

Secondary Legislation

Part 3F:

Maritime (Design, Construction, and Equipment – Electrical) Rules [year]

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Subpart A General

Section 1 Preliminary provisions

A1.1 Title

This Part may be cited as Part 3F: Maritime (Design, Construction, and Equipment – Electrical) Rules [year].

A1.2 Commencement and revocation

- (1) This Part comes into force on []
- (2) [List current relevant 40-series Parts/provisions] are revoked.

A1.3 Application

- (1) This Part applies to—
 - (a) the design and construction of New Zealand ships that are commercial ships; and
 - (b) the design, construction, installation, testing, and maintenance of electrical systems, electrical equipment, and electrical fittings installed on those ships; and
 - (c) electrical-related information on those ships.
- (2) This Part does not apply to a ship that any of the following Parts apply to:
 - (a) Part 2A: Maritime (Design, Construction, and Equipment – SOLAS Ships) Rules:¹
 - (b) Part 404: Design, Construction, and Equipment – New Zealand Cape Town Vessels and Foreign Cape Town Vessels:
 - (c) Part 40G: Design, Construction, and Equipment – Novel Ships:
 - (d) Part 40F: Design, Construction, and Equipment – Hovercraft:
 - (e) Part 82: Commercial Jet Boat Operations – River.
- (3) An existing ship must comply with this Part only to the extent specified in the Schedule.

A1.4 Certification

A ship must be certified for compliance with this Part in accordance with Part 1A: Maritime (Design, Construction, and Equipment – Survey and Certification) Rules.²

A1.5 Transitional and savings provisions

The transitional, savings, and related provisions set out in the Schedule have effect according to their terms.

Section 2 Interpretation

A2.1 Conflict

- (1) If a conflict exists between this Part and an MTI, or an MTI made under section 452B of the Act for the purposes of any other Part, this Part applies.
- (2) Nothing in this Part prevents a ship from being fitted with electrical equipment or an electrical system necessary, required, or permitted by any enactment.

A2.2 References to rules and MTIs

- (1) Where a rule in this Part contains a reference to a rule in another Part, that reference includes the Part number as the prefix to the reference.
- (2) A reference, in this Part, to a rule includes any MTI provided for in the rule.

¹ Draft Rule Part 2A to be consulted on in 2026.

² Draft Rule Part 1A and MTI to be consulted on in 2025/26.

- (3) A reference to an MTI in this Part is a reference to an MTI as amended or replaced from time to time.
- (4) A MTI is secondary legislation (see Part 3 of the Legislation Act 2019 for publication requirements).

A2.3 Definitions

In this Part, unless the context otherwise requires—

Act means the Maritime Transport Act 1994

barge means any barge, lighter, or similar ship that has no means of self-propulsion

cargo means all items that are transported by the ship except the following:

- (a) fuel and ballast for the ship (either solid or liquid):
- (b) consumables (including fresh water) to be used on board:
- (c) permanent outfit and equipment of the ship:
- (d) stores and spare gear for the ship:
- (e) crew and their personal baggage, passengers and their personal baggage, and industrial personnel and their personal equipment and personal baggage

Certificate of Survey means a certificate issued by a surveyor under Part 1A: Maritime (Design, Construction, and Equipment – Survey and Certification) Rules

Certificate of Surveyor Recognition has the meaning set out in Part 44: Surveyor Responsibilities and Survey, Certification, and Maintenance for Ships in Maritime Transport Operations

classification society means a classification society specified in an MTI.

[See clause 2.1 of the MTI.](#)

coastal limits has the meaning set out in Part 20: Operating Limits

commencement date means the date specified in rule A1.2

commercial ship has the meaning set out in section 2(1) of the Act

competent person means a person who—

- (a) has the relevant knowledge, experience, and skill to competently carry out a task required or permitted by this Part; and
- (b) as applicable,—
 - (i) has a relevant qualification evidencing the person's possession of that knowledge, experience, and skill; and
 - (ii) is authorised by their employer, if the person is an employee

control station means a space where any of the following are located:

- (a) a ship's radio or main navigating equipment:
- (b) the emergency source of power and emergency switchboard:
- (c) the centralised fire recording or fire control equipment:
- (d) other functions essential to the safe operation of a ship in normal or emergency conditions

crew has the meaning set out in section 2(1) of the Act

DAE surveyor means a design approval surveyor electrical recognised under the Certificate of Recognition as being qualified to evaluate the electrical design of a ship

Director has the meaning set out in section 2(1) of the Act

DSC means digital selective calling, a technique using digital codes, which enables a radio station to establish contact with another station or group of stations, and includes transfer of information to another station or group of stations

electrical equipment means any equipment that uses, or is designed or intended to use, electricity, and includes electrical appliances

electrical fittings mean everything used, designed, or intended for use, in or in connection with the generation, conversion, transformation, conveyance, or use of electricity

electrical installation—

- (a) means all fittings that form part of a system that is used to convey electricity to a point of consumption, or used to generate or store electricity; and
- (b) does not include an electrical appliance or electrical equipment

electrical propulsion equipment means all components of the power supply, control, and drive train in a ship driven by electricity

enclosed water limits has the meaning set out in Part 20: Operating Limits

end of life means—

- (a) the capacity of the battery when fully charged is 80 percent or less of the capacity the battery was rated at when it was new; or
- (b) the voltage discharged by the battery is below a level that equipment connected to the battery can operate at the required output

essential equipment means navigation lights, emergency lighting, radio power and light, electronic control systems and alarms, and electrically powered bilge pumps

existing ship means a ship that—

- (a) is a New Zealand ship on the day before the commencement date; or
- (b) becomes a New Zealand ship on or after the commencement date and holds current certification—
 - (i) confirming the ship was constructed under survey and in accordance with the rules of a classification society; or
 - (ii) from an Australian authority authorised to issue certification in accordance with the Marine Safety (Domestic Commercial Vessel) National Law Act 2012

[Under consideration – see commentary in the Invitation to Comment.](#)

fire detection and fire alarm system means those elements of the construction and equipment of the ship that detect the presence of fire or potential risk of fire and consequently raise an alarm

fixed fire-extinguishing system means an arrangement of components forming a single system that, when manually or automatically initiated, operates automatically to control, suppress or extinguish a fire without the need for further manual control

HF means high frequency, being the frequency spectrum between 3,000 kHz and 30 MHz

inshore limits has the meaning set out in Part 20: Operating Limits

like-for-like in relation to repairs or replacements means—

- (a) the replacement of equipment or materials for equipment or materials that are similar in design, function, use, and maintenance, whether or not they are from the same manufacturer; and
- (b) no additional alteration or modification of existing finishes or fixtures is required to install and occupy the same or similar footprint as the original equipment or materials

LLL means load line length and has the meaning set out in Part 2B: Maritime (Design, Construction, and Equipment – Load Line) Rules³

LOA means the length overall 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

- (b) includes structures such as deckhouses that project beyond those terminal points; and
- (c) does not include fittings such as beltings, bowsprits, platforms, pulpits and booms that project beyond those terminal points

major alteration—

- (a) means an alteration or repair to the design or construction of a ship and its structure, systems, equipment, or fittings, specified in Part 1A: Maritime (Design, Construction, and Equipment – Survey and Certification) Rules; and
- (b) includes the replacement, removal, or addition of non-permanent parts; and
- (c) does not include direct like-for-like repairs or replacements of parts

marine electrical work means—

- (a) connecting or disconnecting electricity supply wiring from electrical equipment, or electricity supply wiring to electrical equipment; and
- (b) installing, removing, adding, testing, replacing, altering, or maintaining electrical equipment or an electrical installation

maritime transport instrument (MTI) means a transport instrument made by the Director for the purposes of this Part or any other Part, under section 452B of the Act

MF means medium frequency being the frequency spectrum between 300 kHz and 3,000 kHz

new ship means—

- (a) that is not an existing ship; or
- (b) a ship, the keel of which is laid or at a similar stage of construction, on or after the commencement date

New Zealand ship has the meaning set out in section 2(1) of the Act

offshore limits has the meaning set out in Part 20: Operating Limits

operate has the meaning set out in section 2(1) of the Act

Part means a group of rules made under the Act

passenger has the meaning set out in section 2(1) of the Act

protective device means a device that detects and responds to abnormal conditions in the electrical energy system, and includes a fuse, a circuit breaker, and a residual current device

restricted limits has the meaning set out in Part 20: Operating Limits

rules has the meaning set out in section 2(1) of the Act

rules of a classification society means the rules published by a classification society for the manufacture, examination, testing, and certifying of the hull, machinery, and electrical components

scope of certification in relation to a ship means the ship's category, activity, type, operating limits, minimum crew, maximum number of passengers on board, maximum number of persons on board, and maximum cargo capacity

³ Draft Rule Part 2B to be consulted on in 2026.

service battery (or 'house battery') means a battery or battery bank with the primary purpose of supplying circuits that are not related to the starting of an internal combustion engine, including circuits relating to lighting and essential equipment

ship has the meaning set out in section 2(1) of the Act

For ease of reference, "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.

standard has the meaning set out in section 4(1) of the Standards and Accreditation Act 2015 and includes other material incorporated by reference under section 452 of the Act

surveyor means a person who holds a valid Certificate of Surveyor Recognition

unlimited area has the meaning set out in Part 20: Operating Limits

valid means—

- (a) in respect of a certificate—
 - (i) the certificate has been issued in accordance with the rules; and
 - (ii) is not expired, lapsed, suspended, or revoked; and
- (b) in respect of an endorsement—
 - (i) the certificate has been endorsed in accordance with the rules; and
 - (ii) the conditions set out in paragraph (a) are met in respect of the applicable certificate; and
 - (iii) the endorsement is not expired or suspended

VHF means very high frequency, being the frequency spectrum between 30 MHz and 300 MHz

VHF coverage area has the meaning set out in Part 3G: Maritime (Design, Construction, and Equipment – Radio Equipment) Rules⁴

voyage has the meaning set out in section 2(1) of the Act and, for the purposes of this Part, a ship that is a barge is not on a voyage if—

- (a) a person is on board only for the purposes of anchoring or securing a mooring line so that the barge can be securely docked; or
- (b) the barge is secured with studs or anchors to the bed of the sea, river, or lake; or
- (c) the barge is secured by means of cables to the wharf or land

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.

⁴ Draft Rule Part 3G and MTI consulted on currently with Rule Part 3F in 2025.

Subpart B Responsibilities

B1.1 General responsibilities of operators to ensure compliance

An operator must ensure that a ship's electrical systems, electrical equipment, and electrical fittings comply with the requirements in this Part.

B1.2 Maintenance, testing, and inspection

An operator must ensure that the electrical systems and electrical equipment on a ship are maintained, tested, and inspected to the satisfaction of a surveyor before—

- (a) entering service (if it is a new ship); and
- (b) re-entering service (if it is a ship that has undergone a major alteration).

B1.3 Major alteration or major change to a ship's operation

An operator must ensure that a ship undergoes the appropriate survey, as specified in Part 1A: Maritime (Design, Construction, and Equipment – Survey and Certification) Rules, if—

- (a) a major alteration is made to the ship; or
- (b) a major change is made to the operation of the ship.

B1.4 Responsibilities of persons carrying out marine electrical work

(1) A person who carries out work on the electrical system of a ship must ensure that—

- (a) the work is safe; and
- (b) the work and the electrical system comply with this Part and a standard specified in an MTI; and
- (c) the electrical system is tested in accordance with the requirements in an MTI; and
- (d) the work complies with electrical design approval if such approval is required for the work.

[See Sections 1, 2, and 3 of the MTI.](#)

(2) A person who carries out the work referred to in subrule (1) must provide to the operator—

- (a) records of any inspections and tests of the ship's electrical system; and
- (b) a written statement confirming that the requirements in subrule (1) and the requirements in an MTI have been complied with.

[Note: The form for the written statement is to be developed.](#)

B1.5 Responsibilities of surveyors

(1) A surveyor must not certify a ship under Part 1A: Maritime (Design, Construction, and Equipment – Survey and Certification) Rules unless they believe, on reasonable grounds, that the ship complies with this Part.

(2) A DA_E surveyor is responsible for evaluating the electrical design of a ship and its equipment to establish whether it—

- (a) is fit for the purposes it is intended for; and
- (b) complies with relevant maritime rules.

Subpart C Ship requirements

Section 1 General requirements for electrical systems and electrical equipment

For the purposes of consultation, references to specific clauses in the MTI are included in boxed under specific enabling clauses.

C1.1 General requirements for electrical systems and electrical equipment

- (1) A ship must comply with the requirements in this Part (including the design, construction, and installation standards specified in an MTI).

See MTI including clause 2.1 and Appendix 1 for existing ships.

Electrical system

- (2) An electrical system on a ship must be capable of safely supplying, controlling, storing, and distributing electrical energy to a ship's systems and equipment during both normal operations and in an emergency.
- (3) An electrical system on a ship must be—
- (a) designed, constructed, installed, and maintained to minimise the risk and propagation of fire; and
 - (b) safe for persons on board; and
 - (c) convenient to operate; and
 - (d) reliable.

Electrical equipment

- (4) Electrical equipment installed on a ship must be appropriate for—
- (a) the intended operation of the ship; and
 - (b) its specific location on the ship.

Existing ships

- (5) An existing ship of less than 45 metres in LOA must comply with rule C1.1(1) to the extent required in the Schedule.

Section 2 Lightning protection system

C2.1 General requirements for lightning protection systems

A lightning protection system, if installed on a ship, must be able to minimise damage to the ship and the possibility of injury or death to persons on board caused by lightning strike.

C2.2 Type and design of lightning protection systems

If installed, a lightning protection system on a ship must comply with a standard specified in an MTI.

See clause 2.2 of the MTI.

Section 3 Alternative source of electrical power

C3.1 General requirements for alternative sources of electrical power

- (1) If a ship is required to have an alternative source of electrical power, in the event of failure of the main source of power, that alternative source must be capable of providing electrical power to essential equipment.

- (2) The means by which the supply of electricity is transferred between the main and alternative sources of electrical power must ensure that a delay in providing power to critical safety systems does not put the ship and the persons on board at risk of harm.

C3.2 Type and design of alternative sources of electrical power

- (1) An alternative source of electrical power must be provided by either an engine-powered generator, or a rechargeable battery or battery bank that complies with Section 9.
- (2) A generator providing an alternative source of electrical power must comply with the engine-powered generator requirements in an MTI.
- (3) If a generator that provides an alternative source of electrical power on a ship is not designed to start and come on load automatically, the ship must have a transitional source of power that complies with the requirements in an MTI if it is—
- (a) carrying passengers within coastal limits, offshore limits, or the unlimited area; or
 - (b) of 24 metres or more in LLL.

[See clause 2.3 of the MTI.](#)

- (4) So that a non-essential circuit may be easily switched off in an emergency, a circuit that provides power to essential equipment must be—
- (a) clearly labelled; and
 - (b) arranged separately at the switchboard.
- (5) On a ship of 12 metres or more in LOA, the alternative electrical system and any control systems, emergency power protection, switchboards, and cables must be electrically and physically separated from the main supply system up to the point where it connects to the equipment being supplied.
- (6) On a ship of less than 12 metres in LOA—
- (a) circuits for the alternative electrical system must be labelled and located on a separate part of the switchboard; and
 - (b) the remaining parts of the main and alternative electrical system must be physically separated.
- (7) A visual indication on a ship must be fitted at the steering position or at a continuously manned control station to show whether electrical power is being provided from the main or the alternative source of power.

C3.3 Minimum duration of alternative source of electrical power

An alternative source of electrical power on a ship must be capable of simultaneously and continuously supplying, for the minimum durations specified in Table 1, all equipment required or permitted by this Part or any enactment, including for—

- (a) navigation lights (Section 4); and
- (b) emergency lighting (Section 5); and
- (c) radio power and light (Section 6); and
- (d) electronic control systems and alarm systems (Section 7); and
- (e) electric bilge pumps specified in Part 3E: Maritime (Design, Construction, and Equipment – Machinery and Ancillary Equipment) Rules.⁵

[See Section 7 of Part 3E and clause 2.3 of the MTI.](#)

⁵ Draft Rule Part 3E and MTI consulted on in 2024.

Table 1: Minimum duration of alternative source of electrical power, including for emergency lighting, radio power and light, electronic control systems, and alarm systems

Operating limit (as defined in Part 20)	Enclosed water limits	Inshore limits/ Inshore fishing limits	Coastal limits	Offshore limits	Unlimited area
Minimum duration of alternative power	2 hours	3 hours	6 hours	12 hours	

Section 4 Navigation lights

C4.1 General requirements for navigation lights

- (1) The installation of navigation lights required on a ship must be arranged to ensure they are exhibited and operate as required under Part 22: Collision Prevention.
- (2) A ship must have both a main and an alternative source of electrical power for its navigation lights subject to subrule (3).
- (3) A ship may be equipped with a second set of battery-operated navigation lights, instead of an alternative source of power to navigation lights, if the ship is less than 12 metres LOA and is operating within—
 - (a) restricted limits; or
 - (b) inshore fishing limits.

C4.2 Type, design, and installation of navigation lights and ancillary equipment

- (1) A navigation light must be individually protected in each non-earthed pole by a circuit breaker that must be mounted on a clearly marked section of a distribution switchboard.
- (2) An LED navigation light must be selected and installed—
 - (a) so it does not interfere with radiocommunication reception; and
 - (b) to ensure that the necessary luminous intensity is maintained at the level required by Part 22: Collision Prevention, and is—
 - (i) only used within the manufacturer's specified lifespan; or
 - (ii) equipped with an alarm function to notify the person on watch that the luminous intensity of the light has reduced below the required level.
- (3) A cable supplying electrical power to a navigation light must be of sufficient size to ensure that the total circuit volt drop from the power source does not exceed 10 percent when measured between the power source and the terminals of the light when it is operating.
- (4) If incandescent lights are used on a ship, the total circuit volt drop must not exceed 3 percent.
- (5) On a ship of 12 metres or more in LOA, a navigation light fitting must have a duplicate lamp where it is not practicable and safe to replace a fitting or a lamp during a voyage.
- (6) On a ship of 12 metres or more in LOA, the distribution switchboard for the navigation light must be accessible to the person on watch.
- (7) On a ship of 24 metres or more in LLL that proceeds beyond restricted limits, a navigation light must be provided with an automatic indicator to provide an audible or visual alert if the light fails.
- (8) As an alternative to providing an alternative source of power to navigation lights, a ship may be equipped with a second set of battery-operated navigation lights for use in an emergency, but only if the ship is less than 12 metres in LOA and is operating within—
 - (a) restricted limits; or
 - (b) inshore fishing limits.

Section 5 Emergency lighting

C5.1 General requirements for emergency lighting

- (1) A ship must have an alternative source of electrical power for emergency lighting.
- (2) Emergency lighting on a ship must be capable of providing sufficient light to assist persons on board to—
 - (a) access essential equipment; and
 - (b) perform tasks necessary for the ongoing safe operation of the ship; and
 - (c) move safely to muster stations; and
 - (d) safely abandon ship.

C5.2 Type, design, and duration of emergency lighting

Emergency lighting equipment

- (1) A new ship of less than 12 metres in LOA may be equipped with fixed battery-operated lamps or a waterproof rechargeable torch as emergency lighting if the ship is operating within—
 - (a) restricted limits; or
 - (b) inshore fishing limits.
- (2) An existing ship may be equipped with fixed battery-operated lamps or a waterproof rechargeable torch as emergency lighting.

Duration of emergency lighting

- (3) A ship must have emergency lighting capable of operating for the minimum durations specified in Table 1.
- (4) A fixed battery-operated lamp or a waterproof rechargeable torch must be provided with a means of charging.

Section 6 Radio power and light

C6.1 General requirements for radio power and light

- (1) A ship that proceeds beyond enclosed water limits must have available, while it is at sea, a source of electrical power capable of—
 - (a) operating the ship's radio installations; and
 - (b) charging batteries used to provide a reserve source of energy for the radio installations.
- (2) The main source of electrical power must be sufficient to effectively operate a ship's radiocommunication equipment under normal operating conditions on the ship.
- (3) In the event of failure of a ship's main source of electrical power, the ship must have available a reserve source of electrical energy that is capable of simultaneously supplying—
 - (a) the radio installations; and
 - (b) an emergency light to illuminate the radio controls, unless the emergency light is provided by a torch or fixed battery-operated lamp in accordance with rule C6.3.
- (4) The reserve source of energy may be—
 - (a) the alternative source of electrical power required by rule C3.1; or
 - (b) an independent rechargeable battery or batteries located above the design waterline.

C6.2 Capacity of the reserve source of energy

- (1) The reserve source of electrical energy described in rule C6.1(3) must have sufficient capacity to supply continuously, for the minimum durations specified in Table 1, a total current equal to the sum of—
 - (a) the current required to operate the VHF radio receiver; and
 - (b) one half of the current required to operate the VHF radio transmitter for the transmission of speech, and DSC where fitted, with the transmitter operating at its full rated frequency output power; and
 - (c) the current required to operate the MF/HF radio receiver, if fitted; and
 - (d) one half of the current required to operate the MF/HF radio transmitter, if fitted, for the transmission of speech, and DSC, where fitted, with the transmitter operating at its full rated radio frequency output power; and
 - (e) the current required to operate the emergency radio light, if applicable; and
 - (f) one third of the current that may be drawn by any other radio installations which may be connected to the source of energy.
- (2) If the reserve source of energy is supplied by the alternative source of electrical power referred to in rule C6.1(4)(a), the capacity of the alternative source of electrical power must be sufficient to—
 - (a) comply with subrule (1); and
 - (b) supply power to all other essential equipment required by rule C3.1 for the minimum durations specified in Table 1.

C6.3 Alternative light to illuminate the radio installation

A ship of less than 12 metres in LOA that operates within the VHF coverage area may be equipped with, as the emergency radio light,—

- (a) an independent battery-operated lamp; or
- (b) a waterproof rechargeable torch.

Section 7 Electronic control systems and alarm systems

C7.1 General requirements for electronic control systems and alarm systems

- (1) If installed, networked and integrated alarm systems, and control and monitoring systems, and their supporting software and hardware, must be designed, manufactured, and installed in accordance with the rules of a classification society.
- (2) The installation of an electronic control system or an alarm system must ensure that, under normal operating conditions and upon failure of main power supply, the electronic control system and alarm system can continue to operate.

C7.2 Type and duration of electronic control systems and alarm systems

- (1) If installed, an electronic control system and an alarm system on a ship, including but not limited to the following, must have an alternative power supply:
 - (a) a control and monitoring system:
 - (b) a battery management or energy management system:
 - (c) a general alarm:
 - (d) a system for broadcasting emergency signals, alarms, or messages to persons on board:
 - (e) a signalling lamp and radar:

- (f) a bilge alarm:
 - (g) a watertight door indicator:
 - (h) a steering monitoring and alarm system:
 - (i) a propulsion control monitoring and alarm system:
 - (j) a fixed fire detection and alarm system:
 - (k) a fixed fire-extinguishing system and activation alarm system.
- (2) The alternative source of electrical power required for an electronic control system and an alarm system on a ship must be capable of supplying power for the minimum durations specified in Table 1.

Section 8 Electrically propelled ships

C8.1 General requirements for electrically propelled ships

- (1) An electrically propelled ship must comply with the relevant requirements in this Part and the requirements in an MTI.
- (2) An electric motor providing a ship's propulsion must comply with the General Requirements for main and auxiliary equipment in Part 3E: Maritime (Design, Construction, and Equipment – Machinery and Ancillary Equipment) Rules.
- (3) An electric propulsion motor and its associated control system, and the battery system providing the source of power, must comply with a standard specified in an MTI.
- (4) The components of electrical propulsion equipment and associated battery systems must be fitted with instrumentation to enable critical parameters to be monitored from each control station.

[See clause 2.4 of the MTI.](#)

Section 9 Batteries and battery installation

C9.1 General requirements for batteries and engines with electric starting arrangements

- (1) Batteries and battery systems on a ship must be designed and installed to ensure that electrical energy supplied by batteries is always available as required by this Part and in an MTI.
- (2) A battery or battery bank on a ship must be provided with a means of being recharged.
- (3) The service battery must have sufficient reserve capacity at end of life to comply with the requirements in this Part and in an MTI.

Battery installation and arrangements

- (4) Batteries on a ship must be—
 - (a) secured against movement in all directions; and
 - (b) installed in containers that are resistant to the effects of electrolyte; and
 - (c) appropriately covered to protect against damage; and
 - (d) sufficiently ventilated to prevent the accumulation of harmful or explosive gases; and
 - (e) protected against overcurrent and short circuit.
- (5) Batteries with different chemistries must be installed in separate compartments.
- (6) It must not be possible to connect batteries of different chemistries.
- (7) A battery on a ship must be provided with overcurrent protection that complies with a standard specified in an MTI.

- (8) Battery installation and arrangements on a ship must comply with the requirements in an MTI.

Batteries used for engine-starting

- (9) A ship that relies solely on electric starting as the means of starting an internal combustion propulsion engine must be provided with 2 batteries or battery banks installed and arranged to permit engine-starting from either battery or battery bank.
- (10) The arrangements of the batteries in subclause (9) must comply with the requirements in an MTI.

Lithium-ion batteries

- (11) The design and installation of a lithium-ion battery must—
- (a) comply with a standard specified in an MTI; and
 - (b) be approved by a DA_E surveyor.
- (12) A compartment containing a lithium-ion battery or battery bank must be ventilated to the exterior of the ship.

[See clause 2.5 of the MTI.](#)

Section 10 Inspections and tests

C10.1 General requirements for inspections and tests

The electrical inspections and tests required in an MTI must be—

- (a) undertaken by a competent person who is experienced in marine electrical work; and
- (b) conducted in accordance with the requirements in an MTI.

[See Section 3 of the MTI.](#)

Section 11 Electrical manual

C11.1 General requirements for electrical manual

- (1) A readily accessible electrical manual must be on a ship of 12 metres or more in LOA.
- (2) The electrical manual must include the following information:
- (a) diagrams identifying the electrical circuits on the ship with the locations of electrical equipment and identification of conductors and protective devices:
 - (b) the location and a description of the functions of electrical controls, dials, switches, fuses, and circuit-breakers:
 - (c) instructions for—
 - (i) operating emergency systems on the ship using the alternative source of electrical power; and
 - (ii) starting the engine using the alternative source of electrical power; and
 - (iii) operating and maintaining the electrical system:
 - (d) any information considered necessary by the DA_E surveyor for the safe and reliable operation of the ship.

Schedule

Transitional, savings, and related provisions

1. Meaning of commencement date

In this Schedule, **commencement date** means the date on which the Part commenced under rule A1.2(1).

2. Application to existing ships

- (1) From the commencement date, an existing ship must comply with the applicable General Requirements in Sections 1 to 11 and other requirements in this Part, subject to subclauses (2) to (6).
- (2) An existing ship of less than 45 metres in LOA must comply with rule C1.1 within 2 years of the commencement date.

[See clause 2.1 and Appendix 1 of the MTI.](#)

- (3) An existing ship must comply with subrules C4.2(2) and (6) and (7) (navigation lights) no later than 5 years from the commencement date.
- (4) An existing ship must comply with the following rules from the ship's first renewal survey after the commencement date or within 5 years of the commencement date:
 - (a) rule C3.1 (alternative source of electrical power):
 - (b) rule C3.2(3) (transitional source of power):
 - (c) rule C3.2(4)(a) (labelling of electrical circuits at switchboard):
 - (d) rule C5.1 (emergency lighting):
 - (e) rule C5.2(3) (duration of emergency lighting):
 - (f) rule C6.1(3) (radio power and light):
 - (g) rule C7.2 (type and duration of electronic control systems and alarm systems).
- (5) A ship that is less than 12 metres in LOA must comply with rule C11.1 (electrical manual) from the ship's first renewal survey after the commencement date or within 5 years of the commencement date.
- (6) An existing ship is not required to comply with the following rules:
 - (a) rule C3.2(4)(b) (separation at the switchboard of circuits for essential equipment):
 - (b) rule C3.2(5) (physical separation of the alternative electrical system):
 - (c) rule C3.2(6) (labelling at the switchboard and physical separation):
 - (d) rule C3.2(7) (visual indication at the steering position):
 - (e) rule C4.2(5) (duplicate lamp):
 - (f) rule C9.1(9) (2 means of engine-starting if the ship's engine relies solely on electric starting).

3. Existing exemptions continued

An exemption granted by the Director under section 40AA of the Act from a requirement that is in force immediately before commencement continues in force on and after commencement and is subject to the same conditions (if any) as applied before commencement.