centre line.

- (2) Every magnetic compass required by rule 45.22(1) must have an appropriate table or curve of total errors available at all times.
- (3) A ship which operates only on a river or other restricted waterway need not be fitted with a compass.

**45.23 Magnetic compasses - non-passenger ships and fishing ships of less than 6 metres in length that do not proceed beyond restricted limits**

- (1) Subject to rule 45.23(3), if proceeding only in restricted limits, a ship that is –
  - (a) a non-passenger ship of less than six metres in length; and
  - (b) a fishing ship that is less than six metres in length;must be provided with a magnetic compass which meets the requirements of rule 45.23(2).<sup>4</sup>
- (2) Every magnetic compass required by rule 45.23(1) must have an appropriate table or curve of total errors available at all times.
- (3) A ship which operates only on a river or other restricted waterway need not be provided with a compass.

**45.24 Magnetic compasses - fishing ships that proceed into the unlimited area**

- (1) Subject to rule 45.24(4), a fishing ship that proceeds into the unlimited area must be fitted with two compasses that are capable of being adjusted, one of which must be for use as a steering compass and the other for use as a standard compass.
- (2) The owner and the master of a ship that is fitted with a standard compass must ensure that the compass –
  - (a) is sited on the centre line of the ship in a position from which the view of the horizon is least obstructed; and
  - (b) is fitted with an efficient means of illumination and a device for dimming that illumination; and
  - (c) has an apparent card diameter of not less than 125 millimetres readable from the steering position; and
  - (d) is corrected so as to have not more than 5° deviation on any heading; and
  - (e) is suspended by gimbals; and
  - (f) is fitted in a binnacle or permanently fitted on a wooden stand at a convenient height to enable bearings of terrestrial and celestial objects to be taken, and is provided with suitable fittings for the placing of the necessary correctors; and
  - (g) is placed so that any electrical devices, electronic devices, items of magnetic material, or other equipment likely to exert disturbing influences, are located –
    - (i) as far away as is practicable from the compass; and
    - (ii) at least as far away as recommended in manufacturing instructions; and
    - (iii) in any case, not less than half a metre away; and
  - (h) is provided with a means for taking accurate bearings of terrestrial and celestial objects; and
    - (i) if on an open deck or top of a deckhouse, is provided with safe and convenient access and adequate guard rails so that the person using the compass can at all times be assured of protection from slipping or falling.

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<sup>4</sup> This may be a hand held compass.

- (3) The owner and the master of a ship fitted with a steering compass must ensure that the steering compass –
- (a) is sited –
    - (i) forward of the steering wheel; and
    - (ii) on or near the centre line of the ship; and
    - (iii) in a position from which the view of the horizon is least obstructed; and
  - (b) is fitted with an efficient means of illumination and a device for dimming that illumination; and
  - (c) is adjusted so as to have no more than 5° deviation on any heading; and
  - (d) is suspended by gimbals or has internal gimbaling; and
  - (e) is permanently fitted on a shelf or stand with suitable fittings for placing the necessary correctors; and
  - (f) is placed so that any electrical devices, electronic devices, items of magnetic material, or other equipment likely to exert disturbing influences are located –
    - (i) as far away as practicable from the compass; and
    - (ii) at least as far away as recommended in manufacturing instructions; and
    - (iii) in any case, not less than half a metre away.
- (4) A steering compass will not be required if –
- (a) the standard compass is equipped with a device by which it may be read from the normal steering position with its protective cover in place; or
  - (b) the card of a gyro-compass or transmitting compass can be read from the normal steering position.

**45.25 Magnetic compasses - installation, repositioning, repair and adjustment of adjustable magnetic compasses**

- (1) The owner and the master of a ship must ensure that the installation, repositioning, or repair of an adjustable magnetic compass that rule 45.20, 45.21, or 45.24 requires to be fitted to that ship is made in consultation with a compass adjuster.
- (2) The owner and the master of a ship must ensure that all adjustable magnetic compasses required by rule 45.20, 45.21, or 45.24 to be fitted to that ship –
- (a) are properly adjusted as set out in the Appendix; and
  - (b) have an appropriate table or curve of deviations available at all times.<sup>5</sup>

**Ships of 500 tons gross tonnage or more to which SOLAS is not applied**

**45.26 Application of rules 45.27 to 45.34**

- (1) Rules 45.27 to 45.34 inclusive apply to any New Zealand ship that is a commercial ship of 500 tons gross tonnage or more not referred to in rule 45.6.<sup>6</sup>
- (2) Rules 45.27 to 45.34 inclusive do not apply to pleasure craft or to barges.

**45.27 Gyro-compasses**

- (1) A ship that is –
- (a) a fishing ship of 45 metres or more in length that is constructed on or after 1 September 1984; or

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<sup>5</sup> The compass need only be adjusted by a compass adjuster at the time required in the Appendix (b). When the compass has not been seen by a compass adjuster the table or curve of deviations may be drawn up by any other person, such as the master or a surveyor with suitable navigation experience.

<sup>6</sup> In addition to having to meet the requirements contained in rules 45.27 to 45.34, a New Zealand ship that is a commercial ship of 500 tons gross tonnage or more not referred to in rule 45.6 must meet the requirements contained in rules 45.4 to 45.5 and rules 45.20 to 45.25.

- (b) a fishing ship of 75 metres or more in length; must be fitted with a gyro-compass that meets the requirements of the International Maritime Organization Assembly Resolution A.424(XI).
- (2) A ship of 1,600 tons gross tonnage or more must meet the following requirements –
  - (a) a gyro repeater or gyro repeaters must be fitted; and
  - (b) the gyro repeater or gyro repeaters must be suitably placed for taking bearings as near as practicable over an arc of the horizon of 360°; and
  - (c) an appliance, such as an azimuth mirror, azimuth circle, or sight vane, must be provided to enable bearings to be taken from the gyro repeater or gyro repeaters.
- (3) The owner and the master of a ship must ensure that the master gyro-compass or a gyro repeater fitted to that ship is clearly readable by the helmsperson at the main steering position.

**45.28 Equipment relating to emergency steering position**

- (1) A ship which has an emergency steering position must be provided with a telephone or other means of communication for relaying heading information to the emergency steering position.
- (2) A fishing ship of 45 metres or more in length that is constructed on or after 1 February 1998 must be provided with equipment for supplying visual compass readings to the emergency steering position.

**45.29 Radar installations**

- (1) A ship that is –
  - (a) a non-passenger ship; or
  - (b) a fishing ship;that either –
  - (c) is constructed on or after 1 September 1984; or
  - (d) is of 1,600 tons gross tonnage or more;must be fitted with at least one radar installation.
- (2) A passenger ship must be fitted with at least two radar installations.
- (3) The owner and the master of a ship must ensure that radar installations fitted to that ship on or after 1 September 1984 meet the requirements of the International Maritime Organization Assembly Resolutions A.477(XII) and A.222(VII).
- (4) The owner and the master of a ship must ensure that each radar installation fitted to that ship is capable of being operated from the ship's emergency source of electrical energy.
- (5) A ship that proceeds into the unlimited area must have a radar installation capable of operating in the 9 GHz band.

**45.30 Plotting equipment**

- (1) A ship required by rule 45.29(1) or (2) to be fitted with a radar installation must be provided with plotting equipment<sup>7</sup> for plotting radar readings on the navigating bridge.
- (2) On a ship that is 1,600 tons gross tonnage or more that is constructed on or after 1 September 1984, the plotting equipment required by rule 45.30(1) must be at least as effective as a reflection plotter.

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<sup>7</sup> This may be an ARPA.

**45.31 ARPAs**

- (1) A ship that is –
  - (a) 15,000 tons gross tonnage or more; or
  - (b) 10,000 tons gross tonnage or more that is constructed on or after 1 September 1984;must be fitted with an ARPA.
- (2) The owner and the master of a ship must ensure that an ARPA fitted to that ship before 1 January 1997 meets the requirements of the International Maritime Organization Assembly Resolution A.422(XI).
- (3) The owner and the master of a ship must ensure that an ARPA fitted to that ship on or after 1 January 1997 meets the requirements of the International Maritime Organization Assembly Resolution A.823(19).

**45.32 Echo-sounding devices**

- A ship that is –
- (a) a passenger or non-passenger ship of 1,600 tons gross tonnage or more that is constructed after 25 May 1980; or
  - (b) a fishing ship of 75 metres or more in length; or
  - (c) a fishing ship of 45 metres or more in length that is constructed after 1 September 1984;
- must be fitted with an echo-sounding device that meets the requirements of the International Maritime Organization Assembly Resolution A.224(VII).

**45.33 Devices to indicate speed and distance**

- (1) A fishing ship that is –
  - (a) engaged in a voyage in the unlimited area; and
  - (b) of 45 metres or more in length; and
  - (c) constructed on or after 1 September 1984;must be fitted with a device to indicate speed and distance.
- (2) A ship required by rule 45.31(1) to be fitted with an ARPA must be fitted with a device to indicate speed and distance through the water.
- (3) The owner and the master of a ship must ensure that each device to indicate speed and distance fitted to that ship before 1 January 1997 meets the requirements of the International Maritime Organization Assembly Resolution A.478(XII).
- (4) The owner and the master of a ship must ensure that each device to indicate speed and distance fitted to that ship on or after 1 January 1997 meets the requirements of the International Maritime Organization Assembly Resolution A.824(19).

**45.34 Rudder angle indicator and propeller revolution indicator**

- (1) Rule 45.34 applies to a ship that is –
  - (a) a passenger ship or non-passenger ship of 1,600 tons gross tonnage or more that is constructed before 1 September 1984; or
  - (b) a passenger or non-passenger ship of 500 tons gross tonnage or more that is constructed on or after 1 September 1984; or
  - (c) a fishing ship of 75 metres or more in length that is constructed before 1 September 1984; or
  - (d) a fishing ship of 45 metres or more in length that is constructed on or after 1 September 1984.
- (2) A ship to which rule 45.34(1) applies must be fitted with the following indicators –

- (a) rudder angle; and
  - (b) rate of revolution of all propellers fitted; and
  - (c) if the ship has variable pitch propellers, pitch and operational mode of variable pitch propellers; and
  - (d) if the ship has lateral thrust propellers, the pitch and operational mode of lateral thrust propellers.
- (3) The indicators required by rule 45.34(2) must meet the requirements of the International Maritime Organization Assembly Resolution A.694(17).
- (4) The indicators referred to in rule 45.34(2) must be readable from the conning position.
- (5) A ship to which rule 45.34(1) applies that is fitted with power operated steering gear must have a rudder angle indicator at the principal steering position.

## **Section 2 - Compass adjusters**

### **45.35 Recognition as a compass adjuster**

- (1) An applicant is entitled to a maritime document as a compass adjuster under this Part if the Director is satisfied that –
- (a) the person has –
    - (i) a certificate proving that the person has passed a compass adjuster's course acceptable to the Director and one of the following certificates of competency–
      - (aa) certificate as Master issued in accordance with rule 32.106 of Part 32; or
      - (bb) certificate as Chief mate issued in accordance with rule 32.104 of Part 32
    - (ii) experience as a Sub-specialist Navigation Officer in the Royal New Zealand Navy and a certificate proving that the person has passed a compass adjuster's course acceptable to the Director; or
    - (iii) a certificate recognised by the Director as equivalent to the certificate proving that the person has passed a compass adjuster's course and a certificate referred to in rule 43.35(1)(aa) or (bb); or
    - (iv) a licence as a compass adjuster issued under Part V of the Ships' Compasses Regulations 1971; and
  - (b) the person has adjusted the compasses of no fewer than six commercial ships in the five years preceding the date of application, with no more than three of these adjustments being carried out while the person adjusting the compass is the master of the ship; and
  - (c) the requirements specified in section 41 of the Act have been complied with in respect of that maritime document.
- (2) The maritime document referred to in rule 45.35(1) is to be valid for a period specified by the Director up to a maximum period of five years from the date of issue.<sup>8</sup>
- (3) The holder of a licence as a compass adjuster issued under Part V of the Ships' Compasses Regulations 1971 referred to in rule 45.35(1)(a)(iv) is deemed to hold a licence as a compass adjuster for the purposes of Part 45 until 1 August 2000.

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<sup>8</sup> Renewal of a compass adjusters maritime document will be the same procedure as 45.35(1).

## **Appendix - Compass adjustment**

### **(a) Compass adjustment on ships to which SOLAS is applied**

#### **(1) Definitions:**

For the purpose of (a) of the Appendix, deviation will be considered to be "excessive" if deviation on any compass is over 5° on any heading.

For the purposes of the Appendix, "regular intervals" for checking compass errors means, if practicable, either at least once per watch or at least once on each course steered.

#### **(2) The owner and the master of a ship must ensure for the purpose of showing that the ship's compass is, or compasses are, properly adjusted, that –**

- (a)** the compass of the ship is, or compasses of the ship are, adjusted by a compass adjuster before commencing the ship's first voyage; and
- (b)** the compass is, or compasses are, adjusted by the master for a second time within two years of the first adjustment (provided that the master holds a certificate as Master issued in accordance with rule 32.106 of Part 32 or an equivalent certificate) or a compass adjuster for a second time within two years of the first adjustment; and
- (c)** compass errors are, whenever practicable, checked at regular intervals and recorded in the compass error book; and
- (d)** the compass is, or compasses are, swung annually to check the table or curve of residual deviations and, if necessary, the card or cards of the compass or compasses are updated; and
- (e)** where a compass's deviations are found to be excessive, that compass is adjusted by the master (provided that the master holds a certificate as Master issued in accordance with rule 32.106 of Part 32 or an equivalent certificate) or a compass adjuster.

### **(b) Compass adjustment on ships to which SOLAS is not applied**

- (1)** The owner and the master of a new ship which has been launched to which rule 45.20, 45.21, 45.24 or 45.25 applies must ensure that the adjustable compass is, or compasses are, adjusted by a compass adjuster before that ship's initial voyage is commenced.
- (2)** The master of a ship that is used in a maritime transport operation must ensure that the ship's adjustable compass is, or compasses are, swung and adjusted by a compass adjuster whenever the compass deviation exceeds 5°.