

Maritime Rules

Part 40A: Design, Construction and Equipment – Passenger Ships which are not SOLAS Ships

MNZ Consolidation

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Part objective

Part 40A prescribes the requirements for the design, construction and equipment of New Zealand passenger ships that are not SOLAS ships (and therefore not covered by Part 40B) and for foreign non SOLAS passenger ships that operate on the New Zealand coast.

The authority for making Part 40A is found in sections 36(1)(a), 36(1)(c), 36(1)(d), 36(1)(j), 36(1)(l), 36(1)(q) and 36(1)(t) of the Maritime Transport Act 1994.

Maritime Rules are subject to the Regulations (Disallowance) Act 1989. 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 this Act.

Please Note: The text within the document in **green** are identified amendments that will be addressed in the next domestic omnibus rule amendment 2017.

Disclaimer:

This document is the current consolidated version of Maritime Rules Part 40A 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

History of Part 40A

Part 40A first came into force on 1 February 2001 and now incorporates the following amendments:

Amendment	Effective date
Amendment 1	27 May 2004
Amendment 2	23 November 2006
Amendment 3	4 September 2008
Amendment 4	30 July 2009
Amendment 5	1 April 2011
Amendment 6	2 August 2012
Amendment 7	1 April 2014
Amendment 8	1 July 2014
Amendment 9	7 August 2014
Amendment 10	1 January 2015
Amendment 11	1 April 2015
Amendment 12	1 November 2016

Summary of amendments

Amendment 1

Maritime Rules Amendments Parts 20-90

PO, 40A.2, Appendix 3: Clauses 3.1 & 3.2

Amendment 2

Maritime (EPIRBs) Amendment

40A.6(a)(iv), 40A.57(2)(b), 40A.77, Appendix 5: Clause 5.1

Amendment 3

Maritime (Various Amendments) Rules (Parts 20-91)

40A.2, 40A.4, 40A.9(4)(d)(i), 40A.19(3)(a), 40A.19(4), 40A.19(5), 40A.35(3) & (4), 40A.33(3)(b)(ii), 40A.33(3A), 40A.41(4), 40A.41(5), 40A.43(1), 40A.43(1A), 40A.44(5), 40A.44(7), 40A.46(c), 40A.49, 40A.49(2), 40A.53(5)(b), 40A.57(7) & (8), 40A.72, Appendix 1, Appendix 4: Clause 4.5 – Column 2(4), Appendix 8: Clauses 15, 15.2(1), 17.1(1), 17.2

Amendment 4

Maritime (Various Amendments) Rules 2009 (21-80)

Appendix 8: Clause 18.2(3) and Annex 1

Amendment 5

Maritime Rules Various Amendments 2011

40A.10(1), Appendix 4: Clause (4), Appendix 7

Amendment 6

Part 82: Commercial Jet Boat Operations – River

40A.3(3)

Amendment 7

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

40A.2, 40A.6, Appendix 8 clause 17.2(d)

Amendment 8

Parts 19 and 44: Consequential Amendments

40A.2, references to 'new ship' and 'existing ship', 40A.7, 40A.8, 40A.11,

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40A.13, 40A.16, 40A.28, 40A.38,
40A.58, 40A.59, 40A.64, 40A.72,
40A.75, 40A.77

Amendment 9

Part 40A, Part 40C, Part 40D, Part 40E, Part 40F and
Part 42A: Amendment 2014

40A.2, 40A.8, 40A.13, 40A.24,
40A.26, 40A.33, 40A.38, 40A.40,
40A.41, 40A.57, Appendix 1,
Appendix 4.1, Appendix 4.2, Appendix
4.3

Amendment 10

Maritime Rules Various Amendments 2014

40A.9, 40A.24, 40A.46, 40A.50,
40A.68, Appendix 1

Amendment 11

Maritime Rules Various Amendments 2015

40A.12, 40A.28, 40A.43, Appendix 4.3

Amendment 12

Maritime Rules Various Amendments 2016

40A.3, 40A.9, 40A.11, 40A.23,
40A.24, 40A.28, 40A.35, 40A.56,
Appendix 7 & 8

All signed rules can be found on our website:

<http://www.maritimenz.govt.nz/Rules/List-of-all-rules/Part40A-maritime-rule.asp>

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General

40A.1 Entry into force

Part 40A comes into force on 1 February 2001.

40A.2 Definitions

In this Part:

Act means the Maritime Transport Act 1994:

boat has the same meaning as ship:

certificate of survey means—

- (a) a certificate of survey issued by a surveyor under rule 44.41 of Part 44; or
- (b) any document that is deemed under Part 44 to be a current Certificate of Survey described in paragraph (a); or
- (c) a certificate of survey issued under section 219 of the Shipping and Seamen Act 1952 and deemed to be issued or recognised as a maritime document under Part V of the Act pursuant to section 468(5) of the Act; or
- (d) a certificate of survey issued under section 143 of the Act and saved under section 468(8) of the Act:

closed cup test means a test for determining the flashpoint of a flammable liquid as prescribed in Australian/New Zealand Standards—

- (a) AS/NZS 2106.0:1999 *Methods for the determination of the flash point of flammable liquids (closed cup) – General*; and
- (b) AS/NZS 2106.1:1999 *Methods for the determination of the flash point of flammable liquids (closed cup) – Abel closed cup method*; and
- (c) AS/NZS 2106.2:1999 *Methods for the determination of the flash point of flammable liquids (closed cup) – Pensky Martens closed cup method*; and
- (d) AS/NZS 2106.5:1999 *Methods for the determination of the flash point of flammable liquids (closed cup) – Flash/no flash test - Rapid equilibrium method*; and
- (e) AS/NZS 2106.6:1999 *Methods for the determination of the flash point of flammable liquids (closed cup) – Determination of flash point - Closed cup equilibrium method*.

Certificate of Surveyor Recognition—

- (a) has the same meaning as in Part 44; and
- (b) includes any document that is deemed under Part 44 to be a valid Certificate of Surveyor Recognition:

coastal limits has the same meaning as in Part 20:

cockpit means an exposed recess in the weather deck of a ship that extends not more than one half of the length overall of the ship:

commercial ship means a ship that is not—

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

constructed under survey means constructed subject to an initial survey conducted by a surveyor who holds with a Certificate of Surveyor Recognition entitling the surveyor to perform that function from the time of commencement of building of the ship until completion of the building of that ship:

current, in relation to a document means that it is valid, has not expired, and, in the case of a maritime document, has not been suspended or revoked by the Director:

enclosed water limits has the same meaning as in Part 20:

enclosed water limits ship means a ship that has been assigned enclosed water limits under rule 20.20:

EPIRB means an electronic position indicating radio beacon:

exposed recess means a recess that is not completely enclosed by a weathertight superstructure:

fully decked boat means a boat in which the horizontal projection of the sheerline area comprises decking with opening appliances that are weathertight. The horizontal projection of the sheerline area may also include—

- (a) a watertight self-draining cockpit complying with rule 40A.15(1)(c); and
- (b) other watertight recesses of volume less than the product of length overall x maximum beam x minimum freeboard, divided by 40 (m³):

inflatable boat means a boat that—

- (a) achieves its shape and buoyancy through the medium of inflation; and
- (b) is propelled by an engine:

inshore limits has the same meaning as in Part 20:

inshore limits ship means a ship that has been assigned inshore limits under rule 20.5:

international voyage means a voyage to or from a port outside New Zealand:

length means 96 percent of the total length on a waterline at 85 percent of the least moulded depth measured from the top of the keel, or the length from the fore side of the stem to the axis of the rudder stock on that waterline, if that is the greater length. In ships designed with a rake of keel, the waterline on which this length is measured must be parallel to the design waterline:

length overall means the length of the ship measured from the foreside of the head of the stem to the aftermost part of the transom or stern of the ship; and for the purposes of this Part—

- (a) does not include fittings (such as beltings, bowsprits, platforms, gantries, trim tabs, jet and outboard drive units) that project beyond these terminal points; and
- (b) includes structures (such as bulbous bows, deckhouses, free flooding bait tanks and buoyancy tubing) that project beyond these terminal points.¹

machinery spaces of Category A means those spaces, and trunks to such spaces, that contain—

- (a) internal combustion machinery used for main propulsion; or
- (b) internal combustion machinery used for purposes other than main propulsion where such machinery has an aggregate total power output of not less than 375 kW; or
- (c) any oil-fired boiler or oil fuel unit:

major alteration or modification means the alteration or modification of a ship, including the replacement, removal or addition of—

- (a) any part of a ship, that is likely to—

¹ See the Advisory Circular to Part 40A for further guidance and interpretation of this definition.

- (i) significantly affect the structural integrity, tonnage, freeboard, cargo or passenger capacity, crew or passenger accommodation, conditions of assignment of load line, watertight subdivision, stability, structural fire protection; or
 - (ii) result in significant changes to the propulsion machinery, auxiliary machinery, steering or method of propulsion of the ship; and
- (b) any safety equipment of the ship:

major repair means a repair in respect of any damage, defect, breakdown or grounding of a ship that is likely to significantly affect the structural integrity, conditions of assignment of load line, watertight subdivision, stability, structural fire protection, main propulsion machinery, method of propulsion, steering gear, or vital auxiliary machinery of the ship:

Maritime Transport Operator Plan—

- (a) means the plan required by rule 19.41; and
- (b) for a ship operating under rule 19.81(3), the equivalent requirements under the New Zealand Safe Ship Management Code that applied prior to the revocation of section 2 of Part 21 by 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 that are navigable:

New Zealand Safe Ship Management Certificate means the certificate of that name issued under section 2 of Part 21 as in force prior to the revocation of that section by Part 19:

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:

offshore limits has the same meaning as in Part 20:

oil fuel unit means the equipment used for the preparation of oil fuel for delivery to an oil-fired boiler, or equipment used for the preparation for delivery of heated oil to an internal combustion engine, and includes any oil pressure pumps, filters and heaters dealing with oil at a pressure of more than 0.18 N/mm²:

open boat is a boat not protected from entry of water by means of a complete deck or by a combination of a partial weather deck and a weathertight superstructure or deckhouse:

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 ship to which paragraph (a) or paragraph (b) 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:
- (d) 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:

partially decked boat means a boat in which at least two-thirds of the horizontal projection of the sheerline area is equipped with decking, cabins, shelters or rigid covers which are weathertight and designed to shed water overboard. The decked area must include all that area within one third of the length from the bow plus the area 100 mm inboard from the periphery of the boat (excluding the transom):

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 circumstances 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) for ships that do not proceed beyond restricted limits, a commercial ship that carries any passengers; and
- (b) for ships that proceed beyond restricted limits, a commercial ship that carries more than 12 passengers:

pleasure craft has the same meaning as in section 2 of the Act:

person means a person of 1 year of age or more:

pontoon boat means an open or decked boat—

- (a) that is constructed of metal, fibre reinforced plastic or rotationally moulded polyethelene thermoplastic; and
- (b) the intact buoyancy of which is chiefly ensured by tubular, or similar hollow or foam filled, topsides; and
- (c) that is propelled by an engine:

post-27 May 2004 ship—

- (a) means a ship—
 - (i) for which construction commences; or
 - (ii) which is converted into a passenger ship to which Part 40A applies, on or after 27 May 2004; and
- (b) **post 27 May 2004** in relation to any ship or boat has a corresponding meaning:

pre-27 May 2004 ship—

- (a) means a ship—
 - (i) for which construction commenced; or
 - (ii) which was converted into a passenger ship to which Part 40A applies, before 27 May 2004; and
- (b) **pre-27 May 2004** in relation to any ship or boat has a corresponding meaning:

restricted coastal limits in relation to a ship, means any defined section of the coastal limits that has been assigned to that ship by a surveyor under rule 20.5(1):

restricted limits has the same meaning as in Part 20:

restricted limits ship means a ship that has been assigned either enclosed water limits or inshore limits under rule 20.20:

rigid – inflatable boat means an open or decked boat that—

- (a) has a rigid bottom structure; and

- (b) has inflatable sides that chiefly ensure the intact buoyancy of the boat; and
- (c) is propelled by an engine:

rules means maritime rules and marine protection rules:

sailing ship means a ship that—

- (a) is designed to be navigated under wind power alone and for which any motor provided is an auxiliary means of propulsion; or
- (b) possesses a non-dimensional ratio of (sail area) divided by (volume of displacement)^{2/3} of more than 9:

series production boat means a boat which is one of a series of boats built to a standard design:

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:

ship's design for the purposes of this Part, includes the ship's structural integrity, watertightness and weathertightness, safe means of egress and access, intact stability and reserve of buoyancy, the ship's compliance with any damage stability and buoyancy requirements, and the provision of machinery and other installed systems and equipment necessary for the safe working of the ship:

sister ship means a ship that is—

- (a) built to the same lines plan as a pre-27 May 2004 ship that has approved stability data; and
- (b) in all respects, similar in construction and outfit as a pre-27 May 2004 ship that has approved stability data:

submersible craft means any craft that operates with its hull and superstructure fully submerged below the water:

surveyor means a person who holds a current Certificate of Surveyor Recognition under Part 44:

swamp means a process of taking in water to any part of the interior or nonself-draining spaces of a ship, except for air tanks:

VHF (very high frequency) means the frequency spectrum between 30MHz and 300MHz:

VHF coverage area means an area defined in Appendix 3 of Part 43, being an area within the defined coverage of a 24 hour VHF coast station on channel 16 (radio telephony) and "VHF coverage" has a corresponding meaning:

watertight means capable of preventing the passage of water through the structure in any direction under a head of water for which the surrounding structure is designed:

weathertight means that in any sea condition water will not penetrate into the ship:

weather deck means a deck exposed to the weather and sea.

well deck is a weather deck, watertight against a head of 1.2 metres of seawater, which is fitted with solid bulwarks such as would impede the drainage of solid water over the sides. If the freeboard to this deck, measured from the designed load waterline is less than 250 mm the vessel shall be considered as an open boat for the purposes of

subdivision, stability, and drainage requirements. The deck within the bulwarks is considered to be a weather deck unless it is completely enclosed by a weathertight superstructure.

40A.3 Application

- (1) Subject to rule 40A.3(3), this Part applies to every New Zealand ship that is a passenger ship that—
 - (a) does not proceed beyond restricted limits; or
 - (b) is less than 45 metres in length and does not proceed beyond the offshore limit.
- (2) Subject to rule 40A.3(3), this Part applies to every foreign passenger ship to which Part 40B does not apply, if the ship embarks passengers in New Zealand for a voyage that is not an international voyage.
- (3) This Part does not apply to—
 - (a) a sailing ship; or
 - (b) a hovercraft; or
 - (c) a commercial jet boat to which Part 80 or Part 82 applies; or
 - (d) any craft for which a certificate of registration as an amusement device has been issued under the Machinery Act 1950; or
 - (e) any submersible craft.

40A.4 Maritime New Zealand number

- (1) The owner and the master of a ship built prior to the 4th September 2008 must ensure that the ship is permanently marked with the letters 'MSA' or 'MNZ', followed by a number issued to the ship by the Director.
- (2) The owner and the master of a ship built on or after [the commencement of the Maritime Amendment Rules 2007] must ensure that the ship is permanently marked with the letters 'MNZ', followed by a number issued to the ship by the Director.
- (3) The letters and number referred to in subrules (1) and (2) must be—
 - (a) clearly marked; and
 - (b) dark on a light background or light on a dark background; and
 - (c) in characters at least 75 mm high; and
 - (d) located on—
 - (i) both sides of the superstructure in a clearly visible position; or
 - (ii) if no superstructure is fitted, on the transom or stern.

40A.5 Additional safety equipment

The owner and the master of a ship that is provided with—

- (a) fire appliances additional to those required by rule 40A.55; or
- (b) life saving appliances additional to those required by rule 40A.56; or
- (c) radiocommunications equipment additional to that required by rule 40A.57;

must ensure that the additional appliances and equipment meet the standards required by rules 40A.55, 40A.56, and 40A.57 and are well maintained and in good working order.

40A.6 Conditions under which restricted limit ships are permitted to make voyages in the coastal or offshore limits

The owner and the master of a ship that has been assigned restricted or coastal limits under rule 20.20 and is making a single voyage in coastal or offshore limits (as applicable) as permitted under rule 20.43 must ensure that—

- (a) the ship is provided with at least the following safety equipment:

- (i) a liferaft that complies with rules 42A.11 and 42A.12 and that is able to carry the number of persons carried on the ship;
 - (ii) one lifejacket that has a buoyancy of 100N and complies with rule 42A.19, for each person carried on the ship;
 - (iii) 4 rocket parachute flares and 2 buoyant smoke floats that comply with the requirements of rules 42A.22 and 42A.24 respectively;
 - (iv) a 406 MHz EPIRB that complies with the requirements of rule 43.18A or 43.19;
 - (v) a VHF radio that complies with Part 43;
 - (vi) in the case of a ship making a single voyage in coastal limits, if proceeding outside the VHF coverage area, a radio installation that a surveyor is satisfied will enable radio communication in the intended area of operation; and
 - (vii) in the case of a ship making a single voyage in offshore limits, if proceeding outside the VHF coverage area, a radio installation that meets the requirements of rule 43.14; and
- (b) the ship is provided with up to date charts and nautical publications relevant to the areas covered by the proposed voyage; and
 - (c) the crew of the ship meet the minimum crewing and qualification requirements of Part 31 of the maritime rules, as applicable, for a ship that proceeds into coastal or offshore limits, as applicable; and
 - (d) the voyage is only made under favourable weather conditions with a favourable weather forecast.

Design, survey and construction

40A.7 Design

- (1) Subject to rules 40A.7(2), (3) and (4), the owner of a ship must ensure that—
 - (a) if the ship is a post-27 May 2004 ship to which rule 40A.9(2) does not apply, the ship's design is approved² by a surveyor who holds a current Certificate of Surveyor Recognition that entitles the surveyor to perform that function as—
 - (i) fit for its intended use and intended operating limits; and
 - (ii) complying with all the applicable maritime and marine protection rules; and
 - (b) if the ship is a pre-27 May 2004 ship to which rules 40A.9(4)(a) and (b) do not apply, the ship's design is approved by a surveyor who holds a current Certificate of Surveyor Recognition that entitles the surveyor to perform that function as—
 - (i) fit for its intended use and intended operating limits; and
 - (ii) complying with all the applicable maritime and marine protection rules; and
 - (c) if the ship undergoes major alteration, its operating limits are permanently changed, or its passenger carrying capacity is increased, the ship's design is approved by a surveyor who holds a current Certificate of Surveyor Recognition that entitles the surveyor to perform that function as—
 - (i) fit for its intended use and intended operating limits; and
 - (ii) complying with all the applicable maritime and marine protection rules.
- (2) The design of a post-27 May 2004 ship of less than 7.5 metres in length overall does not require approval if the ship is a series production boat of a design and construction that has a record of at least 5 years of safe operation under similar conditions to that intended for the post-27 May 2004 ship.

² Approval of the ship's design does not guarantee any performance of the ship's design other than in respect of the sufficiency and compliance with maritime and marine protection rules of those elements included in the definition of ship design in rule 40C.2.

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- (3) A pre-27 May 2004 ship that has a certificate of survey that was issued before 1 February 1998 is considered to have had its design approved for the operating limits and number of passengers indicated on the certificate of survey.
- (4) The design of a pre-27 May 2004 ship of less than 7.5 metres in length overall to which rule 40A.7(3) does not apply does not require approval if the ship, or a ship of the same design and construction, has a record of at least 5 years of safe operation in the intended service and similar area of operation.

40A.8 Survey

- (1) Unless a surveyor is satisfied of the relevant matters set out in subrule (2), a surveyor must not —
 - (a) issue a certificate of survey; or
 - (b) subject to the Director's power to prescribe the extent of survey in that provision, report a satisfactory survey for the purpose of Part 44.
- (2) For the purpose of subrule (1) the matters are —
 - (a) a ship's design has been approved in accordance with rule 40A.7 and 40A.38; and
 - (b) for a ship to which section 1 of this Part applies, the ship—
 - “(i) complies with rules 40A.9 to 40A.63 inclusive and the requirements of Part 50³, as may be applicable for that ship; and
 - “(ii) is provided with the equipment required by Parts 22⁴ and 45,⁵ as may be applicable for that ship; and
 - (c) for a ship to which section 2 of this Part applies, the ship meets either the requirements of—
 - (i) rule 40A.68; or
 - (ii) rules 40A.12 to 40A.63 inclusive and rule 40A.69; or
 - (iii) rules 40A.12 to 40A.63 inclusive and rule 40A.70,as the case may be, and the requirements of Parts 22, 45 and 50⁶, as may be applicable for that ship; and
 - (d) for a ship to which section 3 of this Part applies, the ship complies with rule 40A.73 or rule 40A.74, as the case may be, and the requirements of Parts 22, 45 and 50, as may be applicable for that ship; and
 - (e) the ship and the ship's equipment are in all respects fit for its intended use and operating limits; and
 - (f) all applicable maritime rules and marine protection rules are complied with.
- (3) The owner and the master of a ship must ensure that after the survey that takes into account those matters prescribed in subrule (2), no major alteration, modification, or repairs are made in the structure, equipment, arrangements, material, or scantlings covered by those matters without the approval of a surveyor.

40A.9 Construction

- (1) The construction of a ship must provide strength for the safe operation of the ship and to withstand the sea and weather conditions likely to be encountered in the intended area of operation, assuming that the ship is operated at its service draught and driven prudently at its maximum service speed.
- (2) A post-27 May 2004 ship complies with rule 40A.9(1) if it is constructed under survey and is—

³ Part 50 – Medical Stores

⁴ Part 22 – Collision Prevention includes requirements for distress equipment to be carried.

⁵ Part 45 – Navigation Equipment.

⁶ Part 50 – Medical Stores

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- (a) certified as being in accordance with hull or full certification standards for the ship's operating limits by any one of the following classification societies:
 - American Bureau of Shipping
 - Bureau Veritas
 - DNV GL AS, DNV GL, DNV, or GL
 - Lloyd's Register of Shipping
 - Nippon Kaiji Kyokai; or
 - (b) certified by any one of the marine safety authorities of a State or Territory of the Commonwealth of Australia as complying with the requirements of the *Uniform Shipping Laws Code*, published by the Australian Transport Advisory Council, if the operating limits stated in that certification are considered by the Director to be equivalent to the ship's operating limits in New Zealand.
- (3) A post-27 May 2004 ship of 7.5 metres or more in length overall that is not built in accordance with rule 40A.9(2) must be constructed under survey.
- (4) A pre-27 May 2004 ship complies with rule 40A.9(1) if it is in good repair and—
- (a) was built to one of the standards referred to in rule 40A.9(2) for post-27 May 2004 ships and a current certificate of a type referred to in rule 40A.9(2) exists for the ship; or
 - (b) was built to one of the standards referred to in rule 40A.9(2) for post-27 May 2004 ships and, where no current certificate referred to in rule 40A.9(2) exists for the ship, a surveyor is satisfied following a structural survey of the ship that the ship continues to meet the standard; or
 - (c) has a certificate of survey that was issued before 1 February 1998, and a surveyor is satisfied following a structural survey of the ship that the ship's condition is adequate for its intended purpose; or
 - (d) has undergone:
 - (i) design approval in accordance with rule 40A.7(1)(b); and
 - (ii) a survey by a surveyor and the surveyor is satisfied that the ship's condition is adequate for its intended purpose.
- (5) A rigid hulled ship must comply with the following:
- (a) it must be constructed of wood, fibre reinforced plastic (FRP), aluminium alloy or steel, a combination of such materials, or other materials that the Director considers provide equivalent performance:
 - (b) if it proceeds beyond enclosed waters, it must be fitted with—
 - (i) a watertight weather deck, which may be a well deck, over the length of the ship; and
 - (ii) shelter for the total number of persons carried that is suitable for the sea and weather conditions likely to be encountered in the intended area of operation;unless it is an open boat to be assigned inshore limits, in which case a surveyor must be satisfied that the boat complies with rules 40A.13(3) and 40A.17:
 - (c) if a cockpit is fitted, it must be watertight and self draining.
- (6) (a) A post-27 May 2004 inflatable boat or rigid-inflatable boat must comply with the requirements of Appendix 6.
- (b) A pre-27 May 2004 inflatable boat or rigid inflatable boat must comply with the requirements of Appendix 6 within 1 year of this Part coming into force.
- (7) A pontoon boat must—

- (a) be constructed of aluminium alloy, steel, fibre reinforced plastic, rotationally moulded polyethylene thermoplastic or any other material that the Director considers provides equivalent performance; and
- (b) comply with clauses 6.1, 6.10, 6.11, 6.14 and 6.15 of Appendix 6 applying to rigid inflatable boats. The damage tests of Annex 1 to Appendix 6 are not required; and
- (c) if it proceeds beyond enclosed water limits, comply with rule 40A. 17.

Section 1 – General passenger ships

General

40A.10 Application of section 1

- (1) Except as provided in rule 40A.10(2), rules 40A.10 to 40A.63 inclusive apply to any passenger ship which—
 - (a) is used as a ferry, excursion ship, cruising ship, training ship, water taxi or sports fishing boat; and
 - (b) during a voyage is not, at any time, wholly submerged below the surface of the water.
- (2) Rules 40A.10 to 40A.63 apply to ships to which sections 2 and 3 apply to the extent specified in those sections.

40A.11 Definitions relating to section 1

In section 1:

cargo means any goods carried for reward other than the personal luggage of passengers, and perishable goods not exceeding 100 kilograms in total weight:

cruising ship means any ship which carries berthed passengers on a voyage:

design waterline means the deepest load line at which the ship is designed to operate:

excursion ship means any ship which carries passengers on a voyage with the intention of returning to its starting point:

ferry means any ship which carries passengers on a regular or irregular service between any two or more places of embarkation or disembarkation:

freeboard deck for ships of 24 metres or more in length which are load line ships, has the same meaning as in Part 47. For other ships, it means the uppermost deck having means of weathertight closure and below which all openings in the sides of the ship have means of watertight closure:

personal luggage means luggage carried on board by passengers:

sports fishing boat means any ship which only carries passengers who will participate in recreational fishing during the voyage:

training ship means any ship which carries passengers on a voyage for the purpose of instructing them in navigation, boat handling or other nautical training purposes:

water taxi means any ship which is available for hire to carry passengers to any intended destination.

Subdivision and stability

40A.12 Subdivision

- (1) This rule applies to all ships except those pre-27 May 2004 ships to which rule 40A.14 applies.

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- (2) Except as provided in rule 40A.12(3), a ship of 15 metres or more in length overall must be fitted with a vertically continuous collision bulkhead that is—
- (a) watertight up to the freeboard deck; and
 - (b) located not less than 5 percent of the length overall and not more than 15 percent of the length overall abaft the foreside of the stem measured at the design waterline.

Double-ended ferries must have such a collision bulkhead at each end.

- (3) In any ship of less than 20 metres in length overall, the collision bulkhead may be stepped if—
- (a) the bulkhead below the step is located not less than 5 percent of the length overall abaft the stem at the design waterline; and
 - (b) the continuation of the bulkhead to the freeboard deck above the step is located at a distance not less than 1.5 percent of the length overall abaft the stem, measured at the top of the step; and
 - (c) the top of the step is not less than 2.5 percent of the length overall above the design waterline.
- (4) (a) Doorways and other access openings must not be fitted in the collision bulkhead below the freeboard deck, except that in a ship of 20 metres in length overall or less a surveyor may permit the fitting of a single watertight manhole of the minimum opening required for access, if—
- (i) it is located as high as possible in the collision bulkhead; and
 - (ii) there is no other practical location for access to the space forward of the collision bulkhead.
- (b) Except as provided in rule 40A.12(4)(c), pipes passing through the collision bulkhead must be fitted with valves operable from above the freeboard deck.
- (c) Where the fore peak is not used as a tank and the space immediately aft of the collision bulkhead is not a machinery or cargo space, the fore peak may be drained by a cock secured on the after side of the bulkhead. The cock must be—
- (i) operated from a readily accessible and protected position aft of the bulkhead; or
 - (ii) of a self closing type.
- (5) Where a forecastle is fitted to a ship and the forecastle extends aft of the position of the collision bulkhead, the bulkhead must be extended weathertight to the next deck above the freeboard deck. Openings in the extension above the freeboard deck must be the minimum necessary for the operation of the ship and must be provided with weathertight closing arrangements.
- (6) A ship of 12 metres or more in length overall must have watertight bulkheads at each end of the main propulsion machinery space.
- (7) A ship that is permitted to carry more than 50 passengers, and a ship which proceeds beyond the coastal limits and is less than 35 metres in length overall, must have its watertight bulkheads so arranged that hull damage that results in the free-flooding of any one compartment will not cause the ship to float at a waterline which is less than 75 mm below the freeboard deck at any point.
- (8) For the purposes of the calculation required in rule 40A.12(7)—
- (a) hull damage must be assumed to occur at any length of the ship, but not on a watertight bulkhead; and
 - (b) the permeabilities given in Table 40A.1 must be used in any waterline calculation; and
 - (c) the extent of assumed damage must be—

- (i) 90 percent of the length between watertight bulkheads; and
- (ii) transverse penetration of 20 percent of breadth of the ship, but not more than 5 metres; and
- (iii) for the full depth of the ship excluding any double bottom, if fitted.

Table 40A.1

Spaces	Permeability
Cargo, stores	60
Accommodation for passengers and crew	95
Machinery	85
Liquids	0 or 95 (whichever results in the more severe requirement)
Void spaces	95 (0 if in accordance with rule 40A.12(9))
For cargo vehicles	90

- (9) Surveyors may permit the use of low-density foam or another medium to provide buoyancy in void spaces, provided it is—
 - (a) impervious to water absorption; and
 - (b) structurally stable under service conditions; and
 - (c) chemically inert in relation to the structural materials and other medium with which it may be in contact; and
 - (d) properly secured in place; and
 - (e) easily removable for inspection of the void space.
- (10) The watertight bulkheads of a ship which proceeds beyond the coastal limits and is 35 metres or more in length overall must be so arranged that the ship meets the subdivision and damage stability requirements of Part B of Chapter II-1 of the International Convention for the Safety of Life at Sea, 1974.

40A.13 Stability

- (1) This rule applies to all ships except pre-27 May 2004 ships to which rule 40A.14 applies.
- (2) With the exception of ships to which rule 40A.13(3) and (9) applies, the intact stability of a ship must be determined in accordance with Appendix 1 of this Part.
- (3) A monohull boat of less than 6 metres in length overall which is—
 - (a) an open boat; or
 - (b) a partially decked boat that proceeds beyond enclosed waters;
 must meet the flotation and stability requirements of a swamp test or calculation approved by the Director⁷ in accordance with rule 40A.13(4).
- (4) The Director may approve a swamp test or calculation that demonstrates that a boat, when fully swamped, has sufficient buoyancy distributed so that the boat will stay afloat and in good trim, without listing if flooded. The test or the calculation must include the full outfit of equipment, the total number of persons that is permitted to carry and a mass equivalent to its engine and full tank or tanks of fuel⁸.

⁷ An approved test and method of calculation with flotation and stability criteria are given in the Advisory Circular for this Part.

⁸ For details of a recommended swamping calculation and test for open boats see the Advisory Circular to Part 40A of the maritime rules.

- (5) For a ship to which rule 40A.12(7) applies, the residual stability in the damaged condition must be such that—
 - (a) any angle of equilibrium does not exceed 7° from the upright; and
 - (b) the resulting righting lever curve has a range to the downflooding angle of at least 15° beyond any angle of equilibrium; and
 - (c) the maximum righting lever within the range is not less than 100mm; and
 - (d) the area under the curve is not less than 0.015 metre radians.
- (6) For a ship to which rule 40A.12(10) applies, the residual stability in the damaged condition must conform with the requirements of regulation 8 of Part B of Chapter II-1 of the International Convention for the Safety of Life at Sea 1974.
- (7)
 - (a) A single hull ship must be constructed so as to minimise unsymmetrical flooding when the ship is in the damaged condition.
 - (b) Where it is necessary to correct large angles of heel resulting from unsymmetrical flooding, the means of correction must be self-acting or, if cross-flooding fittings are used, the controls for those fittings must be capable of operation from above the bulkhead deck.
 - (c) The owner and the master of a ship which is fitted with cross-flooding controls must ensure that written instructions on the use of those cross-flooding fittings are readily available on that ship whenever it is at sea.
- (8) Where any ship is fitted with permanent solid ballast in order to comply with the requirements of Appendix 1 of this Part—
 - (a) the ballast must be placed and secured to the satisfaction of a surveyor; and
 - (b) the ballast must not be a material that may adversely affect the adjacent ship structure; and
 - (c) a record of the weight, location, and nature of the ballast must be documented in—
 - (i) the survey plan required by Part 19; or
 - (ii) in any case where the transitional provisions of Part 19 apply, the documentation associated with the ship's safe ship management system.
- (9) The stability requirements of this rule do not apply to any ship which is an inflatable or rigid-inflatable boat that is required to comply with Appendix 6 of this Part.
- (10) The owner of a ship that—
 - (a) proceeds beyond restricted limits and carries more than 12 berthed passengers; or
 - (b) proceeds beyond restricted limits and carries more than 50 unberthed passengers;must ensure that stability information in the form prescribed by Appendix 1 is available on the ship.
- (11) A ship fitted with or carrying a deck crane or other lifting device must be a decked ship and meet the applicable requirements of rule 40A, Appendix 1.7.

40A.14 Pre-27 May 2004 ships' subdivision and stability

- (1) A pre-27 May 2004 ship that was surveyed and issued with a certificate of survey prior to 1 February 1998 is not required to comply with rules 40A.12 and 40A.13, provided that, since the issue of the certificate—
 - (a) it has not undergone—
 - (i) major repairs, or major alterations or modifications; or
 - (ii) a change of use; and
 - (b) the number of passengers that the ship is permitted to carry has not been increased; and

- (c) in the case of a ship which is not a restricted limit ship, the ship's operating limits have not been changed to permit the ship to proceed beyond the limits previously assigned.
- (2) The owner of a pre-27 May 2004 ship that was engaged in passenger services which did not require survey of the ship under the Maritime Transport Act 1994 prior to 1 February 1998, must, where applicable, ensure that the ship complies with rules 40A.12 and 40A.13 before 1 February 2003, except that—
 - (a) A pre-27 May 2004 open boat need not comply with rule 40A.13(3) if the boat has a record of at least 5 years of safe operation in the intended area of operation; and
 - (b) where the weight of any existing ballast for a pre-27 May 2004 ship is unknown, only the presence of permanent ballast and its location must be recorded for compliance with rule 40A.13(8)(c).

40A.15 Freeboard⁹

- (1) Except as provided in rules 40A.15(3) and (4), a ship that is less than 24 metres in length and does not carry cargo must have the following minimum freeboards when upright in still water and loaded with fuel, water and stores, and weights representing the total number of passengers and crew to be carried (calculated as 75 kgs per person)—
 - (a) in the case of a ship with a continuous weather deck, a freeboard measured down from the lowest point of the weather deck of not less than 375 mm for a ship of 6 metres or less in length overall and not less than 750 mm for a ship of 18 metres or more length overall. For a ship of intermediate length overall, the freeboard must be determined by linear interpolation:
 - (b) in the case of either an open or a partially open ship, a clear height of side (that is, the distance between the waterline and the top of the gunwale or capping or to the top of the wash strake if fitted above the capping) of not less than 400 mm for a ship of 6 metres or less in length overall and not less than 800 mm for a ship of 18 metres or more in length overall. For a ship of intermediate length overall, the clear height must be determined by linear interpolation:
 - (c) in the case of a ship fitted with a cockpit, the height of the cockpit sole above the water at the lowest point must not be less than 250 mm, but a surveyor may permit a lesser height if it can be shown—
 - (i) that the ship has a reserve of buoyancy; and
 - (ii) its stability remains intact when the cockpit is full of water; and
 - (iii) if the cockpit is self draining, it is capable of self draining within 3 minutes.
- (2) A ship of less than 16 metres in length overall that does not proceed beyond restricted limits and is fitted with a raised weathertight fore deck structure and flush weathertight deck with bulwarks aft may have a minimum freeboard of 250 mm, if—
 - (a) openings in the deck are kept to a minimum and are provided with weathertight closing arrangements; and
 - (b) openings to the weathertight raised structure forward from the aft deck have sills of at least 250 mm height; and
 - (c) bulwarks are fitted with water freeing arrangements in accordance with rule 40A.26(2), whether or not the ship is less than 12 metres in length overall.
- (3) The minimum freeboard or clear height of side of a ship must not be less than that required to meet any requirement of rules 40A.12 or 40A.13.
- (4) The freeboard requirements of rule 40A.15 do not apply to any ship that is an inflatable or rigid-inflatable boat or pontoon boat that is required to comply with Appendix 6 of this Part.

⁹ A ship that is 24 metres or more in length, or that is less than 24 metres in length and carries cargo, must comply with Part 47.

Number of passengers

40A.16 Number of passengers

- (1) The maximum number of passengers that a ship may carry must be determined by a surveyor in accordance with Appendix 2. A surveyor must record the maximum number for each of the ship's operating limits on the Certificate of Survey.
- (2) The owner and the master of a ship must not allow on board the ship more than the maximum number of passengers recorded on the ship's Certificate of Survey for the operating limits in which the ship is operating or intending to operate.

Passenger accommodation

40A.17 Shelter

- (1) Except as provided in rule 40A.17(2), where a ship proceeds beyond enclosed water limits the ship must have spaces that provide shelter from the weather for the total number of passengers that the ship is certified to carry. Such sheltered spaces may be open at the after end in a ship that does not proceed beyond inshore limits.
- (2) A ship of 12 metres or less in length and carrying 12 passengers or less that is permitted to operate beyond enclosed water limits but not beyond a restricted coastal limit may, with the approval of a surveyor, be provided with suitable warm and weatherproof clothing for the total number of passengers that the ship is certified to carry in lieu of the shelter required by rule 40A.17(1), having regard to the area and season of operation.

40A.18 Seating

- (1) A ship that engages in voyages of 30 minutes duration or more must be equipped with seating for every passenger that the ship is certified to carry, in accordance with this rule.
- (2) If continuous fixed seating is installed, 450 mm of seating must be allowed for each person.
- (3) Any fixed seating installed must provide for ready escape, with passageways between fixed seating of—
 - (a) not less than 600 mm wide, if the passageway is 4.5 metres or less in length; or
 - (b) not less than 750 mm wide, if the passageway is more than 4.5 metres in length.
- (4) On vehicular ferries carrying private vehicles on the open deck, within enclosed waters, the number of seats per vehicle may be allowed for vehicle passengers instead of the seating required by rule 40A.18(1) if—
 - (a) adequate space is allowed between vehicles for free passenger movement and to allow persons to get in and out of the vehicles; and
 - (b) the normal voyage duration is not more than 1 hour.
- (5) Where seats are in rows, the distance from seat front to seat front must not be less than 750 mm when the seats face the same way.
- (6) Portable or temporary seating must be arranged in the same manner as that required for fixed seating.
- (7) Seats must not be installed in working areas of a deck, or in areas between deckhouses or superstructures and bulwarks or rails, or in internal closed passageways where the width of the space is less than 1 metre.

40A.19 Egress

- (1) The minimum width of any single opening, including any door and stairway, that gives normal egress from any passenger compartment to open deck spaces must be determined from Table 40A.2.

Table 40A.2

Number of passengers for which compartment measured in accordance with Appendix 2		Width of Egress
Exceeding	Not exceeding	mm
	12	600
12	30	750
30	45	900
45	60	1050
60	75	1200
75	90	1350
90	100	1500

- (2) A passenger compartment that is permitted, in accordance with Appendix 2, to accommodate more than 100 passengers must be provided with more than one normal means of egress, having a combined width of clear opening of 1500 mm plus 25 mm for every 10 passengers or part thereof in excess of 100. No such means of normal egress may have a clear width of opening of less than 750 mm.
- (3) Ready egress must be provided from—
- (a) decks or compartments that are permitted, in accordance with Appendix 2, to accommodate 12 or less passengers by—
 - (i) at least 1 stairway; and
 - (ii) any combination of stairways and ladderways.
 - (b) decks or compartments that are permitted, in accordance with Appendix 2, to accommodate more than 12 passengers, by stairways that meet the requirements of rule 40A.19(5).
- (4) Ladderways required by subrules (3) and (6) must—
- (a) have a width of not less than 600 mm, measured between the inside of the handrails or any obstruction protruding within the handrails; and
 - (b) have a tread width of not less than 100 mm with a non-slip surface; and
 - (c) have an angle of not less than 22° to the vertical; and
 - (d) be aligned, as far as possible, fore and aft and not athwartships; and
 - (e) be well illuminated by day and night.
- (5) Stairways required by subrules (3) and (6) must—
- (a) be provided with handrails at a vertical height of not less than 850 mm above the nosing of the treads, that are fitted so that there is no obstruction on or above the handrails that would tend to break a hand hold. Provided that, in the case of a stairway serving a step or break that does not exceed 1 metre in height, handrails may be omitted if suitable hand holds are provided; and
 - (b) be provided with a centre line dividing rail where the width of the stairway is 1500 mm or more; and
 - (c) have a clear vertical height of not less than 1.9 metres above the treads; and
 - (d) have an angle to the vertical of not less than 45° when the number of passengers exceeds 200, and 37° when that number is 200 or less; and

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- (e) in any ship proceeding beyond enclosed waters, be aligned forward and aft and not athwartships, if practicable; and
 - (f) have stair treads that—
 - (i) are not less than 150 mm wide; and
 - (ii) are not less than 200 mm or more than 225 mm vertically apart; and
 - (iii) have a non slip surface; and
 - (g) be well illuminated by day and night.
- (6) At least two means of escape must be provided from all levels of passenger accommodation¹⁰ in accordance with the following:
- (a) below the weather deck the main means of escape from a passenger accommodation space must be a stairway and the second means must be either a trunked ladderway or a stairway, unless more than 12 passengers are permitted in the space, in which case the second means must be a stairway; and
 - (b) above the weather deck the means of escape from a passenger accommodation space must be stairways, or doors to an open deck, or a combination of stairways and such doors; and
 - (c) the means of escape must be so located as to minimise the risk of access to both escapes being cut off in an emergency.
- (7) A corridor or part of a corridor from which there is only one route of escape must not exceed 7 metres in length.

40A.20 Headroom

- (1) Except as provided in rule 40A.20(2), clear headroom in passenger compartments must be not less than 1.9 metres, provided that this may be reduced—
- (a) at the sides of the compartment to allow for camber, ducting or piping; or
 - (b) in way of fixed seating, provided a surveyor is satisfied that passengers are able to access the adjacent passageways in comfort.
- (2) Cabins containing sleeping berths in any ship carrying 12 passengers or less in total may have a lesser headroom, provided that a surveyor is satisfied that the proposed headroom permits adequate access to each berth.
- (3) Passageways within passenger compartments leading to exits must have not less than 1.9 metres of clear headroom.

40A.21 Toilet facilities

- (1) Except as provided in rule 40A.21(2) and (5), toilet facilities must be provided in accordance with the following:¹¹
- (a) for unberthed passengers on ships not proceeding beyond the coastal limits, the toilet facilities required by Table 40A.3:

¹⁰ These may include the normal means of egress from each restricted space or group of spaces.

¹¹ Owners and operators of ferries should note that they must comply with section 42 of the Human Rights Act 1993, which prohibits discrimination in access to facilities on the grounds of disability. Under section 43, however, special facilities are not required when it would be unreasonable to provide them.

Table 40A.3

Number of passengers the ship is certified to carry	Toilet facilities required
1 to 50 passengers	1 wc and 1 hand basin:
51 to 100 passengers	2 wc and 2 hand basins (or 1 hand basin if both wc are in one compartment):
Each additional 100 passengers or remainder over 100	1 additional wc and 1 additional hand basin

(b) for unberthed passengers on a ship proceeding beyond the coastal limits, the toilet facilities required by Table 40A.4:

Table 40A.4

Number of passengers the ship is certified to carry	Toilet facilities required
1 to 12 passengers	1 wc and 1 hand basin:
13 to 50 passengers	2 wc and 2 hand basins (or 1 hand basin if both wc are in one compartment):
51 to 100 passengers	3 wc and 3 hand basins (or 2 hand basins if 2 or more wc are in one compartment)
Each additional 100 passengers or remainder over 100	1 additional wc and 1 additional hand basin

(c) for berth passengers, the number of wc, hand basins and showers must each be obtained by dividing the total number of passengers by 5. If the remainder exceeds 2, the number should be increased by one.

- (2) An open boat and any ship operating on short runs of less than 30 minutes duration within enclosed water limits on which less than 50 passengers are carried is not required to be provided with toilet facilities.
- (3) In all cases, compartments housing a wc must—
 - (a) be large enough to allow comfortable entry and egress; and
 - (b) be clean, well lighted, ventilated and drained; and
 - (c) be effectively protected from the weather and sea; and
 - (d) ensure privacy.

Where there is more than one wc in a compartment, they must be screened to ensure privacy.

- (4) A wc must be provided with ample flush of water that is available at all times and is independently controlled.¹² Soil and waste pipes must have adequate dimensions and be constructed to minimise the risk of obstruction and to facilitate cleaning. Such pipes must not pass through fresh water or drinking water tanks.
- (5) Chemical or other self-contained toilets may be fitted instead of a wc in restricted limit ships carrying not more than 12 passengers.
- (6) Cold fresh water, and for berthed passengers, hot fresh water or means of heating water, must be available in all wash spaces.

¹² Where toilet facilities are provided, local and national discharge requirements should be complied with.

Crew accommodation

40A.22 Crew accommodation

The following requirements apply to crew accommodation on a ship to which Part 51 does not apply that is 12 metres or more in length overall and that is normally engaged on voyages of 36 hours or more, or in which crew are required to sleep on board:

- (a) the location, structure, and arrangement of the crew accommodation must ensure security, protection against the weather and the sea, and insulation from heat, cold, and noise. Crew accommodation spaces must not be located forward of the collision bulkhead:
- (b) bulkheads and decks between accommodation spaces and machinery spaces, fuel tanks, galleys, engine, deck and other store rooms, drying rooms, communal wash places or wc must be constructed so as to prevent the infiltration of fumes and odours. Direct openings into sleeping rooms from such places must be avoided wherever practicable. Bulkheads separating such places from sleeping rooms and external bulkheads must be gastight and, where necessary, must prevent the passage of water:
- (c) all internal surfaces must be of a material that is easily kept clean, and is impervious to damp:
- (d) unless otherwise approved by a surveyor, the clear headroom in areas of free movement throughout the crew accommodation must be not less than 1.9 metres:
- (e) a surveyor must be satisfied that the crew accommodation spaces—
 - (i) are provided with adequate ventilation to ensure sufficient air changes for a comfortable living environment; and
 - (ii) have lighting such as to permit a person with normal vision to read in that space:
- (f) wherever practicable, access to sleeping rooms must be through a doorway. If access is to be from the main deck to below, it must be by way of an inclined ladder or stairway:
- (g) where a hazard (such as a galley area) is located between a sleeping room and the open deck, an emergency escape must be provided which permits access from the sleeping room to the open deck without passing through the area of hazard:
- (h) at least two means of escape must be provided at all levels of crew accommodation and must be so located as to minimise the risk of access to both escapes being cut off in an emergency:
- (i) each crew member must be provided with an individual bunk, the minimum inside dimensions of which must be 1.9 metres by 0.68 metres. A surveyor may permit the foot of the bunk to be tapered, if the surveyor considers that this is acceptable in cases of limited crew accommodation space:
- (j) the clearance above any bunk must not be less than 600 mm. The lowest bunk must not be less than 300 mm above the deck:
- (k) bunks must not be placed side by side in such a way that access to one bunk can only be obtained over another bunk. The minimum clear deck space between bunks must be at least 600 mm:
- (l) when one bunk is placed over another, a dustproof base of wood or other suitable material must be fitted to the upper bunk:
- (m) each bunk must be fitted with a mattress of a type that will not attract pests or insects. The mattress and cover must be of non-flammable material:
- (n) each crew member must be provided with adequate storage space in the form of a locker for the storage of personal items and clothes:
- (o) adequate toilet, messing, catering and beverage facilities must be provided for the total crew complement. Passenger facilities may be used for this purpose where appropriate. For every 8 crew members or less, there should be one flush toilet or

suitable alternative, one shower or bath, and one wash basin. Each shower, bath and wash basin provided must be supplied with hot and cold fresh water.

Watertight and weathertight integrity

40A.23 Watertight integrity

- (1) The number of openings in a ship's sides below the weather deck must be kept to a minimum.
- (2) For any ship to which Part 47 does not apply, inlets and discharges through the ship's hull must comply with rule 40A.35.¹³
- (3) All portlights fitted in the side of a ship below the freeboard deck must—
 - (a) be fixed; and
 - (b) must be fitted in a position where their sills are on or above a line that—
 - (i) is drawn parallel to the freeboard deck at the ship's side; and
 - (ii) has its lowest point at least 500 mm above the design waterline.

Deadlights must be fitted to all port lights in the sides of a ship. Portlights, their glasses and deadlights must be constructed to the satisfaction of a surveyor.¹⁴

40A.24 Weathertight integrity

- (1) (a) The freeboard deck and every deck above the freeboard deck must be weathertight and provided with freeing arrangements capable of rapidly clearing the deck of water under all weather conditions.
- (b) For a ship that is not required to comply with Part 47, the height above deck of the hatchway coamings and the permanent weathertight sills of openings in deckhouses or companionways that give access into spaces below the weathertight deck must comply with Table 40A.4A.

Table 40A.4A

Operating Limit	Length overall of ship (L)	Minimum height of coaming or sill
Offshore, Coastal, Restricted Coastal	6 m or more but less than 18m	300 mm
	18m or more but less than 24m	300 + 50(L - 18) mm
	24m and over	600 mm
Inshore	Less than 10m	150 mm
	10m or more but less than 18m	200 mm
	18m and over	250 mm
Enclosed waters	All lengths	150 mm

- (c) Openings in deckhouses or companionways that give access into spaces below the weathertight deck and that are located in cockpits, wells or in exposed positions on the weathertight deck must be fitted with weathertight doors.
- (d) All hatches exposed to the weather must be weathertight. Covers or closures for all hatches on weathertight decks, trunks or cabin tops must be fitted with securing devices and must be attached to the hatch coaming or frame to prevent them

¹³ Part 47 applies to ships of 24 metres or more in length, ships carrying cargo, and barges operating within coastal limits. For requirements regarding inlets and discharges led through the ship's hull see Part 47.

¹⁴ It is recommended that portlights and deadlights comply with the requirements of the standard ISO 12216 — *Windows, portlights, hatches, deadlights, and doors — Strength and tightness requirements*.

coming adrift. Escape hatches that lead to crew or passenger accommodation must be capable of being opened from both sides.

- (e) Where operating experience has shown justification, and on approval by the surveyor, and where the covers are other than wood, the height of coamings (hatches only) may be reduced, or the coamings omitted entirely, provided that the safety of the ship is not thereby impaired. In such cases, the hatchway opening must be kept as small as practicable and the covers permanently attached by hinges or equivalent means. The covers must be capable of being rapidly closed, and battened down or otherwise secured by arrangements that are acceptable to the surveyor.
- (2) (a) Ventilators on a ship that is not subject to the requirements of Part 47 must have coaming heights above deck that comply with Table 40A.4B.

Table 40A.4B

Length overall of ship	Minimum height above deck	
	On weather deck	On superstructure deck
less than 24 m	600 mm	375 mm
24 m or more but less than 35 m	760 mm	450 mm

- (b) Where the coaming height exceeds 900 mm, the coaming must be firmly supported.
 - (c) Ventilators must be capable of being closed weathertight by devices permanently attached to the ventilator or adjacent structure, but closing devices are not required for ventilators in the following circumstances—
 - (i) where the height of the ventilator is 300 mm or more above the weather deck—
 - (aa) on any ship that does not proceed beyond enclosed water limits; and
 - (bb) on any ship of less than 10 metres in length overall that does not proceed beyond a restricted coastal limit:
 - (ii) on any ship of less than 15 metres in length overall, where the height of the ventilator is 1 metre or more above the weather deck and the ventilator is positioned not more than 0.25 of the moulded breadth from the centre line of the ship:
 - (iii) on any ship of less than 24 metres in length overall, where the height of the ventilator is 2 metres or more above the weather deck and the ventilator is positioned not less than 0.25 of the moulded breadth from the centre line of the ship:
 - (iv) where the height of the ventilator exceeds 4.5 metres above the weather deck.
- (3) (a) Except as provided in rule 40A.24(3)(b), air pipes to tanks and other spaces below the weather deck that are not subject to the requirements of Part 47 must have efficient means of watertight closing permanently attached to the pipe or adjacent structure.
- (b) On any ship that does not proceed beyond enclosed waters, closing devices are not required for air pipes that have a gooseneck, if the height of the pipe above the deck to the point where water may have access below is 300 mm or more.
 - (c) The height of air pipes above deck to the point where water may have access below must be at least 760 mm on the weather deck and at least 450 mm on the superstructure deck of any ship proceeding beyond enclosed waters. A surveyor may allow a reduction of the height above deck of an air pipe to avoid interference

with the operation of a ship, provided that the safety of the ship is not adversely affected.

- (4) Suitable permanently transparent material must be fitted in all wheelhouse windows¹⁵ and the windows of other structures above the weather deck. Where glass is used, it must be toughened safety glass. The thickness of glass or other material used, the means of securing the windows, and the width of the bearing surfaces must be acceptable to a surveyor.

Guard rails and bulwarks

40A.25 Guard rails and bulwarks

- (1) A ship to which Part 47 does not apply must be provided with guard rails, bulwarks, and other protection as required by this rule:
 - (a) bulwarks or fixed guard rails must be fitted near the edge of every exposed deck to which passengers and crew have normal access, unless because of special circumstances the fitting of guard rails and bulwarks is impracticable, in which case a surveyor may permit the omission of such rails or bulwarks provided that adequate grab rails, toe rails and safe footing are provided:
 - (b) except as provided in rule 40A.25(1)(e), for any post-27 May 2004 ship, the height of guard rails or bulwarks above the deck on decks to which passengers have access must be not less than the height shown in Table 40A.5:

Table 40A.5

Length overall of ship	Minimum height
20 metres or more	1000 mm
16 metres or more but less than 20	850 mm
10 metres or more but less than 16	750 mm
less than 10 metres	To be determined by surveyor in each case having regard to the safety of the passengers and crew

- (c) storm rails or hand grabs must be installed where considered necessary by a surveyor for safe movement in passageways, at deckhouse sides, and at ladders and hatches where passengers and crew have normal access:
 - (d) on a ship carrying vehicles, effective barriers, chains or cables must be installed at the open ends of any vehicle deck:
 - (e) on any ship that does not carry more than 12 passengers and is engaged only in recreational fishing excursions, the height of bulwarks or guard rails is not required to exceed 850 mm above deck:
 - (f) except as provided in rule 40A.25(1)(a), decks to which only crew have access must have guard rails or bulwarks of the minimum height given in Table 40A.5, unless a surveyor considers a lesser height to be safe.
- (2) On a ship—
 - (a) the openings between guard rails on decks to which passengers have access must not exceed 230 mm unless all or part of the space below the upper rail course is fitted with strong wire mesh or equivalent; and
 - (b) on decks to which passengers do not have access, the openings between the lowest course of guard rails must not exceed 230 mm and the other courses must not be more than 380 mm apart.

¹⁵ See also rule 40A.63.

- (3) Subrule (4) applies to a pre-27 May 2004 ship that prior to 1 February 2001—
 - (a) was issued with a certificate under rule 21.13(2)(a) or (b); or
 - (b) held documents recognised by the Director under section 41 of the Act; or
 - (c) held documents accepted by the Director under section 42 of the Act;
- (4) A pre-27 May 2004 ship to which this subrule applies is not required to comply with subrule (2) if its existing guard rails are maintained in a condition that—
 - (a) does not compromise the safety of the ship and persons on board; and
 - (b) is satisfactory to a surveyor.

40A.26 Water freeing arrangements

- (1) Except as provided in rules 40A.26(2), (3), and (6), where bulwarks on weather parts of a deck form wells,—
 - (a) the minimum freeing port area (A) in square metres on each side of the ship for each well on the freeboard deck must be determined in relation to the length of the well in metres (l) and the height of the bulwark in metres (h) in the well as follows—
 - (i) for any ship of 24 metres in length overall or more—
 - (aa) $A = K \times l$
 - (ab) $K = 0.07$:
(l need not be taken as greater than 70 percent of the ship's length)
 - (bb) where the bulwark is more than 1.2 metres in average height, the required area must be increased by 0.004 square metres per metre of length of well for each 100 mm difference in height:
 - (cc) where the bulwark is less than 900 mm in average height, the required area may be decreased by 0.004 square metres per metre of length of well for each 100 mm difference in height:
 - (ii) for any ship of more than 12 metres in length but less than 24 metres in length overall—
$$A = \frac{(1.0 + 3.5h) \times l \times h}{100}$$
 - (iii) for any ship of 12 metres or less in length overall—
$$A = \frac{2 \times l \times h}{100}$$
 - (b) the minimum freeing port area for each well on an open weather deck above the freeboard deck must be not less than one half the area (A).
- (2) Except as provided in rule 40A.26(6), a ship of less than 12 metres in length overall that does not proceed beyond restricted limits and has a well deck aft that is fitted with bulwarks all round must be provided with—
 - (a) freeing ports of the minimum area required by rule 40A.26(1); or
 - (b) a minimum of two freeing ports fitted (one port and one starboard) in the transom, each of a clear area of at least 225 square centimetres.
- (3) If a ship has only small side deck areas in which water can be trapped, a surveyor may accept a smaller freeing port area, if the surveyor is satisfied that the volume of water that may become trapped in the side deck areas will not unduly affect the ship's stability.
- (4) Except as provided in rule 40A.26(6), freeing ports must be so arranged along the length of bulwarks as to ensure that the deck is freed of water most rapidly and effectively. Lower edges of freeing ports must be as near to the deck as practicable.

- (5) If freeing port covers are fitted, a surveyor must be satisfied that the covers will not restrict freeing of water while they are in service.
- (6) In a ship in which freeing ports can not be fitted, a surveyor must be satisfied that other efficient means of clearing trapped water from the ship are provided.
- (7) In a ship in which a cockpit is fitted in the weather deck, the ship must—
 - (a) comply with rule 40A.15(1)(c); and
 - (b) be provided with efficient non-return means of drainage overboard.

Bilge drainage

40A.27 Bilge pumping arrangements

- (1) Except as provided in rules 40A.27(2) and (5), a ship must be provided with a pumping system capable of pumping from and draining any watertight compartment in the ship.¹⁶
- (2)
 - (a) Any watertight compartments filled with a buoyancy material meeting the requirements of rule 40A.12(9) are not required to have bilge pumping arrangements.
 - (b) A watertight compartment of less than 7 percent of the total under deck volume may be drained into an adjacent compartment by means of a self-closing valve or cock, if the valve or cock—
 - (i) is fitted outside the compartment to be drained; and
 - (ii) is operable from a readily accessible position (other than where the valve is fitted in the collision bulkhead and it complies with rule 40A.12(4)(c)).
- (3) In the case of a post-27 May 2004 ship of 15 metres or more in length overall that proceeds beyond the coastal limits, the pumping system must permit pumping and draining from every space in the ship when any one watertight compartment is flooded. This provision does not apply to flooding of the propelling machinery space.
- (4) The bilge system in any post-27 May 2004 ship of 24 metres or more in length overall, other than a ship to which rule 40A.28(2) applies, must be provided with a bilge main and a bilge distribution box located in an accessible position. The valves in any bilge distribution box must be of a non-return type.
- (5) An open boat or partially open boat of less than 6 metres in length may be provided with a bailing device acceptable to a surveyor instead of a bilge system, provided there is ready access to the bilge for bailing. Sealed watertight compartments constructed of the hull material and integral with the hull or deck structure in such boats are not required to have bilge drainage arrangements if the boat complies with the requirements of rule 40A.13(3).

40A.28 Bilge pumps

- (1) Except as provided in rule 40A.28(2), any post-27 May 2004 ship that is a decked ship must be provided with the number, capacity, and type of bilge pumps specified in Table 40A.6, in accordance with the associated notes.

Table 40A.6

Limits	Length O.A.	Manual		Power	
		No.	Capacity	No.	Capacity
Enclosed Waters	<15m	1	5.5 kl/hr	—	—
	15m – 45m	1	5.5 kl/hr	1 ^a	11.0 kl/hr

¹⁶ Adequate limber holes should be provided in floors, side girders etc. to ensure an adequate flow of water to the bilge pump. It is recommended that these have an area of twice that of the inlet of the pump.

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Inshore and restricted Coastal	< 15m	1	5.5 kl/hr	1 ^a	11.0 kl/hr
	15m — 45m	—	—	2 ^b	11.0 kl/hr
Coastal and Offshore	15m – 30m	—	—	2 ^b	11.0 kl/hr
	30m — 45m	—	—	2 ^c	15.0 kl/hr

Notes for Table 40A.6

- a independent power pump or pump driven from main engine;
- b both independent power pumps or one pump driven from main engine;
- c both independent power pumps.

1. A power pump may be substituted for a manually operated pump.
 2. An independent power pump may be driven by an auxiliary engine or by an electric motor but where 2 power pumps are required—
 - (a) both pumps must not be dependent on the same source of power; and
 - (b) the pumps and bilge system must be arranged to permit concurrent operation of the 2 pumps.
 3. Where a ship is required to be fitted with 2 power pumps and the capacity of one of those pumps is no more than 20 per cent less than the specified capacity, the deficiency may be made good by an equivalent excess of capacity in the other power pump.
 4. A bilge pump must be of a self priming type or be provided with a suitable priming device.
 5. Capacity shown in Table 40A.6 is the discharge capacity as installed in kilo-litres per hour.
 6. Manual pumps must be operable from above the weather deck.
 7. If independent bilge mains are fitted in the hulls of a multi-hulled ship, each independent bilge main must have two powered pumps if the ship is required by Table 40A.6 to have two powered pumps.
- (2) In any post-27 May 2004 ship of less than 24 metres in length overall, in any post-27 May 2004 multi-hulled ship, and in any post-27 May 2004 high speed craft to which rules 40A.66(2) and (3) apply, each watertight compartment may be drained by at least one fixed electrically driven submersible bilge pump instead of a bilge main, if the following requirements are met—
- (a) the total capacity of the submersible bilge pumps (Q_t) is not less than—

$$Q_t = 0.0138 d_m^2 \text{ metres}^3/\text{hour}$$
 where d_m = internal diameter of branch bilge suction pipes in mm; and
 - (b) the capacity of each separate submersible bilge pump (Q_n) is not less than—

$$Q_n = \frac{Q_t}{(N - 1)} \text{ metres}^3/\text{hour}$$
 where N = number of fixed submersible bilge pumps; and
 - (c) the capacity of the fitted submersible bilge pumps in any one compartment is at least 8 metres³/hour; and
 - (d) in the main machinery space there are at least two means of bilge suction, only one of which is a submersible bilge pump; and

- (e) each submersible bilge pump is fitted with a float switch that automatically operates that pump or an audible alarm at the steering position. Any such float switch must be protected from jamming caused by bilge debris; and
 - (f) each submersible bilge pump has a visual alarm at the steering position to indicate when it is running; and
 - (g) each submersible bilge pump is accessible for inspection, removal or maintenance without the removal of permanent ship structure; and
 - (h) electrically driven submersible bilge pumps rated for 12V, 24V or 32V DC comply with the International Standard *ISO 8849:1990 Small Craft — Electrically operated bilge pumps* or an equivalent standard;¹⁷ and
 - (i) there are two sources of electrical supply on the ship that are capable of running the pumps in any one compartment for 12 hours; and
 - (j) subject to rule 40A.28(3), on a ship of 12 metres or more in length overall, emergency bilge pumping arrangements are provided for compartments outside the main machinery space that are fitted with only one submersible bilge pump.
- (3) The requirement in rule 40A.28(2)(j) may be met by a portable submersible self-priming pump, if the pump—
- (a) is of a capacity equal to or more than that required for the fixed submersible pumps; and
 - (b) is stored, with its suction and discharge hoses, in a locker marked ‘For emergency use only’; and
 - (c) is available for immediate use; and
 - (d) if an emergency switchboard is required by rule 40A.40, has power supplied from that switchboard.
- (4) Subject to rule 40A.28(5), a pre-27 May 2004 ship must comply with rules 40A.28(1) or (2), as applicable, as if it were a post-27 May 2004 ship.
- (5) A pre-27 May 2004 ship is not required to comply with subrule (1) or (2) if—
- (a) it was surveyed and issued with either—
 - (i) a certificate of survey under section 219 of the Shipping and Seamen Act 1952 or section 143 of the Maritime Transport Act 1994; or
 - (ii) a New Zealand Safe Ship Management Certificate issued prior to the date of the coming into force of this Part; and
 - (b) since the issue of the applicable certificate referred to in subrule (a)—
 - (i) the ship has not undergone major alteration; and
 - (ii) the ship’s operating limits have not been changed to permit the ship to proceed beyond the limits previously assigned.

40A.29 Bilge piping

- (1) (a) Bilge piping arrangements must be so arranged as to prevent water passing from the sea into holds or machinery spaces or from one watertight compartment to another.
- (b) The bilge connection to any pump that also draws from the sea or from water ballast spaces must be either—
- (i) a screw down non-return valve; or
 - (ii) a cock that cannot be opened at the same time to the bilges and to the sea or to the bilges and the water-ballast spaces.
- (c) Bilge suction pipes must be either—

¹⁷ Equivalent standards include European Standard EN 28849:1993 and British Standard BS EN 28849:1993.

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- (i) located at least 20 percent of the breadth of the ship inboard of the ship's sides to avoid damage in the event of a collision; or
 - (ii) provided with non-return valves or foot valves fitted within the space they serve.
- (d) All manually operated valves must be readily accessible under normal circumstances.
- (2) (a) Piping used in bilge systems must be of marine quality metal, except that—
- (i) non-metallic bilge piping may be used on any ship of less than 12 metres in length overall that does not proceed beyond restricted limits or on any ship of less than 15 metres in length overall that does not proceed beyond enclosed waters; and
 - (ii) non-metallic bilge piping may be used on any ship in association with submersible bilge pumps that comply with rule 40A.28(2); and
 - (iii) non-metallic bilge piping may be used in non-metallic hulled ships, provided that the pipe material and arrangements are to the satisfaction of a surveyor.
- (b) Non-metallic bilge piping must have a high resistance to salt water, fuel oil, heat and vibration and be capable of operating under suction without collapse and resultant reduction of its effective area.
- (3) For a ship of 10 metres or more in length overall, the diameter of bilge suction pipes must be the greater of the following—
- (a) not less than—
 - (i) $d_m = 25 + 1.68 \sqrt{L(B + D)}$;
 - (ii) $d_b = 25 + 2.16 \sqrt{C(B + D)}$;
- where
- d_m = internal diameter of the main bilge suction in mm
 - d_b = internal diameter of branch bilge suction pipes in mm
 - L = ship length overall in metres
 - B = breadth of single hull ship or breadth of hull for multi-hull ship, in metres
 - D = depth of ship in metres
 - C = length of compartment in metres; or
- (b) 32 mm.
- (4) For a ship of less than 10 metres in length overall, the diameter of bilge suction pipes must not be less than 25 mm.
- (5) In a post-27 May 2004 ship of 15 metres or more in length overall that proceeds beyond restricted limits and in which a bilge main is fitted, at least two bilge suctions must be fitted in the machinery space. One suction must be connected to the bilge main and the other must be a direct bilge suction.
- (6) (a) On a ship of 20 metres in length overall or more, each bilge suction in a machinery space must be fitted with a mudbox and metallic tail pipe.
- (b) A bilge suction in a space other than a machinery space must be fitted with a mudbox, a strum box or a strainer, as appropriate, except that if a direct bilge suction pump is fitted which is capable of pumping solids and waste, a surveyor may permit the omission of a strum box or strainer.
- (c) If a strum box or strainer is fitted, the strum box or strainer holes must be no greater than 10 mm in diameter and the aggregate area of the holes must be no less than twice the area of the suction pipe.

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- (7) Where a ship is fitted with submersible bilge pumps in accordance with rule 40A.28(2), discharge piping arrangements must include at least two automatic non-return devices fitted between the overboard discharge and the compartment being served by the pump. One of these devices must be an automatic non return valve situated at or near the ship's side and the other must be either—
 - (a) an automatic non-return valve; or
 - (b) a pipework loop taken up to the highest practicable point below the weathertight deck.

40A.30 Bilge alarm

In a ship other than an open or partially decked ship, if the space in which the main propulsion machinery is located contains through-hull fittings, the space must be fitted with—

- (a) a bilge level device that is connected to an audible alarm located near the steering position. The power supply for the audible alarm must be available at all times when there is any person on board; or
- (b) an automatic submersible bilge pump that complies with rule 40A.28(2) and has located at the steering position a means of indicating that it is running.

40A.31 Sounding arrangements

- (1) In a ship of 24 metres in length overall or more, all tanks forming part of the structure of the ship and all watertight compartments other than the machinery space must be provided with efficient sounding arrangements.
- (2) Where sounding pipes are used for this purpose, all such pipes must extend above the bulkhead deck and a doubling pad must be placed below the sounding pipe for the sounding rod to strike upon.
- (3) Where sounding pipes from the bilges, double bottom tanks or cofferdams terminate within the propulsion machinery space, they must be fitted with a closing cock.

Machinery

40A.32 General

- (1) A ship with a propulsion motor of more than 5 kW shaft power must have sufficient astern power to provide for manoeuvrability of the ship under all normal operating conditions.
- (2) Main and auxiliary machinery essential for the propulsion and safety of the ship must be provided with effective means of control and such readily visible instrumentation as a surveyor considers is appropriate for the safe operation of such machinery on that ship.
- (3) A post-27 May 2004 ship fitted with an inboard engine must be provided with sufficient fuel tankage for its intended service and area of operation.
- (4) The machinery, fuel tank or tanks, and associated piping systems and fittings must be—
 - (a) of a design and construction adequate for the service for which they are intended; and
 - (b) so installed and protected as to reduce to a minimum the danger to persons from moving parts, hot surfaces and other hazards during normal movement about the ship.
- (5) Machinery spaces must be adequately ventilated and so designed as to provide safe and free access to all machinery and machinery controls, including any parts that may require servicing at sea and while in operation.
- (6) Two means of escape must be provided from a machinery space of Category A, except that a surveyor may permit a single means of escape that does not lead to other areas

of major fire hazard if the space is an unmanned machinery space not exceeding 5 metres in length.

40A.33 Petrol inboard and outboard engines

- (1) A ship may be fitted with an inboard petrol engine if—
 - (a) the engine is located in an efficiently enclosed space to which a fixed fire extinguishing system is fitted; and
 - (b) provision is made to ventilate the engine space thoroughly before the engine is started;¹⁸ and
 - (c) electrical devices within the engine and tank compartments have protection against ignition of surrounding flammable gases;¹⁹ and
 - (d) any flexible hose used between the engine and any solidly mounted metallic line to eliminate vibration failure is made of fire resistant fuel hose;²⁰ and
 - (e) not more than 12 passengers are carried; and
 - (f) the ship does not proceed beyond inshore operating limits.
 - (2) A ship fitted with one or more outboard petrol engines—
 - (a) must not proceed beyond restricted coastal limits; and
 - (b) must have the engines securely fastened to the hull; and
 - (c) if the engines are not permanently secured, must provide the engines with an effective safety chain or cable; and
 - (d) must have effectively drained engine wells that are long enough for the engine to be tilted up.
 - (3) Petrol for outboard motors must be stored—
 - (a) in portable containers²¹ that can be readily jettisoned; or
 - (b) in a fixed-in-place inboard tank, if—
 - (i) the ship is a rigid hulled ship or rigid/inflatable boat; and
 - (ii) the tank is constructed of mild steel, stainless steel or aluminium alloy and located in a safe place; and
 - (iii) the tank is tested to a pressure of 0.3 bar, to the satisfaction of a surveyor; and
 - (iv) the opening of the vent pipe from the petrol tank is protected by a flash proof fitting; and
 - (v) where the possibility of accumulation of hydrocarbon vapours exists and where a source of ignition may be present, a safe detector of hydrocarbon gas is fitted under or adjacent to the tank.
- (3A) Aluminium tanks must only be used for “fixed-in-place” inboard fuel tanks.
- (4) (a) Except as provided in rule 40A.33(4)(b), any post-27 May 2004 boat fitted with outboard motors must undergo a test in accordance with Appendix D of the *Australian standard AS 1799.1 Small Pleasure Boats Code Part 1: General requirements for power boats*, to confirm that the boat can manoeuvre safely using its maximum power capacity.
 - (b) If the prototype of any series production boat has completed the test referred to in rule 40A.33(4)(a) to the satisfaction of a surveyor, subsequent boats of that series

¹⁸ For guidance it is recommended that reference be made to ISO 11105: – *Small Craft – Ventilation of petrol engine and/or petrol tank compartments*

¹⁹ For guidance it is recommended that reference be made to ISO 8846:1990 – *Small Craft – Electrical devices – Protection against ignition of surrounding flammable gases*.

²⁰ For guidance it is recommended that reference be made to ISO 7840: – *Small Craft – Fire resistant fuel hoses*

²¹ For guidance it is recommended that reference be made to ISO 13591 – *Small Craft – Portable Fuel Systems for outboard motors*.

fitted with an engine of the same power may be accepted by a surveyor without undertaking that test.

40A.34 Fuel tanks

- (1) All fuel tanks fitted on a ship must—
 - (a) be tested and installed to the satisfaction of a surveyor; and
 - (b) have a means of safely ascertaining the amount of fuel contained; and
 - (c) be provided with vents and filling connections located in a safe open -air position.
- (2) A ship must be provided with a means of isolating a source of fuel that may feed a fire that occurs in a machinery space. In a ship of 24 metres or more in length overall, a valve or cock that is capable of being closed from a position outside the machinery space must be fitted in the fuel feed pipe as close as possible to the fuel tank.

40A.35 Inlets, discharges and sea water piping

- (1) Openings below the weather deck of a ship of less than 24 metres in length overall must be provided with—
 - (a) an efficient means of closure fitted as close as possible to the side of the ship; and
 - (b) if the opening is for the purpose of an inlet or discharge below the waterline, a seacock or valve that is readily accessible in an emergency.²²
- (2) Inlet and discharge pipes from a wc must be provided with ship side fittings in accordance with rule 40A.35(1). When the rim of a toilet is either below or less than 300 mm above the deepest waterline of the ship, anti-siphon measures must be provided.
- (3) Any opening for a log or other sensor that is capable of being withdrawn must be fitted watertight to a surveyor's satisfaction and provided with an effective means of closure when the fitting is removed.
- (4) Engine exhaust outlets that penetrate the hull below the deck must be provided with an effective means to prevent backflooding into the hull through the exhaust system.
- (5) Fittings attached to the shell, and the seacock or valve required by rule 40A.35(1) must be of steel, bronze, or other ductile material acceptable to a surveyor.
- (6) Other than for bilge piping to which rule 40A.29(2)(a)(i), (ii) and (iii) applies, all pipes that carry seawater must be of marine quality metal, except that—
 - (a) in any ship of less than 24 metres in length overall that is constructed of non-metallic materials, non-metallic piping may be used; and
 - (b) suitable reinforced synthetic rubber piping may be used in short lengths for vibration damping.
- (7) Where non-metallic piping or reinforced synthetic piping is used it must—
 - (a) have a high resistance to salt water, fuel oil, heat and vibration; and
 - (b) be capable of operating under suction without collapse and resultant reduction in effective area; and
 - (c) for non-metallic piping, have resistance to impact damage; and
 - (d) for reinforced synthetic rubber piping, be readily visible and protected against mechanical damage and contact with hot surfaces.

40A.36 Steering gear

- (1) A ship must be provided with an efficient means of steering that is of adequate strength and sufficient to steer the ship at full speed ahead and astern.

²² Openings in ships of 24 metres or more in length overall that are load line ships are governed by Part 47.

- (2) When a steering gear is fitted with a remote control, other arrangements must be provided to effectively steer the ship in the event of failure of the remote control.²³ Emergency steering is not required in a twin screw ship if a surveyor is satisfied that the ship can manoeuvre adequately on both engines.

Electrical

40A.37 General

A ship's electrical system must—

- (a) be permanently installed; and
- (b) be such as to minimise risk of fire; and
- (c) not be hazardous to passengers and crew; and
- (d) be convenient to operate; and
- (e) provide a high degree of reliability.

40A.38 Design

- (1) The owner of a ship to which rule 40A.7(1) applies which is a post-27 May 2004 ship or a ship that undergoes major alteration of its electrical systems must ensure that the information set out in subrule (2) is provided in a clear and legible form to and approved by a surveyor recognised by the Director for that purpose before the ship is built, or the electrical systems are altered or modified, as the case may be.
- (2) The diagrams and information required by subrule (1) are—
- (a) schematic diagrams of the main and any emergency power and lighting systems which include—
 - (i) a description of the type of electrical systems of supply installed; and
 - (ii) ratings of generators, transformers, batteries, charging sources, inverters, semi-conductor converters; and
 - (iii) all feeders connected to each switchboard; and
 - (iv) insulation type, size, and current loadings of feeder and final sub-circuit cables; and
 - (v) make, protection characteristic curve, prospective short circuit, and over current ratings of all circuit breakers and fuses; and
 - (b) simplified diagrams of generation circuits, battery charging, interconnector circuits, and feeder circuits; and
 - (c) arrangement and location plans of main and emergency switchboards plus any distribution boards; and
 - (d) plans showing the location of the main and emergency sources of power, radio battery, inverters, and battery chargers; and
 - (e) electrical load calculations used to determine the capacities of main and emergency generators and battery banks; and
 - (f) circuit diagram(s) of electrically powered bilge pumps plus bilge level alarms and pump monitoring systems; and
 - (g) circuit diagrams of electrically powered navigation lights, controls, and monitoring; and
 - (h) volt drop calculations of each of the following:
 - (i) main power feeder circuit; and
 - (ii) navigation light circuit; and
 - (iii) bilge pump circuit; and
 - (iv) vhf radio power supply circuit.

²³ The emergency steering may be by means of a tiller to fit the head of the rudder stock.

40A.39 Installation and materials

- (1) The builder of a ship must ensure that any installation of electrical wiring and equipment is carried out by suitably qualified person or persons who are experienced in marine electrical work.
- (2) Electrical equipment, switchboards and conductors must be so selected and located that they are unaffected by water, oil, heat or other environmental conditions to which they may be exposed in a ship.

40A.40 Electrical systems

- (1) For ships of 24 metres or less in length overall, the electrical systems must comply with either—
 - (a) the relevant rules of a classification society named in rule 40A.9(2)(a); or
 - (b) the applicable parts of the AS/NZS 3004.2 *Electrical installations – Marinas and Boats*.
- (2) For ships of more than 24 metres in length overall, the electrical systems must comply with either:
 - (a) the relevant rules of a classification society named in rule 40A.9(2)(a); or
 - (b) the applicable parts of the IEC 60092 series of standards – *Electrical installations in ships*.

40A.41 Marking and documentation

- (1) The owner and master of a ship of more than 12 metres in length must ensure a manual containing the information set out in subrules (2) and (3) is kept on board the ship and readily accessible at all times.”
- (2) The manual must include the following information:
 - (a) diagrams identifying the electrical circuits of the ship with the locations of electrical devices in the ship and identification of conductors by colour or other means;
 - (b) the location and a description of the functions of electrical controls, dials, switches, fuses, and circuit-breakers installed on the panel-board;
 - (c) instructions for operating and maintaining the electrical system.
- (3) The manual must include the following warning instructions:
 - (a) never work on the electrical installation while the electrical system is energized; and
 - (b) never modify the craft's electrical systems or relevant drawings; and
 - (c) never use the electrical system if the shore power reverse polarity indicator is activated; and
 - (d) never alter or modify the rated current amperage of overcurrent protective devices; and
 - (e) never install or replace electrical appliances or devices with components exceeding the rated current amperage of the circuit; and
 - (f) never leave the craft unattended with the electrical system energized except battery chargers, automatic bilge-pumps, fire protection and alarm circuits.
- (4) The owner of a post-27 May 2004 ship must maintain copies of the drawings and manuals required by this rule on board the ship.
- (5) The owner of a pre-27 May 2004 ship must maintain on board the ship documentation that the surveyor considers sufficient to enable the ship to be safely operated and maintained.

40A.42 Emergency lighting

- (1) If general lighting within a post-27 May 2004 ship of 12 metres or more in length overall is provided by a centralised electrical system, an alternative source of power must be installed that is sufficient to provide emergency lighting for a period of at least 3 hours in

passenger spaces below the weather deck. The emergency lighting must be sufficient to enable persons to make their way to the open deck.

- (2) In a ship that proceeds beyond a restricted coastal limit, an alternative source of power for emergency lighting must be provided—
 - (a) that is sufficient to enable persons to make their way to the open deck and evacuate the ship if necessary; and
 - (b) that is sufficient to illuminate, for a period of at least 6 hours—
 - (i) any launching gear for lifeboats or liferaft launching appliances and the lifeboats and liferafts they serve; and
 - (ii) the water into which any lifeboats and liferafts served by launching appliances are launched; and
 - (iii) the stowage position of liferafts for which launching appliances are not provided.
- (3) In a ship of 12 metres or more in length overall an alternative source of power must be available to power navigation lights in accordance with the requirements of Part 22 of the maritime rules.
- (4) An alternative source of power required by this rule must be—
 - (a) self contained; and
 - (b) located in a compartment other than that containing the main source of power; and
 - (c) either a generator or an accumulator battery.

40A.43 Navigation lights

- (1) Each navigation light may be on the same switch, but must be individually protected in each non-earthed pole by a fuse or circuit breaker that must be mounted on one clearly marked section of a distribution switchboard.
- (1A) The distribution switchboard referred to in subrule (1) must be accessible to the person on watch on a ship of more than 12 metres in length overall.
- (2) On a post-27 May 2004 ship of 24 metres or more in length overall which proceeds beyond restricted limits, each navigation light must be provided with an automatic indicator giving audible or visual indication of failure of the light.
- (3) Cables supplying navigation lights must be of sufficient size to ensure that total circuit volt drop does not exceed 3 percent of the supply system voltage.

40A.44 Lightning protection²⁴

- (1) If fitted, lightning conductors must comply with the requirements of rules 40A.44(2) and 40A.44(3).
- (2) In any wood or composite ship fitted with wooden masts, the lightning conductors must comply with the following:
 - (a) they must be of continuous copper tape or rope, or a combination of copper tape and rope, having a cross sectional area not less than 100 mm², which must be riveted with copper rivets or fastened with copper clamps to a suitable copper spike not less than 13 mm in diameter that projects at least 150 mm above the top of the mast; and
 - (b) where tape is used, the lower end of the tape must terminate at the point at which the shrouds leave the mast and must be securely clamped to a copper rope of not less than 13 mm diameter. This copper rope must be led down the shrouds and must be securely clamped to a copper earth plate not less than 0.2 m² in area,

²⁴ For hulls and masts of other materials than those referred to in these rules, the arrangements need individual and specialist consideration. The use of copper with an aluminium alloy hull will present corrosion problems.

fixed well below the light waterline and attached to the ship's hull in such a manner that it is immersed under all normal conditions of heel.

- (3) In any wood or composite ship fitted with steel masts, each mast must be connected to a copper plate in accordance with the requirements of rule 40A.44(2). The copper rope must be securely attached to, and in good electrical contact with, the mast at or above the point at which the shrouds leave the mast.
- (4) In any steel ship fitted with wooden masts, the lightning conductors must be of copper tape or rope terminating in a spike, as required by rule 40A.44(2). At the lower end of the mast the copper tape or rope must be securely clamped to the nearest metal forming part of the hull of the ship.
- (5) Lightning conductors must be run as straight as possible and sharp bends in the conductors must be avoided. All clamps used must be of brass or copper and securely locked. No connection may be a soldered connection.
- (6) The resistance of the lightning conductor, measured between the mast head and the position on the earth plate or hull to which the lightning conductor is earthed, must not exceed 0.02 ohms.
- (7) Lightning conductors must be placed to minimise the risk of side strike.

40A.45 Tests and trials

- (1) Before a new electrical system or an electrical system that has undergone major alteration or modification is put into service, the electrical system must be inspected and tested to the satisfaction of a surveyor.
- (2) The inspection and tests must include—
 - (a) visual inspection; and
 - (b) inspection for continuity of all conductors; and
 - (c) insulation resistance tests; and
 - (d) verification of polarity; and
 - (e) confirmation of earthing; and
 - (f) confirmation that it is not possible to make contact with bare live parts; and
 - (g) confirmation that alarms and shutdown devices are functional.
- (3) The insulation resistance of all circuits and equipment must be—
 - (a) measured, using a direct current insulation tester, between—
 - (i) all current carrying parts connected together and earth; and
 - (ii) all current carrying parts of opposite polarity or phase; and
 - (b) not less than 1 megohm.

If initial tests produce results less than 1 megohm, appliances may be disconnected and tested separately. Disconnected appliances must have an insulation resistance of not less than 0.5 megohm.

Structural fire protection

40A.46 Definitions

The following definitions apply to rules 40A.47 to 40A.54 inclusive—

accommodation spaces means those spaces used for lounges, mess rooms, recreational rooms, lavatories, cabins, offices, hospitals, pantries containing no cooking appliances, and similar spaces:

areas of major fire hazard means machinery spaces of Category A, spaces containing dangerous goods, store rooms containing flammable products and spaces containing road vehicles:

areas of moderate fire hazard means auxiliary machinery spaces and separate galleys:

areas of minor fire hazard means accommodation and cargo spaces:

control stations are those spaces in which the ship's radio or main navigation equipment or the emergency source of power is located, or where the fire recording or fire control equipment is centralised:

corridors means passenger and crew corridors and lobbies:

evacuation stations means deck spaces forming survival craft embarkation stations and muster stations:

fire-resisting divisions means those divisions formed by bulkheads and decks that are constructed of non-combustible or fire-restricting materials and that by insulation or inherent fire-resisting properties satisfy the requirements and criteria of the *Test Procedures for Fire-Resisting Divisions of High Speed Craft* adopted by the International Maritime Organization by resolution MSC.45(65):

fire-restricting material means material that has properties complying with the criteria for qualifying products as 'fire-restricting materials' in the *Standard for Qualifying Marine Materials for High Speed Craft as Fire-Restricting Materials* adopted by the International Maritime Organization by resolution MSC.40(64):

low flame spread surface means that the surface thus described will adequately restrict the spread of flame, this being determined—

- (a) in accordance with the test procedure specified in the *International Code for Application of Fire Test Procedures* adopted by the International Maritime Organization by resolution MSC.61(67); or
- (b) from evidence of approval as a low flame spread material by the Administration of another state or a classification society, where tests have been carried out in accordance with the *Recommendation on Improved Fire Test Procedures for Surface Flammability of Bulkhead, Ceiling and Deck Finish Materials*, adopted by the International Maritime Organization by resolution A.653(16); or
- (c) in accordance with the test procedure in the standard AS/NZ 1530.3 – 1999 *Methods for fire tests on building materials, components and structures Part 3: Simultaneous determination of ignitability, flame propagation, heat release and smoke release*, where the material must meet the following criteria—
 - (i) spread of flame index not to exceed 3; and
 - (ii) ignitability index plus heat evolved index not to exceed 7 (in total); and
 - (iii) smoke developed index not to exceed 4, unless the spread of flame index does not exceed 1, and the ignitability index plus the heat evolved index does not exceed 3, in which case, the Director may accept a smoke developed index of up to 5:

machinery spaces means those machinery spaces of Category A:

non-combustible material means a material that neither burns nor gives off flammable vapours in sufficient quantity for self-ignition when heated to approximately 750° C, this being determined by the test procedure laid down in the *Improved Recommendation on Test Method for Qualifying Marine Construction Materials as Non-Combustible* adopted by the International Maritime Organization by resolution A.472(XII):

service spaces are those spaces used as galleys, pantries containing cooking appliances, store rooms and workshops other than those forming part of a machinery space:

smoke-tight means that a division made of non-combustible or fire-restricting materials is capable of preventing the passage of smoke.

40A.47 Post-27 May 2004 ships of 35 metres or more that proceed beyond restricted limits and post-27 May 2004 ships that carry more than 36 berthed passengers

A post-27 May 2004 ship of 35 metres or more in length overall that proceeds beyond restricted limits and any post-27 May 2004 ship that carries more than 36 berthed passengers must comply with the following:

- (a) there must be fire-resisting divisions formed by bulkheads and decks that separate the spaces, and have the structural fire protection times given in Table 40A.7 and the accompanying notes:
- (b) internal stairways that serve more than two decks of accommodation must be enclosed at all levels with smoke-tight divisions of non-combustible or fire-restricting materials. Where only two decks are served, the internal stairway must be provided with such an enclosure on at least one level:
- (c) air spaces that are enclosed behind ceilings and linings of accommodation, service spaces and control stations, must be divided by close-fitting draught stops spaced not more than 14 metres apart:
- (d) fire-restricting or non-combustible materials must be used wherever practicable. Fabrics, furniture and floor coverings used in the passenger and crew accommodation must be such as to reduce the risk of fire and the quantity and toxicity of smoke and gases in the event of fire.

Table 40A.7

Structural fire protection times for fire-resisting divisions (bulkheads and decks) separating spaces of varying fire hazard

Space		1	2	3	4	5
Areas of major fire hazard	1	60 60	30 60	C/FRM 60	C/FRM 60	C/FRM 60
Areas of moderate fire hazard	2		30 30	C/FRM 30	C/FRM 60	C/FRM 30
Areas of minor fire hazard	3			C/FRM C/FRM	C/FRM C/FRM	C/FRM C/FRM
Control stations	4				C/FRM C/FRM	Nil
Evacuation stations	5					Nil

Notes for Tables 40A.7 and 40A.8

- 1. The values top and bottom represent the required structural fire protection time in minutes for the protection system on the relevant side of the division
- 2. Where adjacent spaces are in the same numerical category, a bulkhead or deck need not be required between such spaces, for example, between two storerooms containing flammable products. However, a bulkhead is required between a galley and a storeroom containing flammable products even though both spaces are in the same category.
- 3. C/FRM means there is no structural fire protection requirement, except that smoke-tight non-combustible or fire-restricting material must be used.

40A.48 Post-27 May 2004 ships of 24 metres or more and post-27 May 2004 ships carrying more than 12 berthed passengers, that proceed beyond enclosed waters

A post-27 May 2004 ship of 24 metres or more in length overall that proceeds beyond enclosed waters and a post-27 May 2004 ship to which rule 40A.47 does not apply that carries more than 12 berthed passengers and that proceeds beyond enclosed waters must comply with the following:

- (a) there must be fire-resisting divisions formed by bulkheads and decks that are separating the spaces, and have the structural fire protection times, given in Table 40A.8:
- (b) internal stairways that serve more than two decks of accommodation must be enclosed at all levels with smoke-tight divisions of non-combustible or fire-restricting materials. Where only two decks are served, the internal stairway must be provided with such an enclosure on at least one level:
- (c) air spaces enclosed behind the ceilings and linings of—
 - (i) accommodation spaces; and
 - (ii) service spaces; and
 - (iii) control stations,

must be divided by close-fitting draught stops spaced not more than 14 metres apart.

Table 40A.8

Structural fire protection times for fire-resisting divisions (bulkheads and decks) separating spaces of varying fire hazard

Space		1	2	3	4	5
Areas of major fire hazard	1	30 30	15 30	C/FRM 30	C/FRM 30	C/FRM 30
Areas of moderate fire hazard	2		15 15	C/FRM 15	C/FRM 30	C/FRM 15
Areas of minor fire hazard	3			C/FRM C/FRM	C/FRM C/FRM	C/FRM C/FRM
Control stations	4				C/FRM C/FRM	Nil
Evacuation stations	5					Nil

40A.49 Post-27 May 2004 ships of 12 metres or more but less than 24 metres and post-27 May 2004 ships of 24 metres or more that do not proceed beyond enclosed waters

- (1) In a post-27 May 2004 ship of 12 metres or more but less than 24 metres in length overall that carries less than 12 berthed passengers, and in any post-27 May 2004 ship of 24 metres or more in length overall that does not proceed beyond enclosed waters—
 - (a) the decks and bulkheads separating any area of major fire hazard from control stations, evacuation routes and survival craft embarkation areas must have a fire protection time of 30 minutes; and
 - (b) the decks and bulkheads separating any area of major fire hazard from accommodation spaces must have a fire protection time of 15 minutes; and
 - (c) the decks and bulkheads separating any area of moderate fire hazard from control stations, evacuation routes and survival craft embarkation areas must have a fire protection time of 15 minutes; and
 - (d) as an alternative to the fitting of structural fire protection required in rules 40A.49(a), (b) and (c), the following may be installed—

- (i) boundary cooling of decks and bulkheads by fixed or portable means where the bulkhead or deck is of metal construction and the bulkhead or deck is sufficiently exposed to enable cooling; or
 - (ii) where a fixed fire extinguishing system that complies with Appendix 3 is fitted in the fire hazard area—
 - (aa) a second shot for a gaseous fixed fire extinguishing system; or
 - (bb) arrangements to enable continuous operation of a water-mist fixed fire extinguishing system.
- (2) Subrule (1) does not apply to ships that only carry day passengers.

40A.50 Maintenance of structural integrity

- (1) Main load-carrying structures within areas of major fire hazard and areas of moderate fire hazard must be arranged to distribute load so as to ensure that there will be no collapse of the construction of the hull and superstructure when it is exposed to fire for the applicable fire protection time specified in Tables 40A.7 and 40A.8.
- (2) If the structures specified in rule 40A.50(1) are made of aluminium alloy, they must be insulated to ensure that the temperature of the core does not rise more than 200° C above the ambient temperature within the applicable times specified in Tables 40A.7 and 40A.8 and rule 40A.49.
- (3) If the structures specified in rule 40A.50(1) are made of combustible material, they must be insulated to ensure that their temperatures do not rise to a level where deterioration of the construction will occur during exposure to the fire test specified for load bearing fire-resisting divisions in *Test Procedures for Fire-Resisting Divisions of High Speed Craft* adopted by the International Maritime Organization by resolution MSC.45(65).

40A.51 Pre-27 May 2004 ships

- (1) A pre-27 May 2004 ship that was—
 - (a) issued with a certificate of survey under section 219 of the Shipping and Seamen Act 1952 or section 143 of the Maritime Transport Act 1994; or
 - (b) surveyed and issued with a certificate required by rule 21.13(2)(a), prior to the date of coming into force of this Part,

is not required to comply with rules 40A.52, 40A.53 and 40A.54.
- (2) A pre-27 May 2004 ship that was not issued with a certificate referred to in rule 40A.51(1) prior to 1 February 2001 must comply with the relevant requirements of rules 40A.52, 40A.53 or 40A.54.

40A.52 General requirements

- (1) Doors and other closures of openings within the bulkheads forming fire-resisting divisions must be, as far as is practicable, of the same fire-resisting standard as the division in which they are fitted, except that steel watertight doors need not be insulated. Doors to machinery spaces of Category A must be self-closing.
- (2) The fire integrity of bulkheads or decks forming fire-resisting divisions must not be impaired if they are penetrated for the passage of electrical cables, pipes, ducts and similar products.
- (3) Where two fire divisions having different structural fire protection times intersect, the insulation of the division with the higher structural fire protection time must continue on the deck or bulkhead with the insulation of the lesser structural fire protection time for a distance of at least 450mm.
- (4) Combustible veneers are permitted on non-combustible divisions and fire-resisting divisions, if the veneers are low flame spread surfaces.

- (5) Glass or similar materials must not be fitted in machinery space boundaries.
- (6) Thermal or acoustic insulation fitted in accommodation spaces, service spaces (except domestic refrigeration spaces), control stations and machinery spaces must, if it is not a fire-resisting division or a fire-restricting material, be non-combustible and must not be capable of producing harmful quantities of smoke and toxic gases. The surface of insulation fitted on the internal boundaries of machinery spaces of Category A must be impervious to oil.
- (7) Paints, varnishes or other finishes used on exposed interior surfaces must provide low flame spread surfaces and must not be capable of producing excessive quantities of smoke or toxic gases.
- (8) Primary deck coverings within accommodation spaces, service spaces and control stations must be of material approved by a surveyor that will not readily ignite or give rise to toxic or explosive hazards at elevated temperatures.
- (9) All exposed surfaces of fibre reinforced plastic construction within accommodation and service spaces, control stations, machinery spaces of Category A and other machinery spaces of similar fire risk must have a final lay-up layer of resin—
 - (a) with inherent fire-retardant properties; or
 - (b) coated with a fire-retardant paint; or
 - (c) protected by non-combustible materials.
- (10) All waste receptacles must be constructed of non-combustible materials with no openings in the sides or bottom.
- (11) In a ship of 24 metres or more in length overall, machinery driving fuel oil unit pumps and other similar fuel pumps must be fitted with remote controls situated outside the space in which the machinery is located so that it can be stopped in the event of fire in the space in which it is located.
- (12) Drip trays must be fitted where necessary to prevent leakage into bilges.
- (13) All main and auxiliary machinery exhaust pipes must be kept clear of, or well insulated in way of, any timber or other combustible material.
- (14) Materials readily rendered ineffective by heat must not be used for overboard scuppers, sanitary discharges, and other outlets that are close to the waterline, where failure of the material in the event of fire would give rise to a danger of flooding.
- (15) In accommodation and service spaces and control stations, pipes penetrating fire-resisting divisions must be of a material acceptable to a surveyor, having regard to the temperature that such divisions are required to withstand.
- (16) Survival craft must be protected from major fire hazards. Where a ship has survival craft stowed directly above an area of major fire hazard, the deck in that vicinity must have a structural fire protection time of at least 15 minutes.

40A.53 Heating and cooking installations

- (1) Electric radiators must be fixed in position and so constructed as to reduce fire risks to a minimum.
- (2) Open gas flame appliances, except cooking stoves, domestic refrigerators and water heaters, are not permitted. Spaces containing any such stoves or water heaters must have adequate ventilation to remove fumes and possible gas leakage to a safe space. All pipes conveying gas from a container to a stove or water heater must be of steel or other material approved by a surveyor. Automatic safety gas shut-off devices must be fitted to operate on loss of pressure in the gas main pipe or flame failure on any appliance.

- (3) Cooking appliances must be installed to reduce the risks of fire caused by heat radiating from the cooking element or flame or from cooking fats and oils catching alight. The bulkheads and linings in way of, and decks and ceilings above, the cooking appliance must be of non-combustible or fire-restricting materials.
- (4) Cylinders for compressed, liquefied or dissolved gases must—
 - (a) be clearly marked by means of identifying colours in accordance with NZS 5807:1980 *Code of Practice for Industrial Identification by Colour, Wording or Other Coding*; and
 - (b) have a clearly legible identification of the name and chemical formula of their contents; and
 - (c) be properly secured.
- (5) Cylinders containing flammable or other dangerous gases and expended cylinders must be—
 - (a) stored and properly secured on open decks and all valves, pressure regulators and pipes leading from such cylinders must be protected against damage; and
 - (b) protected against excessive variations in temperature, direct rays of the sun, and accumulation of snow. A surveyor may permit cylinders to be stored in a compartment or compartments that comply with the requirements of rules 40D.56(3) to 40D.56(5) inclusive.

40A.54 Ventilation systems

- (1) Means must be provided to stop fans and close main openings to ventilation systems from outside the space served.
- (2) Ventilation systems serving machinery spaces of Category A must be independent of ventilation systems serving other spaces.
- (3) Ventilation ducts serving more than one space or passing through one space to serve another must be of non-combustible material.
- (4) Ventilation ducts for machinery spaces of Category A must not pass through accommodation spaces, service spaces or control stations unless the ducts are constructed of steel or an equivalent material and arranged to protect the integrity of any fire-resisting divisions. Conversely, any ventilation ducts for accommodation spaces, service spaces or control rooms must not pass through machinery spaces of Category A unless the ducts are constructed of steel or an equivalent material and arranged to protect the integrity of any fire-resisting division.
- (5) Store rooms containing flammable products must be provided with ventilation systems that are independent of ventilation systems serving other spaces.
- (6)
 - (a) In a ship of 24 metres or more in length overall, ventilation ducts of 0.075m² or more cross-section that pass through a fire-resisting division must be fitted with a 900 mm steel sleeve and, except as provided in rule 40A.54(6)(c), fire dampers.
 - (b) The fire damper must—
 - (i) operate automatically and be capable of being closed manually from either side of the bulkhead; and
 - (ii) have an indicator to show if it is open or closed.
 - (c) Fire dampers are not required where a duct—
 - (i) passes through a space surrounded by fire-resisting divisions; and
 - (ii) does not serve that space; and
 - (iii) has the same fire integrity as the divisions it pierces.

Fire fighting appliances

40A.55 Fire fighting appliances

- (1) The owner and the master of a ship must ensure that fire appliances are provided in accordance with the requirements of Appendix 3 of this Part.
- (2) The owner and the master of a ship must ensure that the fire appliances comply with the performance standards prescribed in Part 42B.
- (3) The owner and the master of a ship must ensure that the fire appliances are maintained, inspected and serviced in accordance with the requirements of Part 42B.
- (4) The master of a ship must ensure that all fire appliances are—
 - (a) in good working order; and
 - (b) ready for immediate use;before the ship commences a voyage, and at all times during the voyage.

Life saving appliances

40A.56 Life saving appliances

- (1) The owner and the master of a ship must ensure that life saving appliances are provided in accordance with the requirements of Appendix 4 of this Part.
- (2) The owner and the master of a ship must ensure that the life saving appliances comply with the performance standards prescribed in Part 42A.
- (3) The owner and the master of a ship must ensure that the life saving appliances are maintained, inspected and serviced in accordance with the requirements of Part 42A.
- (4) The master of a ship must ensure that all life saving appliances are—
 - (a) in good working order; and
 - (b) ready for immediate use;before the ship commences a voyage, and at all times during the voyage.

Radiocommunications

40A.57 Radiocommunication equipment

- (1) The owner and the master of a ship that proceeds beyond enclosed waters must ensure that radiocommunication equipment is provided in accordance with the requirements of Appendix 5 of this Part.
- (2) Except as provided in rule 40A.57(6), the owner and the master of a ship that operates only within enclosed waters must ensure that the ship is provided with at least two means of distress alert that may be either—
 - (a) a VHF radio that complies with rule 43.12; or
 - (b) a 406 MHz EPIRB that complies with the requirements of rule 43.18A or 43.19; or
 - (c) if there is no VHF coverage for the applicable operating area, a cell phone, if—
 - (i) there is cell phone coverage for the full area of the ship's operation; and
 - (ii) where this means of distress alert is permitted, a permanent notice is displayed in a prominent position to the effect that the emergency number 111 must be used as the recognition number for a distress call; or
 - (d) (i) if the ship is greater than 6 metres in length overall, or of 6 metres in length overall or less and operating in the hours of darkness (between sunset and sunrise), 2 buoyant smoke floats and 2 hand flares that comply with Part 42A; and

- (ii) if the ship is 6 metres or less in length overall and operates only in daylight, 2 buoyant smoke floats that comply with Part 42A.
- (3) The owner and the master of a ship must ensure that the radiocommunications equipment meets the performance standards prescribed in Part 43.
- (4) The owner and the master of a ship must ensure that the radiocommunications equipment is maintained, inspected and serviced in accordance with the requirements of Part 43.
- (5) The master of a ship must ensure that all radiocommunications equipment is—
 - (a) in working order; and
 - (b) ready for immediate use;before the ship commences a voyage and at all times during any voyage.
- (6) A surveyor may exempt any boat or ferry operating in rivers and other similar restricted waterways within enclosed waters from any of the requirements of this rule, if a surveyor does not consider the requirement to be necessary for the safety of the ship.
- (7) The owner and the master of a ship must ensure that the radiocommunication equipment is fitted with a rechargeable battery that is available at all times the ship is at sea and is of sufficient capacity to supply current continuously for a period of at least 6 hours.

Anchors and cables

40A.58 Post-27 May 2004 ships of 24 metres or more

- (1) The owner of a ship of 24 metres or more in length overall must ensure that the ship is provided with anchors and cables in accordance with the requirements of—
 - (a) a classification society listed in rule 40A.9(2)(a); or
 - (b) Table 1 in Appendix 7.

- (2) The equipment numeral to be used with Table 1 in Appendix 7 is:

$$\text{For monohulls} \quad EN = \Delta^{2/3} + 2(Ba + \sum b.h) + 0.1A$$

$$\text{For twin hulls} \quad EN = \Delta^{2/3} + 2[Ba + \sum b.h - G(B-2B_1)] + 0.1A$$

where

EN = equipment numeral

Δ = moulded displacement, in tonnes, to the maximum design waterline.

B = maximum moulded breadth, in metres.

a = distance in metres from the maximum design waterline to the upper edge of the uppermost complete deck, at side amidships.

b = breadth of the widest superstructure or deckhouse on each tier, in metres.

h = height in metres of the centreline of each tier of superstructure or deckhouse having a breadth greater than B/4. Sheer, camber and trim may be ignored in measuring h.

A = profile area in m², of the hull above the maximum design waterline, and superstructures and deckhouses that have a breadth greater than B/4, within the overall length. Screens and bulwarks more than 1.5 metres in height must be regarded as parts of deckhouses when determining h and A.

B1 = the greatest breadth of the hulls, in metres.

G = the minimum air gap between the maximum design waterline and the underside of the bridging structure between the hulls, in metres.

40A.59 Post-27 May 2004 ships of less than 24 metres

The owner of any post-27 May 2004 ship of less than 24 metres in length overall must ensure that the ship is provided with—

- (a) anchors and cables in accordance with the requirements of a classification society listed in rule 40A.9(2)(a); or
- (b) anchors in accordance with the requirements of Tables 2A, 2B, or 2C of Appendix 7, and cables in accordance with Tables 3A, 3B or 4 of Appendix 7, and the notes accompanying Tables 2A, 2B, 2C, 3A, 3B and 4.

40A.60 Testing and marking

Anchors of more than 75 kgs and chain cables of 12.5 mm diameter or more must comply with the testing and marking requirements contained in Part 41.

40A.61 Windlass

- (1) The owner and the master of any post-27 May 2004 ship must ensure that—
 - (a) a powered windlass or other powered mechanical lifting device is provided, except for a post-27 May 2004 ship using an anchor of less than 50 kgs, in which case the windlass or mechanical lifting device may be hand operated; and
 - (b) the windlass is of sufficient power²⁵ and suitable for the size of chain attached to the anchor; and
 - (c) the inboard end of the rope or chain is permanently made fast to the ship; and
 - (d) windlasses or other mechanical lifting devices are securely fitted to the deck of the ship.
- (2) Rule 40A.61(1)(a) does not apply to a post-27 May 2004 ship using an anchor of less than 30 kgs and using rope instead of anchor chain, in accordance with Tables 3A or 3B of Appendix 7 and the notes relating to Tables 3A or 3B.

40A.62 Pre-27 May 2004 ships

- (1) A pre-27 May 2004 ship that was issued with a certificate of survey is not required to comply with rules 40A.58 to 40A.60 inclusive, if the owner maintains its existing anchors and cables in a condition that is satisfactory to a surveyor.
- (2) A pre-27 May 2004 ship that was not subject to survey under section 133 of the Maritime Transport Act 1994 is not required to comply with rules 40A.58 to 40A.60 inclusive, if the owner retains its existing anchors and cables and a surveyor is satisfied that those anchor and cable arrangements do not compromise the safety of the ship and its crew, and remain in a condition satisfactory to a surveyor.

Navigating position

40A.63 Navigating position

- (1) The navigating position on a ship must afford the person at the helm as wide an arc of visibility as possible, both ahead and abaft the beam, and where practicable, must provide all round visibility.
- (2) The wheelhouse windows forward of the helm position and those essential for the safe navigation of the ship must be clear.²⁶

²⁵ During trials, a windlass should be capable of raising the anchor from a depth of 82.5 metres to a depth of 27.5 metres at a mean speed of 9 metres per minute. Where the depth of water is inadequate or the anchor cable is less than 82.5m, suitable equivalent simulating conditions may be accepted by the surveyor as an alternative.

²⁶ Other windows may be polarised or tinted.

- (3) Adequate space must be provided for the person at the helm that is not obstructed by passenger arrangements.

Ships of 6 metres or less engaged solely in recreational diving

40A.64 Ships of 6 metres or less overall engaged solely in recreational diving operations

- (1) This rule applies to a ship that—
 - (a) is a commercial ship engaged solely in excursions for the purpose of recreational diving; and
 - (b) is 6 metres or less in length overall; and
 - (c) does not proceed beyond enclosed water limits or more than 5 miles from a safe haven on the coast of New Zealand.
- (2) Subject to rule 40A.64(3), the owner of a ship must not allow that ship to be operated unless—
 - (a) the ship is operated under a Maritime Transport Operator Plan (or for a ship operating under rule 19.81(3), the equivalent requirements under the New Zealand Safe Ship Management Code that applied prior to the revocation of section 2 of Part 21 by Part 19); or
 - (b)
 - (i) the ship and its equipment comply with the requirements of Appendix 8; and
 - (ii) a safe operational plan is prepared and approved by the authorised person in accordance with Appendix 8; and
 - (iii) the ship and its equipment undergo the inspections by the authorised person required by Appendix 8; and
 - (iv) the owner's operation of the ship undergoes the audits by the authorised person required by Appendix 8; and
 - (v) the owner is in possession of a current certificate of compliance issued in respect of that ship under Appendix 8.
- (3) The owner of any ship who elects to comply with the requirements of rule 40A.64(2)(b) is not required to hold a valid certificate of compliance for that ship until 1 August 2001.

40A.65 Recognition of authorised person

- (1) Every person, other than an employee of the Authority, who inspects or audits an operation for the purposes of rule 40A.64(2)(b), must hold a valid certificate of recognition authorising the person to conduct those inspections or audits.
- (2) A person is entitled to a certificate of recognition as an authorised person if—
 - (a) that person makes an application in accordance with section 35 of the Act; and
 - (b) the Director is satisfied that—
 - (i) the person has the appropriate technical qualifications and practical experience in the operation of small commercial dive boats necessary to undertake the inspections and audits to be authorised by the certificate; and
 - (ii) the requirements of section 41 of the Act have been met.
- (3) Every certificate of recognition issued must prescribe—
 - (a) the extent and nature of any inspection or audit that may be undertaken by the authorised person; and
 - (b) that the certificate is issued in respect of small dive boats operating in accordance with rule 40A.64(2)(b); and
 - (c) the period of validity of the certificate, which in any case must not be more than five years from the date of issue; and
 - (d) any other conditions or requirements that the Director determines are appropriate to the recognition.

Section 2 – High speed craft

General

40A.66 Application

- (1) A high speed craft that—
- (a) enters service in New Zealand waters on or after 1 February 2001; and
 - (b) is 35 metres or more in length overall; and
 - (c) is capable of speeds of 25 knots or more; and
 - (d) proceeds beyond restricted limits;
- must comply with rule 40A.68.
- (2) A high speed craft that enters service in New Zealand waters on or after 1 February 2001 that is capable of speeds of 25 knots or more and is—
- (a) 20 metres or more but less than 35 metres in length overall; or
 - (b) 35 metres or more in length overall and does not proceed beyond restricted limits;
- must comply with rules 40A.10 to 40A.63 inclusive and rule 40A.69.
- (3) A high speed craft that—
- (a) enters service in New Zealand waters on or after 1 February 2001; and
 - (b) is less than 20 metres in length overall; and
 - (c) is capable of speeds of 30 knots or more; and
 - (d) carries more than 12 passengers; and
 - (e) is intended to be used for high speed passenger rides;²⁷
- must comply with rules 40A.10 to 40A.63 inclusive and rule 40A.70.

40A.67 Definitions relating to section 2

In this section—

High speed craft means a ship that is capable of a maximum speed, in metres per second, equal to or exceeding:

$$3.7 \times \nabla^{0.1667} \text{ m/s}$$

where ∇ is the displacement, in cubic metres, corresponding to the design waterline.

40A.68 Compliance with the high speed craft code

The owner of a high speed craft must ensure that the design, construction and equipment of the craft is in accordance with the requirements of the *International Code of Safety for High Speed Craft* adopted by Resolution MSC 36(63) of the International Maritime Organization's Maritime Safety Committee, and that the craft complies with the Code in its entirety.

Additional requirements for high speed craft

40A.69 Additional requirements for high speed craft of 20 metres or more but less than 35 metres in length and high speed craft of 35 metres or more that do not proceed beyond restricted limits

The owner of a high speed craft must ensure that—

²⁷ Note Section 2 does not apply to craft to which Part 80 apply.

- (a) the operational safety of the high speed craft is demonstrated to the satisfaction of a surveyor for normal service conditions, and for equipment failure situations, by means of full-scale tests of the prototype high speed craft; and
- (b) safe maximum speeds for each mode of operation are determined for the varying sea states experienced in the high speed craft's assigned operating limits; and
- (c) the minimum depth of water required for operation in all modes is determined; and
- (d) the high speed craft is provided with an operating manual that contains information on—
 - (i) the area or route of operation; and
 - (ii) limitations to be observed for safe operation as determined by rules 40A.69(a), (b) and (c); and
 - (iii) handling and performance characteristics and limitations; and
 - (iv) actions to be taken in the event of prescribed failures; and
- (e) there is no unsafe change in stability, controllability or attitude of the high speed craft during transition from one type of operating surface or mode to another; and
- (f) any possible hazard to persons aboard the ship resulting from a maximum likely acceleration or deceleration of the high speed craft is minimised; and
- (g) the high speed craft's motions remain within safe limits in the event of failure of any forced stabilisation or self stabilisation device; and
- (h) where an automatic control system is fitted for stabilisation, provision is made to override the system and to cancel the override.

40A.70 Additional requirements for high speed craft of less than 20 metres

The owner of a high speed craft must ensure that—

- (a) the operational safety of the high speed craft is demonstrated to the satisfaction of a surveyor for normal service conditions, and for equipment failure situations, by means of full-scale tests of the prototype ship; and
- (b) the area where the high speed craft will be operating at high speed is clearly defined and is well clear of other regular commercial shipping and recreational water activities; and
- (c) the high speed craft's safety management manual contains information on –
 - (i) the high speed operational area; and
 - (ii) any particular handling and performance characteristics or limitations of the ship at high speed; and
 - (iii) actions to be taken in the event of failures at high speed; and
- (d) there is no unsafe change in stability, controllability or attitude of the high speed craft during transition from one type of operating surface or mode to another; and
- (e) any possible hazard to persons aboard the ship resulting from a maximum likely acceleration or deceleration of the high speed craft is minimised.

Section 3 – Hire and drive boats and houseboats

General

40A.71 Application

- (1) Rules 40A.73, 40A.75 and 40A.76 apply to hire and drive boats of more than 3.5 metres in length overall.
- (2) Rules 40A.74, 40A.75 and 40A.76 apply to houseboats of not more than 20 metres in length overall.

40A.72 Definitions relating to section 3

In this section:

certificate means the Certificate of Survey:

flooded mass means the mass of the houseboat in the flooded condition:

hire and drive boat—

- (a) means a commercial ship that—
 - (i) is let, without a skipper, for hire or reward or for any other consideration whatsoever; and
 - (ii) the hirer uses solely for pleasure; and
- (b) includes a ship provided in conjunction with a holiday establishment or hotel for the use of guests or tenants.

hirer means a person who—

- (a) hires a hire and drive boat; or
- (b) uses a hire and drive boat while under hire:

houseboat means any ship that is let for hire or reward or for any other consideration whatsoever, having a fixed house above the deck with accommodation that may be used by persons residing on board for an overnight period or longer, and that does not proceed beyond enclosed waters.

40A.73 General requirements

- (1) The owner of a hire and drive boat must ensure that the design, construction and equipment of the boat comply with the applicable rules of Section 1 of this Part.
- (2) A surveyor who assigns operating limits to a hire and drive boat under rule 20.5 must not assign operating limits that permit operation of the boat beyond restricted limits.

Houseboats

40A.74 Houseboats

The owner of a post-27 May 2004 houseboat must ensure that it complies with the following requirements:

- (a) the construction must be in accordance with rule 40A.9:
- (b) when fully loaded, the height of the deck or top of the pontoon above water at the lowest point must be not less than 400 mm for houseboats of 6 metres or less in length overall, and 600 mm for houseboats of 20 metres in length overall. For houseboats of intermediate lengths the minimum freeboard must be determined by interpolation:
- (c) a houseboat must comply with the following stability test:

when a number of persons equal to the total number for which it is proposed to certificate the houseboat are placed on one side of the uppermost deck at its extreme breadth from the centreline of the hull, the angle of heel must not exceed seven degrees from the upright, if the freeboard of the hull on the heeled or immersed side, measured from the inclined waterline to the intersection of the edge of the main deck line and sheerline of the main hull at its lowest point, is not less than 25 percent of the freeboard in the upright condition when fully loaded:

- (d) the number of persons that may be carried on a houseboat must not exceed the number of permanent berths available or the maximum number of persons allowed by the stability test in rule 40A.74(c), whichever is the lower:
- (e) the hull of a houseboat must—
 - (i) be subdivided into watertight compartments that are arranged to provide an adequate reserve of buoyancy with any one compartment flooded; or

- (ii) be filled with 1 cubic metre of closed cell foam buoyancy per 800 kgs of flooded mass:
- (f) houseboats must be propelled by inboard engines that operate on fuel having a flashpoint of not less than 60° C, or outboard engines with fuel storage arrangements that comply with rule 40A.33(3):
- (g) a house boat must carry the following equipment—
 - (i) navigation lights that comply with Part 22:
 - (ii) a sound signalling device:
 - (iii) an electric signalling torch:
 - (iv) a hand bilge pump with a capacity of not less than 90 litres per minute, provided that a bilge pump is not required on a houseboat with pontoon hulls having one compartment sub-division:
 - (v) one CO₂ extinguisher with minimum rating 5B:E, as prescribed in Australian/New Zealand standard AS/NZS 1850:1997 *Portable fire Extinguishers — Classification, rating and performance testing*:
 - (vi) one dry powder extinguisher with minimum rating 60B:E or foam extinguisher with minimum rating 3A:30B as prescribed in Australian/New Zealand standard AS/NZS 1850:1997 *Portable fire Extinguishers - Classification, rating and performance testing*:
 - (vii) two fire buckets that comply with rule 42B.62:
 - (viii) one lifebuoy that complies with rule 42A.17:
 - (ix) one lifejacket having a buoyancy of not less than 71 Newtons that complies with rule 42A.19 for each adult person carried on the houseboat, and one lifejacket that complies with rule 42A.19 of an appropriate size for each child carried on the houseboat,;
 - (x) one anchor and chain cable that comply with rule 40A.59:
 - (xi) a first aid kit that meets the requirements for a restricted limit ship under Part 50:
 - (xii) one boat hook or barge pole.
- (h) a houseboat must be constructed so as to provide maximum possible visibility for the helmsman from the operating position.²⁸

Responsibilities

40A.75 Responsibilities of owner

- (1) The owner of a hire and drive boat must maintain a record of the following for all hire and drive contracts entered into:
 - (a) full name, address and signature of hirer:
 - (b) date and time when boat hired out:
 - (c) date and time when boat returned by the hirer:
 - (d) number of persons declared by the hirer to be carried.

The owner must produce the record on demand by the Director.

- (2) The owner of a hire and drive boat must not hire out the boat if the number of persons declared by the hirer is in excess of the number of persons the boat is certified to carry under its current certificate of survey.
- (3) The owner of a hire and drive boat must satisfy himself or herself that the hirer is—
 - (a) not less than 16 years of age; and
 - (b) competent to take charge of that boat within the operating limits assigned to it.

²⁸ The surveyor may permit the use of rear vision mirrors to improve visibility astern.

- (4) The owner of a hire and drive boat must ensure that the hirer is issued with clear and concise instructions on—
 - (a) correct and safe handling and navigation of the boat; and
 - (b) correct and safe operation of machinery, fuel, gas and pumping systems and valves or openings in the hull; and
 - (c) stowage and use of lifesaving appliances; and
 - (d) location and use of fire appliances; and
 - (e) the boat's operating limits, any dangers to navigation in those limits, and any other conditions on the use of the boat.
- (5) The owner must exhibit on the boat for the use of the hirer a plan showing the operating limits within which the boat may be operated, and provide up to date charts and publications relating to those limits.
- (6) The owner must obtain from the hirer a signed statement indicating that the hirer fully understands the permissible operating limits and any conditions that have been placed on the use of the boat.

40A.76 Responsibilities of hirer

- (1) The hirer must not be less than 16 years of age.
- (2) The hirer must not permit more than the maximum number of persons the boat is certified to carry to be on board when the boat is underway.
- (3) The hirer must ensure that any equipment required to be carried is not misused.
- (4) The hirer must not permit the boat to proceed beyond or outside the operating limits specified on the certificate.

Appendix 1 Intact stability of decked ships

1.1 Heeling test

- (1) This clause applies to a post-27 May 2004 single hull decked ship that—
 - (a) is less than 15 metres in length overall; and
 - (b) carries 50 or less passengers; and
 - (c) operates within restricted limits.
- (2) A ship to which this clause applies must comply with subclauses (3) to (6).
- (3) A ship to which this clause applies must be tested in the fully loaded condition to ascertain the angle of heel and the position of the waterline that would result if—
 - (a) all of the passengers that the ship is certified to carry are assembled along one side of the ship²⁹ and
 - (b) a helmsman is at the helm.
- (4) The results of the heel test must show—
 - (a) the angle of heel does not exceed 15°; and
 - (b) the freeboard to the deck or, if the ship has no side deck, to the top of the cockpit coaming, is not less than 75 mm at any point.
- (5) For the purpose of the test, each of the passengers and the helmsman must be represented by a mass of at least 75 kg.
- (6) If the ship is fitted with a cockpit, it must be demonstrated that the ship—
 - (a) has a reserve of buoyancy when the cockpit is full of water; and
 - (b) does not heel more than 15° when the cockpit is full of water.

1.2 Inclining test and stability criteria

- (1) This clause applies to a post-27 May 2004 single hull decked ship that—
 - (a) is 15 metres or more in length overall; or
 - (b) carries more than 50 passengers; or
 - (c) operates beyond restricted limits.
- (2) A ship to which this clause applies must comply with subclauses (4) to (8).
- (3) The surveyor that conducts the requirements of subrules (3) to (8) must be the same surveyor throughout.
- (4) Except as provided in subclause (5), the lightship weight, vertical centre of gravity (KG), and longitudinal centre of gravity (LCG) of a ship to which this clause applies must be determined from the results of an inclining experiment conducted or witnessed by a surveyor.
- (5) A sister ship of a ship to which this clause applies is not required to conduct an inclining experiment provided the lightship displacement can be measured to within a limit of that of the lead sister ship that is satisfactory to the surveyor.
- (6) Curves of statical stability (GZ curves) must be produced for—
 - (a) loaded departure with 100% consumables; and
 - (b) loaded arrival with 10% consumables.
- (7) The surveyor must be satisfied that the curves of statical stability for the loaded conditions meet the following criteria—

²⁹ Where the ship has more than one deck to which passengers have access, passenger weights representing the number of passengers permitted on each deck must be used in the test.

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- (a) the area under the righting lever curve (GZ curve) must not be less than—
 - (i) 0.055 metre-radians up to 30° angle of heel; and
 - (ii) 0.09 metre-radians up to 40° angle of heel or the downflooding angle if this angle is less; and
 - (b) the area under the GZ curve between the angles of heel of 30° and 40° or between 30° and the downflooding angle if that angle is less than 40°, must be not less than 0.03 metre-radians; and
 - (c) the righting lever (GZ) must be at least 0.20 metres at an angle of heel equal to or greater than 30°; and
 - (d) except as provided in paragraph (e), the maximum GZ must occur at an angle of heel of not less than 25°; and
 - (e) if the ship has a hull form that results in the maximum GZ occurring at an angle of heel less than 25°, but not less than 15°, this may be accepted by a surveyor provided the area under the GZ curve up to the angle (θ_m) at which the maximum GZ occurs is not less than $0.055 + 0.001(30 - \theta_m)$ metre-radians; and
 - (f) after correction for free surface effects, the initial metacentric height (GM) must not be less than 0.35 metres.
- (8) If a ship to which this clause applies carries more than 50 passengers, the following stability criteria must also be met—
- (a) the angle of heel must not exceed 10° when any one of the following capsizing moments is applied or 15° when the worst two capsizing moments are applied together—
 - (i) the passenger crowding moment; and
 - (ii) the wind heeling moment; and
 - (iii) the heeling moment due to turning; and
 - (b) the righting lever (GZ), at the intersection of the righting lever curve and the heeling lever curve³⁰ must not exceed 0.6GZ max; and
 - (c) the area under the righting lever curve above the passenger heeling lever curve taken up to the downflooding angle (θ_d) or the second intercept with the passenger heeling lever curve, whichever is less, must not be less than one quarter of the total area under the righting lever curve up to the same limiting angle; and
 - (d) the passenger crowding, wind and rudder moments must be determined as follows—
 - (i) the passenger crowding moment must use—
 - (aa) a standard mass per person of 75 kg; and
 - (bb) a distribution of 4 passengers per square metre; and
 - (cc) the centre of gravity of a standing person as 1 metre above the deck and a seated person as 300 mm above the seat; and
 - (ii) the wind heeling moment must be derived from the equation—

$$M = 0.000102 PAh \text{ (tonnes metres)}$$
 where—

P is the gusting wind pressure in Pascals determined from the following table—

Operating Limits	Wind Pressure
Offshore/Coastal	500 Pa

³⁰ The heeling lever curve is to be determined from the combined effects of the passenger crowding moment and the more severe of either the wind heeling moment or the rudder heeling moment.

Restricted Coastal	450 Pa
Restricted Limits	350 Pa

A is the projected area of ship above waterline in metres²
 H is the vertical distance between centroid of A and that of lateral underwater area in metres.

- (iii) the heeling moment due to turning is derived from the formula below when V/\sqrt{L} is less than 4—

$$\frac{0.0053V^2 \Delta d}{L} \text{ (tonnes metres)}$$

where—

V is the service speed in knots
 L is the waterline length of ship in metres
 Δ is displacement in tonnes
 d is the vertical distance between centre of gravity of ship and centroid of lateral underwater area of ship in metres.

1.3 Multihull ship heeling test

- (1) This clause applies to a multihull decked ship of less than 15 metres in length overall that carries 50 or less passengers.
- (2) A ship to which this clause applies must be tested³¹ to establish that, in the fully loaded condition, the ship does not heel or trim in any direction by more than 8° when subject to uncontrolled passenger crowding as determined in accordance with clause 1.2(8)(d)(i).

1.4 Multihull ship inclining test and stability criteria

- (1) This clause applies to a multihull decked ship that—
 - (a) is 15 metres or more in length overall; or
 - (b) carries more than 50 passengers.
- (2) The surveyor that conducts the requirements of subrules (3) to (5) must be the same surveyor throughout.
- (3) The lightship weight, vertical centre of gravity (KG), and longitudinal centre of gravity (LCG) of the ship must be determined—
 - (a) from an inclining experiment conducted or witnessed by a surveyor; or
 - (b) if an accurate inclining is not practicable, by a lightship survey and accurate calculation by a surveyor;
- (4) The curves of statical stability for service load conditions must be determined and the surveyor must be satisfied that they meet the following criteria—
 - (a) the area under the righting lever curve (GZ curve) must not be less than $0.055 \times 30^\circ / \theta$ metre-radians up to 0°, where θ is the lesser of—
 - (i) the downflooding angle; or
 - (ii) the angle at which the maximum GZ occurs; or
 - (iii) 30°; and
 - (b) the maximum GZ must occur at an angle of heel of not less than 10°; and
 - (c) the heel due to steady wind must not exceed 16° when the following wind heel lever (h_w)³² is applied—

³¹ The heel test may be established by a physical test or by calculation.

$$h_w = PAZ/9800\Delta \text{ (metres)}$$

where—

- P is the wind pressure given in the table in clause 1.2(8)(d)(ii)
- A is the projected lateral area of the portion of the ship above the lightest service waterline (metres²)
- Z is the vertical distance from the centre of A to a point one half the lightest service draught (metres)
- Δ is displacement (tonnes); and

- (d) the residual area (A_2) that is created as a result of the effect of heeling due to the wind lever plus the crowding of passengers on one side of the ship ($h_w + h_p$)³³ must be at least 0.028 metre-radians and is defined as the area—
 - (i) under the GZ curve; and
 - (ii) above the heeling lever curve ($h_w + h_p$); and
 - (iii) beyond the angle of heel due to wind plus passenger heeling (θ_h); and
 - (iv) up to a 15° angle of roll or the angle of downflooding (θ_d), whichever is less.

- (5) The requirements for subclauses (4)(a) and (b) are shown diagrammatically in figures (4)(a) and (4)(b) below—

Figure (4)(a)

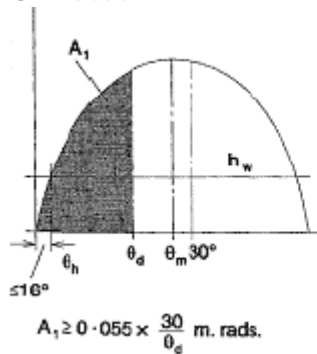
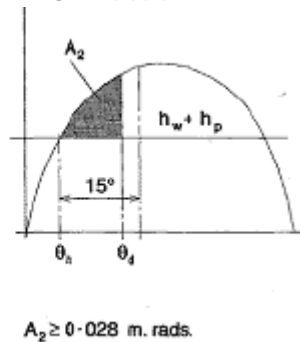


Figure (4)(b)



where—

- θ_h is the angle of heel due to wind plus passenger heeling angle
- θ_d is the downflooding angle
- θ_m is the angle at which maximum GZ occurs.

1.5 Hydrofoil Ship

A hydrofoil ship that operates in the fully foil-borne mode must be surveyed by a surveyor to ensure that the intact stability complies with the requirements of Annex 6 *Stability of Hydrofoil Craft* of the *International Code of Safety for High-Speed Craft* adopted by the International Maritime Organization by Resolution MSC.36(63).

1.6 Stability Information

- (1) A ship that is required to complete an inclining test must have the stability information approved by the surveyor that conducted the inclining test.
- (2) If a ship is required to be provided with stability information by rule 40A.13(10), that stability information must include—
 - (a) curves of statical stability for at least the following conditions—

³² h_w is [must] assumed constant at all angles.

³³ To obtain the lever (h_p), the passenger crowding moment, as defined in 1.2(8)(d)(i), is divided by the displacement Δ .

- (i) loaded departure with 100% consumables; and
- (ii) loaded arrival with 10% consumables; and
- (iii) any anticipated critical service condition; and
- (b) details of passenger loadings, tank capacities and any permitted cargo loading; and
- (c) a simple explanation of the curves of statical stability and the effects of loading changes on the intact stability.

1.7 Deck cranes

- (1) This clause applies to a ship that—
 - (a) is fitted with a deck crane or other lifting device; or
 - (b) carries a mobile crane.
- (2) A ship to which this clause applies must be subjected to a practical test with the ship in its worst anticipated service load condition to establish the angle of heel and the minimum freeboard on the low side.
- (3) Except as provided in subclause (4), with the crane or other lifting device operating at its maximum load moment the angle of heel must not exceed whichever is the lesser angle—
 - (a) 7°; or
 - (b) that angle of heel which results in a freeboard on the low side of 250 mm.
- (4) When an angle of heel greater than 7° but not exceeding 10° occurs, a surveyor may accept the lifting condition if all the following criteria are satisfied when the crane or lifting device is operating at its maximum load moment—
 - (a) the range of stability from the angle of static equilibrium is equal to or greater than 20°; and
 - (b) the area under the curve of residual righting lever, up to 40° from the angle of static equilibrium or the downflooding angle, if that angle is less than 40°, is equal to or greater than 0.1 metre radians; and
 - (c) except as provided in paragraph (d), the minimum freeboard fore and aft throughout the lifting operations is not less than half the assigned freeboard at amidships; and
 - (d) for ships with less than 1000 mm assigned freeboard amidships, the freeboard fore or aft must not be less than 500 mm.

Rule 40A.16

Appendix 2 Number of passengers

- 2.1 Before its entry into service, any post-27 May 2004 ship to which Part 40A applies must be measured in accordance with this Appendix by a surveyor, to determine the maximum number of passengers the ship may carry in each operating limit that the ship is assigned.
- 2.2 The maximum number of passengers must be determined by calculating the sum of persons allowed in all deck and enclosed spaces.
- 2.3. The number of passengers allowed in enclosed spaces must be determined as follows—
- in cabins and other compartments fitted with fixed berths, or settees convertible to sleeping berths, by the number of berths, if there is at least 2 cubic metres of space for each passenger in the cabin or compartment, and the berths are not in more than 2 tiers:
 - in spaces used exclusively for dining, the number must be restricted to the number of seats provided. The space must not be included unless it is open at all times when passengers are on board:
 - in public spaces on a ship operating in the coastal and offshore limits and in public spaces below the main deck of a ship operating in restricted limits and restricted coastal limits, by dividing the clear deck area in square metres by 0.836:
 - in public spaces situated on or above the main deck of a ship operating in the restricted coastal or inshore limit, by dividing the clear deck area in square metres by 0.56:
 - in public spaces situated on or above the main deck of a ship operating in the enclosed water limit, by dividing the clear deck area in square metres by 0.28:
 - in sheltered spaces meeting the requirements of rule 40A.17 on a ship operating in the inshore limit, by dividing the clear deck area in square metres by 0.28.
- 2.4 The number of passengers allowed on open decks must be determined as follows—
- for a ship operating in the coastal and offshore limit, the clear area in square metres of all open deck spaces must be divided by 0.836:
 - for a ship operating in the restricted coastal and inshore limit, the clear area in square metres of the open main deck must be divided by 0.56, and for decks above the main deck and deckhouse tops the clear area in square metres must be divided by 0.836:
 - for a ship operating in the enclosed water limit, the clear area in square metres of the open main deck must be divided by 0.28, and for decks above the main deck and deckhouse tops, the clear area in square metres must be divided by 0.836.
- 2.5 The number of passengers allowed in an open boat or in a cockpit must be determined as follows—
- for a ship operating in the enclosed water limit, by dividing the clear area in square metres of the open boat or cockpit by 0.28:
 - for a ship operating in the inshore limit, by dividing the clear area in square metres of the open boat or cockpit by 0.56.
- In an open boat, the area is measured inside the back of any side benches, gunwale or side deck, whichever is the least measurement. Spaces abreast any engine casing that are less than 915 mm in width must not be included in the measured area and deduction must be made for any area required for handling and stowing the anchors. For an open boat, the crew number must be deducted from the passengers number determined by dividing the clear area by the factor given in (a) or (b).
- 2.6 The following deck and enclosed spaces must not be measured for the purposes of clauses 2.3 and 2.4—
- forecastle decks; and

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- (b) for any flush deck ship not operating beyond enclosed waters, the deck area required for stowing and handling anchors; and
 - (c) for any flush deck ship operating beyond enclosed waters, the open deck space within one eighth of the ship's length aft of the foreside of the stem; and
 - (d) the space between deckhouse sides and bulwark or rail, if this is less than 750 mm wide; and
 - (e) interior passageways of less than 750 mm width and passageways on the open deck of less than 450 mm width; and
 - (f) space occupied by tables and permanent fittings in public rooms; and
 - (g) toilets and washrooms; and
 - (h) spaces where the presence of passengers would interfere with the navigation and working of the ship; and
 - (i) public rooms with a headroom of less than 1.9 metres; and
 - (j) spaces used for the stowage of any cargo.
- 2.7 Where the number of passengers determined in accordance with this Appendix is greater than any number permitted for compliance with—
- (a) the stability requirements of rule 40A. 13; or
 - (b) compliance with the freeboard requirements of Part 47 or rule 40A. 15, as the case may be; or
 - (c) the seating required by rule 40A.18; or
 - (d) the egress required by rule 40A.19;

the ship must be certified to carry the lesser number of passengers that meets all these requirements.

Rule 40A.55

Appendix 3 Fire fighting appliances

3.1 Offshore limit ships and coastal limits ships

The requirements in Appendix 3.1 apply to a ship that proceeds into offshore and coastal limits.

Item	Requirement
Fire patrol	In a ship of 24 metres or more in length overall that is carrying more than 36 passengers, a patrol system must be maintained, that is capable of promptly detecting the outbreak of any fire. Each member of the fire patrol must be trained to be familiar with the arrangements of the ship as well as the location and operation of any equipment he or she may be called upon to use. Each member of the patrol must have access to an effective means of two-way communication.
Fire control plans	In a ship of 24 metres or more in length overall there must be clearly exhibited on board the ship, for the guidance of the master and crew, fire control plans that comply with rule 42B.68.
Alarm and communication systems	A ship of 24 metres or more in length overall must be provided with— <ul style="list-style-type: none"> (a) manual alarms fitted throughout the accommodation and service spaces where the ship is required to have a patrol system that will enable that patrol to give an alarm immediately to the navigating bridge or fire control station; and (b) a fixed fire detection and alarm system that complies with rules 42B.4 to 42B.8 inclusive, as applicable, in the accommodation and service spaces of ships not required to have a patrol system, and in such spaces to which a patrol does not have access; and (c) a special alarm, that is operated from the navigation bridge or fire control station, to summon the crew. This alarm may be part of the ship's general alarm system but it must be capable of being sounded independently of the alarm to the passenger spaces; and (d) a public address system or other effective means of communication that is available throughout the accommodation, service spaces and control stations.
Fire pumps	<ol style="list-style-type: none"> (1) A ship of 24 metres or more in length overall must be provided with at least 2 independently driven power pumps that comply with rule 42B.61, each capable of delivering simultaneously one jet from each of any 2 fire hydrants. (2) A ship of less than 24 metres in length overall must be provided with at least one power driven fire pump³⁴ that complies with rule 42B.61, and is capable of delivering one jet of water from any fire hydrant provided in the ship

³⁴ This pump may be driven by the main engine.

<p>Emergency fire pumps</p>	<p>(1) If a fire in any one compartment of a ship of 24 metres or more in length overall could put all the main fire pumps out of action, the ship must be provided with a fixed independently driven power operated emergency fire pump that complies with rule 42B.61. The emergency fire pump must be located in a position outside that compartment.</p> <p>(2) A ship of less than 24 metres in length overall in which the fire pump is located in the main machinery space must be provided with an emergency fire pump. The emergency fire pump must be located in a position outside the main machinery space and must comply with rule 42B.61³⁵</p>
<p>Fire main, water service pipes, hydrants, hoses and nozzles</p>	<p>(1) A ship must be provided with a fire main, water service pipes and hydrants that comply with rule 42B.63, and with hoses and nozzles that comply with rules 42B.64 and 42B.65 respectively.</p> <p>(2) In a ship of 24 metres or more in length overall, the arrangement of fire main and water service pipes and the number and position of fire hydrants must be such that—</p> <ul style="list-style-type: none"> (a) at least 2 jets of water may reach— <ul style="list-style-type: none"> (i) any part of the ship that is normally accessible to passengers or crew while the ship is being navigated; and (ii) any store room; (iii) any empty part of any cargo space; and (b) in accommodation spaces, service spaces, and machinery spaces, the requirements of (a) are met when all watertight doors are closed; and (c) every machinery space of Category A is provided with 2 fire hydrants, 1 port and 1 starboard; and (d) where there is access to a machinery space of Category A from a shaft tunnel, 2 fire hydrants are provided in the shaft tunnel at the entrance to the machinery space. <p>(3) In a ship of less than 24 metres in length overall, the arrangement of the fire main and water service pipes and the number of fire hydrants must be such that—</p> <ul style="list-style-type: none"> (a) at least one jet of water must reach— <ul style="list-style-type: none"> (i) any part of the ship normally accessible to passengers and crew while the ship is being navigated; and (ii) any store room; and (iii) any empty part of any cargo space; and (b) in accommodation spaces, service spaces and machinery spaces, the requirements of (a) are met when all watertight doors are closed; and (c) every space containing oil-fired boilers or propelling machinery of internal combustion type is provided with one fire hydrant.

³⁵ The emergency pump may be manually operated.

	<p>(4) A ship must be provided with one hose and one jet/spray nozzle that comply with rules 42B.64 and 42B.65 respectively, for every hydrant fitted in the ship, provided that in every case a minimum, of 2 hoses and 2 jet/spray nozzles must be provided.</p> <p>(5) A ship of 24 metres or more in length overall that carries more than 36 passengers must be provided with one water-fog applicator in every machinery space of Category A and one water-fog applicator for each pair of fire crew outfits.</p> <p>(6) All hose connections must be inter-connectable.</p>
<p>Fixed fire extinguishing installation – Machinery Space</p>	<p>(1) A ship of 24 metres or more in length overall must be provided with a fixed fire extinguishing system in any machinery space of Space Category A containing—</p> <ul style="list-style-type: none"> (a) any oil-fired boiler, oil fuel settling tank or oil fuel unit; or (b) internal combustion machinery. <p>(2) A ship of less than 24 metres in length overall must be provided with a fixed fire extinguishing installation in any machinery space fitted with oil fired boilers or internal combustion type machinery used for main propulsion.</p> <p>(3) A fixed fire extinguishing system fitted in a machinery space described in (1) or (2) must be—</p> <ul style="list-style-type: none"> (a) a gaseous fire extinguishing system that complies with rules 42B.20 to 42B.22 inclusive, as applicable; or (b) a water based system that complies with rules 42B.27 to 42B.30 inclusive; or (c) a high expansion foam system that complies with rule 42B.31.
<p>Non-portable foam and CO₂ extinguishers</p>	<p>(1) In a ship of 24 metres or more in length overall, any space containing an oil-fired boiler must be provided with at least one foam extinguisher of at least 135 litres capacity that complies with rule 42B.53, or one CO₂ extinguisher of at least 45 kgs capacity that complies with rule 42B.54.</p> <p>(2) In a ship of 24 metres or more in length overall, any machinery space of Category A must be provided with at least one foam extinguisher of at least 45 litres capacity that complies with rule 42B.53, or one CO₂ extinguisher of at least 15 kgs capacity that complies with rule 42B.54.</p> <p>(3) In a ship, any space containing steam turbines or enclosed pressure lubricated steam engines that are used for main propulsion, or having in aggregate a total brake power of not less than 375 kW for auxiliary purposes, must be provided with at least one foam extinguisher of at least 45 litres capacity that complies with rule 42B.53, or one CO₂ extinguisher of at least 15 kgs capacity that complies with rule 42B.54.</p> <p>(4) The extinguishers must be sufficient in number and so positioned as to be readily available in the event of a fire and must be capable of directing foam or CO₂ onto any</p>

	part of a boiler room or space containing oil fuel installations and onto any part of the pressure lubrication system or any part of the casings enclosing pressure lubricated parts of turbines, engines, or associated gearing.
Sand	In a ship of 24 metres or more in length overall, each boiler firing space must be provided with at least 0.25 m ³ of sand or other dry material suitable for quenching oil fires, and a scoop for its distribution. Alternatively, an additional portable fire extinguisher suitable for extinguishing oil fires that complies with rule 42B.57 may be provided.
Portable fire extinguishers	<p>(1) In a ship of 24 metres or more in length overall, portable fire extinguishers that comply with rule 42B.57 must be provided as follows—</p> <ul style="list-style-type: none"> (a) on each deck, in sufficient numbers that at least 2 portable fire extinguishers are readily available for use in every accommodation and service space between watertight bulkheads. In enclosed accommodation and service spaces above the bulkhead deck, at least one portable fire extinguisher must be available for use on each side of the deck; and (b) at least one portable fire extinguisher in each galley of 45 m² deck area or less, and 2 in larger galleys; and (c) at least one portable fire extinguisher in each control station; and (d) at least 2 portable fire extinguishers, suitable for extinguishing an oil fire, in each firing space in each boiler room and each space containing any part of any oil fuel installation; and (e) at least 2 portable fire extinguishers in every machinery space of Category A containing internal combustion machinery, but sufficient in number and so located that no portable fire extinguisher is more than 10 metres walking distance from any point in the space. The extinguishers must be suitable for extinguishing oil fires; and (f) at least 2 portable fire extinguishers in every space containing steam turbines or enclosed pressure lubricated steam engines that are used for main propulsion, and at least one portable fire extinguisher in every such space used for auxiliary machinery. A sufficient number of portable fire extinguishers must be provided and so located that no portable fire extinguisher is more than 10 metres walking distance from any point in the space. The extinguishers must be suitable for extinguishing oil fires. <p>(2) In a ship of less than 24 metres in length overall, portable fire extinguishers that comply with rule 42B.57 must be provided as follows—</p> <ul style="list-style-type: none"> (a) at least one for each passenger space and each crew space on each deck; and (b) at least one in each galley; and

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	<p>(c) at least 2 suitable for extinguishing oil fires in each space containing propelling machinery.</p> <p>(3) For every two extinguishers of the same type, one spare charge or replacement extinguisher of the same type must be provided.</p>
Fire smothering blankets	In a ship of 24 metres or more in length overall, each galley must be provided with one fire smothering blanket complying with rule 42B.67, if the galley deck area is 45 m ² or less, and 2 such fire smothering blankets if the galley deck area is greater.
Fire crew outfits	<p>(1) A ship of 24 metres or more in length overall, and a ship carrying more than 36 day passengers or more than 12 berthed passengers, must carry 2 fire crew outfits that comply with rule 42B.66 and a breathing apparatus for each fire crew outfit, complying with rule 42B.58 or rule 42B.59.</p> <p>(2) A ship of less than 24 metres in length overall that carries 36 or less day passengers or less than 12 berthed passengers must carry—</p> <p>(a) one fire axe that complies with rule 42B.66; and</p> <p>(b) one safety lamp that complies with rule 42B.66.</p>
Signs	Signs that comply with rule 42B.69 must be provided to identify all fire fighting appliances and their location.

3.2 Restricted coastal limits ships

The requirements in Appendix 3.2 apply to a ship that proceeds in a restricted coastal limit.

Item	Requirement
Fire control plan	A ship of 24 metres or more in length overall that carries more than 36 passengers must carry a fire control plan that complies with rule 42B.68.
Alarm system	<p>(1) A ship of 24 metres or more in length overall must be provided with a fixed fire detection and alarm system that complies with rules 42B.4 to 42B.8 inclusive, as applicable, in all accommodation and service spaces other than sanitary spaces and other spaces that, in the opinion of a surveyor, afford no substantial fire risk.</p> <p>(2) A post-27 May 2004 ship of 24 metres or more in length overall that carries more than 36 day passengers or more than 12 berthed passengers must be provided with a public address system or other effective means of communication that is available throughout the accommodation and service spaces and any control station.</p>
Fire pumps	<p>(1) A ship of 24 metres or more in length overall must be provided with at least one independently driven power pump that complies with rule 42B.61, and is capable of delivering one jet of water from any fire hydrant in the ship.</p> <p>(2) A ship of 9 metres or more but less than 24 metres in length overall must be provided with at least one power pump that complies with rule 42B.61, and is capable of delivering one jet of water from any fire hydrant provided on the ship.³⁶</p> <p>(3) A ship of less than 9 metres in length overall must be provided with either—</p> <ul style="list-style-type: none"> (a) one power pump that complies with rule 42B.61;³⁷ or (b) one hand operated pump that complies with rule 42B.61; <p>and that pump must be capable of delivering one jet of water from any fire hydrant provided on the ship.</p>
Emergency fire pumps	<p>(1) If a fire in any one compartment could put all the fire pumps out of action, an emergency fire pump must be provided in a position outside the machinery spaces. The emergency fire pump may be a hand operated pump if it complies with rule 42B.61.</p> <p>(2) In any ship of less than 15 metres in length overall, 2 fire buckets complying with rule 42B.62 may be carried instead of an emergency fire pump.</p>
Fire main, water service pipes, hydrants, hoses and nozzles.	<p>(1) A ship must be provided with—</p> <ul style="list-style-type: none"> (a) a fire main, water service pipes and hydrants that

³⁶ This pump may be driven by the main engine.

³⁷ This pump may be driven by the main engine.

	<p>comply with rule 42B.63; and</p> <p>(b) hoses and nozzles that comply with rules 42B.64 and 42B.65 respectively.</p> <p>(2) In a ship, the arrangement of the fire main, water service pipes and hydrants must be such that at least one jet of water, having a throw of not less than 6 metres, can reach any part of the ship that is normally accessible to passengers or crew while the ship is being navigated, and any store room and any empty part of any cargo space. In accommodation spaces and service spaces this requirement must be met when all watertight doors to these spaces are closed.</p> <p>(3) In a ship, any space containing oil fired boilers or internal combustion propelling machinery must be provided with one hydrant, unless—</p> <p>(a) the ship is less than 15 metres in length overall; and</p> <p>(b) a surveyor is satisfied that water can be effectively directed into the space from a hydrant located outside that space.</p> <p>(4) A ship must be provided with at least one hose and one jet/spray nozzle that comply with rules 42B.64 and 42B.65 respectively, for each hydrant fitted in the ship.</p> <p>(5) All hose connections must be inter-connectable.</p>
<p>Fixed fire extinguishing installation – Machinery Space</p>	<p>(1) A post-27 May 2004 ship of 15 metres or more in length overall, and a post-27 May 2004 ship that carries more than 36 day passengers or more than 12 berthed passengers, and every pre-27 May 2004 ship of 24 metres in length overall or more must be provided with a fixed fire extinguishing system in any machinery space of Category A containing—</p> <p>(a) any oil-fired boiler, oil fuel settling tank or oil fuel unit; or</p> <p>(b) internal combustion machinery.</p> <p>(2) The fixed fire extinguishing system must be—</p> <p>(a) a gaseous fire extinguishing system that complies with rules 42B.20 to 42B.22 inclusive, as applicable; or</p> <p>(b) a water based system that complies with rules 42B.23 to 42B.26 inclusive; or</p> <p>(c) a high expansion foam system that complies with rule 42B.31.</p>
<p>Non-portable foam and CO₂ extinguishers</p>	<p>(1) In a ship of 24 metres or more in length overall, any space containing an oil-fired boiler or oil fuel unit must be provided with at least—</p> <p>(a) one foam extinguisher of at least 135 litres capacity that complies with rule 42B.53; or</p> <p>(b) one CO₂ extinguisher of at least 15 kgs capacity that complies with rule 42B.54.</p>

	<p>(2) In a ship of 24 metres or more in length overall, any machinery space of Category A must be provided with at least—</p> <ul style="list-style-type: none"> (a) one foam extinguisher of at least 45 litres capacity that complies with rule 42B.53; or (b) one CO₂ extinguisher of at least 15 kgs capacity that complies with rule 42B.54. <p>(3) In a ship, any space containing steam turbines or enclosed pressure lubricated steam engines that are used for main propulsion, or have in aggregate a total brake power of not less than 375 kW for auxiliary purposes, must be provided with at least—</p> <ul style="list-style-type: none"> (a) one foam extinguisher of at least 45 litres capacity that complies with rule 42B.53; or (b) one CO₂ extinguisher of at least 15 kgs capacity that complies with rule 42B.54.
<p>Sand</p>	<p>In a ship of 24 metres or more in length overall, each boiler firing space must be provided with at least 0.15 m³ of sand or other dry material suitable for quenching oil fires, and a scoop for its distribution. Alternatively, an additional portable fire extinguisher that complies with rule 42B.57 and that is suitable for extinguishing oil fires may be provided.</p>
<p>Portable fire extinguishers</p>	<p>(1) In a ship of 24 metres or more in length overall, portable fire extinguishers that comply with rule 42B.57 must be provided as follows—</p> <ul style="list-style-type: none"> (a) at least one portable fire extinguisher in each passenger area on each deck provided for 36 passengers or less, and at least 2 portable fire extinguishers in any passenger area on each deck provided for more than 36 passengers; and (b) at least one portable fire extinguisher in each crew area; and (c) at least one portable fire extinguisher in the galley; and (d) at least one portable fire extinguisher in any control station; and (e) at least 2 portable fire extinguishers, suitable for extinguishing an oil fire, in each firing space in each boiler room, and in each space containing any part of any oil fuel installation; and (f) at least 2 portable fire extinguishers in every machinery space of Category A containing internal combustion machinery. A sufficient number of portable fire extinguishers must be provided and so located that no portable fire extinguisher is more than 10 metres walking distance from any point in the space. The extinguishers must be suitable for extinguishing oil fires; and (g) at least 2 portable fire extinguishers in every space containing steam turbines or enclosed pressure lubricated steam engines that are used for main propulsion, and at least one portable fire

	<p>extinguisher in every such space used for auxiliary machinery. A sufficient number of portable fire extinguishers must be provided and so located that no portable fire extinguisher is more than 10 metres walking distance from any point in the space. The extinguishers must be suitable for extinguishing oil fires.</p> <p>(2) In a ship of 9 metres or more but less than 24 metres in length overall, portable fire extinguishers that comply with rule 42B.57 must be provided as follows—</p> <p>(a) at least one portable fire extinguisher in each passenger area on each deck provided for 36 passengers or less, and at least 2 portable fire extinguishers in any passenger area on each deck provided for more than 36 passengers; and</p> <p>(b) at least one portable fire extinguisher for each crew area on each deck; and</p> <p>(c) at least one portable fire extinguisher in each galley; and</p> <p>(d) at least 2 portable fire extinguishers that are suitable for extinguishing oil fires, in or adjacent to each space containing propelling machinery.</p> <p>(3) In a ship of less than 9 metres in length overall, portable fire extinguishers that comply with rule 42B.57 must be provided as follows—</p> <p>(a) at least one portable fire extinguisher in the passenger area; and</p> <p>(b) at least one portable fire extinguisher in any galley; and</p> <p>(c) at least one portable fire extinguisher, suitable for extinguishing oil fires, in or adjacent to the propelling machinery space. If the propelling machinery is not enclosed, the portable fire extinguisher must be readily available.</p> <p>(4) Despite any other requirement in Appendix 3.2, a ship must be provided with at least the following number of portable fire extinguishers—</p> <table border="0" data-bbox="660 1529 1278 1715"> <thead> <tr> <th style="text-align: left;">Length overall</th> <th style="text-align: right;">No.</th> </tr> </thead> <tbody> <tr> <td>24 metres or more –</td> <td style="text-align: right;">5</td> </tr> <tr> <td>15 metres or more but less than 24 metres –</td> <td style="text-align: right;">4</td> </tr> <tr> <td>9 metres or more but less than 15 metres –</td> <td style="text-align: right;">3</td> </tr> <tr> <td>Less than 9 metres –</td> <td style="text-align: right;">2</td> </tr> </tbody> </table> <p>(5) In a ship of 15 metres or more in length overall, for every two extinguishers of the same type, one spare charge or replacement extinguisher of the same type must be provided.</p>	Length overall	No.	24 metres or more –	5	15 metres or more but less than 24 metres –	4	9 metres or more but less than 15 metres –	3	Less than 9 metres –	2
Length overall	No.										
24 metres or more –	5										
15 metres or more but less than 24 metres –	4										
9 metres or more but less than 15 metres –	3										
Less than 9 metres –	2										
Fire smothering blankets	In a ship of 24 metres or more in length overall, each galley must be provided with a fire smothering blanket that complies with rule 42B.67, if the galley is fitted with exposed heating elements, burners or other open cooking										

	arrangements.
Fire crew outfits	<p>(1) A ship of 24 metres or more in length overall carrying more than 36 passengers must carry two fire crew outfits that comply with rule 42B.66 and a breathing apparatus for each fire crew outfit, complying with rule 42B.58 or rule 42B.59.</p> <p>(2) A ship of less than 24 metres in length overall and a ship carrying 36 or less passengers must be provided with at least one fire axe and one safety lamp.</p>
Signs	Signs that comply with rule 42B.69 must be provided to identify all fire fighting appliances and their location.

3.3 Restricted limit ships

The requirements of Appendix 3.3 apply to a ship that proceeds in restricted limits.

Item	Requirement
Fire alarms	<p>(1) In a post-27 May 2004 ship of 24 metres or more in length overall that is constructed of a combustible material, or where in the opinion of a surveyor a fire hazard exists due to—</p> <ul style="list-style-type: none"> (a) an appreciable amount of combustible material used in the construction of the accommodation spaces, service spaces and control stations; or (b) the size of the spaces referred to in (a), their arrangement or their location relative to control stations; or (c) where applicable, the flame spread characteristics of the installed furniture; <p>there must be installed in the accommodation and service spaces a fixed fire alarm and fire detection system that complies with rules 42B.4 to 42B.8 inclusive, as applicable.</p> <p>(2) A post-27 May 2004 ship of 24 metres or more in length overall that carries more than 36 passengers must be provided with a public address system or other effective means of communication that is available throughout the accommodation and service spaces and any control station.</p>
Fire pumps	<p>(1) A ship of 24 metres or more in length overall must be provided with at least one independently driven power pump that complies with rule 42B.61 and is capable of delivering one jet of water from any fire hydrant in the ship.</p> <p>(2) A ship of 15 metres or more but less than 24 metres in length overall and a post-27 May 2004 ship of less than 15 metres in length overall that carries more than 36 passengers must be provided with at least one power operated pump that complies with rule 42B.61, and is capable of delivering one jet of water from any fire hydrant provided on the ship.³⁸</p> <p>(3) A post-27 May 2004 ship of less than 15 metres in length</p>

³⁸ This pump may be driven by the main engine.

	<p>overall that carries 36 passengers or less must be provided with at least—</p> <p>(a) where the post-27 May 2004 ship is 9 metres or more in length overall—</p> <p>(i) one power operated fire pump that complies with rule 42B.61 and is capable of delivering one jet of water from any fire hydrant in the ship; or</p> <p>(ii) one manually operated fire pump that complies with rule 42B.61 and is capable of delivering one jet of water from any fire hydrant in the ship; and</p> <p>(b) where the post-27 May 2004 ship is less than 9 metres but more than 6 metres in length overall, 2 fire buckets that comply with rule 42B.62; and</p> <p>(c) where the post-27 May 2004 ship is 6 metres or less in length overall one fire bucket, that complies with rule 42B.62, or a baler.</p> <p>(4) Pre-27 May 2004 ships of less than 15 metres but more than 6 metres in length overall must be provided with at least—</p> <p>(a) one power operated or manually operated fire pump that complies with rule 42B.61; or</p> <p>(b) 2 fire buckets that comply with rule 42B.62.</p> <p>(5) Pre-27 May 2004 ships of 6 metres or less length overall must be provided with at least one fire bucket that complies with rule 42B.62 or with a baler.</p>
Emergency fire pumps	<p>(1) A ship of 24 metres or more in length overall must be provided with a power operated emergency fire pump that complies with rule 42B.61, or a manually operated emergency fire pump that complies with rule 42B.61. The pump must be located in a position outside the machinery spaces.</p> <p>(2) A ship of 15 metres or more but less than 24 metres in length overall and a post-27 May 2004 ship of less than 15 metres in length overall that carries more than 36 passengers must be provided with at least 2 fire buckets that comply with rule 42B.62, if the power fire pump is driven by the main engine.</p>
Fire main, water service pipes, hydrants, hoses and nozzles	<p>(1) A ship of 9 metres or more in length overall must be provided with a fire main, water service pipes and hydrants that comply with the provisions of rule 42B.63 and hoses and nozzles that comply with the provisions of rules 42B.64 and 42B.65 respectively.</p> <p>(2) The arrangement of the fire main, water service pipes and hydrants must be such that at least one jet of water, having a throw of not less than 6 metres, can reach any part of the ship that is normally accessible to passengers or crew while the ship is being navigated, and any store room and any empty part of any cargo space. In accommodation spaces and service spaces, this requirement must be met when all watertight doors in these spaces are closed.</p> <p>(3) In a ship of 9 metres or more in length overall, any space</p>

	<p>containing oil fired boilers or internal combustion propelling machinery must be provided with one hydrant, unless—</p> <ul style="list-style-type: none"> (a) the ship is less than 24 metres in length overall; and (b) the surveyor is satisfied that water can be directed effectively into the space from a hydrant located outside that space. <p>(4) A ship of 9 metres or more in length overall must be provided with at least one hose and one jet/spray nozzle that comply with rules 42B.64 and 42B.65 respectively, for each hydrant fitted in the ship.</p> <p>(5) All hose connections must be interconnectable</p>
<p>Fixed fire extinguishing installation – machinery space.</p>	<p>(1) A post-27 May 2004 ship of 15 metres or more in length overall, a post-27 May 2004 ship that carries more than 36 passengers, and every pre-27 May 2004 ship of 24 metres or more in length overall must be provided with a fixed fire extinguishing system in any machinery space of Category A containing—</p> <ul style="list-style-type: none"> (a) any oil-fired boiler, oil fuel settling tank or oil fuel unit; or (b) internal combustion machinery. <p>(2) The fixed fire extinguishing system must be—</p> <ul style="list-style-type: none"> (a) a gaseous fire extinguishing system that complies with rules 42B.20 to 42B.22, as applicable; or (b) a water based system that complies with rules 42B.23 to 42B.26 inclusive; or (c) a high expansion foam system that complies with rules 42B.31 and 42B.32. <p>(3) Where a fixed fire extinguishing system is fitted in accordance with rule 40A.33 in an enclosed space containing a main propulsion machinery engine or any fuel tank using petrol or other fuel having a flashpoint below 60°C (closed cup test), that fixed fire extinguishing system must comply with rule 42B.21(7).</p>
<p>Non-portable foam and CO₂ extinguishers</p>	<p>(1) In a ship of 24 metres or more in length overall, any space containing any oil-fired boiler or oil fuel unit must be provided with at least—</p> <ul style="list-style-type: none"> (a) one foam extinguisher of at least 135 litres capacity that complies with rule 42B.53; or (b) one CO₂ extinguisher of at least 15 kgs capacity that complies with rule 42B.54. <p>(2) In a ship of 24 metres or more in length overall, any machinery space of Category A must be provided with at least—</p> <ul style="list-style-type: none"> (a) one foam extinguisher complying with rule 42B.53 of at least 45 litres capacity; or (b) one CO₂ extinguisher complying with rule 42B.54 of at least 15 kgs capacity. <p>(3) In a ship, any space containing steam turbines or enclosed pressure lubricated steam engines that are used for main propulsion, or have in aggregate a total brake power of not</p>

	<p>less than 375 kW for auxiliary purposes, must be provided with at least—</p> <p>(a) one foam extinguisher of at least 45 litres capacity; or</p> <p>(b) one CO₂ extinguisher of at least 15 kgs capacity.</p>
Sand	<p>In a ship of 24 metres or more in length overall, each boiler firing space must be provided with at least 0.15 m³ of sand or other dry material suitable for quenching oil fires, and a scoop for its distribution. Alternatively, an additional portable fire extinguisher suitable for extinguishing oil fires that complies with rule 42B.57 may be provided.</p>
Portable fire extinguishers	<p>(1) In a ship of 24 metres or more in length overall, portable fire extinguishers that comply with rule 42B.57 must be provided as follows—</p> <p>(a) at least one portable fire extinguisher in each passenger area on each deck provided for 36 passengers or less and at least 2 portable fire extinguishers in any passenger area on each deck provided for more than 36 passengers; and</p> <p>(b) at least one portable fire extinguisher in any crew area; and</p> <p>(c) at least one portable fire extinguisher in the galley; and</p> <p>(d) at least one portable fire extinguisher in any control station; and</p> <p>(e) at least 2 portable fire extinguishers, suitable for extinguishing an oil fire, in each firing space in each boiler room and each space containing any part of any oil fuel installation; and</p> <p>(f) at least 2 portable fire extinguishers in every machinery space of Category A containing internal combustion machinery. A sufficient number of portable fire extinguishers must be provided and so located that no portable fire extinguisher is more than 10 metres walking distance from any point in the space. The extinguishers must be suitable for extinguishing oil fires; and</p> <p>(g) at least 2 portable fire extinguishers in every space containing steam turbines or enclosed pressure lubricated steam engines that are used for main propulsion, and at least one in every such space used for auxiliary machinery. A sufficient number of portable fire extinguishers must be provided and so located that no portable fire extinguisher is more than 10 metres walking distance from any point in the space. The extinguishers must be suitable for extinguishing oil fires.</p> <p>(2) In a ship of 9 metres or more but less than 24 metres in length overall, portable fire extinguishers that comply with rule 42B.57 must be provided as follows—</p> <p>(a) at least one portable fire extinguisher in each passenger area on each deck provided for 36 passengers or less, and at least 2 portable fire extinguishers in any passenger area on each deck provided for more than 36 passengers; and</p>

	<ul style="list-style-type: none"> (b) at least one portable fire extinguisher for each crew area on each deck; and (c) at least one portable fire extinguisher in each galley; and (d) at least 2 portable fire extinguishers suitable for extinguishing oil fires in or adjacent to each space containing propelling machinery. <p>(3) In a ship of less than 9 metres in length that is a decked ship or that provides sheltered accommodation, portable fire extinguishers that comply with rule 42B.57 must be provided as follows—</p> <ul style="list-style-type: none"> (a) at least one portable fire extinguisher in, or adjacent to, the passenger area; and (b) at least one portable fire extinguisher in any galley; and (c) at least one portable fire extinguisher, suitable for extinguishing oil fires, in or adjacent to the propelling machinery space. If the propelling machinery is not enclosed, the portable fire extinguisher must be readily available. <p>(4) In every open boat, at least one portable fire extinguisher that is suitable for extinguishing oil fires and that complies with rule 42B.57 must be provided.</p> <p>(5) Despite the other requirements in Appendix 3.3, a ship must be provided with at least the following total number of portable fire extinguishers –</p> <table border="0" style="margin-left: 40px;"> <thead> <tr> <th style="text-align: left;">Length Overall</th> <th style="text-align: right;">No.</th> </tr> </thead> <tbody> <tr> <td>24 metres or more –</td> <td style="text-align: right;">5</td> </tr> <tr> <td>More than 15 metres but less than 24 metres –</td> <td style="text-align: right;">4</td> </tr> <tr> <td>More than 9 metres but less than 15 metres –</td> <td style="text-align: right;">3</td> </tr> <tr> <td>Less than 9 metres –</td> <td style="text-align: right;">2</td> </tr> <tr> <td>Open boat –</td> <td style="text-align: right;">1</td> </tr> </tbody> </table>	Length Overall	No.	24 metres or more –	5	More than 15 metres but less than 24 metres –	4	More than 9 metres but less than 15 metres –	3	Less than 9 metres –	2	Open boat –	1
Length Overall	No.												
24 metres or more –	5												
More than 15 metres but less than 24 metres –	4												
More than 9 metres but less than 15 metres –	3												
Less than 9 metres –	2												
Open boat –	1												
Fire smothering blankets	In a ship of 24 metres or more in length overall, each galley that is fitted with a stove or similar appliance that has exposed heating elements, burners or other open cooking arrangements must be provided with one fire smothering blanket complying with rule 42B.67.												
Fire crew outfits	<p>(1) A ship of 24 metres or more in length overall and a ship that is certified to carry more than 36 passengers must be provided with one fire axe and one safety lamp that comply with rule 42B.66.</p> <p>(2) A ship of 9 metres or more but less than 24 metres in length overall that is not certified to carry more than 36 passengers must be provided with at least one axe.</p>												
Signs	Signs that comply with rule 42B.69 must be provided to identify all fire fighting appliances and their location.												

Rule 40A.56

Appendix 4 Life saving appliances

4.1 Offshore limit ships and coastal limits ships

The requirements in Appendix 4.1 apply to a ship that proceeds into offshore or coastal limits.

Item	Requirements
Survival craft – (comprising lifeboats, rescue boats and liferafts)	<p>(1) A ship that is certified to carry 200 or more persons must—</p> <ul style="list-style-type: none"> (a) be provided with— <ul style="list-style-type: none"> (i) lifeboats of sufficient aggregate capacity for at least 30 percent of the total number of persons the ship is certified to carry; and (ii) liferafts of sufficient aggregate capacity for at least 95 percent of the total number of persons the ship is certified to carry; and (b) have the lifeboats distributed equally on each side of the ship; and (c) have launching appliances for the liferafts that— <ul style="list-style-type: none"> (i) comply with rule 42A.28; and (ii) are equally distributed on each side of the ship. <p>(2) A ship that is certified to carry less than 200 persons must—</p> <ul style="list-style-type: none"> (a) be provided with either— <ul style="list-style-type: none"> (i) the lifeboats and liferafts required in (1) for a ship certified to carry 200 or more persons; or (ii) on each side of the ship, liferafts of sufficient aggregate capacity to accommodate the total number of persons the ship is certified to carry. If the liferafts cannot be readily transferred for launching on either side of the ship, additional liferafts must be provided so that there is sufficient aggregate capacity on each side of the ship to accommodate 150 percent of the total number of persons the ship is certified to carry. Such liferafts must be provided with at least one launching appliance that complies with rule 42A.28, on each side of the ship; and (b) in the event of any one survival craft being lost or rendered unserviceable, have a sufficient number of survival craft available for use on each side of the ship to accommodate the total number of persons that the ship is certified to carry. <p>(3) A ship must carry at least one rescue boat that complies with rule 42A.14 if 200 or more passengers are carried. If less than 200 passengers are carried, the rescue boat may comply with rule 42A.15. A lifeboat may be accepted as a rescue boat, provided it complies with the requirements of rules 42A.6 and 42A.7. Each lifeboat or rescue boat must be provided with a launching appliance that complies with rule 42A.28(2).</p>

	<p>(4) If the rescue boat is a lifeboat and the ship is certified to carry less than 200 persons and is otherwise only provided with liferafts as survival craft, the lifeboat may be included in the aggregate capacity required by (2)(a)(ii), provided there is sufficient aggregate capacity available on either side of the ship to accommodate 150 percent of the total number of persons that the ship is certified to carry.</p> <p>(5) The number of lifeboats and rescue boats that are carried must be sufficient to ensure that, on abandonment of the ship by all the persons that the ship is certified to carry, no more than 9 liferafts need to be marshalled by any one lifeboat or rescue boat.</p> <p>(6) Survival craft with an aggregate capacity equal to the total number of persons that the ship is certified to carry must be capable of being launched with their full complement of persons and equipment within a period of 30 minutes from the time the abandon ship signal is given.</p> <p>(7) Every lifeboat required by (1) or (2) must comply with rules 42A.6 and 42A.7 and every liferaft required by (1) or (2) must comply with rules 42A.8 to 42A.10 inclusive, as applicable.</p> <p>(8) Every liferaft must be stowed with its painter permanently attached to the ship and with a float-free launching arrangement so that, as far as practicable, the liferaft floats free and, if inflatable, inflates automatically when the ship sinks.</p> <p>(9) A lifeboat on a ship that proceeds below 48°S must be of an enclosed type.</p>
Lifebuoys	<p>(1) A ship of 30 metres or more in length overall must carry at least six lifebuoys. At least one lifebuoy on each side of the ship must be provided with a buoyant lifeline, and not less than four lifebuoys must be provided with a self-igniting light. Not less than two of the lifebuoys provided with self-igniting lights must also be provided with self-activating smoke signals and be capable of a quick release from the navigating bridge. Every lifebuoy must be provided with either a buoyant lifeline or self-igniting light or self-activating smoke signal.</p> <p>(2) A ship of less than 30 metres in length overall must carry at least four lifebuoys. At least one lifebuoy on each side of the ship must be provided with a buoyant lifeline, and not less than two lifebuoys must be provided with a self-igniting light. Every lifebuoy must be provided with either a buoyant lifeline or a self-igniting light.</p> <p>(3) Lifebuoys must comply with rule 42A.16.</p>
Lifejackets	<p>(1) A ship must carry a lifejacket for—</p> <ul style="list-style-type: none"> (a) every person that the ship is certified to carry; plus (b) at least 5 percent of the total number of persons that the ship is certified to carry. <p>(2) Lifejackets provided on a ship proceeding into offshore limits must have a buoyancy of at least 150 Newtons and</p>

	<p>comply with the requirements of rule 42A.18. Lifejackets provided on a ship proceeding in coastal limits must have a buoyancy of at least 100 Newtons and comply with the requirements of rule 42A.19.</p> <p>(3) A ship must be provided with a number of children's lifejackets that comply with rule 42A.19 equal to at least 10 percent of the total number of persons that the ship is certified to carry, or any greater number that is needed to provide a lifejacket for each child carried.</p> <p>(4) In addition to other lifejackets provided, a sufficient number of inflatable lifejackets that comply with rule 42A.18 must be provided for the crew of each rescue boat.</p> <p>(5) Every lifejacket intended for use by a member of the crew must be marked indelibly with the word 'CREW' on the inside and outside, both back and front, in letters not less than 75 mm high and in a colour contrasting with the colour of the lifejacket.</p> <p>(6) Lifejackets must be stowed in locations approved by a surveyor and must be readily accessible to persons on board in an emergency.³⁹ At least 5 percent of the number of lifejackets carried for passengers must be stowed in lockers on or adjacent to open decks or muster stations. The stowage position of all lifejackets must be clearly and permanently marked.</p>
Line throwing appliance	A ship of 30 metres or more in length overall must carry a line throwing appliance that complies with rule 42A.30.
Distress flares	<p>(1) A ship that proceeds into offshore limits must carry at least 12 rocket parachute flares that comply with rule 42A.22.</p> <p>(2) A ship that proceeds into coastal limits must carry at least 8 rocket parachute flares that comply with rule 42A.22, and at least 2 buoyant smoke signals that comply with rule 42A.24.</p>
Immersion suits and thermal protective aids	<p>A ship that operates below 48°S must carry—</p> <p>(a) for every person assigned to crew a rescue boat, an immersion suit that complies with the requirements of rule 42A.25 and is of an adequate size; and</p> <p>(b) for each lifeboat on the ship, at least 3 immersion suits complying with rule 42A.25 and, in addition, a thermal protective aid complying with rule 42A.27 for every person permitted to be accommodated and not provided with an immersion suit.</p>
General emergency alarm and public address system	<p>(1) A ship must be provided with—</p> <p>(a) a general emergency alarm system; and</p> <p>(b) a public address system or other effective means of communication throughout the accommodation and service spaces.</p> <p>(2) The general alarm and public address system must comply with rule 42A.32.</p>

³⁹ Lifejackets for berthed passengers may be stowed adjacent to their berths and lifejackets for unberthed passengers may be stowed in or adjacent to public rooms or muster stations.

4.2 Restricted coastal limits ships

The requirements in Appendix 4.2 apply to a ship that proceeds in a restricted coastal limit.

Item	Requirements
Survival craft – (comprising lifeboats, rescue boats and liferafts)	<p>(1) A ship of 24 metres or more in length overall must be provided with either—</p> <p>(a) on each side of the ship, a sufficient number of lifeboats complying with rules 42A.6 and 42A.7 to carry 50 percent of the total number of persons that the ship is certified to carry, if the ship is subdivided in accordance with rule 40A.12; or</p> <p>(b) a sufficient number of liferafts complying with rules 42A.8 to 42A.10 inclusive, as applicable, for the total number of persons that the ship is certified to carry, stowed so that they can be readily placed in the water on either side of the ship.</p> <p>(2) A ship of 24 metres or more in length overall must be provided with a rescue boat that complies with rule 42A.15 or a lifeboat that complies with rules 42A.6 and 42A.7. This requirement is in addition to any lifeboats required above.</p> <p>(3) Every lifeboat or rescue boat must be attached to a separate set of davits, that complies with rule 42A.28(2).</p> <p>(4) A ship of 9 metres or more but less than 24 metres in length overall must be provided with sufficient liferafts that comply with rules 42A.11 and 42A.12 to accommodate the total number of persons that the ship is certified to carry.</p> <p>(5) A ship of 15 metres or more but less than 24 metres in length overall and carrying more than 36 passengers must be provided with a rescue boat that complies with rule 42A.15.</p>
Lifebuoys	<p>(1) A ship of 30 metres or more in length overall must carry at least six lifebuoys. At least one lifebuoy on each side of the ship must be provided with a buoyant lifeline, and not less than four lifebuoys must be provided with a self-igniting light. Not less than two of the lifebuoys provided with self-igniting lights must also be provided with self-activating smoke signals and be capable of a quick release from the navigating bridge. Every lifebuoy must be provided with either a buoyant lifeline or self-igniting light or self-activating smoke signal.</p> <p>(2) At least 50 percent of lifebuoys must be provided with a buoyant lifeline and the remaining lifebuoys must be provided with a self-igniting light.</p>
Lifejackets	<p>(1) A ship must be provided with a lifejacket that has a buoyancy of not less than 100 Newtons and complies with rule 42A.19, for each person that the ship is certified to carry.</p> <p>(2) A ship must be provided with a number of children's lifejackets, of appropriate sizes, that comply with rule 42A.19, equal to at least 10 percent of the total number of persons that the ship is certified to carry, or such greater</p>

	<p>number as to provide a lifejacket of appropriate size for each child carried.</p> <p>(3) In addition to other lifejackets provided, a sufficient number of inflatable lifejackets that comply with rule 42A.19 must be provided for the crew of each rescue boat.</p> <p>(4) Every lifejacket intended for use by a member of the crew must be marked indelibly with the word 'CREW' on the inside and outside, both back and front, in letters not less than 75 mm high and in a colour contrasting with the colour of the lifejacket.</p> <p>(5) Lifejackets must be stowed in locations approved by a surveyor and must be readily accessible to persons on board in an emergency. Lifejackets for unberthed passengers must be stowed in or adjacent to passenger spaces and exits to the open deck from such spaces.⁴⁰ The stowage positions must be clearly and permanently marked.</p>
Distress flares	A ship must carry at least 4 rocket parachute flares that comply with rule 42A.22, plus 2 buoyant smoke signals that comply with rule 42A.24.
Public address system	A ship that carries more than 36 passengers must be provided with a public address system or other effective means of communication that is available throughout the accommodation and service spaces.

4.3 Restricted limit ships

The requirements in Appendix 4.3 apply to a ship that proceeds in restricted limits.

Item	Requirements
Survival craft (comprising lifeboats, rescue boats, liferafts and buoyant apparatus)	<p>(1) An inshore limits ship of 24 metres or more but less than 45 metres in length overall must be provided with a lifeboat that complies with rules 42A.6 and 42A.7 or a rescue boat that complies with rule 42A.15, and is capable of being launched from one side or end of the ship.</p> <p>(2) An inshore limits ship of 45 metres or more in length overall must be provided with at least 2 lifeboats that comply with rules 42A.6 and 42A.7 or 2 rescue boats that comply with rule 42A.15, one being carried on each side of the ship.</p> <p>(3) An enclosed water limits ship of 24 metres or more in length overall must be provided with a lifeboat that complies with rules 42A.6 and 42A.7 or a rescue boat that complies with rule 42A.15, and is capable of being launched from one side or end of the ship.</p> <p>(4) A ship that carries more than 36 passengers must be provided with liferafts complying with rules 42A.11 and 42A.12 or open reversible liferafts complying with the requirements of rule 42A.13, or buoyant apparatus that comply with rule 42A.31, which, together with any lifeboat or rescue boat, have sufficient aggregate capacity for at least 20 percent of the total number of persons that the ship is</p>

⁴⁰ Lifejackets for berthed passengers may be stowed adjacent to their berths.

	<p>certified to carry.</p> <p>(5) Liferrafts or buoyant apparatus must be stowed so that they can readily be placed in the water on either side of the ship.</p> <p>(6) Every lifeboat or rescue boat must be attached to a separate set of davits that complies with rule 42A.28(2).</p>										
Lifebuoys	<p>(1) A ship that carries more than 12 passengers or is of 9 metres or more in length overall must be provided with the number of lifebuoys as follows—</p> <table border="1" data-bbox="587 524 1302 712"> <thead> <tr> <th>Length overall of ship (metres)</th> <th>No. of lifebuoys</th> </tr> </thead> <tbody> <tr> <td>45 or more</td> <td>6</td> </tr> <tr> <td>24 or more but less than 45</td> <td>4</td> </tr> <tr> <td>9 or more but less than 24</td> <td>2</td> </tr> <tr> <td>less than 9 carrying more than 12 passengers</td> <td>2</td> </tr> </tbody> </table> <p>(2) Lifebuoys must comply with rule 42A.17.</p> <p>(3) At least 50 percent of lifebuoys must be provided with a buoyant lifeline and the remaining lifebuoys must be provided with a self-igniting light but, if the ship is permitted to operate in daylight hours only, self-igniting lights are not required.</p> <p>(4) A ship of less than 9 metres in length overall that does not carry more than 12 passengers must be provided with—</p> <ul style="list-style-type: none"> (a) a lifebuoy; or (b) a rescue buoy that is satisfactory to a surveyor; or (c) a throw bag that is satisfactory to a surveyor. 	Length overall of ship (metres)	No. of lifebuoys	45 or more	6	24 or more but less than 45	4	9 or more but less than 24	2	less than 9 carrying more than 12 passengers	2
Length overall of ship (metres)	No. of lifebuoys										
45 or more	6										
24 or more but less than 45	4										
9 or more but less than 24	2										
less than 9 carrying more than 12 passengers	2										
Lifejackets	<p>(1) An inshore limits ship must be provided with a lifejacket that complies with rule 42A.19 for each person that the ship is certified to carry.</p> <p>(2) An inshore limits ship certified to carry more than 12 passengers must be provided with an additional number of children's lifejackets, of appropriate sizes, that comply with rule 42A.19, equal to at least 10 percent of the total number of persons that the ship is certified to carry, or such greater number as is necessary to provide a lifejacket of appropriate size for each child carried.</p> <p>(3) An enclosed water limit ship must be provided with sufficient lifejackets which, together with any lifeboat, rescue boat, liferafts, buoyant apparatus or lifebuoys carried, have sufficient aggregate capacity to provide 100 per cent buoyancy for the total number of persons that the ship is certified to carry.</p> <p>(4) An open boat that is capable of speeds of 30 knots or more must be provided with a lifejacket for each person that the boat is certified to carry, and the lifejackets must be worn during any voyage.</p> <p>(5) Lifejackets must comply with rule 42A.19 and adult life jackets must have a buoyancy of at least 71 Newtons.</p> <p>(6) Lifejackets must be stowed in locations approved by a surveyor and must be readily accessible to persons on</p>										

	board in an emergency. The stowage position of all lifejackets must be clearly and permanently marked.
Distress flares	<p>(1) Every inshore limits ship of 12 metres or more in length overall must be provided with at least 4 rocket parachute flares that comply with rule 42A.22, and 2 buoyant smoke flares that comply with rule 42A.24.</p> <p>(2) Every inshore limits ship of less than 12 metres in length overall must be provided with 2 hand flares that comply with rule 42A.23, and 2 buoyant smoke floats that comply with rule 42A.24.</p> <p>(3) Subject to the following exceptions, a ship that proceeds into the enclosed water limit must be provided with at least 2 buoyant smoke floats that comply with rule 42A.24, and 2 hand flares that comply with rule 42A.23.</p> <p>(4) For a ship of 6 metres or less in length overall that proceeds into the enclosed water limit, the 2 hand flares are not required if the ship operates in daylight (between sunrise and sunset) only.</p> <p>(5) A ship in enclosed waters is not required to carry distress flares if a surveyor is satisfied that—</p> <ul style="list-style-type: none"> (a) 2 other independent means of communicating with the shore are always available on the ship;⁴¹ or (b) the ship operates only in a river or in a restricted waterway where the use of distress flares is unnecessary.

⁴¹ For example, the means of communication in rule 40A.57(2).

Appendix 5 Radiocommunication equipment

5.1 Ships within a VHF coverage area

The requirements in Appendix 5.1 apply to a ship that proceeds beyond enclosed waters but does not proceed beyond a VHF coverage area.

Item	Requirements
VHF Radio	The ship must be provided with a VHF radio that complies with rule 43.12. The VHF radio must be positioned so that it is possible to operate the distress alert from the normal navigation position.
Satellite EPIRB	<ol style="list-style-type: none"> (1) The ship must be provided with a 406 MHz EPIRB that complies with the requirements of rule 43.18A or 43.19. (2) The EPIRB must be kept in a readily accessible position on board the ship.
Source of electrical energy	<ol style="list-style-type: none"> (1) The ship must have available at all times while it is at sea a rechargeable battery that is situated above the ship's design waterline and is capable of operating the VHF radio installation. The battery must be of sufficient capacity to supply continuously for a period of at least 6 hours a total current equal to the sum of— <ol style="list-style-type: none"> (a) the current consumption of the VHF radio receiver; and (b) one third of the current that may be drawn by the VHF radio transmitter for speech transmission on the frequency at which the current consumption is a maximum; and (c) the current consumption of the emergency electric light, if applicable; and (d) one third of the current that may be drawn by each additional load capable of operation from this battery. (2) For a ship that spends less than 24 hours at sea at one time, provision must be made for recharging the radio battery system within a 10 hour period. For a ship that spends more than 24 hours at sea at one time, provision must be made for recharging the radio battery system within a 10 hour period while the ship is at sea.
Clock	A means of accurately telling the time must be permanently mounted on board.
Card of Instructions	The ship must be provided with a suitable card that explains in simple terms the use of the VHF radio and distress procedure stated in Part 23.
Emergency electric light	<ol style="list-style-type: none"> (1) A ship of 24 metres or more in length overall must be provided with an emergency electric light that— <ol style="list-style-type: none"> (a) is independent of the system that supplies the normal lighting of the VHF radio installation; and (b) is permanently arranged so as to be capable of providing sufficient illumination of— <ol style="list-style-type: none"> (i) the operating controls of the VHF radio installation; and

	<p>(ii) the card of instructions; and</p> <p>(c) is controlled by a switch, clearly labelled to indicate its purpose, placed at the operating position of the VHF.</p> <p>(2) A ship of less than 24 metres in length overall must be fitted with the emergency electric light prescribed above or carry a torch for this purpose.</p>
Documents	<p>(1) The ship must be provided with the following documents:</p> <p>(a) a Ship Station Radio Licence issued pursuant to the Radiocommunications (Radio) Regulations 1993; and</p> <p>(b) any associated call sign and MMSI (Maritime Mobile Service Identity) number (if provided).</p> <p>(2) The Ship Station Radio Licence and any call sign or MMSI number provided must be displayed in the vicinity of the radio installation.</p>

5.2 Ships that proceed beyond a VHF coverage area

The requirements in Appendix 5.2 apply to a ship that proceeds beyond a VHF coverage area.

Item	Requirements
MF/HF Radiotelephone	The ship must be provided with a MF/HF radiotelephone that complies with rule 43.14.
VHF Radio	The ship must be provided with a VHF radio that complies with rule 43.12. The VHF radio must be positioned so that it is possible to operate the distress alert from the normal navigation position.
Satellite EPIRB	<p>(1) The ship must be provided with a satellite EPIRB that is either—</p> <p>(a) a 406 Mhz EPIRB that complies with rule 43.19; or</p> <p>(b) an INMARSAT EPIRB that complies with rule 43.20.</p> <p>(2) The EPIRB must be kept in a readily accessible position on board the ship.</p>
Source of electrical energy	<p>(1) The ship must have a main source of electrical power capable of operating the radio installations in the ship.</p> <p>(2) The ship must have available at all times while at sea a reserve source of electrical power located above the design waterline. This must consist of rechargeable batteries of such capacity as to supply continuously for a period of 6 hours a total current equal to the sum of—</p> <p>(a) the current required to operate the VHF radio receiver; and</p> <p>(b) one half of the current required to operate the VHF radio transmitter for the transmission of speech, with the transmitter operating at its full rated frequency output power; and</p> <p>(c) the current required to operate the MF/HF radio receiver; and</p> <p>(d) one half of the current required to operate the MF/HF radio transmitter for the transmission of speech with</p>

	<p>the transmitter operating at its full rated radio frequency output power; and</p> <p>(e) the emergency light; and</p> <p>(f) one third of the current that may be drawn by each additional load capable of operation from this battery.</p> <p>(3) Provision must be made for recharging the radio battery system within 10 hours while the ship is at sea.</p>
Clock	The ship must be provided with a reliable clock fully visible to the radio operator, mounted in the immediate vicinity of the radio installation and marked with the radiotelephone silence periods.
Card of Instructions	The ship must be provided with a card of instructions that explains in simple terms the use of the radio equipment and distress procedures to an unskilled person for use in an emergency.
Emergency electric light	<p>(1) A ship of 24 metres or more in length overall must be provided with an emergency electric light that—</p> <p>(a) is independent of the system that supplies the normal lighting of the radio installations; and</p> <p>(b) is permanently arranged so as to be capable of providing sufficient illumination of—</p> <p>(i) the operating controls of the radio installations; and</p> <p>(ii) the clock; and</p> <p>(iii) the card of instructions; and</p> <p>(c) is controlled by a switch, clearly labelled to indicate its purpose, placed at the operating position of the MF/HF transmitter.</p> <p>(2) A ship of less than 24 metres in length overall must be fitted with the emergency electric light prescribed above or carry a torch for this purpose.</p>
Documents	<p>(1) The ship must be provided with the following documents:</p> <p>(a) Ship Station Radio Licence issued pursuant to the Radiocommunications (Radio) Regulations 1993; and</p> <p>(b) any associated call sign and MMSI (Maritime Mobile Service Identity) number (if provided).</p> <p>(2) The Ship Station Radio Licence and any call sign or MMSI number provided must be displayed in the vicinity of the radio installation.</p>

Rule 40.9(6), (7)

Appendix 6 Inflatable and rigid-inflatable boats

Inflatable boats

- 6.1 If a surveyor assigns inshore limits to an inflatable boat under rule 20.5, the owner and master of the boat must ensure that it—
- (a) remains within 20 miles of a safe haven; and
 - (b) operates only in favourable weather.
- 6.2 An inflatable boat must comply with the requirements of the *International Standard ISO 6185:1982 Shipbuilding and Marine Structures – Inflatable Boats – Boats made of reinforced elastomers or plastomers*, or substantially comply with that standard to the satisfaction of the Director.

Rigid – inflatable boats

- 6.3 A surveyor must not assign coastal limits (including restricted coastal limits) to a rigid-inflatable boat unless—
- (a) it is purpose designed for the carriage of passengers; and
 - (b) it has a substantial enclosure for passengers.
- 6.4 If a surveyor assigns coastal limits to a rigid-inflatable boat under rule 20.5, the owner and master of the boat must ensure that it remains within 60 miles of a safe haven.
- 6.5 Inflatable portions of rigid-inflatable boats must be constructed of materials of—
- (a) sufficient tensile and tear strength; and
 - (b) sufficient resistance,
- to withstand the environmental and abrasive conditions that may be expected in the service in which the boat is to be operated.
- 6.6 The rigid hull of a rigid-inflatable boat must be constructed of wood, fibre reinforced plastic, aluminium alloy or steel.
- 6.7 The location of the inflatable portions relative to the hull must be such as to minimise loads on the inflatable portions, particularly when the boat is pounding into a sea.
- 6.8 The design and detail of the attachment of the inflatable portions to the rigid hull, particularly in the bow region where the greatest loads occur, must be adequate for the conditions that may be expected in the service in which the boat is to be operated.
- 6.9 Where the inflatable portions are bonded to the rigid hull, the attachment design must be such that the principal loads are taken in shear rather than in peel.
- 6.10 Where the inflatable portions are mechanically fastened to the hull, the attachment design must be consistent with the service loads to which the inflatable portion is subjected, and must minimise any chafing of the inflatable portion fabric and connections to that fabric.
- 6.11 Where the inflatable portions are necessary in order for the boat to meet the buoyancy and stability requirements of this Appendix, the inflatable portions must consist of the minimum total number of separate compartments shown in Table 40A.9, provided that no compartment may exceed 60 percent of the total volume.

Table 40A.9

Maximum Permissible Power	L x B	
	5 to 9	Greater than 9
10hp to 25hp	2	3
Greater than 25hp	3	4

Where L = length in metres
B = breadth in metres

- 6.12 Each inflatable compartment required by 6.11 must be fitted with a non-return valve for manual inflation and with a means of deflation. A pressure relief valve must also be fitted unless a surveyor is satisfied that this is unnecessary.
- 6.13 Where a transom is fitted, it must not be inset by more than 20 percent of the boat's length from aft.
- 6.14 An open boat that in the opinion of a surveyor has inadequate sheer forward must have a raised spray cover, to deflect water, over not less than 15 percent of the boat's length forward.
- 6.15 Places vulnerable to wear on the outside of the inflatable portions must be provided with rubbing strips to the satisfaction of a surveyor.
- 6.16 Patches must be provided for securing any fittings to the inflatable portions.⁴²
- 6.17 Buoyancy, stability, freeboard and passenger numbers for rigid inflatable boats which—
 - (a) are less than 12 metres in length overall; and
 - (b) carry 12 or less passengers; and
 - (c) are not fitted with decks above the hull to which passengers have access;
 must be determined in accordance with the requirements of Annex 1 to this Appendix.
- 6.18 For rigid inflatable boats which—
 - (a) are 12 metres or more in length overall; or
 - (b) carry more than 12 passengers; or
 - (c) are fitted with decks above the hull to which passengers have access;
 the intact stability requirements of Appendix 1 of this Part for a single hull ship carrying more than 50 passengers must be applied. Further, it must be shown that the boat with the entire buoyancy on one side deflated has sufficient residual stability, to meet the damage criteria of rule 40A.13(5).⁴³
- 6.19 Safety equipment must be provided in accordance with the requirements of Appendices 3 and 4. In addition, for boats which proceed more than 5 miles from a safe haven but cannot meet the buoyancy and stability standards required by this Appendix without the inflated portions, the following must be carried—
 - (a) for repairing punctures, a repair kit in a suitable container;⁴⁴ and
 - (b) an efficient manually operated bellows or pump.

⁴² For example painters.

⁴³ The downflooding angle is to be taken as the angle at which there is zero freeboard at any part of the damaged boat.

⁴⁴ It is recommended that a clamp type repair kit be carried on rigid-inflatable boats.

Annex 1 Tests to be carried out on inflatable and rigid-inflatable boats

The following tests, observed by a surveyor, must be carried out on boats to which this Annex applies, when they are floating in still water:

- (1) Stability tests
 - (a) The tests must be carried out with the engine and fuel tank fitted, or replaced with an equivalent mass, and the maximum number of persons permitted to be carried on board, or an equivalent mass of 75 kgs per person.
 - (b) The maximum number of persons to be carried on the boat must be crowded to one side, with half this number seated on the buoyancy tube. This procedure must be repeated with the persons seated on the other side and at each end of the boat. In each case buoyancy must be positive and the surveyor must record the freeboard to the top of the buoyancy tube.
 - (c) Two persons on board the boat must recover a third person from the water into the boat. The third person must feign unconsciousness and have his or her back towards the boat so as not to assist the rescuers. The stability of the boat must remain positive throughout the recovery.⁴⁵
- (2) Damage tests
 - (a) The tests must be carried out with the boat loaded with the maximum number of persons permitted to be carried on the boat. The engine and fuel tank with full fuel must be fitted or replaced by an equivalent mass and all equipment appropriate to the intended use of the boat must be fitted.
 - (b) Tests witnessed by a surveyor must be for the following conditions of simulated damage—
 - (i) with forward buoyancy compartment deflated; and
 - (ii) with the entire buoyancy on one side of the boat deflated.

The tests are successful if, for each condition of simulated damage, the maximum number of persons permitted to be carried is supported within the boat.

- (3) Swamp test
 - (a) It must be demonstrated that an open or partially open boat, when fully swamped, is capable of supporting its full outfit of equipment, the maximum number of persons permitted to be carried on the boat, and a mass equivalent to its engine and full tank of fuel.
 - (b) In the swamped condition, the boat must not be seriously deformed.
 - (c) The boat's drainage system must be demonstrated at the conclusion of the test.
- (4) Freeboard Test

Subject to (5)(b), the freeboard of a post-27 may 2004 boat must not be less than—

 - (a) 300 mm or one half the buoyancy tube diameter, whichever is the larger, measured from the upper surface of the buoyancy tubes; and
 - (b) 250 mm at the lowest part of the transom;

With the boat in the following conditions:⁴⁶

 - (c) carrying all its equipment, engine and a full fuel load, provided that any or all of these may be replaced with an equivalent mass; and

⁴⁵ Each person involved should wear a lifejacket during this test.

⁴⁶ Where fitted, drainage socks may be tied up for this test.

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- (d) carrying all its equipment, engine and a full fuel load and the maximum number of persons permitted to be carried, or replaced with masses equivalent to any or all of these (for persons, an average individual mass of 75 kgs must be used), with the boat trimmed as necessary to represent a normal operating condition.
- (5) New and Existing Boats
- (a) Pre and post 27 May boats must be subject to the above tests, provided that, for standard production types, a surveyor may accept documented evidence of tests of the prototype witnessed by a surveyor. Such documentation must be for a prototype with the same or a greater number of persons, and identical motor, fuel and equipment or greater specification.
 - (b) In the case of an pre-27 May 2004 boat that is unable to meet the minimum freeboards of (4), a surveyor may consider a lesser 'operational freeboard' taking into account the safe operational history of the boat in the operating limits and type of service permitted.

Rule 40A.58, 40A.59, 40A.61

Appendix 7 Anchors and cables

Table 1

Anchors and chain cables for ships of 24 metres or more in length

Equipment Numeral		Stockless Anchors		Stud Link Chain Cable		
Exceeding	Not Exceeding	Number	Weight per Anchor (kgs)	Total Length (m)	Mild Steel Dia(mm)	Special Steel Dia(mm)
50	60	2	120	192.5	12.5	–
60	70	2	140	192.5	12.5	–
70	80	2	160	220	14	12.5
80	90	2	180	220	14	12.5
90	100	2	210	220	16	14
100	110	2	240	220	16	14
110	120	2	270	247.5	17.5	16
120	130	2	300	247.5	17.5	16
130	140	2	340	275	19	17.5
140	150	2	390	275	19	17.5
150	175	2	480	275	22	19
175	205	2	570	302.5	24	20.5
205	240	2	660	302.5	26	22
240	280	2	780	330	28	24
280	320	2	900	357.5	30	26
320	360	2	1020	357.5	32	28
360	400	2	1140	385	34	30
400	450	2	1290	385	36	32
450	500	2	1440	412.5	38	34
500	550	2	1590	412.5	40	34
550	600	2	1740	440	42	36
600	660	2	1920	440	44	38
660	720	2	2100	440	46	40

Table 2(A)
Anchor weights (kgs) for ships operating in offshore waters

L	H													
	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0
8	12	15	18.5	21	<u>24.5</u>	27	31	35						
9	14	17	21	<u>24</u>	28	32	36	41	46					
10	16	19	<u>23.5</u>	27	32	37	42	47	52	59				
11	18	22	26	31	37	42	48	54	61	67.5	75			
12	20	<u>24.5</u>	29	35	41	48	54	62	69.5	77	87	96		
13	22	27	33	40	46.5	53.5	62	70	80.5	90	99.5	110	121	
14	<u>24</u>	30.5	37.5	45	52	61	70	81	91	102	113	124.5	138	148
15	27	35	42	50	59	69	79	91	102	115	128	141	154	167.5
16	31	39	47	56	66	77	90	102	115	129	142	156	171	186
17	35	43	52	63	74	87	100	114	129	143	158	174	190	206
18	39	48	58	70	83	97	111	127	142	158	175	191	210	226
19	43	53	65	78	93	108	124	140	156	175	192	211	227.5	246
20	48	59	72	87.5	103	120	137	154	172.5	191	211	229	248	268
21	53	66	80	97	114	132	149	169	189	208	228	248	269.5	291
22	59	73	90	107	126	144.5	164	185	206	226	247	269.5	292	318
23	65	82	100	118	138	158	180	201	223	244	268	291	318	347
24	72	90	109	130	150	172	195	218	240	264	289	318	343.5	388

Table 2(B)
Anchor weights (kgs) for ships operating in coastal and inshore waters

L	H													
	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0
4			7	10										
5		7	10	12	14									
6	7	10	12	13	15	18								
7	9	11	14	16	18	20	<u>22.5</u>							
8	10	12.5	15	17.5	20	<u>22.5</u>	25	30						
9	12	15	17.5	20	<u>22.5</u>	27.5	30	35	40					
10	14	17	20	<u>22.5</u>	27.5	30	35	40	45	50				
11	15	20	<u>22.5</u>	25	30	35	40	45	50	55	60			
12	17	<u>20</u>	25	30	35	40	45	50	57.5	65	72.5	80		
13	20	25	30	35	40	45	50	60	67.5	75	82.5	90	100	
14	20	25	32.5	37.5	45	50	57.5	67.5	75	85	95	105	115	125
15	<u>22.5</u>	30	35	42.5	50	57.5	65	75	85	95	110	120	130	140
16	25	32.5	40	47.5	55	65	75	85	97.5	110	120	130	140	155
17	30	37.5	45	52.5	62.5	72.5	85	95	110	120	130	145	160	175
18	32.5	40	50	60	70	80	92.5	105	120	130	145	160	175	190
19	35	45	55	65	77.5	90	105	120	130	145	160	175	190	205
20	40	50	60	72.5	85	100	115	130	145	160	175	190	205	225
21	45	55	67.5	80	95	110	125	140	160	175	190	210	225	245
22	50	60	75	90	105	120	135	155	175	190	205	225	245	265
23	55	70	85	100	115	130	150	170	190	205	225	245	265	290
24	60	75	90	110	125	145	165	180	200	220	240	260	285	320

Table 2(C)
Anchor weights (kgs) for ships operating in enclosed waters only

L	H														
	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	
4			6	8											
5		6	8	9.5	11										
6	6	8	9.5	11	12.5	14									
7	7	9	11	12.5	14.5	16	18								
8	8	10.5	12.5	14.5	16.5	18.5	21	23.5							
9	9.5	12	14	16.5	18.5	21.5	24.5	28	31						
10	11	13	16	18.5	21.5	25	28.5	32	35	40					
11	12.5	15	18	21	24.5	28.5	32.5	36	41	45.5	50				
12	13	16.5	20	23.5	28	32.5	36.5	42	46	52	58	64			
13	15	18.5	22.5	27	31.5	36	42	47	53	60	66	73	81.5		
14	17	20.5	25	30.5	35	41.5	47	53	60.5	68	74.5	84.5	<u>92</u>	<u>99</u>	
15	19	23	29	33.5	40	46	53	60.5	68	77	86	<u>94</u>	103	112	
16	21	26	32	37.5	44.5	51.5	59.5	68	77	87	<u>95.5</u>	104.5	114.5	125	
17	23	30.5	35	42.5	49	58	66.5	76	87	<u>95.5</u>	105	116.5	127	138	
18	26.5	32.5	39	47	55.5	64.5	74.5	85.5	<u>96</u>	105	117	128.5	140	151	
19	29	36	44	52	62	72	83.5	<u>96</u>	106	117	129	141	153	164	
20	32.5	40	48	58.5	68.5	81	<u>92</u>	104	115	128	141	153.5	166	180	
21	35.5	44.5	53.5	64.5	76	88.5	100	113	126	138	153	166.5	181	195	
22	40	49	60	71.5	85	<u>96.5</u>	111	124	138	152	165	181	195.5	211	
23	44	54	66.5	79	<u>93</u>	106	120	135	149	163	180	195	211	230	
24	48	60.5	73	88	100	116	131	146	162	175	196	210	229	250	

Notes relating to Tables 2(A), (B) and (C)

1. L is the ship's overall length in metres and H is the height in metres shown in Figure 7.1.
2. Above the underlined figures in Table 2, one anchor is required, below the underlined figure two anchors are required.
3. The weight of anchor is for a ship having a displacement hull. For ships having a planing hull, the weight of anchor in Table 2 may be reduced by 25 percent.
4. The weights given are for stockless anchors with an assumed holding power of 3 times their weight. Where recognised high holding power anchors are carried, a reduction of 30 percent of the specified anchor weight may be permitted. Recognised high holding power anchors are those anchors having a holding power at least double that of stockless anchors.
5. Where a ship is required to carry two anchors of a specified weight, any one anchor may differ by not more than 10 percent from such specified weight, but the total weight of both anchors carried must not be less than twice the specified weight.
6. The weight of the head of a stockless anchor must be at least 60 percent of the total weight of the anchor.

Table 3(A)

Anchor cables - ships operating in offshore and coastal waters

	Anchor Weight (kgs)	Short link chain dia (mm)	Manila rope dia (mm)	Terylene rope dia (mm)	Nylon rope dia (mm)	Plus chain pendant length
Rope may be used instead of chain	Under 8 8-13 13-18 18-25	8 8 8 8	14 16 18 20	12 12 14 16	10 10 11 12	3m chain
One chain must be carried. Rope may be substituted for chain on second anchor	25-32 32-38 38-44 44-51 51-76 76-89 89-100	10 10 10 13 14 14 15	24 24 24 30 34 38 40	16 18 22 24 28 32 34	14 14 16 18 20 22 24	6m chain
Rope not permitted	100-130 130-178 178-226 226-274 274-322 322-370 370-432	15 16 17 19 20 21 21				

Table 3(B)
Anchor cables – ships operating in restricted limits

	Anchor Weight (kgs)	Short link chain dia (mm)	Manila rope dia (mm)	Terylene rope dia (mm)	Nylon rope dia (mm)	Plus chain pendant length	
Rope may be used instead of chain	Under 8	8	14	12	10	3m chain	
	8-13	8	16	12	10		
	13-18	8	18	14	11		
	18-25	8	20	16	12		
		25-38	10	24	18	14	6m chain
		38-44	12	24	22	16	
		44-51	13	28	24	18	
		51-89	14	36	30	22	
		89-100	15	40	34	24	
One chain must be carried. Rope may be substituted for chain on second anchor	100-130	15	48	40	30	9m chain	
	130-178	16	52	46	34		
	178-226	17	56	48	36		
	226-274	19	60	52	38		

Notes relating to tables 3(A) and (B)

1. The chain pendant must be of the table size for short link chain and shackled between rope and anchor.
2. Where a higher holding power anchor is permitted (see Notes, Table 2), the chain or rope used must be that nominated for the weight of the stockless anchor for which the high holding power is specified.
3. For small high holding power anchors, the use of nylon is recommended because of its greater elasticity and breaking strain compared to manila.
4. Where anchor ropes are permitted instead of chain, the use of a chain pendant of tabulated size and length is mandatory. This chain facilitates the anchor shank assuming a horizontal position, hence maximising the holding power of the anchor.

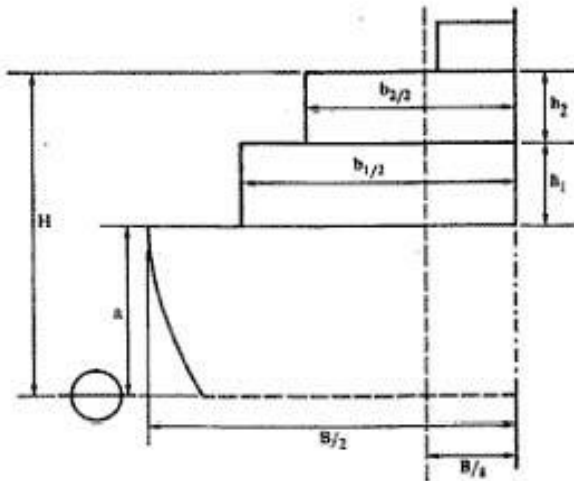
Table 4 Length of anchor cable to be carried

Length overall of Ship (metres)	Length of Cable per Anchor (metres)
4-6	See Notes
7-9	45
10-11	55
12-14	70
15-17	82
18-20	96
21-24	110

Note relating to table 4

For ships of less than 7 metres in length overall a surveyor should have regard to the ship arrangements, and area and nature of operation of the ship in determining the appropriate length of cable to be provided.

Figure 7.1



Appendix 8 - Code of practice for the safety of boats of 6 metres or less engaged in recreational diving operations

1. General

1.1 Definitions

In Appendix 8—

authorised person means a person recognised by the Director, pursuant to rule 40A.65, for the purpose of inspecting commercial recreational diving boats and auditing commercial recreational diving boats operational procedures to establish compliance with the requirements of this Code:

Code means this Code of Practice:

existing boat means any boat that is not a new boat:

new boat means any boat, the construction of which was started on or after the date of entry into force of Part 40A.

1.2 Operating limits

The areas in which a boat is permitted to operate must be shown on the certificate of compliance issued under 18.2 of Appendix 8.

2. Design and construction

2.1 General requirements

- (a) The design and construction of the hull and any house must provide strength and service life for the safe operation of the boat at its maximum service speed, to withstand the sea conditions and weather conditions likely to be encountered in its intended service. Overall and local stresses normally incurred in removing the boat from the water and when carried on a road trailer must be allowed for.
- (b) Provision must be made for the boat to be towed. Towing eyes must be fitted to withstand the forces experienced when the boat is towed at 5 knots in still water. The towing eye must be so positioned that the boat can be towed safely.

2.2 New boats

A new boat must comply with the following requirements:

- (a) an authorised person must be satisfied that the construction of a rigid hulled boat constructed of aluminium alloy or fibre reinforced plastic is suitable for its intended purpose;⁴⁷
- (b) timber used in a rigid hulled boat must be suitable and appropriately treated for use in a marine environment. Exposed plywood must be of a marine grade that complies with the current standard AS/NZS 2272 *Plywood – Marine*. An authorised person must be satisfied that the construction of a timber boat is suitable for its intended purpose:
- (c) on completion, a rigid hulled boat must be tested in the fully loaded condition to ascertain the angle of heel and the position of the waterline that results when all the persons that the boat is certified to carry are assembled along one side of the boat (the helmsman may be assumed to be at the helm). The angle of heel must not exceed 15 degrees, and in the case of a boat with a watertight weather deck,

⁴⁷ Compliance with the New Zealand Power Trailer Boat Manufacturers' Compliance Programme administered by the Boating Industries Association may be accepted as meeting this requirement.

when so heeled, the freeboard to the deck or uppermost surface of the topsides in way of any cockpit must not be less than 75 mm at any point:

- (d) it must comply with rule 40A.13(3):
- (e) for series production boats, the authorised person may accept the results of any of the above tests carried out by a manufacturer and witnessed by an authorised person for a prototype boat, provided the equipment, engine and fuel tank installation are similar:
- (f) inflatable and rigid-inflatable boats must comply with the requirements of Appendix 6:
- (g) for the purposes of the tests required by subclauses (c), (d) and (f), each person carried must be represented by a weight of 75 kgs plus 30 kgs of equipment.

2.3 Existing boats

An existing boat that is in a good state of repair will be considered acceptable if—

- (a) it is built to a standard acceptable to the authorised person for the type and material of the boat; or
- (b) it is constructed in general accordance with the standard of a boat that has a record of at least 5 years history of safe operation in an area where the sea and weather conditions are no less severe than those likely to be encountered in the intended area of operation.

3. Watertight integrity

3.1 Cockpits

Where a cockpit is provided, it must be watertight and self draining. Openings from the cockpit to below deck that are normally opened at sea must have a coaming, the top of which is not less than 150 mm above the sole.

3.2 Openings

Openings in the hull that are used as inlets or discharges below the waterline must be fitted with a seacock, valve or other effective means of closure that is readily accessible in an emergency. An opening for a log or other sensor must be fitted in an efficient, watertight manner.

4. Weathertight integrity

4.1 Openings

- (a) Hatchways that give access to spaces below the weather deck must be of efficient construction and be provided with sufficient means of weathertight closing.
- (b) Openings giving access to spaces below a deck must be provided with a weathertight door or hatch. The door or hatch must be of efficient construction, permanently attached, open outwards, and have efficient means of closing from both sides.
- (c) Doorways and access hatch openings must be wide enough to allow the escape of a person in an emergency.
- (d) Any windscreen or windows must be of heat treated safety glass, polycarbonate or acrylic sheet, or material having similar safety characteristics. Plate glass must not be used. An authorised person must be satisfied that windscreens and windows are securely installed.
- (e) Ventilators must be of efficient construction, with their openings arranged to prevent the ready admission of water.
- (f) Engine exhaust outlets that penetrate the hull below the deck must be provided with means to prevent backflooding into the hull through the exhaust system.

5. Accommodation

5.1 General

A sheltered area must be provided for safe stowage of safety equipment and other equipment that would be adversely affected by the marine environment.

5.2 Enclosed accommodation⁴⁸

- (a) The authorised person must be satisfied that adequate means of escape are provided from any enclosed accommodation space. Provision must be made for stowing gear clear of escape routes.
- (b) The authorised person must be satisfied that enclosed accommodation spaces have lighting and ventilation that is adequate for their intended use.
- (c) Installation of cooking devices must be such as to minimise the risk of fire and explosion. Gas cooking appliances must comply with and be installed in accordance with the current standard *NZS 5428 'Installation and Use of LPG for Non-Propulsion Purposes in Caravans and Boats'*.

6. Machinery

6.1 Outboard motors

- (a) Outboard motors used on the boat must be made by a reputable and experienced manufacturer and the owner must ensure that they are used and installed in accordance with the manufacturer's specifications.
- (b) The total horsepower of outboards installed in the boat must be within the range recommended by the boat manufacturer.
- (c) A new boat fitted with an outboard motor or motors must undergo a test in accordance with Appendix D of the *Australian standard AS 1799.1 – 1992 Small Pleasure boats Code Part 1: General requirements for power boats* to satisfy an authorised person that the boat can manoeuvre safely using its maximum power capacity. Where the prototype of any series production boat has completed such a test to the satisfaction of an authorised person, subsequent boats of that series may be accepted by an authorised person without undertaking that test.

6.2 Inboard engines

- (a) An inboard engine used for propulsion must be of a type designed or manufactured for marine use or marinised for that purpose having regard to its intended use. The propulsion system should be capable of delivering adequate astern power for manoeuvring.
- (b) An authorised person must be satisfied that the engine is in good condition and that the record of maintenance indicates that the engine has been appropriately maintained.
- (c) Associated drive units such as stern drives and jet units must be compatible with the engine torque and revolution limits. The manufacturer's recommendations must be followed in this respect.
- (d) An inboard petrol engine must be located in an enclosed space fitted with a suitable hydrocarbon gas detection device. A fixed gaseous fire extinguishing system capable of discharging into the engine space must also be fitted. Provision must be made to ventilate the space thoroughly before the engine is started.
- (e) The engine space must be arranged so as to permit reasonable access to all items of machinery. Thermal or acoustic insulation fitted in an engine space must be of non-combustible material and protected against impregnation by flammable substances.

⁴⁸ Where toilet facilities are provided, it will be necessary to comply with local and national discharge requirements.

- (f) In a boat constructed of wood, measures must be taken to prevent absorption of oil into the structure within the engine space.

7. Fuel tanks

7.1 Portable tanks

Any portable tank or tanks in which fuel for outboard engines is stowed must be—

- (a) of a type supplied for that purpose by the outboard engine manufacturer; and
- (b) adequately secured in place in an open or well ventilated space where the tank or tanks can be readily jettisoned and any spillage will drain overboard.

7.2 Built-in tanks

- (a) Where a separate fixed-in-place petrol tank is installed, it must be manufactured, tested and installed in accordance with the requirements of rule 40A.33(3).
- (b) Other built-in tanks must be constructed, tested and installed to the satisfaction of the authorised person and generally in accordance with rule 40A.34.

8. Electrical arrangements

8.1 General

- (a) Electrical arrangements must be such as to minimise the risk of fire and shock.
- (b) Overload and short circuit protection must be provided for all circuits, except engine starting circuits supplied from the batteries.

8.2 Batteries

Batteries must be of adequate capacity to carry all expected electrical loads and must not be of less capacity than that recommended by the engine manufacturer. The batteries must be well secured and located—

- (a) above the bilge; and
- (b) as close to the starter motor as practicable; and
- (c) in a well ventilated position.

9. Steering gear

- (1) Every boat must be provided with an efficient and robust means of steering.
- (2) The control position must be located so that the person steering the boat has a clear view for the safe navigation of the boat under all operating conditions.
- (3) When the steering gear is fitted with remote control, arrangements must be made for emergency steering in the event of failure of the control.

10. Bilge pumping

10.1 General

Every boat other than a decked boat must be provided with an efficient means of bailing water from the boat.

10.2 Bilge pumps

- (a) Every decked boat proceeding beyond enclosed water limits must have at least 2 pumps, each capable of removing water from the bilges and any enclosed space below the weather deck that is not a sealed buoyancy space or tank. One of these pumps must be a powered pump.

- (b) Every decked boat that does not proceed beyond enclosed water limits must have one pump capable of removing water from the bilges, which may be a powered or hand pump.

11. Life saving appliances

11.1 Personal buoyancy

- (1) Personal buoyancy must be provided for each person carried.
- (2) Personal buoyancy must be either—
 - (a) a lifejacket having a buoyancy of at least 71 Newtons that complies with rule 42A.19; or
 - (b) a full body wetsuit, if it is worn throughout the voyage.

11.2 Distress signals

Every boat must carry the following distress signals—

- (a) within enclosed water limits, 2 buoyant smoke floats complying with rule 42A.24, and, if operating in hours of darkness, 2 hand flares complying with rule 42A.23;
- (b) within inshore limits, 2 hand flares complying with rule 42A.23 and 2 buoyant smoke floats complying with rule 42A.24.

12. Fire appliances

12.1 General

Every boat must be provided with a bucket or other container that is capable of applying water to a fire and that is acceptable to the authorised person.

12.2 Portable fire extinguishers

A boat fitted with an inboard engine or cooking facility must be provided with one portable fire extinguisher that complies with rule 42B.57 and that is suitable for extinguishing fires associated with these installations.

13. Anchors and warps

13.1 General

- (a) Every boat must carry an anchor and warp that are acceptable to the authorised person, taking into account the boat type, size and area of operation.⁴⁹
- (b) An adequate length of warp must be provided to give at least twice the depth of water anchored in.
- (c) The warp must be suitable for marine purposes and must have not less than 3 metres of chain between warp and anchor.

14. Communications

14.1 General⁵⁰

- (1) Boats that proceed beyond enclosed water limits must be provided with a VHF radio installation capable of transmitting and receiving messages to and from a radio communications centre on land.

⁴⁹ Consideration should be given to more than one anchor for various dive sites, e.g. grapnel for reefs and danforth type for sand.

⁵⁰ The radio installation and any cell phone is to be commensurate with the availability of coverage for the boats intended area of operation.

- (2) Boats that do not proceed beyond enclosed water limits must have at least two means of communicating with the shore in the event of an emergency. The means must be any two of the following—
 - (a) distress signals required by clause 11.2:
 - (b) VHF radio:
 - (c) EPIRB:
 - (d) cell phone.

15. Miscellaneous equipment⁵¹

15.1 General

Every boat must carry at least the following equipment—

- (a) a means of emergency propulsion;⁵² and
- (b) a waterproof torch; and
- (c) spare plugs and bungs; and
- (d) a painter not less than 4 metres long; and
- (e) spare parts and tools as may be necessary for repairs that may be required at sea.

15.2 Specific equipment

- (1) Boats must carry portable oxygen equipment for treating unconscious or conscious patients.⁵³
- (2) An adequate entry/exit ladder or platform for water access must be fitted where, in the opinion of the authorised person, the boat's freeboard necessitates this.
- (3) Each boat must carry an orientation buoy/surface support station for diving operations.
- (4) Each boat must carry a float line for streaming astern to aid diver pickup.
- (5) Boats proceeding beyond enclosed water limits must be provided with a space blanket, or equivalent means for exposure protection and rewarming of hypothermic persons.

16. Protection of personnel

16.1 General

- (1) All boats must have deck surfaces treated with a non-slip finish. Side decks to which persons have access must have a toe rail.
- (2) Handholds must be fitted on houses adjacent to side decks to which persons have access and open boats must have handholds and toeholds that will serve to enhance the safety of persons on board during transit in the worst weather conditions likely to be encountered in service.

17. Safe operation

17.1 Passenger safety

- (1) Before commencing a voyage, the master must brief all passengers on the safety features of the boat and its equipment.⁵⁴

⁵¹ Reference should be made to Appendix 5 of Part 40D for specific equipment required by boats to which this Code applies.

⁵² For example paddles, oars or auxiliary motor.

⁵³ See NZ Underwater Association 'Code of Practice for Commercial Vessels used for Recreational and Occupational Scuba Diving and Related Diving Activities' for recommended amounts of oxygen to be carried.

⁵⁴ This briefing may be part of the orientation presentation required prior to undertaking a diving trip by the NZ Underwater Association "Code of Practice for Commercial Vessels used for Recreational and Occupational Scuba Diving and Related Diving Activities".

- (2) Before commencing a voyage, the master of the boat must ensure that all passengers are adequately clothed, having regard to the prevailing and forecast climatic conditions and the nature of the voyage.

17.2 Safe operational plan

- (1) The owner of any dive boat must provide a safe operational plan that is related to the specific operations of that owner's boat or boats.
- (2) The safe operational plan must include at least the following—
 - (a) a record of initial inspection of the boat (or boats) and the report of the authorised person on the initial inspection and any subsequent inspection; and
 - (b) a planned maintenance schedule for the boat (or boats) and motor (or motors) with a record of work undertaken; and
 - (c) a record of the safety equipment required for the boat (or boats), its maintenance, testing and inspection; and
 - (d) record of certification of each master that is required by Part 31; and
 - (e) operational management procedures, including pre-voyage and post-voyage checks of the boat and its equipment, procedures en route and at the dive site, emergency procedures at the dive site;⁵⁵ and
 - (f) details of contact arrangements with shore and other boats as may be necessary; and
 - (g) accident or emergency procedures, including reporting.⁵⁶
- (3) The safe operational plan must be reviewed by the owner on a regular basis and following any accident. Such reviews must be recorded.
- (4) A safe operational plan must be made available:
 - (a) to the authorised person for the purpose of the initial and periodic audits; and
 - (b) at all reasonable times for inspection by an officer of the Maritime Safety Authority.

18. Inspection, audit and certification

18.1 Initial inspection and audit

- (1) The owner of any dive boat must arrange for an authorised person to inspect the boat and carry out an initial audit of the owner's operation.
- (2) An authorised person performing an inspection of a boat required by Appendix 8 must inspect the boat, its machinery, fittings and equipment for compliance with the requirements of Appendix 8.
- (3) An authorised person performing an initial audit of a boat owner's operation as required by Appendix 8 must audit the operation to establish that a safe operational plan meeting the requirements of Appendix 8, 17.2 is in place and that the operation complies with that plan.
- (4) The owner of any boat to which Appendix 8 applies must ensure that periodic audits of the owner's operation are carried out by the authorised person to determine maintenance of the safe operational plan and continuing compliance with that plan and the requirements of Appendix 8. At least one such audit must occur in every 2 year period.

⁵⁵ Reference should be made to the NZ Underwater Association "Code of Practice for Commercial Vessels used for Recreational and Occupational Scuba Diving and Related Diving Activities" for appropriate procedures in respect of safety and emergency situations at the dive site.

⁵⁶ These procedures should demonstrate how the reporting requirements of sections 30 and 31 of the Maritime Transport Act 1994 are to be complied with.

- (5) On conclusion of any audit, the authorised person must immediately advise the owner, in writing, of any non-compliance likely to compromise the safety of the operation. The owner must take immediate steps to rectify the non-compliance to the satisfaction of the authorised person.

18.2 Certificate of compliance

- (1) On completion of a satisfactory initial boat inspection and a satisfactory initial audit of the owner's operation, and where the safe operational plan complies with the requirements of clause 17.2, the authorised person must approve the safe operational plan and notify the Director accordingly.
- (2) On receipt of notification of approval of the safe operational plan by the authorised person and upon application in accordance with section 35 of the Maritime Transport Act by the owner, the Director may issue to the owner of the boat a certificate of compliance in accordance with section 41 of the Maritime Transport Act 1994.
- (3) *revoked by Maritime (Various Amendments) Rules 2009, Part 21-80, on 30 July 2009*