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Sexta-feira, 11 de Outubro de 2013

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Número 54

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CONSELHO DE MINISTROS:

Decreto nº 2/2013:

Aprova para ratificação as emendas de 2010, à Convenção Internacional sobre Normas de Formação, de Certificação e de Serviços de Quartos para Marítimos STCW/78, bem como o Código de Formação, de Certificação e de Serviço de Quartos para Marítimos, designados como "Emendas de Manila.....1382

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CONSELHO DE MINISTROS

Decreto nº 2/2013

de 11 de Outubro

A Convenção STCW (Standards of Training, Certification and Watchkeeping for Seafarers) estabelece normas de formação, certificação e de serviços de quartos para os marítimos.

A STCW foi objecto de uma segunda revisão em 2010, durante a Conferência Diplomática realizada em Manila, nas Filipinas, tendo ficado conhecida como as Emendas de Manila, das quais resultou uma versão actualizada para responder às exigências do transporte marítimo da actualidade, reforçando a sua componente prioritária de assegurar a manutenção a nível global, dos mais elevados padrões de competência dos marítimos, entendidas como um factor crítico da segurança das tripulações e dos navios e de eficiência da operação do transporte marítimo.

As Emendas de Manila iniciaram o seu processo de entrada em vigor no dia 1 de Janeiro de 2012 de acordo com o calendário de implementação apresentado no final desta edição.

As disposições da Convenção STCW estabelecem uma inter-relação, quer entre os diversos intervenientes, quer nos assuntos que versam, em três áreas essenciais:

- As companhias (ou as empresas de recrutamento);
- A uniformidade dos padrões de competência; e
- Medidas que asseguram a sua implementação e cumprimento por parte dos Estados signatários.

Assim:

No uso da faculdade conferida pela alínea *d*) do n.º 2 do artigo 204.º da Constituição, o Governo decreta o seguinte:

Artigo 1.º

Objecto

São aprovadas para ratificação as emendas de 2010, à Convenção Internacional sobre Normas de Formação, de Certificação e de Serviços de Quartos para Marítimos STCW/78, bem como o Código de Formação, de Certificação e de Serviço de Quartos para Marítimos, designados como "Emendas de Manila", cujos textos adoptados na Conferencia das Partes de 2010 seguem em versão autenticada em inglês, com a respectiva tradução em português, anexos ao presente diploma e dele fazem parte integrante.

Artigo 2.º

Entrada em vigor

O presente diploma entra em vigor no seguinte ao da sua publicação.

Visto e aprovado em Conselho de Ministros de 5 de Setembro de 2013

José Maria Pereira Neves - Sara Maria Duarte Lopes

International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978

THE PARTIES TO THIS CONVENTION,

DESIRING to promote safety of life and property at sea and the protection of the marine environment by establishing in common agreement international standards of training, certification and watchkeeping for seafarers,

Considering that this end may best be achieved by the conclusion of an International Convention on Standards of Training, Certification and Watchkeeping for Seafarers,

HAVE AGREED as follows:

Article I

General obligations under the Convention

(1) The Parties undertake to give effect to the provisions of the Convention and the annex thereto, which shall constitute an integral part of the Convention. Every reference to the Convention constitutes at the same time a reference to the annex.

(2) The Parties undertake to promulgate all laws, decrees, orders and regulations and to take all other steps which may be necessary to give the Convention full and complete effect, so as to ensure that, from the point of view of safety of life and property at sea and the protection of the marine environment, seafarers on board ships are qualified and fit for their duties.

Article II

Definitions

For the purpose of the Convention, unless expressly provided otherwise:

a) Party means a State for which the Convention has entered into force;

b) Administration means the Government of the Party whose flag the ship is entitled to fly;

c) Certificate means a valid document, by whatever name it may be known, issued by or under the authority of the Administration or recognized by the Administration authorizing the holder to serve as stated in this document or as authorized by national regulations;

d) Certificated means properly holding a certificate;

e) Organization means the Inter-Governmental Maritime Consultative Organization (IMCO);[1]

f) Secretary-General means the Secretary-General of the Organization;

g) Seagoing ship means a ship other than those which navigate exclusively in inland waters

[1]The name of the Organization was changed to "International Maritime Organization (IMO)" by virtue of amendments to the Organization's Convention which entered into force on 22 May 1982.

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or in waters within, or closely adjacent to, sheltered waters or areas where port regulations apply;

h) Fishing vessel means a vessel used for catching fish, whales, seals, walrus or other living resources of the sea;

i) Radio Regulations means the Radio Regulations annexed to, or regarded as being annexed to, the most recent International Telecommunication Convention which may be in force at any time.

Article III

Application

The Convention shall apply to seafarers serving on board seagoing ships entitled to fly the flag of a Party except to those serving on board:

a) warships, naval auxiliaries or other ships owned or operated by a State and engaged only on governmental non-commercial service; however, each Party shall ensure, by the adoption of appropriate measures not impairing the operations or operational capabilities of such ships owned or operated by it, that the persons serving on board such ships meet the requirements of the Convention so far as is reasonable and practicable;

b) fishing vessels;

c) pleasure yachts not engaged in trade; or

d) wooden ships of primitive build.

Article IV

Communication of information

(1) The Parties shall communicate as soon as practicable to the Secretary-General:

a) the text of laws, decrees, orders, regulations and instruments promulgated on the various matters within the scope of the Convention;

b) full details, where appropriate, of contents and duration of study courses, together with their national examination and other requirements for each certificate issued in compliance with the Convention;

c) a sufficient number of specimen certificates issued in compliance with the Convention.

(2) The Secretary-General shall notify all Parties of the receipt of any communication under paragraph (1) (a) and, *inter alia*, for the purposes of articles IX and X, shall, on request, provide them with any information communicated to him under paragraphs (1)(b) and (c).

Article V

Other treaties and interpretation

(1) All prior treaties, conventions and arrangements relating to standards of training, certification and watchkeeping for seafarers in force between the Parties shall continue to have full and complete effect during the terms thereof as regards:

a) seafarers to whom this Convention does not apply;

b) seafarers to whom this Convention applies, in respect of matters for which it has not expressly provided.

(2) To the extent, however, that such treaties, conventions or arrangements conflict with the provisions of the Convention, the Parties shall review their commitments under such treaties, conventions and arrangements with a view to ensuring that there is no conflict between these commitments and their obligations under the Convention.

(3) All matters which are not expressly provided for in the Convention remain subject to the legislation of Parties.

(4) Nothing in the Convention shall prejudice the codification and development of the law of the sea by the United Nations Conference on the Law of the Sea convened pursuant to resolution 2750 C(XXV) of the General Assembly of the United Nations, nor the present or future claims and legal views of any State concerning the law of the sea and the nature and extent of coastal and flag State jurisdiction.

Article VI

Certificates

(1) Certificates for masters, officers or ratings shall be issued to those candidate who, to the satisfaction of the Administration, meet the requirements for service, age, medical fitness, training, qualification and examinations in accordance with the appropriate provisions of the annex to the Convention.

(2) Certificates for masters and officers issued in compliance with this article shall be endorsed by the issuing Administration in the form as prescribed in regulation I/2 of the annex. If the language used is not English, the endorsement shall include a translation into that language.

Article VII

Transitional provisions

(1) A certificate of competency or of service in a capacity for which the Convention requires a certificate and which before entry into force of the Convention for a Party is issued in accordance with the laws of that Party or the Radio Regulations shall be recognized as valid for service after entry into force of the Convention for that Party.

(2) After the entry into force of the Convention or a Party, its Administration may continue to issue certificates of competency in accordance with its previous practices for a period not exceeding five years. Such certificates shall be recognized as valid for the purpose of the Convention. During this transitional period such certificates shall be issued only to seafarers who had commenced their sea service before entry into force of the Convention for that Party within the specific ship department to which those

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certificates relate. The Administration shall ensure that all other candidates for certification shall be examined and certificated in accordance with the Convention.

(3) A Party may, within two years after entry into force of the Convention for that Party, issue a certificate of service to seafarers who hold neither an appropriate certificate under the Convention nor a certificate of competency issued under its laws before entry into force of the Convention for that Party but who have:

a) served in the capacity for which they seek a certificate of service for not less than three years at sea within the last seven years preceding entry into force of the Convention for that Party;

b) produced evidence that they have performed that service satisfactorily;

c) satisfied the Administration as to medical fitness, including eyesight and hearing, taking into account their age at the time of application.

For the purpose of the Convention, a certificate of service issued under this paragraph shall be regarded as the equivalent of a certificate issued under the Convention.

Article VIII

Dispensation

(1) In circumstances of exceptional necessary, Administrations, if in their opinion this does not cause danger to persons, property or the environment, may issue a dispensation permitting a specified seafarer to serve in a specified ship for a specified period not exceeding six months in a capacity, other than that of the radio officer or radiotelephone operator, except as provided by the relevant Radio Regulations, for which he does not hold the appropriate certificate, provided that the person to whom the dispensation is issued shall be adequately qualified to fill the vacant post in a safe manner, to the satisfaction of the Administration. However, dispensations shall not be granted to a master or chief engineer officer except in circumstances of *force majeure* and then only for the shortest possible period.

(2) Any dispensation granted for a post shall be granted only to a person properly certificated to fill the post immediately below. Where certification of the post below is not required by the Convention, a dispensation may be issued to a person whose qualification and experience are, in the opinion of the Administration, of a clear equivalence to the requirements for the post to be filled, provided that, if such a person holds no appropriate certificate, he shall be required to pass a test accepted by the Administration as demonstrating that such a dispensation may safely be issued. In addition, Administrations shall ensure that the post in question is filled by the holder of an appropriate certificate as soon as possible.

(3) Parties shall, as soon as possible after 1 January of each year, send a report to the Secretary-General giving information of the total number of dispensations in respect of each capacity for which a certificate is required that have been issued during the year to seagoing ships, together with information as to the numbers of those ships above and below 1,600 gross register tons respectively.

Article IX

Equivalents

(1) The Convention shall not prevent an Administration from retaining or adopting other educational and training arrangements, including those involving seagoing service and shipboard organization especially adapted to technical developments and to special types of ships and trades, provided that the level of seagoing service, knowledge and efficiency as regards navigational and technical handling of ship and cargo ensures a degree of safety at sea and has a preventive effect as regards pollution at least equivalent to the requirements of the Convention.

(2) Details of such arrangements shall be reported as early as practicable to the Secretary-General who shall circulate such particulars to all Parties.

Article X

Control

(1) Ships, except those excluded by article III, are subject, while in the ports of a Party, to control by officers duly authorized by that Party to verify that all seafarers serving on board who are required to be certificated by the Convention are so certificated or hold an appropriate dispensation. Such certificates shall be accepted unless there are clear grounds for believing that a certificate has been fraudulently obtained or that the holder of a certificate is not the person to whom that certificate was originally issued.

(2) In the event that any deficiencies are found under paragraph (1) or under the procedures specified in regulation I/4, "Control procedures", the officer carrying out the control shall forthwith inform, in writing, the master of the ship and the Consul or, in his absence, the nearest diplomatic representative or the maritime authority of the State whose flag the ship is entitled to fly, so that appropriate action may be taken. Such notification shall specify the details of the deficiencies found and the grounds on which the Party determines that these deficiencies pose a danger to persons, property or the environment.

(3) In exercising the control under paragraph (1), if, taking into account the size and type of the ship and the length and nature of the voyage, the deficiencies referred to in paragraph (3) of regulation I/4 are not corrected and it is determined that this fact poses a danger to persons, property or the environment, the Party carrying out the control shall take steps to ensure that the ship will not sail unless and until these requirements are met to the extent that the danger has been removed. The facts concerning the action taken shall be reported promptly to the Secretary-General.

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(4) When exercising control under this article, all possible efforts shall be made to avoid a ship being unduly detained or delayed. If a ship is so detained or delayed it shall be entitled to compensation for any loss or damage resulting therefrom.

(5) This article shall be applied as may be necessary to ensure that no more favourable treatment is given to ships entitled to fly the flag of a non-Party than is given to ships entitled to fly the flag of a Party.

Article XI

Promotion of technical co-operation

(1) Parties to the Convention shall promote, in consultation with, and with the assistance of, the Organization, support for those Parties which request technical assistance for:

a) training of administrative and technical personnel;

b) establishment of institutions for the training of seafarers;

c) supply of equipment and facilities for training institutions;

d) development of adequate training programmes, including practical training on seagoing ships; and

e) facilitation of other measures and arrangements to enhance the qualifications of seafarers;

preferably on a national, sub-regional or regional basis, to further the aims and purposes of the Convention, taking into account the special needs of developing countries in this regard.

(2) On its part, the Organization shall pursue the aforesaid efforts, as appropriate, in consultation or association with other international organizations, particularly the International Labour Organisation.

Article XII

Amendments

(1) The Convention may be amended by either of the following procedures:

a) amendments after consideration within the Organization:

(i) any amendment proposed by a Party shall be submitted to the Secretary-General, who shall then circulate it to all Members of the Organization, all Parties and the Director-General of the International Labour Office at least six months prior to its consideration;

(ii) any amendment so proposed and circulated shall be referred to the Maritime Safety Committee of the Organization for consideration;

(iii) Parties, whether or not Members of the Organization, shall be entitled to participate in the proceedings of the Maritime Safety Committee for consideration and adoption of amendments;

(iv) amendments shall be adopted by a two-thirds majority of the Parties present and voting in the Maritime Safety Committee expanded as provided for in sub-paragraph (a)(iii) (hereinafter referred to as the "expanded Maritime Safety Committee") on condition that at least one third of the Parties shall be present at the time of voting;

(v) amendments so adopted shall be communicated by the Secretary-General to all Parties for acceptance;

(vi) an amendment to an article shall be deemed to have been accepted on the date on which it is accepted by two thirds of the Parties;

(vii) an amendment to the annex shall be deemed to have been accepted:

1. at the end of two years from the date on which it is communicated to the parties for acceptance; or

2. at the end of a different period, which shall be not less than one year, if so determined at the time of its adoption by a two-thirds majority of the Parties present and voting in the expanded Maritime Safety Committee;

however, the amendments shall be deemed not to have been accepted if, within the specified period, either more than one third of Parties or Parties the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant shipping of ships of 100 gross register tons or more notify the Secretary-General that they object to the amendment;

(viii) an amendment to an article shall enter into force with respect to those Parties which have accepted it six months after the date on which it is deemed to have been accepted, and with respect to each Party which accepts it after that date, six months after the date of that Party's acceptance;

(ix) an amendment to the annex shall enter into force with respect to all Parties, except those which have objected to the amendment under sub-paragraph (*a*)(vii) and which have not withdrawn such objections, six months after the date on which it is deemed to have been accepted. Before the date determined for entry into force, any Party may give notice to the Secretary-General that it exempts itself from giving effect to that amendment for a period not longer than one year from the date of its entry into force, or for such longer period as may be determined by a two-thirds majority of the Parties present and voting in the expanded Maritime Safety Committee at the time of the adoption of the amendment; or

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b) amendment by a conference:

(i) upon the request of a Party concurred in by at least one third of the Parties, the Organization shall convene, in association or consultation with the Director-General of the International Labour Office, a conference of Parties to consider amendments to the Convention;

(ii) every amendment adopted by such a conference by a two-thirds majority of the Parties present and voting shall be communicated by the Secretary-General to all Parties for acceptance;

(iii) unless the conference decides otherwise, the amendment shall be deemed to have been accepted and shall enter into force in accordance with the procedures specified in sub-paragraphs (a)(vi) and (a)(viii) or sub-paragraphs (a)(vii) and (a)(ix) respectively, provided that references in these sub-paragraphs to the expanded Maritime Safety Committee shall be taken to mean references to the conference.

(2) Any declaration of acceptance of, or objection to, an amendment or any notice given under paragraph (1) (a)(ix) shall be submitted in writing to the Secretary-General, who shall inform all Parties of any such submission and the date of its receipt.

(3) The Secretary-General shall inform all Parties of any amendments which enter into force, together with the date on which each such amendment enters into force.

Article XIII

Signature, ratification, acceptance, approval and accession

(1) The Convention shall remain open for signature at the Headquarters of the Organization from 1 December 1978 until 30 November 1979 and shall thereafter remain open for accession. Any State may become a Party by:

a) signature without reservation as to ratification, acceptance or approval; or

b) signature subject to ratification, acceptance or approval, followed by ratification, acceptance or approval; or

c) accession.

(2) Ratification, acceptance, approval or accession shall be effected by the deposit of an instrument to that effect with the Secretary-General.

(3) The Secretary-General shall inform all States that have signed the Convention or acceded to it and the Director-General of the International Labour Office of any signature or of the deposit of any instrument of ratification, acceptance, approval or accession and the date of its deposit.

Article XIV

Entry into force

(1) The Convention shall enter into force 12 months after the date on which not less than 25 States, the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant shipping of ships of 100 gross register tons or more, have either signed it without reservation as to ratification, acceptance or approval or deposited the requisite instruments of ratification, acceptance, approval or accession in accordance with article XIII.

(2) The Secretary-General shall inform all States that have signed the Convention or acceded to it of the date on which it enters into force.

(3) Any instrument of ratification, acceptance, approval or accession deposited during the 12 months referred to in paragraph (1) shall take effect on the coming into force of the Convention or three months after the deposit of such instrument, whichever is the later date.

(4) Any instrument of ratification, acceptance, approval or accession deposited after the date on which the Convention enters into force shall take effect three months after the date of deposit.

(5) After the date on which an amendment is deemed to have been accepted under article XII, any instrument of ratification, acceptance, approval or accession deposited shall apply to the Convention as amended.

Article XV

Denunciation

(1) The Convention may be denounced by any Party at any time after five years from the date on which the Convention entered into force for that Party.

(2) Denunciation shall be effected by notification in writing to the Secretary-General who shall inform all other Parties and the Director-General of the International Labour Office of any such notification received and of the date of its receipt as well as the date on which such denunciation takes effect.

(3) A denunciation shall take effect 12 months after receipt of the notification of denunciation by the Secretary-General or after any longer period which may be indicated in the notification.

Article XVI

Deposit and registration

(1) The Convention shall be deposited with the Secretary-General who shall transmit certified true copies thereof to all States that have signed the Convention or acceded to it.

(2) As soon as the Convention enters into force, the Secretary-General shall transmit the text to the Secretary-General of the United Nations for registration and publication, in accordance with Article 102 of the charter of the United Nations.

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Article XVII

Languages

The Convention is established in a single copy in the Chinese, English, French, Russian and Spanish languages, each text being equally authentic. Official translations in the Arabic and German languages shall be prepared and deposited with the signed original.

IN WITNESS WHEREOF the undersigned, being duly authorized by their respective Governments for that purpose, have signed the Convention.[2]

DONE AT LONDON this seventh day of July, one thousand nine hundred and seventy eight.

RESOLUTION 1

MANILA AMENDMENTS TO THE ANNEX TO THE INTERNATIONAL CONVENTION ON STANDARDS OF TRAINING, CERTIFICATION AND WATCHKEEPING FOR SEAFARERS (STCW), 1978

THE 2010 MANILA CONFERENCE,

RECALLING Article XII(1)(b) of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (hereinafter referred to as "the Convention"), concerning the procedure for amendment by a Conference of Parties,

HAVING CONSIDERED amendments to the annex to the Convention proposed and circulated to the Members of the Organization and to all Parties to the Convention,

1. ADOPTS, in accordance with article XII(1)(b)(ii) of the Convention, amendments to the annex to the Convention, the text of which is set out in the annex to the present resolution;

2. DETERMINES, in accordance with article XII(1)(a)(vii) of the Convention, that the amendments annexed hereto shall be deemed to have been accepted on 1 July 2011, unless, prior to that date, more than one third of Parties to the Convention or Parties the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant shipping of ships of 100 gross register tons or more have notified the Secretary-General that they object to the amendments;

3. INVITES Parties to note that, in accordance with article XII(1)(a)(ix) of the Convention, the amendments annexed hereto shall enter into force on 1 January 2012 upon being deemed to have been accepted in accordance with paragraph 2 above;

4. REQUESTS the Secretary-General of the Organization, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Parties to the Convention;

5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its annex to all Members of the Organization which are not Parties to the Convention.

[2]Signatures omitted

ANNEX

THE MANILA AMENDMENTS TO THE ANNEX TO THE INTERNATIONAL CONVENTION ON STANDARDS OF TRAINING, CERTIFICATION AND WATCHKEEPING FOR SEAFARERS, 1978

1 The Annex to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, is replaced by the following:

"ANNEX

CHAPTER I

General provisions

Regulation I/1

Definitions and clarifications

1. For the purpose of the Convention, unless expressly provided otherwise:

.1 *Regulations* means regulations contained in the annex to the Convention;

.2 *Approved* means approved by the Party in accordance with these regulations;

.3 *Master* means the person having command of a ship;

.4 *Officer* means a member of the crew, other than the master, designated as such by national law or regulations or, in the absence of such designation, by collective agreement or custom;

.5 *Deck officer* means an officer qualified in accordance with the provisions of chapter II of the Convention;

.6 *Chief mate* means the officer next in rank to the master and upon whom the command of the ship will fall in the event of the incapacity of the master;

.7 *Engineer officer* means an officer qualified in accordance with the provisions of regulation III/1, III/2 or III/3 of the Convention;

.8 *Chief engineer officer* means the senior engineer officer responsible for the mechanical propulsion and the operation and maintenance of the mechanical and electrical installations of the ship;

.9 *Second engineer officer* means the engineer officer next in rank to the chief engineer officer and upon whom the responsibility for the mechanical propulsion and the operation and maintenance of the mechanical and electrical installations of the ship will fall in the event of the incapacity of the chief engineer officer;

.10 *Assistant engineer officer* means a person under training to become an engineer officer and designated as such by national law or regulations;

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.11 *Radio operator* means a person holding an appropriate certificate issued or recognized by the Administration under the provisions of the Radio Regulations;

.12 *GMDSS radio operator* means a person who is qualified in accordance with the provisions of chapter IV of the Convention;

.13 *Rating* means a member of the ship's crew other than the master or an officer;

.14 *Near-coastal voyages* means voyages in the vicinity of a Party as defined by that Party;

.15 *Propulsion power* means the total maximum continuous rated output power, in kilowatts, of all the ship's main propulsion machinery which appears on the ship's certificate of registry or other official document;

.16 *Radio duties* include, as appropriate, watchkeeping and technical maintenance and repairs conducted in accordance with the Radio Regulations, the International Convention for the Safety of Life at Sea and, at the discretion of each Administration, the relevant recommendations of the Organization;

.17 *Oil tanker* means a ship constructed and used for the carriage of petroleum and petroleum products in bulk;

.18 *Chemical tanker* means a ship constructed or adapted and used for the carriage in bulk of any liquid product listed in chapter 17 of the International Bulk Chemical Code;

.19 *Liquefied gas tanker* means a ship constructed or adapted and used for the carriage in bulk of any liquefied gas or other product listed in chapter 19 of the International Gas Carrier Code;

.20 *Passenger ship* means a ship as defined in the International Convention for the Safety of Life at Sea, 1974, as amended;

.21 *Ro-ro passenger ship* means a passenger ship with ro-ro cargo spaces or special category spaces as defined in the International Convention for the Safety of Life at Sea, 1974, as amended;

.22 *Month* means a calendar month or 30 days made up of periods of less than one month;

.23 *STCW Code* means the Seafarers' Training, Certification and Watchkeeping (STCW) Code as adopted by the 1995 Conference resolution 2, as it may be amended;

.24 *Function* means a group of tasks, duties and responsibilities, as specified in the STCW Code, necessary for ship operation, safety of life at sea or protection of the marine environment;

.25 *Company* means the owner of the ship or any other organization or person such as the manager, or the bareboat charterer, who has assumed the responsibility for operation of the ship from the shipowner and who, on assuming such responsibility, has agreed to take over all the duties and responsibilities imposed on the company by these regulations;

.26 *Seagoing service* means service on board a ship relevant to the issue or revalidation of a certificate or other qualification;

.27 *ISPS Code* means the International Ship and Port Facility Security (ISPS) Code adopted on 12 December 2002, by resolution 2 of the Conference of Contracting Governments to the International Convention for the Safety of Life at Sea (SOLAS), 1974, as may be amended by the Organization;

.28 *Ship security officer* means the person on board the ship, accountable to the master, designated by the Company as responsible for the security of the ship including implementation and maintenance of the ship security plan and liaison with the Company security officer and port facility security officers;

.29 *Security duties* include all security tasks and duties on board ships as defined by chapter XI-2 of the International Convention for the Safety of Life at Sea (SOLAS 1974, as amended) and the International Ship and Port Facility Security (ISPS) Code;

.30 *Certificate of competency* means a certificate issued and endorsed for masters, officers and GMDSS radio operators in accordance with the provisions of chapters II, III, IV or VII of this annex and entitling the lawful holder thereof to serve in the capacity and perform the functions involved at the level of responsibility specified therein;

.31 *Certificate of proficiency* means a certificate, other than a certificate of competency issued to a seafarer, stating that the relevant requirements of training, competencies or seagoing service in the Convention have been met;

.32 *Documentary evidence* means documentation, other than a certificate of competency or certificate of proficiency, used to establish that the relevant requirements of the Convention have been met.

.33 *Electro-technical officer* means an officer qualified in accordance with the provisions of regulation III/6 of the Convention;

.34 *Able seafarer deck* means a rating qualified in accordance with the provisions of regulation II/5 of the Convention;

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.35 *Able seafarer engine* means a rating qualified in accordance with the provisions of regulation III/5 of the Convention;

.36 *Electro-technical rating* means a rating qualified in accordance with the provisions of regulation III/7 of the Convention; and

2 These regulations are supplemented by the mandatory provisions contained in part A of the STCW Code and:

.1 any reference to a requirement in a regulation also constitutes a reference to the corresponding section of part A of the STCW Code;

.2 in applying these regulations, the related guidance and explanatory material contained in part B of the STCW Code should be taken into account to the greatest degree possible in order to achieve a more uniform implementation of the Convention provisions on a global basis;

.3 amendments to part A of the STCW Code shall be adopted, brought into force and take effect in accordance with the provisions of article XII of the Convention concerning the amendment procedure applicable to the annex; and

.4 part B of the STCW Code shall be amended by the Maritime Safety Committee in accordance with its rules of procedure.

3 The references made in article VI of the Convention to "the Administration" and "the issuing Administration" shall not be construed as preventing any Party from issuing and endorsing certificates under the provisions of these regulations.

Regulation I/2

Certificates and endorsements

1 Certificates of competency shall be issued only by the Administration, following verification of the authenticity and validity of any necessary documentary evidence.

2 Certificates issued in accordance with the provisions of regulations V/1-1 and V/1-2 to masters and officers shall only be issued by an Administration.

3 Certificates shall be in the official language or languages of the issuing country. If the language used is not English, the text shall include a translation into that language.

4 In respect of radio operators, Parties may:

.1 include the additional knowledge required by the relevant regulations in the examination for the issue of a certificate complying with the Radio Regulations; or

.2 issue a separate certificate indicating that the holder has the additional knowledge required by the relevant regulations.

5 The endorsement required by article VI of the Convention to attest the issue of a certificate shall only be issued if all the requirements of the Convention have been complied with.

6 At the discretion of a Party, endorsements may be incorporated in the format of the certificates being issued as provided for in section A-I/2 of the STCW Code. If so incorporated, the form used shall be that set forth in section A-I/2, paragraph 1. If issued otherwise, the form of endorsements used shall be that set forth in paragraph 2 of that section.

7 An Administration which recognizes under regulation I/10:

.1 a certificate of competency; or

.2 a certificate of proficiency issued to masters and officers in accordance with the provisions of regulations V/1-1 and V/1-2 shall endorse such certificate to attest its recognition only after ensuring the authenticity and validity of the certificate.

The endorsement shall only be issued if all requirements of the Convention have been complied with. The form of the endorsement used shall be that set forth in paragraph 3 of section A-I/2 of the STCW Code.

8 The endorsements referred to in paragraphs 5, 6 and 7:

.1 may be issued as separate documents;

.2 shall be issued by the Administration only;

.3 shall each be assigned a unique number, except that endorsements attesting the issue of a certificate may be assigned the same number as the certificate concerned, provided that number is unique; and

.4 shall expire as soon as the certificate endorsed expires or is withdrawn, suspended or cancelled by the Party which issued it and, in any case, not more than five years after their date of issue.

9 The capacity in which the holder of a certificate is authorized to serve shall be identified in the form of endorsement in terms identical to those used in the applicable safe manning requirements of the Administration.

10 Administrations may use a format different from the format given in section A-I/2 of the STCW Code, provided that, as a minimum, the required information is provided in Roman characters and Arabic figures, taking into account the variations permitted under section A-I/2.

11 Subject to the provisions of regulation I/10, paragraph 5, any certificate required by the Convention must be kept available in its original form on board the ship on which the holder is serving.

12 Each Party shall ensure that certificates are issued only to candidates who comply with the requirements of this regulation.

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13 Candidates for certification shall provide satisfactory proof:

.1 of their identity;

.2 that their age is not less than that prescribed in the regulation relevant to the certificate applied for;

.3 that they meet the standards of medical fitness specified in section A-I/9 of the STCW Code;

.4 of having completed the seagoing service and any related compulsory training required by these regulations for the certificate applied for; and

.5 that they meet the standards of competence prescribed by these regulations for the capacities, functions and levels that are to be identified in the endorsement to the certificate.

14 Each Party undertakes to maintain a register or registers of all certificates and endorsements for masters, officers, and, as applicable, ratings which are issued, have expired or have been revalidated, suspended, cancelled or reported lost or destroyed and of dispensations issued.

15 Each Party undertakes to make available information on the status of such certificates of competency, endorsements and dispensations to other Parties and companies which request verification of the authenticity and validity of certificates produced to them by seafarers seeking recognition of their certificates under regulation I/10 or employment on board ship.

16 As of 1 January 2017, the information on the status of information required to be available in accordance with paragraph 15 of this regulation shall be made available, in the English language, through electronic means.

Regulation I/3

Principles governing near-coastal voyages

1 Any Party defining near-coastal voyages for the purpose of the Convention shall not impose training, experience or certification requirements on the seafarers serving on board the ships entitled to fly the flag of another Party and engaged on such voyages in a manner resulting in more stringent requirements for such seafarers than for seafarers serving on board ships entitled to fly its own flag. In no case shall any such Party impose requirements in respect of seafarers serving on board ships entitled to fly the flag of another Party in excess of those of the Convention in respect of ships not engaged on near-coastal voyages.

2 A Party that, for ships afforded the benefits of the near-coastal voyage provisions of the Convention, which includes voyages off the coast of other Parties within the limits of their near-coastal definition, shall enter into an undertaking with the Parties concerned specifying the details of both involved trading areas and other relevant conditions.

3 With respect to ships entitled to fly the flag of a Party regularly engaged on near-coastal voyages off the coast of another Party, the Party whose flag the ship is entitled to fly shall prescribe training, experience and certification requirements for seafarers serving on such ships at least equal to those of the Party off whose coast the ship is engaged, provided that they do not exceed the requirements of the Convention in respect of ships not engaged on near-coastal voyages. Seafarers serving on a ship which extends its voyage beyond what is defined as a near-coastal voyage by a Party and enters waters not covered by that definition shall fulfill the appropriate competency requirements of the Convention.

4 A Party may afford a ship which is entitled to fly its flag the benefits of the near-coastal voyage provisions of the Convention when it is regularly engaged off the coast of a non-Party on near-coastal voyages as defined by the Party.

5 The certificates of seafarers issued by a Party for its defined near-coastal voyages limits may be accepted by other Parties for service in their defined near-coastal voyages limits, provided the Parties concerned enter into an undertaking specifying the details of involved trading areas and other relevant conditions thereof.

6 Parties defining near-coastal voyages, in accordance with the requirements of this regulation, shall:

.1 meet the principles governing near-coastal voyages specified in section A-I/3;

.2 communicate to the Secretary-General, in conformity with the requirements of regulation I/7, the details of the provisions adopted; and

.3 incorporate the near-coastal voyages limits in the endorsements issued pursuant to regulation I/2, paragraphs 5, 6 or 7.

7 Nothing in this regulation shall, in any way, limit the jurisdiction of any State, whether or not a Party to the Convention.

Regulation I/4

Control procedures

1 Control exercised by a duly authorized control officer under article X shall be limited to the following:

.1 verification in accordance with article X(1) that all seafarers serving on board who are required to be certificated in accordance with the Convention hold an appropriate certificate or a valid dispensation, or provide documentary proof that an application for an endorsement has been submitted to the Administration in accordance with regulation I/10, paragraph 5;

.2 verification that the numbers and certificates of the seafarers serving on board are in conformity with the applicable safe manning requirements of the Administration; and

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.3 assessment, in accordance with section A-I/4 of the STCW Code, of the ability of the seafarers of the ship to maintain watchkeeping and security standards, as appropriate, as required by the Convention if there are clear grounds for believing that such standards are not being maintained because any of the following have occurred:

.3.1 the ship has been involved in a collision, grounding or stranding, or

.3.2 there has been a discharge of substances from the ship when under way, at anchor or at berth which is illegal under any international convention, or

.3.3 the ship has been manoeuvred in an erratic or unsafe manner whereby routeing measures adopted by the Organization or safe navigation practices and procedures have not been followed, or

.3.4 the ship is otherwise being operated in such a manner as to pose a danger to persons, property, the environment, or a compromise to security.

2 Deficiencies which may be deemed to pose a danger to persons, property or the environment include the following:

.1 failure of seafarers to hold a certificate, to have an appropriate certificate, to have a valid dispensation or to provide documentary proof that an application for an endorsement has been submitted to the Administration in accordance with regulation I/10, paragraph 5;

.2 failure to comply with the applicable safe manning requirements of the Administration;

.3 failure of navigational or engineering watch arrangements to conform to the requirements specified for the ship by the Administration;

.4 absence in a watch of a person qualified to operate equipment essential to safe navigation, safety radiocommunications or the prevention of marine pollution; and

.5 inability to provide, for the first watch at the commencement of a voyage and for subsequent relieving watches, persons who are sufficiently rested and otherwise fit for duty.

3 Failure to correct any of the deficiencies referred to in paragraph 2, in so far as it has been determined by the Party carrying out the control that they pose a danger to persons, property or the environment, shall be the only grounds under article X on which a Party may detain a ship.

Regulation I/5

National provisions

1 Each Party shall establish processes and procedures for the impartial investigation of any reported incompetency, act, omission or compromise to security that may pose a direct threat to safety of life or property at sea or to the marine environment by the holders of certificates or endorsements issued by that Party in connection with their performance of duties related to their certificates and for the withdrawal, suspension and cancellation of such certificates for such cause and for the prevention of fraud.

2 Each Party shall take and enforce appropriate measures to prevent fraud and other unlawful practices involving certificates and endorsements issued.

3 Each Party shall prescribe penalties or disciplinary measures for cases in which the provisions of its national legislation giving effect to the Convention are not complied with in respect of ships entitled to fly its flag or of seafarers duly certificated by that Party.

4 In particular, such penalties or disciplinary measures shall be prescribed and enforced in cases in which:

.1 a company or a master has engaged a person not holding a certificate as required by the Convention;

.2 a master has allowed any function or service in any capacity required by these regulations to be performed by a person holding an appropriate certificate to be performed by a person not holding the required certificate, a valid dispensation or having the documentary proof required by regulation I/10, paragraph 5; or

.3 a person has obtained by fraud or forged documents an engagement to perform any function or serve in any capacity required by these regulations to be performed or filled by a person holding a certificate or dispensation.

5 A Party, within whose jurisdiction there is located any company which, or any person who, is believed on clear grounds to have been responsible for, or to have knowledge of, any apparent non-compliance with the Convention specified in paragraph 4, shall extend all co-operation possible to any Party which advises it of its intention to initiate proceedings under its jurisdiction.

Regulation I/6

Training and assessment

Each Party shall ensure that:

.1 the training and assessment of seafarers, as required under the Convention, are administered, supervised and monitored in accordance with the provisions of section A-I/6 of the STCW Code; and

.2 those responsible for the training and assessment of competence of seafarers, as required under the Convention, are appropriately qualified in accordance with the provisions of section A-I/6 of the STCW Code for the type and level of training or assessment involved.

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Regulation I/7

Communication of information

1 In addition to the information required to be communicated by article IV, each Party shall provide to the Secretary-General, within the time periods prescribed and in the format specified in section A-I/7 of the STCW Code, such other information as may be required by the Code on other steps taken by the Party to give the Convention full and complete effect.

2 When complete information as prescribed in article IV and section A-I/7 of the STCW Code has been received and such information confirms that full and complete effect is given to the provisions of the Convention, the Secretary-General shall submit a report to this effect to the Maritime Safety Committee.

3 Following subsequent confirmation by the Maritime Safety Committee, in accordance with procedures adopted by the Committee, that the information which has been provided demonstrates that full and complete effect is given to the provisions of the Convention:

.1 the Maritime Safety Committee shall identify the Parties so concerned;

.2 review the list of Parties which communicated information that demonstrated that they give full and complete effect to the relevant provisions of the Convention, to retain in this list only the Parties so concerned; and

.3 other Parties shall be entitled, subject to the provisions of regulations I/4 and I/10, to accept, in principle, that certificates issued by or on behalf of the Parties identified in paragraph 3.1 are in compliance with the Convention.

4 Amendments to the Convention and STCW Code, with dates of entry into force later than the date information has been, or will be, communicated to the Secretary-General in accordance with the provisions of paragraph 1, are not subject to the provisions of section A-I/7, paragraphs 1 and 2.

Regulation I/8

Quality standards

1 Each Party shall ensure that:

.1 in accordance with the provisions of section A-I/8 of the STCW Code, all training, assessment of competence, certification, including medical certification, endorsement and revalidation activities carried out by non-governmental agencies or entities under its authority are continuously monitored through a quality standards system to ensure achievement of defined objectives, including those concerning the qualifications and experience of instructors and assessors; and

.2 where governmental agencies or entities perform such activities, there shall be a quality standards system.

2 Each Party shall also ensure that an evaluation is periodically undertaken, in accordance with the provisions of section A-I/8 of the STCW Code, by qualified persons who are not themselves involved in the activities concerned. This evaluation shall include all changes to national regulations and procedures in compliance with the amendments to the Convention and STCW Code, with dates of entry into force later than the date information was communicated to the Secretary-General.

3 A report containing the results of the evaluation required by paragraph 2 shall be communicated to the Secretary-General in accordance with the format specified in section A-I/7 of the STCW Code.

Regulation I/9

Medical standards

1 Each Party shall establish standards of medical fitness for seafarers and procedures for the issue of a medical certificate in accordance with the provisions of this regulation and of section A-I/9 of the STCW Code.

2 Each Party shall ensure that those responsible for assessing the medical fitness of seafarers are medical practitioners recognized by the Party for the purpose of seafarer medical examinations, in accordance with the provisions of section A-I/9 of the STCW Code.

3 Every seafarer holding a certificate issued under the provisions of the Convention, who is serving at sea, shall also hold a valid medical certificate issued in accordance with the provisions of this regulation and of section A-I/9 of the STCW Code.

4 Every candidate for certification shall:

.1 be not less than 16 years of age;

.2 provide satisfactory proof of his/her identity; and

.3 meet the applicable medical fitness standards established by the Party.

5 Medical certificates shall remain valid for a maximum period of two years unless the seafarer is under the age of 18, in which case the maximum period of validity shall be one year.

6 If the period of validity of a medical certificate expires in the course of a voyage, then the medical certificate shall continue in force until the next port of call where a medical practitioner recognized by the Party is available, provided that the period shall not exceed three months.

7 In urgent cases the Administration may permit a seafarer to work without a valid medical certificate until the next port of call where a medical practitioner recognized by the Party is available, provided that:

.1 the period of such permission does not exceed three months; and

.2 the seafarer concerned is in possession of an expired medical certificate of recent date.

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Regulation I/10

Recognition of certificates

1 Each Administration shall ensure that the provisions of this regulation are complied with, in order to recognize, by endorsement in accordance with regulation I/2, paragraph 7, a certificate issued by or under the authority of another Party to a master, officer or radio operator and that:

.1 the Administration has confirmed, through an evaluation of that Party, which may include inspection of facilities and procedures, that the requirements of the Convention regarding standards of competence, training and certification and quality standards are fully complied with; and

.2 an undertaking is agreed with the Party concerned that prompt notification will be given of any significant change in the arrangements for training and certification provided in compliance with the Convention.

2 Measures shall be established to ensure that seafarers who present, for recognition, certificates issued under the provisions of regulations II/2, III/2 or III/3, or issued under VII/1 at the management level, as defined in the STCW Code, have an appropriate knowledge of the maritime legislation of the Administration relevant to the functions they are permitted to perform.

3 Information provided and measures agreed upon under this regulation shall be communicated to the Secretary-General in conformity with the requirements of regulation I/7.

4 Certificates issued by or under the authority of a non-Party shall not be recognized.

5 Notwithstanding the requirement of regulation I/2, paragraph 7, an Administration may, if circumstances require, subject to the provisions of paragraph 1, allow a seafarer to serve for a period not exceeding three months on board a ship entitled to fly its flag, while holding an appropriate and valid certificate issued and endorsed as required by another Party for use on board that Party's ships but which has not yet been endorsed so as to render it appropriate for service on board ships entitled to fly the flag of the Administration. Documentary proof shall be readily available that application for an endorsement has been submitted to the Administration.

6 Certificates and endorsements issued by an Administration under the provisions of this regulation in recognition of, or attesting the recognition of, a certificate issued by another Party shall not be used as the basis for further recognition by another Administration.

Regulation I/11

Revalidation of certificates

1 Every master, officer and radio operator holding a certificate issued or recognized under any chapter of the Convention other than chapter VI, who is serving at sea or intends to return to sea after a period ashore, shall, in order to continue to qualify for seagoing service, be required, at intervals not exceeding five years, to:

.1 meet the standards of medical fitness prescribed by regulation I/9; and

.2 establish continued professional competence in accordance with section A-I/11 of the STCW Code.

2 Every master, officer and radio operator shall, for continuing seagoing service on board ships for which special training requirements have been internationally agreed upon, successfully complete approved relevant training.

3 Every master and officer shall, for continuing seagoing service on board tankers, meet the requirements in paragraph 1 of this regulation and be required, at intervals not exceeding five years, to establish continued professional competence for tankers in accordance with section A-I/11, paragraph 3 of the STCW Code.

4 Each Party shall compare the standards of competence which it required of candidates for certificates issued before 1 January 2017 with those specified for the appropriate certificate in part A of the STCW Code, and shall determine the need for requiring the holders of such certificates to undergo appropriate refresher and updating training or assessment.

5 The Party shall, in consultation with those concerned, formulate or promote the formulation of a structure of refresher and updating courses as provided for in section A-I/11 of the STCW Code.

6 For the purpose of updating the knowledge of masters, officers and radio operators, each Administration shall ensure that the texts of recent changes in national and international regulations concerning the safety of life at sea, security and the protection of the marine environment are made available to ships entitled to fly its flag.

Regulation I/12

Use of simulators

1 The performance standards and other provisions set forth in section A-I/12 and such other requirements as are prescribed in part A of the STCW Code for any certificate concerned shall be complied with in respect of:

.1 all mandatory simulator-based training;

.2 any assessment of competency required by part A of the STCW Code which is carried out by means of a simulator; and

.3 any demonstration, by means of a simulator, of continued proficiency required by part A of the STCW Code.

Regulation I/13

Conduct of trials

1 These regulations shall not prevent an Administration from authorizing ships entitled to fly its flag to participate in trials.

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2 For the purposes of this regulation, the term *trial* means an experiment or series of experiments, conducted over a limited period, which may involve the use of automated or integrated systems in order to evaluate alternative methods of performing specific duties or satisfying particular arrangements prescribed by the Convention, which would provide at least the same degree of safety and pollution prevention as provided by these regulations.

3 The Administration authorizing ships to participate in trials shall be satisfied that such trials are conducted in a manner that provides at least the same degree of safety and pollution prevention as provided by these regulations. Such trials shall be conducted in accordance with guidelines adopted by the Organization.

4 Details of such trials shall be reported to the Organization as early as practicable but not less than six months before the date on which the trials are scheduled to commence. The Organization shall circulate such particulars to all Parties.

5 The results of trials authorized under paragraph 1, and any recommendations the Administration may have regarding those results, shall be reported to the Organization, which shall circulate such results and recommendations to all Parties.

6 Any Party having any objection to particular trials authorized in accordance with this regulation should communicate such objection to the Organization as early as practicable. The Organization shall circulate details of the objection to all Parties.

7 An Administration which has authorized a trial shall respect objections received from other Parties relating to such trial by directing ships entitled to fly its flag not to engage in a trial while navigating in the waters of a coastal State which has communicated its objection to the Organization.

8 An Administration which concludes, on the basis of a trial, that a particular system will provide at least the same degree of safety and pollution prevention as provided by these regulations may authorize ships entitled to fly its flag to continue to operate with such a system indefinitely, subject to the following requirements:

.1 the Administration shall, after results of the trial have been submitted in accordance with paragraph 5, provide details of any such authorization, including identification of the specific ships which may be subject to the authorization, to the Organization, which will circulate this information to all Parties;

.2 any operations authorized under this paragraph shall be conducted in accordance with any guidelines developed by the Organization, to the same extent as they apply during a trial;

.3 such operations shall respect any objections received from other Parties in accordance with paragraph 7, to the extent such objections have not been withdrawn; and

.4 an operation authorized under this paragraph shall only be permitted pending a determination by the Maritime Safety Committee as to whether an amendment to the Convention would be appropriate, and, if so, whether the operation should be suspended or permitted to continue before the amendment enters into force.

9 At the request of any Party, the Maritime Safety Committee shall establish a date for the consideration of the trial results and for the appropriate determinations.

Regulation I/14

Responsibilities of companies

1 Each Administration shall, in accordance with the provisions of section A-I/14, hold companies responsible for the assignment of seafarers for service in their ships in accordance with the provisions of the present Convention, and shall require every such company to ensure that:

.1 each seafarer assigned to any of its ships holds an appropriate certificate in accordance with the provisions of the Convention and as established by the Administration;

.2 its ships are manned in compliance with the applicable safe manning requirements of the Administration;

.3 seafarers assigned to any of its ships have received refresher and updating training as required by the Convention;

.4 documentation and data relevant to all seafarers employed on its ships are maintained and readily accessible, and include, without being limited to, documentation and data on their experience, training, medical fitness and competency in assigned duties;

.5 seafarers, on being assigned to any of its ships, are familiarized with their specific duties and with all ship arrangements, installations, equipment, procedures and ship characteristics that are relevant to their routine or emergency duties;

.6 the ship's complement can effectively coordinate their activities in an emergency situation and in performing functions vital to safety, security and to the prevention or mitigation of pollution; and

.7 at all times on board its ships there shall be effective oral communication in accordance with chapter V, regulation 14, paragraphs 3 and 4 of the SOLAS Convention.

Regulation I/15

Transitional provisions

1 Until 1 January 2017, a Party may continue to issue, recognize and endorse certificates in accordance with the

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provisions of the Convention which applied immediately prior to 1 January 2012 in respect of those seafarers who commenced approved seagoing service, an approved education and training programme or an approved training course before 1 July 2013.

2 Until 1 January 2017, a Party may continue to renew and revalidate certificates and endorsements in accordance with the provisions of the Convention which applied immediately prior to 1 January 2012.

CHAPTER II

Master and deck department

Regulation II/1

Mandatory minimum requirements for certification of officers in charge of a navigational watch on ships of 500 gross tonnage or more

1 Every officer in charge of a navigational watch serving on a seagoing ship of 500 gross tonnage or more shall hold a certificate of competency.

2 Every candidate for certification shall:

.1 be not less than 18 years of age;

.2 have approved seagoing service of not less than 12 months as part of an approved training programme which includes onboard training that meets the requirements of section A-II/1 of the STCW Code and is documented in an approved training record book, or otherwise have approved seagoing service of not less than 36 months;

.3 have performed, during the required seagoing service, bridge watchkeeping duties under the supervision of the master or a qualified officer for a period of not less than six months;

.4 meet the applicable requirements of the regulations in chapter IV, as appropriate, for performing designated radio duties in accordance with the Radio Regulations;

.5 have completed approved education and training and meet the standard of competence specified in section A-II/1 of the STCW Code; and

.6 meet the standards of competence specified in section A-VI/1, paragraph 2, section A-VI/2, paragraphs 1 to 4, section A-VI/3, paragraphs 1 to 4 and section A-VI/4, paragraphs 1 to 3 of the STCW Code.

Regulation II/2

Mandatory minimum requirements for certification of masters and chief mates on ships of 500 gross tonnage or more

Master and chief mate on ships of 3,000 gross tonnage or more

1 Every master and chief mate on a seagoing ship of 3,000 gross tonnage or more shall hold a certificate of competency.

2 Every candidate for certification shall:

.1 meet the requirements for certification as an officer in charge of a navigational watch on ships of 500 gross tonnage or more and have approved seagoing service in that capacity:

.1.1 for certification as chief mate, not less than 12 months, and

.1.2 for certification as master, not less than 36 months; however, this period may be reduced to not less than 24 months if not less than 12 months of such seagoing service has been served as chief mate; and

.2 have completed approved education and training and meet the standard of competence specified in section A-II/2 of the STCW Code for masters and chief mates on ships of 3,000 gross tonnage or more.

Master and chief mate on ships of between 500 and 3,000 gross tonnage

3 Every master and chief mate on a seagoing ship of between 500 and 3,000 gross tonnage shall hold a certificate of competency.

4 Every candidate for certification shall:

.1 for certification as chief mate, meet the requirements of an officer in charge of a navigational watch on ships of 500 gross tonnage or more;

.2 for certification as master, meet the requirements of an officer in charge of a navigational watch on ships of 500 gross tonnage or more and have approved seagoing service of not less than 36 months in that capacity; however, this period may be reduced to not less than 24 months if not less than 12 months of such seagoing service has been served as chief mate; and

.3 have completed approved training and meet the standard of competence specified in section A-II/2 of the STCW Code for masters and chief mates on ships of between 500 and 3,000 gross tonnage.

Regulation II/3

Mandatory minimum requirements for certification of officers in charge of a navigational watch and of masters on ships of less than 500 gross tonnage

Ships not engaged on near-coastal voyages

1 Every officer in charge of a navigational watch serving on a seagoing ship of less than 500 gross tonnage not engaged on near-coastal voyages shall hold a certificate of competency for ships of 500 gross tonnage or more.

2 Every master serving on a seagoing ship of less than 500 gross tonnage not engaged on near-coastal voyages shall hold a certificate of competency for service as master on ships of between 500 and 3,000 gross tonnage.

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Ships engaged on near-coastal voyages

Officer in charge of a navigational watch

3 Every officer in charge of a navigational watch on a seagoing ship of less than 500 gross tonnage engaged on near-coastal voyages shall hold a certificate of competency.

4 Every candidate for certification as officer in charge of a navigational watch on a seagoing ship of less than 500 gross tonnage engaged on near-coastal voyages shall:

.1 be not less than 18 years of age;

.2 have completed:

.2.1 special training, including an adequate period of appropriate seagoing service as required by the Administration, or

.2.2 approved seagoing service in the deck department of not less than 36 months;

.3 meet the applicable requirements of the regulations in chapter IV, as appropriate, for performing designated radio duties in accordance with the Radio Regulations;

.4 have completed approved education and training and meet the standard of competence specified in section A-II/3 of the STCW Code for officers in charge of a navigational watch on ships of less than 500 gross tonnage engaged on near-coastal voyages; and

.5 meet the standard of competence specified in section A-VI/1, paragraph 2, section A-VI/2, paragraphs 1 to 4, section A-VI/3, paragraphs 1 to 4 and section A-VI/4, paragraphs 1 to 3 of the STCW Code.

Master

5 Every master serving on a seagoing ship of less than 500 gross tonnage engaged on near-coastal voyages shall hold a certificate of competency.

6 Every candidate for certification as master on a seagoing ship of less than 500 gross tonnage engaged on near-coastal voyages shall:

.1 be not less than 20 years of age;

.2 have approved seagoing service of not less than 12 months as officer in charge of a navigational watch;

.3 have completed approved education and training and meet the standard of competence specified in section A-II/3 of the STCW Code for masters on ships of less than 500 gross tonnage engaged on near-coastal voyages; and

.4 meet the standard of competence specified in section A-VI/1, paragraph 2, section A-VI/2, paragraphs 1 to 4, section A-VI/3, paragraphs 1 to 4 and section A-VI/4, paragraphs 1 to 3 of the STCW Code.

Exemptions

7 The Administration, if it considers that a ship's size and the conditions of its voyage are such as to render the application of the full requirements of this regulation and section A-II/3 of the STCW Code unreasonable or impracticable, may to that extent exempt the master and the officer in charge of a navigational watch on such a ship or class of ships from some of the requirements, bearing in mind the safety of all ships which may be operating in the same waters.

Regulation II/4

Mandatory minimum requirements for certification of ratings forming part of a navigational watch[3]

1 Every rating forming part of a navigational watch on a seagoing ship of 500 gross tonnage or more, other than ratings under training and ratings whose duties while on watch are of an unskilled nature, shall be duly certificated to perform such duties.

2 Every candidate for certification shall:

.1 be not less than 16 years of age;

.2 have completed:

.2.1 approved seagoing service including not less than six months of training and experience, or

.2.2 special training, either pre-sea or on board ship, including an approved period of seagoing service which shall not be less than two months; and

.3 meet the standard of competence specified in section A-II/4 of the STCW Code.

3 The seagoing service, training and experience required by subparagraphs 2.2.1 and 2.2.2 shall be associated with navigational watchkeeping functions and involve the performance of duties carried out under the direct supervision of the master, the officer in charge of the navigational watch or a qualified rating.

Regulation II/5

Mandatory minimum requirements for certification of ratings as able seafarer deck

1 Every able seafarer deck serving on a seagoing ship of 500 gross tonnage or more shall be duly certificated.

2 Every candidate for certification shall:

.1 be not less than 18 years of age;

.2 meet the requirements for certification as a rating forming part of a navigational watch;

.3 while qualified to serve as a rating forming part of a navigational watch, have approved seagoing service in the deck department of:

.3.1 not less than 18 months, or

.3.2 not less than 12 months and have completed approved training; and

.4 meet the standard of competence specified in section A-II/5 of the STCW Code.

[3]These requirements are not those for certification of Able Seamen as contained in the ILO Certification of Able Seamen Convention, 1946, or any subsequent convention.

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3 Every Party shall compare the standards of competence which it required of Able Seamen for certificates issued before 1 January 2012 with those specified for the certificate in section A-II/5 of the STCW Code, and shall determine the need, if any, for requiring these personnel to update their qualifications.

4 Until 1 January 2012, a Party which is also a Party to the International Labour Organization Certification of Able Seamen Convention, 1946 (No. 74) may continue to issue, recognize and endorse certificates in accordance with the provisions of the aforesaid convention.

5 Until 1 January 2017, a Party which is also a Party to the International Labour Organization Certification of Able Seamen Convention, 1946 (No. 74) may continue to renew and revalidate certificates and endorsements in accordance with the provisions of the aforesaid convention.

6 Seafarers may be considered by the Party to have met the requirements of this regulation if they have served in a relevant capacity in the deck department for a period of not less than 12 months within the last 60 months preceding the entry into force of this regulation for that Party.

CHAPTER III

Engine department

Regulation III/1

Mandatory minimum requirements for certification of officers in charge of an engineering watch in a manned engine-room or designated duty engineers in a periodically unmanned engine-room

1 Every officer in charge of an engineering watch in a manned engine-room or designated duty engineer officer in a periodically unmanned engine-room on a seagoing ship powered by main propulsion machinery of 750 kW propulsion power or more shall hold a certificate of competency.

2 Every candidate for certification shall:

.1 be not less than 18 years of age;

.2 have completed combined workshop skill training and an approved seagoing service of not less than 12 months as part of an approved training programme which includes onboard training that meets the requirements of section A-III/1 of the STCW Code and is documented in an approved training record book, or otherwise have completed combined workshop skill training and an approved seagoing service of not less than 36 months of which not less than 30 months will be seagoing service in the engine department;

.3 have performed, during the required seagoing service, engine-room watchkeeping duties under the supervision of the chief engineer officer or a qualified engineer officer for a period of not less than six months;

.4 have completed approved education and training and meet the standards of competence specified in section A-III/1 of the STCW Code; and

.5 meet the standards of competence specified in section A-VI/1, paragraph 2, section A-VI/2, paragraphs 1 to 4, section A-VI/3, paragraphs 1 to 4 and section A-VI/4, paragraphs 1 to 3 of the STCW Code.

Regulation III/2

Mandatory minimum requirements for certification of chief engineer officers and second engineer officers on ships powered by main propulsion machinery of 3,000 kW propulsion power or more

1 Every chief engineer officer and second engineer officer on a seagoing ship powered by main propulsion machinery of 3,000 kW propulsion power or more shall hold a certificate of competency.

2 Every candidate for certification shall:

.1 meet the requirements for certification as an officer in charge of an engineering watch on seagoing ships powered by main propulsion machinery of 750 kW propulsion power or more and have approved seagoing service in that capacity:

.1.1 for certification as second engineer officer, not less than 12 months as qualified engineer officer, and

.1.2 for certification as chief engineer officer, not less than 36 months: however, this period may be reduced to not less than 24 months if not less than 12 months of such seagoing service has been served as second engineer officer; and

.2 have completed approved education and training and meet the standard of competence specified in section A-III/2 of the STCW Code.

Regulation III/3

Mandatory minimum requirements for certification of chief engineer officers and second engineer officers on ships powered by main propulsion machinery of between 750 kW and 3,000 kW propulsion power

1 Every chief engineer officer and second engineer officer on a seagoing ship powered by main propulsion machinery of between 750 kW and 3,000 kW propulsion power shall hold a certificate of competency.

2 Every candidate for certification shall:

.1 meet the requirements for certification as an officer in charge of an engineering watch and:

.1.1 for certification as second engineer officer, shall have not less than 12 months of approved seagoing service as assistant engineer officer or engineer officer, and

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.1.2 for certification as chief engineer officer, shall have not less than 24 months of approved seagoing service of which not less than 12 months shall be served while qualified to serve as second engineer officer; and

.2 have completed approved education and training and meet the standard of competence specified in section A-III/3 of the STCW Code.

3 Every engineer officer who is qualified to serve as second engineer officer on ships powered by main propulsion machinery of 3,000 kW propulsion power or more may serve as chief engineer officer on ships powered by main propulsion machinery of less than 3,000 kW propulsion power, provided the certificate is so endorsed.

Regulation III/4

Mandatory minimum requirements for certification of ratings forming part of a watch in a manned engine-room or designated to perform duties in a periodically unmanned engine-room

1 Every rating forming part of an engine-room watch or designated to perform duties in a periodically unmanned engine-room on a seagoing ship powered by main propulsion machinery of 750 kW propulsion power or more, other than ratings under training and ratings whose duties are of an unskilled nature, shall be duly certificated to perform such duties.

2 Every candidate for certification shall:

.1 be not less than 16 years of age;

.2 have completed:

.2.1 approved seagoing service including not less than six months of training and experience, or

.2.2 special training, either pre-sea or on board ship, including an approved period of seagoing service which shall not be less than two months; and

.3 meet the standard of competence specified in section A-III/4 of the STCW Code.

3 The seagoing service, training and experience required by subparagraphs 2.2.1 and 2.2.2 shall be associated with engine-room watchkeeping functions and involve the performance of duties carried out under the direct supervision of a qualified engineer officer or a qualified rating.

Regulation III/5

Mandatory minimum requirements for certification of ratings as able seafarer engine in a manned engine-room or designated to perform duties in a periodically unmanned engine-room

1 Every able seafarer engine serving on a seagoing ship powered by main propulsion machinery of 750 kW propulsion power or more shall be duly certificated.

2 Every candidate for certification shall:

.1 be not less than 18 years of age;

.2 meet the requirements for certification as a rating forming part of a watch in a manned engine-room or designated to perform duties in a periodically unmanned engine-room;

.3 while qualified to serve as a rating forming part of an engineering watch, have approved seagoing service in the engine department of:

.3.1 not less than 12 months, or

.3.2 not less than 6 months and have completed approved training; and

.4 meet the standard of competence specified in section A-III/5 of the STCW Code.

3 Every Party shall compare the standards of competence which it required of ratings in the engine department for certificates issued before 1 January 2012 with those specified for the certificate in section A-III/5 of the STCW Code, and shall determine the need, if any, for requiring these personnel to update their qualifications.

4 Seafarers may be considered by the Party to have met the requirements of this regulation if they have served in a relevant capacity in the engine department for a period of not less than 12 months within the last 60 months preceding the entry into force of this regulation for that Party.

Regulation III/6

Mandatory minimum requirements for certification of electro-technical officer

1 Every electro-technical officer serving on a seagoing ship powered by main propulsion machinery of 750 kW propulsion power or more shall hold a certificate of competency.

2 Every candidate for certification shall:

.1 be not less than 18 years of age;

.2 have completed not less than 12 months of combined workshop skills training and approved seagoing service of which not less than 6 months will be seagoing service as part of an approved training programme which meets the requirements of section A-III/6 of the STCW Code and is documented in an approved training record book, or otherwise not less than 36 months of combined workshop skills training and approved seagoing service of which not less than 30 months will be seagoing service in the engine department;

.3 have completed approved education and training and meet the standards of competence specified in section A-III/6 of the STCW Code; and

.4 meet the standards of competence specified in section A-VI/1, paragraph 2,section A-VI/2, paragraphs 1 to 4, section A-VI/3, paragraphs 1 to 4 and section A-VI/4, paragraphs 1 to 3 of the STCW Code.

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3 Every Party shall compare the standards of competence which it required of electro-technical officers for certificates issued before 1 January 2012 with those specified for the certificate in section A-III/6 of the STCW Code, and shall determine the need for requiring those personnel to update their qualifications.

4 Seafarers may be considered by the Party to have met the requirements of this regulation if they have served in a relevant capacity on board a ship for a period of not less than 12 months within the last 60 months preceding the entry into force of this regulation for that Party and meet the standards of competence specified in section A-III/6 of the STCW Code.

5 Notwithstanding the above requirements of paragraph 1 to 4, a suitably qualified person may be considered by a Party to be able to perform certain functions of section A-III/6.

Regulation III/7

Mandatory minimum requirements for certification of electro-technical rating

1 Every electro-technical rating serving on a seagoing ship powered by main propulsion machinery of 750kW propulsion power or more shall be duly certificated.

2 Every candidate for certification shall:

.1 be not less than 18 years of age;

.2 have:

.2.1 completed approved seagoing service including not less than 12 months training and experience, or

.2.2 completed approved training, including an approved period of seagoing service which shall not be less than 6 months; or

.2.3 qualifications that meet the technical competences in table A-III/7 and an approved period of seagoing service, which shall not be less than 3 months; and

.3 meet the standard of competence specified in section A-III/7 of the STCW Code.

3 Every Party shall compare the standards of competence which it required of electro- technical ratings for certificates issued before 1 January 2012 with those specified for the certificate in section A-III/7 of the STCW Code, and shall determine the need, if any, for requiring these personnel to update their qualifications.

4 Seafarers may be considered by the Party to have met the requirements of this regulation if they have served in a relevant capacity on board a ship for a period of not less than 12 months within the last 60 months preceding the entry into force of this regulation for that Party and meet the standards of competence specified in section A-III/7 of the STCW Code.

5 Notwithstanding the above requirements of paragraphs 1 to 4, a suitably qualified person may be considered by a Party to be able to perform certain functions of section A-III/7.

CHAPTER IV

Radiocommunication and radio operators

Explanatory note

Mandatory provisions relating to radio watchkeeping are set forth in the Radio Regulations and in the International Convention for the Safety of Life at Sea, 1974, as amended. Provisions for radio maintenance are set forth in the International Convention for the Safety of Life at Sea, 1974, as amended, and the guidelines adopted by the Organization[4].

Regulation IV/1

Application

1 Except as provided in paragraph 2, the provisions of this chapter apply to radio operators on ships operating in the global maritime distress and safety system (GMDSS) as prescribed by the International Convention for the Safety of Life at Sea, 1974, as amended.

2 Radio operators on ships not required to comply with the provisions of the GMDSS in chapter IV of the SOLAS Convention are not required to meet the provisions of this chapter. Radio operators on these ships are, nevertheless, required to comply with the Radio Regulations. The Administration shall ensure that the appropriate certificates as prescribed by the Radio Regulations are issued to or recognized in respect of such radio operators.

Regulation IV/2

Mandatory minimum requirements for certification of GMDSS radio operators

1 Every person in charge of or performing radio duties on a ship required to participate in the GMDSS shall hold an appropriate certificate related to the GMDSS, issued or recognized by the Administration under the provisions of the Radio Regulations.

2 In addition, every candidate for certification of competency under this regulation for service on a ship, which is required by the International Convention for the Safety of Life at Sea, 1974, as amended, to have a radio installation, shall:

.1 be not less than 18 years of age; and

.2 have completed approved education and training and meet the standard of competence specified in section A-IV/2 of the STCW Code.

CHAPTER V

Standards regarding special training requirements for personnel on certain types of ships

Regulation V/1-1

Mandatory minimum requirements for the training and qualifications of masters, officers and ratings on oil and chemical tankers

[4]Refer to the Radio Maintenance Guidelines for the Global Maritime Distress and Safety System (GMDSS)
Related to Sea Areas A3 and A4 adopted by the Organization by resolution A.702(17).

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1 Officers and ratings assigned specific duties and responsibilities related to cargo or cargo equipment on oil or chemical tankers shall hold a certificate in basic training for oil and chemical tanker cargo operations.

2 Every candidate for a certificate in basic training for oil and chemical tanker cargo operations shall have completed basic training in accordance with provisions of section A-VI/1 of the STCW Code and shall have completed:

.1 at least three months of approved seagoing service on oil or chemical tankers and meet the standard of competence specified in section A-V/1-1, paragraph 1 of the STCW Code; or

.2 an approved basic training for oil and chemical tanker cargo operations and meet the standard of competence specified in section A-V/1-1, paragraph 1 of the STCW Code.

3 Masters, chief engineer officers, chief mates, second engineer officers and any person with immediate responsibility for loading, discharging, care in transit, handling of cargo, tank cleaning or other cargo-related operations on oil tankers shall hold a certificate in advanced training for oil tanker cargo operations.

4 Every candidate for a certificate in advanced training for oil tanker cargo operations shall:

.1 meet the requirements for certification in basic training for oil and chemical tanker cargo operations; and

.2 while qualified for certification in basic training for oil and chemical tanker cargo operations, have:

.2.1 at least three months of approved seagoing service on oil tankers, or

.2.2 at least one month of approved onboard training on oil tankers in a supernumerary capacity, which includes at least three loading and three unloading operations and is documented in an approved training record book taking into account guidance in section B-V/1; and

.3 have completed approved advanced training for oil tanker cargo operations and meet the standard of competence specified in section A-V/1-1, paragraph 2 of the STCW Code.

5 Masters, chief engineer officers, chief mates, second engineer officers and any person with immediate responsibility for loading, discharging, care in transit, handling of cargo, tank cleaning or other cargo-related operations on chemical tankers shall hold a certificate in advanced training for chemical tanker cargo operations.

6 Every candidate for a certificate in advanced training for chemical tanker cargo operations shall:

.1 meet the requirements for certification in basic training for oil and chemical tanker cargo operations; and

.2 while qualified for certification in basic training for oil and chemical tanker cargo operations, have:

.2.1 at least three months of approved seagoing service on chemical tankers, or

.2.2 at least one month of approved onboard training on chemical tankers in a supernumerary capacity, which includes at least three loading and three unloading operations and is documented in an approved training record book taking into account guidance in section B-V/1; and

.3 have completed approved advanced training for chemical tanker cargo operations and meet the standard of competence specified in section A-V/1-1, paragraph 3 of the STCW Code.

7 Administrations shall ensure that a certificate of proficiency is issued to seafarers who are qualified in accordance with paragraph 2, 4 or 6 as appropriate, or that an existing certificate of competency or certificate of proficiency is duly endorsed.

Regulation V/1-2

Mandatory minimum requirements for the training and qualifications of masters, officers and ratings on liquefied gas tankers

1 Officers and ratings assigned specific duties and responsibilities related to cargo or cargo equipment on liquefied gas tankers shall hold a certificate in basic training for liquefied gas tanker cargo operations.

2 Every candidate for a certificate in basic training for liquefied gas tanker cargo operations shall have completed basic training in accordance with provisions of section A-VI/1 of the STCW Code and shall have completed:

.1 at least three months of approved seagoing service on liquefied gas tankers and meet the standard of competence specified in section A-V/1-2, paragraph 1 of the STCW Code; or

.2 an approved basic training for liquefied gas tanker cargo operations and meet the standard of competence specified in section A-V/1-2, paragraph 1 of the STCW Code.

3 Masters, chief engineer officers, chief mates, second engineer officers and any person with immediate responsibility for loading, discharging, care in transit, handling of cargo, tank cleaning or other cargo-related operations on liquefied gas tankers shall hold a certificate in advanced training for liquefied gas tanker cargo operations.

4 Every candidate for a certificate in advanced training for liquefied gas tanker cargo operations shall:

.1 meet the requirements for certification in basic training for liquefied gas tanker cargo operations; and

.2 while qualified for certification in basic training for liquefied gas tanker cargo operations, have:

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.2.1 at least three months of approved seagoing service on liquefied gas tankers, or

.2.2 at least one month of approved onboard training on liquefied gas tankers in a supernumerary capacity, which includes at least three loading and three unloading operations and is documented in an approved training record book taking into account guidance in section B-V/1; and

.3 have completed approved advanced training for liquefied gas tanker cargo operations and meet the standard of competence specified in section A-V/1-2, paragraph 2 of the STCW Code.

5 Administrations shall ensure that a certificate of proficiency is issued to seafarers who are qualified in accordance with paragraph 2 or 4 as appropriate, or that an existing certificate of competency or certificate of proficiency is duly endorsed.

Regulation V/2

Mandatory minimum requirements for the training and qualifications of masters, officers, ratings and other personnel on passenger ships

1 This regulation applies to masters, officers, ratings and other personnel serving on board passenger ships engaged on international voyages. Administrations shall determine the applicability of these requirements to personnel serving on passenger ships engaged on domestic voyages.

2 Prior to being assigned shipboard duties on board passenger ships, seafarers shall have completed the training required by paragraphs 4 to 7 below in accordance with their capacity, duties and responsibilities.

3 Seafarers who are required to be trained in accordance with paragraphs 4, 6 and 7 below shall, at intervals not exceeding five years, undertake appropriate refresher training or be required to provide evidence of having achieved the required standard of competence within the previous five years.

4 Masters, officers and other personnel designated on muster lists to assist passengers in emergency situations on board passenger ships shall have completed training in crowd management as specified in section A-V/2, paragraph 1 of the STCW Code.

5 Personnel providing direct service to passengers in passenger spaces on board passenger ships shall have completed the safety training specified in section A-V/2, paragraph 2 of the STCW Code.

6 Masters, chief engineer officers, chief mates, second engineer officers and any person designated on muster lists of having responsibility for the safety of passengers in emergency situations on board passenger ships shall have completed approved training in crisis management and human behaviour as specified in section A-V/2, paragraph 3 of the STCW Code.

7 Masters, chief engineer officers, chief mates, second engineer officers and every person assigned immediate responsibility for embarking and disembarking passengers, loading, discharging or securing cargo, or closing hull openings on board ro-ro passenger ships shall have completed approved training in passenger safety, cargo safety and hull integrity as specified in section A-V/2, paragraph 4 of the STCW Code.

8 Administrations shall ensure that documentary evidence of the training which has been completed is issued to every person found qualified under the provisions of this regulation.

CHAPTER VI

Emergency, occupational safety, security, medical care and survival functions

Regulation VI/1

Mandatory minimum requirements for safety familiarization, basic training and instruction for all seafarers

1 Seafarers shall receive safety familiarization and basic training or instruction in accordance with section A-VI/1 of the STCW Code and shall meet the appropriate standard of competence specified therein.

2 Where basic training is not included in the qualification for the certificate to be issued, a certificate of proficiency shall be issued, indicating that the holder has attended the course in basic training.

Regulation VI/2

Mandatory minimum requirements for the issue of certificates of proficiency in survival craft, rescue boats and fast rescue boats

1 Every candidate for a certificate of proficiency in survival craft and rescue boats other than fast rescue boats shall:

.1 be not less than 18 years of age;

.2 have approved seagoing service of not less than 12 months or have attended an approved training course and have approved seagoing service of not less than six months; and

.3 meet the standard of competence for certificates of proficiency in survival craft and rescue boats set out in section A-VI/2, paragraphs 1 to 4, of the STCW Code.

2 Every candidate for a certificate of proficiency in fast rescue boats shall:

.1 be the holder of a certificate of proficiency in survival craft and rescue boats other than fast rescue boats;

.2 have attended an approved training course; and

.3 meet the standard of competence for certificates of proficiency in fast rescue boats set out in section A-VI/2, paragraphs 7 to 10, of the STCW Code.

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Regulation VI/3

Mandatory minimum requirements for training in advanced fire fighting

1 Seafarers designated to control fire-fighting operations shall have successfully completed advanced training in techniques for fighting fire, with particular emphasis on organization, tactics and command, in accordance with the provisions of section A-VI/3, paragraphs 1 to 4, of the STCW Code and shall meet the standard of competence specified therein.

2 Where training in advanced fire fighting is not included in the qualifications for the certificate to be issued, a certificate of proficiency shall be issued indicating that the holder has attended a course of training in advanced fire fighting.

Regulation VI/4

Mandatory minimum requirements relating to medical first aid and medical care

1 Seafarers designated to provide medical first aid on board ship shall meet the standard of competence in medical first aid specified in section A-VI/4, paragraphs 1 to 3, of the STCW Code.

2 Seafarers designated to take charge of medical care on board ship shall meet the standard of competence in medical care on board ships specified in section A-VI/4, paragraphs 4 to 6, of the STCW Code.

3 Where training in medical first aid or medical care is not included in the qualifications for the certificate to be issued, a certificate of proficiency shall be issued indicating that the holder has attended a course of training in medical first aid or in medical care.

Regulation VI/5

Mandatory minimum requirements for the issue of certificates of proficiency for ship security officers

1 Every candidate for a certificate of proficiency as ship security officer shall:

.1 have approved seagoing service of not less than 12 months or appropriate seagoing service and knowledge of ship operations; and

.2 meet the standard of competence for certification of proficiency as ship security officer, set out in section A-VI/5, paragraphs 1 to 4, of the STCW Code.

2 Administrations shall ensure that every person found qualified under the provisions of this regulation is issued with a certificate of proficiency.

Regulation VI/6

Mandatory minimum requirements for security-related training and instruction for all seafarers

1 Seafarers shall receive security-related familiarization and security-awareness training or instruction in accordance with section A-VI/6, paragraphs 1 to 4 of the STCW Code and shall meet the appropriate standard of competence specified therein.

2 Where security awareness is not included in the qualification for the certificate to be issued, a certificate of proficiency shall be issued indicating that the holder has attended a course in security awareness training.

3 Every Party shall compare the security-related training or instruction it requires of seafarers who hold or can document qualifications before the entry into force of this regulation with those specified in section A-VI/6, paragraph 4 of the STCW Code, and shall determine the need for requiring these seafarers to update their qualifications.

Seafarers with designated security duties

4 Seafarers with designated security duties shall meet the standard of competence specified in section A-VI/6, paragraphs 6 to 8 of the STCW Code.

5 Where training in designated security duties is not included in the qualifications for the certificate to be issued, a certificate of proficiency shall be issued indicating that the holder has attended a course of training for designated security duties.

6 Every Party shall compare the security training standards required of seafarers with designated security duties who hold or can document qualifications before the entry into force of this regulation with those specified in section A-VI/6, paragraph 8 of the STCW Code, and shall determine the need for requiring these seafarers to update their qualifications.

CHAPTER VII

Alternative certification

Regulation VII/1

Issue of alternative certificates

1 Notwithstanding the requirements for certification laid down in chapters II and III of this annex, Parties may elect to issue or authorize the issue of certificates other than those mentioned in the regulations of those chapters, provided that:

.1 the associated functions and levels of responsibility to be stated on the certificates and in the endorsements are selected from and identical to those appearing in sections A-II/1, A-II/2, A-II/3, A-II/4, A-II/5, A-III/1, A-III/2, A-III/3, A-III/4, A-III/5 and A-IV/2 of the STCW Code;

.2 the candidates have completed approved education and training and meet the requirements for standards of competence, prescribed in the relevant sections of the STCW Code and as set forth in section A-VII/1 of this Code, for the functions and levels that are to be stated on the certificates and in the endorsements;

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.3 the candidates have completed approved seagoing service appropriate to the performance of the functions and levels that are to be stated on the certificate. The minimum duration of seagoing service shall be equivalent to the duration of seagoing service prescribed in chapters II and III of this annex. However, the minimum duration of seagoing service shall be not less than as prescribed in section A-VII/2 of the STCW Code;

.4 the candidates for certification who are to perform the function of navigation at the operational level shall meet the applicable requirements of the regulations in chapter IV, as appropriate, for performing designated radio duties in accordance with the Radio Regulations; and

.5 the certificates are issued in accordance with the requirements of regulation I/2 and the provisions set forth in chapter VII of the STCW Code.

2 No certificate shall be issued under this chapter unless the Party has communicated information to the Organization in accordance with article IV and regulation I/7.

Regulation VII/2

Certification of seafarers

1 Every seafarer who performs any function or group of functions specified in tables A-II/1, A-II/2, A-II/3, A-II/4 or A-II/5 of chapter II or in tables A-III/1, A-III/2, A-III/3, A-III/4 or A-III/5 of chapter III or A-IV/2 of chapter IV of the STCW Code shall hold a certificate of competency or certificate of proficiency, as applicable.

Regulation VII/3

Principles governing the issue of alternative certificates

1 Any Party which elects to issue or authorize the issue of alternative certificates shall ensure that the following principles are observed:

.1 no alternative certification system shall be implemented unless it ensures a degree of safety at sea and has a preventive effect as regards pollution at least equivalent to that provided by the other chapters; and

.2 any arrangement for alternative certification issued under this chapter shall provide for the interchangeability of certificates with those issued under the other chapters.

2 The principle of interchangeability in paragraph 1 shall ensure that:

.1 seafarers certificated under the arrangements of chapters II and/or III and those certificated under chapter VII are able to serve on ships which have either traditional or other forms of shipboard organization; and

.2 seafarers are not trained for specific shipboard arrangements in such a way as would impair their ability to take their skills elsewhere.

3 In issuing any certificate under the provisions of this chapter, the following principles shall be taken into account:

.1 the issue of alternative certificates shall not be used in itself:

.1.1 to reduce the number of crew on board,

.1.2 to lower the integrity of the profession or "de-skill" seafarers, or

.1.3 to justify the assignment of the combined duties of the engine and deck watchkeeping officers to a single certificate holder during any particular watch; and

.2 the person in command shall be designated as the master; and the legal position and authority of the master and others shall not be adversely affected by the implementation of any arrangement for alternative certification.

4 The principles contained in paragraphs 1 and 2 of this regulation shall ensure that the competency of both deck and engineer officers is maintained.

CHAPTER VIII

Watchkeeping

Regulation VIII/1

Fitness for duty

1 Each Administration shall, for the purpose of preventing fatigue:

.1 establish and enforce rest periods for watchkeeping personnel and those whose duties involve designated safety, prevention of pollution and security duties in accordance with the provisions of section A-VIII/1 of the STCW Code; and

.2 require that watch systems are so arranged that the efficiency of all watchkeeping personnel is not impaired by fatigue and that duties are so organized that the first watch at the commencement of a voyage and subsequent relieving watches are sufficiently rested and otherwise fit for duty.

2 Each Administration shall, for the purpose of preventing drug and alcohol abuse, ensure that adequate measures are established in accordance with the provisions of section A-VIII/1 while taking into account the guidance given in section B-VIII/1 of the STCW Code.

Regulation VIII/2

Watchkeeping arrangements and principles to be observed

1 Administrations shall direct the attention of companies, masters, chief engineer officers and all watchkeeping personnel to the requirements, principles and guidance set out in the STCW Code which shall be observed to

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ensure that a safe continuous watch or watches appropriate to the prevailing circumstances and conditions are maintained in all seagoing ships at all times.

2 Administrations shall require the master of every ship to ensure that watchkeeping arrangements are adequate for maintaining a safe watch or watches, taking into account the prevailing circumstances and conditions and that, under the master's general direction:

.1 officers in charge of the navigational watch are responsible for navigating the ship safely during their periods of duty, when they shall be physically present on the navigating bridge or in a directly associated location such as the chartroom or bridge control room at all times;

.2 radio operators are responsible for maintaining a continuous radio watch on appropriate frequencies during their periods of duty;

.3 officers in charge of an engineering watch, as defined in the STCW Code, under the direction of the chief engineer officer, shall be immediately available and on call to attend the machinery spaces and, when required, shall be physically present in the machinery space during their periods of responsibility;

.4 an appropriate and effective watch or watches are maintained for the purpose of safety at all times while the ship is at anchor or moored and, if the ship is carrying hazardous cargo, the organization of such watch or watches takes full account of the nature, quantity, packing and stowage of the hazardous cargo and of any special conditions prevailing on board, afloat or ashore; and

.5 as applicable, an appropriate and effective watch or watches are maintained for the purposes of security."

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RESOLUTION 2

MANILA AMENDMENTS TO THE SEAFARERS' TRAINING, CERTIFICATION AND WATCHKEEPING (STCW) CODE

THE 2010 MANILA CONFERENCE,

HAVING ADOPTED resolution 1 on Adoption of the Manila amendments to the annex to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978,

RECOGNIZING the importance of establishing detailed mandatory standards of competence and other mandatory provisions necessary to ensure that all seafarers shall be properly educated and trained, adequately experienced, skilled and competent to perform their duties in a manner which provides for the safety of life, property and security at sea and the protection of the marine environment,

ALSO RECOGNIZING the need to allow for the timely amendment of such mandatory standards and provisions in order to effectively respond to changes in technology, operations, practices and procedures used on board ships,

RECALLING that a large percentage of maritime casualties and pollution incidents are caused by human error,

APPRECIATING that one effective means of reducing the risks associated with human error in the operation of seagoing ships is to ensure that the highest practicable standards of training, certification and competence are maintained in respect of the seafarers who are or will be employed on such ships,

DESIRING to achieve and maintain the highest practicable standards for the safety of life and property at sea and in port and for the protection of the environment,

HAVING CONSIDERED amendments to the Seafarers' Training, Certification and Watchkeeping (STCW) Code, comprised in part A – Mandatory standards regarding provisions of the annex to the 1978 STCW Convention, as amended, and part B – Recommended guidance regarding provisions of the1978 STCW Convention, as amended, proposed and circulated to all

Members of the Organization and all Parties to the Convention,

NOTING that regulation I/1, paragraph 2, of the annex to the 1978 STCW Convention provides that amendments to part A of the STCW Code shall be adopted, brought into force and take effect in accordance with the provisions of article XII of the Convention concerning the amendment procedure applicable to the annex,

HAVING CONSIDERED amendments to the STCW Code proposed and circulated to the Members of the Organization and to all Parties to the Convention,

1. ADOPTS amendments to the Seafarers' Training, Certification and Watchkeeping (STCW) Code, set out in annex to the present resolution;

2. DETERMINES, in accordance with article XII(1)(a)(vii) of the Convention, that the amendments to part A of the STCW Code shall be deemed to have been accepted on 1 July 2011, unless, prior to that date, more than one third of Parties or Parties the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant shipping of ships of 100 gross register tons or more have notified the Secretary-General that they object to the amendments;

3. INVITES Parties to note that, in accordance with article XII(1)(a)(ix) of the Convention, the amendments to part A of the STCW Code annexed hereto shall enter into force on 1 January 2012 upon being deemed to have been accepted in accordance with paragraph 2 above;

4. RECOMMENDS that the guidance contained in part B of the STCW Code, as amended, should be taken into account by all Parties to the 1978 STCW Convention as from the date of entry into force of the amendments to part A of the STCW Code;

5. REQUESTS the Maritime Safety Committee to keep the STCW Code under review and amend it, as appropriate;

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6. ALSO REQUESTS the Secretary-General of the Organization to transmit certified copies of the present resolution and the text of amendments to the STCW Code contained in the annex to all Parties to the Convention;

7. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its annexes to all Members of the Organization which are not Parties to the Convention.

***

ANNEX 1

THE MANILA AMENDMENTS TO THE SEAFARERS' TRAINING, CERTIFICATION AND WATCHKEEPING (STCW) CODE

1 The part A of the Seafarers' Training, Certification and Watchkeeping (STCW) Code is replaced by the following:

"PART A

Mandatory standards regarding provisions of the annex to the STCW Convention

Introduction

1 This part of the STCW Code contains mandatory provisions to which specific reference is made in the annex to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended, hereinafter referred to as the STCW Convention.

These provisions give in detail the minimum standards required to be maintained by Parties in order to give full and complete effect to the Convention.

2 Also contained in this part are standards of competence required to be demonstrated by candidates for the issue and revalidation of certificates of competency under the provisions of the STCW Convention. To clarify the linkage between the alternative certification provisions of chapter VII and the certification provisions of chapters II, III and IV, the abilities specified in the standards of competence are grouped, as appropriate, under the following seven functions:

.1 Navigation

.2 Cargo handling and stowage

.3 Controlling the operation of the ship and care for persons on board

.4 Marine engineering

.5 Electrical, electronic and control engineering

.6 Maintenance and repair

.7 Radiocommunications

at the following levels of responsibility:

.1 Management level

.2 Operational level

.3 Support level

Functions and levels of responsibility are identified by subtitle in the tables of standards of competence given in chapters II, III and IV of this part. The scope of the function at the level of responsibility stated in a subtitle is defined by the abilities listed under it in column 1 of the table.

The meaning of "function" and "level of responsibility" is defined in general terms in section A-I/1 below.

3 The numbering of the sections of this part corresponds with the numbering of the regulations contained in the annex to the STCW Convention. The text of the sections may be divided into numbered parts and paragraphs, but such numbering is unique to that text alone.

CHAPTER I

Standards regarding general provisions

Section A-I/1

Definitions and clarifications

1 The definitions and clarifications contained in article II and regulation I/1 apply equally to the terms used in parts A and B of this Code. In addition, the following supplementary definitions apply only to this Code:

.1 *Standard of competence* means the level of proficiency to be achieved for the proper performance of functions on board ship in accordance with the internationally agreed criteria as set forth herein and incorporating prescribed standards or levels of knowledge, understanding and demonstrated skill;

.2 *Management level* means the level of responsibility associated with:

.2.1 serving as master, chief mate, chief engineer officer or second engineer officer on board a seagoing ship, and

.2.2 ensuring that all functions within the designated area of responsibility are properly performed;

.3 *Operational level* means the level of responsibility associated with:

.3.1 serving as officer in charge of a navigational or engineering watch or as designated duty engineer for periodically unmanned machinery spaces or as radio operator on board a seagoing ship, and

.3.2 maintaining direct control over the performance of all functions within the designated area of responsibility in accordance with proper procedures and under the direction of an individual serving in the management level for that area of responsibility;

.4 *Support level* means the level of responsibility associated with performing assigned tasks, duties or responsibilities on board a seagoing ship under the direction of an individual serving in the operational or management level;

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.5 *Evaluation criteria* are the entries appearing in column 4 Criteria of the "Specification of Minimum Standard of Competence" tables in part A and provide the means for an assessor to judge whether or not a candidate can perform the related tasks, duties and responsibilities; and

.6 *Independent evaluation* means an evaluation by suitably qualified persons, independent of, or external to, the unit or activity being evaluated, to verify that the administrative and operational procedures at all levels are managed, organized, undertaken and monitored internally in order to ensure their fitness for purpose and achievement of stated objectives.

Section A-I/2

Certificates and endorsements

1 Where, as provided in regulation I/2, paragraph 6, the endorsement required by article VI of the Convention is incorporated in the wording of the certificate itself, the certificate shall be issued in the format shown hereunder, provided that the words "or until the date of expiry of any extension of the validity of this certificate as may be shown overleaf" appearing on the front of the form and the provisions for recording extension of the validity appearing on the back of the form shall be omitted where the certificate is required to be replaced upon its expiry. Guidance on completion of the form is contained in section B-I/2 of this Code.

(Official Seal)

(COUNTRY)

CERTIFICATE ISSUED UNDER THE PROVISIONS OF THE INTERNATIONAL CONVENTION ON STANDARDS OF TRAINING, CERTIFICATION AND WATCHKEEPING FOR SEAFARERS, 1978, AS AMENDED

The Government of ..... certifies that ..... has been found duly qualified in accordance with the provisions of regulation ..... of the above Convention, as amended, and has been found competent to perform the following functions, at the levels specified, subject to any limitations indicated until ..... or until the date of expiry of any extension of the validity of this certificate as may be shown overleaf:

FUNCTION	LEVEL	LIMITATIONS APPLYING (IF ANY)

The lawful holder of this certificate may serve in the following capacity or capacities specified in the applicable safe manning requirements of the Administration:

CAPACITY	LIMITATIONS APPLYING (IF ANY)

Certificate No. ..... issued on .....

(Official Seal)

.....

Signature of duly authorized official

.....

Name of duly authorized official

The original of this certificate must be kept available in accordance with regulation I/2, paragraph 11 of the Convention while its holder is serving on a ship.

Date of birth of the holder of the certificate .....

Signature of the holder of the certificate .....

Photograph of the holder of the certificate

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The validity of this certificate is hereby extended until	.....
(Official Seal)	.....
	Signature of duly authorized official
Date of revalidation	.....
	Name of duly authorized official
The validity of this certificate is hereby extended until	.....
(Official Seal)	.....
	Signature of duly authorized official
Date of revalidation	.....
	Name of duly authorized official

2 Except as provided in paragraph 1, the form used to attest the issue of a certificate shall be as shown hereunder, provided that the words "or until the date of expiry of any extension of the validity of this endorsement as may be shown overleaf" appearing on the front of the form and the provisions for recording extension of the validity appearing on the back of the form shall be omitted where the endorsement is required to be replaced upon its expiry. Guidance on completion of the form is contained in section B-I/2 of this Code.

I (Official Seal)

(COUNTRY)

ENDORSEMENT ATTESTING THE ISSUE OF A CERTIFICATE UNDER THE PROVISIONS OF THE INTERNATIONAL CONVENTION ON STANDARDS OF TRAINING, CERTIFICATION AND WATCHKEEPING FOR SEAFARERS, 1978, AS AMENDED

The Government of ..... certifies that certificate No. ..... has been issued to ..... who has been found duly qualified in accordance with the provisions of regulation ..... of the above Convention, as amended, and has been found competent to perform the following functions, at the levels specified, subject to any limitations indicated

until ..... or until the date of expiry of any extension of the validity of this endorsement

as may be shown overleaf:

FUNCTION	LEVEL	LIMITATIONS APPLYING (IF ANY)

The lawful holder of this endorsement may serve in the following capacity or capacities specified in the applicable safe manning requirements of the Administration:

CAPACITY	LIMITATIONS APPLYING (IF ANY

Endorsement No. ..... issued on .....

(Official Seal)

.....

Signature of duly authorized official

.....

Name of duly authorized official

The original of this endorsement must be kept available in accordance with regulation I/2, paragraph 11 of the Convention while its holder is serving on a ship.

Date of birth of the holder of the certificate .....

Signature of the holder of the certificate .....

Photograph of the holder of the certificate

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The validity of this endorsement is hereby extended until	.....
(Official Seal)	.....
	Signature of duly authorized official
Date of revalidation	.....
	Name of duly authorized official
The validity of this endorsement is hereby extended until	.....
(Official Seal)	.....
	Signature of duly authorized official
Date of revalidation	.....
	Name of duly authorized official

3 The form used to attest the recognition of a certificate shall be as shown hereunder, except that the words "or until the date of expiry of any extension of the validity of this endorsement as may be shown overleaf" appearing on the front of the form and the provisions for recording extension of the validity appearing on the back of the form shall be omitted where the endorsement is required to be replaced upon its expiry. Guidance on completion of the form is contained in section B-I/2 of this Code.

(Official Seal)

(COUNTRY)

ENDORSEMENT ATTESTING THE RECOGNITION OF A CERTIFICATE UNDER THE PROVISIONS OF THE INTERNATIONAL CONVENTION ON STANDARDS OF TRAINING, CERTIFICATION AND WATCHKEEPING FOR SEAFARERS, 1978, AS AMENDED

The Government of ..... certifies that certificate No. ..... issued to ..... by or on behalf of the Government of ..... is duly recognized in accordance with the provisions of regulation I/10 of the above Convention, as amended, and the lawful holder is authorized to perform the following functions, at the levels specified, subject to any limitations indicated until ..... or until the date of expiry of any extension of the validity of this endorsement as may be shown overleaf:

FUNCTION	LEVEL	LIMITATIONS APPLYING (IF ANY)

The lawful holder of this endorsement may serve in the following capacity or capacities specified in the applicable safe manning requirements of the Administration:

CAPACITY	LIMITATIONS APPLYING (IF ANY)

Endorsement No. ..... issued on .....

(Official Seal)

.....

Signature of duly authorized official

.....

Name of duly authorized official

The original of this endorsement must be kept available in accordance with regulation I/2, paragraph 11 of the Convention while its holder is serving on a ship.

Date of birth of the holder of the certificate .....

Signature of the holder of the certificate .....

Photograph of the holder of the certificate

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The validity of this endorsement is hereby extended until	.....
(Official Seal)	.....
	Signature of duly authorized official
Date of revalidation	.....
	Name of duly authorized official

The validity of this endorsement is hereby extended until	.....
(Official Seal)	.....
	Signature of duly authorized official
Date of revalidation	.....
	Name of duly authorized official

4 In using formats which may be different from those set forth in this section, pursuant to regulation I/2, paragraph 10, Parties shall ensure that in all cases:

.1 all information relating to the identity and personal description of the holder, including name, date of birth, photograph and signature, along with the date on which the document was issued, shall be displayed on the same side of the documents; and

.2 all information relating to the capacity or capacities in which the holder is entitled to serve in accordance with the applicable safe manning requirements of the Administration, as well as any limitations, shall be prominently displayed and easily identified.

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ISSUE AND REGISTRATION OF CERTIFICATES

Approval of seagoing service

5 In approving seagoing service required by the Convention, Parties should ensure that the

service concerned is relevant to the qualification being applied for, bearing in mind that, apart from the initial familiarization with service in seagoing ships, the purpose of such service is to allow the seafarer to be instructed in and to practise, under appropriate supervision, those safe and proper seagoing practices, procedures and routines which are relevant to the qualification applied for.

Approval of training courses

6 In approving training courses and programmes, Parties should take into account that the relevant IMO Model Courses can assist in the preparation of such courses and programmes and ensure that the detailed learning objectives recommended therein are suitably covered.

Electronic access to registers

7 In the maintenance of the electronic register in accordance with paragraph 15 of regulation I/2, provisions shall be made to allow controlled electronic access to such register or registers to allow Parties and companies to confirm:

.1 the name of the seafarer to whom such certificate, endorsement or other qualification was issued, its relevant number, date of issue, and date of expiry;

.2 the capacity in which the holder may serve and any limitations attaching thereto; and

.3 the functions the holder may perform, the levels authorized and any limitations attaching thereto.

Development of a database for certificate registration

8 In implementing the requirement in paragraph 14 of regulation I/2 for the maintenance of a register of certificates and endorsements, a standard database is not necessary provided that all the relevant information is recorded and available in accordance with regulation I/2.

9 The following items of information should be recorded and available, either on paper or electronically, in accordance with regulation I/2:

.1 Status of certificate

Valid

Suspended

Cancelled

Reported lost

Destroyed

with a record of changes to status to be kept, including dates of changes.

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.2 Certificate details

Seafarer's name

Date of birth

Nationality

Gender

Preferably a photograph

Relevant document number

Date of issue

Date of expiry

Last revalidation date

Details of dispensation(s)

.3 Competency details

STCW competency standard (e.g., regulation II/1)

Capacity

Function

Level of responsibility

Endorsements

Limitations

.4 Medical details

Date of issue of latest medical certificate relating to the issue or revalidation of the certificate of competency.

Section A-I/3

Principles governing near-coastal voyages

1 When a Party defines near-coastal voyages, *inter alia*, for the purpose of applying variations to the subjects listed in column 2 of the standard of competence tables contained in chapters II and III of part A of the Code, for the issue of certificates valid for service in ships entitled to fly the flag of that Party and engaged on such voyages, account shall be taken of the following factors, bearing in mind the effect on the safety and security of all ships and on the marine environment:

.1 type of ship and the trade in which it is engaged;

.2 gross tonnage of the ship and the power in kilowatts of the main propulsion machinery;

.3 nature and length of the voyages;

.4 maximum distance from a port of refuge;

.5 adequacy of the coverage and accuracy of navigational position-fixing devices;

.6 weather conditions normally prevailing in the near-coastal voyages area;

.7 provision of shipboard and coastal communication facilities for search and rescue; and

.8 the availability of shore-based support, regarding especially technical maintenance on board.

2 It is not intended that ships engaged on near-coastal voyages extend their voyages worldwide, under the excuse that they are navigating constantly within the limits of designated near-coastal voyages of neighbouring Parties.

Section A-I/4

Control procedures

1 The assessment procedure provided for in regulation I/4, paragraph 1.3, resulting from any of the occurrences mentioned therein shall take the form of a verification that members of the crew who are required to be competent do in fact possess the necessary skills related to the occurrence.

2 It shall be borne in mind when making this assessment that onboard procedures are relevant to the International Safety Management (ISM) Code and that the provisions of this Convention are confined to the competence to safely execute those procedures.

3 Control procedures under this Convention shall be confined to the standards of competence of the individual seafarers on board and their skills related to watchkeeping as defined in part A of this Code. Onboard assessment of competency shall commence with verification of the certificates of the seafarers.

4 Notwithstanding verification of the certificate, the assessment under regulation I/4, paragraph 1.3 can require the seafarer to demonstrate the related competency at the place of duty. Such demonstration may include verification that operational requirements in respect of watchkeeping standards have been met and that there is a proper response to emergency situations within the seafarer's level of competence.

5 In the assessment, only the methods for demonstrating competence together with the criteria for its evaluation and the scope of the standards given in part A of this Code shall be used.

6 Assessment of competency related to security shall be conducted for those seafarers with specific security duties only in case of clear grounds, as provided for in chapter XI/2 of the International Convention for the Safety of Life at Sea (SOLAS). In all other cases, it shall be confined to the verification of the certificates and/or endorsements of the seafarers.

Section A-I/5

National provisions

The provisions of regulation I/5 shall not be interpreted as preventing the allocation of tasks for training under supervision or in cases of *force majeure*.

Section A-I/6

Training and assessment

1 Each Party shall ensure that all training and assessment of seafarers for certification under the Convention is:

.1 structured in accordance with written programmes, including such methods and

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media of delivery, procedures, and course material as are necessary to achieve the prescribed standard of competence; and

.2 conducted, monitored, evaluated and supported by persons qualified in accordance with paragraphs 4, 5 and 6.

2 Persons conducting in-service training or assessment on board ship shall only do so when such training or assessment will not adversely affect the normal operation of the ship and they can dedicate their time and attention to training or assessment.

Qualifications of instructors, supervisors and assessors[5]

3 Each Party shall ensure that instructors, supervisors and assessors are appropriately qualified for the particular types and levels of training or assessment of competence of seafarers either on board or ashore, as required under the Convention, in accordance with the provisions of this section.

In-service training

4 Any person conducting in-service training of a seafarer, either on board or ashore, which is intended to be used in qualifying for certification under the Convention, shall:

.1 have an appreciation of the training programme and an understanding of the specific training objectives for the particular type of training being conducted;

.2 be qualified in the task for which training is being conducted; and

.3 if conducting training using a simulator:

.3.1 have received appropriate guidance in instructional techniques involving the use of simulators, and

.3.2 have gained practical operational experience on the particular type of simulator being used.

5 Any person responsible for the supervision of in-service training of a seafarer intended to be used in qualifying for certification under the Convention shall have a full understanding of the training programme and the specific objectives for each type of training being conducted.

Assessment of competence

6 Any person conducting in-service assessment of competence of a seafarer, either on board or ashore, which is intended to be used in qualifying for certification under the Convention, shall:

.1 have an appropriate level of knowledge and understanding of the competence to be assessed;

.2 be qualified in the task for which the assessment is being made;

.3 have received appropriate guidance in assessment methods and practice;

.4 have gained practical assessment experience; and

.5 if conducting assessment involving the use of simulators, have gained practical assessment experience on the particular type of simulator under the supervision and to the satisfaction of an experienced assessor.

Training and assessment within an institution

7 Each Party which recognizes a course of training, a training institution, or a qualification granted by a training institution, as part of its requirements for the issue of a certificate required under the Convention, shall ensure that the qualifications and experience of instructors and assessors are covered in the application of the quality standard provisions of section A-I/8. Such qualification, experience and application of quality standards shall incorporate appropriate training in instructional techniques, and training and assessment methods and practice, and shall comply with all applicable requirements of paragraphs 4 to 6.

Section A-I/7

Communication of information

1 The information required by regulation I/7, paragraph 1 shall be communicated to the Secretary-General in the formats prescribed in the paragraphs hereunder.

PART 1 – INITIAL COMMUNICATION OF INFORMATION

2 Within one calendar year of entry into force of regulation I/7, each Party shall report on the steps it has taken to give the Convention full and complete effect, which report shall include the following:

.1 contact details and organization chart of the ministry, department or governmental agency responsible for administering the Convention;

.2 a concise explanation of the legal and administrative measures provided and taken to ensure compliance, particularly with regulations I/2, I/6 and I/9;

.3 a clear statement of the education, training, examination, competency assessment and certification policies adopted;

.4 a concise summary of the courses, training programmes, examinations and assessments provided for each certificate issued pursuant to the Convention;

.5 a concise outline of the procedures followed to authorize, accredit or approve training and examinations, medical fitness and competency assessments required by the Convention, the conditions attaching thereto, and a list of the authorizations, accreditations and approvals granted;

[5]The relevant IMO Model Course(s) may be of assistance in the preparation of courses.

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.6 a concise summary of the procedures followed in granting any dispensation under article VIII of the Convention; and

.7 the results of the comparison carried out pursuant to regulation I/11 and a concise outline of the refresher and upgrading training mandated.

PART 2 – SUBSEQUENT REPORTS

3 Each Party shall, within six months of:

.1 retaining or adopting any equivalent education or training arrangements pursuant to article IX, provide a full description of such arrangements;

.2 recognizing certificates issued by another Party, provide a report summarizing the measures taken to ensure compliance with regulation I/10; and

.3 authorizing the employment of seafarers holding alternative certificates issued under regulation VII/1 on ships entitled to fly its flag, provide the Secretary-General with a specimen copy of the type of safe manning documents issued to such ships.

4 Each Party shall report the results of each evaluation carried out pursuant to regulation I/8, paragraph 2 within six months of its completion. The report of the evaluation shall include the following information:

.1 the qualifications and experience of those who conducted the evaluation; (e.g., certificates of competency held, experience as a seafarer and independent evaluator, experience in the field of maritime training and assessment, experience in the administration of certification systems, or any other relevant qualifications/experience);

.2 the terms of reference for the independent evaluation and those of the evaluators;

.3 a list of training institutions/centres covered by the independent evaluation; and

.4 the results of the independent evaluation, including:

.1 verification that:

.1.1 all applicable provisions of the Convention and STCW Code, including their amendments, are covered by the Party's quality standards system in accordance with section A-I/8, paragraph 3.1; and

.1.2 all internal management control and monitoring measures and follow-up actions comply with planned arrangements and documented procedures and are effective in ensuring achievement of defined objectives in accordance with section A-I/8, paragraph 3.2;

.2 a brief description of:

.2.1 the non-conformities found, if any, during the independent evaluation,

.2.2 the corrective measures recommended to address the identified non-conformities, and

.2.3 the corrective measures carried out to address the identified non-conformities.

5 Parties shall report the steps taken to implement any subsequent mandatory amendments to the Convention and STCW Code, not previously included in the report on the initial communication of information pursuant to regulation I/7 or any previous report pursuant to regulation I/8. The information shall be included in the next report pursuant to regulation I/8, paragraph 3, following the entry into force of the amendment.

6 The information on the steps taken to implement mandatory amendments to the Convention and STCW Code shall include the following, where applicable:

.1 a concise explanation of the legal and administrative measures provided and taken to ensure compliance with the amendment;

.2 a concise summary of any courses, training programmes, examinations and assessments provided to comply with the amendment;

.3 a concise outline of the procedures followed to authorize, accredit or approve training and examinations, medical fitness and competency assessments required under the amendment;

.4 a concise outline of any refresher training and upgrading training required to meet the amendments; and

.5 a comparison between the measures to implement the amendment and existing measures contained in previous reports pursuant to regulation I/7, paragraph 1 and/or regulation I/8, paragraph 2 where applicable.

PART 3 – PANEL OF COMPETENT PERSONS

7 The Secretary-General shall maintain a list of competent persons approved by the Maritime Safety Committee, including competent persons made available or recommended by the Parties, who may be called upon to evaluate the reports submitted pursuant to regulation I/7 and regulation I/8 and may be called to assist in the preparation of the report required by regulation I/7, paragraph 2. These persons shall ordinarily be available during relevant sessions of the Maritime Safety Committee or its subsidiary bodies, but need not conduct their work solely during such sessions.

8 In relation to regulation I/7, paragraph 2, the competent persons shall be knowledgeable of the requirements of the Convention and at least one of them shall have knowledge of the system of training and certification of the Party concerned.

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9 When a report is received from any Party under regulation I/8, paragraph 3, the Secretary-General will designate competent persons from the list maintained in accordance with paragraph 7, to consider the report and provide their views on whether:

.1 the report is complete and demonstrates that the Party has carried out an independent evaluation of the knowledge, understanding, skills and competence acquisition and assessment activities, and of the administration of the certification system (including endorsement and revalidation), in accordance with section A-I/8, paragraph 3;

.2 the report is sufficient to demonstrate that:

.2.1 the evaluators were qualified,

.2.2 the terms of reference were clear enough to ensure that:

.2.2.1 all applicable provisions of the Convention and STCW Code, including their amendments, are covered by the Party's quality standards system; and

.2.2.2 the implementation of clearly defined objectives in accordance with regulation I/8, paragraph 1 could be verified over the full range of relevant activities,

.2.3 the procedures followed during the independent evaluation were appropriate to identify any significant non-conformities in the Party's system of training, assessment of competence, and certification of seafarers, as may be applicable to the Party concerned, and

.2.4 the actions being taken to correct any noted non-conformities are timely and appropriate.[6]

10 Any meeting of the competent persons shall:

.1 be held at the discretion of the Secretary-General;

.2 be comprised of an odd number of members, ordinarily not to exceed five persons;

.3 appoint its own chairman; and

.4 provide the Secretary-General with the agreed opinion of its members, or if no agreement is reached, with both the majority and minority views.

11 The competent persons shall, on a confidential basis, express their views in writing on:

.1 a comparison of the facts reported in the information communicated to the Secretary-General by the Party with all relevant requirements of the Convention;

.2 the report of any relevant evaluation submitted under regulation I/8, paragraph 3;

.3 the report of any steps taken to implement the amendments to the STCW Convention and Code submitted under paragraph 5; and

.4 any additional information provided by the Party.

PART 4 – REPORT TO THE MARITIME SAFETY COMMITTEE

12 In preparing the report to the Maritime Safety Committee required by regulation I/7, paragraph 2, the Secretary-General shall:

.1 solicit and take into account the views expressed by competent persons selected from the list established pursuant to paragraph 7;

.2 seek clarification, when necessary, from the Party of any matter related to the information provided under regulation I/7, paragraph 1; and

.3 identify any area in which the Party may have requested assistance to implement the Convention.

13 The Party concerned shall be informed of the arrangements for the meetings of competent persons, and its representatives shall be entitled to be present to clarify any matter related to the information provided pursuant to regulation I/7, paragraph 1.

14 If the Secretary-General is not in a position to submit the report called for by paragraph 2 of regulation I/7, the Party concerned may request the Maritime Safety Committee to take the action contemplated by paragraph 3 of regulation I/7, taking into account the information submitted pursuant to this section and the views expressed in accordance with paragraphs 10 and 11.

Section A-I/8

Quality standards

National objectives and quality standards

1 Each Party shall ensure that the education and training objectives and related standards of competence to be achieved are clearly defined and identify the levels of knowledge, understanding and skills appropriate to the examinations and assessments required under the Convention. The objectives and related quality standards may be specified separately for different courses and training programmes and shall cover the administration of the certification system.

2 The field of application of the quality standards shall cover the administration of the certification system, all training courses and programmes, examinations and assessments carried out by or under the authority of a Party and the qualifications and experience required of instructors and assessors, having regard to the policies, systems, controls and internal quality assurance reviews established to ensure achievement of the defined objectives.

3 Each Party shall ensure that an independent evaluation of the knowledge, understanding, skills and competence acquisition and assessment activities, and of the administration of the certification system, is conducted at intervals of not more than five years in order to verify that:

.1 all applicable provisions of the Convention and STCW Code, including their amendments, are covered by the quality standards system;

[6] *Corrective actions must be timely and appropriate* means those actions must be focused on the underpinning/root causes of deficiencies and must be arranged to take place in a prescribed time schedule.

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.2 all internal management control and monitoring measures and follow-up actions comply with planned arrangements and documented procedures and are effective in ensuring achievement of the defined objectives;

.3 the results of each independent evaluation are documented and brought to the attention of those responsible for the area evaluated; and

.4 timely action is taken to correct deficiencies.

Section A-I/9

Medical standards

1 Parties, when establishing standards of medical fitness for seafarers as required by regulation I/9, shall adhere to the minimum in-service eyesight standards set out in table A-I/9 and take into account the criteria for physical and medical fitness set out in paragraph 2. They should also take into account the guidance given in section B-I/9 of this Code and table B-I/9 regarding assessment of minimum physical abilities.

These standards may, to the extent determined by the party without prejudice to the safety of the seafarers or the ship, differentiate between those persons seeking to start a career at sea and those seafarers already serving at sea and between different functions on board, bearing in mind the different duties of seafarers. They shall also take into account for any impairment or disease that will limit the ability of the seafarer to effectively perform his/her duties during the validity period of the medical certificate.

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2 The standards of physical and medical fitness established by the party shall ensure that seafarers satisfy the following criteria:

.1 have the physical capability, taking into account paragraph 5 below, to fulfil all the requirements of the basic training as required by section A-VI/1, paragraph 2;

.2 demonstrate adequate hearing and speech to communicate effectively and detect any audible alarms;

.3 have no medical condition, disorder or impairment that will prevent the effective and safe conduct of their routine and or emergency duties on board during the validity period of the medical certificate;

.4 are not suffering from any medical condition likely to be aggravated by service at sea or to render the seafarer unfit for such service or to endanger the health and safety of other persons on board; and

.5 are not taking any medication that has side effects that will impair judgment, balance, or any other requirements for effective and safe performance of routine or and emergency duties on board.

3 Medical fitness examinations of seafarers shall be conducted by appropriately qualified and experienced medical practitioners recognized by the Party.

4 Each Party shall establish provisions for recognizing medical practitioners. A register of recognized medical practitioners shall be maintained by the Party and made available to other Parties, companies and seafarers on request.

5 Each Party shall provide guidance for the conduct of medical fitness examinations and issuing of medical certificates, taking into account provisions set out in section B-I/9 of this Code. Each Party shall determine the amount of discretion given to recognized medical practitioners on the application of the medical standards, bearing in mind the different duties of seafarers, except that there shall not be discretion with respect to the minimum eyesight standards for distance vision aided, near/immediate vision and colour vision in table A-I/9 for seafarers in the deck department required to undertake look-out duties. A Party may allow discretion on the application of these standards with regard to seafarers in the engine department, on the condition that seafarer's combined vision fulfils the requirements set in table A-I/9.

6 Each Party shall establish processes and procedures to enable seafarers who, after examination, do not meet the medical fitness standards or have had a limitation imposed on their ability to work, in particular with respect to time, field of work or trading area, to have their case reviewed in line with that Party's provisions for appeal.

7 The medical certificate provided for in regulation I/9, paragraph 3 shall include the following information as a minimum:

.1 Authorizing authority and the requirements under which the document is issued

.2 Seafarer information

.2.1 Name: (Last, first, middle)

.2.2 Date of birth: (day/month/year)

.2.3 Gender: (Male/Female)

.2.4 Nationality

.3 Declaration of the recognized medical practitioner

.3.1 Confirmation that identification documents were checked at the point of examination: *Y/N*

.3.2 Hearing meets the standards in STCW A-I/9: *Y/N*

.3.3 Unaided hearing satisfactory? *Y/N*

.3.4 Visual acuity meets standards in STCW A-I/9? *Y/N*

.3.5 Colour vision[7] meets standards in STCW A-I/9? *Y/N*

.3.5.1 Date of last colour vision test.

[7]Note: Colour vision assessment only needs to be conducted every six years.

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.3.6 Fit for look-out duties? *Y/N*

.3.7 No limitations or restrictions on fitness? *Y/N*

If "N", specify limitations or restrictions.

.3.8 Is the seafarer free from any medical condition likely to be aggravated by service at sea or to render the seafarer unfit for such service or to endanger the health of other persons on board?: *Y/N*

.3.9 Date of examination: (*day/month/year*)

.3.10 Expiry date of certificate: (*day/month/year*)

.4 Details of the issuing authority

.4.1 Official stamp (including name) of the issuing authority

.4.2 Signature of the authorized person

.5 Seafarer's signature – confirming that the seafarer has been informed of the content of the certificate and of the right to a review in accordance with paragraph 6 of section A-I/9

8 Medical certificates shall be in the official language of the issuing country. If the language used is not English, the text shall include a translation into that language.

Table A-I/9

Minimum in-service eyesight standards for seafarers

STCW Convention regulation	Category of seafarer	Distance vision Aided1		Near/immediate vision	Colour Vision3	Visual fields4	Night blindness4	Diplopia (double vision)4
		One eye	Other eye	Both eyes together, aided or unaided				
I/11 II/1 II/2 II/3 II/4 II/5 VII/2	Masters, deck officers and ratings required to undertake look-out duties	0.52	0.5	Vision required for ship's navigation (e.g., chart and nautical publication reference, use of bridge instrumentation and equipment, and identification of aids to navigation)	See Note 6	Normal Visual fields	Vision required to perform all necessary functions in darkness without compromise	No significant condition evident
I/11 III/1 III/2 III/3 III/4 III/5 III/6 III/7 VII/2	All engineer officers, electro-technical officers, electrotechnical ratings and ratings or others forming part of an engineroom watch	0.45	0.4 (see Note 5)	Vision required to read instruments in close proximity, to operate equipment, and to identify systems/components as necessary	See Note 7	Sufficient visual fields	Vision required to perform all necessary functions in darkness without compromise	No significant condition evident
I/11 IV/2	GMDSS Radio operators	0.4	0.4	Vision required to read instruments in close proximity, to operate equipment, and to identify systems/components as necessary	See Note 7	Sufficient visual fields	Vision required to perform all necessary functions in darkness without compromise	No significant condition evident

Notes:

1 Values given in Snellen decimal notation.

2 A value of at least 0.7 in one eye is recommended to reduce the risk of undetected underlying eye disease.

3 As defined in the *International Recommendations for Colour Vision Requirements for Transport* by the Commission Internationale de l'Eclairage (CIE-143-2001 including any subsequent versions).

4 Subject to assessment by a clinical vision specialist where indicated by initial examination findings

5 Engine department personnel shall have a combined eyesight vision of at least 0.4.

6 CIE colour vision standard 1 or 2.

7 CIE colour vision standard 1, 2 or 3.

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Section A-I/10

Recognition of certificates

1 The provisions of regulation I/10, paragraph 4 regarding the non-recognition of certificates issued by a non-Party shall not be construed as preventing a Party, when issuing its own certificate, from accepting seagoing service, education and training acquired under the authority of a non-Party, provided the Party complies with regulation I/2 in issuing each such certificate and ensures that the requirements of the Convention relating to seagoing service, education, training and competence are complied with.

2 Where an Administration which has recognized a certificate withdraws its endorsement of recognition for disciplinary reasons, the Administration shall inform the Party that issued the certificate of the circumstances.

Section A-I/11

Revalidation of certificates

Professional competence

1 Continued professional competence as required under regulation I/11 shall be established by:

.1 approved seagoing service, performing functions appropriate to the certificate held, for a period of at least:

.1.1 twelve months in total during the preceding five years, or

.1.2 three months in total during the preceding six months immediately prior to revalidating; or

.2 having performed functions considered to be equivalent to the seagoing service required in paragraph 1.1; or

.3 passing an approved test; or

.4 successfully completing an approved training course or courses; or

.5 having completed approved seagoing service, performing functions appropriate to the certificate held, for a period of not less than three months in a supernumerary capacity, or in a lower officer rank than that for which the certificate held is valid immediately prior to taking up the rank for which it is valid.

2 The refresher and updating courses required by regulation I/11 shall be approved and include changes in relevant national and international regulations concerning the safety of life at sea and the protection of the marine environment and take account of any updating of the standard of competence concerned.

3 Continued professional competence for tankers as required under regulation I/11, paragraph 3 shall be established by:

.1 approved seagoing service, performing duties appropriate to the tanker certificate or endorsement held, for a period of at least 3 months in total during the preceding 5 years; or

.2 successfully completing an approved relevant training course or courses.

Section A-I/12

Standards governing the use of simulators

PART 1 – PERFORMANCE STANDARDS

General performance standards for simulators used in training

1 Each Party shall ensure that any simulator used for mandatory simulator-based training shall:

.1 be suitable for the selected objectives and training tasks;

.2 be capable of simulating the operating capabilities of shipboard equipment concerned, to a level of physical realism appropriate to training objectives, and include the capabilities, limitations and possible errors of such equipment;

.3 have sufficient behavioural realism to allow a trainee to acquire the skills appropriate to the training objectives;

.4 provide a controlled operating environment, capable of producing a variety of conditions, which may include emergency, hazardous or unusual situations relevant to the training objectives;

.5 provide an interface through which a trainee can interact with the equipment, the simulated environment and, as appropriate, the instructor; and

.6 permit an instructor to control, monitor and record exercises for the effective debriefing of trainees.

General performance standards for simulators used in assessment of competence

2 Each Party shall ensure that any simulator used for the assessment of competence required under the Convention or for any demonstration of continued proficiency so required shall:

.1 be capable of satisfying the specified assessment objectives;

.2 be capable of simulating the operational capabilities of the shipboard equipment concerned to a level of physical realism appropriate to the assessment objectives, and include the capabilities, limitations and possible errors of such equipment;

.3 have sufficient behavioural realism to allow a candidate to exhibit the skills appropriate to the assessment objectives;

.4 provide an interface through which a candidate can interact with the equipment and simulated environment;

.5 provide a controlled operating environment, capable of producing a variety of conditions, which may include emergency, hazardous or unusual situations relevant to assessment objectives; and

.6 permit an assessor to control, monitor and record exercises for the effective assessment of the performance of candidates.

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Additional performance standards

3 In addition to meeting the basic requirements set out in paragraphs 1 and 2, simulation equipment to which this section applies shall meet the performance standards given hereunder in accordance with their specific type.

Radar simulation

4 Radar simulation equipment shall be capable of simulating the operational capabilities of navigational radar equipment which meets all applicable performance standards adopted by the Organization* and incorporate facilities to:

.1 operate in the stabilized relative-motion mode and sea- and ground-stabilized true-motion modes;

.2 model weather, tidal streams, current, shadow sectors, spurious echoes and other propagation effects, and generate coastlines, navigational buoys and search and rescue transponders; and

.3 create a real-time operating environment incorporating at least two own-ship stations with ability to change own ship's course and speed, and include parameters for at least 20 target ships and appropriate communication facilities.

Automatic Radar Plotting Aid (ARPA) simulation

5 ARPA simulation equipment shall be capable of simulating the operational capabilities of ARPAs which meet all applicable performance standards adopted by the Organization[8], and shall incorporate the facilities for:

.1 manual and automatic target acquisition;

.2 past track information;

.3 use of exclusion areas;

.4 vector/graphic time-scale and data display; and

.5 trial manoeuvres.

PART 2 – OTHER PROVISIONS

Simulator training objectives

6 Each Party shall ensure that the aims and objectives of simulator-based training are defined within an overall training programme and that specific training objectives and tasks are selected so as to relate as closely as possible to shipboard tasks and practices.

Training procedures

7 In conducting mandatory simulator-based training, instructors shall ensure that:

.1 trainees are adequately briefed beforehand on the exercise objectives and tasks and are given sufficient planning time before the exercise starts;

.2 trainees have adequate familiarization time on the simulator and with its equipment before any training or assessment exercise commences;

.3 guidance given and exercise stimuli are appropriate to the selected exercise objectives and tasks and to the level of trainee experience;

.4 exercises are effectively monitored, supported as appropriate by audio and visual observation of trainee activity and pre- and post-exercise evaluation reports;

.5 trainees are effectively debriefed to ensure that training objectives have been met and that operational skills demonstrated are of an acceptable standard;

.6 the use of peer assessment during debriefing is encouraged; and

.7 simulator exercises are designed and tested so as to ensure their suitability for the specified training objectives.

Assessment procedures

8 Where simulators are used to assess the ability of candidates to demonstrate levels of competency, assessors shall ensure that:

.1 performance criteria are identified clearly and explicitly and are valid and available to the candidates;

.2 assessment criteria are established clearly and are explicit to ensure reliability and uniformity of assessment and to optimize objective measurement and evaluation, so that subjective judgements are kept to the minimum;

.3 candidates are briefed clearly on the tasks and/or skills to be assessed and on the tasks and performance criteria by which their competency will be determined;

.4 assessment of performance takes into account normal operating procedures and any behavioural interaction with other candidates on the simulator or with simulator staff;

.5 scoring or grading methods to assess performance are used with caution until they have been validated; and

.6 the prime criterion is that a candidate demonstrates the ability to carry out a task safely and effectively to the satisfaction of the assessor.

Qualifications of instructors and assessors[9]

9 Each Party shall ensure that instructors and assessors are appropriately qualified and experienced for the particular types and levels of training and corresponding assessment of competence as specified in regulation I/6 and section A-I/6.

Section A-I/13

Conduct of trials

(No provisions)

[8]See relevant/appropriate performance standards adopted by the Organization.

[9]The relevant IMO Model Course(s) and resolution MSC.64(67), *Recommendations on new and amended performance standards*, may be of assistance in the preparation of courses.

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Section A-I/14

Responsibilities of companies

1 Companies, masters and crew members each have responsibility for ensuring that the obligations set out in this section are given full and complete effect and that such other measures as may be necessary are taken to ensure that each crew member can make a knowledgeable and informed contribution to the safe operation of the ship.

2 The company shall provide written instructions to the master of each ship to which the Convention applies, setting forth the policies and the procedures to be followed to ensure that all seafarers who are newly employed on board the ship are given a reasonable opportunity to become familiar with the shipboard equipment, operating procedures and other arrangements needed for the proper performance of their duties, before being assigned to those duties. Such policies and procedures shall include:

.1 allocation of a reasonable period of time during which each newly employed seafarer will have an opportunity to become acquainted with:

.1.1 the specific equipment the seafarer will be using or operating;

.1.2 ship-specific watchkeeping, safety, environmental protection, security and emergency procedures and arrangements the seafarer needs to know to perform the assigned duties properly; and

.2 designation of a knowledgeable crew member who will be responsible for ensuring that an opportunity is provided to each newly employed seafarer to receive essential information in a language the seafarer understands.

3 Companies shall ensure that masters, officers and other personnel assigned specific duties and responsibilities on board their ro-ro passenger ships shall have completed familiarization training to attain the abilities that are appropriate to the capacity to be filled and duties and responsibilities to be taken up, taking into account the guidance given in section B-I/14 of this Code.

Section A-I/15

Transitional provisions

(No provisions)

CHAPTER II

Standards regarding the master and deck department

Section A-II/1

Mandatory minimum requirements for certification of officers in charge of a navigational watch on ships of 500 gross tonnage or more

Standard of competence

1 Every candidate for certification shall:

.1 be required to demonstrate the competence to undertake, at the operational level, the tasks, duties and responsibilities listed in column 1 of table A-II/1;

.2 at least hold the appropriate certificate for performing VHF radiocommunications in accordance with the requirements of the Radio Regulations; and

.3 if designated to have primary responsibility for radiocommunications during distress incidents, hold the appropriate certificate issued or recognized under the provisions of the Radio Regulations.

2 The minimum knowledge, understanding and proficiency required for certification is listed in column 2 of table A-II/1.

3 The level of knowledge of the subjects listed in column 2 of table A-II/1 shall be sufficient for officers of the watch to carry out their watchkeeping duties.[10]

4 Training and experience to achieve the necessary level of theoretical knowledge, understanding and proficiency shall be based on section A-VIII/2, part 4-1 – Principles to be observed in keeping a navigational watch – and shall also take into account the relevant requirements of this part and the guidance given in part B of this Code.

5 Every candidate for certification shall be required to provide evidence of having achieved the required standard of competence in accordance with the methods for demonstrating competence and the criteria for evaluating competence tabulated in columns 3 and 4 of table A-II/1.

Onboard training

6 Every candidate for certification as officer in charge of a navigational watch of ships of 500 gross tonnage or more whose seagoing service, in accordance with paragraph 2.2 of regulation II/1, forms part of a training programme approved as meeting the requirements of this section shall follow an approved programme of onboard training which:

.1 ensures that, during the required period of seagoing service, the candidate receives systematic practical training and experience in the tasks, duties and responsibilities of an officer in charge of a navigational watch, taking into account the guidance given in section B-II/1 of this Code;

.2 is closely supervised and monitored by qualified officers aboard the ships in which the approved seagoing service is performed; and

.3 is adequately documented in a training record book or similar document.[11]

Near-coastal voyages

7 The following subjects may be omitted from those listed in column 2 of table A-II/1 for issue of restricted certificates for service on near-coastal voyages, bearing in mind the safety of all ships which may be operating in the same waters:

.1 celestial navigation; and

.2 those electronic systems of position fixing and navigation that do not cover the waters for which the certificate is to be valid.

[10]The relevant IMO Model Course(s) may be of assistance in the preparation of courses.
11The relevant IMO Model Course(s) and a similar document produced by the International Shipping Federation may be of assistance in the preparation of training record books.

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Table A-II/1

Specification of minimum standard of competence for officers in charge of a navigational watch on ships of 500 gross tonnage or more

Function: Navigation at the operational level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Plan and conduct a passage and determine position	Celestial navigation Ability to use celestial bodies to determine the ship's position Terrestrial and coastal navigation Ability to determine the ship's position by use of: .1 landmarks .2 aids to navigation, including lighthouses, beacons and buoys .3 dead reckoning, taking into account winds, tides, currents and estimated speed Thorough knowledge of and ability to use nautical charts, and publications, such as sailing directions, tide tables, notices to mariners, radio navigational warnings and ships' routeing information Electronic systems of position fixing and navigation Ability to determine the ship's position by use of electronic navigational aids	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate .4 approved laboratory equipment training using chart catalogues, charts, nautical publications, radio navigational warnings, sextant, azimuth mirror, electronic navigation equipment, echo-sounding equipment, compass	The information obtained from nautical charts and publications is relevant, interpreted correctly and properly applied. All potential navigational hazards are accurately identified The primary method of fixing the ship's position is the most appropriate to the prevailing circumstances and conditions The position is determined within the limits of acceptable instrument/system errors The reliability of the information obtained from the primary method of position fixing is checked at appropriate intervals Calculations and measurements of navigational information are accurate The charts selected are the largest scale suitable for the area of navigation and charts and publications are corrected in accordance with the latest information available Performance checks and tests to navigation systems comply with manufacturer's recommendations and good navigational practice
Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Plan and conduct a passage and determine position (continued)	Echo-sounders Ability to operate the equipment and apply the information correctly Compass – magnetic and gyro Knowledge of the principles of magnetic and gyro-compasses Ability to determine errors of the magnetic and gyro-compasses, using celestial and terrestrial means, and to allow for such errors Steering control system Knowledge of steering control systems, operational procedures and change-over from manual to automatic control and vice versa. Adjustment of controls for optimum performance Meteorology Ability to use and interpret information obtained from shipborne meteorological instruments Knowledge of the characteristics of the various weather systems, reporting procedures and recording systems Ability to apply the meteorological information available		Errors in magnetic and gyro-compasses are determined and correctly applied to courses and bearings The selection of the mode of steering is the most suitable for the prevailing weather, sea and traffic conditions and intended manoeuvres Measurements and observations of weather conditions are accurate and appropriate to the passage Meteorological information is correctly interpreted and applied

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Maintain a safe navigational watch	Watchkeeping Thorough knowledge of the content, application and intent of the International Regulations for Preventing Collisions at Sea, 1972, as amended Thorough knowledge of the Principles to be observed in keeping a navigational watch The use of routeing in accordance with the General Provisions on Ships' Routeing The use of information from navigational equipment for maintaining a safe navigational watch Knowledge of blind pilotage techniques The use of reporting in accordance with the General Principles for Ship Reporting Systems and with VTS procedures	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience; .2 approved training ship experience .3 approved simulator training, where appropriate .4 approved laboratory equipment training	The conduct, handover and relief of the watch conforms with accepted principles and procedures A proper look-out is maintained at all times and in such a way as to conform to accepted principles and procedures Lights, shapes and sound signals conform with the requirements contained in the International Regulations for Preventing Collisions at Sea, 1972, as amended and are correctly recognized The frequency and extent of monitoring of traffic, the ship and the environment conform with accepted principles and procedures A proper record is maintained of the movements and activities relating to the navigation of the ship Responsibility for the safety of navigation is clearly defined at all times, including periods when the master is on the bridge and while under pilotage

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Maintain a safe navigational watch (continued)	Bridge resource management Knowledge of bridge resource management principles, including: .1 allocation, assignment, and prioritization of resources .2 effective communication .3 assertiveness and leadership .4 obtaining and maintaining situational awareness .5 consideration of team experience	Assessment of evidence obtained from one or more of the following: .1 approved training .2 approved in-service experience .3 approved simulator training	Resources are allocated and assigned as needed in correct priority to perform necessary tasks Communication is clearly and unambiguously given and received Questionable decisions and/or actions result in appropriate challenge and response Effective leadership behaviours are identified Team member(s) share accurate understanding of current and predicted vessel state, navigation path, and external environment
Use of radar and ARPA to maintain safety of navigation Note: Training and assessment in the use of ARPA is not required for those who serve exclusively on ships not fitted with ARPA. This limitation shall be reflected in the endorsement issued to the seafarer concerned	Radar navigation Knowledge of the fundamentals of radar and automatic radar plotting aids (ARPA) Ability to operate and to interpret and analyse information obtained from radar, including the following: Performance, including: .1 factors affecting performance and accuracy .2 setting up and maintaining displays .3 detection of misrepresentation of information, false echoes, sea return, etc., racons and SARTs	Assessment of evidence obtained from approved radar simulator and ARPA simulator plus in-service experience	Information obtained from radar and ARPA is correctly interpreted and analysed, taking into account the limitations of the equipment and prevailing circumstances and conditions

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Use of radar and ARPA to maintain safety of navigation (continued) Note: Training and assessment in the use of ARPA is not required for those who serve exclusively on ships not fitted with ARPA. This limitation shall be reflected in the endorsement issued to the seafarer concerned	Use, including: .1 range and bearing; course and speed of other ships; time and distance of closest approach of crossing, meeting overtaking ships .2 identification of critical echoes; detecting course and speed changes of other ships; effect of changes in own ship's course or speed or both .3 application of the International Regulations for Preventing Collisions at Sea, 1972, as amended .4 plotting techniques and relative- and true-motion concepts .5 parallel indexing		Action taken to avoid a close encounter or collision with other vessels is in accordance with the International Regulations for Preventing Collisions at Sea, 1972, as amended Decisions to amend course and/or speed are both timely and in accordance with accepted navigation practice Adjustments made to the ship's course and speed maintain safety of navigation Communication is clear, concise and acknowledged at all times in a seamanlike manner Manoeuvring signals are made at the appropriate time and are in accordance with the International Regulations for Preventing Collisions at Sea, 1972, as amended

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Use of radar and ARPA to maintain safety of navigation (continued) Note: Training and assessment in the use of ARPA is not required for those who serve exclusively on ships not fitted with ARPA. This limitation shall be reflected in the endorsement issued to the seafarer concerned	Principal types of ARPA, their display characteristics, performance standards and the dangers of over-reliance on ARPA Ability to operate and to interpret and analyse information obtained from ARPA, including: .1 system performance and accuracy, tracking capabilities and limitations, and processing delays .2 use of operational warnings and system tests .3 methods of target acquisition and their limitations .4 true and relative vectors, graphic representation of target information and danger areas .5 deriving and analyzing information, critical echoes, exclusion areas and trial manoeuvres		
Use of ECDIS to maintain the safety of Navigation Note: Training and assessment in the use of ECDIS is not required for those who serve exclusively on ships not fitted with ECDIS These limitations shall be reflected in the endorsements issued to the seafarer concerned	Navigation using ECDIS Knowledge of the capability and limitations of ECDIS operations, including: .1 a thorough understanding of Electronic Navigational Chart (ENC) data, data accuracy, presentation rules, display options and other chart data formats .2 the dangers of over-reliance .3 familiarity with the functions of ECDIS	Examination and assessment of evidence obtained from one or more of the following: .1 approved training ship experience .2 approved ECDIS simulator training	Monitors information on ECDIS in a manner that contributes to safe navigation Information obtained from ECDIS (including radar overlay and/or radar tracking functions, when fitted) is correctly interpreted and analysed, taking into account the limitations of the equipment, all connected sensors (including radar and AIS where interfaced), and prevailing circumstances and conditions

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	required by performance standards in force Proficiency in operation, interpretation, and analysis of information obtained from ECDIS, including: .1 use of functions that are integrated with other navigation systems in various installations, including proper functioning and adjustment to desired settings .2 safe monitoring and adjustment of information, including own position, sea area display, mode and orientation, chart data displayed, route monitoring, user-created information layers, contacts (when interfaced with AIS and/or radar tracking) and radar overlay functions (when interfaced) .3 confirmation of vessel position by alternative means .4 efficient use of settings to ensure conformance to operational procedures, including alarm parameters for anti-grounding, proximity to contacts and special areas, completeness of chart data and chart update status, and backup arrangements .5 adjustment of settings and values to suit the present conditions		Safety of navigation is maintained through adjustments made to the ship's course and speed through ECDIS-controlled track-keeping functions (when fitted) Communication is clear, concise and acknowledged at all times in a seamanlike manner

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence

Use of ECDIS to maintain the safety of navigation (continued)	.6 situational awareness while using ECDIS including safe water and proximity of hazards, set and drift, chart data and scale selection, suitability of route, contact detection and management, and integrity of sensors		
Respond to emergencies	Emergency procedures Precautions for the protection and safety of passengers in emergency situations Initial action to be taken following a collision or a grounding; initial damage assessment and control Appreciation of the procedures to be followed for rescuing persons from the sea, assisting a ship in distress, responding to emergencies which arise in port	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate .4 practical training	The type and scale of the emergency is promptly identified Initial actions and, if appropriate, manoeuvring of the ship are in accordance with contingency plans and are appropriate to the urgency of the situation and nature of the emergency
Respond to a distress signal at sea	Search and rescue Knowledge of the contents of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual	Examination and assessment of evidence obtained from practical instruction or approved simulator training, where appropriate	The distress or emergency signal is immediately recognized Contingency plans and instructions in standing orders are implemented and complied with

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Use the IMO Standard Marine Communication Phrases and use English in written and oral form	English language Adequate knowledge of the English language to enable the officer to use charts and other nautical publications, to understand meteorological information and messages concerning ship's safety and operation, to communicate with other ships, coast stations and VTS centres and to perform the officer's duties also with a multilingual crew, including the ability to use and understand the IMO Standard Marine Communication Phrases (IMO SMCP)	Examination and assessment of evidence obtained from practical instruction	English language nautical publications and messages relevant to the safety of the ship are correctly interpreted or drafted Communications are clear and understood
Transmit and receive information by visual signalling	Visual signaling Ability to use the International Code of Signals Ability to transmit and receive, by Morse light, distress signal SOS as specified in Annex IV of the International Regulations for Preventing Collisions at Sea, 1972, as amended and appendix 1 of the International Code of Signals, and visual signalling of single-letter signals as also specified in the International Code of Signals	Assessment of evidence obtained from practical instruction and/or simulation	Communications within the operator's area of responsibility are consistently successful

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Manoeuvre the ship	Ship manoeuvring and handling Knowledge of: .1 the effects of deadweight, draught, trim, speed and under-keel clearance on turning circles and stopping distances .2 the effects of wind and current on ship handling .3 manoeuvres and procedures for the rescue of person overboard .4 squat, shallow-water and similar effects .5 proper procedures for anchoring and mooring	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service Experience .2 approved training ship experience .3 approved simulator training, where appropriate .4 approved training on a manned scale ship model, where appropriate	Safe operating limits of ship propulsion, steering and power systems are not exceeded in normal manoeuvres Adjustments made to the ship's course and speed maintain safety of navigation

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Function: Cargo handling and stowage at the operational level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Monitor the loading, stowage, securing, care during the voyage and the unloading of cargoes	Cargo handling, stowage and Securing Knowledge of the effect of cargo, including heavy lifts, on the seaworthiness and stability of the ship Knowledge of safe handling, stowage and securing of cargoes, including dangerous, hazardous and harmful cargoes, and their effect on the safety of life and of the ship Ability to establish and maintain effective communications during loading and unloading	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service Experience .2 approved training ship experience .3 approved simulator training, where appropriate	Cargo operations are carried out in accordance with the cargo plan or other documents and established safety rules/regulations, equipment operating instructions and shipboard stowage limitations The handling of dangerous, hazardous and harmful cargoes complies with international regulations and recognized standards and codes of safe practice Communications are clear, understood and consistently successful
Inspect and report defects and damage to cargo spaces, hatch covers and ballast tanks	Knowledge1 and ability to explain where to look for damage and defects most commonly encountered due to: .1 loading and unloading operations .2 corrosion .3 severe weather conditions Ability to state which parts of the ship shall be inspected each time in order to cover all parts within a given period of time Identify those elements of the ship structure which are critical to the safety of the ship	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate	The inspections are carried out in accordance with laid-down procedures, and defects and damage are detected and properly reported Where no defects or damage are detected, the evidence from testing and examination clearly indicates adequate competence in adhering to procedures and ability to distinguish between normal and defective or damaged parts of the ship

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Inspect and report defects and damage to cargo spaces, hatch covers and ballast tanks (continued)	State the causes of corrosion in cargo spaces and ballast tanks and how corrosion can be identified and prevented Knowledge of procedures on how the inspections shall be carried out Ability to explain how to ensure reliable detection of defects and damages Understanding of the purpose of the “enhanced survey programme”		

Function: Controlling the operation of the ship and care for persons on board at the operational level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Ensure compliance With pollution-prevention requirements	Prevention of pollution of the marine environment and anti-pollution procedures Knowledge of the precautions to be taken to prevent pollution of the marine environment Anti-pollution procedures and all associated equipment Importance of proactive measures to protect the marine environment	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service Experience .2 approved training ship experience .3 approved training	Procedures for monitoring shipboard operations and ensuring compliance with MARPOL requirements are fully observed Actions to ensure that a positive environmental reputation is maintained

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Maintain seaworthiness of the ship	Ship stability Working knowledge and application of stability, trim and stress tables, diagrams and stress-calculating equipment Understanding of fundamental actions to be taken in the event of partial loss of intact buoyancy Understanding of the fundamentals of watertight integrity Ship construction General knowledge of the principal structural members of a ship and the proper names for the various parts	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service Experience .2 approved training ship experience .3 approved simulator training, where appropriate .4 approved laboratory equipment training	The stability conditions comply with the IMO intact stability criteria under all conditions of loading Actions to ensure and maintain the watertight integrity of the ship are in accordance with accepted practice

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Prevent, control and fight fires on board	Fire prevention and fire-fighting appliances Ability to organize fire drills Knowledge of classes and chemistry of fire Knowledge of fire-fighting Systems Knowledge of action to be taken in the event of fire, including fires involving oil systems	Assessment of evidence obtained from approved fire-fighting training and experience as set out in section A-VI/3	The type and scale of the problem is promptly identified and initial actions conform with the emergency procedure and contingency plans for the ship Evacuation, emergency shutdown and isolation procedures are appropriate to the nature of the emergency and are implemented promptly The order of priority and the levels and time-scales of making reports and informing personnel on board are relevant to the nature of the emergency and reflect the urgency of the problem
Operate life-saving appliances	Life-saving Ability to organize abandon ship drills and knowledge of the operation of survival craft and rescue boats, their launching appliances and arrangements, and their equipment, including radio life-saving appliances, satellite EPIRBs, SARTs, immersion suits and thermal protective aids	Assessment of evidence obtained from approved training and experience as set out in section A-VI/2, paragraphs 1 to 4	Actions in responding to abandon ship and survival situations are appropriate to the prevailing circumstances and conditions and comply with accepted safety practices and standards
Apply medical first aid on board ship	Medical aid Practical application of medical guides and advice by radio, including the ability to take effective action based on such knowledge in the case of accidents or illnesses that are likely to occur on board ship	Assessment of evidence obtained from approved training as set out in section A-VI/4, paragraphs 1 to 3	The identification of probable cause, nature and extent of injuries or conditions is prompt and treatment minimizes immediate threat to life
Monitor compliance with legislative requirements	Basic working knowledge of the relevant IMO conventions concerning safety of life at sea and protection of the marine environment	Assessment of evidence obtained from examination or approved training	Legislative requirements relating to safety of life at sea and protection of the marine environment are correctly identified

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Application of leadership and teamworking skills	Working knowledge of shipboard personnel management and training A knowledge of related international maritime conventions and recommendations, and national legislation Ability to apply task and workload management, including: .1 planning and co-ordination .2 personnel assignment .3 time and resource constraints .4 prioritization Knowledge and ability to apply effective resource management: .1 allocation, assignment, and prioritization of resources .2 effective communication onboard and ashore .3 decisions reflect consideration of team experiences .4 assertiveness and leadership, including motivation .5 obtaining and maintaining situational awareness	Assessment of evidence obtained from one or more of the following: .1 approved training .2 approved in-service experience .3 practical demonstration	The crew are allocated duties and informed of expected standards of work and behaviour in a manner appropriate to the individuals concerned Training objectives and activities are based on assessment of current competence and capabilities and operational requirements. Operations are demonstrated to be in accordance with applicable rules Operations are planned and resources are allocated as needed in correct priority to perform necessary tasks Communication is clearly and unambiguously given and received Effective leadership behaviours are demonstrated Necessary team member(s) share accurate understanding of current and predicted vessel and operational status and external environment Decisions are most effective for the situation

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Application of leadership and teamworking skills (continued)	Knowledge and ability to apply decision-making techniques: .1 Situation and risk assessment .2 Identify and consider generated options .3 Selecting course of action .4 Evaluation of outcome effectiveness		
Contribute to the safety of personnel and ship	Knowledge of personal survival techniques Knowledge of fire prevention and ability to fight and extinguish fires Knowledge of elementary first aid Knowledge of personal safety and social responsibilities	Assessment of evidence obtained from approved training and experience as set out in section A-VI/1, paragraph 2	Appropriate safety and protective equipment is correctly used Procedures and safe working practices designed to safeguard personnel and the ship are observed at all times Procedures designed to safeguard the environment are observed at all times Initial and follow-up action on becoming aware of an emergency conforms with established emergency response procedures

Section A-II/2

Mandatory minimum requirements for certification of masters and chief mates on ships of 500 gross tonnage or more

Standard of competence

1 Every candidate for certification as master or chief mate of ships of 500 gross tonnage or more shall be required to demonstrate the competence to undertake, at the management level, the tasks, duties and responsibilities listed in column 1 of table A-II/2.

2 The minimum knowledge, understanding and proficiency required for certification is listed in column 2 of table A-II/2. This incorporates, expands and extends in depth the subjects listed in column 2 of table A-II/1 for officers in charge of a navigational watch.

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3 Bearing in mind that the master has ultimate responsibility for the safety of the ship, its passengers, crew and cargo, and for the protection of the marine environment against pollution by the ship, and that a chief mate shall be in a position to assume that responsibility at any time, assessment in these subjects shall be designed to test their ability to assimilate all available information that affects the safety of the ship, its passengers, crew or cargo, or the protection of the marine environment.

4 The level of knowledge of the subjects listed in column 2 of table A-II/2 shall be sufficient to enable the candidate to serve in the capacity of master or chief mate[12].

5 The level of theoretical knowledge, understanding and proficiency required under the different sections in column 2 of table A-II/2 may be varied according to whether the certificate is to be valid for ships of 3,000 gross tonnage or more or for ships of between 500 gross tonnage and 3,000 gross tonnage.

[12]The relevant IMO Model Course(s) may be of assistance in the preparation of courses.

6 Training and experience to achieve the necessary level of theoretical knowledge, understanding and proficiency shall take into account the relevant requirements of this part and the guidance given in part B of this Code.

7 Every candidate for certification shall be required to provide evidence of having achieved the required standard of competence in accordance with the methods for demonstrating competence and criteria for evaluating competence tabulated in columns 3 and 4 of table A-II/2.

Near-coastal voyages

8 An Administration may issue a certificate restricted to service on ships engaged exclusively on near-coastal voyages and, for the issue of such a certificate, may exclude such subjects as are not applicable to the waters or ships concerned, bearing in mind the effect on the safety of all ships which may be operating in the same waters.

Table A-II/2

Specification of minimum standard of competence for masters and chief mates on ships of 500 gross tonnage or more

Function: Navigation at the management level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Plan a voyage and conduct navigation	Voyage planning and navigation for all conditions by acceptable methods of plotting ocean tracks, taking into account, e.g.: .1 restricted waters .2 meteorological conditions .3 ice .4 restricted visibility .5 traffic separation schemes .6 vessel traffic service (VTS) areas .7 areas of extensive tidal effects Routeing in accordance with the General Provisions on Ships' Routeing Reporting in accordance with the General principles for Ship Reporting Systems and with VTS procedures	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved simulator training, where appropriate .3 approved laboratory equipment training using chart catalogues, charts, nautical publications and ship particulars	The equipment, charts and nautical publications required for the voyage are enumerated and appropriate to the safe conduct of the voyage The reasons for the planned route are supported by facts and statistical data obtained from relevant sources and publications Positions, courses, distances and time calculations are correct within accepted accuracy standards for navigational equipment All potential navigational hazards are accurately identified
Determine position and the accuracy of resultant position fix by any means	Position determination in all conditions: .1 by celestial observations .2 by terrestrial observations, including the ability to use appropriate charts, notices to mariners and other publications to assess the accuracy of the resulting position fix	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved simulator training, where appropriate	The primary method chosen for fixing the ship's position is the most appropriate to the prevailing circumstances and conditions The fix obtained by celestial observations is within accepted accuracy levels

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	.3 using modern electronic navigational aids, with specific knowledge of their operating principles, limitations, sources of error, detection of misrepresentation of information and methods of correction to obtain accurate position fixing	.3 approved laboratory equipment training, using: .1 charts, nautical almanac, plotting sheets, chronometer, sextant and a calculator .2 charts, nautical publications and navigational instruments (azimuth mirror, sextant, log, sounding equipment, compass) and manufacturers' manuals .3 radar, terrestrial electronic position- fixing systems, satellite navigation systems and appropriate nautical charts and publications	The fix obtained by terrestrial observations is within accepted accuracy levels The accuracy of the resulting fix is properly assessed The fix obtained by the use of electronic navigational aids is within the accuracy standards of the systems in use. The possible errors affecting the accuracy of the resulting position are stated and methods of minimizing the effects of system errors on the resulting position are properly applied
Determine and allow for compass errors	Ability to determine and allow for errors of the magnetic and gyro-compasses Knowledge of the principles of magnetic and gyro-compasses An understanding of systems under the control of the master gyro and a knowledge of the operation and care of the main types of gyro-compass	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved simulator training, where appropriate .3 approved laboratory equipment training using celestial observations, terrestrial bearings and comparison between magnetic and gyro-compasses	The method and frequency of checks for errors of magnetic and gyro-compasses ensures accuracy of information

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Coordinate search and rescue operations	A thorough knowledge of and ability to apply the procedures contained in the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved simulator training, where appropriate .3 approved laboratory equipment training using: relevant publications, charts, meteorological data, particulars of ships involved, radiocommunication equipment and other available facilities and one or more of the following: .1 approved SAR training course .2 approved simulator training, where appropriate .3 approved laboratory equipment training	The plan for coordinating search and rescue operations is in accordance with international guidelines and standards Radiocommunications are established and correct communication procedures are followed at all stages of the search and rescue operations
Establish watchkeeping arrangements and procedures	Thorough knowledge of content, application and intent of the International Regulations for Preventing Collisions at Sea, 1972, as Amended Thorough knowledge of the content, application and intent of the Principles to be observed in keeping a navigational watch	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved simulator training, where appropriate	Watchkeeping arrangements and procedures are established and maintained in compliance with international regulations and guidelines so as to ensure the safety of navigation, protection of the marine environment and safety of the ship and persons on board

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Maintain safe navigation through the use of information from navigation equipment and systems to assist command decision making Note: Training and assessment in the use of ARPA is not required for those who serve exclusively on ships not fitted with ARPA. This limitation shall be reflected in the endorsement issued to the seafarer concerned	An appreciation of system errors and thorough understanding of the operational aspects of navigational systems Blind pilotage planning Evaluation of navigational information derived from all sources, including radar and ARPA, in order to make and implement command decisions for collision avoidance and for directing the safe navigation of the ship The interrelationship and optimum use of all navigational data available for conducting navigation	Examination and assessment of evidence obtained from approved ARPA simulator training and one or more of the following: .1 approved in-service experience .2 approved simulator training, where appropriate .3 approved laboratory equipment training	Information obtained from navigation equipment and systems is correctly interpreted and analysed, taking into account the limitations of the equipment and prevailing circumstances and conditions Action taken to avoid a close encounter or collision with another vessel is in accordance with the International Regulations for Preventing Collisions at Sea, 1972, as amended
Maintain the safety of navigation through the use of ECDIS and associated navigation systems to assist command decision making Note: Training and assessment in the use of ECDIS is not required for those who serve exclusively on ships not fitted with ECDIS. This limitation shall be reflected in the endorsement issued to the seafarer concerned	Management of operational procedures, system files and data, including: .1 manage procurement, licensing and updating of chart data and system software to conform to established procedures .2 system and information updating, including the ability to update ECDIS system version in accordance with vendor's product development .3 create and maintain system configuration and backup files .4 create and maintain log files in accordance with established procedures .5 create and maintain route plan files in accordance with established procedures	Assessment of evidence obtained from one of the following: .1 approved in-service experience .2 approved training ship experience .3 approved ECDIS simulator training	Operational procedures for using ECDIS are established, applied, and monitored Actions taken to minimize risk to safety of navigation

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	.6 use ECDIS log-book and track history functions for inspection of system functions, alarm settings and user responses Use ECDIS playback functionality for passage review, route planning and review of system functions		

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Forecast weather and oceanographic conditions	Ability to understand and interpret a synoptic chart and to forecast area weather, taking into account local weather conditions and information received by weather fax Knowledge of the characteristics of various weather systems, including tropical revolving storms and avoidance of storm centres and the dangerous quadrants Knowledge of ocean current Systems Ability to calculate tidal conditions Use all appropriate nautical publications on tides and currents	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved laboratory equipment training	The likely weather conditions predicted for a determined period are based on all available information Actions taken to maintain safety of navigation minimize any risk to safety of the ship Reasons for intended action are backed by statistical data and observations of the actual weather conditions
Respond to navigational emergencies	Precautions when beaching a ship Action to be taken if grounding is imminent, and after grounding Refloating a grounded ship with and without assistance Action to be taken if collision is imminent and following a collision or impairment of the watertight integrity of the hull by any cause	Examination and assessment of evidence obtained from practical instruction, in-service experience and practical drills in emergency procedures	The type and scale of any problem is promptly identified and decisions and actions minimize the effects of any malfunction of the ship's systems Communications are effective and comply with established procedures Decisions and actions maximize safety of persons on board

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	Assessment of damage control Emergency steering Emergency towing arrangements and towing procedure		
Manoeuvre and handle a ship in all conditions	Manoeuvring and handling a ship in all conditions, including: .1 manoeuvres when approaching pilot stations and embarking or disembarking pilots, with due regard to weather, tide, headreach and stopping distances .2 handling ship in rivers, estuaries and restricted waters, having regard to the effects of current, wind and restricted water on helm response .3 application of constantrate-of-turn techniques .4 manoeuvring in shallow water, including the reduction in under-keel clearance caused by squat, rolling and pitching .5 interaction between passing ships and between own ship and nearby banks (canal effect) .6 berthing and unberthing under various conditions of wind, tide and current with and without tugs .7 ship and tug interaction .8 use of propulsion and manoeuvring systems	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service Experience .2 approved simulator training, where appropriate .3 approved manned scale ship model, where appropriate	All decisions concerning berthing and anchoring are based on a proper assessment of the ship's manoeuvring and engine characteristics and the forces to be expected while berthed alongside or lying at anchor While under way, a full assessment is made of possible effects of shallow and restricted waters, ice, banks, tidal conditions, passing ships and own ship's bow and stern wave so that the ship can be safely manoeuvred under various conditions of loading and weather

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Manoeuvre and handle a ship in all conditions (continued)	.9 choice of anchorage; anchoring with one or two anchors in limited anchorages and factors involved in determining the length of anchor cable to be used .10 dragging anchor; clearing fouled anchors .11 dry-docking, both with and without damage .12 management and handling of ships in heavy weather, including assisting a ship or aircraft in distress; towing operations; means of keeping an unmanageable ship out of trough of the sea, lessening drift and use of oil .13 precautions in manoeuvring to launch rescue boats or survival craft in bad weather .14 methods of taking on board survivors from rescue boats and survival craft .15 ability to determine the manoeuvring and propulsion characteristics of common types of ships, with special reference to stopping distances and turning circles at various draughts and speeds .16 importance of navigating at reduced speed to avoid damage caused by own ship's bow wave and stern wave		

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Manoeuvre and handle a ship in all conditions (continued)	.17 practical measures to be taken when navigating in or near ice or in conditions of ice accumulation on board .18 use of, and manoeuvring in and near, traffic separation schemes and in vessel traffic service (VTS) areas		
Operate remote controls of propulsion plant and engineering systems and services	Operating principles of marine power plants Ships' auxiliary machinery General knowledge of marine engineering terms	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved simulator training, where appropriate	Plant, auxiliary machinery and equipment is operated in accordance with technical specifications and within safe operating limits at all times

Function: Cargo handling and stowage at the management level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Plan and ensure safe loading, stowage, securing, care during the voyage and unloading of cargoes	Knowledge of and ability to apply relevant international regulations, codes and standards concerning the safe handling, stowage, securing and transport of cargoes Knowledge of the effect on trim and stability of cargoes and cargo operations Use of stability and trim diagrams and stress-calculating equipment, including automatic data-based (ADB) equipment, and knowledge of loading cargoes and ballasting in order to keep hull stress within acceptable limits	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved simulator training, where appropriate using stability, trim and stress tables, diagrams and stress-calculating equipment	The frequency and extent of cargo condition monitoring is appropriate to its nature and prevailing conditions Unacceptable or unforeseen variations in the condition or specification of the cargo are promptly recognized and remedial action is immediately taken and designed to safeguard the safety of the ship and those on board Cargo operations are planned and executed in accordance with established procedures and legislative requirements

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Plan and ensure safe loading, stowage, securing, care during the voyage and unloading of cargoes (continued)	Stowage and securing of cargoes on board ships, including cargo-handling gear and securing and lashing equipment Loading and unloading operations, with special regard to the transport of cargoes identified in the Code of Safe Practice for Cargo Stowage and Securing General knowledge of tankers and tanker operations Knowledge of the operational and design limitations of bulk carriers Ability to use all available shipboard data related to loading, care and unloading of bulk cargoes Ability to establish procedures for safe cargo handling in accordance with the provisions of the relevant instruments such as IMDG Code, IMSBC Code, MARPOL 73/78 Annexes III and V and other relevant information Ability to explain the basic principles for establishing effective communications and improving working relationship between ship and terminal personnel		Stowage and securing of cargoes ensures that stability and stress conditions remain within safe limits at all times during the voyage

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Assess reported defects and damage to cargo spaces, hatch covers and ballast tanks and take appropriate action	Knowledge of the limitations on strength of the vital constructional parts of a standard bulk carrier and ability to interpret given figures for bending moments and shear forces Ability to explain how to avoid the detrimental effects on bulk carriers of corrosion, fatigue and inadequate cargo handling	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved simulator training, where appropriate using: stability, trim and stress tables, diagrams and stress-calculating equipment	Evaluations are based on accepted principles, well-founded arguments and correctly carried out. The decisions taken are acceptable, taking into consideration the safety of the ship and the prevailing conditions
Carriage of dangerous goods	International regulations, standards, codes and recommendations on the carriage of dangerous cargoes, including the International Maritime Dangerous Goods (IMDG) Code and the International Maritime Solid Bulk Cargoes (IMSBC) Code Carriage of dangerous, hazardous and harmful cargoes; precautions during loading and unloading and care during the voyage	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved simulator training, where appropriate .3 approved specialist training	Planned distribution of cargo is based on reliable information and is in accordance with established guidelines and legislative requirements Information on dangers, hazards and special requirements is recorded in a format suitable for easy reference in the event of an incident

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Function: Controlling the operation of the ship and care for persons on board at the management level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Control trim, stability and stress	Understanding of fundamental principles of ship construction and the theories and factors affecting trim and stability and measures necessary to preserve trim and stability Knowledge of the effect on trim and stability of a ship in the event of damage to and consequent flooding of a compartment and countermeasures to be taken Knowledge of IMO recommendations concerning ship stability	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate	Stability and stress conditions are maintained within safe limits at all times
Monitor and control compliance with legislative requirements and measures to ensure safety of life at sea and the protection of the marine environment	Knowledge of international maritime law embodied in international agreements and conventions Regard shall be paid especially to the following subjects: .1 certificates and other documents required to be carried on board ships by international conventions, how they may be obtained and their period of validity .2 responsibilities under the relevant requirements of the International Convention on Load Lines, 1966, as amended .3 responsibilities under the relevant requirements of the International Convention for the Safety of Life at Sea, 1974, as amended .4 responsibilities under the International Convention for the Prevention of Pollution from Ships, as amended	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate	Procedures for monitoring operations and maintenance comply with legislative requirements Potential non-compliance is promptly and fully identified Planned renewal and extension of certificates ensures continued validity of surveyed items and equipment

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	.5 maritime declarations of health and the requirements of the International Health Regulations .6 responsibilities under international instruments affecting the safety of the ship, passengers, crew and cargo .7 methods and aids to prevent pollution of the marine environment by ships .8 national legislation for Implementing international agreements and conventions		

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Maintain safety and security of the ship's crew and passengers and the operational condition of life-saving, fire-fighting and other safety systems	Thorough knowledge of life-saving appliance regulations (International Convention for the Safety of Life at Sea) Organization of fire drills and abandon ship drills Maintenance of operational condition of life-saving, fire-fighting and other safety systems Actions to be taken to protect and safeguard all persons on board in emergencies Actions to limit damage and salve the ship following a fire, explosion, collision or grounding	Examination and assessment of evidence obtained from practical instruction and approved in-service training and experience	Procedures for monitoring fire-detection and safety systems ensure that all alarms are detected promptly and acted upon in accordance with established emergency procedures
Develop emergency and damage control plans and handle emergency situations	Preparation of contingency plans for response to emergencies Ship construction, including damage control Methods and aids for fire prevention, detection and extinction Functions and use of life-saving appliances	Examination and assessment of evidence obtained from approved in-service training and experience	Emergency procedures are in accordance with the established plans for emergency situations

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Use of leadership and managerial skill	Knowledge of shipboard personnel management and training A knowledge of related international maritime conventions and recommendations, and national legislation Ability to apply task and workload management, including: .1 planning and co-ordination .2 personnel assignment .3 time and resource constraints .4 prioritization Knowledge and ability to apply effective resource management: .1 allocation, assignment, and prioritization of resources .2 effective communication on board and ashore .3 decisions reflect consideration of team experiences .4 assertiveness and leadership, including motivation .5 obtaining and maintaining situation awareness Knowledge and ability to apply decision-making techniques: .1 situation and risk assessment .2 identify and generate options .3 selecting course of action	Assessment of evidence obtained from one or more of the following: .1 approved training .2 approved in-service experience .3 approved simulator training	The crew are allocated duties and informed of expected standards of work and behaviour in a manner appropriate to the individuals concerned Training objectives and activities are based on assessment of current competence and capabilities and operational requirements Operations are demonstrated to be in accordance with applicable rules Operations are planned and resources are allocated as needed in correct priority to perform necessary tasks Communication is clearly and unambiguously given and received Effective leadership behaviours are demonstrated Necessary team member(s) share accurate understanding of current and predicted vessel state and operational status and external environment

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Use of leadership and managerial skill (continued)	.4 evaluation of outcome effectiveness Development, implementation, and oversight of standard operating procedures		Decisions are most effective for the situation Operations are demonstrated to be effective and in accordance with applicable rules
Organize and manage the provision of medical care on board	A thorough knowledge2 of the use and contents of the following publications: .1 International Medical Guide for Ships or equivalent national publications .2 medical section of the International Code of Signals .3 Medical First Aid Guide for Use in Accidents Involving Dangerous Goods	Examination and assessment of evidence obtained from approved training	Actions taken and procedures followed correctly apply and make full use of advice available

Section A-II/3

Mandatory minimum requirements for certification of officers in charge of a navigational watch and of masters on ships of less than 500 gross tonnage, engaged on near-coastal voyages

OFFICER IN CHARGE OF A NAVIGATIONAL WATCH

Standard of competence

1 Every candidate for certification shall:

.1 be required to demonstrate the competence to undertake, at operational level, the tasks, duties and responsibilities listed in column 1 of table A-II/3;

.2 at least hold the appropriate certificate for performing VHF radiocommunications in accordance with the requirements of the Radio Regulations; and

.3 if designated to have primary responsibility for radiocommunications during distress incidents, hold the appropriate certificate issued or recognized under the provisions of the Radio Regulations.

2 The minimum knowledge, understanding and proficiency required for certification is listed in column 2 of table A-II/3.

3 The level of knowledge of the subjects listed in column 2 of table A-II/3 shall be sufficient to enable the candidate to serve in the capacity of officer in charge of a navigational watch.

4 Training and experience to achieve the necessary level of theoretical knowledge, understanding and proficiency shall be based on section A-VIII/2, part 4-1 – Principles to be observed in keeping a navigational watch, and shall also take into account the relevant requirements of this part and the guidance given in part B of this Code.

5 Every candidate for certification shall be required to provide evidence of having achieved the required standard of competence in accordance with the methods for demonstrating competence and the criteria for evaluating competence tabulated in columns 3 and 4 of table A-II/3.

Special training

6 Every candidate for certification as officer in charge of a navigational watch on ships of less than 500 gross tonnage, engaged on near-coastal voyages, who, in accordance with paragraph 4.2.1 of regulation II/3, is required to have completed special training, shall follow an approved programme of onboard training which:

.1 ensures that, during the required period of seagoing service, the candidate receives systematic practical training and experience in the tasks, duties and responsibilities of an officer in charge of a navigational watch, taking into account the guidance given in section B-II/1 of this Code;

.2 is closely supervised and monitored by qualified officers on board the ships in which the approved seagoing service is performed; and

.3 is adequately documented in a training record book or similar document[13].

MASTER

7 Every candidate for certification as master on ships of less than 500 gross tonnage, engaged on near-coastal voyages, shall meet the requirements for an officer in charge of a navigational watch set out below and, in addition, shall be required to provide evidence of knowledge and ability to carry out all the duties of such a master.

13The relevant IMO Model Course(s) and a similar document produced by the International Shipping Federation may be of assistance in the preparation of training record books.

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Table A-II/3

Specification of minimum standard of competence for officers in charge of a navigational watch and for masters on ships of less than 500 gross tonnage engaged on near-coastal voyages

Function: Navigation at the operational level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Plan and conduct a coastal passage and determine position Note: Training and assessment in the use of ECDIS is not required for those who serve exclusively on ships not fitted with ECDIS. These limitations shall be reflected in the endorsement issued to the seafarer concerned	Navigation Ability to determine the ship's position by the use of: .1 landmarks .2 aids to navigation, including lighthouses, beacons and buoys .3 dead reckoning, taking into account winds, tides, currents and estimated speed Thorough knowledge of and ability to use nautical charts and publications, such as sailing directions, tide tables, notices to mariners, radio navigational warnings and ships' routeing information Reporting in accordance with General Principles for Ship Reporting Systems and with VTS procedures Note: This item is only required for certification as master	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate .4 approved laboratory equipment training Using: chart catalogues, charts, nautical publications, radio navigational warnings, sextant, azimuth mirror, electronic navigation equipment, echo-sounding equipment, compass	Information obtained from nautical charts and publications is relevant, interpreted correctly and properly applied The primary method of fixing the ship's position is the most appropriate to the prevailing circumstances and conditions The position is determined within the limits of acceptable instrument/system errors The reliability of the information obtained from the primary method of position fixing is checked at appropriate intervals Calculations and measurements of navigational information are accurate Charts and publications selected are the largest scale on board suitable for the area of navigation and charts are corrected in accordance with the latest information available

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Plan and conduct a coastal passage and determine position (continued)	Voyage planning and navigation for all conditions by acceptable methods of plotting coastal tracks, taking into account, e.g.: .1 restricted waters .2 meteorological conditions .3 ice .4 restricted visibility .5 traffic separation schemes .6 vessel traffic service (VTS) areas .7 areas of extensive tidal effects Note: This item is only required for certification as Master Thorough knowledge of and ability to use ECDIS	Examination and assessment of evidence obtained from one or more of the following: .1 approved training ship experience .2 approved ECDIS simulator training	

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Plan and conduct a coastal passage and determine position (continued)	Navigational aids and equipment Ability to operate safely and determine the ship's position by use of all navigational aids and equipment commonly fitted on board the ships concerned Compasses Knowledge of the errors and corrections of magnetic compasses Ability to determine errors of the compass, using terrestrial means, and to allow for such errors Automatic pilot Knowledge of automatic pilot systems and procedures; change-over from manual to automatic control and vice versa; adjustment of controls for optimum performance Meteorology Ability to use and interpret information obtained from shipborne meteorological instruments Knowledge of the characteristics of the various weather systems, reporting procedures and recording systems Ability to apply the meteorological information available	Assessment of evidence obtained from approved radar simulator	Performance checks and tests of navigation systems comply with manufacturer's recommendations, good navigational practice and IMO resolutions on performance standards for navigational equipment Interpretation and analysis of information obtained from radar is in accordance with accepted navigational practice and takes account of the limits and accuracy levels of radar Errors in magnetic compasses are determined and applied correctly to courses and bearings Selection of the mode of steering is the most suitable for prevailing weather, sea and traffic conditions and intended manoeuvres Measurements and observations of weather conditions are accurate and appropriate to the passage Meteorological information is evaluated and applied to maintain the safe passage of the vessel

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Maintain a safe navigational watch	Watchkeeping Thorough knowledge of content, application and intent of the International Regulations for Preventing Collisions at Sea, 1972, as amended Knowledge of content of the Principles to be observed in keeping a navigational watch Use of routeing in accordance with the General Provisions on Ships' Routeing Use of reporting in accordance with the General Principles for Ship Reporting Systems and with VTS procedures	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate .4 approved laboratory equipment training	The conduct, handover and relief of the watch conforms with accepted principles and procedures A proper look-out is maintained at all times and in conformity with accepted principles and procedures Lights, shapes and sound signals conform with the requirements contained in the International Regulations for Preventing Collisions at Sea, 1972, as amended and are correctly recognized The frequency and extent of monitoring of traffic, the ship and the environment conform with accepted principles and procedures Action to avoid close encounters and collision with other vessels is in accordance with the International Regulations for Preventing Collisions at Sea, 1972, as amended Decisions to adjust course and/or speed are both timely and in accordance with accepted navigation procedures A proper record is maintained of movements and activities relating to the navigation of the ship Responsibility for safe navigation is clearly defined at all times, including periods when the master is on the bridge and when under pilotage

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Respond to emergencies	Emergency procedures, including: .1 precautions for the protection and safety of passengers in emergency situations .2 initial assessment of damage and damage control .3 action to be taken following a collision .4 action to be taken following a grounding In addition, the following material should be included for certification as master: .1 emergency steering .2 arrangements for towing and for being taken in tow .3 rescuing persons from the sea .4 assisting a vessel in distress .5 appreciation of the action to be taken when emergencies arise in port	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate .4 practical instruction	The type and scale of the emergency is promptly identified Initial actions and, if appropriate, manoeuvring are in accordance with contingency plans and are appropriate to the urgency of the situation and the nature of the emergency
Respond to a distress signal at sea	Search and rescue Knowledge of the contents of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual	Examination and assessment of evidence obtained from practical instruction or approved simulator training, where appropriate	The distress or emergency signal is immediately recognized Contingency plans and instructions in standing orders are implemented and complied with

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Manoeuvre the ship and operate small ship power plants	Ship manoeuvring and handling Knowledge of factors affecting safe manoeuvring and handling The operation of small ship power plants and auxiliaries Proper procedures for anchoring and mooring	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate	Safe operating limits of ship propulsion, steering and power systems are not exceeded in normal manoeuvres Adjustments made to the ship's course and speed maintain safety of navigation Plant, auxiliary machinery and equipment is operated in accordance with technical specifications and within safe operating limits at all times

Function: Cargo handling and stowage at the operational level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Monitor the loading, stowage, securing and unloading of cargoes and their care during the voyage	Cargo handling, stowage and securing Knowledge of safe handling, stowage and securing of cargoes, including dangerous, hazardous and harmful cargoes, and their effect on the safety of life and of the ship Use of the International Maritime Dangerous Goods (IMDG) Code	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate	Cargo operations are carried out in accordance with the cargo plan or other documents and established safety rules/regulations, equipment operating instructions and shipboard stowage limitations The handling of dangerous, hazardous and harmful cargoes complies with international regulations and recognized standards and codes of safe practice

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Function: Controlling the operation of the ship and care for persons on board at the operational level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Ensure compliance with pollution-prevention requirements	Prevention of pollution of the marine environment and anti-pollution procedures Knowledge of the precautions to be taken to prevent pollution of the marine environment Anti-pollution procedures and all associated equipment	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience	Procedures for monitoring shipboard operations and ensuring compliance with MARPOL requirements are fully observed

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Maintain seaworthiness of the ship	Ship stability Working knowledge and application of stability, trim and stress tables, diagrams and stress-calculating equipment Understanding of fundamental actions to be taken in the event of partial loss of intact buoyancy Understanding of the fundamentals of watertight integrity Ship construction General knowledge of the principal structural members of a ship and the proper names for the various parts	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate .4 approved laboratory equipment training	The stability conditions comply with the IMO intact stability criteria under all conditions of loading Actions to ensure and maintain the watertight integrity of the ship are in accordance with accepted practice
Prevent, control and fight fires on board	Fire prevention and fire-fighting appliances Ability to organize fire drills Knowledge of classes and chemistry of fire Knowledge of fire-fighting Systems Understanding of action to be taken in the event of fire, including fires involving oil systems	Assessment of evidence obtained from approved fire-fighting training and experience as set out in section A-VI/3	The type and scale of the problem is promptly identified and initial actions conform with the emergency procedure and contingency plans for the ship Evacuation, emergency shutdown and isolation procedures are appropriate to the nature of the emergency and are implemented promptly The order of priority, and the levels and time-scales of making reports and informing personnel on board, are relevant to the nature of the emergency and reflect the urgency of the problem

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Operate life-saving appliances	Life-saving Ability to organize abandon ship drills and knowledge of the operation of survival craft and rescue boats, their launching appliances and arrangements, and their equipment, including radio life-saving appliances, satellite EPIRBs, SARTs, immersion suits and thermal protective aids	Assessment of evidence obtained from approved training and experience as set out in section A-VI/2, paragraphs 1 to 4	Actions in responding to abandon ship and survival situations are appropriate to the prevailing circumstances and conditions and comply with accepted safety practices and standards

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Apply medical first aid on board ship	Medical aid Practical application of medical guides and advice by radio, including the ability to take effective action based on such knowledge in the case of accidents or illnesses that are likely to occur on board ship	Assessment of evidence obtained from approved training as set out in section A-VI/4, paragraphs 1 to 3	The identification of probable cause, nature and extent of injuries or conditions is prompt and treatment minimizes immediate threat to life
Monitor compliance with legislative requirements	Basic working knowledge of the relevant IMO conventions concerning safety of life at sea and protection of the marine environment	Assessment of evidence obtained from examination or approved training	Legislative requirements relating to safety of life at sea and protection of the marine environment are correctly identified
Contribute to the safety of personnel and ship	Knowledge of personal survival techniques Knowledge of fire prevention and ability to fight and extinguish fires Knowledge of elementary first aid Knowledge of personal safety and social responsibilities	Assessment of evidence obtained from approved training and experiences as set out in section A-VI/1, paragraph 2	Appropriate safety and protective equipment is correctly used Procedures and safe working practices designed to safeguard personnel and the ship are observed at all times Procedures designed to safeguard the environment are observed at all times Initial and follow-up actions on becoming aware of an emergency conform with established emergency response procedures

Section A-II/4

Mandatory minimum requirements for certification of ratings forming part of a navigational watch

Standard of competence

1 Every rating forming part of a navigational watch on a seagoing ship of 500 gross tonnage or more shall be required to demonstrate the competence to perform the navigation function at the support level, as specified in column 1 of table A-II/4.

2 The minimum knowledge, understanding and proficiency required of ratings forming part of a navigational watch on a seagoing ship of 500 gross tonnage or more is listed in column 2 of table A-II/4.

3 Every candidate for certification shall be required to provide evidence of having achieved the required standard of competence in accordance with the methods for demonstrating competence and the criteria for evaluating competence specified in columns 3 and 4 of table A-II/4. The reference to "practical test" in column 3 may include approved shore-based training in which the students undergo practical testing.

4 Where there are no tables of competence for the support level in respect to certain functions, it remains the responsibility of the Administration to determine the appropriate training, assessment and certification requirements to be applied to personnel designated to perform those functions at the support level.

Table A-II/4

Specification of minimum standard of competence for ratings forming part of a navigational watch

Function: Navigation at the support level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Steer the ship and also comply with helm orders in the English language	Use of magnetic and gyro-compasses Helm orders Change-over from automatic pilot to hand steering and vice versa	Assessment of evidence obtained from: .1 practical test, or .2 approved in-service experience, or .3 approved training ship experience	A steady course is steered within acceptable limits, having regard to the area of navigation and prevailing sea state. Alterations of course are smooth and controlled Communications are clear and concise at all times and orders are acknowledged in a seamanlike manner
Keep a proper look-out by sight and hearing	Responsibilities of a look-out, including reporting the approximate bearing of a sound signal, light or other object in degrees or points	Assessment of evidence obtained from: .1 practical test, or .2 approved in-service experience, or .3 approved training ship experience	Sound signals, lights and other objects are promptly detected and their appropriate bearing, in degrees or points, is reported to the officer of the watch

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Contribute to monitoring and controlling a safe watch	Shipboard terms and definitions Use of appropriate internal communication and alarm systems Ability to understand orders and to communicate with the officer of the watch in matters relevant to watchkeeping duties Procedures for the relief, maintenance and handover of a watch Information required to maintain a safe watch Basic environmental protection procedures	Assessment of evidence obtained from approved in-service experience or approved training ship experience	Communications are clear and concise and advice/clarification is sought from the officer on watch where watch information or instructions are not clearly understood Maintenance, handover and relief of the watch is in conformity with accepted practices and procedures

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Operate emergency equipment and apply emergency procedures	Knowledge of emergency duties and alarm signals Knowledge of pyrotechnic distress signals; satellite EPIRBs and SARTs Avoidance of false distress alerts and action to be taken in event of accidental activation	Assessment of evidence obtained from demonstration and approved in-service experience or approved training ship experience	Initial action on becoming aware of an emergency or abnormal situation is in conformity with established practices and procedures Communications are clear and concise at all times and orders are acknowledged in a seamanlike manner The integrity of emergency and distress alerting systems is maintained at all times

Section A-II/5

Mandatory minimum requirements for certification of ratings as able seafarer deck

Standard of competence

1 Every able seafarer deck serving on a seagoing ship of 500 gross tonnage or more shall be required to demonstrate the competence to perform the functions at the support level, as specified in column 1 of table A-II/5.

2 The minimum knowledge, understanding and proficiency required of an able seafarer deck serving on a seagoing ship of 500 gross tonnage or more is listed in column 2 of table A-II/5.

3 Every candidate for certification shall be required to provide evidence of having achieved the required standard of competence in accordance with the methods for demonstrating competence and the criteria for evaluating competence specified in columns 3 and 4 of table A-II/5.

Table A-II/5

Specification of minimum standards of competence of ratings as able seafarer deck

Function: Navigation at the support level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Contribute to a safe navigational watch	Ability to understand orders and to communicate with the officer of the watch in matters relevant to watchkeeping duties Procedures for the relief, maintenance and handover of a watch Information required to maintain a safe watch	Assessment of evidence obtained from in-service experience or practical test	Communications are clear and concise Maintenance, handover and relief of the watch is in conformity with acceptable practices and procedures

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Contribute to berthing, anchoring and other mooring operations	Working knowledge of the mooring system and related procedures, including: .1 the function of mooring and tug lines and how each line functions as part of an overall system .2 the capacities, safe working loads, and breaking strengths of mooring equipment, including mooring wires, synthetic and fibre lines, winches, anchor windlasses, capstans, bitts, chocks and bollards .3 the procedures and order of events for making fast and letting go mooring and tug lines and wires, including towing lines .4 the procedures and order of events for the use of anchors in various operations Working knowledge of the procedures and order of events associated with mooring to a buoy or buoys	Assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 practical training .3 examination .4 approved training ship experience .5 approved simulator training, where appropriate	Operations are carried out in accordance with established safety practices and equipment operating instructions

Function: Cargo handling and stowage at the support level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Contribute to the handling of cargo and stores	Knowledge of procedures for safe handling, stowage and securing of cargoes and stores, including dangerous, hazardous and harmful substances and liquids Basic knowledge of and precautions to observe in connection with particular types of cargo and identification of IMDG labelling	Assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 practical training .3 examination .4 approved training ship experience .5 approved simulator training, where appropriate	Cargo and stores operations are carried out in accordance with established safety procedures and equipment operating instructions The handling of dangerous, hazardous and harmful cargoes or stores complies with established safety practices

Function: Controlling the operation of the ship and care for persons on board at the support level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Contribute to the safe operation of deck equipment and machinery	Knowledge of deck equipment, including: .1 function and uses of valves and pumps, hoists, cranes, booms, and related equipment .2 function and uses of winches, windlasses, capstans and related equipment .3 hatches, watertight doors, ports, and related equipment	Assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 practical training .3 examination .4 approved training ship experience	Operations are carried out in accordance with established safety practices and equipment operating instructions

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Contribute to the safe operation of deck equipment and machinery (continued)	.4 fibre and wire ropes, cables and chains, including their construction, use, markings, maintenance and proper stowage .5 ability to use and understand basic signals for the operation of equipment, including winches, windlasses, cranes, and hoists .6 ability to operate anchoring equipment under various conditions, such as anchoring, weighing anchor, securing for sea, and in emergencies Knowledge of the following procedures and ability to: .1 rig and unrig bosun's chairs and staging .2 rig and unrig pilot ladders, hoists, rat-guards and gangways .3 use marlin spike seamanship skills, including the proper use of knots, splices and stoppers Use and handling of deck and cargo-handling gear and equipment: .1 access arrangements, hatches and hatch covers, ramps, side/bow/stern doors or elevators .2 pipeline systems – bilge and ballast suctions and wells	Assessment of evidence obtained from practical demonstration Assessment of evidence obtained from practical demonstration Assessment of evidence obtained from practical demonstration	Communications within the operator's area of responsibility are consistently successful Equipment operation is safely carried out in accordance with established procedures Demonstrate the proper methods for rigging and unrigging in accordance with safe industry practice Demonstrate the proper creation and use of knots, splices, stoppers, whippings, servings as well as proper canvas handling

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Contribute to the safe operation of deck equipment and machinery (continued)	.3 cranes, derricks, winches Knowledge of hoisting and dipping flags and the main single-flag signals. (A, B, G, H, O, P, Q)		Demonstrate the proper use of blocks and tackle Demonstrate the proper methods for handling lines, wires, cables and chains
Apply occupational health and safety precautions	Working knowledge of safe working practices and personal shipboard safety including: .1 working aloft .2 working over the side .3 working in enclosed spaces .4 permit to work systems .5 line handling .6 lifting techniques and methods of preventing back injury .7 electrical safety .8 mechanical safety .9 chemical and biohazard safety .10 personal safety equipment	Assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 practical training .3 examination .4 approved training ship experience	Procedures designed to safeguard personnel and the ship are observed at all times Safe working practices are observed and appropriate safety and protective equipment is correctly used at all times
Apply precautions and contribute to the prevention of pollution of the marine environment	Knowledge of the precautions to be taken to prevent pollution of the marine environment Knowledge of the use and operation of anti-pollution equipment Knowledge of the approved methods for disposal of marine pollutants	Assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 practical training .3 examination .4 approved training ship experience	Procedures designed to safeguard the marine environment are observed at all times

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Operate survival craft and rescue boats	Knowledge of the operation of survival craft and rescue boats, their launching appliances and arrangements, and their equipment Knowledge of survival at sea techniques	Assessment of evidence obtained from approved training and experience as set out in section A-VI/2, paragraphs 1 to 4	Actions in responding to abandon ship and survival situations are appropriate to the prevailing circumstances and conditions and comply with accepted safety practices and standards

Function: Maintenance and repair at the support level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Contribute to shipboard maintenance and repair	Ability to use painting, lubrication and cleaning materials and equipment Ability to understand and execute routine maintenance and repair procedures Knowledge of surface preparation techniques Understanding manufacturer's safety guidelines and shipboard instructions Knowledge of safe disposal of waste materials Knowledge of the application, maintenance and use of hand and power tools	Assessment of evidence obtained from practical demonstration Assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 practical training .3 examination .4 approved training ship experience	Maintenance and repair activities are carried out in accordance with technical, safety and procedural specifications

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CHAPTER III

Standards regarding engine department

Section A-III/1

Mandatory minimum requirements for certification of officers in charge of an engineering watch in a manned engine-room or as designated duty engineers in a periodically unmanned engine-room

Training

1 The education and training required by paragraph 2.4 of regulation III/1 shall include training in mechanical and electrical workshop skills relevant to the duties of an engineer officer.

Onboard training

2 Every candidate for certification as officer in charge of an engineering watch in a manned engine-room or as designated duty engineer in a periodically unmanned engine-room of ships powered by main propulsion machinery of 750 kW or more whose seagoing service, in accordance with paragraph 2.2 of regulation III/1, forms part of a training programme approved as meeting the requirements of this section shall follow an approved programme of onboard training which:

.1 ensures that, during the required period of seagoing service, the candidate receives systematic practical training and experience in the tasks, duties and responsibilities of an officer in charge of an engine-room watch, taking into account the guidance given in section B-III/1 of this Code;

.2 is closely supervised and monitored by a qualified and certificated engineer officer aboard the ships in which the approved seagoing service is performed; and

.3 is adequately documented in a training record book.

Standard of competence

3 Every candidate for certification as officer in charge of an engineering watch in a manned engine-room or as designated duty engineer in a periodically unmanned engine-room on a seagoing ship powered by main propulsion machinery of 750 kW propulsion power or more shall be required to demonstrate ability to undertake, at the operational level, the tasks, duties and responsibilities listed in column 1 of table A-III/1.

4 The minimum knowledge, understanding and proficiency required for certification is listed in column 2 of table A-III/1.

5 The level of knowledge of the material listed in column 2 of table A-III/1 shall be sufficient for engineer officers to carry out their watchkeeping duties.[14]

[14]The relevant IMO Model Course(s) may be of assistance in the preparation of courses.

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6 Training and experience to achieve the necessary theoretical knowledge, understanding and proficiency shall be based on section A-VIII/2, part 4-2 – Principles to be observed in keeping an engineering watch, and shall take into account the relevant requirements of this part and the guidance given in part B of this Code.

7 Candidates for certification for service in ships in which steam boilers do not form part of their machinery may omit the relevant requirements of table A-III/1. A certificate awarded on such a basis shall not be valid for service on ships in which steam boilers form part of a ship's machinery until the engineer officer meets the standard of competence in the items omitted from table A-III/1. Any such limitation shall be stated on the certificate and in the endorsement.

8 The Administration may omit knowledge requirements for types of propulsion machinery other than those machinery installations for which the certificate to be awarded shall be valid. A certificate awarded on such a basis shall not be valid for any category of machinery installation which has been omitted until the engineer officer proves to be competent in these knowledge requirements. Any such limitation shall be stated on the certificate and in the endorsement.

9 Every candidate for certification shall be required to provide evidence of having achieved the required standard of competence in accordance with the methods for demonstrating competence and the criteria for evaluating competence tabulated in columns 3 and 4 of table A-III/1.

Near-coastal voyages

10 The requirements of paragraphs 2.2 to 2.5 of regulation III/1 relating to level of knowledge, understanding and proficiency required under the different sections listed in column 2 of table A-III/1 may be varied for engineer officers of ships powered by main propulsion machinery of less than 3,000 kW propulsion power engaged on near-coastal voyages, as considered necessary, bearing in mind the effect on the safety of all ships which may be operating in the same waters. Any such limitation shall be stated on the certificate and in the endorsement.

Table A-III/1

Specification of minimum standard of competence for officers in charge of an engineering watch in a manned engine-room or designated duty engineers in a periodically unmanned engine-room

Function: Marine engineering at the operational level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Maintain a safe engineering watch	Thorough knowledge of Principles to be observed in keeping an engineering watch, including: .1 duties associated with taking over and accepting a watch .2 routine duties undertaken during a watch .3 maintenance of the machinery space logs and the significance of the readings taken .4 duties associated with handing over a watch Safety and emergency procedures; change-over of remote/automatic to local control of all systems Safety precautions to be observed during a watch and immediate actions to be taken in the event of fire or accident, with particular reference to oil systems	Assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate .4 approved laboratory equipment training	The conduct, handover and relief of the watch conforms with accepted principles and procedures The frequency and extent of monitoring of engineering equipment and systems conforms to manufacturers' recommendations and accepted principles and procedures, including Principles to be observed in keeping an engineering watch A proper record is maintained of the movements and activities relating to the ship's engineering systems

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Maintain a safe engineering watch (continued)	Engine-room resource management Knowledge of engine-room resource management principles, including: .1 allocation, assignment, and prioritization of resources .2 effective communication .3 assertiveness and leadership .4 obtaining and maintaining situational awareness .5 Consideration of team experience	Assessment of evidence obtained from one or more of the following: .1 approved training .2 approved in-service experience .3 approved simulator training	Resources are allocated and assigned as needed in correct priority to perform necessary tasks Communication is clearly and unambiguously given and received Questionable decisions and/or actions result in appropriate challenge and response Effective leadership behaviours are identified Team member(s) share accurate understanding of current and predicted engine-room and associated systems state, and of external environment

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Use English in written and oral form	Adequate knowledge of the English language to enable the officer to use engineering publications and to perform engineering duties	Examination and assessment of evidence obtained from practical instruction	English language publications relevant to engineering duties are correctly interpreted Communications are clear and understood
Use internal communication systems	Operation of all internal communication systems on board	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate .4 approved laboratory equipment training	Transmission and reception of messages are consistently Successful Communication records are complete, accurate and comply with statutory requirements

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Operate main and auxiliary machinery and associated control systems	Basic construction and operation principles of machinery systems, including: .1 marine diesel engine .2 marine steam turbine .3 marine gas turbine .4 marine boiler .5 shafting installations, including propeller .6 other auxiliaries, including various pumps, air compressor, purifier, fresh water generator, heat exchanger, refrigeration, airconditioning and ventilation systems .7 steering gear .8 automatic control systems .9 fluid flow and characteristics of lubricating oil, fuel oil and cooling systems .10 deck machinery Safety and emergency procedures for operation of propulsion plant machinery, including control systems	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved laboratory equipment training	Construction and operating mechanisms can be understood and explained with drawings/instructions

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Operate main and auxiliary machinery and associated control systems (continued)	Preparation, operation, fault detection and necessary measures to prevent damage for the following machinery items and control systems: .1 main engine and associated auxiliaries .2 steam boiler and associated auxiliaries and steam systems .3 auxiliary prime movers and associated systems .4 other auxiliaries, including refrigeration, air-conditioning and ventilation systems	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate .4 approved laboratory equipment training	Operations are planned and carried out in accordance with operating manuals, established rules and procedures to ensure safety of operations and avoid pollution of the marine environment Deviations from the norm are promptly identified The output of plant and engineering systems consistently meets requirements, including bridge orders relating to changes in speed and direction The causes of machinery malfunctions are promptly identified and actions are designed to ensure the overall safety of the ship and the plant, having regard to the prevailing circumstances and conditions

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Operate fuel, lubrication, ballast and other pumping systems and associated control systems	Operational characteristics of pumps and piping systems, including control systems Operation of pumping systems: .1 routine pumping operations .2 operation of bilge, ballast and cargo pumping systems Oily-water separators (or similar equipment) requirements and operation	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate .4 approved laboratory equipment training	Operations are planned and carried out in accordance with operating manuals, established rules and procedures to ensure safety of operations and avoid pollution of the marine environment Deviations from the norm are promptly identified and appropriate action is taken

Function: Electrical, electronic and control engineering at the operational level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Operate electrical, electronic and control systems	Basic configuration and operation principles of the following electrical, electronic and control equipment: .1 electrical equipment: .a generator and distribution systems .b preparing, starting, paralleling and changing over generators .c electrical motors including starting methodologies .d high-voltage installations .e sequential control circuits and associated system devices .2 electronic equipment: .a characteristics of basic electronic circuit elements .b flowchart for automatic and control systems .c functions, characteristics and features of control systems for machinery items, including main propulsion plant operation control and steam boiler automatic controls .3 control systems: .a various automatic control methodologies and characteristics .b Proportional–Integral–Derivative (PID) control characteristics and associated system devices for process control	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate .4 approved laboratory equipment training	Operations are planned and carried out in accordance with operating manuals, established rules and procedures to ensure safety of operations Electrical, electronic and control systems can be understood and explained with drawings/instructions

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Maintenance and repair of electrical and electronic equipment	Safety requirements for working on shipboard electrical systems, including the safe isolation of electrical equipment required before personnel are permitted to work on such equipment Maintenance and repair of electrical system equipment, switchboards, electric motors, generator and DC electrical systems and equipment Detection of electric malfunction, location of faults and measures to prevent damage Construction and operation of electrical testing and measuring equipment Function and performance tests of the following equipment and their configuration: .1 monitoring systems .2 automatic control devices .3 protective devices The interpretation of electrical and simple electronic diagrams	Examination and assessment of evidence obtained from one or more of the following: .1 approved workshop skills training .2 approved practical experience and tests .3 approved in-service experience .4 approved training ship experience	Safety measures for working are appropriate Selection and use of hand tools, measuring instruments, and testing equipment are appropriate and interpretation of results is accurate Dismantling, inspecting, repairing and reassembling equipment are in accordance with manuals and good practice Reassembling and performance testing is in accordance with manuals and good practice

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Function: Maintenance and repair at the operational level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Appropriate use of hand tools, machine tools and measuring instruments for fabrication and repair on board	Characteristics and limitations of materials used in construction and repair of ships and equipment Characteristics and limitations of processes used for fabrication and repair Properties and parameters considered in the fabrication and repair of systems and components Methods for carrying out safe emergency/temporary repairs Safety measures to be taken to ensure a safe working environment and for using hand tools, machine tools and measuring instruments Use of hand tools, machine tools and measuring instruments Use of various types of sealants and packings	Assessment of evidence obtained from one or more of the following: .1 approved workshop skills training .2 approved practical experience and tests .3 approved in-service experience .4 approved training ship experience	Identification of important parameters for fabrication of typical ship-related components is appropriate Selection of materials is appropriate Fabrication is to designated tolerances Use of equipment and hand tools, machine tools and measuring instruments is appropriate and safe
Maintenance and repair of shipboard machinery and equipment	Safety measures to be taken for repair and maintenance, including the safe isolation of shipboard machinery and equipment required before personnel are permitted to work on such machinery or equipment Appropriate basic mechanical knowledge and skills	Examination and assessment of evidence obtained from one or more of the following: .1 approved workshop skills training .2 approved practical experience and tests .3 approved in-service experience	Safety procedures followed are appropriate Selection of tools and spare gear is appropriate

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Maintenance and repair of shipboard machinery and equipment (continued)	Maintenance and repair, such as dismantling, adjustment and reassembling of machinery and equipment The use of appropriate specialized tools and measuring instruments Design characteristics and selection of materials in construction of equipment Interpretation of machinery drawings and handbooks The interpretation of piping, hydraulic and pneumatic diagrams	.4 approved training ship experience	Dismantling, inspecting, repairing and reassembling equipment is in accordance with manuals and good practice Re-commissioning and performance testing is in accordance with manuals and good practice Selection of materials and parts is appropriate

Function: Controlling the operation of the ship and care for persons on board at the operational level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Ensure compliance with pollution-prevention requirements	Prevention of pollution of the marine environment Knowledge of the precautions to be taken to prevent pollution of the marine environment Anti-pollution procedures and all associated equipment Importance of proactive measures to protect the marine environment	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved training	Procedures for monitoring shipboard operations and ensuring compliance with MARPOL requirements are fully observed Actions to ensure that a positive environmental reputation is maintained

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Maintain seaworthiness of the ship	Ship stability Working knowledge and application of stability, trim and stress tables, diagrams and stress-calculating equipment Understanding of the fundamentals of watertight integrity Understanding of fundamental actions to be taken in the event of partial loss of intact buoyancy Ship construction General knowledge of the principal structural members of a ship and the proper names for the various parts	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate .4 approved laboratory equipment training	The stability conditions comply with the IMO intact stability criteria under all conditions of loading Actions to ensure and maintain the watertight integrity of the ship are in accordance with accepted practice
Prevent, control and fight fires on board	Fire prevention and fire-fighting appliances Ability to organize fire drills Knowledge of classes and chemistry of fire Knowledge of fire-fighting systems Action to be taken in the event of fire, including fires involving oil systems	Assessment of evidence obtained from approved fire-fighting training and experience as set out in section A-VI/3, paragraphs 1 to 3	The type and scale of the problem is promptly identified and initial actions conform with the emergency procedure and contingency plans for the ship Evacuation, emergency shutdown and isolation procedures are appropriate to the nature of the emergency and are implemented promptly The order of priority, and the levels and time-scales of making reports and informing personnel on board, are relevant to the nature of the emergency and reflect the urgency of the problem

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Operate life-saving appliances	Life-saving Ability to organize abandon ship drills and knowledge of the operation of survival craft and rescue boats, their launching appliances and arrangements, and their equipment, including radio life-saving appliances, satellite EPIRBs, SARTs, immersion suits and thermal protective aids	Assessment of evidence obtained from approved training and experience as set out in section A-VI/2, paragraphs 1 to 4	Actions in responding to abandon ship and survival situations are appropriate to the prevailing circumstances and conditions and comply with accepted safety practices and standards
Apply medical first aid on board ship	Medical aid Practical application of medical guides and advice by radio, including the ability to take effective action based on such knowledge in the case of accidents or illnesses that are likely to occur on board ship	Assessment of evidence obtained from approved training as set out in section A-VI/4, paragraphs 1 to 3	Identification of probable cause, nature and extent of injuries or conditions is prompt and treatment minimizes immediate threat to life
Monitor compliance with legislative requirements	Basic working knowledge of the relevant IMO conventions concerning safety of life at sea and protection of the marine environment	Assessment of evidence obtained from examination or approved training	Legislative requirements relating to safety of life at sea and protection of the marine environment are correctly identified
Application of leadership and teamworking skills	Working knowledge of shipboard personnel management and training A knowledge of related international maritime conventions and recommendations, and national legislation Ability to apply task and workload management, including: .1 planning and co-ordination .2 personnel assignment .3 time and resource constraints .4 prioritization	Assessment of evidence obtained from one or more of the following: .1 approved training .2 approved in-service experience .3 practical demonstration	The crew are allocated duties and informed of expected standards of work and behaviour in a manner appropriate to the individuals concerned Training objectives and activities are based on assessment of current competence and capabilities and operational requirements. Operations are demonstrated to be in accordance with applicable rules

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Application of leadership and teamworking skills (continued)	Knowledge and ability to apply effective resource management: .1 allocation, assignment, and prioritization of resources .2 effective communication on board and ashore .3 decisions reflect consideration of team experiences .4 assertiveness and leadership, including Motivation .5 obtaining and maintaining situational awareness Knowledge and ability to apply decision-making techniques: .1 Situation and risk assessment .2 Identify and consider generated options .3 Selecting course of action .4 Evaluation of outcome effectiveness		Operations are planned and resources are allocated as needed in correct priority to perform necessary tasks Communication is clearly and unambiguously given and received Effective leadership behaviours are demonstrated Necessary team member(s) share accurate understanding of current and predicted vessel and operational status and external environment Decisions are most effective for the situation

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Contribute to the safety of personnel and ship	Knowledge of personal survival techniques Knowledge of fire prevention and ability to fight and extinguish fires Knowledge of elementary first aid Knowledge of personal safety and social responsibilities	Assessment of evidence obtained from approved training and experience as set out in section A-VI/1, paragraph 2	Appropriate safety and protective equipment is correctly used Procedures and safe working practices designed to safeguard personnel and the ship are observed at all times Procedures designed to safeguard the environment are observed at all times Initial and follow-up actions on becoming aware of an emergency conform with established emergency response procedures

Section A-III/2

Mandatory minimum requirements for certification of chief engineer officers and second engineer officers on ships powered by main propulsion machinery of 3,000 kW propulsion power or more

Standard of competence

1 Every candidate for certification as chief engineer officer and second engineer officer of seagoing ships powered by main propulsion machinery of 3,000 kW power or more shall be required to demonstrate ability to undertake, at the management level, the tasks, duties and responsibilities listed in column 1 of table A-III/2.

2 The minimum knowledge, understanding and proficiency required for certification is listed in column 2 of table A-III/2. This incorporates, expands and extends in depth the subjects listed in column 2 of table A-III/1 for officers in charge of an engineering watch.

3 Bearing in mind that a second engineer officer shall be in a position to assume the responsibilities of the chief engineer officer at any time, assessment in these subjects shall be designed to test the candidate's ability to assimilate all available information that affects the safe operation of the ship's machinery and the protection of the marine environment.

4 The level of knowledge of the subjects listed in column 2 of table A-III/2 shall be sufficient to enable the candidate to serve in the capacity of chief engineer officer or second engineer officer.[15]

5 Training and experience to achieve the necessary level of theoretical knowledge, understanding and proficiency shall take into account the relevant requirements of this part and the guidance given in part B of this Code.

15The relevant IMO Model Course(s) may be of assistance in the preparation of courses.

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6 The Administration may omit knowledge requirements for types of propulsion machinery other than those machinery installations for which the certificate to be awarded shall be valid. A certificate awarded on such a basis shall not be valid for any category of machinery installation which has been omitted until the engineer officer proves to be competent in these knowledge requirements. Any such limitation shall be stated on the certificate and in the endorsement.

7 Every candidate for certification shall be required to provide evidence of having achieved the required standard of competence in accordance with the methods for demonstrating competence and the criteria for evaluating competence tabulated in columns 3 and 4 of table A-III/2.

Near-coastal voyages

8 The level of knowledge, understanding and proficiency required under the different sections listed in column 2 of table A-III/2 may be varied for engineer officers of ships powered by main propulsion machinery with limited propulsion power engaged on near-coastal voyages, as considered necessary, bearing in mind the effect on the safety of all ships which may be operating in the same waters. Any such limitation shall be stated on the certificate and in the endorsement.

Table A-III/2

Specification of minimum standard of competence for chief engineer officers and second engineer officers on ships powered by main propulsion machinery of 3,000 kW propulsion power or more

Function: Marine engineering at the management level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Manage the operation of propulsion plant machinery	Design features, and operative mechanism of the following machinery and associated auxiliaries: .1 marine diesel engine .2 marine steam turbine .3 marine gas turbine .4 marine steam boiler	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate .4 approved laboratory equipment training	Explanation and understanding of design features and operating mechanisms are appropriate
Plan and schedule operations	Theoretical knowledge Thermodynamics and heat transmission Mechanics and hydromechanics Propulsive characteristics of diesel engines, steam and gas turbines, including speed, output and fuel consumption Heat cycle, thermal efficiency and heat balance of the following: .1 marine diesel engine .2 marine steam turbine .3 marine gas turbine .4 marine steam boiler	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate .4 approved laboratory equipment training	The planning and preparation of operations is suited to the design parameters of the power installation and to the requirements of the voyage

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Plan and schedule operations (continued)	Refrigerators and refrigeration cycle Physical and chemical properties of fuels and lubricants Technology of materials Naval architecture and ship construction, including damage control		

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Operation, surveillance, performance assessment and maintaining safety of propulsion plant and auxiliary machinery	Practical knowledge Start up and shut down main propulsion and auxiliary machinery, including associated systems Operating limits of propulsion plant The efficient operation, surveillance, performance assessment and maintaining safety of propulsion plant and auxiliary machinery Functions and mechanism of automatic control for main engine Functions and mechanism of automatic control for auxiliary machinery including but not limited to: .1 generator distribution systems .2 steam boilers .3 oil purifier .4 refrigeration system .5 pumping and piping systems .6 steering gear system .7 cargo-handling equipment and deck machinery	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate .4 approved laboratory equipment training	The methods of preparing for the start-up and of making available fuels, lubricants, cooling water and air are the most appropriate Checks of pressures, temperatures and revolutions during the start-up and warmup period are in accordance with technical specifications and agreed work plans Surveillance of main propulsion plant and auxiliary systems is sufficient to maintain safe operating conditions The methods of preparing the shutdown and of supervising the cooling down of the engine are the most appropriate The methods of measuring the load capacity of the engines are in accordance with technical specifications Performance is checked against bridge orders Performance levels are in accordance with technical specifications

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Manage fuel, lubrication and ballast operations	Operation and maintenance of machinery, including pumps and piping systems	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate	Fuel and ballast operations meet operational requirements and are carried out so as to prevent pollution of the marine environment

Function: Electrical, electronic and control engineering at the management level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Manage operation of electrical and electronic control equipment	Theoretical knowledge Marine electrotechnology, electronics, power electronics, automatic control engineering and safety devices Design features and system configurations of automatic control equipment and safety devices for the following: .1 main engine .2 generator and distribution system .3 steam boiler Design features and system configurations of operational control equipment for electrical motors Design features of high-voltage installations Features of hydraulic and pneumatic control equipment	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate .4 approved laboratory equipment training	Operation of equipment and system is in accordance with operating manuals Performance levels are in accordance with technical specifications

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Manage troubleshooting restoration of electrical and electronic control equipment to operating condition	Practical knowledge Troubleshooting of electrical and electronic control equipment Function test of electrical, electronic control equipment and safety devices Troubleshooting of monitoring systems Software version control	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate .4 approved laboratory equipment training	Maintenance activities are correctly planned in accordance with technical, legislative, safety and procedural specifications Inspection, testing and troubleshooting of equipment are appropriate

Function: Maintenance and repair at the management level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Manage safe and effective maintenance and repair procedures	Theoretical knowledge Marine engineering practice Practical knowledge Manage safe and effective maintenance and repair procedures Planning maintenance, including statutory and class verifications Planning repairs	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved workshop training	Maintenance activities are correctly planned and carried out in accordance with technical, legislative, safety and procedural specifications Appropriate plans, specifications, materials and equipment are available for maintenance and repair Action taken leads to the restoration of plant by the most suitable method
Detect and identify the cause of machinery malfunctions and correct faults	Practical knowledge Detection of machinery malfunction, location of faults and action to prevent damage Inspection and adjustment of Equipment Non-destructive examination	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate .4 approved laboratory equipment training	The methods of comparing actual operating conditions are in accordance with recommended practices and procedures Actions and decisions are in accordance with recommended operating specifications and limitations
Ensure safe working practices	Practical knowledge Safe working practices	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved laboratory equipment training	Working practices are in accordance with legislative requirements, codes of practice, permits to work and environmental concerns

Function: Controlling the operation of the ship and care for persons on board at the management level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Control trim, stability and stress	Understanding of fundamental principles of ship construction and the theories and factors affecting trim and stability and measures necessary to preserve trim and stability Knowledge of the effect on trim and stability of a ship in the event of damage to and consequent flooding of a compartment and countermeasures to be taken Knowledge of IMO recommendations concerning ship stability	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate	Stability and stress conditions are maintained within safety limits at all times

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Monitor and control compliance with legislative requirements and measures to ensure safety of life at sea and protection of the marine environment	Knowledge of relevant international maritime law embodied in international agreements and conventions Regard shall be paid especially to the following subjects: .1 certificates and other documents required to be carried on board ships by International conventions, how they may be obtained and the period of their legal validity .2 responsibilities under the relevant requirements of the International Convention on Load Lines .3 responsibilities under the relevant requirements of the International Convention for the Safety of Life at Sea, 1974, as amended	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate	Procedures for monitoring operations and maintenance comply with legislative requirements Potential non-compliance is promptly and fully identified Requirements for renewal and extension of certificates ensure continued validity of survey items and equipment

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Monitor and control Compliance with legislative requirements and measures to ensure safety of life at sea and protection of the marine environment (continued)	.4 responsibilities under the International Convention for the Prevention of Pollution from Ships, as amended .5 maritime declarations of health and the requirements of the International Health Regulations .6 responsibilities under international instruments affecting the safety of the ships, passengers, crew or cargo .7 methods and aids to prevent pollution of the environment by ships .8 knowledge of national legislation for implementing international agreements and conventions		
Maintain safety and security of the vessel, crew and passengers and the operational condition of life-saving, fire-fighting and other safety systems	A thorough knowledge of life-saving appliance regulations (International Convention for the Safety of Life at Sea) Organization of fire and abandon ship drills Maintenance of operational condition of life-saving, fire-fighting and other safety systems Actions to be taken to protect and safeguard all persons on board in emergencies Actions to limit damage and salve the ship following fire, explosion, collision or grounding	Examination and assessment of evidence obtained from practical instruction and approved in-service training and experience	Procedures for monitoring fire-detection and safety systems ensure that all alarms are detected promptly and acted upon in accordance with established emergency procedures

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Develop emergency and damage control plans and handle emergency situations	Ship construction, including damage control Methods and aids for fire prevention, detection and extinction Functions and use of life-saving appliances	Examination and assessment of evidence obtained from approved in-service training and experience	Emergency procedures are in accordance with the established plans for emergency situations

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Use leadership and managerial skills	Knowledge of shipboard personnel management and training A knowledge of international maritime conventions and recommendations, and related national legislation Ability to apply task and workload management, including: .1 planning and coordination .2 personnel assignment .3 time and resource constraints .4 prioritization Knowledge and ability to apply effective resource management: .1 allocation, assignment, and prioritization of resources .2 effective communication on board and ashore .3 decisions reflect consideration of team experience	Assessment of evidence obtained from one or more of the following: .1 approved training .2 approved in-service experience .3 approved simulator training	The crew are allocated duties and informed of expected standards of work and behaviour in a manner appropriate to the individuals concerned Training objectives and activities are based on assessment of current competence and capabilities and operational requirements Operations are demonstrated to be in accordance with applicable rules Operations are planned and resources are allocated as needed in correct priority to perform necessary tasks Communication is clearly and unambiguously given and received

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Use leadership and managerial skills (continued)	.4 assertiveness and leadership, including motivation .5 obtaining and maintaining situation awareness Knowledge and ability to apply decision-making techniques: .1 situation and risk assessment .2 identify and generate options .3 select course of action .4 evaluation of outcome effectiveness Development, implementation, and oversight of standard operating procedures		Effective leadership behaviours are demonstrated Necessary team member(s) share accurate understanding of current and predicted vessel and operational status and external environment Decisions are most effective for the situation Operations are demonstrated to be effective and in accordance with applicable rules

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Section A-III/3

Mandatory minimum requirements for certification of chief engineer officers and second engineer officers on ships powered by main propulsion machinery of between 750 kW and 3,000 kW propulsion power

Standard of competence

1 Every candidate for certification as chief engineer officer and second engineer officer of seagoing ships powered by main propulsion machinery of between 750 kW and 3,000 kW power shall be required to demonstrate ability to undertake, at management level, the tasks, duties and responsibilities listed in column 1 of table A-III/2.

2 The minimum knowledge, understanding and proficiency required for certification is listed in column 2 of table A-III/2. This incorporates, expands and extends in depth the subjects listed in column 2 of table A-III/1 for officers in charge of an engineering watch in a manned engine-room or designated duty engineers in a periodically unmanned engine-room.

3 Bearing in mind that a second engineer officer shall be in a position to assume the responsibilities of the chief engineer officer at any time, assessment in these subjects shall be designed to test the candidate's ability to assimilate all available information that affects the safe operation of the ship's machinery and the protection of the marine environment.

4 The level of knowledge of the subjects listed in column 2 of table A-III/2 may be lowered but shall be sufficient to enable the candidate to serve in the capacity of chief engineer officer or second engineer officer at the range of propulsion power specified in this section.

5 Training and experience to achieve the necessary level of theoretical knowledge, understanding and proficiency shall take into account the relevant requirements of this part and the guidance given in part B of this Code.

6 The Administration may omit knowledge requirements for types of propulsion machinery other than those machinery installations for which the certificate to be awarded shall be valid. A certificate awarded on such a basis shall not be valid for any category of machinery installation which has been omitted until the engineer officer proves to be competent in these knowledge requirements. Any such limitation shall be stated on the certificate and in the endorsement.

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7 Every candidate for certification shall be required to provide evidence of having achieved the required standard of competence in accordance with the methods for demonstrating competence and the criteria for evaluating competence tabulated in columns 3 and 4 of table A-III/2.

Near-coastal voyages

8 The level of knowledge, understanding and proficiency required under the different sections listed in column 2 of table A-III/2 and the requirements of paragraphs 2.1.1 and 2.1.2 of regulation III/3 may be varied for engineer officers of ships powered by main propulsion machinery of less than 3,000 kW main propulsion power engaged on near-coastal voyages, as considered necessary, bearing in mind the effect on the safety of all ships which may be operating in the same waters. Any such limitation shall be stated on the certificate and in the endorsement.

Section A-III/4

Mandatory minimum requirements for certification of ratings forming part of a watch in a manned engine-room or designated to perform duties in a periodically unmanned engine-room

Standard of competence

1 Every rating forming part of an engine-room watch on a seagoing ship shall be required to demonstrate the competence to perform the marine engineering function at the support level, as specified in column 1 of table A-III/4.

2 The minimum knowledge, understanding and proficiency required of ratings forming part of an engine-room watch is listed in column 2 of table A-III/4.

3 Every candidate for certification shall be required to provide evidence of having achieved the required standard of competence in accordance with the methods for demonstrating competence and the criteria for evaluating competence specified in columns 3 and 4 of table A-III/4. The reference to "practical test" in column 3 may include approved shore-based training in which the students undergo practical testing.

4 Where there are no tables of competence for the support level with respect to certain functions, it remains the responsibility of the Administration to determine the appropriate training, assessment and certification requirements to be applied to personnel designated to perform those functions at the support level.

Table A-III/4

Specification of minimum standard of competence for ratings forming part of an engineering watch

Function: Marine engineering at the support level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Carry out a watch routine appropriate to the duties of a rating forming part of an engine-room watch Understand orders and be understood in matters relevant to watchkeeping duties	Terms used in machinery spaces and names of machinery and equipment Engine-room watchkeeping procedures Safe working practices as related to engine-room operations Basic environmental protection procedures Use of appropriate internal communication system Engine-room alarm systems and ability to distinguish between the various alarms, with special reference to fire-extinguishing gas alarms	Assessment of evidence obtained from one or more of the following: .1 approved in-service experience; .2 approved training ship experience; or .3 practical test	Communications are clear and concise and advice or clarification is sought from the officer of the watch where watch information or instructions are not clearly understood Maintenance, handover and relief of the watch is in conformity with accepted principles and procedures
For keeping a boiler watch: Maintain the correct water levels and steam pressures	Safe operation of boilers	Assessment of evidence obtained from one or more of the following: .1 approved in-service experience; .2 approved training ship experience; .3 practical test; or .4 approved simulator training, where appropriate	Assessment of boiler condition is accurate and based on relevant information available from local and remote indicators and physical inspections The sequence and timing of adjustments maintains safety and optimum efficiency

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Operate emergency equipment and apply emergency procedures	Knowledge of emergency Duties Escape routes from machinery spaces Familiarity with the location and use of fire-fighting equipment in the machinery spaces	Assessment of evidence obtained from demonstration and approved in-service experience or approved training ship experience	Initial action on becoming aware of an emergency or abnormal situation conforms with established procedures Communications are clear and concise at all times and orders are acknowledged in a seamanlike manner

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Section A-III/5

Mandatory minimum requirements for certification of ratings as able seafarer engine in a manned engine-room or designated to perform duties in a periodically unmanned engine-room

Standard of competence

1 Every able seafarer engine serving on a seagoing ship powered by main propulsion machinery of 750 kW propulsion power or more shall be required to demonstrate the competence to perform the functions at the support level, as specified in column 1 of table A-III/5.

2 The minimum knowledge, understanding and proficiency required of an able seafarer engine serving on a seagoing ship powered by main propulsion machinery of 750 kW propulsion power or more is listed in column 2 of table A-III/5.

3 Every candidate for certification shall be required to provide evidence of having achieved the required standard of competence in accordance with the methods for demonstrating competence and the criteria for evaluating competence specified in columns 3 and 4 of table A-III/5.

Table A-III/5

Specification of minimum standards of competence for ratings as able seafarer engine in a manned engine-room or designated to perform duties in a periodically unmanned engine-room

Function: Marine engineering at the support level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Contribute to a safe engineering watch	Ability to understand orders and to communicate with the officer of the watch in matters relevant to watchkeeping duties Procedures for the relief, maintenance and handover of a watch Information required to maintain a safe watch	Assessment of evidence obtained from in-service experience or practical test	Communications are clear and concise Maintenance, handover and relief of the watch is in conformity with acceptable practices and procedures
Contribute to the monitoring and controlling of an engine-room watch	Basic knowledge of the function and operation of main propulsion and auxiliary machinery Basic understanding of main propulsion and auxiliary machinery control pressures, temperatures and levels	Assessment of evidence obtained from one or more of the following: .1 approved in-service experience; .2 approved training ship experience; or .3 practical test	The frequency and extent of monitoring of main propulsion and auxiliary machinery conforms with accepted principles and procedures Deviations from the norm are identified Unsafe conditions or potential hazards are promptly recognized, reported and rectified before work continues
Contribute to fuelling and oil transfer operations	Knowledge of the function and operation of fuel system and oil transfer operations, including: .1 preparations for fuelling and transfer operations .2 procedures for connecting and disconnecting fuelling and transfer hoses	Assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 practical training .3 examination .4 approved training ship experience	Transfer operations are carried out in accordance with established safety practices and equipment operating instructions The handling of dangerous, hazardous and harmful liquids complies with established safety practices Communications within the operator's area of responsibility are consistently successful

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Contribute to fuelling and oil transfer operations (continued)	.3 procedures relating to incidents that may arise during fuelling or transferring operation .4 securing from fuelling and transfer operations .5 ability to correctly measure and report tank levels	Assessment of evidence obtained from practical demonstration	
Contribute to bilge and ballast operations	Knowledge of the safe function, operation and maintenance of the bilge and ballast systems, including: .1 reporting incidents associated with transfer operations .2 ability to correctly measure and report tank levels	Assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 practical training .3 examination .4 approved training ship experience Assessment of evidence obtained from practical demonstration	Operations and maintenance are carried out in accordance with established safety practices and equipment operating instructions and pollution of the marine environment is avoided Communications within the operator's area of responsibility are consistently successful

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Contribute to the operation of equipment and machinery	Safe operation of equipment, including: .1 valves and pumps .2 hoists and lifting equipment .3 hatches, watertight doors, ports and related equipment Ability to use and understand basic crane, winch and hoist signals	Assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 practical training .3 examination .4 approved training ship experience Assessment of evidence obtained from practical demonstration	Operations are carried out in accordance with established safety practices and equipment operating instructions Communications within the operator's area of responsibility are consistently successful

Function: Electrical, electronic and control engineering at the support level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Safe use of electrical equipment	Safe use and operation of electrical equipment, including: .1 safety precautions before commencing work or repair .2 isolation procedures .3 emergency procedures .4 different voltages on board Knowledge of the causes of electric shock and precautions to be observed to prevent shock	Assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 practical training .3 examination .4 approved training ship experience	Recognizes and reports electrical hazards and unsafe equipment Understands safe voltages for hand-held equipment Understands risks associated with high-voltage equipment and onboard work

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Function: Maintenance and repair at the support level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Contribute to shipboard maintenance and repair	Ability to use painting, lubrication and cleaning materials and equipment Ability to understand and execute routine maintenance and repair procedures Knowledge of surface preparation techniques Knowledge of safe disposal of waste materials Understanding manufacturer's safety guidelines and shipboard instructions	Assessment of evidence obtained from practical demonstration Assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 practical training .3 examination .4 approved training ship experience	Maintenance activities are carried out in accordance with technical, safety and procedural specifications Selection and use of equipment and tools is appropriate

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Contribute to shipboard maintenance and repair (continued)	Knowledge of the application, maintenance and use of hand and power tools and measuring instruments and machine tools Knowledge of metalwork		

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Function: Controlling the operation of the ship and care for persons on board at the support level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Contribute to the handling of stores	Knowledge of procedures for safe handling, stowage and securing of stores	Assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 practical training .3 examination .4 approved training ship experience	Stores operations are carried out in accordance with established safety practices and equipment operating instructions The handling of dangerous, hazardous and harmful stores complies with established safety practices Communications within the operator's area of responsibility are consistently successful
Apply precautions and contribute to the prevention of pollution of the marine environment	Knowledge of the precautions to be taken to prevent pollution of the marine environment Knowledge of use and operation of anti-pollution equipment Knowledge of approved methods for disposal of marine pollutants	Assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 practical training .3 examination .4 approved training ship experience	Procedures designed to safeguard the marine environment are observed at all times

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Apply occupational health and safety procedures	Working knowledge of safe working practices and personal shipboard safety, including: .1 electrical safety .2 lockout/tag-out .3 mechanical safety .4 permit to work systems .5 working aloft .6 working in enclosed spaces .7 lifting techniques and methods of preventing back injury .8 chemical and biohazard Safety .9 personal safety equipment	Assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 practical training .3 examination .4 approved training ship experience	Procedures designed to safeguard personnel and the ship are observed at all times Safe working practices are observed and appropriate safety and protective equipment is correctly used at all times

Section A-III/6

Mandatory minimum requirements for certification of electro-technical officers

Training

1 The education and training required by paragraph 2.3 of regulation III/6 shall include training in electronic and electrical workshop skills relevant to the duties of electro-technical officer.

Onboard training

2 Every candidate for certification as electro-technical officer shall follow an approved programme of onboard training which:

.1 ensures that, during the required period of seagoing service, the candidate receives systematic practical training and experience in the tasks, duties and responsibilities of an electro-technical officer;

.2 is closely supervised and monitored by qualified and certificated officers aboard the ships in which the approved seagoing service is performed; and

.3 is adequately documented in a training record book.

Standard of competence

3 Every candidate for certification as electro-technical officer shall be required to demonstrate the ability to undertake the tasks, duties and responsibilities listed in column 1 of table A-III/6.

4 The minimum knowledge, understanding and proficiency required for certification is listed in column 2 of table A-III/6 and it shall take into account the guidance given in part B of this Code.

5 Every candidate for certification shall be required to provide evidence of having achieved the required standard of competence tabulated in columns 3 and 4 of table A-III/6.

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Table A-III/6

Specification of minimum standards of competence for electro-technical officers

Function: Electrical, electronic and control engineering at the operational level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Monitor the operation of electrical, electronic and control systems	Basic understanding of the operation of mechanical engineering systems, including: .1 prime movers, including main propulsion plant .2 engine-room auxiliary machinery .3 steering systems .4 cargo handling systems .5 deck machinery .6 hotel systems Basic knowledge of heat transmission, mechanics and hydromechanics Knowledge of: Electro-technology and electrical machines theory Fundamentals of electronics and power electronics Electrical power distribution boards and electrical equipment Fundamentals of automation, automatic control systems and technology	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate .4 approved laboratory equipment training	Operation of equipment and system is in accordance with operating manuals Performance levels are in accordance with technical specifications

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Monitor the operation of electrical, electronic and control systems (continued)	Instrumentation, alarm and monitoring systems Electrical drives Technology of electrical Materials Electro-hydraulic and electro-pneumatic control systems Appreciation of the hazards and precautions required for the operation of power systems above 1,000 volts		
Monitor the operation of automatic control systems of propulsion and auxiliary machinery	Preparation of control systems of propulsion and auxiliary machinery for operation	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate .4 approved laboratory equipment training	Surveillance of main propulsion plant and auxiliary systems is sufficient to maintain safe operation condition

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Operate generators and distribution systems	Coupling, load sharing and changing over generators Coupling and breaking connection between switchboards and distribution panels	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate .4 approved laboratory equipment training	Operations are planned and carried out in accordance with operating manuals, established rules and procedures to ensure safety of operations Electrical distribution systems can be understood and explained with drawings/instructions
Operate and maintain power systems in excess of 1,000 volts	Theoretical knowledge High-voltage technology Safety precautions and procedures Electrical propulsion of the ships, electrical motors and control systems Practical knowledge Safe operation and maintenance of highvoltage systems, including knowledge of the special technical type of highvoltage systems and the danger resulting from operational voltage of more than 1,000 volts	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate .4 approved laboratory equipment training	Operations are planned and carried out in accordance with operating manuals, established rules and procedures to ensure safety of operations

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Operate computers and computer networks on ships	Understanding of: .1 main features of data processing .2 construction and use of computer networks on ships .3 bridge-based, engine-room-based and commercial computer use	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate .4 approved laboratory equipment training	Computer networks and computers are correctly checked and handled
Use English in written and oral form	Adequate knowledge of the English language to enable the officer to use engineering publications and to perform the officer's duties	Examination and assessment of evidence obtained from practical instructions	English language publications relevant to the officer's duties are correctly interpreted Communications are clear and understood
Use internal communication systems	Operation of all internal communication systems on board	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate .4 approved laboratory equipment training	Transmission and reception of messages are consistently successful Communication records are complete, accurate and comply with statutory requirements

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Function: Maintenance and repair at the operational level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Maintenance and repair of electrical and electronic equipment	Safety requirements for working on shipboard electrical systems, including the safe isolation of electrical equipment required before personnel are permitted to work on such equipment Maintenance and repair of electrical system equipment, switchboards, electric motors, generator and DC electrical systems and equipment Detection of electric malfunction, location of faults and measures to prevent damage Construction and operation of electrical testing and measuring equipment Function and performance tests of the following equipment and their configuration: .1 monitoring systems .2 automatic control devices .3 protective devices The interpretation of electrical and electronic diagrams	Examination and assessment of evidence obtained from one or more of the following: .1 approved workshop skills training .2 approved practical experience and tests .3 approved in-service experience .4 approved training ship experience	Safety measures for working are appropriate Selection and use of hand tools, measuring instruments, and testing equipment are appropriate and interpretation of results is accurate Dismantling, inspecting, repairing and reassembling equipment are in accordance with manuals and good practice Reassembling and performance testing is in accordance with manuals and good practice

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Maintenance and repair of automation and control systems of main propulsion and auxiliary machinery	Appropriate electrical and mechanical knowledge and skills Safety and emergency procedures Safe isolation of equipment and associated systems required before personnel are permitted to work on such plant or equipment Practical knowledge for the testing, maintenance, fault finding and repair Test, detect faults and maintain and restore electrical and electronic control equipment to operating condition	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate .4 approved laboratory equipment training	The effect of malfunctions on associated plant and systems is accurately identified, ship's technical drawings are correctly interpreted, measuring and calibrating instruments are correctly used and actions taken are justified Isolation, dismantling and reassembly of plant and equipment are in accordance with manufacturer's safety guidelines and shipboard instructions and legislative and safety specifications. Action taken leads to the restoration of automation and control systems by the method most suitable and appropriate to the prevailing circumstances and conditions
Maintenance and repair of bridge navigation equipment and ship communication systems	Knowledge of the principles and maintenance procedures of navigation equipment, internal and external communication systems Theoretical knowledge: Electrical and electronic systems operating in flammable areas Practical knowledge: Carrying out safe maintenance and repair procedures Detection of machinery malfunction, location of faults and action to prevent damage		The effect of malfunctions on associated plant and systems is accurately identified, ship's technical drawings are correctly interpreted, measuring and calibrating instruments are correctly used and actions taken are justified Isolation, dismantling and re-assembly of plant and equipment are in accordance with manufacturer's safety guidelines and shipboard instructions, legislative and safety specifications. Action taken leads to the restoration of bridge navigation equipment and ship communication systems by the method most suitable and appropriate to the prevailing circumstances and conditions

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Maintenance and repair of electrical, electronic and control systems of deck machinery and cargo-handling equipment	Appropriate electrical and mechanical knowledge and skills Safety and emergency procedures Safe isolation of equipment and associated systems required before personnel are permitted to work on such plant or equipment Practical knowledge for the testing, maintenance, fault finding and repair Test, detect faults and maintain and restore electrical and electronic control equipment to operating condition	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training, where appropriate .4 approved laboratory equipment training	The effect of malfunctions on associated plant and systems is accurately identified, ship's technical drawings are correctly interpreted, measuring and calibrating instruments are correctly used and actions taken are justified Isolation, dismantling and re-assembly of plant and equipment are in accordance with manufacturer's safety guidelines and shipboard instructions, legislative and safety specifications. Action taken leads to the restoration of deck machinery and cargo-handling equipment by the method most suitable and appropriate to the prevailing circumstances and conditions
Maintenance and repair of control and safety systems of hotel equipment	Theoretical knowledge: Electrical and electronic systems operating in flammable areas Practical knowledge: Carrying out safe maintenance and repair procedures Detection of machinery malfunction, location of faults and action to prevent damage		The effect of malfunctions on associated plant and systems is accurately identified, ship's technical drawings are correctly interpreted, measuring and calibrating instruments are correctly used and actions taken are justified Isolation, dismantling and re-assembly of plant and equipment are in accordance with manufacturer's safety guidelines and shipboard instructions, legislative and safety specifications. Action taken leads to the restoration of control and safety systems of hotel equipment by the method most suitable and appropriate to the prevailing circumstances and conditions

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Function: Controlling the operation of the ship and care for persons on board at operational level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Ensure compliance with pollution-prevention requirements	Prevention of pollution of the marine environment Knowledge of the precautions to be taken to prevent pollution of the marine environment Anti-pollution procedures and all associated equipment Importance of proactive measures to protect the marine environment	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved training	Procedures for monitoring shipboard operations and ensuring compliance with pollution-prevention requirements are fully observed Actions to ensure that a positive environmental reputation is maintained
Prevent, control and fight fire on board	Fire prevention and fire-fighting appliances Ability to organize fire drills Knowledge of classes and chemistry of fire Knowledge of fire-fighting systems Action to be taken in the event of fire, including fires involving oil systems	Assessment of evidence obtained from approved fire-fighting training and experience as set out in section A-VI/3, paragraphs 1 to 3	The type and scale of the problem is promptly identified and initial actions conform with the emergency procedure and contingency plans for the ship Evacuation, emergency shutdown and isolation procedures are appropriate to the nature of the emergency and are implemented promptly The order of priority, and the levels and time-scales of making reports and informing personnel on board, are relevant to the nature of the emergency and reflect the urgency of the problem

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Operate life-saving appliances	Life-saving Ability to organize abandon ship drills and knowledge of the operation of survival craft and rescue boats, their launching appliances and arrangements, and their equipment, including radio life-saving appliances, satellite EPIRBs, SARTs, immersion suits and thermal protective aids	Assessment of evidence obtained from approved training and experience as set out in section A-VI/2, paragraphs 1 to 4	Actions in responding to abandon ship and survival situations are appropriate to the prevailing circumstances and conditions and comply with accepted safety practices and standards
Apply medical first aid on board ship	Medical aid Practical application of medical guides and advice by radio, including the ability to take effective action based on such knowledge in the case of accidents or illnesses that are likely to occur on board ship	Assessment of evidence obtained from approved training as set out in section A-VI/4, paragraphs 1 to 3	Identification of probable cause, nature and extent of injuries or conditions is prompt and treatment minimizes immediate threat to life
Application of leadership and teamworking skills	Working knowledge of shipboard personnel management and training Ability to apply task and workload management, including: .1 planning and co-ordination .2 personnel assignment .3 time and resource constraints .4 prioritization	Assessment of evidence obtained from one or more of the following: .1 approved training .2 approved in-service experience .3 practical demonstration	The crew are allocated duties and informed of expected standards of work and behaviour in a manner appropriate to the individuals concerned Training objectives and activities are based on assessment of current competence and capabilities and operational requirements

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Application of leadership and teamworking skills (continued)	Knowledge and ability to apply effective resource management: .1 allocation, assignment, and prioritization of resources .2 effective communication on board and ashore .3 decisions reflect consideration of team experiences 4 assertiveness and leadership, including motivation .5 obtaining and maintaining situational awareness Knowledge and ability to apply decision-making techniques: .1 Situation and risk assessment .2 Identify and consider generated options .3 Selecting course of action .4 Evaluation of outcome effectiveness		Operations are planned and resources are allocated as needed in correct priority to perform necessary tasks Communication is clearly and unambiguously given and received Effective leadership behaviours are demonstrated Necessary team member(s) share accurate understanding of current and predicted vessel and operational status and external environment Decisions are most effective for the situation
Contribute to the safety of personnel and ship	Knowledge of personal survival techniques Knowledge of fire prevention and ability to fight and extinguish fires Knowledge of elementary first aid Knowledge of personal safety and social responsibilities	Assessment of evidence obtained from approved training and experience as set out in section A-VI/1, paragraph 2	Appropriate safety and protective equipment is correctly used Procedures and safe working practices designed to safeguard personnel and the ship are observed at all times Procedures designed to safeguard the environment are observed at all times Initial and follow-up actions on becoming aware of an emergency conform with established emergency response procedures

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Section A-III/7

Mandatory minimum requirements for certification of electro-technical rating

1 Every electro-technical rating serving on a seagoing ship powered by main propulsion machinery of 750 kW propulsion power or more shall be required to demonstrate the competence to perform the functions at the support level, as specified in column 1 of table A-III/7.

2 The minimum knowledge, understanding and proficiency required of an electro-technical rating serving on a seagoing ship powered by main propulsion machinery of 750 kW propulsion power or more is listed in column 2 of table A-III/7.

3 Every candidate for certification shall be required to provide evidence of having achieved the required standard of competence in accordance with the methods for demonstrating competence and the criteria for evaluating competence specified in columns 3 and 4 of table A-III/7.

Table A-III/7

Specification of minimum standards of competence for electro-technical ratings

Function: Electrical, electronic and control engineering at the support level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Safe use of electrical equipment	Safe use and operation of electrical equipment, including: .1 safety precautions before commencing work or repair .2 isolation procedures .3 emergency procedures .4 different voltages on board Knowledge of the causes of electric shock and precautions to be observed to prevent shock	Assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 practical training .3 examination .4 approved training ship experience	Understands and follows safety instructions of electrical equipment and machinery Recognizes and reports electrical hazards and unsafe equipment Understands safe voltages for hand-held equipment Understands risks associated with high-voltage equipment and onboard work
Contribute to monitoring the operation of electrical systems and machinery	Basic knowledge of the operation of mechanical engineering systems, including: .1 prime movers, including main propulsion plant .2 engine-room auxiliary machineries .3 steering systems .4 cargo-handling systems .5 deck machineries .6 hotel systems	Assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 practical training .3 examination .4 approved training ship experience	Knowledge that ensures: .1 operation of equipment and system is in accordance with operating manuals .2 performance levels are in accordance with technical specifications

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Contribute to monitoring the operation of electrical systems and machinery (continued)	Basic knowledge of: .1 electro-technology and electrical machines theory .2 electrical power distribution boards and electrical equipment .3 fundamentals of automation, automatic control systems and technology .4 instrumentation, alarm and monitoring systems .5 electrical drives .6 electro-hydraulic and electro-pneumatic control systems .7 coupling, load sharing and changes in electrical configuration		
Use hand tools, electrical and electronic measurement equipment for fault finding, maintenance and repair operations	Safety requirements for working on shipboard electrical systems Application of safe working Practices Basic knowledge of: .1 construction and operational characteristics of shipboard AC and DC systems and equipment .2 use of measuring instruments, machine tools, and hand and power tools	Assessment of evidence obtained from one or more of the following: .1 approved workshop skills training .2 approved practical experience and tests	Implementation of safety procedures is satisfactory Selection and use of test equipment is appropriate and interpretation of results is accurate Selection of procedures for the conduct of repair and maintenance is in accordance with manuals and good practice

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Contribute to shipboard maintenance and repair	Ability to use lubrication and cleaning materials and equipment Knowledge of safe disposal of waste materials Ability to understand and execute routine maintenance and repair procedures Understanding manufacturer's safety guidelines and shipboard instructions	Assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 practical training .3 examination .4 approved training ship experience	Maintenance activities are carried out in accordance with technical, safety and procedural specifications Selection and use of equipment and tools is appropriate
Contribute to the maintenance and repair of electrical systems and machinery on board	Safety and emergency procedures Basic knowledge of electro-technical drawings and safe isolation of equipment and associated systems required before personnel are permitted to work on such plant or equipment Test, detect faults and maintain and restore electrical control equipment and machinery to operating condition Electrical and electronic equipment operating in flammable areas Basics of ship's fire-detection System Carrying out safe maintenance and repair procedures	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service Experience .2 approved training ship experience .3 approved simulator training, where appropriate .4 approved laboratory equipment training	The effect of malfunctions on associated plant and systems is accurately identified, ship's technical drawings are correctly interpreted, measuring and calibrating instruments are correctly used and actions taken are justified Isolation, dismantling and reassembly of plant and equipment is in accordance with manufacturer's safety guidelines and shipboard instructions

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Contribute to the maintenance and repair of electrical systems and machinery on board (continued)	Detection of machinery malfunction, location of faults and action to prevent damage Maintenance and repair of lighting fixtures and supply systems		

Function: Controlling the operation of the ship and care for persons on board at the support level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Contribute to the handling of stores	Knowledge of procedures for safe handling, stowage and securing of stores	Assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 practical training .3 examination .4 approved training ship experience	Stores stowage operations are carried out in accordance with established safety practices and equipment operating instructions The handling of dangerous, hazardous and harmful stores complies with established safety practices Communications within the operator's area of responsibility are consistently successful
Apply precautions and contribute to the prevention of pollution of the marine environment	Knowledge of the precautions to be taken to prevent pollution of the marine environment Knowledge of use and operation of anti-pollution equipment/agents Knowledge of approved methods for disposal of marine pollutants	Assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 practical training .3 examination .4 approved training ship experience	Procedures designed to safeguard the marine environment are observed at all times

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Apply occupational health and safety procedures	Working knowledge of safe working practices and personal shipboard safety, including: .1 electrical safety .2 lockout/tag-out .3 mechanical safety .4 permit to work systems .5 working aloft .6 working in enclosed spaces .7 lifting techniques and methods of preventing back injury .8 chemical and biohazard safety .9 personal safety equipment	Assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 practical training .3 examination .4 approved training ship experience	Procedures designed to safeguard personnel and the ship are observed at all times Safe working practices are observed and appropriate safety and protective equipment is correctly used at all times

CHAPTER IV

Standards regarding radio operators

Section A-IV/1

Application

(No provisions)

Section A-IV/2

Mandatory minimum requirements for certification of GMDSS radio operators

Standard of competence

1 The minimum knowledge, understanding and proficiency required for certification of GMDSS radio operators shall be sufficient for radio operators to carry out their radio duties. The knowledge required for obtaining each type of certificate defined in the Radio Regulations shall be in accordance with those regulations. In addition, every candidate for certification of competency shall be required to demonstrate ability to undertake the tasks, duties and responsibilities listed in column 1 of table A-IV/2.

2 The knowledge, understanding and proficiency for endorsement under the Convention of certificates issued under the provisions of the Radio Regulations are listed in column 2 of table A-IV/2.

3 The level of knowledge of the subjects listed in column 2 of table A-IV/2 shall be sufficient for the candidate to carry out his duties[16].

4 Every candidate shall provide evidence of having achieved the required standard of competence through:

.1 demonstration of competence to perform the tasks and duties and to assume responsibilities listed in column 1 of table A-IV/2, in accordance with the methods for demonstrating competence and the criteria for evaluating competence tabulated in columns 3 and 4 of that table; and

.2 examination or continuous assessment as part of an approved course of training based on the material set out in column 2 of table A-IV/2.

[16]The relevant IMO Model Course(s) may be of assistance in the preparation of courses.

Table A-IV/2

Specification of minimum standard of competence for GMDSS radio operators

Function: Radiocommunications at the operational level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Transmit and receive information using GMDSS subsystems and equipment and fulfilling the functional requirements of GMDSS	In addition to the requirements of the Radio Regulations, a knowledge of: .1 search and rescue radiocommunications, including procedures in the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual .2 the means to prevent the transmission of false distress alerts and the procedures to mitigate the effects of such alerts .3 ship reporting systems .4 radio medical services	Examination and assessment of evidence obtained from practical demonstration of operational procedures, using: .1 approved equipment	Transmission and reception of communications comply with international regulations and procedures and are carried out efficiently and effectively

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	.5 use of the International Code of Signals and the IMO Standard Marine Communication Phrases .6 the English language, both written and spoken, for the communication of information relevant to safety of life at sea Note: This requirement may be reduced in the case of the Restricted Radio Operator's Certificate	.2 GMDSS communication simulator, where appropriate3 .3 radiocommunication laboratory equipment	English language messages relevant to the safety of the ship and persons on board and protection of the marine environment are correctly handled

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Provide radio services in emergencies	The provision of radio services in emergencies such as: .1 abandon ship .2 fire on board ship .3 partial or full breakdown of radio installations Preventive measures for the safety of ship and personnel in connection with hazards related to radio equipment, including electrical and non-ionizing radiation hazards	Examination and assessment of evidence obtained from practical demonstration of operational procedures, using: .1 approved equipment .2 GMDSS communication simulator, where appropriate4 .3 radiocommunication laboratory equipment	Response is carried out efficiently and effectively

CHAPTER V

Standards regarding special training requirements for personnel on certain types of ships

Section A-V/1-1

Mandatory minimum requirements for the training and qualifications of masters, officers and ratings on oil and chemical tankers

Standard of competence

1 Every candidate for certification in basic training for oil and chemical tanker cargo operations shall be required to:

.1 demonstrate the competence to undertake the tasks, duties and responsibilities listed in column 1 of table A-V/1-1-1; and

.2 provide evidence of having achieved:

.2.1 the minimum knowledge, understanding and proficiency listed in column 2 of table A-V/1-1-1, and

.2.2 the required standard of competence in accordance with the methods for demonstrating competence and the criteria for evaluating competence tabulated in columns 3 and 4 of table A-V/1-1-1.

2 Every candidate for certification in advanced training for oil tanker cargo operations shall be required to:

.1 demonstrate the competence to undertake the tasks, duties and responsibilities listed in column 1 of table A-V/1-1-2; and

.2 provide evidence of having achieved:

.2.1 the minimum knowledge, understanding and proficiency listed in column 2 of table A-V/1-1-2, and

.2.2 the required standard of competence in accordance with the methods for demonstrating competence and the criteria for evaluating competence tabulated in columns 3 and 4 of table A-V/1-1-2.

3 Every candidate for certification in advanced training for chemical tanker cargo operations shall be required to:

.1 demonstrate the competence to undertake the tasks, duties and responsibilities listed in column 1 of table A-V/1-1-3; and

.2 provide evidence of having achieved:

.2.1 the minimum knowledge, understanding and proficiency listed in column 2 of table A-V/1-1-3, and

.2.2 the required standard of competence in accordance with the methods for demonstrating competence and the criteria for evaluating competence tabulated in columns 3 and 4 of table A-V/1-1-3.

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Table A-V/1-1-1

Specification of minimum standard of competence in basic training for oil and chemical tanker cargo operations

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Contribute to the safe cargo operation of oil and chemical tankers	Basic knowledge of tankers: .1 types of oil and chemical tankers .2 general arrangement and construction Basic knowledge of cargo operations: .1 piping systems and valves .2 cargo pumps .3 loading and unloading .4 tank cleaning, purging, gas-freeing and inerting Basic knowledge of the physical properties of oil and chemicals: .1 pressure and temperature, including vapour pressure/temperature relationship .2 types of electrostatic charge generation .3 chemical symbols Knowledge and understanding of tanker safety culture and safety management	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Communications within the area of responsibility are clear and effective Cargo operations are carried out in accordance with accepted principles and procedures to ensure safety of operations

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Take precautions to prevent hazards	Basic knowledge of the hazards associated with tanker operations, including: .1 health hazards .2 environmental hazards .3 reactivity hazards .4 corrosion hazards .5 explosion and flammability hazards .6 sources of ignition, including electrostatic hazards .7 toxicity hazards .8 vapour leaks and clouds Basic knowledge of hazard controls: .1 inerting, water padding, drying agents and monitoring techniques .2 anti-static measures .3 ventilation .4 segregation .5 cargo inhibition .6 importance of cargo compatibility .7 atmospheric control .8 gas testing Understanding of information on a Material Safety Data Sheet (MSDS)	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Correctly identifies, on an MSDS, relevant cargo-related hazards to the vessel and to personnel, and takes the appropriate actions in accordance with established procedures Identification and actions on becoming aware of a hazardous situation conform to established procedures in line with best practice

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Apply occupational health and safety precautions and measures	Function and proper use of gas-measuring instruments and similar equipment Proper use of safety equipment and protective devices, including: .1 breathing apparatus and tank-evacuating equipment .2 protective clothing and equipment .3 resuscitators .4 rescue and escape equipment Basic knowledge of safe working practices and procedures in accordance with legislation and industry guidelines and personal shipboard safety relevant to oil and chemical tankers, including: .1 precautions to be taken when entering enclosed spaces .2 precautions to be taken before and during repair and maintenance work .3 safety measures for hot and cold work .4 electrical safety .5 ship/shore safety checklist Basic knowledge of first aid with reference to a Material Safety Data Sheet (MSDS)	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Procedures for entry into enclosed spaces are observed. Procedures and safe working practices designed to safeguard personnel and the ship are observed at all times Appropriate safety and protective equipment is correctly used First aid do's and don'ts

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Carry out fire-fighting operations	Tanker fire response organization and action to be taken Fire hazards associated with cargo handling and transportation of hazardous and noxious liquids in bulk Fire-fighting agents used to extinguish oil and chemical fires Fixed fire-fighting foam system operations Portable fire-fighting foam Operations Fixed dry chemical system Operations Spill containment in relation to fire-fighting operations	Practical exercises and instruction conducted under approved and truly realistic training conditions (e.g., simulated shipboard conditions) and, whenever possible and practicable, in darkness	Initial actions and follow-up actions on becoming aware of fire on board conform with established practices and procedures Action taken on identifying muster signal is appropriate to the indicated emergency and complies with established procedures Clothing and equipment are appropriate to the nature of the fire-fighting operations The timing and sequence of individual actions are appropriate to the prevailing circumstances and conditions Extinguishment of fire is achieved using appropriate procedures, techniques and fire-fighting agents
Respond to emergencies	Basic knowledge of emergency procedures, including emergency shutdown	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	The type and impact of the emergency is promptly identified and the response actions conform to the emergency procedures and contingency plans

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Take precautions to prevent pollution of the environment from the release of oil or chemicals	Basic knowledge of the effects of oil and chemical pollution on human and marine life Basic knowledge of shipboard procedures to prevent pollution Basic knowledge of measures to be taken in the event of spillage, including the need to: .1 report relevant information to the responsible persons .2 assist in implementing shipboard spill-containment procedures	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Procedures designed to safeguard the environment are observed at all times

Table A-V/1-1-2

Specification of minimum standard of competence in advanced training for oil tanker cargo operations

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Ability to safely perform and monitor all cargo operations	Design and characteristics of an oil tanker Knowledge of oil tanker design, systems and equipment, including: .1 general arrangement and construction .2 pumping arrangement and equipment .3 tank arrangement, pipeline system and tank venting arrangement .4 gauging systems and alarms .5 cargo heating systems .6 tank cleaning, gas-freeing and inerting systems .7 ballast system .8 cargo area venting and accommodation ventilation .9 slop arrangements .10 vapour recovery systems .11 cargo-related electrical and electronic control system .12 environmental protection equipment, including Oil Discharge Monitoring Equipment (ODME)	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Communications are clear, understood and successful Cargo operations are carried out in a safe manner, taking into account oil tanker designs, systems and equipment Cargo operations are planned, risk is managed and carried out in accordance with accepted principles and procedures to ensure safety of operations and avoid pollution of the marine environment Potential non-compliance with cargo-operation-related procedures is promptly identified and rectified Proper loading, stowage and unloading of cargoes ensures that stability and stress conditions remain within safe limits at all times Actions taken and procedures followed are correctly applied and the appropriate shipboard cargo-related equipment is properly used Calibration and use of monitoring and gas-detection equipment comply with operational practices and procedures

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Ability to safely perform and monitor all cargo operations (continued)	.13 tank coating .14 tank temperature and pressure control systems .15 fire-fighting systems Knowledge of pump theory and characteristics, including types of cargo pumps and their safe operation Proficiency in tanker safety culture and implementation of safety-management system Knowledge and understanding of monitoring and safety systems, including the emergency shutdown Loading, unloading, care and handling of cargo Ability to perform cargo measurements and calculations Knowledge of the effect of bulk liquid cargoes on trim, stability and structural integrity Knowledge and understanding of oil cargo-related operations, including: .1 loading and unloading plans .2 ballasting and deballasting .3 tank cleaning operations .4 inerting .5 gas-freeing		Procedures for monitoring and safety systems ensure that all alarms are detected promptly and acted upon in accordance with established emergency procedures

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Ability to safely perform and monitor all cargo operations (continued)	.6 ship-to-ship transfers .7 load on top .8 crude oil washing Development and application of cargo-related operation plans, procedures and checklists Ability to calibrate and use monitoring and gas-detection systems, instruments and equipment Ability to manage and supervise personnel with cargo-related responsibilities		Personnel are allocated duties and informed of procedures and standards of work to be followed, in a manner appropriate to the individuals concerned and in accordance with safe operational practices
Familiarity with physical and chemical properties of oil cargoes	Knowledge and understanding of the physical and chemical properties of oil cargoes Understanding the information contained in a Material Safety Data Sheet (MSDS)	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Effective use is made of information resources for identification of properties and characteristics of oil cargoes and related gases, and their impact on safety, the environment and vessel operation

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Take precautions to prevent hazards	Knowledge and understanding of the hazards and control measures associated with oil tanker cargo operations, including: .1 toxicity .2 flammability and explosion .3 health hazards .4 inert gas composition .5 electrostatic hazards Knowledge and understanding of dangers of non-compliance with relevant rules/regulations	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Relevant cargo-related hazards to the vessel and to personnel associated with oil tanker cargo operations are correctly identified, and proper control measures are taken
Apply occupational health and safety precautions	Knowledge and understanding of safe working practices, including risk assessment and personal shipboard safety relevant to oil tankers: .1 precautions to be taken when entering enclosed spaces, including correct use of different types of breathing apparatus .2 precautions to be taken before and during repair and maintenance work .3 precautions for hot and cold work .4 precautions for electrical safety .5 use of appropriate Personal Protective Equipment (PPE)	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Procedures designed to safeguard personnel and the ship are observed at all times Safe working practices are observed and appropriate safety and protective equipment is correctly used Working practices are in accordance with legislative requirements, codes of practice, permits to work and environmental concerns Correct use of breathing apparatus Procedures for entry into enclosed spaces are observed

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Respond to emergencies	Knowledge and understanding of oil tanker emergency procedures, including: .1 ship emergency response plans .2 cargo operations emergency shutdown .3 actions to be taken in the event of failure of systems or services essential to cargo .4 fire-fighting on oil tankers .5 enclosed space rescue .6 use of a Material Safety Data Sheet (MSDS) Actions to be taken following collision, grounding, or spillage Knowledge of medical first aid procedures on board oil tankers	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	The type and impact of the emergency is promptly identified and the response actions conform with established emergency procedures and contingency plans The order of priority, and the levels and time-scales of making reports and informing personnel on board, are relevant to the nature of the emergency and reflect the urgency of the problem Evacuation, emergency shutdown and isolation procedures are appropriate to the nature of the emergency and are implemented promptly The identification of and actions taken in a medical emergency conform to current recognized first aid practice and international guidelines
Take precautions to prevent pollution of the environment	Understanding of procedures to prevent pollution of the atmosphere and the environment	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Operations are conducted in accordance with accepted principles and procedures to prevent pollution of the environment

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Monitor and control compliance with legislative requirements	Knowledge and understanding of relevant provisions of the International Convention for the Prevention of Pollution from Ships (MARPOL), as amended, and other relevant IMO instruments, industry guidelines and port regulations as commonly applied	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	The handling of cargoes complies with relevant IMO instruments and established industrial standards and codes of safe working practice

Table A-V/1-1-3

Specification of minimum standard of competence in advanced training for chemical tanker cargo operations

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Ability to safely perform and monitor all cargo operations	Design and characteristics of a chemical tanker Knowledge of chemical tanker designs, systems, and equipment, including: .1 general arrangement and construction .2 pumping arrangement and equipment .3 tank construction and arrangement .4 pipeline and drainage systems .5 tank and cargo pipeline pressure and temperature control systems and alarms .6 gauging control systems and alarms .7 gas-detecting systems .8 cargo heating and cooling systems .9 tank cleaning systems .10 cargo tank environmental control systems .11 ballast systems .12 cargo area venting and accommodation ventilation .13 vapour return/recovery systems .14 fire-fighting systems	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Communications are clear, understood and successful Cargo operations are carried out in a safe manner, taking into account chemical tanker designs, systems and equipment Cargo operations are planned, risk is managed and carried out in accordance with accepted principles and procedures to ensure safety of operations and avoid pollution of the marine environment

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Ability to safely perform and monitor all cargo operations (continued)	.15 tank, pipeline and fittings' material and coatings .16 slop management Knowledge of pump theory and characteristics, including types of cargo pumps and their safe operation Proficiency in tanker safety culture and implementation of safety management system Knowledge and understanding of monitoring and safety systems, including the emergency shutdown system Loading, unloading, care and handling of cargo Ability to perform cargo measurements and calculations Knowledge of the effect of bulk liquid cargoes on trim and stability and structural integrity Knowledge and understanding of chemical cargo-related operations, including: .1 loading and unloading plans .2 ballasting and deballasting .3 tank cleaning operations .4 tank atmosphere control		Procedures for monitoring and safety systems ensure that all alarms are detected promptly and acted upon in accordance with established procedures Proper loading, stowage and unloading of cargoes ensures that stability and stress conditions remain within safe limits at all times Potential non-compliance with cargo-related procedures is promptly identified and rectified Actions taken and procedures followed are correctly identified and appropriate shipboard cargo-related equipment is properly used

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Ability to safely perform and monitor all cargo operations (continued)	.5 inerting .6 gas-freeing .7 ship-to-ship transfers .8 inhibition and stabilization requirements .9 heating and cooling requirements and consequences to adjacent cargoes .10 cargo compatibility and segregation .11 high-viscosity cargoes .12 cargo residue operations .13 operational tank entry Development and application of cargo-related operation plans, procedures and checklists Ability to calibrate and use monitoring and gas-detection systems, instruments and equipment Ability to manage and supervise personnel with cargo-related responsibilities		Calibration and use of monitoring and gas- detection equipment are consistent with safe operational practices and procedures Personnel are allocated duties and informed of procedures and standards of work to be followed, in a manner appropriate to the individuals concerned and in accordance with safe operational practices

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Familiarity with physical and chemical properties of chemical cargoes	Knowledge and understanding of the chemical and the physical properties of noxious liquid substances, including: .1 chemical cargoes categories (corrosive, toxic, flammable, explosive) .2 chemical groups and industrial usage .3 reactivity of cargoes Understanding the information contained in a Material Safety Data Sheet (MSDS)	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Effective use is made of information resources for identification of properties and characteristics of noxious liquid substances and related gases, and their impact on safety, environmental protection and vessel operation
Take precautions to prevent hazards	Knowledge and understanding of the hazards and control measures associated with chemical tanker cargo operations, including: .1 flammability and explosion .2 toxicity .3 health hazards .4 inert gas composition .5 electrostatic hazards .6 reactivity .7 corrosivity .8 low-boiling-point cargoes .9 high-density cargoes .10 solidifying cargoes .11 polymerizing cargoes	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Relevant cargo-related hazards to the vessel and to personnel associated with chemical tanker cargo operations are correctly identified, and proper control measures are taken

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Take precautions to prevent hazards (continued)	Knowledge and understanding of dangers of non-compliance with relevant rules/regulations		
Apply occupational health and safety precautions	Knowledge and understanding of safe working practices, including risk assessment and personal shipboard safety relevant to chemical tankers: .1 precautions to be taken when entering enclosed spaces, including correct use of different types of breathing apparatus .2 precautions to be taken before and during repair and maintenance work .3 precautions for hot and cold work .4 precautions for electrical Safety .5 use of appropriate Personal Protective Equipment (PPE)	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Procedures designed to safeguard personnel and the ship are observed at all times Safe working practices are observed and appropriate safety and protective equipment is correctly used Working practices are in accordance with legislative requirements, codes of practice, permits to work and environmental concerns Correct use of breathing apparatus Procedures for entry into enclosed spaces are observed

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Respond to emergencies	Knowledge and understanding of chemical tanker emergency procedures, including: .1 ship emergency response plans .2 cargo operations emergency shutdown .3 actions to be taken in the event of failure of systems or services essential to cargo .4 fire fighting on chemical tankers .5 enclosed space rescue .6 cargo reactivity .7 jettisoning cargo .8 use of a Material Safety Data Sheet (MSDS) Actions to be taken following collision, grounding, or spillage Knowledge of medical first aid procedures on board chemical tankers, with reference to the Medical First Aid Guide for Use in Accidents involving Dangerous Goods (MFAG)	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	The type and impact of the emergency is promptly identified and the response actions conform with established emergency procedures and contingency plans The order of priority, and the levels and time-scales of making reports and informing personnel on board, are relevant to the nature of the emergency and reflect the urgency of the problem Evacuation, emergency shutdown and isolation procedures are appropriate to the nature of the emergency and are implemented promptly The identification of and actions taken in a medical emergency conform to current recognized first aid practice and international guidelines

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Take precautions to prevent pollution of the environment	Understanding of procedures to prevent pollution of the atmosphere and the environment	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Operations are conducted in accordance with accepted principles and procedures to prevent pollution of the environment
Monitor and control compliance with legislative requirements	Knowledge and understanding of relevant provisions of the International Convention for the Prevention of Pollution from Ships (MARPOL) and other relevant IMO instruments, industry guidelines and port regulations as commonly applied Proficiency in the use of the IBC Code and related documents	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	The handling of cargoes complies with relevant IMO instruments and established industrial standards and codes of safe working practice

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Section A-V/1-2

Mandatory minimum requirements for the training and qualifications of masters, officers and ratings on liquefied gas tankers

Standard of competence

1 Every candidate for certification in basic training for liquefied gas tanker cargo operations shall be required to:

.1 demonstrate the competence to undertake the tasks, duties and responsibilities listed in column 1 of table A-V/1-2-1; and

.2 provide evidence of having achieved:

.2.1 the minimum knowledge, understanding and proficiency listed in column 2 of table A-V/1-2-1, and

.2.2 the required standard of competence in accordance with the methods for demonstrating competence and the criteria for evaluating competence tabulated in columns 3 and 4 of table A-V/1-2-1.

2 Every candidate for certification in advanced training for liquefied gas tanker cargo operations shall be required to:

.1 demonstrate the competence to undertake the tasks, duties and responsibilities listed in column 1 of table A-V/1-2-2; and

.2 provide evidence of having achieved:

.2.1 the minimum knowledge, understanding and proficiency listed in column 2 of table A-V/1-2-2, and

.2.2 the required standard of competence in accordance with the methods for demonstrating competence and the criteria for evaluating competence tabulated in columns 3 and 4 of table A-V/1-2-2.

Table A-V/1-2-1

Specification of minimum standard of competence in basic training for liquefied gas tanker cargo operations

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Contribute to the safe operation of a liquefied gas tanker	Design and operational characteristics of liquefied gas tankers Basic knowledge of liquefied gas tankers .1 types of liquefied gas tankers .2 general arrangement and construction Basic knowledge of cargo operations: .1 piping systems and valves .2 cargo handling equipment .3 loading, unloading and care in transit .4 emergency shutdown (ESD) system .5 tank cleaning, purging, gas-freeing and inerting Basic knowledge of the physical properties of liquefied gases, including: .1 properties and characteristics .2 pressure and temperature, including vapour pressure/temperature relationship .3 types of electrostatic charge generation .4 chemical symbols Knowledge and understanding of tanker safety culture and safety management	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Communications within the area of responsibility are clear and effective Cargo operations are carried out in accordance with accepted principles and procedures to ensure safety of operations

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Take precautions to prevent hazards	Basic knowledge of the hazards associated with tanker operations, including: .1 health hazards .2 environmental hazards .3 reactivity hazards .4 corrosion hazards .5 explosion and flammability hazards .6 sources of ignition .7 electrostatic hazards .8 toxicity hazards .9 vapour leaks and clouds .10 extremely low temperatures .11 pressure hazards Basic knowledge of hazard controls: .1 inerting, drying and monitoring techniques .2 anti-static measures .3 ventilation .4 segregation .5 cargo inhibition .6 importance of cargo compatibility .7 atmospheric control .8 gas testing Understanding of information on a Material Safety Data Sheet (MSDS)	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Correctly identifies, on an MSDS, relevant cargo-related hazards to the vessel and to personnel, and takes the appropriate actions in accordance with established procedures Identification and actions on becoming aware of a hazardous situation conform to established procedures in line with best practice

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Apply occupational health and safety precautions and measures	Function and proper use of gas-measuring instruments and similar equipment Proper use of safety equipment and protective devices, including: .1 breathing apparatus and tank evacuating equipment .2 protective clothing and equipment .3 resuscitators .4 rescue and escape equipment Basic knowledge of safe working practices and procedures in accordance with legislation and industry guidelines and personal shipboard safety relevant to liquefied gas tankers, including: .1 precautions to be taken when entering enclosed spaces .2 precautions to be taken before and during repair and maintenance work .3 safety measures for hot and cold work .4 electrical safety .5 ship/shore safety checklist	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Procedures for entry into enclosed spaces are observed Procedures and safe working practices designed to safeguard personnel and the ship are observed at all times Appropriate safety and protective equipment is correctly used

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Apply occupational health and safety precautions and measures (continued)	Basic knowledge of first aid with reference to a Material Safety Data Sheet (MSDS)		First aid do's and don'ts
Carry out fire-fighting operations	Tanker fire organization and action to be taken Special hazards associated with cargo handling and transportation of liquefied gases in bulk Fire-fighting agents used to extinguish gas fires Fixed fire-fighting foam system operations Portable fire-fighting foam operations Fixed dry chemical system operations Basic knowledge of spill containment in relation to fire-fighting operations	Practical exercises and instruction conducted under approved and truly realistic training conditions (e.g. simulated shipboard conditions) and, whenever possible and practicable, in darkness	Initial actions and follow-up actions on becoming aware of an emergency conform with established practices and procedures Action taken on identifying muster signals is appropriate to the indicated emergency and complies with established procedures Clothing and equipment are appropriate to the nature of the fire-fighting operations The timing and sequence of individual actions are appropriate to the prevailing circumstances and conditions Extinguishment of fire is achieved using appropriate procedures, techniques and fire-fighting agents
Respond to emergencies	Basic knowledge of emergency procedures, including emergency shutdown	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	The type and impact of the emergency is promptly identified and the response actions conform to the emergency procedures and contingency plans

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Take precautions to prevent pollution of the environment from the release of liquefied gases	Basic knowledge of the effects of pollution on human and marine life Basic knowledge of shipboard procedures to prevent pollution Basic knowledge of measures to be taken in the event of spillage, including the need to: .1 report relevant information to the responsible persons .2 assist in implementing shipboard spill-containment procedures .3 prevent brittle fracture	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Procedures designed to safeguard the environment are observed at all times

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Table A-V/1-2-2

Specification of minimum standard of competence in advanced training for liquefied gas tanker cargo operations

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Ability to safely perform and monitor all cargo operations	Design and characteristics of a liquefied gas tanker Knowledge of liquefied gas tanker design, systems, and equipment, including: .1 types of liquefied gas tankers and cargo tanks construction .2 general arrangement and construction .3 cargo containment systems, including materials of construction and insulation .4 cargo-handling equipment and instrumentation, including: .1 cargo pumps and pumping arrangements .2 cargo pipelines and valves .3 expansion devices .4 flame screens .5 temperature monitoring systems .6 cargo tank level-gauging systems .7 tank pressure monitoring and control systems .5 cargo temperature maintenance system	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Communications are clear, understood and successful Cargo operations are carried out in a safe manner, taking into account liquefied gas tanker designs, systems and equipment Pumping operations are carried out in accordance with accepted principles and procedures and are relevant to the type of cargo Cargo operations are planned, risk is managed and carried out in accordance with accepted principles and procedures to ensure safety of operations and avoid pollution of the marine environment

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Ability to safely perform and monitor all cargo operations (continued)	.6 tank atmosphere control systems (inert gas, nitrogen), including storage, generation and distribution systems .7 cofferdam heating systems .8 gas-detecting systems .9 ballast system .10 boil-off systems .11 reliquefaction systems .12 cargo Emergency Shut Down system (ESD) .13 custody transfer system Knowledge of pump theory and characteristics, including types of cargo pumps and their safe operation Loading, unloading, care and handling of cargo Knowledge of the effect of bulk liquid cargoes on trim and stability and structural integrity Proficiency in tanker safety culture and implementation of safety management requirements		Proper loading, stowage and unloading of liquefied gas cargoes ensures that stability and stress conditions remain within safe limits at all times Potential non-compliance with cargo-related procedures is promptly identified and rectified Actions taken and procedures followed correctly identify and make full use of appropriate shipboard equipment

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Ability to safely perform and monitor all cargo operations (continued)	Proficiency to apply safe preparations, procedures and checklists for all cargo operations, including: .1 post docking and loading: .1 tank inspection .2 inerting (O2 reduction, dewpoint reduction) .3 gassing-up .4 cooling down .5 loading .6 deballasting .7 sampling, including closed-loop sampling .2 sea passage: .1 cooling down .2 pressure maintenance .3 boil-off .4 inhibiting .3 unloading: .1 unloading .2 ballasting .3 stripping and cleaning systems .4 systems to make the tank liquid-free .4 pre-docking preparation: .1 warm-up .2 inerting .3 gas-freeing .5 ship-to-ship transfer		Calibration and use of monitoring and gas- etection equipment is consistent with safe operational practices and procedures Procedures for monitoring and safety systems ensure that all alarms are detected promptly and acted upon in accordance with established procedures

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Ability to safely perform and monitor all cargo operations (continued)	Proficiency to perform cargo measurements and calculations, including: .1 liquid phase .2 gas phase .3 On Board Quantity (OBQ) .4 Remain On Board (ROB) .5 boil-off cargo calculations Proficiency to manage and supervise personnel with cargo-related responsibilities		Personnel are allocated duties and informed of procedures and standards of work to be followed, in a manner appropriate to the individuals concerned and in accordance with safe operational practices
Familiarity with physical and chemical properties of liquefied gas cargoes	Knowledge and understanding of basic chemistry and physics and the relevant definitions related to the safe carriage of liquefied gases in bulk in ships, including: .1 the chemical structure of gases .2 the properties and characteristics of liquefied gases (including CO2) and their vapours, including: .1 simple gas laws .2 states of matter .3 liquid and vapour densities .4 diffusion and mixing of gases .5 compression of gases .6 reliquefaction and refrigeration of gases	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Effective use is made of information resources for identification of properties and characteristics of liquefied gases and their impact on safety, environmental protection and vessel operation

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Familiarity with physical and chemical properties of liquefied gas cargoes (continued)	.7 critical temperature of gases and pressure .8 flashpoint, upper and lower explosive limits, auto-ignition temperature .9 compatibility, reactivity and positive segregation of gases .10 polymerization .11 saturated vapour pressure/reference temperature .12 dewpoint and bubble point .13 lubrication of compressors .14 hydrate formation .3 the properties of single Liquids .4 the nature and properties of solutions .5 thermodynamic units .6 basic thermodynamic laws and diagrams .7 properties of materials .8 effect of low temperature – brittle fracture Understanding the information contained in a Material Safety Data Sheet (MSDS)		

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Take precautions to prevent hazards	Knowledge and understanding of the hazards and control measures associated with liquefied gas tanker cargo operations, including: .1 flammability .2 explosion .3 toxicity .4 reactivity .5 corrosivity .6 health hazards .7 inert gas composition .8 electrostatic hazards .9 polymerizing cargoes Proficiency to calibrate and use monitoring and gasdetection systems, instruments and equipment Knowledge and understanding of dangers of non-compliance with relevant rules/regulations	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Relevant cargo-related hazards to the vessel and to personnel associated with liquefied gas tanker cargo operations are correctly identified, and proper control measures are taken Use of gas-detection devices is in accordance with manuals and good practice
Apply occupational health and safety precautions	Knowledge and understanding of safe working practices, including risk assessment and personal shipboard safety relevant to liquefied gas tankers, including: .1 precautions to be taken when entering enclosed spaces (such as compressor rooms), including the correct use of different types of breathing apparatus	Assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Procedures designed to safeguard personnel and the ship are observed at all times Safe working practices are observed and appropriate safety and protective equipment is correctly used Working practices are in accordance with legislative requirements, codes of practice, permits to work and environmental concerns Correct use of breathing apparatus

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Apply occupational health and safety precautions (continued)	.2 precautions to be taken before and during repair and maintenance work, including work affecting pumping, piping, electrical and control systems .3 precautions for hot and cold work .4 precautions for electrical Safety .5 use of appropriate Personal Protective Equipment (PPE) .6 precautions for cold burn and frostbite .7 proper use of personal toxicity monitoring equipment		
Respond to emergencies	Knowledge and understanding of liquefied gas tanker emergency procedures, including: .1 ship emergency response plans .2 cargo operations emergency shutdown procedure .3 emergency cargo valve operations .4 actions to be taken in the event of failure of systems or services essential to cargo operations .5 fire-fighting on liquefied gas tankers .6 jettisoning of cargo .7 enclosed space rescue	Assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	The type and impact of emergency is promptly identified and the response actions conform with established emergency procedures and contingency plans The order of priority and the levels and timescales of making reports and informing personnel on board are relevant to the nature of the emergency and reflect the urgency of the problem Evacuation, emergency shutdown and isolation are appropriate to the nature of the emergency and implemented promptly

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Respond to emergencies (continued)	Actions to be taken following collision, grounding or spillage and envelopment of the ship in toxic or flammable vapour Knowledge of medical first-aid procedures and antidotes on board liquefied gas tankers, with reference to the Medical First Aid Guide for Use in Accidents involving Dangerous Goods (MFAG)		The identification of and actions taken in a medical emergency conform to current recognized first aid practice and international guidelines
Take precautions to prevent pollution of the environment	Understanding of procedures to prevent pollution of the environment	Assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Operations are conducted in accordance with accepted principles and procedures to prevent pollution of the environment
Monitor and control compliance with legislative requirements	Knowledge and understanding of relevant provisions of the International Convention for the Prevention of Pollution from Ships (MARPOL) and other relevant IMO instruments, industry guidelines and port regulations as commonly applied Proficiency in the use of the IBC and IGC Codes and related documents	Assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	The handling of liquefied gas cargoes complies with relevant IMO instruments and established industrial standards and codes of safe working practices

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Section A-V/2

Mandatory minimum requirements for the training and qualification of masters, officers, ratings and other personnel on passenger ships

Crowd management training

1 The crowd management training required by regulation V/2, paragraph 4 for personnel designated on muster lists to assist passengers in emergency situations shall include, but not necessarily be limited to:

.1 awareness of life-saving appliance and control plans, including:

.1.1 knowledge of muster lists and emergency instructions;

.1.2 knowledge of the emergency exits, and

.1.3 restrictions on the use of elevators;

.2 the ability to assist passengers en route to muster and embarkation stations, including:

.2.1 the ability to give clear reassuring orders;

.2.2 the control of passengers in corridors, staircases and passageways;

.2.3 maintaining escape routes clear of obstructions;

.2.4 methods available for evacuation of disabled persons and persons needing special assistance, and

.2.5 search of accommodation spaces;

.3 mustering procedures, including:

.3.1 the importance of keeping order;

.3.2 the ability to use procedures for reducing and avoiding panic;

.3.3 the ability to use, where appropriate, passenger lists for evacuation counts, and

.3.4 the ability to ensure that the passengers are suitably clothed and have donned their lifejackets correctly.

Safety training for personnel providing direct service to passengers in passenger spaces

2 The additional safety training required by regulation V/2, paragraph 5, shall at least ensure attainment of the abilities as follows:

Communication

.1 Ability to communicate with passengers during an emergency, taking into account:

.1.1 the language or languages appropriate to the principal nationalities of passengers carried on the particular route;

.1.2 the likelihood that an ability to use an elementary English vocabulary for basic instructions can provide a means of communicating with a passenger in need of assistance whether or not the passenger and crew member share a common language;

.1.3 the possible need to communicate during an emergency by some other means, such as by demonstration, or hand signals, or calling attention to the location of instructions, muster stations, life-saving devices or evacuation routes, when oral communication is impractical;

.1.4 the extent to which complete safety instructions have been provided to passengers in their native language or languages, and

.1.5 the languages in which emergency announcements may be broadcast during an emergency or drill to convey critical guidance to passengers and to facilitate crew members in assisting passengers.

Life-saving appliances

.2 Ability to demonstrate to passengers the use of personal life-saving appliances.

Embarkation procedures

.3 embarking and disembarking passengers, with special attention to disabled persons and persons needing assistance.

Crisis management and human behaviour training

3 Masters, chief engineer officers, chief mates, second engineer officers and any person having responsibility for the safety of passengers in emergency situations shall:

.1 have successfully completed the approved crisis management and human behaviour training required by regulation V/2, paragraph 6, in accordance with their capacity, duties and responsibilities as set out in table A-V/2; and

.2 be required to provide evidence that the required standard of competence has been achieved in accordance with the methods and the criteria for evaluating competence tabulated in columns 3 and 4 of table A-V/2.

Passenger safety, cargo safety and hull integrity training

4 The passenger safety, cargo safety and hull integrity training required by regulation V/2, paragraph 7, for masters, chief mates, chief engineer officers, second engineer officers and persons assigned immediate responsibility for embarking and disembarking passengers, for loading, discharging or securing cargo or for closing hull openings on board ro-ro passenger ships shall at least ensure attainment of the abilities that are appropriate to their duties and responsibilities as follows:

Loading and embarkation procedures

.1 Ability to apply properly the procedures established for the ship regarding:

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.1.1 loading and discharging vehicles, rail cars and other cargo transport units, including related communications;

.1.2 lowering and hoisting ramps;

.1.3 setting up and stowing retractable vehicle decks, and

.1.4 embarking and disembarking passengers, with special attention to disabled persons and persons needing assistance.

Carriage of dangerous goods

.2 Ability to apply any special safeguards, procedures and requirements regarding the carriage of dangerous goods on board ro-ro passenger ships.

Securing cargoes

.3 Ability to:

.3.1 apply correctly the provisions of the Code of Safe Practice for Cargo Stowage and Securing to the vehicles, rail cars and other cargo transport units carried, and

.3.2 use properly the cargo-securing equipment and materials provided, taking into account their limitations.

Stability, trim and stress calculations

.4 Ability to:

.4.1 make proper use of the stability and stress information provided;

.4.2 calculate stability and trim for different conditions of loading, using the stability calculators or computer programs provided;

.4.3 calculate load factors for decks, and

.4.4 calculate the impact of ballast and fuel transfers on stability, trim and stress.

Opening, closing and securing hull openings

.5 Ability to:

.5.1 apply properly the procedures established for the ship regarding the opening, closing and securing of bow, stern and side doors and ramps and to correctly operate the associated systems, and

.5.2 conduct surveys on proper sealing.

Ro-ro deck atmosphere

.6 Ability to:

.6.1 use equipment, where carried, to monitor atmosphere in ro-ro spaces, and

.6.2 apply properly the procedures established for the ship for ventilation of ro-ro spaces during loading and discharging of vehicles, while on voyage and in emergencies.

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Table A-V/2

Specification of minimum standard of competence in crisis management and human behavior

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Organize shipboard emergency procedures	Knowledge of: .1 the general design and layout of the ship .2 safety regulations .3 emergency plans and procedures The importance of the principles for the development of ship-specific emergency procedures, including: .1 the need for pre-planning and drills of shipboard emergency procedures .2 the need for all personnel to be aware of and adhere to pre-planned emergency procedures as carefully as possible in the event of an emergency situation	Assessment of evidence obtained from approved training, exercises with one or more prepared emergency plans and practical demonstration	The shipboard emergency procedures ensure a state of readiness to respond to emergency situations
Optimize the use of resources	Ability to optimize the use of resources, taking into account: .1 the possibility that resources available in an emergency may be limited .2 the need to make full use of personnel and equipment immediately available and, if necessary, to improvise Ability to organize realistic drills to maintain a state of readiness, taking into account lessons learnt from previous accidents involving passenger ships; debriefing after drills	Assessment of evidence obtained from approved training, practical demonstration and shipboard training and drills of emergency procedures	Contingency plans optimize the use of available resources Allocation of tasks and responsibilities reflects the known competence of individuals Roles and responsibilities of teams and individuals are clearly defined

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Control response to emergencies	Ability to make an initial assessment and provide an effective response to emergency situations in accordance with established emergency procedures Leadership skills Ability to lead and direct others in emergency situations, including the need: .1 to set an example during emergency situations .2 to focus decision making, given the need to act quickly in an emergency .3 to motivate, encourage and reassure passengers and other personnel Stress handling Ability to identify the development of symptoms of excessive personal stress and those of other members of the ship's emergency team Understanding that stress generated by emergency situations can affect the performance of individuals and their ability to act on instructions and follow procedures	Assessment of evidence obtained from approved training, practical demonstration and shipboard training and drills of emergency procedures	Procedures and actions are in accordance with established principles and plans for crisis management on board Objectives and strategy are appropriate to the nature of the emergency, take account of contingencies and make optimum use of available resources Actions of crew members contribute to maintaining order and control
Control passengers and other personnel during emergency situations	Human behaviour and responses Ability to control passengers and other personnel in emergency situations, including:	Assessment of evidence obtained from approved training, practical demonstration and shipboard training and drills of emergency procedures	Actions of crew members contribute to maintaining order and control

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Control passengers and other personnel during emergency situations (continued)	.1 awareness of the general reaction patterns of passengers and other personnel in emergency situations, including the possibility that: .1.1 generally it takes some time before people accept the fact that there is an emergency situation .1.2 some people may panic and not behave with a normal level of rationality, that their ability to comprehend may be impaired and they may not be as responsive to instructions as in non-emergency situations .2 awareness that passengers and other personnel may, inter alia: .2.1 start looking for relatives, friends and/or their belongings as a first reaction when something goes wrong .2.2 seek safety in their cabins or in other places on board where they think that they can escape danger .2.3 tend to move to the upper side when the ship is listing .3 appreciation of the possible problem of panic resulting from separating families		

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Establish and maintain effective communications	Ability to establish and maintain effective communications, including: .1 the importance of clear and concise instructions and reports .2 the need to encourage an exchange of information with, and feedback from, passengers and other personnel Ability to provide relevant information to passengers and other personnel during an emergency situation, to keep them apprised of the overall situation and to communicate any action required of them, taking into account: .1 the language or languages appropriate to the principal nationalities of passengers and other personnel carried on the particular route .2 the possible need to communicate during an emergency by some other means, such as by demonstration, or by hand signals or calling attention to the location of instructions, muster stations, life-saving devices or evacuation routes, when oral communication is impractical .3 the language in which emergency announcements may be broadcast during an emergency or drill to convey critical guidance to passengers and to facilitate crew members in assisting passengers	Assessment of evidence obtained from approved training, exercises and practical demonstration	Information from all available sources is obtained, evaluated and confirmed as quickly as possible and reviewed throughout the emergency Information given to individuals, emergency response teams and passengers is accurate, relevant and timely Information keeps passengers informed as to the nature of the emergency and the actions required of them

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CHAPTER VI

Standards regarding emergency, occupational safety, security, medical care and survival functions

Section A-VI/1

Mandatory minimum requirements for safety familiarization, basic training and instruction for all seafarers

Safety familiarization training

1 Before being assigned to shipboard duties, all persons employed or engaged on a seagoing ship, other than passengers, shall receive approved familiarization training in personal survival techniques or receive sufficient information and instruction, taking account of the guidance given in part B, to be able to:

.1 communicate with other persons on board on elementary safety matters and understand safety information symbols, signs and alarm signals;

.2 know what to do if:

.2.1 a person falls overboard,

.2.2 fire or smoke is detected, or

.2.3 the fire or abandon ship alarm is sounded;

.3 identify muster and embarkation stations and emergency escape routes;

.4 locate and don lifejackets;

.5 raise the alarm and have basic knowledge of the use of portable fire extinguishers;

.6 take immediate action upon encountering an accident or other medical emergency before seeking further medical assistance on board; and

.7 close and open the fire, weathertight and watertight doors fitted in the particular ship other than those for hull openings.

Basic training[17]

2 Seafarers employed or engaged in any capacity on board ship on the business of that ship as part of the ship's complement with designated safety or pollution-prevention duties in the operation of the ship shall, before being assigned to any shipboard duties:

.1 receive appropriate approved basic training or instruction in:

.1.1 personal survival techniques as set out in table A-VI/1-1;

.1.2 fire prevention and fire fighting as set out in table A-VI/1-2;

[17]The relevant IMO Model Course(s) may assist in the preparation of courses.

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.1.3 elementary first aid as set out in table A-VI/1-3, and

.1.4 personal safety and social responsibilities as set out in table A-VI/1-4;

.2 be required to provide evidence of having achieved the required standard of competence to undertake the tasks, duties and responsibilities listed in column 1 of tables A-VI/1-1, A-VI/1-2, A-VI/1-3 and A-VI/1-4 through:

.2.1 demonstration of competence, in accordance with the methods and the criteria for evaluating competence tabulated in columns 3 and 4 of those tables, and

.2.2 examination or continuous assessment as part of an approved training programme in the subjects listed in column 2 of those tables.

3 Seafarers qualified in accordance with paragraph 2 in basic training shall be required, every five years, to provide evidence of having maintained the required standards of competence, to undertake the tasks, duties and responsibilities listed in column 1 of tables A-VI/1-1 and A-VI/1-2.

4 Parties may accept onboard training and experience for maintaining the required standard of competence in the following areas:

.1 personal survival techniques as set out in table A-VI/1-1:

.1.1 don a lifejacket;

.1.2 board a survival craft from the ship, while wearing a lifejacket;

.1.3 take initial actions on boarding a lifeboat to enhance chance of survival;

.1.4 stream a lifeboat drogue or sea-anchor;

.1.5 operate survival craft equipment; and

.1.6 operate location devices, including radio equipment;

.2 fire prevention and fire fighting as set out in table A-VI/1-2:

.2.1 use self-contained breathing apparatus; and

.2.2 effect a rescue in a smoke-filled space, using an approved smoke-generating device aboard, while wearing a breathing apparatus.

Exemptions

5 The Administration may, in respect of ships other than passenger ships of more than 500 gross tonnage engaged on international voyages and tankers, if it considers that a ship's size and the length or character of its voyage are such as to render the application of the full requirements of this section unreasonable or impracticable, exempt to that extent the seafarers on such a ship or class of ships from some of the requirements, bearing in mind the safety of people on board, the ship and property and the protection of the marine environment.

Table A-VI/1-1

Specification of minimum standard of competence in personal survival techniques

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Survive at sea in the event of ship abandonment	Types of emergency situations which may occur, such as collision, fire, foundering Types of life-saving appliances normally carried on ships Equipment in survival craft Location of personal life-saving appliances Principles concerning survival, including: .1 value of training and drills .2 personal protective clothing and equipment .3 need to be ready for any emergency .4 actions to be taken when called to survival craft stations .5 actions to be taken when required to abandon ship .6 actions to be taken when in the water .7 actions to be taken when aboard a survival craft .8 main dangers to survivors	Assessment of evidence obtained from approved instruction or during attendance at an approved course or approved in-service experience and examination, including practical demonstration of competence to: .1 don a lifejacket .2 don and use an immersion suit .3 safely jump from a height into the water .4 right an inverted liferaft while wearing a lifejacket .5 swim while wearing a lifejacket .6 keep afloat without a lifejacket .7 board a survival craft from the ship and water while wearing a lifejacket .8 take initial actions on boarding survival craft to enhance chance of survival .9 stream a drogue or sea-anchor .10 operate survival craft equipment .11 operate location devices, including radio equipment	Action taken on identifying muster signals is appropriate to the indicated emergency and complies with established procedures The timing and sequence of individual actions are appropriate to the prevailing circumstance and conditions and minimize potential dangers and threats to survival Method of boarding survival craft is appropriate and avoids dangers to other survivors Initial actions after leaving the ship and procedures and actions in water minimize threats to survival

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Table A-VI/1-2

Specification of minimum standard of competence in fire prevention and fire fighting

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Minimize the risk of fire and maintain a state of readiness to respond to emergency situations involving fire	Shipboard fire-fighting organization Location of fire-fighting appliances and emergency escape routes The elements of fire and explosion (the fire triangle) Types and sources of ignition Flammable materials, fire hazards and spread of fire The need for constant vigilance Actions to be taken on board ship Fire and smoke detection and automatic alarm systems Classification of fire and applicable extinguishing agents	Assessment of evidence obtained from approved instruction or attendance at an approved course	Initial actions on becoming aware of an emergency conform with accepted practices and procedures Action taken on identifying muster signals is appropriate to the indicated emergency and complies with established procedures
Fight and extinguish fires	Fire-fighting equipment and its location on board Instruction in: .1 fixed installations .2 fire-fighter's outfits .3 personal equipment .4 fire-fighting appliances and equipment .5 fire-fighting methods .6 fire-fighting agents .7 fire-fighting procedures	Assessment of evidence obtained from approved instruction or during attendance at an approved course, including practical demonstration in spaces which provide truly realistic training conditions (e.g., simulated shipboard conditions) and, whenever possible and practical, in darkness, of the ability to: .1 use various types of portable fire extinguishers .2 use self-contained breathing apparatus	Clothing and equipment are appropriate to the nature of the fire-fighting operations The timing and sequence of individual actions are appropriate to the prevailing circumstances and conditions Extinguishment of fire is achieved using appropriate procedures, techniques and fire-fighting agents Breathing apparatus procedures and techniques comply with accepted practices and procedures

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Fight and extinguish fires (continued)	.8 use of breathing apparatus for fighting fires and effecting rescues	.3 extinguish smaller fires, e.g., electrical fires, oil fires, propane fires .4 extinguish extensive fires with water, using jet and spray nozzles .5 extinguish fires with foam, powder or any other suitable chemical agent .6 enter and pass through, with lifeline but without breathing apparatus, a compartment into which high-expansion foam has been injected .7 fight fire in smoke-filled enclosed spaces wearing self-contained breathing apparatus .8 extinguish fire with water fog or any other suitable fire-fighting agent in an accommodation room or simulated engine-room with fire and heavy smoke .9 extinguish oil fire with fog applicator and spray nozzles, dry chemical powder or foam applicators .10 effect a rescue in a smoke-filled space wearing breathing apparatus	

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Table A-VI/1-3

Specification of minimum standard of competence in elementary first aid

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Take immediate action upon encountering an accident or other medical emergency	Assessment of needs of casualties and threats to own safety Appreciation of body structure and functions Understanding of immediate measures to be taken in cases of emergency, including the ability to: .1 position casualty .2 apply resuscitation techniques .3 control bleeding .4 apply appropriate measures of basic shock management .5 apply appropriate measures in event of burns and scalds, including accidents caused by electric current .6 rescue and transport a casualty .7 improvise bandages and use materials in the emergency kit	Assessment of evidence obtained from approved instruction or during attendance at an approved course	The manner and timing of raising the alarm is appropriate to the circumstances of the accident or medical emergency The identification of probable cause, nature and extent of injuries is prompt and complete and the priority and sequence of actions is proportional to any potential threat to life Risk of further harm to self and casualty is minimized at all times

Table A-VI/1-4

Specification of minimum standard of competence in personal safety and social responsibilities

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Comply with emergency procedures	Types of emergency which may occur, such as collision, fire, foundering Knowledge of shipboard contingency plans for response to emergencies Emergency signals and specific duties allocated to crew members in the muster list; muster stations; correct use of personal safety equipment Action to take on discovering potential emergency, including fire, collision, foundering and ingress of water into the ship Action to take on hearing emergency alarm signals Value of training and drills Knowledge of escape routes and internal communication and alarm systems	Assessment of evidence obtained from approved instruction or during attendance at an approved course	Initial action on becoming aware of an emergency conforms to established emergency response procedures Information given on raising alarm is prompt, accurate, complete and clear
Take precautions to prevent pollution of the marine environment	Basic knowledge of the impact of shipping on the marine environment and the effects of operational or accidental pollution on it Basic environmental protection procedures Basic knowledge of complexity and diversity of the marine environment	Assessment of evidence obtained from approved instruction or during attendance at an approved course	Organizational procedures designed to safeguard the marine environment are observed at all times

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Observe safe working practices	Importance of adhering to safe working practices at all times Safety and protective devices available to protect against potential hazards aboard ship Precautions to be taken prior to entering enclosed spaces Familiarization with international measures concerning accident prevention and occupational health5	Assessment of evidence obtained from approved instruction or during attendance at an approved course	Safe working practices are observed and appropriate safety and protective equipment is correctly used at all times
Contribute to effective communications on board ship	Understand the principles of, and barriers to, effective communication between individuals and teams within the ship Ability to establish and maintain effective communications	Assessment of evidence obtained from approved instruction or during attendance at an approved course	Communications are clear and effective at all times
Contribute to effective human relationships on board ship (continued)	Importance of maintaining good human and working relationships aboard ship Basic teamworking principles and practice, including conflict resolution Social responsibilities; employment conditions; individual rights and obligations; dangers of drug and alcohol abuse	Assessment of evidence obtained from approved instruction or during attendance at an approved course	Expected standards of work and behaviour are observed at all times

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Understand and take necessary actions to control fatigue	Importance of obtaining the necessary rest Effects of sleep, schedules, and the circadian rhythm on fatigue Effects of physical stressors on seafarers Effects of environmental stressors in and outside the ship and their impact on seafarers Effects of schedule changes on seafarer fatigue	Assessment of evidence obtained from approved instruction or during attendance at an approved course	Fatigue management practices are observed and appropriate actions are used at all times

Section A-VI/2

Mandatory minimum requirements for the issue of certificates of proficiency in survival craft, rescue boats and fast rescue boats

PROFICIENCY IN SURVIVAL CRAFT AND RESCUE BOATS OTHER THAN FAST RESCUE BOATS

Standard of competence

1 Every candidate for a certificate of proficiency in survival craft and rescue boats other than fast rescue boats shall be required to demonstrate competence to undertake the tasks, duties and responsibilities listed in column 1 of table A-VI/2-1.

2 The level of knowledge of the subjects listed in column 2 of table A-VI/2-1 shall be sufficient to enable the candidate to launch and take charge of a survival craft or rescue boat in emergency situations[18].

3 Training and experience to achieve the necessary level of theoretical knowledge, understanding and proficiency shall take account of the guidance given in part B of this Code.

4 Every candidate for certification shall be required to provide evidence of having achieved the required standard of competence through:

18The relevant IMO Model Course(s) may be of assistance in the preparation of courses.

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.1 demonstration of competence to undertake the tasks, duties and responsibilities listed in column 1 of table A-VI/2-1, in accordance with the methods for demonstrating competence and the criteria for evaluating competence tabulated in columns 3 and 4 of that table; and

.2 examination or continuous assessment as part of an approved training programme covering the material set out in column 2 of table A-VI/2-1.

5 Seafarers qualified in accordance with paragraph 4 in survival craft and rescue boats other than fast rescue boats shall be required, every five years, to provide evidence of having maintained the required standards of competence to undertake the tasks, duties and responsibilities listed in column 1 of table A-VI/2-1.

6 Parties may accept onboard training and experience for maintaining the required standard of competence of table A-VI/2-1 in the following areas:

.1 take charge of a survival craft or rescue boat during and after launch:

.1.1 interpret the markings on survival craft as to the number of persons they are intended to carry;

.1.2 give correct commands for launching and boarding survival craft, clearing the ship and handling and disembarking persons from survival craft;

.1.3 prepare and safely launch survival craft and clear the ship's side quickly; and

.1.4 safely recover survival craft and rescue boats;

.2 manage survivors and survival craft after abandoning ship:

.2.1 row and steer a boat and steer by compass;

.2.2 use individual items of equipment of survival crafts, except for pyrotechnics, and

.2.3 rig devices to aid location;

.3 use locating devices, including communication and signalling apparatus:

.3.1 use of portable radio equipment for survival craft; and

.4 apply first aid to survivors.

PROFICIENCY IN FAST RESCUE BOATS

Standard of competence

7 Every candidate for a certificate of proficiency in fast rescue boats shall be required to demonstrate competence to undertake the tasks, duties and responsibilities listed in column 1 of table A-VI/2-2.

8 The level of knowledge of the subjects listed in column 2 of table A-VI/2-2 shall be sufficient to enable the candidate to launch and take charge of a fast rescue boat in emergency situations[19].

9 Training and experience to achieve the necessary level of theoretical knowledge, understanding and proficiency shall take account of the guidance given in part B of this Code.

10 Every candidate for certification shall be required to provide evidence of having achieved the required standard of competence through:

.1 demonstration of competence to undertake the tasks, duties and responsibilities listed in column 1 of table A-VI/2-2, in accordance with the methods for demonstrating competence and the criteria for evaluating competence tabulated in columns 3 and 4 of that table; and

.2 examination or continuous assessment as part of an approved training programme covering the material set out in column 2 of table A-VI/2-2.

11 Seafarers qualified in accordance with paragraph 10 in fast rescue boats shall be required, every five years, to provide evidence of having maintained the required standards of competence to undertake the tasks, duties and responsibilities listed in column 1 of table A-VI/2-2.

12 Parties may accept onboard training and experience for maintaining the required standard of competence of table A-VI/2-2, in the following areas:

.1 Take charge of a fast rescue boat during and after launch:

.1.1 control safe launching and recovery of a fast rescue boat;

.1.2 handle a fast rescue boat in prevailing weather and sea conditions;

.1.3 use communications and signalling equipment between the fast rescue boat and a helicopter and a ship;

.1.4 use the emergency equipment carried; and

.1.5 carry out search patterns, taking account of environmental factors.

19 The relevant IMO Model Course(s) may be of assistance in the preparation of courses.

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Table A-VI/2-1

Specification of the minimum standard of competence in survival craft and rescue boats other than fast rescue boats

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Take charge of a survival craft or rescue boat during and after launch	Construction and outfit of survival craft and rescue boats and individual items of their equipment Particular characteristics and facilities of survival craft and rescue boats Various types of device used for launching survival craft and rescue boats Methods of launching survival craft into a rough sea Methods of recovering survival craft Action to be taken after leaving the ship Methods of launching and recovering rescue boats in a rough sea Dangers associated with use of on-load release devices Knowledge of maintenance procedures	Assessment of evidence obtained from practical demonstration of ability to: .1 right an inverted liferaft while wearing a lifejacket .2 interpret the markings on survival craft as to the number of persons they are intended to carry .3 give correct commands for launching and boarding survival craft, clearing the ship and handling and disembarking persons from survival craft .4 prepare and safely launch survival craft and clear the ship's side quickly and operate off-load and on-load release devices .5 safely recover survival craft and rescue boats, including the proper resetting of both off-load and on-load release devices using: inflatable liferaft and open or enclosed lifeboat with inboard engine or approved simulator training, where appropriate	Preparation, boarding and launching of survival craft are within equipment limitations and enable survival craft to clear the ship safely Initial actions on leaving the ship minimize threat to survival Recovery of survival craft and rescue boats is within equipment limitations Equipment is operated in accordance with manufacturers' instructions for release and resetting

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Operate a survival craft engine	Methods of starting and operating a survival craft engine and its accessories together with the use of the fire extinguisher provided	Assessment of evidence obtained from practical demonstration of ability to start and operate an inboard engine fitted in an open or enclosed lifeboat	Propulsion is available and maintained as required for manoeuvring
Manage survivors and survival craft after abandoning ship	Handling survival craft in rough weather Use of painter, sea-anchor and all other equipment Apportionment of food and water in survival craft Action taken to maximize detectability and location of survival craft Method of helicopter rescue Effects of hypothermia and its prevention; use of protective covers and garments, including immersion suits and thermal protective aids Use of rescue boats and motor lifeboats for marshalling liferafts and rescue of survivors and persons in the sea Beaching survival craft	Assessment of evidence obtained from practical demonstration of ability to: .1 row and steer a boat and steer by compass .2 use individual items of equipment of survival craft .3 rig devices to aid location	Survival management is appropriate to prevailing circumstances and conditions

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Use locating devices, including communication and signaling apparatus and pyrotechnics	Radio life-saving appliances carried in survival craft, including satellite EPIRBs and SARTs Pyrotechnic distress signals	Assessment of evidence obtained from practical demonstration of ability to: .1 use portable radio equipment for survival craft .2 use signalling equipment, including pyrotechnics	Use and choice of communication and signaling apparatus is appropriate to prevailing circumstances and conditions

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Apply first aid to survivors	Use of the first-aid kit and resuscitation techniques Management of injured persons, including control of bleeding and shock	Assessment of evidence obtained from practical demonstration of ability to deal with injured persons both during and after abandonment, using first-aid kit and resuscitation technique	Identification of the probable cause, nature and extent of injuries or condition is prompt and accurate Priority and sequence of treatment minimizes any threat to life

Table A-VI/2-2

Specification of the minimum standard of competence in fast rescue boats

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Understand the construction, maintenance, repair and outfitting of fast rescue boats	Construction and outfitting of fast rescue boats and individual items of their equipment Knowledge of the maintenance and emergency repairs of fast rescue boats and the normal inflation and deflation of buoyancy compartments of inflated fast rescue boats	Assessment of evidence obtained from practical instruction	The method of carrying out routine maintenance and emergency repairs Identify components and required equipment for fast rescue boats
Take charge of the launching equipment and appliance as commonly fitted, during launching and recovery	Assessment of the readiness of launching equipment and launching appliance of fast rescue boats for immediate launching and operation Understand the operation and limitations of the winch, brakes, falls, painters, motion-compensation and other equipment as commonly fitted Safety precautions during launching and recovery of a fast rescue boat Launching and recovery of a fast rescue boat in prevailing and adverse weather and sea conditions	Assessment of evidence obtained from practical demonstration of ability to control safe launching and recovery of a fast rescue boat, with equipment as fitted	Ability to prepare and take charge of the launching equipment and appliance during launching and recovery of a fast rescue boat
Take charge of a fast rescue boat as commonly fitted, during launching and recovery	Assessment of the readiness of fast rescue boats and related equipment for immediate launching and operation Safety precautions during launching and recovery of a fast rescue boat Launching and recovery of a fast rescue boat in prevailing and adverse weather and sea conditions	Assessment of evidence obtained from practical demonstration of ability to conduct safe launching and recovery of a fast rescue boat, with equipment as fitted	Ability to take charge of a fast rescue boat during launching and recovery

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Take charge of a fast rescue boat after launching	Particular characteristics, facilities and limitations of fast rescue boats Procedures for the righting of a capsized fast rescue boat How to handle a fast rescue boat in prevailing and adverse weather and sea conditions Navigational and safety equipment available in a fast rescue boat Search patterns and environmental factors affecting their execution	Assessment of evidence obtained from practical demonstration of ability to: .1 right a capsized fast rescue boat .2 handle a fast rescue boat in prevailing weather and sea conditions .3 swim in special equipment .4 use communications and signalling equipment between the fast rescue boat and a helicopter and a ship .5 use the emergency equipment carried .6 recover a casualty from the water and transfer a casualty to a rescue helicopter or to a ship or to a place of safety .7 carry out search patterns, taking account of environmental factors	Demonstration of operation of fast rescue boats within equipment limitations in prevailing weather conditions
Operate a fast rescue boat engine	Methods of starting and operating a fast rescue boat engine and its accessories	Assessment of evidence obtained from practical demonstration of ability to start and operate a fast rescue boat engine	Engine is started and operated as required for manoeuvring

Section A-VI/3

Mandatory minimum training in advanced fire fighting

Standard of competence

1 Seafarers designated to control fire-fighting operations shall have successfully completed advanced training in techniques for fighting fire, with particular emphasis on organization, tactics and command, and shall be required to demonstrate competence to undertake the tasks, duties and responsibilities listed in column 1 of table A-VI/3.

2 The level of knowledge and understanding of the subjects listed in column 2 of table A-VI/3 shall be sufficient for the effective control of fire-fighting operations on board ship[20].

3 Training and experience to achieve the necessary level of theoretical knowledge, understanding and proficiency shall take account of the guidance given in part B of this Code.

4 Every candidate for certification shall be required to provide evidence of having achieved the required standard of competence, in accordance with the methods for demonstrating competence and the criteria for evaluating competence tabulated in columns 3 and 4 of table A-VI/3.

5 Seafarers qualified in accordance with paragraph 4 in advanced fire fighting shall be required, every five years, to provide evidence of having maintained the required standards of competence to undertake the tasks, duties and responsibilities listed in column 1 of table A-VI/3.

6 Parties may accept onboard training and experience for maintaining the required standard of competence of table A-VI/3, in the following areas:

.1 Control fire-fighting operations aboard ships;

.1.1 fire-fighting procedures at sea and in port, with particular emphasis on organization, tactics and command;

.1.2 communication and coordination during fire-fighting operations;

.1.3 ventilation control, including smoke extraction;

.1.4 control of fuel and electrical systems;

.1.5 fire-fighting process hazards (dry distillation, chemical reactions, boiler uptake);

.1.6 fire precautions and hazards associated with the storage and handling of materials;

.1.7 management and control of injured persons; and

.1.8 procedures for coordination with shore-based fire fighters.

[20]The relevant IMO Model Course(s) may be of assistance in the preparation of courses.

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Table A-VI/3

Specification of minimum standard of competence in advanced fire fighting

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Control fire-fighting operations aboard ships	Fire-fighting procedures at sea and in port, with particular emphasis on organization, tactics and command Use of water for fire-extinguishing, the effect on ship stability, precautions and corrective procedures Communication and co-ordination during fire-fighting operations Ventilation control, including smoke extraction Control of fuel and electrical systems Fire-fighting process hazards (dry distillation, chemical reactions, boiler uptake fires, etc.) Fire fighting involving dangerous goods Fire precautions and hazards associated with the storage and handling of materials (paints, etc.) Management and control of injured persons Procedures for coordination with shore-based fire fighters	Practical exercises and instruction conducted under approved and truly realistic training conditions (e.g., simulated shipboard conditions) and, whenever possible and practicable, in darkness	Actions taken to control fires are based on a full and accurate assessment of the incident, using all available sources of information The order of priority, timing and sequence of actions are appropriate to the overall requirements of the incident and to minimize damage and potential damage to the ship, injuries to personnel and impairment of the operational effectiveness of the ship Transmission of information is prompt, accurate, complete and clear Personal safety during fire control activities is safeguarded at all times
Organize and train fire parties	Preparation of contingency Plans Composition and allocation of personnel to fire parties Strategies and tactics for control of fires in various parts of the ship	Practical exercises and instruction conducted under approved and truly realistic training conditions, e.g., simulated shipboard conditions	Composition and organization of fire control parties ensure the prompt and effective implementation of emergency plans and procedures

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Inspect and service fire-detection and fireextinguishing systems and equipment	Fire-detection systems; fixed fire-extinguishing systems; portable and mobile fire-extinguishing equipment, including appliances, pumps and rescue, salvage, life-support, personal protective and communication equipment Requirements for statutory and classification surveys	Practical exercises, using approved equipment and systems in a realistic training environment	Operational effectiveness of all fire-detection and fire-extinguishing systems and equipment is maintained at all times in accordance with performance specifications and legislative requirements
Investigate and compile reports on incidents involving fire	Assessment of cause of incidents involving fire	Practical exercises in a realistic training environment	Causes of fire are identified and the effectiveness of countermeasures is evaluated

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Section A-VI/4

Mandatory minimum requirements related to medical first aid and medical care

Standard of competence for seafarers designated to provide medical first aid on board ship

1 Every seafarer who is designated to provide medical first aid on board ship shall be required to demonstrate the competence to undertake the tasks, duties and responsibilities listed in column 1 of table A-VI/4-1.

2 The level of knowledge of the subjects listed in column 2 of table A-VI/4-1 shall be sufficient to enable the designated seafarer to take immediate effective action in the case of accidents or illness likely to occur on board ship[21].

3 Every candidate for certification under the provisions of regulation VI/4, paragraph 1 shall be required to provide evidence that the required standard of competence has been achieved in accordance with the methods for demonstrating competence and the criteria for evaluating competence tabulated in columns 3 and 4 of table A-VI/4-1.

[21]The relevant IMO Model Course(s) may assist in the preparation of courses.

Standard of competence for seafarers designated to take charge of medical care on board ship

4 Every seafarer who is designated to take charge of medical care on board ship shall be required to demonstrate the competence to undertake the tasks, duties and responsibilities listed in column 1 of table A-VI/4-2.

5 The level of knowledge of the subjects listed in column 2 of table A-VI/4-2 shall be sufficient to enable the designated seafarer to take immediate effective action in the case of accidents or illness likely to occur on board ship[22].

6 Every candidate for certification under the provisions of regulation VI/4, paragraph 2 shall be required to provide evidence that the required standard of competence has been achieved in accordance with the methods for demonstrating competence and the criteria for evaluating competence tabulated in columns 3 and 4 of table A-VI/4-2.

[22]The relevant IMO Model Course(s) may assist in the preparation of courses.

Table A-VI/4-1

Specification of minimum standard of competence in medical first aid

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Apply immediate first aid in the event of accident or illness on board	First-aid kit Body structure and function Toxicological hazards on board, including use of the Medical First Aid Guide for Use in Accidents Involving Dangerous Goods (MFAG) or its national equivalent Examination of casualty or patient Spinal injuries Burns, scalds and effects of heat and cold Fractures, dislocations and muscular injuries Medical care of rescued persons Radio medical advice Pharmacology Sterilization Cardiac arrest, drowning and asphyxia	Assessment of evidence obtained from practical instruction	The identification of probable cause, nature and extent of injuries is prompt, complete and conforms to current first-aid practice Risk of harm to self and to others is minimized at all times Treatment of injuries and the patient's condition is appropriate and conforms to recognized first-aid practice and international guidelines

Table A-VI/4-2

Specification of minimum standard of competence in medical care

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Provide medical care to the sick and injured while they remain on board	are of casualty involving: .1 head and spinal injuries .2 injuries of ear, nose, throat and eyes .3 external and internal bleeding .4 burns, scalds and frostbite .5 fractures, dislocations and muscular injuries .6 wounds, wound healing and infection .7 pain relief	Assessment of evidence obtained from practical instruction and demonstration	Identification of symptoms is based on the concepts of clinical examination and medical history Protection against infection and spread of diseases is complete and effective Personal attitude is calm, confident and reassuring

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	C.8 techniques of sewing and clamping .9 management of acute abdominal conditions .10 minor surgical treatment .11 dressing and bandaging Aspects of nursing: .1 general principles .2 nursing care Diseases, including: .1 medical conditions and emergencies .2 sexually transmitted diseases .3 tropical and infectious diseases Alcohol and drug abuse	Where practicable, approved practical experience at a hospital or similar establishment	Treatment of injury or condition is appropriate and conforms to accepted medical practice and relevant national and international medical guides The dosage and application of drugs and medication complies with manufacturers' recommendations and accepted medical practice The significance of changes in patient's condition is promptly recognized

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Provide medical care to the sick and injured while they remain on board (continued)	Dental care Gynaecology, pregnancy and Childbirth Medical care of rescued Persons Death at sea Hygiene Disease prevention, including: .1 disinfection, disinfestation, de-ratting .2 vaccinations Keeping records and copies of applicable regulations: .1 keeping medical records .2 international and national maritime medical regulations		
Participate in co-ordinated schemes for medical assistance to ships	External assistance, including: .1 radio medical advice .2 transportation of the ill and injured, including helicopter evacuation .3 medical care of sick seafarers involving cooperation with port health authorities or out-patient wards in port		Clinical examination procedures are complete and comply with instructions received The method and preparation for evacuation is in accordance with recognized procedures and is designed to maximize the welfare of the patient Procedures for seeking radio medical advice conform to established practice and recommendations

Section A-VI/5

Mandatory minimum requirements for the issue of certificates of proficiency for ship security officers

Standard of competence

1 Every candidate for a certificate of proficiency as a ship security officer shall be required to demonstrate competence to undertake the tasks, duties and responsibilities listed in column 1 of table A-VI/5.

2 The level of knowledge of the subjects listed in column 2 of table A-VI/5 shall be sufficient to enable the candidate to act as the designated ship security officer.

3 Training and experience to achieve the necessary level of theoretical knowledge, understanding and proficiency shall take into account the guidance in section B-VI/5 of this Code.

4 Every candidate for certification shall be required to provide evidence of having achieved the required standard of competence in accordance with the methods for demonstrating competence and the criteria for evaluating competence tabulated in columns 3 and 4 of table A-VI/5.

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Table A-VI/5

Specifications of minimum standards of competence for ship security officers

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Maintain and supervise the implementation of a ship security plan	Knowledge of international maritime security policy and responsibilities of Governments, companies and designated persons, including elements that may relate to piracy and armed robbery Knowledge of the purpose for and the elements that make up a ship security plan, related procedures and maintenance of records, including those that may relate to piracy and armed robbery Knowledge of procedures to be employed in implementing a ship security plan and reporting of security incidents Knowledge of maritime security levels and the consequential security measures and procedures aboard ship and in the port facility environment Knowledge of the requirements and procedures for conducting internal audits, on-scene inspections, control and monitoring of security activities specified in a ship security plan Knowledge of the requirements and procedures for reporting to the company security officer any deficiencies and non-conformities identified during internal audits, periodic reviews, and security inspections	Assessment of evidence obtained from approved training or examination	Procedures and actions are in accordance with the principles established by the ISPS Code and the SOLAS, 1974, Convention, as amended Legislative requirements relating to security are correctly identified Procedures achieve a state of readiness to respond to changes in maritime security levels Communications within the ship security officer's area of responsibility are clear and understood

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Maintain and supervise the implementation of a ship security plan (continued)	Knowledge of the methods and procedures used to modify the ship security plan Knowledge of security-related contingency plans and the procedures for responding to security threats or breaches of security, including provisions for maintaining critical operations of the ship/port interface, including also elements that may relate to piracy and armed robbery Working knowledge of maritime security terms and definitions, including elements that may relate to piracy and armed robbery		

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Assess security risk, threat, and vulnerability	Knowledge of risk assessment and assessment tools Knowledge of security assessment documentation, including the Declaration of Security Knowledge of techniques used to circumvent security measures, including those used by pirates and armed robbers Knowledge enabling recognition, on a non-discriminatory basis, of persons posing potential security risks Knowledge enabling recognition of weapons, dangerous substances and devices and awareness of the damage they can cause Knowledge of crowd management and control techniques, where appropriate	Assessment of evidence obtained from approved training, or approved experience and examination, including practical demonstration of competence to: .1 conduct physical searches .2 conduct non-intrusive inspections	Procedures and actions are in accordance with the principles established by the ISPS Code and the SOLAS, 1974, Convention, as amended Procedures achieve a state of readiness to respond to changes in the maritime security levels Communications within the ship security officer's area of responsibility are clear and understood

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Assess security risk, threat, and vulnerability (continued)	Knowledge in handling sensitive security-related information and security-related communications Knowledge of implementing and co-ordinating searches Knowledge of the methods for physical searches and non-intrusive inspections		
Undertake regular inspections of the ship to ensure that appropriate security measures are implemented and maintained	Knowledge of the requirements for designating and monitoring restricted areas Knowledge of controlling access to the ship and to restricted areas on board ship Knowledge of methods for effective monitoring of deck areas and areas surrounding the ship Knowledge of security aspects relating to the handling of cargo and ship's stores with other shipboard personnel and relevant port facility security officers Knowledge of methods for controlling the embarkation, disembarkation and access while on board of persons and their effects	Assessment of evidence obtained from approved training or examination	Procedures and actions are in accordance with the principles established by the ISPS Code and the SOLAS, 1974, as amended Procedures achieve a state of readiness to respond to changes in the maritime security levels Communications within the ship security officer's area of responsibility are clear and understood
Ensure that security equipment and systems, if any, are properly operated, tested and calibrated	Knowledge of the various types of security equipment and systems and their limitations, including those that could be used in case of attacks by pirates and armed robbers Knowledge of the procedures, instructions and guidance on the use of ship security alert systems Knowledge of the methods for testing, calibrating, and maintaining security systems and equipment, particularly whilst at sea	Assessment of evidence obtained from approved training or examination	Procedures and actions are in accordance with the principles established by the ISPS Code and the SOLAS, 1974, Convention, as amended

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Encourage security awareness and vigilance	Knowledge of training, drill and exercise requirements under relevant conventions, codes and IMO circulars, including those relevant to anti-piracy and anti-armed robbery Knowledge of the methods for enhancing security awareness and vigilance on board Knowledge of the methods for assessing the effectiveness of drills and exercises	Assessment of evidence obtained from approved training or examination	Procedures and actions are in accordance with the principles established by the ISPS Code and the SOLAS, 1974, as amended Communications within the ship security officer's area of responsibility are clear and understood

Section A-VI/6

Mandatory minimum requirements for security-related training and instruction for all seafarers

Standard of competence for security-related familiarization training

1 Before being assigned to shipboard duties, all persons employed or engaged on a seagoing ship which is required to comply with the provisions of the ISPS Code, other than passengers, shall receive approved security-related familiarization training, taking account of the guidance given in part B, to be able to:

.1 report a security incident, including a piracy or armed robbery threat or attack;

.2 know the procedures to follow when they recognize a security threat; and

.3 take part in security-related emergency and contingency procedures.

2 Seafarers with designated security duties engaged or employed on a seagoing ship shall, before being assigned such duties, receive security-related familiarization training in their assigned duties and responsibilities, taking into account the guidance given in part B.

3 The security-related familiarization training shall be conducted by the ship security officer or an equally qualified person.

Standard of competence for security-awareness training

4 Seafarers employed or engaged in any capacity on board a ship which is required to comply with the provisions of the ISPS Code on the business of that ship as part of the ship's complement without designated security duties shall, before being assigned to any shipboard duties:

.1 receive appropriate approved training or instruction in security awareness as set out in table A-VI/6-1;

.2 be required to provide evidence of having achieved the required standard of competence to undertake the tasks, duties and responsibilities listed in column 1 of table A-VI/6-1:

.2.1 by demonstration of competence, in accordance with the methods and the criteria for evaluating competence tabulated in columns 3 and 4 of table A-VI/6-1; and

.2.2 by examination or continuous assessment as part of an approved training programme in the subjects listed in column 2 of table A-VI/6-1.

Transitional provisions

5 Until 1 January 2014, seafarers who commenced an approved seagoing service prior to the date of entry into force of this section shall be able to establish that they meet the requirements of paragraph 4 by:

.1 approved seagoing service as shipboard personnel, for a period of at least six months in total during the preceding three years; or

.2 having performed security functions considered to be equivalent to the seagoing service required in paragraph 5.1; or

.3 passing an approved test; or

.4 successfully completing approved training.

Standard of competence for seafarers with designated security duties

6 Every seafarer who is designated to perform security duties, including anti-piracy and anti-armed-robbery-related activities, shall be required to demonstrate competence to undertake the tasks, duties and responsibilities listed in column 1 of table A-VI/6-2.

7 The level of knowledge of the subjects in column 2 of table A-VI/6-2 shall be sufficient to enable every candidate to perform on board designated security duties, including anti-piracy and anti-armed-robbery-related activities.

8 Every candidate for certification shall be required to provide evidence of having achieved the required standard of competence through:

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.1 demonstration of competence to undertake the tasks, duties and responsibilities listed in column 1 of table A-VI/6-2, in accordance with the methods for demonstrating competence and the criteria for evaluating competence tabulated in columns 3 and 4 of that table; and

.2 examination or continuous assessment as part of an approved training programme covering the material set out in column 2 of table A-VI/6-2.

Transitional provisions

9 Until 1 January 2014, seafarers with designated security duties who commenced an approved seagoing service prior to the date of entry into force of this section shall be able to demonstrate competence to undertake the tasks, duties and responsibilities listed in column 1 of table A-VI/6-2 by:

.1 approved seagoing service as shipboard personnel with designated security duties, for a period of at least six months in total during the preceding three years; or

.2 having performed security functions considered to be equivalent to the seagoing service required in paragraph 9.1; or

.3 passing an approved test; or

.4 successfully completing approved training.

Table A-VI/6-1

Specification of minimum standard of competence in security awareness

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Contribute to the enhancement of maritime security through heighte-ned awareness	Basic working knowledge of maritime security terms and definitions, including elements that may relate to piracy and armed robbery Basic knowledge of international maritime security policy and responsibilities of Governments, companies and Persons Basic knowledge of maritime security levels and their impact on security measures and procedures aboard ship and in port facilities Basic knowledge of security reporting procedures Basic knowledge of security-related contingency plans	Assessment of evidence obtained from approved instruction or during attendance at an approved course	Requirements relating to enhanced maritime security are correctly identified
Recognition of security threats	Basic knowledge of techniques used to circumvent securi-ty measures Basic knowledge enabling recognition of potential security threats, including elements that may relate to piracy and armed robbery Basic knowledge enabling recognition of weapons, dangerous substances and devices and awareness of the damage they can cause Basic knowledge in handling security-related information and security-related communications	Assessment of evidence obtained from approved instruction or during attendance at an approved course	Maritime security threats are correctly identified

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Understanding of the need for and methods of main-taining security awareness and vigilance	Basic knowledge of training, drill and exercise requirements under relevant conventions, codes and IMO circulars, including those relevant for anti-piracy and anti-armed robbery	Assessment of evidence obtained from approved instruction or during attendance at an appro-ved course	Requirements relating to enhanced maritime security are correctly identified

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Table A-VI/6-2

Specifications of minimum standards of competence for seafarers with designated security duties

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Maintain the conditions set forth in a ship security plan	Working knowledge of maritime security terms and definitions, including elements that may relate to piracy and armed robbery Knowledge of international maritime security policy and responsibilities of Governments, companies and persons, including working knowledge of elements that may relate to piracy and armed robbery Knowledge of maritime security levels and their impact on security measures and procedures aboard ship and in the port facilities Knowledge of security reporting procedures Knowledge of procedures and requirements for drills and exercises under relevant conventions, codes and IMO circulars, including working knowledge of those that may relate to piracy and armed robbery Knowledge of the procedures for conducting inspections and surveys and for the control and monitoring of security activities specified in a ship security plan	Assessment of evidence obtained from approved instruction or during attendance at an approved course	Procedures and actions are in accordance with the principles established by the ISPS Code and the SOLAS, 1974, as amended Legislative requirements relating to security are correctly identified Communications within the area of responsibility are clear and understood

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Maintain the conditions set forth in a ship security plan (continued)	Knowledge of security-related contingency plans and the procedures for responding to security threats or breaches of security, including provisions for maintaining critical operations of the ship/port interface, and including also working knowledge of those that may relate to piracy and armed robbery		
Recognition of security risks and threats	Knowledge of security documentation, including the Declaration of Security Knowledge of techniques used to circumvent security measures, including those used by pirates and armed robbers Knowledge enabling recognition of potential security threats Knowledge enabling recognition of weapons, dangerous substances and devices and awareness of the damage they can cause Knowledge of crowd management and control techniques, where appropriate Knowledge in handling security-related information and security-related communications Knowledge of the methods for physical searches and non-intrusive inspections	Assessment of evidence obtained from approved instruction or during attendance at an approved course	Procedures and actions are in accordance with the principles established by the ISPS Code and the SOLAS, 1974, as amended

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Undertake regular security inspections of the ship	Knowledge of the techniques for monitoring restricted areas Knowledge of controlling access to the ship and to restricted areas on board ship Knowledge of methods for effective monitoring of deck areas and areas surrounding the ship Knowledge of inspection methods relating to the cargo and ship's stores Knowledge of methods for controlling the embarkation, disembarkation and access while on board of persons and their effects	Assessment of evidence obtained from approved instruction or during attendance at an approved course	Procedures and actions are in accordance with the principles established by the ISPS Code and the SOLAS Convention, as amended
Proper usage of security equipment and systems, if any	General knowledge of various types of security equipment and systems, including those that could be used in case of attacks by pirates and armed robbers, including their limitations Knowledge of the need for testing, calibrating, and maintaining security systems and equipment, particularly whilst at sea	Assessment of evidence obtained from approved instruction or during attendance at an approved course	Equipment and systems operations are carried out in accordance with established equipment operating instructions and taking into account the limitations of the equipment and systems Procedures and actions are in accordance with the principles established by the ISPS Code and the SOLAS, 1974, as amended

CHAPTER VII

Standards regarding alternative certification

Section A-VII/1

Issue of alternative certificates

1 Every candidate for certification at the operational level under the provisions of chapter VII of the annex to the Convention shall be required to complete relevant education and training and meet the standard of competence for all the functions prescribed in either table A-II/1 or table A-III/1. Functions specified in table A-II/1 or A-III/1 respectively may be added provided the candidate completes, as appropriate, additional relevant education and training and meets the standards of competence prescribed in those tables for the functions concerned.

2 Every candidate for certification at the management level as the person having command of a ship of 500 gross tonnage or more, or the person upon whom the command of such a ship will fall in the event of the incapacity of the person in command, shall be required, in addition to compliance with the standard of competence specified in table A-II/1, to complete relevant education and training and meet the standards of competence for all of the functions prescribed in table A-II/2. Functions specified in the tables of chapter III of this part may be added provided the candidate completes, as appropriate, additional relevant education and training and meets the standards of competence prescribed in those tables for the functions concerned.

3 Every candidate for certification at the management level as the person responsible for the mechanical propulsion of a ship powered by main propulsion machinery of 750 kW or more, or the person upon whom such responsibility will fall in the event of the incapacity of the person responsible for the mechanical propulsion of the ship, shall be required, in addition to compliance with the standard of competence specified in table A-III/1, to complete relevant education and training and meet the standards of competence for all of the functions prescribed in table A-III/2, as appropriate. Functions specified in the tables of chapter II of this part may be added provided the candidate completes, as appropriate, additional relevant education and training and meets the standards of competence prescribed in those tables for the functions concerned.

4 Every candidate for certification at the support level:

.1 in navigation or marine engineering shall be required to complete relevant training and meet the standard of competence for the function prescribed in either table A-II/4 or table A-III/4. Functions specified in table A-III/4 or A-II/4 respectively may be added provided the candidate completes, as appropriate, additional relevant training and meets the standard of competence prescribed in those tables for the function concerned;

.2 as able seafarer deck shall be required, in addition to compliance with the standard

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of competence specified in table A-II/4, to complete relevant training and meet the standard of competence for all of the functions prescribed in table A-II/5. Functions specified in table A-III/4 or A-III/5 may be added provided the candidate completes, as appropriate, additional relevant training and meets the standard of competence prescribed in that (those) table(s) for the function(s) concerned; and

.3 as able seafarer engine shall be required, in addition to compliance with the standard of competence specified in table A-III/4, to complete relevant training and meet the standard of competence for all of the functions prescribed in table A-III/5. Functions specified in table A-II/4 or A-II/5 may be added provided the candidate completes, as appropriate, additional relevant training and meets the standard of competence prescribed in that (those) table(s) for the function(s) concerned.

Section A-VII/2

Certification of seafarers

1 In accordance with the requirements of regulation VII/1, paragraph 1.3, every candidate for certification under the provisions of chapter VII at operational level in functions specified in tables A-II/1 and A-III/1 shall:

.1 have approved seagoing service of not less than 12 months, which service shall include a period of at least six months performing engine-room duties under the supervision of a qualified engineer officer and, where the function of navigation is required, a period of at least six months performing bridge watchkeeping duties under the supervision of a qualified bridge watchkeeping officer; and

.2 have completed, during this service, onboard training programmes approved as meeting the relevant requirements of sections A-II/1 and A-III/1 and documented in an approved training record book.

2 Every candidate for certification under the provisions of chapter VII at the management level in a combination of functions specified in tables A-II/2 and A-III/2 shall have approved seagoing service related to the functions to be shown in the endorsement to the certificate as follows:

.1 *for persons other than those having command or responsibility for the mechanical propulsion of a ship* – 12 months performing duties at the operational level related to regulation III/2 or III/3 as appropriate and, where the function of navigation at the management level is required, at least 12 months performing bridge watchkeeping duties at the operational level;

.2 *for those having command or the responsibility for the mechanical propulsion of a ship* – not less than 48 months, including the provisions in paragraph 2.1 of this section, performing, as a certificated officer, duties related to the functions to be shown in the endorsement to the certificate, of which 24 months shall be served performing functions set out in table A-III/1 and 24 months shall be served performing functions set out in tables A-III/1 and A-III/2.

3 In accordance with the requirements of regulation VII/1, paragraph 1.3, every candidate for certification under the provisions of chapter VII at support level in functions specified in tables A-II/4 and A-III/4 shall have completed:

.1 approved seagoing service including not less than 12 months' experience, made up of:

.1.1 not less than 6 months associated with navigational watchkeeping duties; and

.1.2 not less than 6 months associated with engine-room duties; or

.2 special training, either pre-sea or on board ship, including an approved period of seagoing service which shall not be less than 4 months, made up of:

.2.1 not less than 2 months associated with navigational watchkeeping duties; and

.2.2 not less than 2 months associated with engine-room duties;

.3 the seagoing service, training and experience required by paragraph 3.1 or 3.2 shall be carried out under the direct supervision of an appropriately qualified officer or rating.

4 In accordance with the requirements of regulation VII/1, paragraph 1.3, every candidate for certification under the provisions of chapter VII at support level in functions specified in tables A-II/5 and A-III/5 shall, while qualified to serve as a rating forming part of a navigational and engine-room watch, meet the standards of competence specified in sections A-II/5 and A-III/5 of the STCW Code and have completed:

.1 approved seagoing service of not less than 30 months, made up of:

.1.1 not less than 18 months associated with able seafarer deck duties, and

.1.2 not less than 12 months associated with able seafarer engine duties; or

.2 an approved training programme and not less than 18 months of approved seagoing service, made up of:

.2.1 not less than 12 months associated with able seafarer deck duties; and

.2.2 not less than 6 months associated with able seafarer engine duties; or

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.3 an approved special integrated deck and engine training programme, including not less than 12 months' approved seagoing service in an integrated deck and engine department, made up of:

.3.1 not less than 6 months associated with able seafarer deck duties; and

.3.2 not less than 6 months associated with able seafarer engine duties.

Section A-VII/3

Principles governing the issue of alternative certificates

(No provisions)

CHAPTER VIII

Standards regarding watchkeeping

Section A-VIII/1

Fitness for duty

1 Administrations shall take account of the danger posed by fatigue of seafarers, especially those whose duties involve the safe and secure operation of a ship.

2 All persons who are assigned duty as officer in charge of a watch or as a rating forming part of a watch and those whose duties involve designated safety, prevention of pollution and security duties shall be provided with a rest period of not less than:

.1 a minimum of 10 hours of rest in any 24-hour period; and

.2 77 hours in any 7-day period.

3 The hours of rest may be divided into no more than two periods, one of which shall be at least 6 hours in length, and the intervals between consecutive periods of rest shall not exceed 14 hours.

4 The requirements for rest periods laid down in paragraphs 2 and 3 need not be maintained in the case of an emergency or in other overriding operational conditions. Musters, fire-fighting and lifeboat drills, and drills prescribed by national laws and regulations and by international instruments, shall be conducted in a manner that minimizes the disturbance of rest periods and does not induce fatigue.

5 Administrations shall require that watch schedules be posted where they are easily accessible. The schedules shall be established in a standardized format* in the working language or languages of the ship and in English.

6 When a seafarer is on call, such as when a machinery space is unattended, the seafarer shall have an adequate compensatory rest period if the normal period of rest is disturbed by call-outs to work.

7 Administrations shall require that records of daily hours of rest of seafarers be maintained in a standardized format[23], in the working language or languages of the ship and in English, to allow monitoring and verification of compliance with the provisions of this section. The seafarers shall receive a copy of the records pertaining to them, which shall be endorsed by the master or by a person authorized by the master and by the seafarers.

8 Nothing in this section shall be deemed to impair the right of the master of a ship to require a seafarer to perform any hours of work necessary for the immediate safety of the ship, persons on board or cargo, or for the purpose of giving assistance to other ships or persons in distress at sea. Accordingly, the master may suspend the schedule of hours of rest and require a seafarer to perform any hours of work necessary until the normal situation has been restored. As soon as practicable after the normal situation has been restored, the master shall ensure that any seafarers who have performed work in a scheduled rest period are provided with an adequate period of rest.

9 Parties may allow exceptions from the required hours of rest in paragraphs 2.2 and 3 above provided that the rest period is not less than 70 hours in any 7-day period.

Exceptions from the weekly rest period provided for in paragraph 2.2 shall not be allowed for more than two consecutive weeks. The intervals between two periods of exceptions on board shall not be less than twice the duration of the exception.

The hours of rest provided for in paragraph 2.1 may be divided into no more than three periods, one of which shall be at least 6 hours in length and neither of the other two periods shall be less than one hour in length. The intervals between consecutive periods of rest shall not exceed 14 hours. Exceptions shall not extend beyond two 24-hour periods in any 7-day period.

Exceptions shall, as far as possible, take into account the guidance regarding prevention of fatigue in section B-VIII/1.

10 Each Administration shall establish, for the purpose of preventing alcohol abuse, a limit of not greater than 0.05% blood alcohol level (BAC) or 0.25 mg/*l* alcohol in the breath or a quantity of alcohol leading to such alcohol concentration for masters, officers and other seafarers while performing designated safety, security and marine environmental duties.

Section A-VIII/2

Watchkeeping arrangements and principles to be observed

PART 1 – CERTIFICATION

1 The officer in charge of the navigational or deck watch shall be duly qualified in accordance with the provisions of chapter II or chapter VII appropriate to the duties related to navigational or deck watchkeeping.

2 The officer in charge of the engineering watch shall be duly qualified in accordance with the provisions of chapter III or chapter VII appropriate to the duties related to engineering watchkeeping.

[23]The *IMO/ILO Guidelines for the development of tables of seafarers' shipboard working arrangements and formats of records of seafarers' hours of work or hours of rest* may be used.

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PART 2 – VOYAGE PLANNING

General requirements

3 The intended voyage shall be planned in advance, taking into consideration all pertinent information, and any course laid down shall be checked before the voyage commences.

4 The chief engineer officer shall, in consultation with the master, determine in advance the needs of the intended voyage, taking into consideration the requirements for fuel, water, lubricants, chemicals, expendable and other spare parts, tools, supplies and any other requirements.

Planning prior to each voyage

5 Prior to each voyage, the master of every ship shall ensure that the intended route from the port of departure to the first port of call is planned using adequate and appropriate charts and other nautical publications necessary for the intended voyage, containing accurate, complete and up-to-date information regarding those navigational limitations and hazards which are of a permanent or predictable nature and which are relevant to the safe navigation of the ship.

Verification and display of planned route

6 When the route planning is verified, taking into consideration all pertinent information, the planned route shall be clearly displayed on appropriate charts and shall be continuously available to the officer in charge of the watch, who shall verify each course to be followed prior to using it during the voyage.

Deviation from planned route

7 If a decision is made, during a voyage, to change the next port of call of the planned route, or if it is necessary for the ship to deviate substantially from the planned route for other reasons, then an amended route shall be planned prior to deviating substantially from the route originally planned.

PART 3 – WATCHKEEPING PRINCIPLES IN GENERAL

8 Watches shall be carried out based on the following bridge and engine-room resource management principles:

.1 proper arrangements for watchkeeping personnel shall be ensured in accordance with the situations;

.2 any limitation in qualifications or fitness of individuals shall be taken into account when deploying watchkeeping personnel;

.3 understanding of watchkeeping personnel regarding their individual roles, responsibility and team roles shall be established;

.4 the master, chief engineer officer and officer in charge of watch duties shall maintain a proper watch, making the most effective use of the resources available, such as information, installations/equipment and other personnel;

.5 watchkeeping personnel shall understand functions and operation of installations/equipment, and be familiar with handling them;

.6 watchkeeping personnel shall understand information and how to respond to information from each station/installation/equipment;

.7 information from the stations/installations/equipment shall be appropriately shared by all the watchkeeping personnel;

.8 watchkeeping personnel shall maintain an exchange of appropriate communication in any situation; and

.9 watchkeeping personnel shall notify the master/chief engineer officer/officer in charge of watch duties without any hesitation when in any doubt as to what action to take in the interest of safety.

PART 4 – WATCHKEEPING AT SEA

Principles applying to watchkeeping generally

9 Parties shall direct the attention of companies, masters, chief engineer officers and watchkeeping personnel to the following principles, which shall be observed to ensure that safe watches are maintained at all times.

10 The master of every ship is bound to ensure that watchkeeping arrangements are adequate for maintaining a safe navigational or cargo watch. Under the master's general direction, the officers of the navigational watch are responsible for navigating the ship safely during their periods of duty, when they will be particularly concerned with avoiding collision and stranding.

11 The chief engineer officer of every ship is bound, in consultation with the master, to ensure that watchkeeping arrangements are adequate to maintain a safe engineering watch.

Protection of marine environment

12 The master, officers and ratings shall be aware of the serious effects of operational or accidental pollution of the marine environment and shall take all possible precautions to prevent such pollution, particularly within the framework of relevant international and port regulations.

Part 4-1 – Principles to be observed in keeping a navigational watch

13 The officer in charge of the navigational watch is the master's representative and is primarily responsible at all times for the safe navigation of the ship and for complying with the International Regulations for Preventing Collisions at Sea, 1972, as amended.

Lookout

14 A proper lookout shall be maintained at all times in compliance with rule 5 of the International Regulations

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for Preventing Collisions at Sea, 1972, as amended and shall serve the purpose of:

.1 maintaining a continuous state of vigilance by sight and hearing, as well as by all other available means, with regard to any significant change in the operating environment;

.2 fully appraising the situation and the risk of collision, stranding and other dangers to navigation; and

.3 detecting ships or aircraft in distress, shipwrecked persons, wrecks, debris and other hazards to safe navigation.

15 The lookout must be able to give full attention to the keeping of a proper lookout and no other duties shall be undertaken or assigned which could interfere with that task.

16 The duties of the lookout and helmsperson are separate and the helmsperson shall not be considered to be the lookout while steering, except in small ships where an unobstructed all-round view is provided at the steering position and there is no impairment of night vision or other impediment to the keeping of a proper lookout. The officer in charge of the navigational watch may be the sole lookout in daylight provided that, on each such occasion:

.1 the situation has been carefully assessed and it has been established without doubt that it is safe to do so;

.2 full account has been taken of all relevant factors, including, but not limited to:

– state of weather,

– visibility,

– traffic density,

– proximity of dangers to navigation, and

– the attention necessary when navigating in or near traffic separation schemes; and

.3 assistance is immediately available to be summoned to the bridge when any change in the situation so requires.

17 In determining that the composition of the navigational watch is adequate to ensure that a proper lookout can continuously be maintained, the master shall take into account all relevant factors, including those described in this section of the Code, as well as the following factors:

.1 visibility, state of weather and sea;

.2 traffic density, and other activities occurring in the area in which the vessel is navigating;

.3 the attention necessary when navigating in or near traffic separation schemes or other routeing measures;

.4 the additional workload caused by the nature of the ship's functions, immediate operating requirements and anticipated manoeuvres;

.5 the fitness for duty of any crew members on call who are assigned as members of the watch;

.6 knowledge of, and confidence in, the professional competence of the ship's officers and crew;

.7 the experience of each officer of the navigational watch, and the familiarity of that officer with the ship's equipment, procedures, and manoeuvring capability;

.8 activities taking place on board the ship at any particular time, including radiocommunication activities, and the availability of assistance to be summoned immediately to the bridge when necessary;

.9 the operational status of bridge instrumentation and controls, including alarm systems;

.10 rudder and propeller control and ship manoeuvring characteristics;

.11 the size of the ship and the field of vision available from the conning position;

.12 the configuration of the bridge, to the extent such configuration might inhibit a member of the watch from detecting by sight or hearing any external development; and

.13 any other relevant standard, procedure or guidance relating to watchkeeping arrangements and fitness for duty which has been adopted by the Organization.

Watch arrangements

18 When deciding the composition of the watch on the bridge, which may include appropriately qualified ratings, the following factors, *inter alia*, shall be taken into account:

.1 at no time shall the bridge be left unattended;

.2 weather conditions, visibility and whether there is daylight or darkness;

.3 proximity of navigational hazards which may make it necessary for the officer in charge of the watch to carry out additional navigational duties;

.4 use and operational condition of navigational aids such as ECDIS, radar or electronic position-indicating devices and any other equipment affecting the safe navigation of the ship;

.5 whether the ship is fitted with automatic steering;

.6 whether there are radio duties to be performed;

.7 unmanned machinery space (UMS) controls, alarms and indicators provided on the bridge, procedures for their use and their limitations; and

.8 any unusual demands on the navigational watch that may arise as a result of special operational circumstances.

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Taking over the watch

19 The officer in charge of the navigational watch shall not hand over the watch to the relieving officer if there is reason to believe that the latter is not capable of carrying out the watchkeeping duties effectively, in which case the master shall be notified.

20 The relieving officer shall ensure that the members of the relieving watch are fully capable of performing their duties, particularly as regards their adjustment to night vision. Relieving officers shall not take over the watch until their vision is fully adjusted to the light conditions.

21 Prior to taking over the watch, relieving officers shall satisfy themselves as to the ship's estimated or true position and confirm its intended track, course and speed, and UMS controls as

appropriate and shall note any dangers to navigation expected to be encountered during their watch.

22 Relieving officers shall personally satisfy themselves regarding the:

.1 standing orders and other special instructions of the master relating to navigation of the ship;

.2 position, course, speed and draught of the ship;

.3 prevailing and predicted tides, currents, weather, visibility and the effect of these factors upon course and speed;

.4 procedures for the use of main engines to manoeuvre when the main engines are on bridge control; and

.5 navigational situation, including, but not limited to:

.5.1 the operational condition of all navigational and safety equipment being used or likely to be used during the watch;

.5.2 the errors of gyro- and magnetic compasses;

.5.3 the presence and movement of ships in sight or known to be in the vicinity;

.5.4 the conditions and hazards likely to be encountered during the watch; and

.5.5 the possible effects of heel, trim, water density and squat on under-keel clearance.

23 If, at any time, the officer in charge of the navigational watch is to be relieved when a manoeuvre or other action to avoid any hazard is taking place, the relief of that officer shall be deferred until such action has been completed.

Performing the navigational watch

24 The officer in charge of the navigational watch shall:

.1 keep the watch on the bridge;

.2 in no circumstances leave the bridge until properly relieved; and

.3 continue to be responsible for the safe navigation of the ship, despite the presence of the master on the bridge, until informed specifically that the master has assumed that responsibility and this is mutually understood.

25 During the watch, the course steered, position and speed shall be checked at sufficiently frequent intervals, using any available navigational aids necessary, to ensure that the ship follows the planned course.

26 The officer in charge of the navigational watch shall have full knowledge of the location and operation of all safety and navigational equipment on board the ship and shall be aware and take account of the operating limitations of such equipment.

27 The officer in charge of the navigational watch shall not be assigned or undertake any duties which would interfere with the safe navigation of the ship.

28 When using radar, the officer in charge of the navigational watch shall bear in mind the necessity to comply at all times with the provisions on the use of radar contained in the International Regulations for Preventing Collisions at Sea, 1972, as amended in force.

29 In cases of need, the officer in charge of the navigational watch shall not hesitate to use the helm, engines and sound signalling apparatus. However, timely notice of intended variations of engine speed shall be given where possible or effective use shall be made of UMS engine controls provided on the bridge in accordance with the applicable procedures.

30 Officers of the navigational watch shall know the handling characteristics of their ship, including its stopping distances, and should appreciate that other ships may have different handling characteristics.

31 A proper record shall be kept during the watch of the movements and activities relating to the navigation of the ship.

32 It is of special importance that at all times the officer in charge of the navigational watch ensures that a proper lookout is maintained. In a ship with a separate chartroom, the officer in charge of the navigational watch may visit the chartroom, when essential, for a short period for the necessary performance of navigational duties, but shall first ensure that it is safe to do so and that proper lookout is maintained.

33 Operational tests of shipboard navigational equipment shall be carried out at sea as frequently as practicable and as circumstances permit, in particular before hazardous conditions affecting navigation are expected. Whenever appropriate, these tests shall be recorded. Such tests shall also be carried out prior to port arrival and departure.

34 The officer in charge of the navigational watch shall make regular checks to ensure that:

.1 the person steering the ship or the automatic pilot is steering the correct course;

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.2 the standard compass error is determined at least once a watch and, when possible, after any major alteration of course; the standard and gyro-compasses are frequently compared and repeaters are synchronized with their master compass;

.3 the automatic pilot is tested manually at least once a watch;

.4 the navigation and signal lights and other navigational equipment are functioning properly;

.5 the radio equipment is functioning properly in accordance with paragraph 86 of this section; and

.6 the UMS controls, alarms and indicators are functioning properly.

35 The officer in charge of the navigational watch shall bear in mind the necessity to comply at all times with the requirements in force of the International Convention for the Safety of Life at Sea (SOLAS), 1974[24]. The officer of the navigational watch shall take into account:

.1 the need to station a person to steer the ship and to put the steering into manual control in good time to allow any potentially hazardous situation to be dealt with in a safe manner; and

.2 that, with a ship under automatic steering, it is highly dangerous to allow a situation to develop to the point where the officer in charge of the navigational watch is without assistance and has to break the continuity of the lookout in order to take emergency action.

36 Officers of the navigational watch shall be thoroughly familiar with the use of all electronic navigational aids carried, including their capabilities and limitations, and shall use each of these aids when appropriate and shall bear in mind that the echo-sounder is a valuable navigational aid.

37 The officer in charge of the navigational watch shall use the radar whenever restricted visibility is encountered or expected, and at all times in congested waters, having due regard to its limitations.

38 The officer in charge of the navigational watch shall ensure that the range scales employed are changed at sufficiently frequent intervals so that echoes are detected as early as possible. It shall be borne in mind that small or poor echoes may escape detection.

39 Whenever radar is in use, the officer in charge of the navigational watch shall select an appropriate range scale and observe the display carefully, and shall ensure that plotting or systematic analysis is commenced in ample time.

40 The officer in charge of the navigational watch shall notify the master immediately:

.1 if restricted visibility is encountered or expected;

.2 if the traffic conditions or the movements of other ships are causing concern;

.3 if difficulty is experienced in maintaining course;

.4 on failure to sight land, or a navigation mark or to obtain soundings by the expected time;

.5 if, unexpectedly, land or a navigation mark is sighted or a change in soundings occurs;

.6 on breakdown of the engines, propulsion machinery remote control, steering gear or any essential navigational equipment, alarm or indicator;

.7 if the radio equipment malfunctions;

.8 in heavy weather, if in any doubt about the possibility of weather damage;

.9 if the ship meets any hazard to navigation, such as ice or a derelict; and

.10 in any other emergency or if in any doubt.

41 Despite the requirement to notify the master immediately in the foregoing circumstances, the officer in charge of the navigational watch shall, in addition, not hesitate to take immediate action for the safety of the ship, where circumstances so require.

42 The officer in charge of the navigational watch shall give watchkeeping personnel all appropriate instructions and information which will ensure the keeping of a safe watch, including a proper lookout.

Watchkeeping under different conditions and in different areas

Clear weather

43 The officer in charge of the navigational watch shall take frequent and accurate compass bearings of approaching ships as a means of early detection of risk of collision and shall bear in mind that such risk may sometimes exist even when an appreciable bearing change is evident, particularly when approaching a very large ship or a tow or when approaching a ship at close range. The officer in charge of the navigational watch shall also take early and positive action in compliance with the applicable International Regulations for Preventing Collisions at Sea, 1972, as amended and subsequently check that such action is having the desired effect.

44 In clear weather, whenever possible, the officer in charge of the navigational watch shall carry out radar practice.

Restricted visibility

45 When restricted visibility is encountered or expected, the first responsibility of the officer in charge of the navigational watch is to comply with the relevant rules of the International Regulations for Preventing Collisions at Sea, 1972, as amended with particular regard to the

[24]See SOLAS regulations V/24, V/25 and V/26.

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sounding of fog signals, proceeding at a safe speed and having the engines ready for immediate manoeuvre. In addition, the officer in charge of the navigational watch shall:

.1 inform the master;

.2 post a proper lookout;

.3 exhibit navigation lights; and

.4 operate and use the radar.

In hours of darkness

46 The master and the officer in charge of the navigational watch, when arranging lookout duty, shall have due regard to the bridge equipment and navigational aids available for use, their limitations, procedures and safeguards implemented.

Coastal and congested waters

47 The largest scale chart on board, suitable for the area and corrected with the latest available information, shall be used. Fixes shall be taken at frequent intervals, and shall be carried out by more than one method whenever circumstances allow. When using ECDIS, appropriate usage code (scale) electronic navigational charts shall be used and the ship's position shall be checked by an independent means of position fixing at appropriate intervals.

48 The officer in charge of the navigational watch shall positively identify all relevant navigation marks.

Navigation with pilot on board

49 Despite the duties and obligations of pilots, their presence on board does not relieve the master or the officer in charge of the navigational watch from their duties and obligations for the safety of the ship. The master and the pilot shall exchange information regarding navigation procedures, local conditions and the ship's characteristics. The master and/or the officer in charge of the navigational watch shall co-operate closely with the pilot and maintain an accurate check on the ship's position and movement.

50 If in any doubt as to the pilot's actions or intentions, the officer in charge of the navigational watch shall seek clarification from the pilot and, if doubt still exists, shall notify the master immediately and take whatever action is necessary before the master arrives.

Ship at anchor

51 If the master considers it necessary, a continuous navigational watch shall be maintained at anchor. While at anchor, the officer in charge of the navigational watch shall:

.1 determine and plot the ship's position on the appropriate chart as soon as practicable;

.2 when circumstances permit, check at sufficiently frequent intervals whether the ship is remaining securely at anchor by taking bearings of fixed navigation marks or readily identifiable shore objects;

.3 ensure that proper lookout is maintained;

.4 ensure that inspection rounds of the ship are made periodically;

.5 observe meteorological and tidal conditions and the state of the sea;

.6 notify the master and undertake all necessary measures if the ship drags anchor;

.7 ensure that the state of readiness of the main engines and other machinery is in accordance with the master's instructions;

.8 if visibility deteriorates, notify the master;

.9 ensure that the ship exhibits the appropriate lights and shapes and that appropriate sound signals are made in accordance with all applicable regulations; and

.10 take measures to protect the environment from pollution by the ship and comply with applicable pollution regulations.

Part 4-2 – Principles to be observed in keeping an engineering watch

52 The term *engineering watch* as used in parts 4-2, 5-2 and 5-4 of this section means either a person or a group of personnel comprising the watch or a period of responsibility for an officer during which the physical presence in machinery spaces of that officer may or may not be required.

53 The *officer in charge of the engineering watch* is the chief engineer officer's representative and is primarily responsible, at all times, for the safe and efficient operation and upkeep of machinery affecting the safety of the ship and is responsible for the inspection, operation and testing, as required, of all machinery and equipment under the responsibility of the engineering watch.

Watch arrangements

54 The composition of the engineering watch shall, at all times, be adequate to ensure the safe operation of all machinery affecting the operation of the ship, in either automated or manual mode, and be appropriate to the prevailing circumstances and conditions.

55 When deciding the composition of the engineering watch, which may include appropriately qualified ratings, the following criteria, *inter alia*, shall be taken into account:

.1 the type of ship and the type and condition of the machinery;

.2 the adequate supervision, at all times, of machinery affecting the safe operation of the ship;

.3 any special modes of operation dictated by conditions such as weather, ice, contaminated water, shallow water, emergency conditions, damage containment or pollution abatement;

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.4 the qualifications and experience of the engineering watch;

.5 the safety of life, ship, cargo and port, and protection of the environment;

.6 the observance of international, national and local regulations; and

.7 maintaining the normal operations of the ship.

Taking over the watch

56 The officer in charge of the engineering watch shall not hand over the watch to the relieving officer if there is reason to believe that the latter is obviously not capable of carrying out the watchkeeping duties effectively, in which case the chief engineer officer shall be notified.

57 The relieving officer of the engineering watch shall ensure that the members of the relieving engineering watch are apparently fully capable of performing their duties effectively.

58 Prior to taking over the engineering watch, relieving officers shall satisfy themselves regarding at least the following:

.1 the standing orders and special instructions of the chief engineer officer relating to the operation of the ship's systems and machinery;

.2 the nature of all work being performed on machinery and systems, the personnel involved and potential hazards;

.3 the level and, where applicable, the condition of water or residues in bilges, ballast tanks, slop tanks, reserve tanks, fresh water tanks, sewage tanks and any special requirements for use or disposal of the contents thereof;

.4 the condition and level of fuel in the reserve tanks, settling tank, day tank and other fuel storage facilities;

.5 any special requirements relating to sanitary system disposals;

.6 condition and mode of operation of the various main and auxiliary systems, including the electrical power distribution system;

.7 where applicable, the condition of monitoring and control console equipment, and which equipment is being operated manually;

.8 where applicable, the condition and mode of operation of automatic boiler controls such as flame safeguard control systems, limit control systems, combustion control systems, fuel-supply control systems and other equipment related to the operation of steam boilers;

.9 any potentially adverse conditions resulting from bad weather, ice, or contaminated or shallow water;

.10 any special modes of operation dictated by equipment failure or adverse ship conditions;

.11 the reports of engine-room ratings relating to their assigned duties;

.12 the availability of fire-fighting appliances; and

.13 the state of completion of the engine-room log.

Performing the engineering watch

59 The officer in charge of the engineering watch shall ensure that the established watchkeeping arrangements are maintained and that, under direction, engine-room ratings, if forming part of the engineering watch, assist in the safe and efficient operation of the propulsion machinery and auxiliary equipment.

60 The officer in charge of the engineering watch shall continue to be responsible for machinery-space operations, despite the presence of the chief engineer officer in the machinery spaces, until specifically informed that the chief engineer officer has assumed that responsibility and this is mutually understood.

61 All members of the engineering watch shall be familiar with their assigned watchkeeping duties. In addition, every member shall, with respect to the ship they are serving in, have knowledge of:

.1 the use of appropriate internal communication systems;

.2 the escape routes from machinery spaces;

.3 the engine-room alarm systems and be able to distinguish between the various alarms, with special reference to the fire-extinguishing media alarm; and

.4 the number, location and types of fire-fighting equipment and damage-control gear in the machinery spaces, together with their use and the various safety precautions to be observed.

62 Any machinery not functioning properly, expected to malfunction or requiring special service shall be noted along with any action already taken. Plans shall be made for any further action if required.

63 When the machinery spaces are in the manned condition, the officer in charge of the engineering watch shall at all times be readily capable of operating the propulsion equipment in response to needs for changes in direction or speed.

64 When the machinery spaces are in the periodic unmanned condition, the designated duty officer in charge of the engineering watch shall be immediately available and on call to attend the machinery spaces.

65 All bridge orders shall be promptly executed. Changes in direction or speed of the main propulsion

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units shall be recorded, except where an Administration has determined that the size or characteristics of a particular ship make such recording impracticable. The officer in charge of the engineering watch shall ensure that the main propulsion unit controls, when in the manual mode of operation, are continuously attended under stand-by or manoeuvring conditions.

66 Due attention shall be paid to the ongoing maintenance and support of all machinery, including mechanical, electrical, electronic, hydraulic and pneumatic systems, their control apparatus and associated safety equipment, all accommodation service systems equipment and the recording of stores and spare gear usage.

67 The chief engineer officer shall ensure that the officer in charge of the engineering watch is informed of all preventive maintenance, damage control, or repair operations to be performed during the engineering watch. The officer in charge of the engineering watch shall be responsible for the isolation, bypassing and adjustment of all machinery under the responsibility of the engineering watch that is to be worked on, and shall record all work carried out.

68 When the engine-room is put in a stand-by condition, the officer in charge of the engineering watch shall ensure that all machinery and equipment which may be used during manoeuvring is in a state of immediate readiness and that an adequate reserve of power is available for steering gear and other requirements.

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69 Officers in charge of an engineering watch shall not be assigned or undertake any duties which would interfere with their supervisory duties in respect of the main propulsion system and ancillary equipment. They shall keep the main propulsion plant and auxiliary systems under constant supervision until properly relieved, and shall periodically inspect the machinery in their charge. They shall also ensure that adequate rounds of the machinery and steering-gear spaces are made for the purpose of observing and reporting equipment malfunctions or breakdowns, performing or directing routine adjustments, required upkeep and any other necessary tasks.

70 Officers in charge of an engineering watch shall direct any other member of the engineering watch to inform them of potentially hazardous conditions which may adversely affect the machinery or jeopardize the safety of life or of the ship.

71 The officer in charge of the engineering watch shall ensure that the machinery space watch is supervised, and shall arrange for substitute personnel in the event of the incapacity of any engineering watch personnel. The engineering watch shall not leave the machinery spaces unsupervised in a manner that would prevent the manual operation of the engine-room plant or throttles.

72 The officer in charge of the engineering watch shall take the action necessary to contain the effects of damage resulting from equipment breakdown, fire, flooding, rupture, collision, stranding, or other cause.

73 Before going off duty, the officer in charge of the engineering watch shall ensure that all events related to the main and auxiliary machinery which have occurred during the engineering watch are suitably recorded.

74 The officer in charge of the engineering watch shall co-operate with any engineer in charge of maintenance work during all preventive maintenance, damage control or repairs. This shall include, but not necessarily be limited to:

.1 isolating and bypassing machinery to be worked on;

.2 adjusting the remaining plant to function adequately and safely during the maintenance period;

.3 recording, in the engine-room log or other suitable document, the equipment worked on and the personnel involved, and which safety steps have been taken and by whom, for the benefit of relieving officers and for record purposes; and

.4 testing and putting into service, when necessary, the repaired machinery or equipment.

75 The officer in charge of the engineering watch shall ensure that any engine-room ratings who perform maintenance duties are available to assist in the manual operation of machinery in the event of automatic equipment failure.

76 The officer in charge of the engineering watch shall bear in mind that changes in speed, resulting from machinery malfunction, or any loss of steering may imperil the safety of the ship and life at sea. The bridge shall be immediately notified in the event of fire and of any impending action in machinery spaces that may cause reduction in the ship's speed, imminent steering failure, stoppage of the ship's propulsion system or any alteration in the generation of electric power or similar threat to safety. This notification, where possible, shall be accomplished before changes are made, in order to afford the bridge the maximum available time to take whatever action is possible to avoid a potential marine casualty.

77 The officer in charge of the engineering watch shall notify the chief engineer officer without delay:

.1 when engine damage or a malfunction occurs which may be such as to endanger the safe operation of the ship;

.2 when any malfunction occurs which, it is believed, may cause damage or breakdown of propulsion machinery, auxiliary machinery or monitoring and governing systems; and

.3 in any emergency or if in any doubt as to what decision or measures to take.

78 Despite the requirement to notify the chief engineer officer in the foregoing circumstances, the officer in charge of the engineering watch shall not hesitate to take immediate action for the safety of the ship, its machinery and crew where circumstances require.

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79 The officer in charge of the engineering watch shall give the watchkeeping personnel all appropriate instructions and information which will ensure the keeping of a safe engineering watch. Routine machinery upkeep, performed as incidental tasks as a part of keeping a safe watch, shall be set up as an integral part of the watch routine. Detailed repair maintenance involving repairs to electrical, mechanical, hydraulic, pneumatic or applicable electronic equipment throughout the ship shall be performed with the cognizance of the officer in charge of the engineering watch and chief engineer officer. These repairs shall be recorded.

Engineering watchkeeping under different conditions and in different areas

Restricted visibility

80 The officer in charge of the engineering watch shall ensure that permanent air or steam pressure is available for sound signals and that at all times bridge orders relating to changes in speed or direction of operation are immediately implemented and, in addition, that auxiliary machinery used for manoeuvring is readily available.

Coastal and congested waters

81 The officer in charge of the engineering watch shall ensure that all machinery involved with the manoeuvring of the ship can immediately be placed in the manual mode of operation when notified that the ship is in congested waters. The officer in charge of the engineering watch shall also ensure that an adequate reserve of power is available for steering and other manoeuvring requirements. Emergency steering and other auxiliary equipment shall be ready for immediate operation.

Ship at anchor

82 At an unsheltered anchorage the chief engineer officer shall consult with the master whether or not to maintain the same engineering watch as when under way.

83 When a ship is at anchor in an open roadstead or any other virtually "at-sea" condition, the engineer officer in charge of the engineering watch shall ensure that:

.1 an efficient engineering watch is kept;

.2 periodic inspection is made of all operating and stand-by machinery;

.3 main and auxiliary machinery is maintained in a state of readiness in accordance with orders from the bridge;

.4 measures are taken to protect the environment from pollution by the ship, and that applicable pollution-prevention regulations are complied with; and

.5 all damage-control and fire-fighting systems are in readiness.

Part 4-3 – Principles to be observed in keeping a radio watch

General provisions

84 Administrations shall direct the attention of companies, masters and radio watchkeeping personnel to comply with the following provisions to ensure that an adequate safety radio watch is maintained while a ship is at sea. In complying with this Code, account shall be taken of the Radio Regulations.

Watch arrangements

85 In deciding the arrangements for the radio watch, the master of every seagoing ship shall:

.1 ensure that the radio watch is maintained in accordance with the relevant provisions of the Radio Regulations and the SOLAS Convention;

.2 ensure that the primary duties for radio watchkeeping are not adversely affected by attending to radio traffic not relevant to the safe movement of the ship and safety of navigation; and

.3 take into account the radio equipment fitted on board and its operational status.

Performing the radio watch

86 The radio operator performing radio watchkeeping duties shall:

.1 ensure that watch is maintained on the frequencies specified in the Radio Regulations and the SOLAS Convention; and

.2 while on duty, regularly check the operation of the radio equipment and its sources of energy and report to the master any observed failure of this equipment.

87 The requirements of the Radio Regulations and the SOLAS Convention on keeping a radiotelegraph or radio log, as appropriate, shall be complied with.

88 The maintenance of radio records, in compliance with the requirements of the Radio Regulations and the SOLAS Convention, is the responsibility of the radio operator designated as having primary responsibility for radiocommunications during distress incidents. The following shall be recorded, together with the times at which they occur:

.1 a summary of distress, urgency and safety radiocommunications;

.2 important incidents relating to the radio service;

.3 where appropriate, the position of the ship at least once per day; and

.4 a summary of the condition of the radio equipment, including its sources of energy.

89 The radio records shall be kept at the distress communications operating position, and shall be made available:

.1 for inspection by the master; and

.2 for inspection by any authorized official of the Administration and by any duly authorized officer exercising control under article X of the Convention.

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PART 5 – WATCHKEEPING IN PORT

Principles applying to all watchkeeping

General

90 On any ship safely moored or safely at anchor under normal circumstances in port, the master shall arrange for an appropriate and effective watch to be maintained for the purpose of safety. Special requirements may be necessary for special types of ships' propulsion systems or ancillary equipment and for ships carrying hazardous, dangerous, toxic or highly flammable materials or other special types of cargo.

Watch arrangements

91 Arrangements for keeping a deck watch when the ship is in port shall at all times be adequate to:

.1 ensure the safety of life, of the ship, the port and the environment, and the safe operation of all machinery related to cargo operation;

.2 observe international, national and local rules; and

.3 maintain order and the normal routine of the ship.

92 The master shall decide the composition and duration of the deck watch depending on the conditions of mooring, type of the ship and character of duties.

93 If the master considers it necessary, a qualified officer shall be in charge of the deck watch.

94 The necessary equipment shall be so arranged as to provide for efficient watchkeeping.

95 The chief engineer officer, in consultation with the master, shall ensure that engineering watchkeeping arrangements are adequate to maintain a safe engineering watch while in port. When deciding the composition of the engineering watch, which may include appropriate engine-room ratings, the following points are among those to be taken into account:

.1 on all ships of 3,000 kW propulsion power and over there shall always be an officer in charge of the engineering watch;

.2 on ships of less than 3,000 kW propulsion power there may be, at the master's discretion and in consultation with the chief engineer officer, no officer in charge of the engineering watch; and

.3 officers, while in charge of an engineering watch, shall not be assigned or undertake any task or duty which would interfere with their supervisory duty in respect of the ship's machinery system.

Taking over the watch

96 Officers in charge of the deck or engineering watch shall not hand over the watch to their relieving officer if they have any reason to believe that the latter is obviously not capable of carrying out watchkeeping duties effectively, in which case the master or chief engineer shall be notified accordingly. Relieving officers of the deck or engineering watch shall ensure that all members of their watch are apparently fully capable of performing their duties effectively.

97 If, at the moment of handing over the deck or engineering watch, an important operation is being performed, it shall be concluded by the officer being relieved, except when ordered otherwise by the master or chief engineer officer.

Part 5-1 – Taking over the deck watch

98 Prior to taking over the deck watch, the relieving officer shall be informed by the officer in charge of the deck watch as to the following:

.1 the depth of the water at the berth, the ship's draught, the level and time of high and low waters; the securing of the moorings, the arrangement of anchors and the scope of the anchor chain, and other mooring features important to the safety of the ship; the state of main engines and their availability for emergency use;

.2 all work to be performed on board the ship; the nature, amount and disposition of cargo loaded or remaining, and any residue on board after unloading the ship;

.3 the level of water in bilges and ballast tanks;

.4 the signals or lights being exhibited or sounded;

.5 the number of crew members required to be on board and the presence of any other persons on board;

.6 the state of fire-fighting appliances;

.7 any special port regulations;

.8 the master's standing and special orders;

.9 the lines of communication available between the ship and shore personnel, including port authorities, in the event of an emergency arising or assistance being required;

.10 any other circumstances of importance to the safety of the ship, its crew, cargo or protection of the environment from pollution; and

.11 the procedures for notifying the appropriate authority of any environmental pollution resulting from ship activities.

99 Relieving officers, before assuming charge of the deck watch, shall verify that:

.1 the securing of moorings and anchor chain is adequate;

.2 the appropriate signals or lights are properly exhibited or sounded;

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.3 safety measures and fire-protection regulations are being maintained;

.4 they are aware of the nature of any hazardous or dangerous cargo being loaded or discharged and the appropriate action to be taken in the event of any spillage or fire; and

.5 no external conditions or circumstances imperil the ship and that it does not imperil others.

Part 5-2 – Taking over the engineering watch

100 Prior to taking over the engineering watch, the relieving officer shall be informed by the officer in charge of the engineering watch as to:

.1 the standing orders of the day, any special orders relating to the ship operations, maintenance functions, repairs to the ship's machinery or control equipment;

.2 the nature of all work being performed on machinery and systems on board ship, personnel involved and potential hazards;

.3 the level and condition, where applicable, of water or residue in bilges, ballast tanks, slop tanks, sewage tanks, reserve tanks and special requirements for the use or disposal of the contents thereof;

.4 any special requirements relating to sanitary system disposals;

.5 the condition and state of readiness of portable fire-extinguishing equipment and fixed fire-extinguishing installations and fire-detection systems;

.6 authorized repair personnel on board engaged in engineering activities, their work locations and repair functions and other authorized persons on board and the required crew;

.7 any port regulations pertaining to ship effluents, fire-fighting requirements and ship readiness, particularly during potential bad weather conditions;

.8 the lines of communication available between the ship and shore personnel, including port authorities, in the event of an emergency arising or assistance being required;

.9 any other circumstance of importance to the safety of the ship, its crew, cargo or the protection of the environment from pollution; and

.10 the procedures for notifying the appropriate authority of environmental pollution resulting from engineering activities.

101 Relieving officers, before assuming charge of the engineering watch, shall satisfy themselves that they are fully informed by the officer being relieved, as outlined above, and:

.1 be familiar with existing and potential sources of power, heat and lighting and their distribution;

.2 know the availability and condition of ship's fuel, lubricants and all water supplies; and

.3 be ready to prepare the ship and its machinery, as far as is possible, for stand-by or emergency conditions as required.

Part 5-3 – Performing the deck watch

102 The officer in charge of the deck watch shall:

.1 make rounds to inspect the ship at appropriate intervals;

.2 pay particular attention to:

.2.1 the condition and securing of the gangway, anchor chain and moorings, especially at the turn of the tide and in berths with a large rise and fall, if necessary, taking measures to ensure that they are in normal working condition;

.2.2 the draught, under-keel clearance and the general state of the ship, to avoid dangerous listing or trim during cargo handling or ballasting;

.2.3 the weather and sea state;

.2.4 the observance of all regulations concerning safety and fire protection;

.2.5 the water level in bilges and tanks;

.2.6 all persons on board and their location, especially those in remote or enclosed spaces; and

.2.7 the exhibition and sounding, where appropriate, of lights and signals;

.3 in bad weather, or on receiving a storm warning, take the necessary measures to protect the ship, persons on board and cargo;

.4 take every precaution to prevent pollution of the environment by the ship;

.5 in an emergency threatening the safety of the ship, raise the alarm, inform the master, take all possible measures to prevent any damage to the ship, its cargo and persons on board, and, if necessary, request assistance from the shore authorities or neighbouring ships;

.6 be aware of the ship's stability condition so that, in the event of fire, the shore fire-fighting authority may be advised of the approximate quantity of water that can be pumped on board without endangering the ship;

.7 offer assistance to ships or persons in distress;

.8 take necessary precautions to prevent accidents or damage when propellers are to be turned; and

.9 enter, in the appropriate log-book, all important events affecting the ship.

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Part 5-4 – Performing the engineering watch

103 Officers in charge of the engineering watch shall pay particular attention to:

.1 the observance of all orders, special operating procedures and regulations concerning hazardous conditions and their prevention in all areas in their charge;

.2 the instrumentation and control systems, monitoring of all power supplies, components and systems in operation;

.3 the techniques, methods and procedures necessary to prevent violation of the pollution regulations of the local authorities; and

.4 the state of the bilges.

104 Officers in charge of the engineering watch shall:

.1 in emergencies, raise the alarm when, in their opinion, the situation so demands, and take all possible measures to prevent damage to the ship, persons on board and cargo;

.2 be aware of the deck officer's needs relating to the equipment required in the loading or unloading of the cargo and the additional requirements of the ballast and other ship stability control systems;

.3 make frequent rounds of inspection to determine possible equipment malfunction or failure, and take immediate remedial action to ensure the safety of the ship, of cargo operations, of the port and the environment;

.4 ensure that the necessary precautions are taken, within their area of responsibility, to prevent accidents or damage to the various electrical, electronic, hydraulic, pneumatic and mechanical systems of the ship; and

.5 ensure that all important events affecting the operation, adjustment or repair of the ship's machinery are satisfactorily recorded.

Part 5-5 – Watch in port on ships carrying hazardous cargo

General

105 The master of every ship carrying cargo that is hazardous, whether explosive, flammable, toxic, health-threatening or environment-polluting, shall ensure that safe watchkeeping arrangements are maintained. On ships carrying hazardous cargo in bulk, this will be achieved by

the ready availability on board of a duly qualified officer or officers, and ratings where appropriate, even when the ship is safely moored or safely at anchor in port.

106 On ships carrying hazardous cargo other than in bulk, the master shall take full account of the nature, quantity, packing and stowage of the hazardous cargo and of any special conditions on board, afloat and ashore.

Part 5-6 – Cargo watch

107 Officers with responsibility for the planning and conduct of cargo operations shall ensure that such operations are conducted safely through the control of the specific risks, including when non-ship's personnel are involved."

ANNEX 2

THE MANILA AMENDMENTS TO THE SEAFARERS' TRAINING, CERTIFICATION AND WATCHKEEPING (STCW) CODE

2 The part B of the Seafarers' Training, Certification and Watchkeeping (STCW) Code is replaced by the following:

"PART B

Recommended guidance regarding provisions of the STCW Convention and its annex

Introduction

1 This part of the STCW Code contains recommended guidance intended to assist Parties to the STCW Convention and those involved in implementing, applying or enforcing its measures to give the Convention full and complete effect in a uniform manner.

2 The measures suggested are not mandatory and the examples given are only intended to illustrate how certain Convention requirements may be complied with. However, the recommendations in general represent an approach to the matters concerned which has been harmonized through discussion within IMO involving, where appropriate, consultation with the International Labour Organization, the International Telecommunication Union and the World Health Organization.

3 Observance of the recommendations contained in this part will assist the Organization in achieving its goal of maintaining the highest practicable standards of competence in respect of crews of all nationalities and ships of all flags.

4 Guidance is provided in this part in respect of certain articles of the Convention, in addition to guidance on certain regulations in its annex. The numbering of the sections of this part therefore corresponds with that of the articles and the regulations of the Convention. As in part A, the text of each section may be divided into numbered parts and paragraphs, but such numbering is unique to that text alone.

GUIDANCE REGARDING PROVISIONS OF THE ARTICLES

Section B-I

Guidance regarding general obligations under the Convention

(No provisions)

Section B-II

Guidance regarding definitions and clarifications

1 The definitions contained in article II of the Convention, and the definitions and clarifications contained in regulation I/1 of its annex, apply equally to the terms used in parts A and B of this Code. Supplementary definitions which apply only to the provisions of this Code are contained in section A-I/1.

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2 The definition of *certificate* appearing in article II (c) provides for three possibilities:

.1 the Administration may issue the certificate;

.2 the Administration may have the certificate issued under its authority; or

.3 the Administration may recognize a certificate issued by another Party, as provided for in regulation I/10.

Section B-III

Guidance regarding the application of the Convention

1 While the definition of *fishing vessel* contained in article II, paragraph (h) excludes vessels used for catching fish, whales, seals, walrus or other living resources of the sea from application of the Convention, vessels not engaged in the catching activity cannot enjoy such exclusion.

2 The Convention excludes all wooden ships of primitive build, including junks.

Section B-IV

Guidance regarding the communication of information

1 In paragraph (1)(b) of article IV, the words "where appropriate" are intended to include:

.1 the recognition of a certificate issued by another Party; or

.2 the issue of the Administration's own certificate, where applicable, on the basis of recognition of a certificate issued by another Party.

Section B-V

Guidance regarding other treaties and interpretation

1 The word "arrangements" in paragraph (1) of article V is intended to include provisions previously established between States for the reciprocal recognition of certificates.

Section B-VI

Guidance regarding certificates

See the guidance given in sections B-I/2 and B-II.

A policy statement and an outline of the procedures to be followed should be published for the information of companies operating ships under the flag of the Administration.

Section B-VII

Guidance regarding transitional provisions

Certificates issued for service in one capacity which are currently recognized by a Party as an adequate qualification for service in another capacity, e.g., chief mate certificates recognized for service as master, should continue to be accepted as valid for such service under article VII. This acceptance also applies to such certificates issued under the provisions of paragraph (2) of article VII.

Section B-VIII

Guidance regarding dispensations

A policy statement and an outline of the procedures to be followed should be published for the information of companies operating ships under the flag of the Administration. Guidance should be provided to those officials authorized by the Administration to issue dispensations. Information on action taken should be summarized in the initial report communicated to the Secretary-General in accordance with the requirements of section A-I/7.

Section B-IX

Guidance regarding equivalents

Naval certificates may continue to be accepted and certificates of service may continue to be issued to naval officers as equivalents under article IX, provided that the requirements of the Convention are met.

Section B-X

Guidance regarding control

(No provisions – see section B-I/4.)

Section B-XI

Guidance regarding the promotion of technical co-operation

1 Governments should provide, or arrange to provide, in collaboration with IMO, assistance to States which have difficulty in meeting the requirements of the Convention and which request such assistance.

2 The importance of adequate training for masters and other personnel serving on board oil, chemical and liquefied gas tankers and ro-ro passenger ships is stressed, and it is recognized that in some cases there may be limited facilities for obtaining the required experience and providing specialized training programmes, particularly in developing countries.

Examination database

3 Parties with maritime training academies or examination centres serving several countries and wishing to establish a database of examination questions and answers are encouraged to do so, on the basis of bilateral co-operation with a country or countries which already have such a database.

Availability of maritime training simulators

4 The IMO Secretariat maintains a list of maritime training simulators, as a source of information for Parties and others, on the availability of different types of simulators for training seafarers, in particular where such training facilities may not be available to them nationally.

5 Parties are urged[25] to provide information on their national maritime training simulators to the IMO Secretariat and to update the information whenever any change or addition is made to their maritime training simulator facilities.

Information on technical co-operation

6 Information on technical advisory services, access to international training institutions affiliated with IMO, and information on fellowships and other technical co-operation which may be provided by or through IMO may be obtained by contacting the Secretary-General at 4 Albert Embankment, London SE1 7SR, United Kingdom.

(No guidance is provided regarding articles XII to XVII.)

[25]See MSC.1/Circ.1209 on simulators available for maritime training

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GUIDANCE REGARDING PROVISIONS OF THE ANNEX TO THE STCW CONVENTION

CHAPTER I

Guidance regarding general provisions

Section B-I/1

Guidance regarding definitions and clarifications

1 The definitions contained in article II of the Convention, and the definitions and interpretations contained in regulation I/1 of its annex, apply equally to the terms used in parts A and B of this Code. Supplementary definitions which apply only to the provisions of this Code are contained in section A-I/1.

2 Officers with capacities covered under the provisions of chapter VII may be designated as "polyvalent officer", "dual-purpose officer" or other designations as approved by the Administration, in accordance with the terminology used in the applicable safe manning requirements.

3 Ratings qualified to serve in capacities covered under the provisions of chapter VII may be designated as "polyvalent ratings" or other designations as approved by the Administration, in accordance with the terminology used in the applicable safe manning requirements.

Section B-I/2

Guidance regarding certificates and endorsements

1 Where an endorsement is integrated in the format of a certificate as provided by section A-I/2, paragraph 1, the relevant information should be inserted in the certificate in the manner explained hereunder, except for the omission of the space numbered .2. Otherwise, in preparing endorsements attesting the issue of a certificate, the spaces numbered .1 to .17 in the form which follows the text hereunder should be completed as follows:

.1 Enter the name of the issuing State.

.2 Enter the number assigned to the certificate by the Administration.

.3 Enter the full name of the seafarer to whom the certificate is issued. The name should be the same as that appearing in the seafarer's passport, seafarer's identity certificate and other official documents issued by the Administration.

.4 The number or numbers of the STCW Convention regulation or regulations under which the seafarer has been found qualified should be entered here, for example:

.4.1 "Regulation II/1", if the seafarer has been found qualified to fill the capacity of officer in charge of a navigational watch;

.4.2 "Regulation III/1", if the seafarer has been found qualified to act as engineer officer in charge of a watch in a manned engine-room, or as designated duty engineer officer in a periodically unmanned engine-room;

.4.3 "Regulation IV/2", if the seafarer has been found qualified to fill the capacity of radio operator;

.4.4 "Regulation VII/1", if the certificate is a functional certificate and the seafarer has been found qualified to perform functions specified in part A of the Code, for example, the function of marine engineering at the management level; and

.4.5 "Regulations III/1 and V/1", if found qualified to act as the engineer officer in charge of a watch in a manned engine-room, or as designated duty engineer officer in a periodically unmanned engine-room in tankers.

(See limitations in paragraphs .8 and .10 below.)

.5 Enter the date of expiry of the endorsement. This date should not be later than the date of expiry, if any, of the certificate in respect of which the endorsement is issued, nor later than five years after the date of issue of the endorsement.

.6 In this column should be entered each of the functions specified in part A of the Code which the seafarer is qualified to perform. Functions and their associated levels of responsibility are specified in the tables of competence set out in chapters II, III and IV of part A of the Code, and are also listed for convenient reference in the introduction to part A. When reference is made under .4 above to regulations in chapter II, III or IV it is not necessary to list specific functions.

.7 In this column should be entered the levels of responsibility at which the seafarer is qualified to perform each of the functions entered in column .6. These levels are specified in the tables of competence set out in chapters II, III and IV of part A of the Code, and are also listed, for convenient reference, in the introduction to part A.

.8 A general limitation, such as the requirement to wear corrective lenses when performing duties, should be entered prominently at the top of this limitations column. Limitations applying to the functions listed in column .6 should be entered on the appropriate line against the function concerned, for example:

.8.1 "Not valid for service in tankers" – if not qualified under chapter V;

.8.2 "Not valid for service in tankers other than oil tankers" – if qualified under chapter V for service only in oil tankers;

.8.3 "Not valid for service in ships in which steam boilers form part of the ship's machinery" – if the related knowledge has been omitted in accordance with STCW Code provisions; and

.8.4 "Valid only on near-coastal voyages" – if the related knowledge has been omitted in accordance with STCW Code provisions.

Note: Tonnage and power limitations need not be shown here if they are already indicated in the title of the certificate and in the capacity entered in column .9.

.9 The capacity or capacities entered in this column should be those specified in the title to the STCW regulation or regulations concerned in the case of certificates issued under chapter II or III, or should be as specified in the applicable safe manning requirements of the Administration, as appropriate.

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.10 A general limitation, such as the requirement to wear corrective lenses when performing duties, should be entered prominently at the top of this limitations column also. The limitations entered in column .10 should be the same as those shown in column .8 for the functions performed in each capacity entered.

.11 The number entered in this space should be that of the certificate, so that both certificate and endorsement have the same unique number for reference and for location in the register of certificates and/or endorsements, etc.

.12 The date of original issue of the endorsement should be entered here; it may be the same as, or differ from, the date of issue of the certificate, in accordance with the circumstances.

.13 The name of the official authorized to issue the endorsement should be shown here in block letters below the official's signature.

.14 The date of birth shown should be the date confirmed from Administration records or as otherwise verified.

.15 The endorsement should be signed by the seafarer in the presence of an official, or may be incorporated from the seafarer's application form duly completed and verified.

.16 The photograph should be a standard black and white or colour passport-type head and shoulders photograph, supplied in duplicate by the seafarer so that one may be kept in or associated with the register of certificates.

.17 If the blocks for revalidation are shown as part of the endorsement form (see section A-I/2, paragraph 1), the Administration may revalidate the endorsement by completing the block after the seafarer has demonstrated continuing proficiency as required by regulation I/11.

(Official Seal)

(COUNTRY)

ENDORSEMENT ATTESTING THE ISSUE OF A CERTIFICATE UNDER THE PROVISIONS OF THE INTERNATIONAL CONVENTION ON STANDARDS OF TRAINING, CERTIFICATION AND WATCHKEEPING FOR SEAFARERS, 1978, AS AMENDED

1753000 002215

The Government of ..... .1 ..... certifies that Certificate No. ..... .2 ..... has been issued to ..... .3 ..... who has been found duly qualified in accordance with the provisions of regulation ..... .4 ..... of the above Convention, as amended, and has been found competent to perform the following functions, at the levels specified, subject to any limitations indicated until ..... .5 ..... or until the date of expiry of any extension of the validity of this endorsement as may be shown overleaf:

.6 FUNCTION	.7 LEVEL	.8 LIMITATIONS APPLYING (IF ANY)

The lawful holder of this endorsement may serve in the following capacity or capacities specified in the applicable safe manning requirements of the Administration:

.9 CAPACITY	.10 LIMITATIONS APPLYING (IF ANY)

Endorsement No ..... .11 ..... issued on ..... .12 .....

(Official Seal) .....

Signature of duly authorized official

..... .13 .....

Name of duly authorized official

The original of this endorsement must be kept available in accordance with regulation I/2, paragraph 11 of the Convention while serving on a ship.

Date of birth of the holder of the certificate ..... .14 .....

Signature of the holder of the certificate ..... .15 .....

Photograph of the holder of the certificate

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The validity of this endorsement is hereby extended until ……. (Official Seal) ……. Signature of duly authorized official Date of revalidation ..... .17 ……. Name of duly authorized official
The validity of this endorsement is hereby extended until ……. (Official Seal) ……. Signature of duly authorized official Date of revalidation ..... .17 ……. Name of duly authorized official

2 An endorsement attesting the recognition of a certificate may be attached to and form part of the certificate endorsed, or may be issued as a separate document (see STCW regulation I/2, paragraph 8). All entries made in the form are required to be in Roman characters and Arabic figures (see STCW regulation I/2, paragraph 10). The spaces numbered .1 to .17 in the form which follows the text hereunder are intended to be completed as indicated in paragraph 1 above, except in respect of the following spaces:

.2 where the number assigned by the Party which issued the certificate being recognized should be entered;

.3 where the name entered should be the same as that appearing in the certificate being recognized;

.4 where the name of the Party which issued the certificate being recognized should be entered;

.9 where the capacity or capacities entered should be selected, as appropriate, from those specified in the safe applicable manning requirements of the Administration which is recognizing the certificate;

.11 where the number entered should be unique to the endorsement both for reference and for location in the register of endorsements; and

.12 where the date of original issue of the endorsement should be entered.

(Official Seal)

(COUNTRY)

ENDORSEMENT ATTESTING THE RECOGNITION OF A CERTIFICATE UNDER THE PROVISIONS OF THE INTERNATIONAL CONVENTION ON STANDARDS OF TRAINING, CERTIFICATION AND WATCHKEEPING FOR SEAFARERS, 1978, AS AMENDED

The Government of …… .1 …… certifies that Certificate No. …… .2 …… issued to …… .3 ……by or on behalf of the Government of …… .4 …… is duly recognized in accordance with the provisions of regulation I/10 of the above Convention, as amended, and the lawful holder is authorized to perform the following functions, at the levels specified, subject to any limitations indicated until …… .5 …… or until the date of expiry of any extension of the validity of this endorsement as may be shown overleaf:

.6 FUNCTION	.7 LEVEL	.8 LIMITATIONS APPLYING (IF ANY)

The lawful holder of this endorsement may serve in the following capacity or capacities specified in the applicable safe manning requirements of the Administration:

.9 CAPACITY	.10 LIMITATIONS APPLYING (IF ANY)

Endorsement No ..... .11 ..... issued on ..... .12 .....

(Official Seal) .....

Signature of duly authorized official

..... .13 .....

Name of duly authorized official

The original of this endorsement must be kept available in accordance with regulation I/2, paragraph 11 of the Convention while serving on a ship.

Date of birth of the holder of the certificate ..... .14 .....

Signature of the holder of the certificate ..... .15 .....

Photograph of the holder of the certificate

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The validity of this endorsement is hereby extended until …… (Official Seal) …… Signature of duly authorized official Date of revalidation ..... .17 …… Name of duly authorized official
The validity of this endorsement is hereby extended until …… (Official Seal) …… Signature of duly authorized official Date of revalidation ..... .17 …… Name of duly authorized official

3 When replacing a certificate or endorsement which has been lost or destroyed, Parties should issue the replacement under a new number, to avoid confusion with the document to be replaced.

4 If an application for revalidation is made within six months before the expiry of an endorsement, the endorsement referred to in paragraphs 5, 6 and 7 of regulation I/2 may be revalidated until:

.1 the fifth anniversary of the date of validity, or extension of the validity, of the endorsement; or

.2 the date the certificate endorsed expires, whichever is earlier.

5 Where a Certificate of Proficiency is issued, it should contain at least the following information:

.1 names of the issuing Party and authority;

.2 number assigned to the certificate by the issuing authority;

.3 full name and date of birth of the seafarer to whom the certificate is issued. The name and birthdate should be the same as that appearing in the seafarer's passport or seafarer's identification document;

.4 title of the certificate. For example, if the certificate is issued in relation to regulation VI/3, paragraph 2, the title used should be "advanced fire fighting" and if it is issued in relation to regulation VI/5, paragraph 1, the title used should be "ship security officer";

.5 number, or numbers, of the Convention regulation(s) or of the STCW Code section under which the seafarer has been found qualified;

.6 dates of issue and expiry of the certificate. If validity of the certificate is unlimited, then, for the benefit of clarification, the "unlimited" term should be entered in front of the date of expiry;

.7 if applicable, limitations, either general limitation (such as the requirement to wear corrective lenses), ship's type limitation (such as "valid only for service on ships of GT<500") or, voyage limitation (such as "valid only on near-coastal voyages");

.8 name and signature of the authorized person who issues the certificate;

.9 photograph of the seafarer. The photograph should be a standard black and white or colour passport-type head and shoulders photograph;

.10 if the certificate is intended to be revalidated then, the date of revalidation, extension of the validity, name and signature of the authorized person; and

.11 the contact details of the issuing Authority.

Table B-I/2

List of certificates or documentary evidence required under the STCW Convention

The list below identifies all certificates or documentary evidence in the Convention which authorize the holder to serve in certain functions on board ships. The certificates are subject to the requirements of regulation I/2 regarding language and their availability in original form.

The list also references the relevant regulations and the requirements for endorsement registration and revalidation.

Regulations	Type of certificate and brief description	Endorsement attesting recognition of a certificate1	Registration required2	Revalidation of certificate3
II/1, II/2, II/3, III/1, III/2, III/3, III/6, IV/2, VII/2	Certificate of Competency – For masters, officers and GMDSS radio operator	Yes	Yes	Yes
II/4, III/4, VII/2	Certificate of Proficiency – For Ratings duly certified to be a part of a navigational or engine-room watch	No	Yes	No
II/5, III/5, III/7, VII/2	Certificate of Proficiency – For Ratings duly certified as able seafarer deck, able seafarer engine electro-technical rating	No	Yes	No

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V/1-1; V/1-2	Certificate of Proficiency or endorsement to a Certificate of Competency – For masters and officers on oil, chemical or liquefied gas tankers	Yes	Yes	Yes
V/1-1; V/1-2	Certificate of Proficiency – For ratings on oil, chemical or liquefied gas tankers	No	Yes	No
V/2	Documentary evidence – Training for masters, officers, ratings and other personnel serving on passenger ships	No	No	No4
VI/1	Certificate of Proficiency5 – Basic Training	No	Yes	Yes6
VI/2	Certificate of Proficiency5 – Survival craft, rescue boats and fast rescue boats	No	Yes	Yes6
VI/3	Certificate of Proficiency5 – Advanced fire fighting	No	Yes	Yes6
VI/4	Certificate of Proficiency – Medical first aid and medical care	No	Yes	No
VI/5	Certificate of Proficiency – Ship security officer	No	Yes	No
VI/6	Certificate of Proficiency7 – Security awareness training or security training for seafarers with designated security duties	No	Yes	No

Notes:

1 *Endorsement attesting recognition of a certificate* means endorsement in accordance with regulation I/2, paragraph 7.

2 *Registration required* means as part of register or registers in accordance with regulation I/2, paragraph 14.

3 *Revalidation of a certificate* means establishing continued professional competence in accordance with regulation I/11 or maintaining the required standards of competence in accordance with sections A-VI/1 to A-VI/3, as applicable.

4 As required by regulation V/2, paragraph 3 seafarers who have completed training in "crowd management", "crisis management and human behaviour" or "passenger safety, cargo safety and hull integrity" shall at intervals not exceeding five years, undertake appropriate refresher training or to provide evidence of having achieved the required standards of competence within the previous five years.

5 The certificates of competency issued in accordance with regulations II/1, II/2, II/3, III/1, III/2, III/3, III/6 and VII/2 include the proficiency requirements in "basic training", "survival craft and rescue boats other than fast rescue boats", "advanced fire fighting" and "medical first aid" therefore, holders of mentioned certificates of competency are not required to carry Certificates of Proficiency in respect of those competences of chapter VI.

6 As required in accordance with sections A-VI/1, A-VI/2 and A-VI/3, seafarers have to provide evidence of having maintained the required standards of competence every five years.

7 Where security awareness training or training in designated security duties is not included in the qualification for the certificate to be issued.

Section B-I/3

Guidance regarding near-coastal voyages

Coastal States may adopt regional "near-coastal voyage limits" through bilateral or multilateral arrangements. Details of such arrangements shall be reported to the Secretary-General, who shall circulate such particulars to all Parties.

Section B-I/4

Guidance regarding control procedures[26]

Introduction

1 The purpose of the control procedures of regulation I/4 is to enable officers duly authorized by port States to ensure that the seafarers on board have sufficient competence to ensure safe and pollution-free operation of the ship.

2 This provision is no different in principle from the need to make checks on ships' structures and equipment. Indeed, it builds on these inspections to make an appraisal of the total system of onboard safety and pollution prevention.

Assessment

3 By restricting assessment as indicated in section A-I/4, the subjectivity which is an unavoidable element in all control procedures is reduced to a minimum, no more than would be evident in other types of control inspection.

4 The clear grounds given in regulation I/4, paragraph 1.3 will usually be sufficient to direct the inspector's attention to specific areas of competency, which could then be followed up by seeking evidence of training in the skills in question. If this evidence is inadequate or unconvincing, the authorized officer may ask to observe a demonstration of the relevant skill.

5 It will be a matter for the professional judgement of the inspector when on board, either following an incident as outlined in regulation I/4 or for the purposes of a routine inspection, whether the ship is operated in a manner likely to pose a danger to persons, property or the environment[27].

[26]The relevant IMO Model Course(s) may be of assistance in the preparation of courses.

[27]See the Code of International Standards and Recommended Practices for a safety Investigation into a marine casualty or marine incident (Casualty Investigation Code)

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Section B-I/5

Guidance regarding national provisions

(No provisions)

Section B-I/6

Guidance regarding training and assessment

Qualifications of instructors and assessors

1 Each Party should ensure that instructors and assessors are appropriately qualified and experienced for the particular types and levels of training or assessment of competence of seafarers, as required under the Convention, in accordance with the guidelines in this section.

In-service training and assessment

2 Any person, on board or ashore, conducting in-service training of a seafarer intended to be used in qualifying for certification under the Convention should have received appropriate guidance in instructional techniques[28].

3 Any person responsible for the supervision of in-service training of a seafarer intended to be used in qualifying for certification under the Convention should have appropriate knowledge of instructional techniques and of training methods and practice.

4 Any person, on board or ashore, conducting an in-service assessment of the competence of a seafarer intended to be used in qualifying for certification under the Convention should have:

.1 received appropriate guidance in assessment methods and practice[29]; and

.2 gained practical assessment experience under the supervision and to the satisfaction of an experienced assessor.

5 Any person responsible for the supervision of the in-service assessment of competence of a seafarer intended to be used in qualifying for certification under the Convention should have a full understanding of the assessment system, assessment methods and practice[30].

Use of distance learning and e-learning

6 Parties may allow the training of seafarers by distance learning and e-learning in accordance with the standards of training and assessment set forth in section A-I/6 and the guidance given below.

Guidance for training by distance learning and e-learning

7 Each Party should ensure that any distance learning and e-learning programme:

.1 is provided by an entity that is approved by the Party;

.2 is suitable for the selected objectives and training tasks to meet the competence level for the subject covered;

.3 has clear and unambiguous instructions for the trainees to understand how the programme operates;

.4 provides learning outcomes that meet all the requirements to provide the underpinning knowledge and proficiency of the subject;

.5 is structured in a way that enables the trainee to systematically reflect on what has been learnt through both self assessment and tutor-marked assignments; and

.6 provides professional tutorial support through telephone, facsimile or e-mail communications.

8 Companies should ensure that a safe learning environment is provided and that there has been sufficient time provided to enable the trainee to study.

9 Where e-learning is provided, common information formats such as XML (Extensible Markup Language), which is a flexible way to share both the format and the data on the World Wide Web, intranets, and elsewhere, should be used.

10 The e-learning system should be secured from tampering and attempts to hack into the system.

Guidance for assessing a trainee's progress and achievements by training by distance learning and e-learning

11 Each Party should ensure that approved assessment procedures are provided for any distance learning and e-learning programme, including:

.1 clear information to the students on the way that tests and examinations are conducted and how the results are communicated;

.2 have test questions that are comprehensive and will adequately assess a trainee's competence and are appropriate to the level being examined;

.3 procedures in place to ensure questions are kept up to date and;

.4 the conditions where the examinations can take place and the procedures for invigilation to be conducted;

.5 secure procedures for the examination system so that it will prevent cheating;

.6 secure validation procedures to record results for the benefit of the Party.

Register of approved training providers, courses and programmes

12 Each Party should ensure that a register or registers of approved training providers, courses and programmes are maintained and made available to Companies and other Parties on request.

[28]The relevant IMO Model Course(s) may be of assistance in the preparation of courses.
[29]The relevant IMO Model Course(s) may be of assistance in the preparation of courses.
[30]The relevant IMO Model Course(s) may be of assistance in the preparation of courses.

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Section B-I/7

Guidance regarding communication of information

Reports of difficulties encountered

1 Parties are encouraged, when communicating information in accordance with article IV and regulation I/7 of the Convention, to include an index specifically locating the required information as follows:

Index of materials submitted in accordance with article IV and regulation I/7 of the STCW Convention

Article IV of the STCW Convention	Location
1 Text of laws, decrees, orders, regulations and instruments (article IV(1)(a))	
2 Details on study courses (article IV(1)(b))	
3 National examination and other requirements (article IV(1)(b))	
4 Specimen certificates (article IV(1)(c))	
Section A-I/7 part 1 of the STCW Code	Location
5 Information on Governmental organization (section A-I/7, paragraph 2.1)	
6 Explanation of legal and administrative measures (section A-I/7, paragraph 2.2)	
7 Statement of the education, training, examination, assessment and certification policies (section A-I/7, paragraph 2.3)	
8 Summary of the courses, training programmes, examinations, assessments by certificate (section A-I/7, paragraph 2.4)	
9 Outline of the procedures and conditions for authorizations, accreditations and approvals (section A-I/7, paragraph 2.5)	
10 List of authorizations, accreditations and approvals granted (section A-I/7, paragraph 2.5)	
11 Summary of procedures for dispensations (section A-I/7, paragraph 2.6)	
12 Comparison carried out pursuant to regulation I/11 (section A-I/7, paragraph 2.7)	
13 Outline of refresher and upgrading training mandated (section A-I/7, paragraph 2.7)	
Section A-I/7, part 2, paragraph 3 of the STCW Code	Location
14 Description of equivalency arrangements adopted pursuant to article IX (section A-I/7, paragraph 3.1)	
15 Summary of measures taken to ensure compliance with regulation I/10 (section A-I/7, paragraph 3.2)	
16 Specimen copy of safe manning documents issued to ships employing seafarers holding alternative certificates under regulation VII/1 (section A-I/7, paragraph 3.3)	
Section A-I/7, part 2, paragraph 4 of the STCW Code	Location
17 Report of results of independent evaluations carried out pursuant to regulation I/8 covering:	
.1 Terms of reference of evaluators for the independent evaluation	
.2 Qualifications and experience of evaluators	
.3 Date and scope of evaluation	
.4 Non-conformities found	
.5 Corrective measures recommended	
.6 Corrective measures carried out	
.7 List of training institutions/centres covered by the independent evaluation	
Section A-I/7, part 2, paragraph 6 of the STCW Code	Location
18 Explanation of legal and administrative measures (section A-I/7, paragraph 6.1)	
19 Statement of the education, training, examination, assessment and certification policies (section A-I/7, paragraph 6.2)	
20 Summary of the courses, training programmes, examinations, assessments by certificate (section A-I/7, paragraph 6.3)	
21 Outline of refresher and upgrading training mandated (section A-I/7, paragraph 6.4)	
22 Comparison carried out pursuant to regulation I/11 (section A-I/7, paragraph 6.5)	

2 Parties are requested to include, in the reports required by regulation I/7, an indication of any relevant guidance contained in part B of this Code, the observance of which has been found to be impracticable.

Section B-I/8

Guidance regarding quality standards

1 In applying quality standards under the provisions of regulation I/8 and section A-I/8 to the administration of its certification system, each Party should take account of existing national or international models, and incorporate the following key elements:

.1 an expressed policy regarding quality and the means by which such policy is to be implemented;

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.2 a quality system incorporating the organizational structure, responsibilities, procedures, processes and resources necessary for quality management;

.3 the operational techniques and activities to ensure quality control;

.4 systematic monitoring arrangements, including internal quality-assurance evaluations, to ensure that all defined objectives are being achieved; and

.5 arrangements for periodic external quality evaluations as described in the following paragraphs.

2 In establishing such quality standards for the administration of their national certification system, Administrations should seek to ensure that the arrangements adopted:

.1 are sufficiently flexible to enable the certification system to take account of the varying needs of the industry, and that they facilitate and encourage the application of new technology;

.2 cover all the administrative matters that give effect to the various provisions of the Convention, in particular regulations I/2 to I/15 and other provisions which enable the Administration to grant certificates of service and dispensations and to withdraw, cancel and suspend certificates;

.3 encompass the Administration's responsibilities for approving training and assessment at all levels, from undergraduate-type courses and updating courses for certificates of competency to short courses of vocational training; and

.4 incorporate arrangements for the internal quality-assurance reviews under paragraph 1.4 involving a comprehensive self-study of the administrative procedures, at all levels, in order to measure achievement of defined objectives and to provide the basis for the independent external evaluation required under section A-I/8, paragraph 3.

Quality standards model for assessment of knowledge, understanding, skills and competence

3 The quality standards model for assessment of knowledge, understanding, skills and competence should incorporate the recommendations of this section within the general framework of either:

.1 a national scheme for education and training accreditation or quality standards; or

.2 an alternative quality-standards model acceptable to the Organization.

4 The above quality-standards model should incorporate:

.1 a quality policy, including a commitment by the training institution or unit to the achievement of its stated aims and objectives and to the consequential recognition by the relevant accrediting or quality-standards authority;

.2 those quality-management functions that determine and implement the quality policy, relating to aspects of the work which impinge on the quality of what is provided, including provisions for determining progression within a course or programme;

.3 quality system coverage, where appropriate, of the academic and administrative organizational structure, responsibilities, procedures, processes and the resources of staff and equipment;

.4 the quality-control functions to be applied at all levels to the teaching, training, examination and assessment activities, and to their organization and implementation, in order to ensure their fitness for their purpose and the achievement of their defined objectives;

.5 the internal quality-assurance processes and reviews which monitor the extent to which the institution, or training unit, is achieving the objectives of the programmes it delivers, and is effectively monitoring the quality-control procedures which it employs; and

.6 the arrangements made for periodic external quality evaluations required under regulation I/8, paragraph 2 and described in the following paragraphs, for which the outcome of the quality-assurance reviews forms the basis and starting point.

5 In establishing quality standards for education, training and assessment programmes, the organizations responsible for implementing these programmes should take account of the following:

.1 Where provisions exist for established national accreditation, or education quality standards, such provisions should be utilized for courses incorporating the knowledge and understanding requirements of the Convention. The quality standards should be applied to both management and operational levels of the activity, and should take account of how it is managed, organized, undertaken and evaluated, in order to ensure that the identified goals are achieved.

.2 Where acquisition of a particular skill or accomplishment of a designated task is the primary objective, the quality standards should take account of whether real or simulated equipment is utilized for this purpose, and of the appropriateness of the qualifications and experience of the assessors, in order to ensure achievement of the set standards.

.3 The internal quality-assurance evaluations should involve a comprehensive self-study

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of the programme, at all levels, to monitor achievement of defined objectives through the application of quality standards. These quality-assurance reviews should address the planning, design, presentation and evaluation of programmes as well as the teaching, learning and communication activities. The outcome provides the basis for the independent evaluation required under section A-I/8, paragraph 3.

The independent evaluation

6 Each independent evaluation should include a systematic and independent examination of all quality activities, but should not evaluate the validity of the defined objectives. The evaluation team should:

.1 carry out the evaluation in accordance with documented procedures;

.2 ensure that the results of each evaluation are documented and brought to the attention of those responsible for the area evaluated; and

.3 check that timely action is taken to correct any deficiencies.

7 The purpose of the evaluation is to provide an independent assessment of the effectiveness of the quality-standard arrangements at all levels. In the case of an education or training establishment, a recognized academic accreditation or quality-standards body or Government agency should be used. The evaluation team should be provided with sufficient advance information to give an overview of the tasks in hand. In the case of a major training institution or programme, the following items are indicative of the information to be provided:

.1 the mission statement of the institution;

.2 details of academic and training strategies in use;

.3 an organization chart and information on the composition of committees and advisory bodies;

.4 staff and student information;

.5 a description of training facilities and equipment; and

.6 an outline of the policies and procedures on:

.6.1 student admission;

.6.2 the development of new courses and review of existing courses;

.6.3 the examination system, including appeals and resits;

.6.4 staff recruitment, training, development, appraisal and promotion;

.6.5 feedback from students and from industry, and

.6.6 staff involvement in research and development.

The report

8 Before submitting a final report, the evaluation team should forward an interim report to the management, seeking their comments on their findings. Upon receiving their comments, the evaluators should submit their final report, which should:

.1 include brief background information about the institution or training programme;

.2 be full, fair and accurate;

.3 highlight the strengths and weaknesses of the institution;

.4 describe the evaluation procedure followed;

.5 cover the various elements identified in paragraph 4;

.6 indicate the extent of compliance or non-compliance with the requirements of the Convention and the effectiveness of the quality standards in ensuring achievement of defined aims and objectives; and

.7 spell out clearly the areas found to be deficient, offer suggestions for improvement and provide any other comments the evaluators consider relevant.

Section B-I/9

Guidance regarding medical standards

MEDICAL EXAMINATION AND CERTIFICATION

1 Parties, in establishing seafarer medical fitness standards and provisions, should take into account the minimum physical abilities set out in table B-I/9 and the guidance given within this section, bearing in mind the different duties of seafarers.

2 Parties, in establishing seafarer medical fitness standards and provisions, should follow the guidance contained in the ILO/WHO publication *Guidelines for Conducting Pre-sea and Periodic Medical Fitness Examinations for Seafarers*, including any subsequent versions, and any other applicable international guidelines published by the International Labour Organization, the International Maritime Organization or the World Health Organization.

3 Appropriate qualifications and experience for medical practitioners conducting medical fitness examinations of seafarers may include occupational health or maritime health qualifications, experience of working as a ship's doctor or a shipping company doctor or working under the supervision of someone with the aforementioned qualifications or experience.

4 The premises where medical fitness examinations are carried out should have the facilities and equipment required to carry out medical fitness examination of seafarers.

5 Administrations should ensure that recognized medical practitioners enjoy full professional independence in exercising their medical judgement when undertaking medical examination procedures.

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6 Persons applying for a medical certificate should present to the recognized medical practitioner appropriate identity documentation to establish their identity. They should also surrender their previous medical certificate.

7 Each Administration has the discretionary authority to grant a variance or waiver of any of the standards set out in table B-I/9 hereunder, based on an assessment of a medical evaluation and any other relevant information concerning an individual's adjustment to the condition and proven ability to satisfactorily perform assigned shipboard functions.

8 The medical fitness standards should, so far as possible, define objective criteria with regard to fitness for sea service, taking into account access to medical facilities and medical expertise on board ship. They should, in particular, specify the conditions under which seafarers suffering from potentially life-threatening medical conditions that are controlled by medication may be allowed to continue to serve at sea.

9 The medical standards should also identify particular medical conditions, such as colour blindness, which might preclude seafarers holding particular positions on board ship.

10 The minimum in-service eyesight standards in each eye for unaided distance vision should be at least 0.1[31].

11 Persons requiring the use of spectacles or contact lenses to perform duties should have a spare pair or pairs, as required, conveniently available on board the ship. Any need to wear visual aids to meet the required standards should be recorded on the medical fitness certificate issued.

12 Colour vision testing should be in accordance with the *International Recommendation for Colour Vision Requirements for Transport*, published by the Commission Internationale de l'Eclairage (CIE 143-2001 including any subsequent versions) or equivalent test methods.

[31]Value given in Snellen decimal notation.

Table B-I/9

Assessment of minimum entry level and in-service physical abilities for seafarers3

Shipboard task, function event or condition3	Related physical ability	A medical examiner should be satisfied that the candidate4
Routine movement around vessel: - on moving deck - between levels - between compartments Note 1 applies to this row	Maintain balance and move with agility Climb up and down vertical ladders and stairways Step over coamings (e.g., Load Line Convention requires coamings to be 600 mm high) Open and close watertight doors	Has no disturbance in sense of balance Does not have any impairment or disease that prevents relevant movements and physical activities Is, without assistance5, able to: - climb vertical ladders and stairways - step over high sills - manipulate door closing systems
Routine tasks on board: - Use of hand tools - Movement of ship's stores - Overhead work - Valve operation - Standing a four-hour watch - Working in confined spaces - Responding to alarms, warnings and instructions - Verbal communication Note 1 applies to this row	Strength, dexterity and stamina to manipulate mechanical devices Lift, pull and carry a load (e.g., 18 kg) Reach upwards Stand, walk and remain alert for an extended period Work in constricted spaces and move through restricted openings (e.g., SOLAS requires minimum openings in cargo spaces and emergency escapes to have the minimum dimensions of 600 mm × 600 mm – SOLAS regulation 3.6.5.1) Visually distinguish objects, shapes and signals Hear warnings and instructions Give a clear spoken description	Does not have a defined impairment or diagnosed medical condition that reduces ability to perform routine duties essential to the safe operation of the vessel Has ability to: - work with arms raised - stand and walk for an extended period - enter confined space - fulfil eyesight standards (A-I/9) - fulfil hearing standards set by competent authority or take account of international guidelines - hold normal conversation
Emergency duties6 on board: - Escape - Fire-fighting - Evacuation Note 2 applies to this row	Don a lifejacket or immersion suit Escape from smoke-filled Spaces Take part in fire-fighting duties, including use of breathing apparatus Take part in vessel evacuation procedures	Does not have a defined impairment or diagnosed medical condition that reduces ability to perform emergency duties essential to the safe operation of the vessel Has ability to: - don lifejacket or immersion suit - crawl - feel for differences in temperature - handle fire-fighting equipment - wear breathing apparatus (where required as part of duties)

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Notes:

1 Rows 1 and 2 of the above table describe (a) ordinary shipboard tasks, functions, events and conditions, (b) the corresponding physical abilities which may be considered necessary for the safety of a seafarer, other crew members and the ship, and (c) high-level criteria for use by medical practitioners assessing medical fitness, bearing in mind the different duties of seafarers and the nature of shipboard work for which they will be employed.

2 Row 3 of the above table describes (a) ordinary shipboard tasks, functions, events and conditions, (b) the corresponding physical abilities which should be considered necessary for the safety of a seafarer, other crew members and the ship, and (c) high-level criteria for use by medical practitioners assessing medical fitness, bearing in mind the different duties of seafarers and the nature of shipboard work for which they will be employed.

3 This table is not intended to address all possible shipboard conditions or potentially disqualifying medical conditions. Parties should specify physical abilities applicable to the category of seafarers (such as "Deck officer" and "Engine rating"). The special circumstances of individuals and for those who have specialized or limited duties should receive due consideration.

4 If in doubt, the medical practitioner should quantify the degree or severity of any relevant impairment by means of objective tests, whenever appropriate tests are available, or by referring the candidate for further assessment.

5 The term "assistance" means the use of another person to accomplish the task.

6 The term "emergency duties" is used to cover all standard emergency response situations such as abandon ship or fire fighting as well as the procedures to be followed by each seafarer to secure personal survival.

Section B-I/10

Guidance regarding the recognition of certificates

1 Training carried out under the STCW Convention which does not lead to the issue of an appropriate certificate and on which information provided by a Party is found by the Maritime Safety Committee to give full and complete effect to the Convention in accordance with regulation I/7, paragraph 2 may be accepted by other Parties to the Convention as meeting the relevant training requirements thereof.

2 Contacted Administrations should issue documentary proof referred to in regulation I/10, paragraph 5 to enable port State control authorities to accept the same in lieu of endorsement of a certificate issued by another Party for a period of three months from the date of issue, providing the information listed below:

.1 seafarer's name

.2 date of birth

.3 number of the original Certificate of Competency

.4 capacity

.5 limitations

.6 contact details of the Administration

.7 dates of issue and expiry.

3 Such documentary proof may be made available by electronic means.

Section B-I/11

Guidance regarding the revalidation of certificates

1 The courses required by regulation I/11 should include relevant changes in marine legislation, technology and recommendations concerning the safety of life at sea, security and the protection of the marine environment.

2 A test may take the form of written or oral examination, the use of a simulator or other appropriate means.

3 Approved seagoing service stated in section A-I/11, paragraph 1 may be served in an appropriate lower officer rank than the certificate held.

4 If an application for revalidation of a certificate referred to in paragraph 1 of regulation I/11 is made within six months before expiry of the certificate, the certificate may be revalidated until the fifth anniversary of the date of validity, or extension of the validity, of the certificate.

Section B-I/12

Guidance regarding the use of simulators

1 When simulators are being used for training or assessment of competency, the following guidelines should be taken into consideration in conducting any such training or assessment.

TRAINING AND ASSESSMENT IN RADAR OBSERVATION AND PLOTTING[32]

2 Training and assessment in radar observation and plotting should:

.1 incorporate the use of radar simulation equipment; and

.2 conform to standards not inferior to those given in paragraphs 3 to 17 below.

3 Demonstrations of and practice in radar observation should be undertaken, where appropriate, on live marine radar equipment, including the use of simulators. Plotting exercises should preferably be undertaken in real time, in order to increase trainees' awareness of the hazards of the improper use of radar data and improve their plotting techniques to a standard of radar plotting commensurate with that necessary for the safe execution of collision-avoidance manoeuvring under actual seagoing conditions.

32The relevant IMO Model Course(s) may be of assistance in the preparation of courses.

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General

Factors affecting performance and accuracy

4 An elementary understanding should be attained of the principles of radar, together with a full practical knowledge of:

.1 range and bearing measurement, characteristics of the radar set which determine the quality of the radar display, radar antennae, polar diagrams, the effects of power radiated in directions outside the main beam, a non-technical description of the radar system, including variations in the features encountered in different types of radar set, performance monitors and equipment factors which affect maximum and minimum detection ranges and accuracy of information;

.2 the current marine radar performance specification adopted by the Organization[33];

.3 the effects of the siting of the radar antenna, shadow sectors and arcs of reduced sensitivity, false echoes, effects of antenna height on detection ranges and of siting radar units and storing spares near magnetic compasses, including magnetic safe distances; and

.4 radiation hazards and safety precautions to be taken in the vicinity of antenna and open waveguides.

Detection of misrepresentation of information, including false echoes and sea returns

5 A knowledge of the limitations to target detection is essential, to enable the observer to estimate the dangers of failure to detect targets. The following factors should be emphasized:

.1 performance standard of the equipment;

.2 brilliance, gain and video processor control settings;

.3 radar horizon;

.4 size, shape, aspect and composition of targets;

.5 effects of the motion of the ship in a seaway;

.6 propagation conditions;

.7 meteorological conditions; sea clutter and rain clutter;

.8 anti-clutter control settings;

.9 shadow sectors; and

.10 radar-to-radar interference.

6 A knowledge should be attained of factors which might lead to faulty interpretation, including false echoes, effects of nearby pylons and large structures, effects of power lines crossing rivers and estuaries, echoes from distant targets occurring on second or later traces.

7 A knowledge should be attained of aids to interpretation, including corner reflectors and radar beacons; detection and recognition of land targets; the effects of topographical features; effects of pulse length and beam width; radar-conspicuous and -inconspicuous targets; factors which affect the echo strength from targets.

Practice

Setting up and maintaining displays

8 A knowledge should be attained of:

.1 the various types of radar display mode; unstabilized ship's-head-up relative motion; ship's-head-up, course-up and north-up stabilized relative motion and true motion;

.2 the effects of errors on the accuracy of information displayed; effects of transmitting compass errors on stabilized and true-motion displays; effects of transmitting log errors on a true-motion display; and the effects of inaccurate manual speed settings on a true-motion display;

.3 methods of detecting inaccurate speed settings on true-motion controls; the effects of receiver noise limiting the ability to display weak echo returns, and the effects of saturation by receiver noise, etc.; the adjustment of operational controls; criteria which indicate optimum points of adjustment; the importance of proper adjustment sequence, and the effects of maladjusted controls; the detection of maladjustments and corrections of:

.3.1 controls affecting detection ranges; and

.3.2 controls affecting accuracy;

.4 the dangers of using radar equipment with maladjusted controls; and

.5 the need for frequent regular checking of performance, and the relationship of the performance indicator to the range performance of the radar set.

Range and bearing

9 A knowledge should be attained of:

.1 the methods of measuring ranges; fixed range markers and variable range markers;

.2 the accuracy of each method and the relative accuracy of the different methods;

.3 how range data are displayed; ranges at stated intervals, digital counter and graduated scale;

.4 the methods of measuring bearings; rotatable cursor on transparent disc covering the display, electronic bearing cursor and other methods;

[33]See relevant/appropriate performance standards adopted by the Organization

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.5 bearing accuracy and inaccuracies caused by parallax, heading marker displacement, centre maladjustment;

.6 how bearing data are displayed; graduated scale and digital counter; and

.7 the need for regular checking of the accuracy of ranges and bearings, methods of checking for inaccuracies and correcting or allowing for inaccuracies.

Plotting techniques and relative-motion concepts

10 Practice should be provided in manual plotting techniques, including the use of reflection plotters, with the objective of establishing a thorough understanding of the interrelated motion between own ship and other ships, including the effects of manoeuvring to avoid collision. At the preliminary stages of this training, simple plotting exercises should be designed to establish a sound appreciation of plotting geometry and relative-motion concepts. The degree of complexity of exercises should increase throughout the training course until the trainee has mastered all aspects of the subject. Competence can best be enhanced by exposing the trainee to real-time exercises performed on a simulator or using other effective means.

Identification of critical echoes

11 A thorough understanding should be attained of:

.1 position fixing by radar from land targets and sea marks;

.2 the accuracy of position fixing by ranges and by bearings;

.3 the importance of cross-checking the accuracy of radar against other navigational aids; and

.4 the value of recording ranges and bearings at frequent, regular intervals when using radar as an aid to collision avoidance.

Course and speed of other ships

12 A thorough understanding should be attained of:

.1 the different methods by which course and speed of other ships can be obtained from recorded ranges and bearings, including:

.1.1 the unstabilized relative plot;

.1.2 the stabilized relative plot; and

.1.3 the true plot; and

.2 the relationship between visual and radar observations, including detail and the accuracy of estimates of course and speed of other ships, and the detection of changes in movements of other ships.

Time and distance of closest approach of crossing, meeting or overtaking ships

13 A thorough understanding should be attained of:

.1 the use of recorded data to obtain:

.1.1 measurement of closest approach distance and bearing;

.1.2 time to closest approach; and

.2 the importance of frequent, regular observations.

Detecting course and speed changes of other ships

14 A thorough understanding should be attained of:

.1 the effects of changes of course and/or speed by other ships on their tracks across the display;

.2 the delay between change of course or speed and detection of that change; and

.3 the hazards of small changes as compared with substantial changes of course or speed in relation to rate and accuracy of detection.

Effects of changes in own ship's course or speed or both

15 A thorough understanding of the effects on a relative-motion display of own ship's movements, and the effects of other ships' movements and the advantages of compass stabilization of a relative display.

16 In respect of true-motion displays, a thorough understanding should be attained of:

.1 the effects of inaccuracies of:

.1.1 speed and course settings; and

.1.2 compass stabilization data driving a stabilized relative-motion display;

.2 the effects of changes in course or speed or both by own ship on tracks of other ships on the display; and

.3 the relationship of speed to frequency of observations.

Application of the International Regulations for Preventing Collisions at Sea, 1972, as amended

17 A thorough understanding should be attained of the relationship of the International Regulations for Preventing Collisions at Sea, 1972, as amended to the use of radar, including:

.1 action to avoid collision, dangers of assumptions made on inadequate information and the hazards of small alterations of course or speed;

.2 the advantages of safe speed when using radar to avoid collision;

.3 the relationship of speed to closest approach distance and time and to the manoeuvring characteristics of various types of ships;

.4 the importance of radar observation reports and radar reporting procedures being well defined;

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.5 the use of radar in clear weather, to obtain an appreciation of its capabilities and limitations, compare radar and visual observations and obtain an assessment of the relative accuracy of information;

.6 the need for early use of radar in clear weather at night and when there are indications that visibility may deteriorate;

.7 comparison of features displayed by radar with charted features; and

.8 comparison of the effects of differences between range scales.

TRAINING AND ASSESSMENT IN THE OPERATIONAL USE OF AUTOMATIC RADAR PLOTTING AIDS (ARPA)

18 Training and assessment in the operational use of automatic radar plotting aids (ARPA) should:

.1 require prior completion of the training in radar observation and plotting or combine that training with the training given in paragraphs 19 to 35 below;[34]

.2 incorporate the use of ARPA simulation equipment; and

.3 conform to standards not inferior to those given in paragraphs 19 to 35 below.

19 Where ARPA training is provided as part of the general training under the 1978 STCW Convention, masters, chief mates and officers in charge of a navigational watch should understand the factors involved in decision-making based on the information supplied by ARPA in association with other navigational data inputs, having a similar appreciation of the operational aspects and of system errors of modern electronic navigational systems, including ECDIS. This training should be progressive in nature, commensurate with the responsibilities of the individual and the certificates issued by Parties under the 1978 STCW Convention.

Theory and demonstration

Possible risks of over-reliance on ARPA

20 Appreciation that ARPA is only a navigational aid and:

.1 that its limitations, including those of its sensors, make over-reliance on ARPA dangerous, in particular for keeping a look-out; and

.2 the need to observe at all times the Principles to be observed in keeping a navigational watch and the Guidance on keeping a navigational watch.

Principal types of ARPA systems and their display characteristics

21 Knowledge of the principal types of ARPA systems in use; their various display characteristics and an understanding of when to use ground- or sea-stabilized modes and north-up, course-up or head-up presentations.

IMO performance standards for ARPA

22 An appreciation of the IMO performance standards for ARPA, in particular the standards relating to accuracy.[35]

Factors affecting system performance and accuracy

23 Knowledge of ARPA sensor input performance parameters – radar, compass and speed inputs and the effects of sensor malfunction on the accuracy of ARPA data.

24 Knowledge of:

.1 the effects of the limitations of radar range and bearing discrimination and accuracy and the limitations of compass and speed input accuracies on the accuracy of ARPA data; and

.2 factors which influence vector accuracy.

Tracking capabilities and limitations

25 Knowledge of:

.1 the criteria for the selection of targets by automatic acquisition;

.2 the factors leading to the correct choice of targets for manual acquisition;

.3 the effects on tracking of "lost" targets and target fading; and

.4 the circumstances causing "target swap" and its effects on displayed data.

Processing delays

26 Knowledge of the delays inherent in the display of processed ARPA information, particularly on acquisition and re-acquisition or when a tracked target manoeuvres.

Operational warnings, their benefits and limitations

27 Appreciation of the uses, benefits and limitations of ARPA operational warnings and their correct setting, where applicable, to avoid spurious interference.

System operational tests

28 Knowledge of:

.1 methods of testing for malfunctions of ARPA systems, including functional self-testing; and

.2 precautions to be taken after a malfunction occurs.

Manual and automatic acquisition of targets and their respective limitations

29 Knowledge of the limits imposed on both types of acquisition in multi-target scenarios, and the effects on acquisition of target fading and target swap.

[34]The relevant IMO Model Course(s) and resolution MSC.64(67) may be of assistance in the preparation of courses.

[35]See relevant/appropriate performance standards adopted by the Organization.

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True and relative vectors and typical graphic representation of target information and danger areas

30 Thorough knowledge of true and relative vectors; derivation of targets' true courses and speeds, including:

.1 threat assessment, derivation of predicted closest point of approach and predicted time to closest point of approach from forward extrapolation of vectors, the use of graphic representation of danger areas;

.2 the effects of alterations of course and/or speed of own ship and/or targets on predicted closest point of approach and predicted time to closest point of approach and danger areas;

.3 the effects of incorrect vectors and danger areas; and

.4 the benefit of switching between true and relative vectors.

Information on past positions of targets being tracked

31 Knowledge of the derivation of past positions of targets being tracked, recognition of historic data as a means of indicating recent manoeuvring of targets and as a method of checking the validity of the ARPA's tracking.

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Practice

Setting up and maintaining displays

32 Ability to demonstrate:

.1 the correct starting procedure to obtain the optimum display of ARPA information;

.2 the selection of display presentation; stabilized relative-motion displays and true-motion displays;

.3 the correct adjustment of all variable radar display controls for optimum display of data;

.4 the selection, as appropriate, of required speed input to ARPA;

.5 the selection of ARPA plotting controls, manual/automatic acquisition, vector/graphic display of data;

.6 the selection of the timescale of vectors/graphics;

.7 the use of exclusion areas when automatic acquisition is employed by ARPA; and

.8 performance checks of radar, compass, speed input sensors and ARPA.

System operational tests

33 Ability to perform system checks and determine data accuracy of ARPA, including the trial manoeuvre facility, by checking against basic radar plot.

Obtaining information from the ARPA display

34 Demonstrate the ability to obtain information in both relative- and true-motion modes of display, including:

.1 the identification of critical echoes;

.2 the speed and direction of target's relative movement;

.3 the time to, and predicted range at, target's closest point of approach;

.4 the courses and speeds of targets;

.5 detecting course and speed changes of targets and the limitations of such information;

.6 the effect of changes in own ship's course or speed or both; and

.7 the operation of the trial manoeuvre facility.

Application of the International Regulations for Preventing Collisions at Sea, 1972, as amended

35 Analysis of potential collision situations from displayed information, determination and execution of action to avoid close-quarters situations in accordance with the International Regulations for Preventing Collisions at Sea, 1972, as amended, in force.

TRAINING AND ASSESSMENT IN THE OPERATIONAL USE OF ELECTRONIC CHART DISPLAY AND INFORMATION SYSTEMS (ECDIS)

Introduction

36 When simulators are being used for training or assessment in the operational use of Electronic Chart Display and Information Systems (ECDIS), the following interim guidance should be taken into consideration in any such training or assessment.

37 Training and assessment in the operational use of the ECDIS should:

.1 incorporate the use of ECDIS simulation equipment; and

.2 conform to standards not inferior to those given in paragraphs 38 to 65 below.

38 ECDIS simulation equipment should, in addition to meeting all applicable performance standards set out in section A-I/12 of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978, as amended, be capable of simulating navigational equipment and bridge operational controls which meet all applicable performance standards adopted by the Organization, incorporate facilities to generate soundings and:

.1 create a real-time operating environment, including navigation control and communications instruments and equipment

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appropriate to the navigation and watchkeeping tasks to be carried out and the manoeuvring skills to be assessed; and

.2 realistically simulate "own ship" characteristics in open-water conditions, as well as the effects of weather, tidal stream and currents.

39 Demonstrations of, and practice in, ECDIS use should be undertaken, where appropriate, through the use of simulators. Training exercises should preferably be undertaken in real time, in order to increase trainees' awareness of the hazards of the improper use of ECDIS. Accelerated timescale may be used only for demonstrations.

General

Goals of an ECDIS training programme

40 The ECDIS trainee should be able to:

.1 operate the ECDIS equipment, use the navigational functions of ECDIS, select and assess all relevant information and take proper action in the case of a malfunction;

.2 state the potential errors of displayed data and the usual errors of interpretation; and

.3 explain why ECDIS should not be relied upon as the sole reliable aid to navigation.

Theory and demonstration

41 As the safe use of ECDIS requires knowledge and understanding of the basic principles governing ECDIS data and their presentation rules as well as potential errors in displayed data and ECDIS-related limitations and potential dangers**,** a number of lectures covering the theoretical explanation should be provided. As far as possible, such lessons should be presented within a familiar context and make use of practical examples. They should be reinforced during simulator exercises.

42 For safe operation of ECDIS equipment and ECDIS-related information (use of the navigational functions of ECDIS, selection and assessment of all relevant information, becoming familiar with ECDIS man–machine interfacing), practical exercises and training on the ECDIS simulators should constitute the main content of the course.

43 For the definition of training objectives, a structure of activities should be defined. A detailed specification of learning objectives should be developed for each topic of this structure.

Simulator exercises

44 Exercises should be carried out on individual ECDIS simulators, or full-mission navigation simulators including ECDIS, to enable trainees to acquire the necessary practical skills. For real-time navigation exercises, navigation simulators are recommended to cover the complex navigation situation. The exercises should provide training in the use of the various scales, navigational modes, and display modes which are available, so that the trainees will be able to adapt the use of the equipment to the particular situation concerned.

45 The choice of exercises and scenarios is governed by the simulator facilities available. If one or more ECDIS workstations and a full-mission simulator are available, the workstations may primarily be used for basic exercises in the use of ECDIS facilities and for passage-planning exercises, whereas full-mission simulators may primarily be used for exercises related to passage-monitoring functions in real time, as realistic as possible in connection with the total workload of a navigational watch. The degree of complexity of exercises should increase throughout the training programme until the trainee has mastered all aspects of the learning subject.

46 Exercises should produce the greatest impression of realism. To achieve this, the scenarios should be located in a fictitious sea area. Situations, functions and actions for different learning objectives which occur in different sea areas can be integrated into one exercise and experienced in real time.

47 The main objective of simulator exercises is to ensure that trainees understand their responsibilities in the operational use of ECDIS in all safety-relevant aspects and are thoroughly familiar with the system and equipment used.

Principal types of ECDIS systems and their display characteristics

48 The trainee should gain knowledge of the principal types of ECDIS in use; their various display characteristics, data structure and an understanding of:

.1 differences between vector and raster charts;

.2 differences between ECDIS and ECS;

.3 differences between ECDIS and RCDS[36];

.4 characteristics of ECDIS and their different solutions; and

.5 characteristics of systems for special purposes (unusual situations/emergencies).

Risks of over-reliance on ECDIS

49 The training in ECDIS operational use should address:

.1 the limitations of ECDIS as a navigational tool;

.2 potential risk of improper functioning of the system;

.3 system limitations, including those of its sensors;

.4 hydrographic data inaccuracy; limitations of vector and raster electronic charts (ECDIS *vs* RCDS and ENC *vs* RNC); and

.5 potential risk of human errors.

[36]SN/Circ.207/Rev.1 – Differences between RCDS and ECDIS.

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Emphasis should be placed on the need to keep a proper look-out and to perform periodical checking, especially of the ship's position, by ECDIS-independent methods.

Detection of misrepresentation of information

50 Knowledge of the limitations of the equipment and detection of misrepresentation of information is essential for the safe use of ECDIS. The following factors should be emphasized during training:

.1 performance standards of the equipment;

.2 radar data representation on an electronic chart, elimination of discrepancy between the radar image and the electronic chart;

.3 possible projection discrepancies between an electronic and paper charts;

.4 possible scale discrepancies (overscaling and underscaling) in displaying an electronic chart and its original scale;

.5 effects of using different reference systems for positioning;

.6 effects of using different horizontal and vertical datums;

.7 effects of the motion of the ship in a seaway;

.8 ECDIS limitations in raster chart display mode;

.9 potential errors in the display of:

.9.1 the own ship's position;

.9.2 radar data and ARPA and AIS information;

.9.3 different geodetic coordinate systems; and

.10 verification of the results of manual or automatic data correction:

.10.1 comparison of chart data and radar picture; and

.10.2 checking the own ship's position by using the other independent position-fixing systems.

51 False interpretation of the data and proper action taken to avoid errors of interpretation should be explained. The implications of the following should be emphasized:

.1 ignoring overscaling of the display;

.2 uncritical acceptance of the own ship's position;

.3 confusion of display mode;

.4 confusion of chart scale;

.5 confusion of reference systems;

.6 different modes of presentation;

.7 different modes of vector stabilization;

.8 differences between true north and gyro north (radar);

.9 using the same data reference system;

.10 using the appropriate chart scale;

.11 using the best-suited sensor to the given situation and circumstances;

.12 entering the correct values of safety data:

.12.1 the own ship's safety contour,

.12.2 safety depth (safe water), and

.12.3 events; and

.13 proper use of all available data.

52 Appreciation that RCDS is only a navigational aid and that, when operating in the RCDS mode, the ECDIS equipment should be used together with an appropriate portfolio of up-to-date paper charts:

.1 appreciation of the differences in operation of RCDS mode as described in SN.1/Circ.207/Rev.1 "Differences between RCDS and ECDIS"; and

.2 ECDIS, in any mode, should be used in training with an appropriate portfolio of up-to-date charts.

Factors affecting system performance and accuracy

53 An elementary understanding should be attained of the principles of ECDIS, together with a full practical knowledge of:

.1 starting and setting up ECDIS; connecting data sensors: satellite and radio navigation system receivers, radar, gyro-compass, log, echo-sounder; accuracy and limitations of these sensors, including effects of measurement errors and ship's position accuracy, manoeuvring on the accuracy of course indicator's performance, compass error on the accuracy of course indication, shallow water on the accuracy of log performance, log correction on the accuracy of speed calculation, disturbance (sea state) on the accuracy of an echo-sounder performance; and

.2 the current performance standards for electronic chart display and information systems adopted by the Organization[37].

Practice

Setting up and maintaining display

54 Knowledge and skills should be attained in:

.1 the correct starting procedure to obtain the optimum display of ECDIS information;

[37]See relevant/appropriate performance standards adopted by the Organization

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.2 the selection of display presentation (standard display, display base, all other information displayed individually on demand);

.3 the correct adjustment of all variable radar/ARPA display controls for optimum display of data;

.4 the selection of convenient configuration;

.5 the selection, as appropriate, of required speed input to ECDIS;

.6 the selection of the timescale of vectors; and

.7 performance checks of position, radar/ARPA, compass, speed input sensors and ECDIS.

Operational use of electronic charts

55 Knowledge and skills should be attained in:

.1 the main characteristics of the display of ECDIS data and selecting proper information for navigational tasks;

.2 the automatic functions required for monitoring ship's safety, such as display of position, heading/gyro course, speed, safety values and time;

.3 the manual functions (by the cursor, electronic bearing line, range rings);

.4 selecting and modification of electronic chart content;

.5 scaling (including underscaling and overscaling);

.6 zooming;

.7 setting of the own ship's safety data;

.8 using a daytime or night-time display mode;

.9 reading all chart symbols and abbreviations;

.10 using different kinds of cursors and electronic bars for obtaining navigational data;

.11 viewing an area in different directions and returning to the ship's position;

.12 finding the necessary area, using geographical coordinates;

.13 displaying indispensable data layers appropriate to a navigational situation;

.14 selecting appropriate and unambiguous data (position, course, speed, etc.);

.15 entering the mariner's notes;

.16 using north-up orientation presentation and other kinds of orientation; and

.17 using true- and relative-motion modes.

Route planning

56 Knowledge and skills should be attained in:

.1 loading the ship's characteristics into ECDIS;

.2 selection of a sea area for route planning:

.2.1 reviewing required waters for the sea passage, and

.2.2 changing over of chart scale;

.3 verifying that proper and updated charts are available;

.4 route planning on a display by means of ECDIS, using the graphic editor, taking into consideration rhumb line and great-circle sailing:

.4.1 using the ECDIS database for obtaining navigational, hydrometeorological and other data;

.4.2 taking into consideration turning radius and wheel-over points/lines when they are expressed on chart scale;

.4.3 marking dangerous depths and areas and exhibiting guarding depth contours;

.4.4 marking waypoints with the crossing depth contours and critical cross-track deviations, as well as by adding, replacing and erasing of waypoints;

.4.5 taking into consideration safe speed;

.4.6 checking pre-planned route for navigational safety; and

.4.7 generating alarms and warnings;

.5 route planning with calculation in the table format, including:

.5.1 waypoints selection;

.5.2 recalling the waypoints list;

.5.3 planning notes;

.5.4 adjustment of a planned route;

.5.5 checking a pre-planned route for navigational safety;

.5.6 alternative route planning;

.5.7 saving planned routes, loading and unloading or deleting routes;

.5.8 making a graphic copy of the monitor screen and printing a route;

.5.9 editing and modification of the planned route;

.5.10 setting of safety values according to the size and manoeuvring parameters of the vessel;

.5.11 back-route planning; and

.5.12 connecting several routes.

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Route monitoring

57 Knowledge and skills should be attained in:

.1 using independent data to control ship's position or using alternative systems within ECDIS;

.2 using the look-ahead function:

.2.1 changing charts and their scales;

.2.2 reviewing navigational charts;

.2.3 vector time selecting;

.2.4 predicting the ship's position for some time interval;

.2.5 changing the pre-planned route (route modification);

.2.6 entering independent data for the calculation of wind drift and current allowance;

.2.7 reacting properly to the alarm;

.2.8 entering corrections for discrepancies of the geodetic datum;

.2.9 displaying time markers on a ship's route;

.2.10 entering ship's position manually; and

.2.11 measuring coordinates, course, bearings and distances on a chart.

Alarm handling

58 Knowledge and ability to interpret and react properly to all kinds of systems, such as navigational sensors, indicators, data and charts alarms and indicator warnings, including, switching the sound and visual alarm signalling system, should be attained in case of:

.1 absence of the next chart in the ECDIS database;

.2 crossing a safety contour;

.3 exceeding cross-track limits;

.4 deviation from planned route;

.5 approaching a waypoint;

.6 approaching a critical point;

.7 discrepancy between calculated and actual time of arrival to a waypoint;

.8 information on under-scaling or over-scaling;

.9 approaching an isolated navigational danger or danger area;

.10 crossing a specified area;

.11 selecting a different geodetic datum;

.12 approaching other ships;

.13 watch termination;

.14 switching timer;

.15 system test failure;

.16 malfunctioning of the positioning system used in ECDIS;

.17 failure of dead-reckoning; and

.18 inability to fix vessel's position using the navigational system.

Manual correction of a ship's position and motion parameters

59 Knowledge and skills should be attained in manually correcting:

.1 the ship's position in dead-reckoning mode, when the satellite and radio navigation system receiver is switched off;

.2 the ship's position, when automatically obtained coordinates are inaccurate; and

.3 course and speed values.

Records in the ship's log

60 Knowledge and skills should be attained in:

.1 automatic voyage recording;

.2 reconstruction of past track, taking into account:

.2.1 recording media;

.2.2 recording intervals;

.2.3 verification of database in use;

.3 viewing records in the electronic ship's log;

.4 instant recording in the electronic ship's log;

.5 changing ship's time;

.6 entering the additional data;

.7 printing the content of the electronic ship's log;

.8 setting up the automatic record time intervals;

.9 composition of voyage data and reporting; and

.10 interface with a voyage data recorder (VDR).

Chart updating

61 Knowledge and skills should be attained in:

.1 performing manual updating of electronic charts. Special attention should be paid to reference-ellipsoid conformity and to conformity of the measurement units used on a chart and in the correction text;

.2 performing semi-automatic updating of electronic charts, using the data obtained on electronic media in the electronic chart format; and

.3 performing automatic updating of electronic charts, using update files obtained via electronic data communication lines.

In the scenarios where non-updated data are employed to create a critical situation, trainees should be required to perform *ad hoc* updating of the chart.

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Operational use of ECDIS where radar/ARPA is connected

62 Knowledge and skills should be attained in:

.1 connecting ARPA to ECDIS;

.2 indicating target's speed vectors;

.3 indicating target's tracks;

.4 archiving target's tracks;

.5 viewing the table of the targets;

.6 checking alignment of radar overlay with charted geographic features;

.7 simulating one or more manoeuvres;

.8 corrections to own ship's position, using a reference point captured by ARPA; and

.9 corrections using the ARPA's cursor and electronic bar.

See also section B-I/12, Guidance regarding the use of simulators (pertaining to radar and ARPA), especially paragraphs 17 to 19 and 36 to 38.

Operational use of ECDIS where AIS is connected

63 Knowledge and skills should be attained in:

.1 interface with AIS;

.2 interpretation of AIS data;

.3 indicating target's speed vectors;

.4 indicating target's tracks; and

.5 archiving target's tracks.

Operational warnings, their benefits and limitations

64 Trainees should gain an appreciation of the uses, benefits and limitations of ECDIS operational warnings and their correct setting, where applicable, to avoid spurious interference.

System operational tests

65 Knowledge and skills should be attained in:

.1 methods of testing for malfunctions of ECDIS, including functional self-testing;

.2 precautions to be taken after a malfunction occurs; and

.3 adequate back-up arrangements (take over and navigate using the back-up system).

Debriefing exercise

66 The instructor should analyse the results of all exercises completed by all trainees and print them out. The time spent on the debriefing should occupy between 10% and 15% of the total time used for simulator exercises.

RECOMMENDED PERFORMANCE STANDARDS FOR NON-MANDATORY TYPES OF SIMULATION

67 Performance standards for non-mandatory simulation equipment used for training and/or assessment of competence or demonstration of skills are set out hereunder. Such forms of simulation include, but are not limited to, the following types:

.1 navigation and watchkeeping;

.2 ship handling and manoeuvring;

.3 cargo handling and stowage;

.4 reporting and radiocommunications; and

.5 main and auxiliary machinery operation.

Navigation and watchkeeping simulation

68 Navigation and watchkeeping simulation equipment should, in addition to meeting all applicable performance standards set out in section A-I/12, be capable of simulating navigational equipment and bridge operational controls which meet all applicable performance standards adopted by the Organization,[38] incorporate facilities to generate soundings and:

.1 create a real-time operating environment, including navigation control and communications instruments and equipment appropriate to the navigation and watchkeeping tasks to be carried out and the manoeuvring skills to be assessed;

.2 provide a realistic visual scenario by day or by night, including variable visibility, or by night only as seen from the bridge, with a minimum horizontal field of view available to the trainee in viewing sectors appropriate to the navigation and watchkeeping tasks and objectives;

.3 realistically simulate "own ship" dynamics in open-water conditions, including the effects of weather, tidal stream, currents and interaction with other ships; and

.4 realistically simulate VTS communication procedures between ship and shore.

Ship handling and manoeuvring simulation

69 In addition to meeting the performance standards set out in paragraph 37, ship handling simulation equipment should:

.1 provide a realistic visual scenario as seen from the bridge, by day and by night, with variable visibility throughout a minimum horizontal field of view available to the trainee in viewing sectors appropriate to the ship handling and manoeuvring training tasks and objectives;[39] and

.2 realistically simulate "own ship" dynamics in restricted waterways, including shallow-water and bank effects.

38See relevant/appropriate performance standards adopted by the Organization
39The relevant IMO Model Course(s) may be of assistance in the preparation of courses.

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70 Where manned scale models are used to provide ship handling and manoeuvring simulation, in addition to the performance standards set out in paragraphs 68.3 and 69.2, such equipment should:

.1 incorporate scaling factors which present accurately the dimensions, areas, volume and displacement, speed, time and rate of turn of a real ship; and

.2 incorporate controls for the rudder and engines, to the correct timescale.

Cargo handling and stowage simulation

71 Cargo handling simulation equipment should be capable of simulating cargo handling and control equipment which meets all applicable performance standards adopted by the Organization,[40] and incorporate facilities to:

.1 create an effective operational environment, including a cargo-control station with such instrumentation as may be appropriate to the particular type of cargo system modelled;

.2 model loading and unloading functions and stability and stress data appropriate to the cargo-handling tasks to be carried out and the skills to be assessed; and

.3 simulate loading, unloading, ballasting and deballasting operations and appropriate associated calculations for stability, trim, list, longitudinal strength, torsional stress and damage stability.[41]

GMDSS communication simulation

72 GMDSS communication simulation equipment should be capable of simulating GMDSS communication equipment which meets all applicable performance standards adopted by the Organization[42], and incorporate facilities to:

.1 simulate the operation of VHF, VHF-DSC, NAVTEX, EPIRB and watch receiver equipment as required for the Restricted Operator's Certificate (ROC);

.2 simulate the operation of INMARSAT-A, -B and -C ship earth stations, MF/HF NBDP, MF/HF-DSC, VHF, VHF-DSC, NAVTEX, EPIRB and watch receiver equipment as required for the General Operator's Certificate (GOC);

.3 provide voice communication with background noise;

.4 provide a printed text communication facility; and

.5 create a real-time operating environment, consisting of an integrated system, incorporating at least one instructor/assessor station and at least two GMDSS ship or shore stations.

Main and auxiliary machinery operation simulation

73 Engine-room simulation equipment should be capable of simulating a main and auxiliary machinery system and incorporate facilities to:

.1 create a real-time environment for seagoing and harbour operations, with communication devices and simulation of appropriate main and auxiliary propulsion machinery equipment and control panels;

.2 simulate relevant sub-systems that should include, but not be restricted to, boiler, steering gear, electrical power general and distribution systems, including emergency power supplies, and fuel, cooling water, refrigeration, bilge and ballast systems;

.3 monitor and evaluate engine performance and remote sensing systems;

.4 simulate machinery malfunctions;

.5 allow for the variable external conditions to be changed so as to influence the simulated operations: weather, ship's draught, seawater and air temperatures;

.6 allow for instructor-controlled external conditions to be changed: deck steam, accommodation steam, deck air, ice conditions, deck cranes, heavy power, bow thrust, ship load;

.7 allow for instructor-controlled simulator dynamics to be changed: emergency run, process responses, ship responses; and

.8 provide a facility to isolate certain processes, such as speed, electrical system, diesel oil system, lubricating oil system, heavy oil system, seawater system, steam system, exhaust boiler and turbo generator, for performing specific training tasks.[43]

Section B-I/13

Guidance regarding the conduct of trials

(No provisions)

Section B-I/14

Guidance regarding responsibilities of companies and recommended responsibilities of masters and crew members

Companies

1 Companies should provide ship-specific introductory programmes aimed at assisting newly employed seafarers to familiarize themselves with all procedures and equipment relating to their areas of responsibility. Companies should also ensure that:

.1 all seafarers on a ship fitted with free-fall lifeboats should receive familiarization training in boarding and launching procedures for such lifeboats;

[40]No standards have as yet been adopted by the Organization
[41]The relevant IMO Model Course(s) may be of assistance in the preparation of courses.
[42]See relevant/appropriate performance standards adopted by the Organization
[43]The relevant IMO Model Course(s) may be of assistance in the preparation of courses.

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.2 prior to joining a ship, seafarers assigned as operating crew of free-fall lifeboats should have undergone appropriate training in boarding, launching and recovering of such lifeboats, including participation on at least one occasion in a free-fall launch; and

.3 personnel who may be required to operate the GMDSS equipment receive GMDSS familiarization training, on joining the ship, and at appropriate intervals thereafter.

2 The familiarization training required by paragraph 3 of section A-I/14 should at least ensure attainment of the abilities that are appropriate to the capacity to be filled and the duties and responsibilities to be taken up, as follows:

Design and operational limitations

.1 Ability to properly understand and observe any operational limitations imposed on the ship, and to understand and apply performance restrictions, including speed limitations in adverse weather, which are intended to maintain the safety of life, ship and cargo.

Procedures for opening, closing and securing hull openings

.2 Ability to apply properly the procedures established for the ship regarding the opening, closing and securing of bow, stern, and side doors and ramps and to correctly operate the related systems.

Legislation, codes and agreements affecting ro-ro passenger ships

.3 Ability to understand and apply international and national requirements for ro-ro passenger ships relevant to the ship concerned and the duties to be performed.

Stability and stress requirements and limitations

.4 Ability to take proper account of stress limitations for sensitive parts of the ship, such as bow doors and other closing devices that maintain watertight integrity, and of special stability considerations which may affect the safety of ro-ro passenger ships.

Procedures for the maintenance of special equipment on ro-ro passenger ships

.5 Ability to apply properly the shipboard procedures for maintenance of equipment peculiar to ro-ro passenger ships such as bow, stern and side doors and ramps, scuppers and associated systems.

Loading and cargo securing manuals and calculators

.6 Ability to make proper use of the loading and securing manuals in respect of all types of vehicles and rail cars where applicable, and to calculate and apply stress limitations for vehicle decks.

Dangerous cargo areas

.7 Ability to ensure proper observance of special precautions and limitations applying to designated dangerous cargo areas.

Emergency procedures

.8 Ability to ensure proper application of any special procedures to:

.8.1 prevent or reduce the ingress of water on vehicle decks;

.8.2 remove water from vehicle decks; and

.8.3 minimize effects of water on vehicle decks.

Master

3 The master should take all steps necessary to implement any company instructions issued in accordance with section A-I/14. Such steps should include:

.1 identifying all seafarers who are newly employed on board the ship before they are assigned to any duties;

.2 providing the opportunity for all newly arrived seafarers to:

.2.1 visit the spaces in which their primary duties will be performed;

.2.2 get acquainted with the location, controls and display features of equipment they will be operating or using;

.2.3 activate the equipment when possible, and perform functions, using the controls on the equipment, and

.2.4 observe and ask questions of someone who is already familiar with the equipment, procedures and other arrangements, and who can communicate information in a language which the seafarer understands; and

.3 providing for a suitable period of supervision when there is any doubt that a newly employed seafarer is familiar with the shipboard equipment, operating procedures and other arrangements needed for the proper performance of his or her duties.

Crew members

4 Seafarers who are newly assigned to a ship should take full advantage of every opportunity provided to become familiar with the shipboard equipment, operating procedures and other arrangements needed for the proper performance of their duties. Immediately upon arriving on board for the first time, each seafarer has the responsibility to become acquainted with the ship's working environment, particularly with respect to new or unfamiliar equipment, procedures or arrangements.

5 Seafarers who do not promptly attain the level of familiarity required for performing their duties have the obligation to bring this fact to the attention of their

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supervisor or to the attention of the crew member designated in accordance with section A-I/14, paragraph 2.2, and to identify any equipment, procedure or arrangement which remains unfamiliar.

Section B-I/15

Guidance regarding transitional provisions

(No provisions)

CHAPTER II

Guidance regarding the master and the deck department

Section B-II/1

Guidance regarding the certification of officers in charge of a navigational watch on ships of 500 gross tonnage or more

Training

1 Every candidate for certification as officer in charge of a navigational watch should have completed a planned and structured programme of training designed to assist a prospective officer to achieve the standard of competence in accordance with table A-II/1.

2 The structure of the programme of training should be set out in a training plan which clearly expresses, for all parties involved, the objectives of each stage of training on board and ashore. It is important that the prospective officer, tutors, ships' staff and company personnel are clear about the competences which are to be achieved at the end of the programme and how they are to be achieved through a combination of education, training and practical experience on board and ashore.

3 The mandatory periods of seagoing service are of prime importance in learning the job of being a ship's officer and in achieving the overall standard of competence required. Properly planned and structured, the periods of seagoing service will enable prospective officers to acquire and practice skills and will offer opportunities for competences achieved to be demonstrated and assessed.

4 Where the seagoing service forms part of an approved training programme, the following principles should be observed:

.1 The programme of onboard training should be an integral part of the overall training plan.

.2 The programme of onboard training should be managed and coordinated by the company which manages the ship on which the seagoing service is to be performed.

.3 The prospective officer should be provided with a training record book[44] to enable a comprehensive record of practical training and experience at sea to be maintained. The training record book should be laid out in such a way that it can provide detailed information about the tasks and duties which should be undertaken and the progress towards their completion. Duly completed, the record book will provide unique evidence that a structured programme of onboard training has been completed which can be taken into account in the process of evaluating competence for the issue of a certificate.

.4 At all times, the prospective officer should be aware of two identifiable individuals who are immediately responsible for the management of the programme of onboard training. The first of these is a qualified seagoing officer, referred to as the "shipboard training officer", who, under the authority of the master, should organize and supervise the programme of training for the duration of each voyage. The second should be a person nominated by the company, referred to as the "company training officer", who should have an overall responsibility for the training programme and for coordination with colleges and training institutions.

.5 The company should ensure that appropriate periods are set aside for completion of the programme of onboard training within the normal operational requirements of the ship.

Roles and responsibilities

5 The following section summarizes the roles and responsibilities of those individuals involved in organizing and conducting onboard training:

.1 The company training officer should be responsible for:

.1.1 overall administration of the programme of training;

.1.2 monitoring the progress of the prospective officer throughout; and

.1.3 issuing guidance as required and ensuring that all concerned with the training programme play their parts.

.2 The shipboard training officer should be responsible for:

.2.1 organizing the programme of practical training at sea;

.2.2 ensuring, in a supervisory capacity, that the training record book is properly maintained and that all other requirements are fulfilled; and

.2.3 making sure, so far as is practicable, that the time the prospective officer spends on board is as useful as possible in terms of training and experience, and is consistent with the objectives of the training programme, the progress of training and the operational constraints of the ship.

[44]The relevant IMO Model Course(s) and a similar document produced by the International Shipping Federation may be of assistance in the preparation of training record books.

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.3 The master's responsibilities should be to:

.3.1 provide the link between the shipboard training officer and the company training officer ashore;

.3.2 fulfil the role of continuity if the shipboard training officer is relieved during the voyage; and

.3.3 ensure that all concerned are effectively carrying out the onboard training programme.

.4 The prospective officer's responsibilities should be to:

.4.1 follow diligently the programme of training as laid down;

.4.2 make the most of the opportunities presented, be they in or outside working hours; and

.4.3 keep the training record book up to date and ensure that it is available at all times for scrutiny.

Induction

6 At the beginning of the programme and at the start of each voyage on a different ship, prospective officers should be given full information and guidance as to what is expected of them and how the training programme is to be organized. Induction presents the opportunity to brief prospective officers about important aspects of the tasks they will be undertaking, with particular regard to safe working practices and protection of the marine environment.

Shipboard programme of training

7 The training record book should contain, amongst other things, a number of training tasks or duties which should be undertaken as part of the approved programme of onboard training. Such tasks and duties should relate to at least the following areas:

.1 steering systems;

.2 general seamanship;

.3 mooring, anchoring and port operations;

.4 life-saving and fire-fighting appliances;

.5 systems and equipment;

.6 cargo work;

.7 bridge work and watchkeeping; and

.8 engine-room familiarization.

8 It is extremely important that the prospective officer is given adequate opportunity for supervised bridge watchkeeping experience, particularly in the later stages of the onboard training programme.

9 The performance of the prospective officers in each of the tasks and duties itemized in the training record book should be initialled by a qualified officer when, in the opinion of the officer concerned, a prospective officer has achieved a satisfactory standard of proficiency. It is important to appreciate that a prospective officer may need to demonstrate ability on several occasions before a qualified officer is confident that a satisfactory standard has been achieved.

Monitoring and reviewing

10 Guidance and reviewing are essential to ensure that prospective officers are fully aware of the progress they are making and to enable them to join in decisions about their future programme. To be effective, reviews should be linked to information gained through the training record book and other sources as appropriate. The training record book should be scrutinized and endorsed formally by the master and the shipboard training officer at the beginning, during and at the end of each voyage. The training record book should also be examined and endorsed by the company training officer between voyages.

Assessment of abilities and skills in navigational watchkeeping

11 A candidate for certification who is required to have received special training and assessment of abilities and skills in navigational watchkeeping duties should be required to provide evidence, through demonstration either on a simulator or on board ship as part of an approved programme of shipboard training, that the skills and ability to perform as officer in charge of a navigational watch in at least the following areas have been acquired, namely to:

.1 prepare for and conduct a passage, including:

.1.1 interpreting and applying information obtained from charts;

.1.2 fixing position in coastal waters;

.1.3 applying basic information obtained from tide tables and other nautical publications;

.1.4 checking and operating bridge equipment;

.1.5 checking magnetic and gyro-compasses;

.1.6 assessing available meteorological information;

.1.7 using celestial bodies to fix position;

.1.8 determining the compass error by celestial and terrestrial means; and

.1.9 performing calculations for sailings of up to 24 hours;

.2 operate and apply information obtained from electronic navigation systems;

.3 operate radar, ARPA and ECDIS and apply radar information for navigation and collision avoidance;

.4 operate propulsion and steering systems to control heading and speed;

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.5 implement navigational watch routines and procedures;

.6 implement the manoeuvres required for rescue of persons overboard;

.7 initiate action to be taken in the event of an imminent emergency situation (e.g., fire, collision, stranding) and action in the immediate aftermath of an emergency;

.8 initiate action to be taken in event of malfunction or failure of major items of equipment or plant (e.g., steering gear, power, navigation systems);

.9 conduct radiocommunications and visual and sound signalling in normal and emergency situations; and

.10 monitor and operate safety and alarm systems, including internal communications.

12 Assessment of abilities and skills in navigational watchkeeping should:

.1 be made against the criteria for evaluating competence for the function of navigation set out in table A-II/1;

.2 ensure that the candidate performs navigational watchkeeping duties in accordance with the Principles to be observed in keeping a safe navigational watch (section A-VIII/2, part 4-1) and the Guidance on keeping a navigational watch (section B-VIII/2, part 4-1).

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Evaluation of competence

13 The standard of competence to be achieved for certification as officer in charge of a navigational watch is set out in table A-II/1. The standard specifies the knowledge and skill required and the application of that knowledge and skill to the standard of performance required on board ship.

14 Scope of knowledge is implicit in the concept of competence. Assessment of competence should, therefore, encompass more than the immediate technical requirements of the job, the skills and tasks to be performed, and should reflect the broader aspects needed to meet the full expectations of competent performance as a ship's officer. This includes relevant knowledge, theory, principles and cognitive skills which, to varying degrees, underpin all levels of competence. It also encompasses proficiency in what to do, how and when to do it, and why it should be done. Properly applied, this will help to ensure that a candidate can:

.1 work competently in different ships and across a range of circumstances;

.2 anticipate, prepare for and deal with contingencies; and

.3 adapt to new and changing requirements.

15 The criteria for evaluating competence (column 4 of table A-II/1) identify, primarily in outcome terms, the essential aspects of competent performance. They are expressed so that assessment of a candidate's performance can be made against them and should be adequately documented in the training record book.

16 Evaluation of competence is the process of:

.1 collecting sufficient valid and reliable evidence about the candidate's knowledge, understanding and proficiency to accomplish the tasks, duties and responsibilities listed in column 1 of table A-II/1; and

.2 judging that evidence against the criteria specified in the standard.

17 The arrangements for evaluating competence should be designed to take account of different methods of assessment which can provide different types of evidence about candidates' competence, e.g.:

.1 direct observation of work activities (including seagoing service);

.2 skills/proficiency/competency tests;

.3 projects and assignments;

.4 evidence from previous experience; and

.5 written, oral and computer-based questioning techniques[45].

18 One or more of the first four methods listed should almost invariably be used to provide evidence of ability, in addition to appropriate questioning techniques to provide evidence of supporting knowledge and understanding.

Training in celestial navigation

19 The following areas summarize the recommended training in celestial navigation:

.1 correctly adjust sextant for adjustable errors;

.2 determine corrected reading of the sextant altitude of celestial bodies;

.3 accurate sight reduction computation, using a preferred method;

.4 calculate the time of meridian altitude of the sun;

.5 calculate latitude by Polaris or by meridian altitude of the sun;

.6 accurate plotting of position line(s) and position fixing;

.7 determine time of visible rising/setting sun by a preferred method;

.8 identify and select the most suitable celestial bodies in the twilight period;

.9 determine compass error by azimuth or by amplitude, using a preferred method;

.10 nautical astronomy as required to support the required competence in paragraphs 19.1 to 19.9 above.

[45]The relevant IMO Model Course(s) may be of assistance in the preparation of courses.

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20 Training in celestial navigation may include the use of electronic nautical almanac and celestial navigation calculation software.

Section B-II/2

Guidance regarding the certification of masters and chief mates on ships of 500 gross tonnage or more

(See section B-II/1 for guidance.)

Section B-II/3

Guidance regarding the certification of officers in charge of a navigational watch and of masters on ships of less than 500 gross tonnage

(See section B-II/1 for guidance.)

Section B-II/4

Guidance regarding the training and certification of ratings forming part of a navigational watch

1 In addition to the requirements stated in table A-II/4 of this Code, Parties are encouraged, for safety reasons, to include the following subjects in the training of ratings forming part of a navigational watch:

.1 a basic knowledge of the International Regulations for Preventing Collisions at Sea, 1972, as amended;

.2 rigging a pilot ladder;

.3 an understanding of wheel orders given by pilots in English;

.4 training for proficiency in survival craft and rescue boats;

.5 support duties when berthing and unberthing and during towing operations;

.6 a basic knowledge of anchoring;

.7 a basic knowledge of dangerous cargoes;

.8 a basic knowledge of stowage procedures and arrangements for bringing stores on board; and

.9 a basic knowledge of deck maintenance and of tools used on deck.

Section B-II/5

Guidance regarding the certification of ratings as able seafarer deck

Onboard training should be documented in an approved training record book.

CHAPTER III

Guidance regarding the engine department

Section B-III/1

Guidance regarding the certification of officers in charge of an engineering watch in a manned engine-room or as designated duty engineers in a periodically unmanned engine-room

1 In table A-III/1, the tools referred to should include hand tools, common measuring equipment, centre lathes, drilling machines, welding equipment and milling machines as appropriate.

2 Training in workshop skills ashore can be carried out in a training institution or approved workshop.

3 Onboard training should be adequately documented in the training record book by qualified assessors.

Section B-III/2

Guidance regarding the certification of chief engineer officers and second engineer officers of ships powered by main propulsion machinery of 3,000 kW propulsion power or more

(No provisions)

Guidance regarding training of engineering personnel having management responsibilities for the operation and safety of electrical power plant above 1,000 volts

1 Training of engineering personnel having management responsibilities for the operation and safety of electrical power plant more than 1,000 V should at least include:

.1 the functional, operational and safety requirements for a marine high-voltage system;

.2 assignment of suitably qualified personnel to carry out maintenance and repair of high-voltage switchgear of various types;

.3 taking remedial action necessary during faults in a high-voltage system;

.4 producing a switching strategy for isolating components of a high-voltage system;

.5 selecting suitable apparatus for isolation and testing of high-voltage equipment;

.6 carrying out a switching and isolation procedure on a marine high-voltage system, complete with safety documentation; and

.7 performing tests of insulation resistance and polarization index on high-voltage equipment.

Section B-III/3

Guidance regarding the certification of chief engineer officers and second engineer officers of ships powered by main propulsion machinery between 750 kW and 3,000 kW propulsion power

(No provisions)

Section B-III/4

Guidance regarding the training and certification of ratings forming part of a watch in a manned engine-room or designated to perform duties in a periodically unmanned engine-room

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1 In addition to the requirements stated in section A-III/4 of this Code, Parties are encouraged, for safety reasons, to include the following items in the training of ratings forming part of an engineering watch:

.1 a basic knowledge of routine pumping operations, such as bilge, ballast and cargo pumping systems;

.2 a basic knowledge of electrical installations and the associated dangers;

.3 a basic knowledge of maintenance and repair of machinery and tools used in the engine-room; and

.4 a basic knowledge of stowage and arrangements for bringing stores on board.

Section B-III/5

Guidance regarding the certification of ratings as able seafarer engine

Onboard training should be documented in an approved training record book.

Section B-III/6

Guidance regarding training and certification for electro-technical officers

In addition to the requirements stated in table A-III/6 of this Code, Parties are encouraged to take into account resolution A.702(17) concerning radio maintenance guidelines for the global maritime distress and safety system within their training programmes.

Section B-III/7

Guidance regarding training and certification for electro-technical ratings

(No provisions)

CHAPTER IV

Guidance regarding radiocommunication and radio operators

Section B-IV/1

Guidance regarding the application of chapter IV

(No provisions)

Section B-IV/2

Guidance regarding training and certification of GMDSS radio operators

TRAINING RELATED TO THE FIRST-CLASS RADIOELECTRONIC CERTIFICATE

General

1 The requirements of medical fitness, especially as to hearing, eyesight and speech, should be met by the candidate before training is commenced.

2 The training should be relevant to the provisions of the STCW Convention, the provisions of the Radio Regulations annexed to the International Telecommunication Convention (Radio Regulations) and the provisions of the International Convention for the Safety of Life at Sea (SOLAS Convention) currently in force, with particular attention given to provisions for the global maritime distress and safety system (GMDSS). In developing training requirements, account should be taken of at least the knowledge and training given in paragraphs 3 to 14 hereunder.

Theory

3 Knowledge of the general principles and basic factors necessary for safe and efficient use of all sub-systems and equipment required in the GMDSS, sufficient to support the practical training provisions given in paragraph 13.

4 Knowledge of the use, operation and service areas of GMDSS sub-systems, including satellite system characteristics, navigational and meteorological warning systems and selection of appropriate communication circuits.

5 Knowledge of the principles of electricity and the theory of radio and electronics sufficient to meet the provisions given in paragraphs 6 to 10 below.

6 Theoretical knowledge of GMDSS radiocommunication equipment, including narrow-band direct-printing telegraphy and radiotelephone transmitters and receivers, digital selective calling equipment, ship earth stations, emergency position-indicating radio beacons (EPIRBs), marine antenna systems, radio equipment for survival craft together with all auxiliary items, including power supplies, as well as general knowledge of the principles of other equipment generally used for radionavigation, with particular reference to maintaining the equipment in service.

7 Knowledge of factors that affect system reliability, availability, maintenance procedures and proper use of test equipment.

8 Knowledge of microprocessors and fault diagnosis in systems using microprocessors.

9 Knowledge of control systems in the GMDSS radio equipment, including testing and analysis.

10 Knowledge of the use of computer software for the GMDSS radio equipment and methods for correcting faults caused by loss of software control of the equipment.

Regulations and documentation

11 Knowledge of:

.1 the SOLAS Convention and the Radio Regulations, with particular emphasis on:

.1.1 distress, urgency and safety radiocommunications;

.1.2 avoiding harmful interference, particularly with distress and safety traffic; and

.1.3 prevention of unauthorized transmissions;

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.2 other documents relating to operational and communication procedures for distress, safety and public correspondence services, including charges, navigational warnings, and weather broadcasts in the Maritime Mobile Service and the Maritime Mobile Satellite Service; and

.3 use of the International Code of Signals and the IMO Standard Marine Communication Phrases.

Watchkeeping and procedures

12 Knowledge of and training in:

.1 communication procedures and discipline to prevent harmful interference in GMDSS sub-systems;

.2 procedures for using propagation-prediction information to establish optimum frequencies for communications;

.3 radiocommunication watchkeeping relevant to all GMDSS sub-systems, exchange of radiocommunication traffic, particularly concerning distress, urgency and safety procedures, and radio records;

.4 use of the international phonetic alphabet;

.5 monitoring a distress frequency while simultaneously monitoring or working on at least one other frequency;

.6 ship reporting systems and procedures;

.7 radiocommunication procedures of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual;

.8 radio medical systems and procedures; and

.9 causes of false distress alerts and means to avoid them[46].

Practical

13 Practical training, supported by appropriate laboratory work, should be given in:

.1 correct and efficient operation of all GMDSS sub-systems and equipment under normal propagation conditions and under typical interference conditions;

.2 safe operation of all the GMDSS communication equipment and ancillary devices, including safety precautions;

.3 adequate and accurate keyboard skills for the satisfactory exchange of communications;

.4 operational techniques for:

.4.1 receiver and transmitter adjustment for the appropriate mode of operation, including digital selective calling and direct-printing telegraphy;

.4.2 antenna adjustment and realignment, as appropriate;

.4.3 use of radio life-saving appliances; and

.4.4 use of emergency position-indicating radio beacons (EPIRBs);

.5 antenna rigging, repair and maintenance, as appropriate;

.6 reading and understanding pictorial, logic and circuit diagrams;

.7 use and care of those tools and test instruments necessary to carry out at-sea electronic maintenance;

.8 manual soldering and desoldering techniques, including those involving semi-conductor devices and modern circuits, and the ability to distinguish whether the circuit is suitable to be manually soldered or desoldered;

.9 tracing and repair of faults to component level, where practicable, and to board/module level in other cases;

.10 recognition and correction of conditions contributing to the fault occurring;

.11 maintenance procedures, both preventive and corrective, for all GMDSS communication equipment and radionavigation equipment; and

.12 methods of alleviating electrical and electromagnetic interference such as bonding, shielding and bypassing.

Miscellaneous

14 Knowledge of and/or training in:

.1 the English language, both written and spoken, for the satisfactory exchange of communications relevant to the safety of life at sea;

.2 world geography, especially the principal shipping routes, services of rescue coordination centres (RCCs) and related communication routes;

.3 survival at sea, the operation of lifeboats, rescue boats, liferafts, buoyant apparatus and their equipment, with special reference to radio life-saving appliances;

.4 fire prevention and fire fighting, with particular reference to the radio installation;

.5 preventive measures for the safety of ship and personnel in connection with hazards related to radio equipment, including electrical, radiation, chemical and mechanical hazards;

.6 first aid, including heart-respiration revival techniques; and

.7 coordinated universal time (UTC), global time zones and the international date line.

[46]See COM/Circ.127 – Guidelines for avoiding false distress alerts.

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TRAINING RELATED TO THE SECOND-CLASS RADIOELECTRONIC CERTIFICATE

General

15 The requirements of medical fitness, especially as to hearing, eyesight and speech, should be met by the candidate before training is commenced.

16 The training should be relevant to the provisions of the STCW Convention and the SOLAS Convention currently in force, with particular attention given to provisions for the global maritime distress and safety system (GMDSS). In developing training requirements, account should be taken of at least the knowledge and training given in paragraphs 17 to 28 hereunder[47].

Theory

17 Knowledge of the general principles and basic factors necessary for safe and efficient use of all sub-systems and equipment required in the GMDSS, sufficient to support the practical training provisions given in paragraph 27 below.

18 Knowledge of the use, operation and service areas of GMDSS sub-systems, including satellite system characteristics, navigational and meteorological warning systems and selection of appropriate communication circuits.

19 Knowledge of the principles of electricity and the theory of radio and electronics sufficient to meet the provisions given in paragraphs 20 to 24 below.

20 General theoretical knowledge of GMDSS radiocommunication equipment, including narrow-band direct-printing telegraph and radiotelephone transmitters and receivers, digital selective calling equipment, ship earth stations, emergency position-indicating radio beacons (EPIRBs), marine antenna systems, radio equipment for survival craft together with all auxiliary items, including power supplies, as well as general knowledge of other equipment generally used for radionavigation, with particular reference to maintaining the equipment in service.

21 General knowledge of factors that affect system reliability, availability, maintenance procedures and proper use of test equipment.

22 General knowledge of microprocessors and fault diagnosis in systems using microprocessors.

23 General knowledge of control systems in the GMDSS radio equipment, including testing and analysis.

24 Knowledge of the use of computer software for the GMDSS radio equipment and methods for correcting faults caused by loss of software control of the equipment.

Regulations and documentation

25 Knowledge of:

.1 the SOLAS Convention and the Radio Regulations, with particular emphasis on:

.1.1 distress, urgency and safety radiocommunications;

.1.2 avoiding harmful interference, particularly with distress and safety traffic; and

.1.3 the prevention of unauthorized transmissions;

.2 other documents relating to operational and communication procedures for distress, safety and public correspondence services, including charges, navigational warnings, and weather broadcasts in the Maritime Mobile Service and the Maritime Mobile Satellite Service; and

.3 the use of the International Code of Signals and the IMO Standard Marine Communication Phrases.

Watchkeeping and procedures

26 Training should be given in:

.1 communication procedures and discipline to prevent harmful interference in GMDSS sub-systems;

.2 procedures for using propagation-prediction information to establish optimum frequencies for communications;

.3 radiocommunication watchkeeping relevant to all GMDSS sub-systems, exchange of radiocommunication traffic, particularly concerning distress, urgency and safety procedures, and radio records;

.4 use of the international phonetic alphabet;

.5 monitoring a distress frequency while simultaneously monitoring or working on at least one other frequency;

.6 ship reporting systems and procedures;

.7 radiocommunication procedures of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual;

.8 radio medical systems and procedures; and

.9 causes of false distress alerts and means to avoid them.[48]

Practical

27 Practical training, supported by appropriate laboratory work, should be given in:

.1 correct and efficient operation of all GMDSS sub-systems and equipment under normal propagation conditions and under typical interference conditions;

.2 safe operation of all the GMDSS communication equipment and ancillary devices, including safety precautions;

.3 adequate and accurate keyboard skills for the satisfactory exchange of communications;

[47]The relevant IMO Model Course(s) may be of assistance in the preparation of courses.

[48]See COM/Circ.127 and IMO Assembly resolution A.814(19) – Guidelines for avoiding false distress alerts.

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.4 operational techniques for:

.4.1 receiver and transmitter adjustment for the appropriate mode of operation, including digital selective calling and direct-printing telegraphy;

.4.2 antenna adjustment and realignment, as appropriate;

.4.3 use of radio life-saving appliances; and

.4.4 use of emergency position-indicating radio beacons (EPIRBs);

.5 antenna rigging, repair and maintenance, as appropriate;

.6 reading and understanding pictorial, logic and module interconnection diagrams;

.7 use and care of those tools and test instruments necessary to carry out at-sea electronic maintenance at the level of replacement of a unit or module;

.8 basic manual soldering and desoldering techniques and their limitations;

.9 tracing and repair of faults to board/module level;

.10 recognition and correction of conditions contributing to the fault occurring;

.11 basic maintenance procedures, both preventive and corrective, for all the GMDSS communication equipment and radionavigation equipment; and

.12 methods of alleviating electrical and electromagnetic interference, such as bonding, shielding and bypassing.

Miscellaneous

28 Knowledge of, and/or training in:

.1 the English language, both written and spoken, for the satisfactory exchange of communications relevant to the safety of life at sea;

.2 world geography, especially the principal shipping routes, services of rescue coordination centres (RCCs) and related communication routes;

.3 survival at sea, the operation of lifeboats, rescue boats, liferafts, buoyant apparatus and their equipment, with special reference to radio life-saving appliances;

.4 fire prevention and fire fighting, with particular reference to the radio installation;

.5 preventive measures for the safety of ship and personnel in connection with hazards related to radio equipment, including electrical, radiation, chemical and mechanical hazards;

.6 first aid, including heart-respiration revival techniques; and

.7 coordinated universal time (UTC), global time zones and the international date line.

TRAINING RELATED TO THE GENERAL OPERATOR'S CERTIFICATE

General

29 The requirements of medical fitness, especially as to hearing, eyesight and speech, should be met by the candidate before training is commenced.

30 The training should be relevant to the provisions of the STCW Convention, the Radio Regulations and the SOLAS Convention currently in force, with particular attention given to provisions for the global maritime distress and safety system (GMDSS). In developing training requirements, account should be taken of at least the knowledge and training given in paragraphs 31 to 36 hereunder[49].

Theory

31 Knowledge of the general principles and basic factors necessary for safe and efficient use of all sub-systems and equipment required in the GMDSS sufficient to support the practical training provisions given in paragraph 35 below.

32 Knowledge of the use, operation and service areas of GMDSS sub-systems, including satellite system characteristics, navigational and meteorological warning systems and selection of appropriate communication circuits.

Regulations and documentation

33 Knowledge of:

.1 the SOLAS Convention and the Radio Regulations, with particular emphasis on:

.1.1 distress, urgency and safety radiocommunications;

.1.2 avoiding harmful interference, particularly with distress and safety traffic; and

.1.3 prevention of unauthorized transmissions;

.2 other documents relating to operational and communication procedures for distress, safety and public correspondence services, including charges, navigational warnings, and weather broadcasts in the Maritime Mobile Service and the Maritime Mobile Satellite Service; and

.3 use of the International Code of Signals and the IMO Standard Marine Communication Phrases.

Watchkeeping and procedures

34 Training should be given in:

.1 communication procedures and discipline to prevent harmful interference in GMDSS sub-systems;

.2 procedures for using propagation-prediction information to establish optimum frequencies for communications;

[49]The relevant IMO Model Course(s) may be of assistance in the preparation of courses.

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.3 radiocommunication watchkeeping relevant to all GMDSS sub-systems, exchange of radiocommunication traffic, particularly concerning distress, urgency and safety procedures, and radio records;

.4 use of the international phonetic alphabet;

.5 monitoring a distress frequency while simultaneously monitoring or working on at least one other frequency;

.6 ship reporting systems and procedures;

.7 radiocommunication procedures of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual;

.8 radio medical systems and procedures; and

.9 causes of false distress alerts and means to avoid them.[50]

Practical

35 Practical training should be given in:

.1 correct and efficient operation of all GMDSS sub-systems and equipment under normal propagation conditions and under typical interference conditions;

.2 safe operation of all the GMDSS communications equipment and ancillary devices, including safety precautions;

.3 accurate and adequate keyboard skills for the satisfactory exchange of communications; and

.4 operational techniques for:

.4.1 receiver and transmitter adjustment for the appropriate mode of operation, including digital selective calling and direct-printing telegraphy;

.4.2 antenna adjustment and realignment as appropriate;

.4.3 use of radio life-saving appliances; and

.4.4 use of emergency position-indicating radio beacons (EPIRBs).

Miscellaneous

36 Knowledge of, and/or training in:

.1 the English language, both written and spoken, for the satisfactory exchange of communications relevant to the safety of life at sea;

.2 world geography, especially the principal shipping routes, services of rescue coordination centres (RCCs) and related communication routes;

.3 survival at sea, the operation of lifeboats, rescue boats, liferafts, buoyant apparatus and their equipment, with special reference to radio life-saving appliances;

.4 fire prevention and fire-fighting, with particular reference to the radio installation;

.5 preventive measures for the safety of ship and personnel in connection with hazards related to radio equipment, including electrical, radiation, chemical and mechanical hazards;

.6 first aid, including heart-respiration revival techniques; and

.7 coordinated universal time (UTC), global time zones and the international date line.

TRAINING RELATED TO THE RESTRICTED OPERATOR'S CERTIFICATE

General

37 The requirements of medical fitness, especially as to hearing, eyesight and speech, should be met by the candidate before training is commenced.

38 The training should be relevant to the provisions of the STCW Convention, the Radio Regulations and the SOLAS Convention currently in force, with particular attention given to provisions for the global maritime distress and safety system (GMDSS). In developing training guidance, account should be taken of at least the knowledge and training given in paragraphs 39 to 44 hereunder[51].

Theory

39 Knowledge of the general principles and basic factors, including VHF range limitation and antenna height effect necessary for safe and efficient use of all sub-systems and equipment required in GMDSS in sea area A1, sufficient to support the training given in paragraph 43 below.

40 Knowledge of the use, operation and service areas of GMDSS sea area A1 sub-systems, e.g., navigational and meteorological warning systems and the appropriate communication circuits.

Regulations and documentation

41 Knowledge of:

.1 those parts of the SOLAS Convention and the Radio Regulations relevant to sea area A1, with particular emphasis on:

.1.1 distress, urgency and safety radiocommunications;

.1.2 avoiding harmful interference, particularly with distress and safety traffic; and

.1.3 prevention of unauthorized transmissions;

[50]See COM/Circ.127 and IMO Assembly resolution A.814(19) – Guidelines for avoiding false distress alerts.

[51]The relevant IMO Model Course(s) may be of assistance in the preparation of courses.

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.2 other documents relating to operational and communication procedures for distress, safety and public correspondence services, including charges, navigational warnings and weather broadcasts in the Maritime Mobile Service in sea area A1; and

.3 use of the International Code of Signals and the IMO Standard Marine Communication Phrases.

Watchkeeping and procedures

42 Training should be given in:

.1 communication procedures and discipline to prevent harmful interference in GMDSS sub-systems used in sea area A1;

.2 VHF communication procedures for:

.2.1 radiocommunication watchkeeping, exchange of radiocommunication traffic, particularly concerning distress, urgency and safety procedures, and radio records;

.2.2 monitoring a distress frequency while simultaneously monitoring or working on at least one other frequency; and

.2.3 the digital selective calling system;

.3 use of the international phonetic alphabet;

.4 ship reporting systems and procedures;

.5 VHF radiocommunication procedures of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual;

.6 radio medical systems and procedures; and

.7 causes of false distress alerts and means to avoid them[52].

Practical

43 Practical training should be given in:

.1 correct and efficient operation of the GMDSS sub-systems and equipment prescribed for ships operating in sea area A1 under normal propagation conditions and under typical interference conditions;

.2 safe operation of relevant GMDSS communication equipment and ancillary devices, including safety precautions; and

.3 operational techniques for use of:

.3.1 VHF, including channel, squelch, and mode adjustment, as appropriate;

.3.2 radio life-saving appliances;

.3.3 emergency position-indicating radio beacons (EPIRBs); and

.3.4 NAVTEX receivers.

[52]See COM/Circ.127 and IMO Assembly resolution A.814(19) – Guidelines for avoiding false distress alerts.

Miscellaneous

44 Knowledge of, and/or training in:

.1 the English language, both written and spoken, for the satisfactory exchange of communications relevant to the safety of life at sea;

.2 services of rescue coordination centres (RCCs) and related communication routes;

.3 survival at sea, the operation of lifeboats, rescue boats, liferafts, buoyant apparatus and their equipment, with special reference to radio life-saving appliances;

.4 fire prevention and fire fighting, with particular reference to the radio installation;

.5 preventive measures for the safety of ship and personnel in connection with hazards related to radio equipment, including electrical, radiation, chemical and mechanical hazards; and

.6 first aid, including heart-respiration revival techniques.

TRAINING RELATED TO MAINTENANCE OF GMDSS INSTALLATIONS ON BOARD SHIPS

General

45 Reference is made to the maintenance requirements of SOLAS Convention regulation IV/15, and to IMO resolution A.702(17) on Radio maintenance guidelines for the GMDSS related to sea areas A3 and A4, which includes in its annex the following provision:

"4.2 The person designated to perform functions for at-sea electronic maintenance should either hold an appropriate certificate as specified by the Radio Regulations, as required, or have equivalent at-sea electronic maintenance qualifications, as may be approved by the Administration, taking into account the recommendations of the Organization on the training of such personnel."

46 The following guidance on equivalent electronic maintenance qualifications is provided for use by Administrations as appropriate.

47 Training as recommended below does not qualify any person to be an operator of GMDSS radio equipment who does not hold an appropriate Radio Operator's Certificate.

Maintenance training equivalent to the First-Class Radioelectronic Certificate

48 In determining training equivalent to the elements of the listed First-Class Radioelectronic Certificate:

.1 the theory content should cover at least the subjects given in paragraphs 3 to 10;

.2 the practical content should cover at least the subjects given in paragraph 13; and

.3 the miscellaneous knowledge included should cover at least the subjects given in paragraph 14.

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Maintenance training equivalent to the Second-Class Radioelectronic Certificate

49 In determining training equivalent to the maintenance elements of the Second-Class Radioelectronic Certificate:

.1 the theory content should cover at least the subjects given in paragraphs 17 to 24;

.2 the practical content should cover at least the subjects given in paragraph 27; and

.3 the miscellaneous knowledge included should cover at least the subjects given in paragraph 28.

CHAPTER V

Guidance regarding special training requirements for personnel on certain types of ships

Section B-V/1

Guidance regarding the training and qualifications of tanker personnel

Person with immediate responsibility

1 The term "person with immediate responsibility" as used in paragraphs 3 and 5 of regulation V/1-1 and paragraph 3 of regulation V/1-2 means a person being in a decision-making capacity with respect to loading, discharging, care in transit, handling of cargo, tank cleaning or other cargo-related operations.

FAMILIARIZATION TRAINING FOR ALL TANKER PERSONNEL

2 All tanker personnel should undergo familiarization training on board and, where appropriate, ashore before being assigned to shipboard duties, which should be given by qualified personnel experienced in the handling and characteristics of oil, chemical or liquefied gas cargoes, as appropriate, and the safety procedures involved. The training should at least cover the matters set out in paragraphs 3 to 8 below.

Regulations

3 Knowledge of the ship's rules and regulations governing the safety of personnel on board a tanker in port and at sea.

Health hazards and precautions to be taken

4 Dangers of skin contact; inhalation and accidental swallowing of cargo; the harmful properties of the cargoes carried, personnel accidents and associated first aid; lists of do's and don'ts.

Fire prevention and fire fighting

5 Control of smoking and cooking restrictions; sources of ignition; fire and explosion prevention; methods of fire fighting; portable fire extinguishers and fixed installations.

Pollution prevention

6 Procedures to be followed to prevent air and water pollution and measures which will be taken in the event of spillage.

Safety equipment and its use

7 The proper use of protective clothing and equipment, resuscitators, escape and rescue equipment.

Emergency procedures

8 Familiarization with the emergency plan procedures.

PROOF OF QUALIFICATION

9 The master of every oil, chemical and liquefied gas tanker should ensure that the officer or the person primarily responsible for the cargo possesses the appropriate certificate, issued or endorsed or validated as required by regulation V/1-1, paragraph 3; regulation V/1-1, paragraph 5 or regulation V/1-2, paragraph 3, as appropriate, and has had adequate recent practical experience on board an appropriate type of tanker to permit that officer or person to safely perform the duties assigned.

GUIDANCE REGARDING APPROVED ON-BOARD TRAINING

General

10 The purpose of qualifying shipboard service is to provide training and knowledge for the safe carriage of specific tanker cargoes.

11 To satisfy the experience appropriate to their duties on the type of tanker on which they serve referred to in regulation V/1-1, paragraph 4.2.2, regulation V/1-1, paragraph 6.2.2 and regulation V/1-2, paragraph 4.2.2, onboard training should:

.1 emphasize practical "hands on experience" and be relative to the employment of the seafarer, i.e. the training of deck and engineering departments may be different;

.2 be under the supervision of personnel qualified and experienced in the handling, characteristics and safety procedures of the cargoes being carried by the vessel;

.3 be on board the tanker carrying products relative to the tanker Certificate of Proficiency/ Endorsement being sought and should be such that the specialist equipment is brought into operation but may be on a ballast passage between cargoes for part of that period;

.4 take part in at least three loading and discharge operations; and[53]

.5 at least cover the matters set out in "Onboard training criteria" in paragraph 19.

12 The onboard training programme must in no way affect the safe running or the seaworthiness of the vessel.

Onboard training programme

13 The trainee should be carried in a supernumerary capacity (i.e. the trainee will have no other duties than that of undertaking the training programme and emergency duties).

[53]A loading or discharging operation is considered to be the loading or discharge of more than 60% of the total cargo tank capacity of the vessel. Loading/discharges of less than this quantity may be summed together to be equivalent to this quantity.

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14 The programme of onboard training should be managed and coordinated by the company which manages the ship on which the seagoing service is to be performed and be a vessel nominated by the company as a training vessel.[54]

15 At all times, the trainee should be aware of two identifiable individuals who are immediately responsible for the management of the programme of onboard training. The first of these is a qualified seagoing officer, referred to as the "shipboard training officer", who, under the authority of the master, should organize and supervise the programme of training. The second should be a person nominated by the company, referred to as the "company training officer", who should have an overall responsibility for the training programme and for coordination with training organizations.

16 The trainee should be provided with an approved training record book to enable a comprehensive record of practical training and experience at sea to be maintained. The approved training record book should be laid out in such a way that it can provide detailed information about the tasks and duties which should be undertaken and the progress towards their completion. Duly completed and countersigned by the master, the approved record book will provide unique evidence that a structured programme of onboard training has been completed leading towards the issue of a relevant Certificate in Advanced Training for Tanker Cargo Operations.

17 During the approved onboard training programme the trainee should be instructed in the loading, discharging, care in transit, handling of cargo, tank cleaning or other cargo-related operations of the tanker to ensure that the experience gained is at least equal to that which would be obtained in three months' normal service.

18 If the three-loading and three-unloading criteria cannot be achieved within the one-month onboard training period, then the period of onboard training should be extended until these criteria have been satisfactorily achieved.

Onboard training criteria

19 The onboard training should at least provide knowledge and experience, relevant to the applicable tanker type, of the following:

.1 Safety

.1.1 All tanker types

.1 Ship's safety-management system

.2 Cargo-specific fire-fighting equipment and procedures

.3 Cargo-specific first-aid procedures, including the Medical First Aid Guide for Use in Accidents involving Dangerous Goods (MFAG)

.4 Ship-/cargo-specific hazards, including smoking regulations, oxygen-depleted atmospheres, cargo hydrocarbon narcosis and toxicity

.5 Risk assessment system

.6 Permit to work, including hot work and enclosed spaces entry procedures

.7 Use of personal protective equipment

.1.2 Additional for liquefied gas tankers

.1 Dangers and precautions related to handling and storage of cargoes at cryogenic temperatures

.2 Construction, cargo, cargo tanks and pipelines

.2.1 All tanker types

.1 Hull/tank construction and limitations

.2 Cargo connections

.3 Properties and hazards associated with the types of cargo being carried, including use of Material Safety Data Sheets

.4 The risks that cargo operations (such as purging/gas-freeing/tank cleaning) may have on the accommodation ventilation systems and actions to mitigate these risks

.5 Configuration of cargo and ballast system

.6 Pumps and associated equipment

.7 Specialist equipment associated with the cargo operations

.8 Particulars of the tanker's construction and how this affects the cargo Operations

.2.2 Additional for liquefied gas tankers

.1 Use of segregation, separation and airlocks to maintain gas-safe areas

.2 Cargo tank, inter-barrier, insulation spaces, and pipeline relief valves and vapour venting systems

.3 Cargo vapour compressors and associated equipment

.3 Trim and stability

.3.1 All tanker types

.1 Tanker's stability information and calculating equipment

.2 Importance of maintaining stress levels within acceptable limits

.3 Dangers of free surface effect and "sloshing" effect

.4 Cargo operations

.4.1 All tanker types

.1 Pre-planning of loading/in-transit care, discharge/ballast operations

.2 Record keeping

.3 Start up/stopping procedures, including emergency shutdown

[54] A nominated training vessel is a trading vessel named by the company that is suitable for the purpose of this guidance, as applicable.

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.4 Attention required for mooring arrangements during cargo operations

.5 Purging and inerting requirements and associated hazards

.6 Loading cargo, including topping-off operations

.7 Discharging cargo, including draining and stripping operations

.8 Monitoring of cargo during loading/discharging operations, including sampling where applicable

.9 Tank gauging and alarm systems

.10 Dangers from electrostatic discharge and its prevention

.11 Ballasting and de-ballasting operations

.12 Maintenance requirements, including coating inspections

.4.2 Additional for chemical tankers

.1 Polymerization, cargo compatibility, tank coating compatibility and other reactions

.2 Functions of inhibitors and catalysts

.3 Vapour/gas dispersion

.4.3 Additional for liquefied gas tankers

.1 Polymerization, cargo compatibility, tank coating compatibility and other reactions

.2 Functions of inhibitors and catalysts

.3 Causes of backpressure and pressure surge effects

.4 Use of boil-off gas as a fuel

.5 Vapour/gas dispersion

.6 Purging and cool-down operations

.7 Operation and maintenance of re-liquefaction equipment

.8 Understanding and use of the custody transfer system

.4.4 Additional for oil tankers

.1 Crude oil washing systems

.5 Tank washing/cleaning

.5.1 All tanker types

.1 Tank cleaning systems and equipment fitted on the tanker

.2 Pre-planning of tank washing/cleaning operations

.3 Tank washing procedures, including purging and inerting

.4 Control of slops/waste product

.5 Electro-static hazards

.6 Cleanliness requirements

.7 Maintenance requirements

.5.2 Additional for chemical tankers

.1 Removal of inhibitors and residues

.2 Use of absorption, cleaning agents and detergents

.5.3 Additional for liquefied gas tankers

.1 Hot-gassing/boil-off of liquid residues and regassification process

.6 Inert gas systems

.6.1 All tanker types

.1 Inerting system(s) and equipment fitted to the tanker

.2 Hazards associated with inerting spaces, with particular reference to safe entry into tanks

.3 Purging, maintaining inert atmosphere and gas-freeing operations

.4 Maintenance requirements

.7 Pollution prevention and control

.7.1 All tanker types

.1 International, flag State and company regulations, documentation and plans

.2 Operation of the tanker's pollution-prevention systems and equipment, including discharge monitoring

.3 Operation of the tanker's pollution-containment equipment

.8 Gas-detection equipment and instruments

.8.1 All tanker types

.1 Use and calibration of personal, portable and fixed gas analysers, with particular reference to oxygen and hydrocarbon monitoring equipment

.2 Operation, maintenance and limitation of cargo tank level measuring, level alarm and temperature-measuring systems

.8.2 Additional for liquefied gas tankers

.1 Operation and maintenance of hull temperature measurement

.9 Publications

.9.1 All tanker types

.1 International, flag State and company publications relevant to the operation of the tanker, including SOLAS, MARPOL and applicable guidance manuals

.2 Operating and maintenance manuals specific to the equipment on board

.3 Established industrial standards and code of safe working practice (e.g., ICS, OCIMF, SIGTTO)

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Section B-V/1-1

Guidance regarding training and qualifications of masters, officers and ratings on oil and chemical tankers

OIL TANKER TRAINING

20 The training required by paragraphs 2.2 and 4.3 of regulation V/1-1 in respect of oil tankers should be set out in a training plan which clearly expresses, for all parties involved, the objectives of the training. Training may be given on board or ashore, where appropriate. It should be supplemented by practical instruction on board and, where appropriate, in a suitable shore- based installation. All training and instruction should be given by properly qualified and suitably experienced personnel[55].

21 As much use as possible should be made of shipboard operation and equipment manuals, films and suitable visual aids, and the opportunity should be taken to introduce discussion of the part to be played by the safety organization on board ship and the role of safety officers and safety committees.

CHEMICAL TANKER TRAINING

22 The training required by paragraphs 2.2 and 6.3 of regulation V/1-1 in respect of chemical tankers should be set out in a training plan which clearly expresses, for all parties involved, the objectives of the training. Training may be given on board or ashore, where appropriate. It should be supplemented by practical instruction on board and, where appropriate, in a suitable shorebased installation. All training and instruction should be given by properly qualified and suitably experienced personnel[56].

23 As much use as possible should be made of shipboard operation and equipment manuals, films and suitable visual aids, and the opportunity should be taken to introduce discussion of the part to be played by the safety organization on board ship and the role of safety officers and safety committees.

Section B-V/1-2

Guidance regarding training and qualifications of masters, officers and ratings on liquefied gas tankers

24 The training required by paragraphs 2.2 and 4.3 of regulation V/1-2 in respect of liquefied gas tankers should be set out in a training plan which clearly expresses, for all parties involved, the objectives of the training. Training may be given on board or ashore, where appropriate. It should be supplemented by practical instruction on board and, where appropriate, in a suitable shore-based installation. All training and instruction should be given by properly qualified and suitably experienced personnel[57].

25 As much use as possible should be made of shipboard operation and equipment manuals, films and suitable visual aids, and the opportunity should be taken to introduce discussion of the part to be played by the safety organization on board ship and the role of safety officers and safety committees.

[55]The relevant IMO Model Course(s) may be of assistance in the preparation of courses.
[56]The relevant IMO Model Course(s) may be of assistance in the preparation of courses.
[57]The relevant IMO Model Course(s) may be of assistance in the preparation of courses.

Section B-V/2

Guidance regarding training of seafarers on passenger ships

ENHANCED FIRE FIGHTING

1 For officers and crew on passenger ships, additional training should be provided highlighting the difficulties of fighting fires, including access to confined spaces and prevention of the spread of fire to adjoining spaces.

DAMAGE CONTROL

2 In developing standards of competency given in sections A-II/1, A-II/2 and A-III/2 to achieve the necessary level of theoretical knowledge, understanding and proficiency in damage control and watertight integrity, companies and training institutions should take into account the minimum knowledge, understanding and proficiency for damage control and watertight integrity as given below:

Competence

Minimize the risk of flooding and maintain a state of readiness to respond to emergency situations involving damage to the watertight integrity of the ship.

Knowledge, understanding and proficiency

Shipboard damage control plans and organization.

Damage control systems, equipment (lockers) and emergency escape routes

The key elements in maintaining stability and watertight integrity.

Importance of securing flooding and maintaining watertight boundaries.

Actions to be taken aboard a ship in the event of an explosion, grounding, collision, or fire

Damage control techniques consistent with equipment found on board including the ship bilge systems and pumps.

Section B-V/a[58]

Guidance regarding additional training for masters and chief mates of large ships and ships with unusual manoeuvring characteristics

1 It is important that masters and chief mates should have had relevant experience and training before assuming the duties of master or chief mate of large ships or ships having unusual manoeuvring and handling characteristics significantly different from those in which they have recently served. Such characteristics will generally be found in ships which are of considerable deadweight or length or of special design or of high speed.

2 Prior to their appointment to such a ship, masters and chief mates should:

.1 be informed of the ship's handling characteristics by the company, particularly in relation to the knowledge, understanding and proficiency listed under ship manoeuvring and handling

[58]Note there are no corresponding regulations in the Convention or sections in part A of the Code for sections B-V/a, B-V/b, B-V/c, B-V/d, B-V/e, B-V/f and B-V/g.

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in column 2 of table A-II/2 - Specification of the minimum standard of competence for masters and chief mates on ships of 500 gross tonnage or more; and

.2 be made thoroughly familiar with the use of all navigational and manoeuvring aids fitted in the ship concerned, including their capabilities and limitations.

3 Before initially assuming command of one of the ships referred to above, the prospective master should have sufficient and appropriate general experience as master or chief mate, and either:

.1 have sufficient and appropriate experience manoeuvring the same ship under supervision or in manoeuvring a ship having similar manoeuvring characteristics; or

.2 have attended an approved ship handling simulator course on an installation capable of simulating the manoeuvring characteristics of such a ship.[59]

4 The additional training and qualifications of masters and chief mates of dynamically supported and high-speed craft should be in accordance with the relevant guidelines of the IMO Code of Safety for Dynamically Supported Craft and the IMO International Codes of Safety for High-Speed Craft (1994 HSC Code and 2000 HSC Code), as appropriate.

Section B-V/b[60]

Guidance regarding training of officers and ratings responsible for cargo handling on ships carrying dangerous and hazardous substances in solid form in bulk

1 Training should be divided into two parts, a general part on the principles involved and a part on the application of such principles to ship operation. All training and instruction should be given by properly qualified and suitably experienced personnel and cover at least the subjects given in paragraphs 2 to 14 hereunder.

PRINCIPLES

Characteristics and properties

2 The important physical characteristics and chemical properties of dangerous and hazardous substances, sufficient to give a basic understanding of the intrinsic hazards and risks involved.

Classification of materials possessing chemical hazards

3 IMO dangerous goods classes 4 to 9 and the hazards associated with each class; and materials hazardous only in bulk (MHB) outlined in the International Maritime Solid Bulk Cargoes (IMSBC) Code.

Health hazards

4 Dangers from skin contact, inhalation, ingestion and radiation.

Conventions, regulations and recommendations

5 General familiarization with the relevant requirements of chapters II-2 and VII of the 1974 SOLAS Convention, as amended.

6 General use of and familiarization with the International Maritime Solid Bulk Cargoes (IMSBC) Code, with particular reference to:

.1 safety of personnel, including safety equipment, measuring instruments, their use and practical application and interpretation of results;

.2 hazards from cargoes which have a tendency to shift; and

.3 materials possessing chemical hazards.

SHIPBOARD APPLICATION

Class 4.1 - Flammable solids

Class 4.2 - Substances liable to spontaneous combustion

Class 4.3 - Substances which, in contact with water, emit flammable gases

7 Carriage, stowage and control of temperature to prevent decomposition and possible explosion; stowage categories; general stowage precautions, including those applicable to self-reactive and related substances; segregation requirements to prevent heating and ignition; the emission of poisonous or flammable gases and the formation of explosive mixtures.

Class 5.1 - Oxidizing substances

8 Carriage, stowage and control of temperature to prevent decomposition and possible explosion; stowage categories; general stowage precautions and segregation requirements to ensure separation from combustible material, from acids and heat sources to prevent fire, explosion and the formation of toxic gases.

Class 6.1 - Toxic substances

9 Contamination of foodstuffs, working areas and living accommodation and ventilation.

Class 7 - Radioactive material

10 Transport index; types of ores and concentrates; stowage and segregation from persons, undeveloped photographic film and plates and foodstuffs; stowage categories; general stowage requirements; special stowage requirements; segregation requirements and separation distances; segregation from other dangerous goods.

Class 8 - Corrosive substances

11 Dangers from wetted substances.

Class 9 - Miscellaneous dangerous substances and articles

12 Examples and associated hazards; the hazards of materials hazardous only in bulk (IMSBC Code); general and specific stowage precautions; working and transport precautions; segregation requirements.

[59] The relevant IMO Model Course(s) may be of assistance in the preparation of courses.

[60] Note there are no corresponding regulations in the Convention or sections in part A of the Code for sections B-V/a, B-V/b, B-V/c, B-V/d, B-V/e, B-V/f and B-V/g.

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Safety precautions and emergency procedures

13 Electrical safety in cargo spaces; precautions to be taken for entry into enclosed spaces that may contain oxygen-depleted, poisonous or flammable atmospheres; the possible effects of fire in shipments of substances of each class; use of the Emergency Response Procedures for Ships Carrying Dangerous Goods; emergency plans and procedures to be followed in case of incidents involving dangerous and hazardous substances and the use of individual entries in the International Maritime Solid Bulk Cargoes (IMSBC) Code, as appropriate, in this respect.

Medical first aid

14 The IMO Medical First Aid Guide for Use in Accidents Involving Dangerous Goods (MFAG) and its use and application in association with other guides and medical advice by radio.

Section B-V/c[61]

Guidance regarding training of officers and ratings responsible for cargo handling on ships carrying dangerous and hazardous substances in packaged form

1 Training should be divided into two parts, a general part on the principles involved and a part on the application of such principles to ship operation. All training and instruction should be given by properly qualified and suitably experienced personnel and cover at least the subjects given in paragraphs 2 to 19 hereunder.

PRINCIPLES

Characteristics and properties

2 The important physical characteristics and chemical properties of dangerous and hazardous substances, sufficient to give a basic understanding of the intrinsic hazards and risks involved.

Classification of dangerous and hazardous substances and materials possessing chemical hazards

3 IMO dangerous goods classes 1 to 9 and the hazards associated with each class.

Health hazards

4 Dangers from skin contact, inhalation, ingestion and radiation.

Conventions, regulations and recommendations

5 General familiarization with the relevant requirements of chapters II-2 and VII of the 1974 SOLAS Convention and of Annex III of MARPOL 73/78, including its implementation through the IMDG Code.

Use of and familiarization with the International Maritime Dangerous Goods (IMDG) Code

6 General knowledge of the requirements of the IMDG Code concerning declaration, documentation, packing, labelling and placarding; freight container and vehicle packing; portable tanks, tank containers and road tank vehicles, and other transport units used for dangerous substances.

7 Knowledge of identification, marking and labelling for stowage, securing, separation and segregation in different ship types mentioned in the IMDG Code.

8 Safety of personnel, including safety equipment, measuring instruments, their use and practical application and the interpretation of results.

SHIPBOARD APPLICATION

Class 1 - Explosives

9 The six hazard divisions and 13 compatibility groups; packagings and magazines used for carriage of explosives; structural serviceability of freight containers and vehicles; stowage provisions, including specific arrangements for on-deck and under-deck stowage; segregation from dangerous goods of other classes within class 1 and from non-dangerous goods; transport and stowage on passenger ships; suitability of cargo spaces; security precautions; precautions to be taken during loading and unloading.

Class 2 - Gases (compressed, liquefied, or dissolved under pressure), flammable, non-flammable, non-toxic and toxic

10 Types of pressure vessels and portable tanks, including relief and closing devices used; stowage categories; general stowage precautions, including those for flammable and poisonous gases and gases which are marine pollutants.

Class 3 - Flammable liquids

11 Packagings, tank containers, portable tanks and road tank vehicles; stowage categories, including the specific requirements for plastics receptacles; general stowage precautions, including those for marine pollutants; segregation requirements; precautions to be taken when carrying flammable liquids at elevated temperatures.

Class 4.1 - Flammable solids

Class 4.2 - Substances liable to spontaneous combustion

Class 4.3 - Substances which, in contact with water, emit flammable gases

12 Types of packagings; carriage and stowage under controlled temperatures to prevent decomposition and possible explosion; stowage categories; general stowage precautions, including those applicable to self-reactive and related substances, desensitized explosives and marine pollutants; segregation requirements to prevent heating and ignition, the emission of poisonous or flammable gases and the formation of explosive mixtures.

Class 5.1 - Oxidizing substances

Class 5.2 - Organic peroxides

13 Types of packagings; carriage and stowage under controlled temperatures to prevent decomposition and

[61]Note there are no corresponding regulations in the Convention or sections in part A of the Code for sections B-V/a, B-V/b, B-V/c, B-V/d, B-V/e, B-V/f and B-V/g.

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possible explosion; stowage categories; general stowage precautions, including those applicable to marine pollutants; segregation requirements to ensure separation from combustible material, from acids and heat sources to prevent fire, explosion and the formation of toxic gases; precautions to minimize friction and impact which can initiate decomposition.

Class 6.1 - Toxic substances

Class 6.2 - Infectious substances

14 Types of packagings; stowage categories; general stowage precautions, including those applicable to toxic, flammable liquids and marine pollutants; segregation requirements, especially considering that the characteristic common to these substances is their ability to cause death or serious injury to human health; decontamination measures in the event of spillage.

Class 7 - Radioactive material

15 Types of packagings; transport index in relation to stowage and segregation; stowage and segregation from persons, undeveloped photographic film and plates and foodstuffs; stowage categories; general stowage requirements; segregation requirements and separation distances; segregation from other dangerous goods.

Class 8 - Corrosive substances

16 Types of packagings; stowage categories; general stowage precautions, including those applicable to corrosive, flammable liquids and marine pollutants; segregation requirements, especially considering that the characteristic common to these substances is their ability to cause severe damage to living tissue.

Class 9 - Miscellaneous dangerous substances and articles

17 Examples of hazards, including marine pollution.

Safety precautions and emergency procedures

18 Electrical safety in cargo spaces; precautions to be taken for entry into enclosed spaces that may contain oxygen-depleted, poisonous or flammable atmospheres; the possible effects of spillage or fire in shipments of substances of each class; consideration of events on deck or below deck; use of the IMO Emergency Response Procedures for Ships Carrying Dangerous Goods; emergency plans and procedures to be followed in case of incidents involving dangerous substances.

Medical first aid

19 The IMO Medical First Aid Guide for Use in Accidents Involving Dangerous Goods (MFAG) and its use and application in association with other guides and medical advice by radio.

Section B-V/d[62]

Guidance on application of the provisions of the STCW Convention to mobile offshore units (MOUs)

1 The provisions of the STCW Convention apply to the maritime personnel of self-propelled MOUs proceeding on voyages.

2 The provisions of the STCW Convention do not apply to non-self-propelled MOUs or to MOUs on station.

3 When considering appropriate standards of training and certification when an MOU is on station, the country of registry should take account of relevant IMO recommendations. In particular, all maritime crew members on self-propelled MOUs and, where required, on other units should meet the requirements of the STCW Convention, as amended.

4 Self-propelled MOUs proceeding on international voyages are required to carry safe manning documents.

5 MOUs on station are subject to the national legislation of the coastal State in whose Exclusive Economic Zone (EEZ) they are operating. Such coastal States should also take account of relevant IMO recommendations and should not prescribe higher standards for MOUs registered in other countries than the standards applied to MOUs registered in that coastal State.

6 All special personnel employed on board MOUs (whether or not self-propelled) should be provided with appropriate familiarization and basic safety training in accordance with relevant IMO recommendations.

Section B-V/e[63]

Guidance regarding training and qualifications of masters and officers in charge of a navigational watch on board offshore supply vessels

1 It is important that masters and officers involved in offshore supply operations should have relevant experience or training before assuming their duties on offshore supply vessels. The focus should be on onboard operational experience or a combination of operational experience and simulator training.

2 Masters and officers should understand the unique manoeuvring and handling characteristics common to offshore supply vessels.

3 Prior to performing offshore supply operations, the master and officers should:

.1 have knowledge of the offshore industry and the terms used in the various operations;

.2 understand the importance of maintaining a safe working distance at all times when working in an offshore location/installation;

.3 have knowledge of vessel manoeuvring and station-keeping under various weather conditions;

.4 understand the specific design parameters of the vessels; and

.5 understand the need to have unrestricted oversight and views of work areas.

4 While on board an offshore supply vessel, the master and officers should:

.1 have knowledge of the handling characteristics and behaviour of vessels fitted with various propulsion arrangements; and

.2 be capable of operating the offshore supply vessel in close proximity to an offshore installation and other vessels.

[62]Note there are no corresponding regulations in the Convention or sections in part A of the Code for sections B-V/a, B-V/b, B-V/c, B-V/d, B-V/e, B-V/f and B-V/g.

[63]Note there are no corresponding regulations in the Convention or sections in part A of the Code for sections B-V/a, B-V/b, B-V/c, B-V/d, B-V/e, B-V/f and B-V/g.

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5 Masters should understand the need for other personnel on board who are involved in performing offshore supply operations to be familiarized with their duties.

Offshore supply vessels performing anchor-handling operations

6 It is important that masters and officers in charge of a navigational watch on board supply vessels involved in anchor-handling operations have relevant experience and training.

7 Prior to performing anchor-handling operations, masters and officers in charge of a navigational watch should:

.1 be well informed of the ship's handling characteristics in relation to anchor-handling, including, but not limited to:

.1.1 navigation and position-holding;

.1.2 ship-handling;

.1.3 thorough knowledge of the stability of offshore supply vessels, in particular the combination of low angle of GZmax, low open deck and large external forces. Use of loading calculators and the conflict between a rigid and stiff ship and good work environment on deck. Potential reduction of stability from use of anti-rolling devices; and

.1.4 operations in hazardous oil-field areas, including locating any pipelines or other structures on the seabed in the area where anchors or other mooring equipment is likely to be used; and

.2 be made thoroughly familiar with the use of all instruments and systems fitted in the ship concerned and involved in anchor-handling, including their capabilities and limitations, including, but not limited to:

.2.1 use of various thrusters, conventional or azimuth propulsion;

.2.2 pickup, handling, heavy lifting, towing out, anchor-handling and laying of anchors for offshore rigs, barges and installations;

.2.3 towing of rigs, barges and other vessels;

.2.4 operation of lifting and towing winches with up to 600 metric tons pull;

.2.5 detailed thorough knowledge of the basis of operation of towing- and anchor-handling winches; in particular, functions of load-limiting devices and release systems and associated equipment as towing pins and stoppers; and

.2.6 the significant difference between emergency release of towing hooks and winches.

8 Masters and officers in charge of a navigational watch when in charge of anchor-handling should have sufficient and appropriate training and experience by having been supervised during a number of Rig-moves, as deemed appropriate by the Administration. Training may be supplemented by appropriate simulator training.

Section B-V/f[64]

Guidance on the training and experience for personnel operating dynamic positioning systems

1 Dynamic positioning is defined as the system whereby a self-propelled vessel's position and heading is automatically controlled by using its own propulsion units.

2 Personnel engaged in operating a Dynamic Positioning (DP) system should receive relevant training and practical experience. Theoretical elements of this training should enable Dynamic Positioning Operators (DPOs) to understand the operation of the DP system and its components. Knowledge, understanding and experience gained should enable personnel to operate vessels safely in DP, with due regard for safety of life at sea and protection of the marine environment.

3 The content of training and experience should include coverage of the following components of a DP system:

.1 DP control station;

.2 power generation and management;

.3 propulsion units;

.4 position reference systems;

.5 heading reference systems;

.6 environmental reference systems; and

.7 external force reference systems, such as hawser tension gauges.

4 Training and experience should cover the range of routine DP operations, as well as the handling of DP faults, failures, incidents and emergencies, to ensure that operations are continued or terminated safely. Training should not be limited to DPOs and DP masters only; other personnel on board, such as electro-technical and engineer officers, may require additional training and experience to ensure that they are able to carry out their duties on a DP vessel. Consideration should be given to conducting appropriate DP drills as a part of onboard training and experience. DPOs should be knowledgeable of the type and purpose of documentation associated with DP operations, such as operational manuals, Failure Modes and Effects Analysis (FMEAs) and capability plots.

5 All training should be given by properly qualified and suitably experienced personnel.

6 Upon appointment to a vessel operating in DP mode, the master, DPOs and other DP-trained personnel should be familiarized with the specific equipment fitted on and the characteristics of the vessel. Particular consideration should be given to the nature of the work of the vessel and the importance of the DP system to this work.

[64]Note there are no corresponding regulations in the Convention or sections in part A of the Code for sections B-V/a, B-V/b, B-V/c, B-V/d, B-V/e, B-V/f and B-V/g.

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Section B-V/g[65]

Guidance regarding training of masters and officers for ships operating in polar waters[66]

1 It is important that masters, officers in charge of a navigational watch and officers in charge of an engineering watch on board ships operating in polar waters should have relevant experience and training, as follows:

.1 Prior to being assigned duties on board such ships:

.1.1 For masters and officers in charge of a navigational watch, the training should provide basic knowledge on at least the subjects given in paragraphs 2 to 11 hereunder; and

.1.2 For officers in charge of an engineering watch, the training should provide basic knowledge on at least the subjects given in paragraphs 3, 6, 10 and 11 hereunder.

.2 Masters and Chief Engineer Officers should have sufficient and appropriate experience in operating ships in polar waters.

Ice characteristics – ice areas

2 Interpretation of different ice-charts and awareness of limitations in meteorology and oceanography data, ice physics, formation, growth, ageing and stage of melt; ice types and concentrations; ice pressure; friction from snow-covered ice; implications of spray-icing and icing up; precautions against icing up and mitigation of consequences; ice regimes in different region and different seasons, including the differences between the Arctic and the Antarctic; recognition of consequences of rapid change in ice and weather conditions; movement of icebergs and pack ice.

Ship's performance in ice and cold climate

3 Vessel characteristics; vessel types, hull designs; ice-strengthening requirements; ice-class in different classification societies – polar class and local regulations; limitations of ice-classes; winterization and preparedness of vessel; low-temperature system performance.

Voyage and passage planning for a ship in ice[67]

4 Development of safe routeing and passage planning to avoid ice where possible, including interpreting various forms of ice imagery and data to assist in the preparation of a strategic passage planning; entering ice from open water to avoid icebergs and dangerous ice conditions; navigation, determining when it is safe or not safe to enter areas containing ice or icebergs due to darkness, swell, fog or pressure ice.

Operating and handling a ship in ice

5 Preparations and risk assessment before approaching ice-infested waters; unassisted operation of vessels with different ice-class in different ice-types; safe speed in the presence of ice and icebergs; communications with an icebreaker and other vessels; navigation in various ice concentrations and coverage; awareness of the increase in energy of movement; use of icebergs for shelter and access through packed ice.

6 Use of different type of propulsion system and rudder, including awareness of system strength and capacity limitations; use of heeling and trim systems, engine loads and cooling problems.

Regulations and recommendations

7 Local requirements for entering different regions, including the Antarctic Treaty; international regulations and recommendations.

Equipment limitations

8 Use of and hazards associated with terrestrial navigational aids in polar waters; high-latitude compass errors; discrimination of radar targets and ice-features in ice-clutter; limitations of electronic positioning systems at high latitude; limitations in nautical charts and pilot descriptions; limitations in communication systems.

Safety precautions and emergency procedures

9 Availability of hydrographic data sufficient for safe navigation; precautions when navigating in poorly charted waters; limitations of search and rescue readiness and responsibility, including GMDSS area A4 and its SAR communication facility limitation; awareness of contingency planning; knowledge of towing procedures; value of contact with other ships and local SAR organization; recognizing dangers when crews are exposed to low temperatures; procedures and techniques for abandoning the ship and survival on the ice; crew-fatigue problems due to noise and vibrations; carriage of additional resources such as bunkers, food and extra clothing; awareness of the additional severity of consequences of incidents in polar waters.

10 Establishing safe working procedures; awareness of the most common hull and equipment damage and how to avoid them; fire-fighting systems limitations.

Environmental considerations

11 Sensitive sea areas regarding discharge; areas where shipping is prohibited or should be avoided; special areas in MARPOL; oil-spill equipment limitations; plan for coping with increased volumes of garbage, bilge water, sludge, sewage, etc.; consequences of pollution in a cold climate.

CHAPTER VI

Guidance regarding emergency, occupational safety, security, medical care and survival functions

Section B-VI/1

Guidance regarding mandatory requirements for safety familiarization and basic training and instruction for all seafarers

[65]Note there are no corresponding regulations in the Convention or sections in part A of the Code for sections B-V/a, B-V/b, B-V/c, B-V/d, B-V/e, B-V/f and B-V/g.
[66]Refer to IMO Assembly resolution A.1024(26) on Guidelines for ships operating in polar waters.
[67] Refer to IMO Assembly resolution A.999(25) on Guidelines on voyage planning for passenger ships operating in remote areas.

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FIRE PREVENTION AND FIRE FIGHTING

1 The training in fire prevention and fire fighting required by section A-VI/1 should include at least the theoretical and practical elements itemized in paragraphs 2 to 4 hereunder[68].

Theoretical training

2 The theoretical training should cover:

.1 the three elements of fire and explosion (the fire triangle): fuel; source of ignition; oxygen;

.2 ignition sources: chemical; biological; physical;

.3 flammable materials: flammability; ignition point; burning temperature; burning speed; thermal value; lower flammable limit (LFL); upper flammable limit (UFL); flammable range; inerting; static electricity; flashpoint; auto-ignition;

.4 fire hazard and spread of fire by radiation, convection and conduction;

.5 reactivity;

.6 classification of fires and applicable extinguishing agents;

.7 main causes of fire on board ships: oil leakage in engine-room; cigarettes; overheating (bearings); galley appliances (stoves, flues, fryers, hotplates, etc.); spontaneous ignition (cargo, wastes, etc.); hot work (welding, cutting, etc.); electrical apparatus (short circuit, non-professional repairs); reaction, self-heating and auto-ignition; arson; static electricity;

.8 fire prevention;

.9 fire- and smoke-detection systems; automatic fire alarms;

.10 fire-fighting equipment, including:

.10.1 fixed installations on board and their locations; fire mains, hydrants; international shore connection; smothering installations, carbon dioxide (CO2), foam; pressure water spray system in special category spaces, etc.; automatic sprinkler system; emergency fire pump; emergency generator; chemical powder applicants; general outline of required and available mobile apparatus; high-pressure fog system; high-expansion foam; new developments and equipment;

.10.2 firefighter's outfit, personal equipment; breathing apparatus; resuscitation apparatus; smoke helmet or mask; fireproof lifeline and harness; and their location on board; and

.10.3 general equipment, including fire hoses, nozzles, connections, fire axes; portable fire extinguishers; fire blankets;

.11 construction and arrangements, including escape routes; means for gas-freeing tanks; Class A, B and C divisions; inert gas systems;

.12 ship fire-fighting organization, including general alarm; fire control plans, muster stations and duties of individuals; communications, including ship–shore when in port; personnel safety procedures; periodic shipboard drills; patrol systems;

.13 practical knowledge of resuscitation methods;

.14 fire-fighting methods, including sounding the alarm; locating and isolating; jettisoning; inhibiting; cooling; smothering; extinguishing; reflash watch; smoke extraction; and

.15 fire-fighting agents, including water, solid jet, spray, fog, flooding; high-, medium- and low-expansion foam; carbon dioxide (CO2); aqueous-film-forming foam (AFFF); dry chemical powder; new developments and equipment.

Practical training

3 The practical training given below should take place in spaces which provide truly realistic training conditions (e.g., simulated shipboard conditions), and whenever possible and practical should also be carried out in darkness as well as by daylight and should allow the trainees to acquire the ability to:

.1 use various types of portable fire extinguishers;

.2 use self-contained breathing apparatus;

.3 extinguish smaller fires, e.g., electrical fires, oil fires and propane fires;

.4 extinguish extensive fires with water (jet and spray nozzles);

.5 extinguish fires with either foam, powder or any other suitable chemical agent;

.6 enter and pass through, with lifeline but without breathing apparatus, a compartment into which high-expansion foam has been injected;

.7 fight fire in smoke-filled enclosed spaces, wearing self-contained breathing apparatus;

.8 extinguish fire with water fog or any other suitable fire-fighting agent in an accommodation room or simulated engine-room with fire and heavy smoke;

.9 extinguish an oil fire with fog applicator and spray nozzles; dry chemical powder or foam applicators; and

.10 effect a rescue in a smoke-filled space, wearing breathing apparatus.

General

4 Trainees should also be made aware of the necessity of maintaining a state of readiness on board.

[68]The relevant IMO Model Course(s) may be of assistance in the preparation of courses.

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ELEMENTARY FIRST AID[69]

5 The training in elementary first aid required by regulation VI/1 as part of the basic training should be given at an early stage in vocational training, preferably during pre-sea training, to enable seafarers to take immediate action upon encountering an accident or other medical emergency until the arrival of a person with first-aid skills or the person in charge of medical care on board.

PERSONAL SAFETY AND SOCIAL RESPONSIBILITIES[70]

6 Administrations should bear in mind the significance of communication and language skills in maintaining safety of life and property at sea and in preventing marine pollution. Given the international character of the maritime industry, the reliance on voice communications from ship to ship and from ship to shore, the increasing use of multinational crews, and the concern that crew members should be able to communicate with passengers in an emergency, adoption of a common language for maritime communications would promote safe practice by reducing the risk of human error in communicating essential information.

7 Although not universal, by common practice English is rapidly becoming the standard language of communication for maritime safety purposes, partly as a result of the use of the IMO Standard Marine Communication Phrases.

8 Administrations should consider the benefits of ensuring that seafarers have an ability to use at least an elementary English vocabulary, with an emphasis on nautical terms and situations.

Section B-VI/2

Guidance regarding certification for proficiency in survival craft, rescue boats and fast rescue boats

1 Before training is commenced, the requirement of medical fitness, particularly regarding eyesight and hearing, should be met by the candidate.

2 The training should be relevant to the provisions of the International Convention for the Safety of Life at Sea (SOLAS), as amended.

3 Parties may also accept onboard training and experience (such as participation in drills) for maintaining the required standard of competence of table A-VI/2-1, in the areas outlined in section A-VI/2, paragraphs 6.1.2, 6.1.3, 6.1.4, 6.2.1, and 12.1.5. Administrations should bear in mind that onboard training in these areas can only be carried out under good weather conditions and port regulations permitting.

Section B-VI/3

Guidance regarding training in advanced fire fighting

(No provisions)

Section B-VI/4

Guidance regarding requirements in medical first aid and medical care

Training programmes for seafarers designated to undertake the tasks, duties and responsibilities listed in column 1 of table A-VI/4-1 to provide medical first aid on board ship should take into account guidance in the revised International Medical Guide for Ships, as appropriate.

Section B-VI/5

Guidance regarding training and certification for ship security officers

1 The training should be relevant to the provisions of the ISPS Code and the SOLAS Convention, as amended.[71]

2 On completion of training, a ship security officer should have adequate knowledge of the English language to correctly interpret and communicate messages relevant to ship or port facility security.

3 In circumstances of exceptional necessity, when a person holding a certificate of proficiency as a ship security officer is temporarily unavailable, the Administration may permit a seafarer having specific security duties and responsibilities and an understanding of the ship security plan to serve as ship security officer and to execute all duties and responsibilities of the ship security officer until the next port of call or for a period not exceeding 30 days, whichever is greater. The company should, as soon as possible, inform the competent authorities of the next port(s) of call of the arrangements in place.

Section B-VI/6

Guidance regarding mandatory minimum requirements for security-related training and instruction for all seafarers

Familiarization and security-awareness

1 Seafarers and shipboard personnel are not security experts and it is not the aim of the provisions of the Convention or this Code to convert them into security specialists.

2 Seafarers and shipboard personnel should receive adequate security-related training or instruction and familiarization training so as to acquire the required knowledge and understanding to perform their assigned duties and to collectively contribute to the enhancement of maritime security.

3 Seafarers without designated security duties should complete the security awareness training or instruction set out in section A-VI/6 at least one time in their career. There is no need for refreshment or revalidation of this training if the seafarer or the shipboard personnel concerned meet the security-related familiarization requirements of regulation VI/6 and participate in the drills and exercises required by the ISPS Code.

Seafarers with designated security duties

4 The expression "with designated security duties" in section A-VI/6 denotes those having specific security duties and responsibilities in accordance with the ship security plan.

[69]The relevant IMO Model Course(s) may be of assistance in the preparation of courses.

[70]The relevant IMO Model Course(s) may be of assistance in the preparation of courses

[71]The relevant IMO Model Course(s) may be of assistance in the preparation of courses.

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5 Seafarers with designated security duties should complete the training as set out in section A-VI/6 at least one time in their career. There is no need for refreshment or revalidation of this training if the seafarer or the shipboard personnel concerned meet the security-related familiarization requirements of regulation VI/6 and participate in the drills and exercises required by the ISPS Code.

6 Those providing "security-related familiarization training" in accordance with section A-VI/6 should not be required to meet the requirements of either regulation I/6 or of section A-I/6.

7 In circumstances of exceptional necessity, when the shipboard security-related duties are required to be undertaken by a person qualified to perform designated security-related duties and such a person is temporarily unavailable, the Administration may permit a seafarer without designated security duties to perform such duties provided such a person has an understanding of the ship security plan, until the next port of call or for a period not exceeding 30 days, whichever is greater.

CHAPTER VII

Guidance regarding alternative certification

Section B-VII/1

Guidance regarding the issue of alternative certificates

(No provisions)

Section B-VII/2

Guidance regarding special integrated deck and engine training programmes

1 Each Party should ensure that any special integrated deck and engine training programme:

.1 is provided by means of an approved training programme;

.2 takes place ashore within maritime training institutions and/or on board approved training ships; and

.3 is documented in an approved training record book.

Section B-VII/3

Guidance regarding principles governing the issue of alternative certificates

(No provisions)

CHAPTER VIII

Guidance regarding watchkeeping

Section B-VIII/1

Guidance regarding fitness for duty

Prevention of fatigue

1 In observing the rest period requirements, "overriding operational conditions" should be construed to mean only essential shipboard work which cannot be delayed for safety or environmental reasons or which could not reasonably have been anticipated at the commencement of the voyage.

2 Although there is no universally accepted technical definition of fatigue, everyone involved in ship operations should be alert to the factors which can contribute to fatigue, including, but not limited to, those identified by the Organization[72], and take them into account when making decisions on ship operations.

3 In applying regulation VIII/1, the following should be taken into account:

.1 provisions made to prevent fatigue should ensure that excessive or unreasonable overall working hours are not undertaken. In particular, the minimum rest periods specified in section A-VIII/1 should not be interpreted as implying that all other hours may be devoted to watchkeeping or other duties;

.2 the frequency and length of leave periods, and the granting of compensatory leave, are material factors in preventing fatigue from building up over a period of time; and

.3 the provisions may be varied for ships on short sea voyages, provided special safety arrangements are put in place.

4 Exceptions provided for in section A-VIII/1, paragraph 9, should be construed to mean the exceptions laid down by the ILO Convention on Seafarers' Hours of Work and the Manning of Ships, 1996 (No.180) or the Maritime Labour Convention, 2006, when it enters into force. The circumstances under which such exceptions are applied should be defined by the Parties.

5 Based on information received as a result of investigating maritime casualties, Administrations should keep their provisions on prevention of fatigue under review.

Prevention of drug and alcohol abuse

6 Drug and alcohol abuse directly affect the fitness and ability of a seafarer to perform watchkeeping duties or duties that involve designated safety, prevention of pollution and security duties. Seafarers found to be under the influence of drugs or alcohol should not be permitted to perform watchkeeping duties or duties that involve designated safety, prevention of pollution and security duties, until they are no longer impaired in their ability to perform those duties.

7 Administrations should ensure that adequate measures are taken to prevent alcohol and drugs from impairing the ability of watchkeeping personnel and those whose duties involve designated safety, prevention of pollution and security duties, and should establish screening programmes as necessary which:

.1 identify drug and alcohol abuse;

[72]See the annex to IMO Assembly resolution A.772(18) on Fatigue factor in manning and safety, paragraphs 2 to 4.4.1 and MSC/Circ.1014. on Guidance on fatigue mitigation and management.

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.2 respect the dignity, privacy, confidentiality and fundamental legal rights of the individuals concerned; and

.3 take into account relevant international guidelines.

8 Companies should consider the implementation of a clearly written policy of drug and alcohol abuse prevention, including prohibition to consume alcohol within four hours prior to serving as a member of a watch either by inclusion in the company's quality-management system or by means of providing adequate information and education to the seafarers.

9 Those involved in establishing drug and alcohol abuse prevention programmes should take into account the guidance contained in the ILO publication *Drug and Alcohol Prevention Programmes in the Maritime Industry (A Manual for Planners)*[73], as may be amended.

Section B-VIII/2

Guidance regarding watchkeeping arrangements and principles to be observed

1 The following operational guidance should be taken into account by companies, masters and watchkeeping officers.

PART 1 – GUIDANCE ON CERTIFICATION

(No provisions)

PART 2 – GUIDANCE ON VOYAGE PLANNING

(No provisions)

PART 3 – WATCHKEEPING PRINCIPLES IN GENERAL

(No provisions)

PART 4 – GUIDANCE ON WATCHKEEPING AT SEA

Part 4-1 – Guidance on keeping a navigational watch

Introduction

2 Particular guidance may be necessary for special types of ships as well as for ships carrying hazardous, dangerous, toxic or highly flammable cargoes. The master should provide this operational guidance as appropriate.

3 It is essential that officers in charge of the navigational watch appreciate that the efficient performance of their duties is necessary in the interests of the safety of life and property at sea and of preventing pollution of the marine environment.

Anchor watch

4 The master of every ship at an unsheltered anchorage, at an open roadstead or any other virtually "at sea" conditions in accordance with chapter VIII, section A-VIII/2, part 4-1, paragraph 51 of the STCW Code, should ensure that watchkeeping arrangements are adequate for maintaining a safe watch at all times. A deck officer should at all times maintain responsibility for a safe anchor watch.

5 In determining the watchkeeping arrangements, and commensurate with maintaining the ship's safety and security and the protection of the marine environment, the master should take into account all pertinent circumstances and conditions such as:

.1 maintaining a continuous state of vigilance by sight and hearing as well as by all other available means;

.2 ship-to-ship and ship-to-shore communication requirements;

.3 the prevailing weather, sea, ice and current conditions;

.4 the need to continuously monitor the ship's position;

.5 the nature, size and characteristics of anchorage;

.6 traffic conditions;

.7 situations which might affect the security of the ship;

.8 loading and discharging operations;

.9 the designation of stand-by crew members; and

.10 the procedure to alert the master and maintain engine readiness.

Part 4-2 – Guidance on keeping an engineering watch

6 Particular guidance may be necessary for special types of propulsion systems or ancillary equipment and for ships carrying hazardous, dangerous, toxic or highly flammable materials or other special types of cargo. The chief engineer officer should provide this operational guidance as appropriate.

7 It is essential that officers in charge of the engineering watch appreciate that the efficient performance of engineering watchkeeping duties is necessary in the interest of the safety of life and property at sea and of preventing pollution of the marine environment.

8 The relieving officer, before assuming charge of the engineering watch, should:

.1 be familiar with the location and use of the equipment provided for the safety of life in a hazardous or toxic environment;

.2 ascertain that materials for the administration of emergency medical first aid are readily available, particularly those required for the treatment of burns and scalds; and

.3 when in port, safely anchored or moored, be aware of:

.3.1 cargo activities, the status of maintenance and repair functions and all other operations affecting the watch, and

.3.2 the auxiliary machinery in use for passenger or crew accommodation services, cargo operations, operational water supplies and exhaust systems.

[73]Annex III of this manual includes "Guiding Principles on Drug and Alcohol Testing procedures for Worldwide Application in the Maritime Industry". These guiding principles were adopted by the Joint ILO/WHO Committee on the Health of Seafarers (May 1993).

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Part 4-3 – Guidance on keeping a radio watch

General

9 Among other things, the Radio Regulations require that each ship radio station is licensed, is under the ultimate authority of the master or other person responsible for the ship and is only operated under the control of adequately qualified personnel. The Radio Regulations also require that a distress alert shall only be sent on the authority of the master or other person responsible for the ship.

10 The master should bear in mind that all personnel assigned responsibility for sending a distress alert must be instructed with regard to, be knowledgeable of, and be able to operate properly all radio equipment on the ship, as required by regulation I/14, paragraph 1.5. This should be recorded in the deck or radio log-book.

Watchkeeping

11 In addition to the requirements concerning radio watchkeeping, the master of every seagoing ship should ensure that:

.1 the ship's radio station is adequately manned for the purpose of exchanging general communications – in particular public correspondence, taking into account the constraints imposed by the duties of those authorized to operate it; and

.2 the radio equipment provided on board and, where fitted, the reserve sources of energy are maintained in an efficient working condition.

12 Necessary instruction and information on use of radio equipment and procedures for distress and safety purposes should be given periodically to all relevant crew members by the person designated in the muster list to have primary responsibility for radiocommunications during distress incidents. This should be recorded in the radio log.

13 The master of every ship not subject to the SOLAS Convention should require that radio watchkeeping is adequately maintained as determined by the Administration, taking into account the Radio Regulations.

Operational

14 Prior to sailing, the radio operator designated as having primary responsibility for radiocommunications during distress incidents should ensure that:

.1 all distress and safety radio equipment and the reserve source of energy are in an efficient working condition, and that this is recorded in the radio log;

.2 all documents required by international agreement, notices to ship radio stations and additional documents required by the Administration are available and are corrected in accordance with the latest supplements, and that any discrepancy is reported to the master;

.3 the radio clock is correctly set against standard time signals;

.4 antennae are correctly positioned, undamaged and properly connected; and

.5 to the extent practicable, routine weather and navigational warning messages for the area in which the ship will be navigating are updated together with those for other areas requested by the master, and that such messages are passed to the master.

15 On sailing and opening the station, the radio operator on watch should:

.1 listen on the appropriate distress frequencies for any possible existing distress situation; and

.2 send a traffic report (name, position and destination, etc.) to the local coast station and any other appropriate coast station from which general communications may be expected.

16 While the station is open, the radio operator on watch should:

.1 check the radio clock against standard time signals at least once a day;

.2 send a traffic report when entering and on leaving the service area of a coast station from which general communications might be expected; and

.3 transmit reports to ship reporting systems in accordance with the instructions of the master.

17 While at sea, the radio operator designated as having primary responsibility for radiocommunications during distress incidents should ensure the proper functioning of:

.1 the digital selective calling (DSC) distress and safety radio equipment by means of a test call at least once each week; and

.2 the distress and safety radio equipment by means of a test at least once each day but without radiating any signal.

The results of these tests should be recorded in the radio log.

18 The radio operator designated to handle general communications should ensure that an effective watch is maintained on those frequencies on which communications are likely to be exchanged, having regard to the position of the ship in relation to those coast stations and to coast earth stations from which traffic may be expected. When exchanging traffic, radio operators should follow the relevant ITU recommendations.

19 When closing the station on arrival at a port, the radio operator on watch should advise the local coast

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station and other coast stations with which contact has been maintained of the ship's arrival and of the closing of the station.

20 When closing the radio station, the radio operator designated as having primary responsibility for radiocommunications during distress incidents should:

.1 ensure that transmitting antennae are earthed; and

.2 check that the reserve sources of energy are sufficiently charged.

Distress alerts and procedures

21 The distress alert or distress call has absolute priority over all other transmissions. All stations which receive such signals are required by the Radio Regulations to immediately cease all transmissions capable of interfering with distress communications.

22 In the case of a distress affecting own ship, the radio operator designated as having primary responsibility for radiocommunications during distress incidents should immediately assume responsibility for following the procedures of the Radio Regulations and relevant ITU-R Recommendations.

23 On receiving a distress alert:

.1 the radio operator on watch should alert the master and, if appropriate, the radio operator designated as having primary responsibility for radiocommunications during distress incidents; and

.2 the radio operator designated as having primary responsibility for radiocommunications during distress incidents should evaluate the situation and immediately assume responsibility for following the procedures of the Radio Regulations and relevant ITU-R Recommendations.

Urgency messages

24 In cases of urgency affecting own ship, the radio operator designated as having responsibility for radiocommunications during distress incidents should immediately assume responsibility for following the procedures of the Radio Regulations and relevant ITU-R Recommendations.

25 In cases of communications relating to medical advice, the radio operator designated as having primary responsibility for radiocommunications during distress incidents should follow the procedures of the Radio Regulations and adhere to the conditions as published in the relevant international documentation (see paragraph 14.2) or as specified by the satellite service provider.

26 In cases of communications relating to medical transports, as defined in the Protocol additional to the Geneva Conventions of 12 August 1949, and relating to the protection of victims of international armed conflicts (Protocol I), the radio operator designated as having primary responsibility for radiocommunication during distress incidents should follow the procedures of the Radio Regulations.

27 On receiving an urgency message, the radio operator on watch should alert the master and, if appropriate, the radio operator designated as having primary responsibility for radiocommunications during distress incidents.

Safety messages

28 When a safety message is to be transmitted, the master and the radio operator on watch should follow the procedures of the Radio Regulations.

29 On receiving a safety message, the radio operator on watch should note its content and act in accordance with the master's instructions.

30 Bridge-to-bridge communications should be exchanged on VHF channel 13. Bridge-to-bridge communications are described as "Intership Navigation Safety Communications" in the Radio Regulations.

Radio records

31 Additional entries in the radio log should be made in accordance with paragraphs 10, 12, 14, 17 and 33.

32 Unauthorized transmissions and incidents of harmful interference should, if possible, be identified, recorded in the radio log and brought to the attention of the Administration in compliance with the Radio Regulations, together with an appropriate extract from the radio log.

Battery maintenance

33 Batteries providing a source of energy for any part of the radio installation, including those associated with uninterrupted power supplies, are the responsibility of the radio operator designated as having primary responsibility for radiocommunications during distress incidents and should be:

.1 tested on-load and off-load daily and, where necessary, brought up to the fully charged condition;

.2 tested once per week by means of a hydrometer where practicable, or, where a hydrometer cannot be used, by a suitable load test; and

.3 checked once per month for the security of each battery and its connections and the condition of the batteries and their compartment or compartments.

The results of these tests should be recorded in the radio log.

PART 5 – GUIDANCE ON WATCHKEEPING IN PORT

(No provisions)"

(Footnotes)

[1] It should be understood that deck officers need not be qualified in the survey of ships.

[2] The relevant IMO Model Course(s) may be of assistance in the preparation of courses.

[3] See paragraph 72 of section B-I/12 of this Code.

[4] See paragraph 72 of section B-I/12 of this Code.

[5] The ILO Code of Practice on "Accident Prevention on Board Ship at Sea and in Port" may be of assistance in the preparation of courses.

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Convenção Internacional sobre Normas de Formação, Certificação e de Serviço de Quartos para Marítimos, 1978

AS PARTES DESTA CONVENÇÃO,

DESEJANDO promover a segurança da vida humana e da propriedade no mar, bem como a protecção do meio ambiente marinho pelo estabelecimento, em comum acordo, de normas de formação, certificação e serviço de quartos para marítimos, e

CONSIDERANDO que este objectivo pode ser mais bem atingido pela conclusão de uma Convenção Internacional sobre Normas de Formação, Certificação e de Serviço de Quartos para Marítimos

ACORDARAM o seguinte:

Artigo I

Obrigações gerais ao abrigo da Convenção

(1) As Partes se comprometem a tornar efectivas as disposições da Convenção e de seu Anexo, que deve constituir parte integrante da Convenção. Toda referência à Convenção constitui ao mesmo tempo uma referência ao Anexo.

(2) As Partes se comprometem a promulgar todas as leis, decretos, ordens e regulamentos e a tomar as demais providências que possam ser necessárias para dar à Convenção total e completo efeito, de modo a assegurar que, quanto à segurança da vida humana e da propriedade no mar e, bem assim, à protecção do meio ambiente marinho, os marítimos a bordo dos navios tenham as qualificações e as aptidões correspondentes às suas atribuições.

Artigo II

Definições

Para os propósitos desta Convenção, a menos que disposto expressamente de outra maneira:

(*a*) Parte designa o Estado para o qual a Convenção entrou em vigor;

(*b*) Administração designa o Governo da Parte cuja bandeira o navio está autorizado a arvorar;

(*c*) Certificado designa um documento válido, qualquer que seja o nome pelo qual possa ser conhecido, emitido pela ou sob a autoridade da Administração, ou pela mesma reconhecido, autorizando o portador a servir como especificado no referido documento, ou conforme autorizado pela legislação nacional;

(*d*) Habilitado significa a pessoa apropriadamente possuindo um certificado;

(*e*) Organização designa a Organização Marítima Internacional (IMO);

(*f*) Secretário-geral designa o Secretário-geral da Organização;

(*g*) Navio que opera na navegação em mar aberto designa um navio outro que não aqueles que operam exclusivamente em águas interiores ou em águas abrigadas ou em suas proximidades ou ainda nas áreas em que se aplicam os regulamentos dos portos;

(*h*) Embarcação de pesca designa uma embarcação utilizada na captura de pescado, baleias, focas, morsas ou outros recursos vivos do mar;

(*j*) Regulamento de Radiocomunicações designa o Regulamento de Radiocomunicações anexo ou considerado como estando anexo a mais recente Convenção Internacional de Telecomunicações que possa estar em vigor em qualquer ocasião.

Artigo III

Aplicação

A Convenção será aplicada aos marítimos servindo a bordo de navios que operam na navegação em mar aberto, autorizados a arvorar a bandeira de uma Parte, exceptuando-se os que servem a bordo de:

(*a*) navios de guerra, navios auxiliares ou outros navios de propriedade ou operados por um Estado, desde que sejam utilizados somente em serviços governamentais não comerciais; entretanto, cada Parte deve assegurar, pela adopção de medidas apropriadas que não prejudiquem as operações ou a capacidade operacional de navios desses tipos, de sua propriedade ou por ele operados, que as pessoas que servem nesses navios atendam às prescrições da Convenção, no que for razoável e aplicável.

(*b*) embarcações de pesca;

(*c*) embarcações de recreio não empregadas em comércio; ou

(*d*) embarcações de madeira de construção primitiva.

Artigo IV

Comunicação de informações

(1) As Partes deverão comunicar ao Secretário-Geral, logo que possível:

(*a*) o texto das leis, decretos, ordens, regulamentos e demais instrumentos promulgados, relativos às várias matérias contidas no escopo da Convenção;

(*b*) detalhes completos, quando apropriados, de programas e duração de cursos, assim como as exigências para os exames e outras condições que sejam previstas em âmbito nacional, para a emissão de cada certificado, em conformidade com a Convenção;

(*c*) um número suficiente de certificados, emitidos em conformidade com a Convenção.

(2) O Secretário-geral deverá notificar todas as Partes sobre o recebimento de qualquer comunicação a que se refere o parágrafo (1) (*a*) e, inter alia, para fins dos propósitos contidos nos artigos IX e X, deve, mediante solicitação, fornecer-lhes toda e qualquer informação recebida no âmbito dos parágrafos (1) (*b*) e (*c*).

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Artigo V

Outros tratados e interpretação

(1) Todos os tratados, convenções e acordos anteriores, relativos a normas de formação, certificação e de serviço de quartos para marítimos, que estejam em vigor entre as Partes, continuam a ter total e completo efeito na vigência de seus prazos, no que se referirem a:

(*a*) marítimos para os quais a Convenção não se aplica;

(*b*) marítimos para os quais esta Convenção se aplica, mas em assuntos que nela não foram objecto de disposições expressas.

(2) Entretanto, na medida em que tais tratados, convenções ou acordos, entrem em conflito com as disposições da Convenção, as Partes deverão revisar os compromissos assumidos nesses tratados, convenções e acordos com o objectivo de assegurar que não haja nenhum conflito entre esses compromissos e suas obrigações estatuídas na Convenção.

(3) Todos os assuntos sobre os quais a Convenção não for explícita permanecem objecto de legislação das Partes.

(4) Nenhuma disposição da Convenção prejudicará a codificação e a elaboração do direito do mar pela Conferência das Nações Unidas sobre o Direito do Mar, convocada em decorrência da Resolução 2.750C (XXV) da Assembleia Geral das Nações Unidas, nem as reivindicações e posições jurídicas presentes ou futuras de qualquer Estado concernentes ao direito do mar e à natureza e extensão da jurisdição do País costeiro e do País da bandeira.

Artigo VI

Certificados

(1) Os certificados para comandantes, oficiais e subalternos deverão ser emitidos para os candidatos que, a critério da Administração, atendam aos requisitos para o serviço, idade, condições de saúde, formação, qualificação e exames, de acordo com as disposições apropriadas contidas no Anexo da Convenção.

(2) Os certificados para comandantes e oficiais emitidos de acordo com este artigo deverão ser endossados pela Administração emitente no formato determinado na regra I/2 do Anexo. Se o idioma utilizado não for o inglês, o certificado de endosso deverá incluir a versão para esse idioma.

Artigo VII

Disposições Transitórias

(1) Um certificado de competência ou de serviço em uma capacidade para a qual a Convenção exija um certificado, o qual tenha sido emitido antes da entrada em vigor da Convenção para uma Parte, de acordo com as leis dessa Parte ou com o Regulamento de Radiocomunicações, deverá ser reconhecido como válido para serviço, depois de a Convenção ter entrado em vigor para a mencionada Parte.

(2) Após a data de entrada em vigor da Convenção para uma Parte, sua Administração pode continuar a emitir os certificados de competência, de acordo com sua prática anterior, por um prazo que não ultrapasse cinco anos. Para efeitos da Convenção, tais certificados serão considerados válidos. Durante o período de transição, tais certificados serão emitidos somente para os marítimos que tenham iniciado seu serviço no mar antes de a Convenção entrar em vigor para essa Parte, e no departamento do navio ao qual o certificado se refere. A Administração deverá assegurar que todos os demais candidatos à certificação serão examinados, e habilitados, de acordo com a Convenção.

(3) Uma Parte pode, num período de dois anos a contar da entrada em vigor da Convenção para essa Parte, emitir um certificado de serviço para marítimos que não tenham um certificado apropriado de acordo com a Convenção, nem um certificado de competência emitido de acordo com as leis dessa Parte, antes de a Convenção entrar em vigor para a mesma Parte, mas que tenham:

(*a*) servido na capacidade para a qual desejam obter um certificado de serviço durante no mínimo três anos no mar, dentro dos últimos sete anos que precederam a entrada em vigor da Convenção para essa Parte;

(*b*) fornecido evidência de que tenham tido desempenho satisfatório naquele serviço;

(*c*) provado à Administração sua aptidão médica, principalmente quanto à visão e audição, levando em consideração sua idade na ocasião da solicitação.

Para os propósitos da Convenção, um certificado de serviço emitido de acordo com este parágrafo deve ser encarado como equivalente a um certificado emitido em conformidade com a Convenção.

Artigo VIII

Dispensas

(1) Em caso de excepcional necessidade, as Administrações, se julgarem que isto não causará qualquer perigo a pessoas, a propriedades ou ao meio ambiente, podem emitir uma dispensa permitindo a um determinado marítimo servir em um determinado navio por um período especificado, que não exceda de seis meses, em uma capacidade para a qual não possua o certificado apropriado, desde que estejam convencidas que a pessoa para a qual a licença for emitida seja adequadamente qualificada para ocupar o cargo vago, com segurança. Essa dispensa não será concedida para a capacidade de oficial de radiocomunicações ou de operador de radiotelefonia a não ser nas circunstâncias previstas nas disposições relevantes do Regulamento de Radiocomunicações. Entretanto, as dispensas não devem ser concedidas para Comandante ou Chefe de Máquinas, salvo em caso de força maior e somente por período o mais curto possível.

(2) Qualquer dispensa concedida para um cargo deverá ser concedida somente a pessoas apropriadamente habilitadas a ocupar o cargo imediatamente abaixo. Quando não for exigida pela Convenção a certificação do cargo

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abaixo, a dispensa pode ser emitida para uma pessoa cuja qualificação e experiência são, na opinião da Administração, de clara equivalência aos requisitos do cargo a ser preenchido, desde que a pessoa indicada, não sendo portadora de um certificado apropriado, seja aprovada em um teste aceito pela Administração, demonstrando que tal dispensa pode ser emitida com toda a segurança. Além disso, a Administração deverá assegurar que o cargo em causa seja preenchido, logo que possível, por um portador de certificado apropriado.

(3) As Partes deverão, logo que possível, após o dia 1° de Janeiro de cada ano, enviar um relatório ao Secretário-Geral informando o total de dispensas emitidas durante o ano para cada capacidade para a qual um certificado é requerido, e que tenham sido emitidas durante o ano para navios que operam na navegação em mar aberto, juntamente com informações sobre o número desses navios com arqueação bruta respectivamente acima e abaixo de 1.600.

Artigo IX

Equivalências

(1) A Convenção não impedirá uma Administração de manter ou adoptar outros arranjos de educação e formação, inclusive aqueles que envolvam a prestação de serviço em navios que operam na navegação em mar aberto e a organização de bordo, especialmente adaptados ao desenvolvimento tecnológico e aos tipos especiais de navios e serviços, desde que o nível do serviço em navios que operam na navegação em mar aberto, dos conhecimentos e da eficiência, assegure, no que concerne à navegação e operação técnica do navio e da carga, um grau de segurança no mar e tenha efeitos preventivos quanto à poluição, pelo menos equivalentes àqueles constantes da Convenção.

(2) Os detalhes de tais arranjos deverão ser relatados logo que possível ao Secretário-Geral, que divulgará tais particularidades a todas as Partes.

Artigo X

Controlo

(1) Os navios, excepto aqueles excluídos pelo artigo III, quando estiverem nos portos de uma Parte, estarão sujeitos ao controle de funcionários devidamente autorizados por essa Parte para verificar se todos os marítimos embarcados, para os quais a Convenção exige a posse de certificados, são de fato portadores de certificado ou licença apropriados. Tais certificados serão aceites a menos que existam claros indícios para acreditar que o certificado tenha sido obtido por fraude, ou de que o portador não seja a pessoa para qual o certificado foi originalmente emitido.

(2) No caso de se encontrarem quaisquer dessas deficiências conforme as disposições do parágrafo (1) ou consoante as disposições da regra I/4, "Procedimentos de Controlo", o funcionário encarregado do controle deverá encaminhar imediatamente uma informação por escrito ao comandante do navio e ao Cônsul ou, na falta deste, ao representante diplomático mais próximo ou, ainda, à autoridade marítima do país cuja bandeira o navio está autorizado a arvorar, de modo que sejam tomadas as devidas providências. Essa notificação deverá especificar os detalhes das deficiências encontradas, bem como os motivos pelos quais a Parte considera que essas deficiências possam representar perigo para pessoas, propriedades e meio ambiente.

(3) No exercício do controle previsto no parágrafo (1), se, considerando o porte e tipo do navio bem como a duração e natureza da viagem, as deficiências referidas no parágrafo (3) da regra I/4 não forem corrigidas e ficar determinado que este fato representa perigo para pessoas, propriedades e meio ambiente, a Parte encarregada do controle deverá tomar as providências para garantir que o navio não viaje sem que essas exigências tenham sido atendidas e até que os perigos tenham sido eliminados. Os fatos relativos às providências tomadas deverão ser relatados imediatamente ao Secretário-Geral.

(4) Quando no exercício do controle, no âmbito deste artigo, devem ser feitos todos os esforços possíveis para evitar que o navio seja indevidamente detido ou retardado. Se um navio for detido ou retardado dessa maneira, ele terá direito a uma indemnização por perdas e danos daí resultantes.

(5) Este artigo deverá ser aplicado quando necessário para assegurar que nenhum tratamento mais favorável será dado aos navios autorizados a arvorar a bandeira de um país que não é Parte signatária, em relação ao tratamento que é dado aos navios autorizados a arvorar a bandeira de uma Parte.

Artigo XI

Promoção de cooperação técnica

(1) As Partes da Convenção, após consultar a Organização e com a sua assistência, deverão fornecer apoio para aquelas Partes que solicitarem assistência técnica para:

(*a*) formação de pessoal administrativo e técnico;

(*b*) estabelecimento de instituições para a formação de marítimos;

(*c*) fornecimento de equipamentos e facilidades para as instituições de formação;

(*d*) desenvolvimento de programas de formação adequados, incluindo formação prática a bordo de navios que operam na navegação em mar aberto; ou

(*e*) facilitação de outras medidas e arranjos para aprimorar a qualificação dos marítimos;

preferivelmente em âmbito nacional, sub-regional ou regional, para fomento das metas e propósitos da Convenção, levando em consideração, nesse aspecto, as necessidades específicas dos países em desenvolvimento.

(2) De sua parte, a Organização deverá perseguir os esforços supramencionados, como apropriado, consultando outras organizações internacionais, ou a elas se associando, particularmente com a Organização Internacional do Trabalho.

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Artigo XII

Emendas

(1) A Convenção pode sofrer emendas por quaisquer dos seguintes procedimentos:

(*a*) emendas após apreciação no âmbito da Organização:

(i) qualquer emenda proposta por uma Parte deverá ser submetida à apreciação do Secretário-Geral, que então fará sua divulgação a todos os Membros da Organização, a todas as Partes, bem como ao Director-geral do Escritório Internacional do Trabalho com uma antecedência mínima de seis meses do início de sua apreciação;

(ii) qualquer emenda proposta e divulgada desta forma deverá ser encaminhada para apreciação do Comité de Segurança Marítima da Organização;

(iii) as Partes, sendo ou não membros da Organização, terão o direito de participar dos processos do Comité de Segurança Marítima para apreciação e adopção das emendas;

(iv) as emendas deverão ser adoptadas pela maioria de dois terços das Partes presentes e votantes no Comité de Segurança Marítima ampliado, como previsto no sub-parágrafo (a)(iii) (doravante citado como "Comité de Segurança Marítima ampliado") condicionado a que, pelo menos, um terço das Partes esteja presente no momento da votação;

(v) as emendas assim adoptadas deverão ser divulgadas pelo Secretário-Geral a todas as Partes para sua aceitação;

(vi) uma emenda a um artigo será considerada como tendo sido aceita na data em que for aceita por dois terços das Partes;

(vii) uma emenda ao Anexo será considerada como tendo sido aceita:

1. ao fim de dois anos a contar da data na qual ela for comunicada às Partes para aceitação; ou

2. ao fim de um período diferente, o qual não deverá ser inferior a um ano, se assim for determinado na época de sua adopção pela maioria de dois terços das Partes votantes presentes no Comité de Segurança Marítima ampliado;

entretanto, as emendas serão consideradas como não tendo sido aceitas se, no período especificado, mais de um terço das Partes, ou Partes representando uma frota mercante combinada constituída de 50% ou mais de arqueação bruta do total de navios da marinha mercante com arqueação bruta acima de 100, notificarem o Secretário-Geral de que se opõem às emendas;

(viii) uma emenda a um artigo entrará em vigor para aquelas Partes que a tenham aceitado seis meses após a data na qual ela tenha sido considerada como aceita e, com relação a cada Parte que a aceitou após aquela data, seis meses após a data da aceitação pela Parte;

(ix) uma emenda ao Anexo entrará em vigor em relação a todas as Partes, excepto para aquelas que a tenham rejeitado, conforme o sub-parágrafo (a)(vii) e que não tenham retirado sua objecção, seis meses após a data na qual for considerada como tendo sido aceita. Antes da data determinada para entrada em vigor, qualquer Parte pode notificar o Secretário-Geral de que ela se exclui da eficácia dessa emenda por um período inferior a um ano a contar da data de sua entrada em vigor ou por um período maior, que pode ser determinado pela maioria de dois terços das Partes votantes presentes ao Comité de Segurança Marítimo ampliado, na data da adopção da emenda; ou

(*b*) emendas produzidas por uma conferência:

(i) por meio de requerimento conjunto enviado por uma Parte e, pelo menos, um terço das Partes, a Organização deverá, em associação ou em consulta com o Director-geral do Escritório Internacional do Trabalho, convocar uma conferência das Partes para apreciar as emendas à Convenção;

(ii) todas as emendas adoptadas por tal conferência composta da maioria de dois terços das Partes votantes presentes será divulgada, pelo Secretário-geral, a todas as Partes, para sua aceitação;

(iii) a menos que a conferência decida de outra forma, a emenda será considerada como tendo sido aceite e entrará em vigor de acordo com os procedimentos especificados nos sub-parágrafos (*a*)(vi) e (*a*)(viii) ou nos sub-parágrafos (*a*)(vii) e (*a*)(ix), respectivamente, desde que as referências ao Comité de Segurança Marítima ampliado, contidas nestes sub-parágrafos, sejam consideradas como referências feitas à conferência.

(2) Qualquer declaração expressa de aceitação ou de objecção a uma emenda ou a qualquer notificação conforme o parágrafo (1)(a)(ix) deverá ser encaminhada por escrito ao Secretário-geral que, em seguida, as informará a todas as Partes de tal submissão e da data em que foram recebidas.

(3) O Secretário-geral deverá informar a todas as Partes sobre quaisquer emendas que entrarem em vigor, assim como as suas respectivas datas de entrada em vigor.

Artigo XIII

Assinatura, ratificação, aceitação, aprovação e adesão

(1) A Convenção permanecerá em aberto para assinaturas na sede da Organização de 1 de Dezembro de 1978 até 30 de Novembro de 1979 e daí em diante permanecerá em aberto para adesões. Qualquer país pode tornar-se uma Parte da seguinte maneira:

(*a*) pela assinatura sem reservas para ratificação, aceitação ou aprovação; ou

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(*b*) pela assinatura sujeita à ratificação, aceitação ou aprovação, seguida da ratificação, aceitação ou aprovação; ou

(*c*) por adesão.

(2) A ratificação, aceitação, aprovação ou adesão serão efectivadas mediante a entrega ao Secretário-Geral de um instrumento legal para oficializar a eficácia do ato.

(3) O Secretário-Geral deverá informar a todos os países que assinaram a Convenção ou que a ela aderiram, e ao Director-geral do Escritório Internacional do Trabalho, qualquer assinatura ou depósito de qualquer instrumento de ratificação, aceitação, aprovação ou adesão e suas respectivas datas em que foram depositadas.

Artigo XIV

Entrada em vigor

(1) A Convenção entrará em vigor 12 meses após a data na qual pelo menos 25 países, cuja frota mercante atinja pelo menos 50% da arqueação bruta total da marinha mercante mundial de navios com arqueação bruta igual ou acima de 100, a tenham assinado sem reservas para ratificação, aceitação ou aprovação ou, ainda, que tenham depositado o instrumento requerido para ratificação, aceitação, aprovação ou adesão de acordo com o artigo XIII.

(2) O Secretário-geral deverá informar a todos os países que assinaram a Convenção, ou que a ela aderiram, da data na qual entrará em vigor.

(3) Qualquer instrumento de ratificação, aceitação, aprovação ou adesão, depositado durante os 12 meses a que se refere o parágrafo 1, tornar-se-á eficaz quando a Convenção entrar em vigor, ou três meses após o depósito de tais instrumentos, na data que ocorrer mais tarde.

(4) Qualquer instrumento de ratificação, aceitação, aprovação ou adesão depositado após a data em que a Convenção entrar em vigor tornar-se-á eficaz três meses após a data de sua entrega.

(5) Após a data na qual a emenda é considerada como tendo sido aceita, conforme o artigo XII, qualquer instrumento de ratificação, aceitação, aprovação ou adesão depositado, será considerado como concernente à Convenção emendada.

Artigo XV

Denúncia

(1) A Convenção pode ser denunciada por qualquer Parte a qualquer tempo após cinco anos a contar da data na qual a Convenção entrou em vigor para essa Parte.

(2) A denúncia terá eficácia por meio de uma notificação por escrito ao Secretário-Geral, que informará a todas as demais Partes e ao Director-geral do Escritório Internacional do Trabalho qualquer notificação deste tipo recebida, sua data de recebimento assim como a data na qual tal denúncia terá efeito legal.

(3) A denúncia terá eficácia 12 meses após o recebimento da notificação de denúncia pelo Secretário-geral, ou após qualquer período maior do que este que eventualmente possa estar indicado na notificação.

Artigo XVI

Depósito e registo

(1) A Convenção será depositada junto ao Secretário-Geral, que enviará cópias autênticas e certificadas para todos os países signatários, ou que a ela aderiram.

(2) Logo que a Convenção entre em vigor, o Secretário-geral deve enviar seu texto ao Secretário-Geral das Nações Unidas para registo e publicação de acordo com o Artigo 102 da Carta da Organização das Nações Unidas.

Artigo XVII

Idiomas

A Convenção é produzida em um único exemplar escrito nos idiomas chinês, inglês, francês, russo e espanhol, sendo cada um dos textos igualmente autênticos. As traduções oficiais para os idiomas árabe e alemão serão preparadas e guardadas junto com o original assinado.

NA QUALIDADE DE TESTEMUNHAS os abaixo assinados, sendo devidamente autorizados por seus respectivos governos para tal fim, assinaram a Convenção.

FEITO EM LONDRES, em sete de Julho de mil novecentos e setenta e oito.

RESOLUÇÃO 1

Emendas de Manila ao anexo à Convenção Internacional sobre Normas de Formação, Certificação e de Serviço de Quartos para Marítimos – (STCW), 1978

A CONFERENCIA DE MANILA 2010,

NO TERMOS do artigo XII (1) (b) da Convenção Internacional sobre Normas de Formação, Certificação e de Serviço de Quartos para Marítimos – (STCW), 1978 (daqui em diante designada por "Convenção") relativo ao procedimento de emendas da Convenção por uma Conferência das Partes;

TENDO CONSIDERADO as emendas de Manila ao anexo à Convenção propostas e distribuídas aos Membros da Organização e a todas as partes à Convenção;

1 - ADOPTA, nos termos do artigo XII (1) (b) (ii) da Convenção, como emendas ao anexo à Convenção, o texto constante no anexo à presente resolução.

2 - DETERMINA, em conformidade com o estipulado no artigo XII (1) (a) (vii) da Convenção, que as emendas em anexo ao presente documento deverão ser consideradas como tendo sido adoptadas em 1 de Julho de 2011, a menos que, antes desta data, mais de um terço das Partes, ou um conjunto de Partes cujas frotas mercantes representam no total um mínimo de 50% da tonelagem de arqueação bruta da frota mundial dos navios de comércio com arqueação bruta igual ou superior a 100, notificarem o Secretário-geral de que levantam uma objecção às emendas;

3 - CONVIDA as Partes a tomar nota que, em conformidade com o artigo XII (1) (a) (ix) da Convenção, as

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emendas em anexo ao presente documento, entrarão em vigor em 1 de Janeiro de 2012, após terem sido consideradas aceites, de acordo com o parágrafo 2 acima;

4 - SOLICITA ao Secretário-geral da Organização que proceda à distribuição de cópias autenticadas da presente resolução e do texto das emendas constantes do anexo a todas as Partes à Convenção;

5 - MAIS SOLICITA ao Secretário-geral que proceda à distribuição de cópias da presente resolução e do respectivo anexo a todos os Membros da Organização que não são Partes à Convenção.

ANEXO

Emendas de Manila ao anexo à Convenção Internacional sobre Normas de Formação, Certificação e de Serviço de Quartos para Marítimos – (STCW), 1978

CAPÍTULO I

Disposições gerais

Regra I/1

Definições e clarificações

1 Para os efeitos da Convenção, a menos que expressamente disposto em contrário:

.1 Regras designa as regras contidas no Anexo da Convenção;

.2 Aprovado(a) significa aprovado(a) pela Parte de acordo com estas regras;

.3 Comandante designa a pessoa que tem o comando de um navio;

.4 Oficial designa um membro da tripulação, que não o comandante, designado como tal por lei ou por regras nacionais ou, na ausência de tal designação, por consenso ou por costume;

.5 Oficial de convés designa um oficial qualificado de acordo com o disposto no Capítulo II da Convenção;

.6 Imediato designa o oficial que se segue ao comandante na hierarquia de bordo, sobre o qual recairá o comando do navio em caso de incapacidade do comandante;

.7 Oficial de máquinas designa um oficial qualificado de acordo com o disposto nas Regras III/1, III/2 ou III/3 da Convenção;

.8 Chefe de máquinas designa o oficial de máquinas mais antigo, responsável pela propulsão mecânica e pela operação e manutenção das instalações mecânicas e eléctricas do navio;

.9 Segundo oficial de máquinas designa o oficial de máquinas que se segue ao chefe de máquinas na hierarquia, e sobre o qual recairá a responsabilidade pela propulsão mecânica e pela operação e manutenção das instalações mecânicas e eléctricas do navio em caso de incapacidade do chefe de máquinas;

.10 Oficial assistente de máquinas (Praticante de Máquinas) designa uma pessoa em formação para tornar-se um oficial de máquinas e designado como tal por lei ou regulamento nacional;

.11 Rádio-operador designa uma pessoa portadora de um certificado apropriado, emitido ou reconhecido pela Administração de acordo com o disposto no Regulamento de Radiocomunicações

.12 Rádio operador de GMDSS designa uma pessoa que está qualificada de acordo com o disposto no Capítulo IV da Convenção;

.13 Marítimo da mestrança e marinhagem designa um membro da tripulação do navio, que não o comandante ou um oficial (marítimos de Mestrança e Marinhagem);

.14 Viagens na navegação costeira designa as viagens nas proximidades de uma Parte, como definido por essa Parte;

.15 Potência propulsora designa a máxima potência nominal contínua de saída, em quilowatts, de todas as máquinas principais da propulsão do navio que consta do certificado de registo do navio ou de outro documento oficial;

.16 Atribuições de radio-comunicações abrangem, como for adequado, o serviço de quarto, a manutenção técnica e os reparos realizados de acordo com o Regulamento de Radiocomunicações, com a Convenção Internacional para a Salvaguarda da Vida Humana no Mar e, a critério de cada Administração, as recomendações pertinentes da Organização;

.17 Petroleiro significa um navio construído e utilizado para o transporte de petróleo e de seus derivados a granel;

.18 Navio-tanque para produtos químicos significa um navio construído, ou adaptado, e utilizado para o transporte a granel de qualquer produto líquido listado no Capítulo 17 do Código Internacional de Produtos Químicos a Granel;

.19 Navio-tanque transportador de gás liquefeito significa um navio construído, ou adaptado, e utilizado para o transporte a granel de qualquer gás liquefeito, ou de outro produto, listado no Capítulo 19 do Código Internacional de Navios Transportadores de Gás;

.20 Navio de passageiros significa um navio, como definido na Convenção Internacional para a Salvaguarda da Vida Humana no Mar, 1974, como emendada;

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.21 Navio ro-ro de passageiros significa um navio de passageiros com espaços de carga ro-ro, ou espaços de categoria especial, como definido na Convenção Internacional para a Salvaguarda da Vida Humana no Mar, 1974, como emendada;

.22 Mês significa um mês do calendário, ou 30 dias, constituído de períodos inferiores a um mês;

.23 Código STCW significa o Código Sobre Normas de Formação, Certificação e de Serviço de Quartos (STCW) para Marítimos, como adoptado pela Resolução 2 da Conferência de 1995, como possa vir a ser emendado;

.24 Função significa um grupo de tarefas, atribuições e responsabilidades, como especificado no Código STCW, necessárias para a operação do navio, a segurança da vida humana no mar ou a protecção do meio ambiente marinho;

.25 Companhia significa o proprietário do navio ou qualquer outra organização ou pessoa, como o gerente ("manager"), ou o afretador a casco nu, que tenha assumido do proprietário a responsabilidade pela operação do navio e que, ao assumir essa responsabilidade, tenha concordado em assumir todas as atribuições e responsabilidades impostas à companhia por estas regras;

.26 Serviço em navegação em mar aberto significa o serviço a bordo de um navio, relevante para a emissão ou a revalidação de um certificado ou de outra qualificação;

.27 Código ISPS significa o Código Internacional de Protecção de Navios e Instalações Portuárias (ISPS), adoptado em 12 de Dezembro de 2002, por meio da Resolução 2 da Conferência de Governos Contratantes da Convenção Internacional para a Salvaguarda da Vida Humana no Mar (SOLAS), 1974, como possa vir a ser emendada pela Organização;

.28 Oficial de protecção do navio significa a pessoa a bordo do navio, directamente subordinada ao comandante, designada pela Companhia como responsável pela protecção do navio, inclusive pela implementação e manutenção do plano de protecção do navio e pela ligação com o funcionário de protecção da Companhia e com o funcionário de protecção da instalação portuária;

.29 Funções de protecção incluem todas as tarefas e serviços de protecção a bordo dos navios, conforme definido pelo capítulo XI-2 da Convenção SOLAS 1974, emendada e o Código ISPS - Código Internacional de Protecção de Navios e de Instalações Portuárias;

.30 Certificado de competência designa um certificado emitido e autenticado/endossado para comandantes, oficiais e rádio operadores de GMDSS de acordo com o disposto nos Capítulos II, III, IV ou VII deste Anexo, e habilitando o seu portador legítimo a servir na capacidade e a desempenhar as funções envolvidas no nível de responsabilidade especificado nesse certificado;

.31 Certificado de proficiência (de qualificação) significa um certificado, que não um certificado de competência, emitido para um marítimo, declarando que foram atendidas as exigências pertinentes da Convenção relativas à formação, às competências ou ao serviço em navegação em mar aberto;

.32 Prova documental significa uma documentação, que não um certificado de competência ou um certificado de proficiência, utilizado para provar que foram atendidas as exigências pertinentes da Convenção;

.33 Oficial electrotécnico designa um oficial qualificado de acordo com o disposto na Regra III/6 da Convenção;

.34 Marítimo qualificado de convés designa um subalterno (mestrança e marinhagem) qualificado de acordo com o disposto na Regra II/5 da Convenção;

.35 Marítimo qualificado de máquinas significa um subalterno (mestrança e marinhagem) qualificado de acordo com o disposto na Regra III/5 da Convenção;

.36 Subalterno electrotécnico significa um marítimo da mestrança qualificado de acordo com o disposto na Regra III/7 da Convenção;

2 Estas regras são suplementadas pelas disposições obrigatórias contidas na Parte A do Código STCW e:

.1 qualquer referência a uma exigência de uma regra constitui igualmente uma referência à Secção correspondente da Parte A do Código STCW;

.2 ao aplicar estas regras, as respectivas directrizes e o material explanatório contido na Parte B do Código STCW devem ser levados em consideração no mais alto grau possível para obter um cumprimento mais uniforme das disposições da Convenção numa base global;

.3 as emendas à Parte A do Código STCW deverão ser adoptadas, postas em vigor e surtir efeito de acordo com o disposto no Artigo XII da Convenção, relativo aos procedimentos de adopção de emendas aplicáveis ao Anexo; e

.4 a Parte B do Código STCW deverá ser emendada pelo Comité de Segurança Marítima, de acordo com suas regras de procedimento.

3 As referências feitas no Artigo VI da Convenção à "Administração" e à "Administração emitente" não deverão ser interpretadas como impedindo qualquer Parte de emitir e endossar certificados com base no disposto nestas regras.

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Regra I/2

Certificados e endossos/autenticações

1 Os certificados de competência só deverão ser emitidos pela Administração, após a verificação da autenticidade e da validade de qualquer prova documental necessária.

2 Os certificados emitidos de acordo com o disposto nas Regras V/1-1 e V/1-2 para comandantes e oficiais só deverão ser emitidos pela Administração.

3 Os certificados deverão ser redigidos no idioma ou idiomas oficiais do país emitente. Se o idioma utilizado não é o inglês, o texto deverá conter uma versão para esse idioma.

4 Com relação aos rádio operadores, as Partes podem:

.1 incluir os conhecimentos adicionais exigidos pelas regras pertinentes no exame para a emissão de um certificado que esteja de acordo com o Regulamento de Radiocomunicações; ou

.2 emitir um certificado separado, indicando que o portador possui o conhecimento adicional exigido pelas regras pertinentes.

5 O endosso exigido pelo artigo VI da Convenção para atestar a emissão de um certificado só deverá ser emitido se tiverem sido atendidas todas as exigências da Convenção.

6 A critério de uma Parte, os endossos poderão ser incorporados ao formato dos certificados que estiverem sendo emitidos como disposto na Secção A-I/2 do Código STCW. Se forem assim incorporados, o modelo utilizado deverá ser o apresentado na Secção A-I/2, parágrafo 1. Se emitidos de outro modo, o modelo de endosso utilizado deverá ser o apresentado no parágrafo 2 dessa Secção.

7 Uma Administração que reconhece com base na Regra I/10:

.1 um certificado de competência; ou

.2 um certificado de proficiência emitido para comandantes e oficiais de acordo com o disposto nas Regras V/1-1 e V/1-2, só deverá endossar esse certificado para atestar o seu reconhecimento após assegurar-se da autenticidade e da validade do certificado.

O endosso só deverá ser emitido se tiverem sido atendidas todas as exigências da Convenção. O modelo de endosso utilizado deverá ser o apresentado no parágrafo 3 da Secção A-I/2 do Código STCW.

8 Os endossos mencionados nos parágrafos 5, 6 e 7:

.1 podem ser emitidos sob a forma de documentos separados;

.2 só deverão ser emitidos pela Administração;

.3 a cada endosso deverá ser atribuído um número único, sendo que aos endossos que atestam a emissão de um certificado pode ser atribuído o mesmo número do certificado em questão, desde que o número seja único; e

.4 deverão expirar logo que o certificado endossado expirar ou for retirado, suspenso ou cancelado pela Parte que o emitiu, e em qualquer caso, num prazo não superior a cinco anos após a data da sua emissão.

9 A capacidade na qual o portador de um certificado está autorizado a servir deverá estar identificada no formulário do endosso, em termos idênticos àqueles usados nas exigências aplicáveis da Administração relativas à tripulação de segurança.

10 As Administrações podem utilizar um formato diferente do sugerido na Secção A-I/2 do Código STCW, desde que sejam fornecidas, no mínimo, as informações exigidas, em caracteres romanos e em algarismos arábicos, levando em consideração as variações permitidas com base na Secção A-I/2.

11 Sujeito ao disposto na Regra I/10, parágrafo 5, qualquer certificado exigido pela Convenção deve ser mantido disponível em sua forma original a bordo do navio em que o seu portador estiver servindo.

12 Toda Parte deverá assegurar que os certificados só serão emitidos para candidatos que atenderem às exigências desta regra.

13 Os candidatos a certificação deverão apresentar uma prova satisfatória:

.1 da sua identidade;

.2 de que a sua idade não é inferior à estabelecida na regra pertinente ao certificado que foi solicitado;

.3 que atendem aos padrões de aptidão médica especificados na Secção A-I/9 do Código STCW;

.4 que completaram o serviço em navegação em mar aberto, e qualquer formação obrigatória relacionada com ele, que seja exigida por estas regras para o certificado que foi solicitado; e

.5 que atendem aos padrões de competência estabelecidos nessas regras para as capacidades, funções e níveis que serão identificados no endosso no certificado.

14 Toda Parte se compromete a manter um registo, ou registos, de todos os certificados e endossos para comandantes, oficiais e, como for aplicável, subalternos, que forem emitidos, que tenham expirado ou que tenham sido revalidados, suspensos, cancelados ou informados como tendo sido perdidos ou destruídos, e das dispensas concedidas.

15 Toda Parte se compromete a disponibilizar informação sobre a situação daqueles certificados de competência, endossos e dispensas, para outras Partes e companhias que solicitarem uma verificação da autenticidade e da validade dos certificados que lhes forem apresentados por marítimos buscando o reconhecimento de seus certificados com base na Regra I/10 ou um emprego a bordo de navio.

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16 A partir de 1 de Janeiro de 2017, a informação sobre a situação das informações que, de acordo com o parágrafo 15 desta regra é exigida que esteja disponível, deverá ser disponibilizada, no idioma inglês, por meio de meios electrónicos.

Regra I/3

Princípios que regem as viagens na navegação costeira

1 Qualquer Parte, ao definir viagens na navegação costeira para os fins da Convenção, não deverá impor aos marítimos que servem a bordo de navios autorizados a arvorar a bandeira de uma outra Parte, e que estão envolvidos nessas viagens, exigências relativas à formação, experiência ou certificação mais rigorosas do que as impostas aos marítimos que servem a bordo de navios autorizados a arvorar a sua própria bandeira. Em nenhuma situação, qualquer Parte deverá impor a marítimos que servem a bordo de navios autorizados a arvorar a bandeira de outra Parte exigências mais rigorosas do que as da Convenção em relação a navios que não são empregados em viagens na navegação costeira.

2 Para navios aos quais tiverem sido concedidos os benefícios das disposições da Convenção relativos a viagens na navegação costeira que incluam viagens ao largo da costa de outras Partes, dentro dos limites da sua definição de navegação costeira, uma Parte deverá assumir um compromisso com as Partes envolvidas especificando os detalhes das duas áreas de tráfego marítimo envolvidas e de outras condições pertinentes.

3 Com relação a navios autorizados a arvorar a bandeira de uma Parte, e que sejam empregados regularmente em viagens na navegação costeira ao largo da costa de outra Parte, a Parte cuja bandeira o navio estiver autorizado a arvorar deverá estabelecer exigências relativas à formação, experiência e certificação para os marítimos que estiverem servindo naqueles navios, que sejam pelo menos iguais às da Parte ao largo de cuja costa o navio estiver sendo empregado, desde que elas não excedam as exigências da Convenção em relação a navios não empregados em viagens na navegação costeira. Os marítimos que estiverem servindo em um navio que estenda a sua viagem além do que é definido por uma Parte como viagem na navegação costeira, e que entre em águas não abrangidas por tal definição, deverão cumprir os requisitos de competência apropriados da Convenção.

4 Uma Parte pode conceder a um navio autorizado a arvorar a sua bandeira os benefícios das disposições da Convenção relativos a viagens na navegação costeira, quando tal navio for empregado regularmente em viagens na navegação costeira, como definido pela Parte, ao largo da costa de uma não-Parte da Convenção.

5 Os certificados de marítimos emitidos por uma Parte para os limites definidos de viagens na navegação costeira podem ser aceites por outras Partes para serviço em seus limites definidos de viagens na navegação costeira, desde que as Partes envolvidas assumam um compromisso especificando os detalhes das áreas de tráfego marítimo envolvidas e de outras condições pertinentes daquele compromisso.

6 As Partes, ao definirem viagens na navegação costeira, de acordo com as exigências desta regra, deverão:

.1 obedecer aos princípios que regem as viagens na navegação costeira especificados na Secção A-I/3;

.2 comunicar ao Secretário-geral, de acordo com as exigências da Regra I/7, os detalhes das disposições adoptadas; e

.3 incluir os limites das viagens na navegação costeira nos endossos feitos de acordo com a Regra I/2, parágrafos 5, 6 ou 7.

7 Nenhuma disposição desta regra deverá, de forma alguma, limitar a jurisdição de qualquer Estado, seja ele uma Parte ou não da Convenção.

Regra I/4

Procedimentos de controlo

1 O controlo exercido por um funcionário de inspecção devidamente autorizado com base no Artigo X deverá estar restrito ao seguinte:

.1 verificação, de acordo com o Artigo X(1), de que todos os marítimos que servem a bordo, dos quais é exigido que sejam habilitados de acordo com a Convenção, possuem um certificado apropriado, ou uma dispensa válida, ou que forneçam prova documental de que uma solicitação de endosso foi submetida à Administração de acordo com o a Regra I/10, parágrafo 5;

.2 verificação de que os números e certificados dos marítimos que servem a bordo estão de acordo com as exigências aplicáveis da Administração relativas à tripulação de segurança; e

.3 avaliação, de acordo com a Secção A-I/4 do Código STCW, da habilidade dos marítimos do navio para manter os padrões de serviço de quarto e de protecção do navio, como for adequado, como exigido pela Convenção, se houver claros indícios para crer que esses padrões não estão sendo mantidos devido à ocorrência de algum dos seguintes fatos:

.3.1 o navio esteve envolvido em uma colisão, encalhe ou varação; ou

.3.2 ocorreu uma descarga de substâncias do navio quando em viagem, fundeado ou atracado, considerada ilegal por qualquer convenção internacional; ou

.3.3 o navio manobrou de uma maneira irregular ou insegura, não cumprindo assim as medidas sobre rotas adoptadas pela Organização, ou não seguindo as práticas e procedimentos de uma navegação segura; ou

.3.4 o navio está, sob outros aspectos, sendo operado de modo a constituir um perigo para as pessoas, propriedades, o meio ambiente ou comprometendo a protecção.

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2 As deficiências que podem ser consideradas como oferecendo um perigo para pessoas, propriedades ou para o meio ambiente incluem as seguintes:

.1 marítimos não portarem um certificado, não terem um certificado apropriado ou uma dispensa válida, ou não fornecerem prova documental de que um pedido de endosso foi submetido à Administração de acordo com a Regra I/10, parágrafo 5;

.2 o não cumprimento das exigências aplicáveis da Administração relativas à tripulação de segurança;

.3 os arranjos do quarto de serviço de navegação ou de máquinas não atenderem às exigências especificadas para o navio pela Administração;

.4 ausência, em um quarto de serviço, de uma pessoa qualificada para operar equipamentos essenciais a uma navegação segura, à segurança das radiocomunicações ou à prevenção da poluição marinha; e

.5 inabilidade de guarnecer o primeiro quarto de serviço no começo de uma viagem e os quartos de rendição subsequentes com pessoas que estejam suficientemente descansadas e, sob outros aspectos, aptas para o serviço.

3 Deixar de corrigir qualquer das deficiências referidas no parágrafo 2, na medida em que forem consideradas pela Parte que esteja realizando o controlo como oferecendo um perigo às pessoas, a propriedades ou ao meio ambiente, deverá ser a única razão pela qual uma Parte pode deter um navio com base no artigo X.

Regra I/5

Disposições nacionais

1 Toda Parte deverá estabelecer processos e procedimentos para a investigação imparcial de qualquer incompetência, acto, omissão ou comprometimento da protecção ao navio que seja informado e que possa oferecer uma ameaça directa à segurança da vida humana, a propriedades no mar ou ao meio ambiente marinho, realizado pelos portadores de certificados ou de endossos emitidos por essa Parte em conexão ao desempenho das suas atribuições relativas aos seus certificados, e para a retirada, suspensão e cancelamento desses certificados por essa causa e para a prevenção de fraudes.

2 Toda Parte deverá adoptar e aplicar medidas apropriadas para impedir fraudes e outras práticas ilícitas envolvendo certificados e endossos emitidos.

3 Toda Parte deverá estabelecer penalidades ou medidas disciplinares para os casos em que as disposições de sua legislação nacional que põem em efeito a Convenção não forem cumpridas pelos navios autorizados a arvorar a sua bandeira, ou por marítimos devidamente habilitados por essa Parte.

4 Em especial, essas penalidades ou medidas disciplinares deverão ser estabelecidas, e deverá ser exigido o seu cumprimento, nos casos em que:

.1 uma companhia ou um comandante tiver empregado uma pessoa que não possua um certificado, como exigido pela Convenção;

.2 um comandante tiver permitido que qualquer função ou serviço, em qualquer capacidade que estas regras exijam que seja desempenhado por uma pessoa portadora de um certificado apropriado, seja desempenhado por uma pessoa que não possua o certificado exigido, uma dispensa válida, ou a prova documental exigida pela Regra I/10, parágrafo 5; ou

.3 uma pessoa que tiver obtido, por meio de fraude ou de documentos forjados, um contrato para emprego para desempenhar qualquer função, ou para servir em qualquer capacidade para a qual seja exigido por estas regras que seja desempenhada ou preenchida por uma pessoa que possua um certificado ou uma dispensa.

5 Uma Parte em cuja jurisdição estiver localizada qualquer companhia, ou qualquer pessoa, que por claros indícios acredita-se que tenha sido responsável por, ou que tenha tido conhecimento de, qualquer aparente descumprimento da Convenção especificado no parágrafo 4, deverá oferecer toda colaboração possível a qualquer Parte que a informe de sua intenção de abrir um inquérito administrativo sob sua jurisdição.

Regra I/6

Formação e avaliação

Toda Parte deverá assegurar que:

.1 a formação e a avaliação de marítimos, como exigido com base na Convenção, sejam administradas, supervisionadas e monitoradas de acordo com as disposições da Secção A-I/6 do Código STCW; e

.2 os responsáveis pela formação e pela avaliação de competência dos marítimos, como exigido com base na Convenção, sejam devidamente qualificados de acordo com o disposto na Secção A-I/6 do Código STCW para o tipo e o nível de formação ou de avaliação envolvidos.

Regra I/7

Comunicação da informação

1 Além das informações que o Artigo IV determina que sejam comunicadas, toda Parte deverá fornecer ao Secretário-geral, dentro dos períodos estabelecidos e no formato especificado na Secção A-I/7 do Código STCW, quaisquer outras informações que possam ser exigidas pelo Código sobre outras medidas tomadas pela Parte para que a Convenção tenha pleno e completo efeito.

2 Quando forem recebidas informações completas, como estabelecido no artigo IV e na Secção A-I/7 do Código STCW, e essas informações confirmarem que as disposi-

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ções da Convenção foram plena e totalmente postas em efeito, o Secretário-geral deverá submeter um relatório neste sentido ao Comité de Segurança Marítima.

3 Após a subsequente confirmação pelo Comité de Segurança Marítima, de acordo com os procedimentos adoptados pelo Comité, de que as informações que foram fornecidas demonstram que as disposições da Convenção foram plena e completamente postas em efeito:

.1 o Comité de Segurança Marítima deverá identificar as Partes a que essas informações dizem respeito;

.2 examinar a lista de Partes que comunicaram informações que demonstraram que deram pleno e completo efeito às disposições pertinentes da Convenção, para manter na lista apenas as Partes a que essas informações dizem respeito; e

.3 as outras Partes deverão ser autorizadas, sujeito ao disposto nas Regras I/4 e I/10, a aceitar, em princípio, que os certificados emitidos pelas Partes identificadas no parágrafo 3.1, ou em seu nome, estão de acordo com a Convenção.

4 As emendas à Convenção e ao Código STCW, com datas de entrada em vigor posteriores à data em que as informações foram, ou serão, comunicadas ao Secretário-geral de acordo com o disposto no parágrafo 1, não estão sujeitas ao disposto na Secção A-I/7, parágrafos 1 e 2.

Regra I/8

Normas de qualidade

1 Toda Parte deverá assegurar que:

.1 de acordo com as disposições da Secção A-I/8 do Código STCW, toda formação, avaliação de competência, certificação, inclusive certificação médica, endosso e actividades de revalidação realizadas por órgãos não-governamentais, ou entidades sob sua autoridade, sejam monitorizadas continuamente por meio de um sistema de normas de qualidade para assegurar que os objectivos definidos sejam alcançados, inclusive os relativos às qualificações e à experiência dos instrutores e avaliadores; e

.2 quando órgãos ou entidades governamentais realizarem tais actividades, deverá existir um sistema de normas de qualidade.

2 Toda Parte deverá assegurar, também, que periodicamente seja realizada uma avaliação, de acordo com o disposto na Secção A-I/8 do Código STCW por pessoas qualificadas que não são envolvidas nas actividades avaliadas. Essa avaliação deverá abranger todas as alterações feitas nas regras e procedimentos nacionais de acordo com emendas à Convenção e ao Código STCW, com datas de entrada em vigor posteriores à data em que as informações foram comunicadas ao Secretário-geral.

3 Um relatório contendo os resultados da avaliação exigida pelo parágrafo 2 deverá ser enviado ao Secretário-geral de acordo com o formato especificado na Secção A-I/7 do Código STCW.

Regra I/9

Normas de aptidão médica

1 Toda Parte deverá estabelecer padrões de aptidão médica para marítimos e procedimentos para a emissão de um certificado médico de acordo com o disposto nesta regra e na Secção A-I/9 do Código STCW.

2 Toda Parte deverá assegurar que as pessoas responsáveis por avaliar a aptidão médica de marítimos sejam médicos reconhecidos pela Parte para efeito de realizar exames médicos, de acordo com o disposto na Secção A-I/9 do Código STCW.

3 Todo marítimo que for portador de um certificado emitido com base no disposto na Convenção, que estiver servindo no mar, deverá possuir também um certificado médico válido, emitido de acordo com o disposto nesta regra e na Secção A-I/9 do Código STCW.

4 Todo candidato a uma certificação deverá:

.1 ter no mínimo 16 anos de idade;

.2 fornecer provas satisfatórias da sua identidade; e

.3 atender às normas aplicáveis à aptidão médica estabelecidos pela Parte.

5 Os certificados médicos deverão permanecer válidos por um período máximo de dois anos, a menos que o marítimo tenha menos de 18 anos de idade, sendo que neste caso o período máximo de validade será de um ano.

6 Se o período de validade de um certificado médico expirar durante uma viagem, deverá continuar em vigor até o próximo porto de escala em que houver disponível um médico reconhecido pela Parte, desde que esse período não seja superior a três meses.

7 Em casos urgentes, a Administração pode permitir que um marítimo trabalhe sem um certificado médico válido até o próximo porto de escala em que houver disponível um médico reconhecido pela Parte, desde que:

.1 o período dessa permissão não ultrapasse três meses; e

.2 o marítimo em questão esteja de posse de um certificado médico expirado, com uma data recente.

Regra I/10

Reconhecimento de certificados

1 Toda Administração deverá assegurar que as disposições desta regra sejam cumpridas, para reconhecer, por meio de endosso de acordo com a Regra I/2, parágrafo 7, um certificado emitido por outra Parte, ou sob a sua autoridade, para um comandante, oficial ou rádio operador e que:

.1 a Administração tenha confirmado, por meio de uma avaliação dessa Parte, que pode incluir uma inspecção das instalações e procedimentos, que as exigências

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da Convenção relativas às normas de competência, formação, certificação e normas de qualidade sejam integralmente cumpridas; e

.2 seja assumido um compromisso com a Parte envolvida de que essa será imediatamente notificada de qualquer mudança significativa nas medidas para formação e certificação realizadas em cumprimento à Convenção.

2 Deverão ser estabelecidas medidas para assegurar que os marítimos que apresentarem para reconhecimento, certificados emitidos de acordo com as disposições das Regras II/2, III/2 ou III/3, ou emitidos de acordo com a Regra VII/1 no nível de gestão, como definido no Código STCW, tenham um conhecimento adequado da legislação marítima da Administração, pertinente às funções que estiverem autorizados a desempenhar.

3 As informações fornecidas e as medidas acordadas com base nesta regra deverão ser comunicadas ao Secretário-geral de acordo com as exigências da Regra I/7.

4 Os certificados emitidos por uma não-Parte, ou sob a sua autoridade, não deverão ser reconhecidos.

5 Não obstante as exigências da Regra I/2, parágrafo 7, uma Administração pode, se as circunstâncias o exigirem, sujeito ao disposto no parágrafo 1, permitir que um marítimo sirva por um período não superior a três meses a bordo de um navio autorizado a arvorar a sua bandeira, enquanto possuir um certificado apropriado e válido, emitido e endossado como exigido por outra Parte para ser utilizado a bordo de navios daquela Parte, mas que ainda não tenha sido endossado de modo a torná-lo apropriado para servir a bordo de navios autorizados a arvorar a bandeira da Administração. Deverá estar prontamente disponível uma prova documental de que o pedido de endosso foi submetido à Administração.

6 Os certificados e endossos emitidos por uma Administração com base no disposto nesta regra em reconhecimento de um certificado emitido por uma outra Parte, ou atestando o reconhecimento desse certificado, não deverão ser utilizados como base para um outro reconhecimento por uma outra Administração.

Regra I/11

Revalidação de certificados

1 Para continuar qualificado no serviço em navegação em mar aberto, deverá ser exigido, a intervalos não superiores a cinco anos, de todo comandante, oficial e rádio operador que possua um certificado emitido ou reconhecido com base em qualquer capítulo da Convenção, excepto o Capítulo VI, que esteja servindo no mar ou que pretenda voltar ao mar depois de um período em terra, que:

.1 atenda às normas de aptidão médica prescritos na Regra I/9; e

.2 demonstre uma competência profissional contínua, de acordo com a Sessão A-I/11 do Código STCW.

2 Todo comandante, oficial e rádio operador deverá, para prestar contínuo serviço em navegação em mar aberto, a bordo de navios para os quais foram internacionalmente acordadas exigências especiais relativas à formação, concluir com bom aproveitamento uma aprovada formação pertinente.

3 Todo comandante e oficial deverá, para prestar contínuo serviço em navegação em mar aberto, a bordo de navios-tanque, atender às exigências do parágrafo 1 desta regra, e dele será exigido, a intervalos não superiores a cinco anos, que demonstre uma competência profissional contínua para navios-tanque, de acordo com a Secção A-I/11, parágrafo 3 do Código STCW.

4 Toda Parte deverá comparar os padrões de competência que são exigidos dos candidatos a certificados emitidos antes de 1 de Janeiro de 2017 com aqueles especificados para o certificado apropriado na parte A do Código STCW, e deverá determinar a necessidade de exigir dos portadores de tais certificados que sejam submetidos a uma formação de recapitulação e de actualização, ou a uma avaliação.

5 A Parte deverá, consultando os interessados, formular ou promover a formulação de uma estrutura de cursos de recapitulação e de actualização, como disposto na Secção A-I/11 do Código STCW.

6 Com o propósito de actualizar o conhecimento de comandantes, oficiais e rádio operadores, toda Administração deverá assegurar que os textos de alterações recentes nas regras nacionais e internacionais relativas à segurança da vida humana no mar, protecção, e protecção ao meio ambiente marinho sejam disponibilizadas para navios autorizados a arvorar a sua bandeira.

Regra I/12

Utilização de simuladores

1 Os padrões de desempenho e outras disposições apresentadas na Secção A-I/12, e outras exigências que estiverem estabelecidas na Parte A do Código STCW para qualquer certificado pertinente, deverão ser atendidos com relação a:

.1 toda formação obrigatória baseada em simuladores;

.2 qualquer avaliação de competência exigida pela Parte A do Código STCW que seja realizada por meio de um simulador; e

.3 qualquer demonstração de proficiência continuada por meio de um simulador, exigida pela Parte A do Código STCW.

Regra I/13

Condução de ensaios

1 Estas regras não deverão impedir que uma Administração autorize os navios autorizados a arvorar a sua bandeira a participarem de provas.

2 Para os efeitos desta regra, o termo prova significa uma experiência, ou uma série de experiências, realizada ao longo de um período limitado, que pode envolver a utilização de sistemas automatizados ou integrados para

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avaliar métodos alternativos de desempenhar atribuições específicas ou de satisfazer a determinadas medidas estabelecidas pela Convenção que proporcionem, pelo menos, o mesmo grau de segurança e de prevenção da poluição que o disposto nestas regras.

3 A Administração que autorizar navios a participarem de provas deverá estar convencida de que essas provas sejam realizadas de modo a oferecer, pelo menos, o mesmo grau de segurança e de prevenção da poluição que o disposto nestas regras. Estas provas deverão ser realizadas de acordo com directrizes adoptadas pela Organização.

4 Os detalhes dessas provas deverão ser informados à Organização logo que possível, mas não com uma antecedência de menos de seis meses antes da data em que estiver programado o início das provas. A Organização disseminará esses detalhes a todas as Partes.

5 Os resultados das provas autorizadas com base no parágrafo 1, e quaisquer recomendações que a Administração possa fazer com relação a esses resultados, deverão ser informados à Organização, que deverá disseminar esses resultados e essas recomendações a todas as Partes.

6 Qualquer Parte que tiver qualquer objecção a determinadas provas autorizadas de acordo com esta regra deverá comunicar essa objecção à Organização o mais cedo possível. A

Organização deverá disseminar os detalhes da objecção a todas as Partes.

7 Uma Administração que tiver autorizado uma prova deverá respeitar as objecções recebidas de outras Partes em relação àquela prova, determinando aos navios autorizados a arvorar a sua bandeira que não realizem uma prova enquanto estiverem navegando em águas de um Estado costeiro que tenha comunicado sua objecção à Organização.

8 Uma Administração que concluir, com base numa prova, que um determinado sistema proporcionará pelo menos o mesmo grau de segurança e de prevenção da poluição que o disposto nestas regras, pode autorizar os navios autorizados a arvorar a sua bandeira a continuarem a operar indefinidamente com tal sistema, sujeitos às seguintes exigências:

.1 a Administração deverá , após os resultados da prova terem sido submetidos de acordo com o parágrafo 5, fornecer os detalhes de tais autorizações, inclusive a identificação dos navios específicos que podem estar sujeitos à autorização, à Organização, que disseminará essas informações a todas as Partes;

.2 quaisquer operações autorizadas com base neste parágrafo deverão ser realizadas de acordo com quaisquer directrizes elaboradas pela Organização, na mesma extensão em que foram aplicadas durante uma prova;

.3 essas operações deverão respeitar quaisquer objecções recebidas de outras Partes de acordo com o parágrafo 7, na medida em que essas objecções não tenham sido retiradas; e

.4 uma operação autorizada com base neste parágrafo só deverá ser permitida na pendência de uma determinação do Comité de Segurança Marítima quanto a se uma emenda à Convenção seria apropriada e, se for, se a operação deve ser suspensa ou tiver permissão para continuar antes que a emenda entre em vigor.

9 Mediante solicitação de qualquer Parte, o Comité de Segurança Marítima deverá estabelecer uma data para apreciar os resultados da prova e para dar as determinações apropriadas.

Regra I/14

Responsabilidades das companhias

1 Toda Administração deverá, de acordo com o disposto na Secção A-I/14, fazer com que as companhias sejam responsáveis pela designação de marítimos para servir em seus navios de acordo com o disposto na presente Convenção, e deverá exigir que toda companhia assegure-se de que:

.1 todo marítimo designado para qualquer de seus navios possua um certificado apropriado de acordo com o disposto na Convenção, e como estabelecido pela Administração;

.2 seus navios sejam tripulados de acordo com as exigências da Administração relativas à fixação da tripulação de segurança;

.3 os marítimos designados para qualquer dos seus navios tenham recebido uma formação/treinamento de recapitulação e de actualização, como exigido pela Convenção;

.4 a documentação e os dados pertinentes a todos os marítimos empregados em seus navios sejam mantidos, estejam prontamente acessíveis e contenham, sem ficar restrito a isso, a documentação e os dados sobre sua experiência, formação, aptidão médica e competência nas atribuições designadas;

.5 os marítimos, ao serem designados para qualquer de seus navios, estejam familiarizados com suas atribuições específicas e com todo o arranjo, instalações, equipamentos, procedimentos e características do navio que sejam pertinentes às suas rotinas ou a atribuições de emergência;

.6 a tripulação do navio possa coordenar efectivamente suas actividades em uma situação de emergência, e no desempenho de funções vitais para a segurança do navio, protecção, e para a prevenção ou atenuação dos efeitos da poluição: e

.7 a qualquer momento a bordo de seus navios haja uma comunicação verbal eficaz, de acordo com o Capítulo V, Regra 14, parágrafos 3 e 4 da Convenção SOLAS.

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Regra I/15

Disposições transitórias

1 Até 1 de Janeiro de 2017, uma Parte pode continuar a emitir, reconhecer e endossar certificados de acordo com as disposições desta Convenção que se apliquem imediatamente antes de 1 de Janeiro de 2012, com relação aos marítimos que tenham iniciado um aprovado serviço em navegação em mar aberto, um aprovado programa de educação e de formação ou um aprovado curso de formação, antes de 1 de Julho de 2013.

2 Até 1 de Janeiro de 2017, uma Parte pode continuar a renovar e revalidar certificados e endossos de acordo com as disposições da Convenção que se apliquem imediatamente antes de 1 de Janeiro de 2012.

CAPÍTULO II

Comandante e secção de convés

Regra II/1

Requisitos mínimos obrigatórios para a certificação de oficiais chefes de quarto de navegação em navios com arqueação bruta igual ou superior a 500

1 Todo oficial chefe de quarto de navegação que estiver servindo em um navio que opere na navegação em mar aberto, com arqueação bruta igual ou superior a 500, deve possuir um certificado de competência.

2 Todo candidato a certificação deverá:

.1 ter no mínimo 18 anos de idade;

.2 ter completado um período de aprovado serviço em navegação em mar aberto, não inferior a 12 meses, como parte de um aprovado programa de formação que contenha uma formação a bordo que atenda às exigências da Secção A-II/1 do Código STCW e que esteja documentado em um aprovado livro de registo de formação, ou então, ter um período de aprovado serviço em navegação em mar aberto não inferior a 36 meses;

.3 ter desempenhado, durante o exigido serviço em navegação em mar aberto, atribuições relativas ao serviço de quarto na ponte sob a supervisão do comandante ou de um oficial qualificado, por um período não inferior a seis meses;

.4 atender às exigências aplicáveis das regras do Capítulo IV, como for adequado, para desempenhar atribuições de radiocomunicações que lhe forem designadas, de acordo com o Regulamento de Radiocomunicações;

.5 ter completado uma educação e uma formação aprovadas, e satisfazer a norma de competência especificada na Secção A-II/1 do Código STCW; e

.6 satisfazer as normas de competência especificadas na Secção A-VI/1, parágrafo 2, Secção A-VI/2, parágrafos 1 a 4, Secção A-VI/3, parágrafos 1 a 4 e Secção A-VI/4, parágrafos 1 a 3 do Código STCW.

Regra II/2

Requisitos mínimos obrigatórios para a certificação de comandantes e imediatos em navios com arqueação bruta igual ou superior a 500

Comandante e imediato em navios com arqueação bruta igual ou superior a 3.000

1 Todo comandante e imediato de navio que opere na navegação em mar aberto, com arqueação bruta igual ou superior a 3.000, deverá possuir um certificado de competência.

2 Todo candidato a certificação deverá:

.1 atender às exigências para a certificação como oficial chefe de quarto de navegação em navios com arqueação bruta igual ou superior a 500 e ter realizado um período de aprovado serviço em navegação em mar aberto, nessa capacidade:

.1.1 para a certificação como imediato, pelo menos 12 meses, e

.1.2 para a certificação como comandante, pelo menos 36 meses. Esse período pode, entretanto, ser reduzido para pelo menos 24 meses, se em um período de serviço em navegação em mar aberto não inferior a 12 meses tiver servido como imediato; e

.2 ter completado uma educação e uma formação aprovadas e que satisfaça a norma de competência especificada na Secção A-II/2 do Código STCW para comandantes e imediatos de navios com arqueação bruta igual ou superior a 3.000.

Comandante e imediato de navios com arqueação bruta entre 500 e 3.000

3 Todo comandante e imediato de um navio que opere na navegação em mar aberto com arqueação bruta entre 500 e 3.000 deve possuir um certificado de competência.

4 Todo candidato a certificação deverá:

.1 para a certificação como imediato, atender às exigências para um oficial chefe de quarto de navegação em navios com arqueação bruta igual ou superior a 500;

.2 para a certificação como comandante, atender às exigências para um oficial chefe de quarto de navegação em navios com arqueação bruta igual ou superior de 500, e ter completado, nessa capacidade, um período de aprovado serviço em navegação em mar aberto não inferior a 36 meses. Este período pode, entretanto, ser reduzido para pelo menos 24 meses se, em pelo menos 12 meses desse serviço em navegação em mar aberto, tiver servido como imediato; e

.3 ter completado uma aprovada formação e que satisfaça o padrão de competência especificado na Secção A-II/2 do Código STCW para comandantes e imediatos de navios com arqueação bruta entre 500 e 3.000.

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Regra II/3

Requisitos mínimos obrigatórios para a certificação de oficiais chefes de quarto navegação e de comandantes em navios com arqueação bruta inferior a 500

Navios não empregados em viagens na navegação costeira

1 Todo oficial chefe de quarto de navegação, servindo em um navio que opere na navegação em mar aberto com arqueação bruta inferior a 500, não empregado em viagens na navegação costeira, deverá possuir um certificado de competência para navios de arqueação bruta igual ou superior a 500.

2 Todo comandante servindo em um navio que opere na navegação em mar aberto com arqueação bruta inferior a 500, não empregado em viagens na navegação costeira, deverá possuir um certificado de competência para servir como comandante em navios com arqueação bruta entre 500 e 3.000.

Navios empregados em viagens na navegação costeira

Oficial chefe de quarto de navegação

3 Todo oficial chefe de quarto de navegação em um navio que opere na navegação em mar aberto com arqueação bruta inferior a 500, empregado em viagens na navegação costeira, deverá possuir um certificado de competência.

4 Todo candidato a certificação como oficial chefe de quarto de navegação em um navio que opere na navegação em mar aberto com arqueação bruta inferior a 500, empregado em viagens na navegação costeira, deverá:

.1 ter no mínimo 18 anos de idade;

.2 ter completado:

.2.1 uma formação especial, inclusive um período adequado de apropriado serviço em navegação em mar aberto, como exigido pela Administração, ou .2.2 um período de aprovado serviço em navegação em mar aberto, na secção de convés, não inferior a 36 meses;

.3 atender às exigências aplicáveis das regras do Capítulo IV, como for adequado, para desempenhar as atribuições de radiocomunicações que lhe forem designadas, de acordo com o Regulamento de Radiocomunicações;

.4 ter completado uma educação e uma formação aprovadas e satisfazer a norma de competência especificada na Secção A-II/3 do Código STCW para oficiais chefes de quarto de navegação em navios com arqueação bruta inferior a 500, empregado em viagens na navegação costeira; e

.5 satisfazer a norma de competência especificada na Secção A-VI/1, parágrafo 2, Secção A-VI/2, parágrafos 1 a 4, Secção A-VI/3, parágrafos 1 a 4 e Secção A-VI/4, parágrafos 1 a 3 do Código STCW.

Comandante

5 Todo comandante que estiver servindo em um navio que opere na navegação em mar aberto com arqueação bruta inferior a 500, empregado em viagens na navegação costeira, deverá possuir um certificado de competência.

6 Todo candidato a certificação como comandante de um navio de navegação em mar aberto com arqueação bruta inferior a 500, empregado em viagens na navegação costeira, deverá:

.1 ter no mínimo 20 anos de idade;

.2 ter um período de aprovado serviço em navegação em mar aberto, não inferior a 12 meses, como oficial chefe de quarto de navegação;

.3 ter completado uma educação e uma formação aprovadas e satisfazer a norma de competência especificada na Secção A-II/3 do Código STCW para comandantes em navios com arqueação bruta inferior a 500, empregado em viagens na navegação costeira; e

.4 satisfazer a norma de competência especificada na Secção A-VI/1, parágrafo 2, Secção A-VI/2, parágrafos 1 a 4, Secção A-VI/3, parágrafos 1 a 4 e Secção A-VI/4, parágrafos 1 a 3 do Código STCW.

Isenções

7 A Administração, se considerar que o tamanho de um navio e as condições da sua viagem são tais que tornem a aplicação de todas as exigências desta regra e da Secção A-II/3 do Código STCW não razoável ou impraticável, pode isentar o comandante e o oficial chefe de quarto de navegação daquele navio, ou de uma classe de navios, de cumprir algumas das exigências, tendo em mente a segurança de todos os navios que podem estar operando nas mesmas águas.

Regra II/4

Requisitos mínimos obrigatórios para a certificação de marítimos de mestrança e marinhagem que façam parte de quartos de navegação [74]

1 Todo marítimo de mestrança e marinhagem que faça parte de um quarto de navegação em um navio que opere na navegação em mar aberto com arqueação bruta igual ou superior a 500, excepto os marítimos de mestrança e marinhagem em formação e os marítimos de mestrança e marinhagem cujas atribuições durante o quarto de serviço não exijam qualificação, deverão estar devidamente habilitados para desempenhar tais atribuições.

2 Todo candidato a certificação deverá:

.1 ter no mínimo 16 anos de idade;

.2 ter completado:

.2.1 um aprovado serviço em navegação em mar aberto, incluindo um período não inferior a seis meses de formação e de experiência, ou

[74] Estas exigências não são aquelas para a certificação de Marinheiro contidas na Convenção de Certificação de Marinheiro
Preferencial, da ILO, de 1946, ou em qualquer convenção subsequente

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.2.2 uma formação especial, seja anterior ao serviço no mar ou a bordo de um navio, incluindo um período de aprovado serviço em navegação em mar aberto que não deverá ser inferior a dois meses; e

.3 satisfazer a norma de competência especificada na Secção A-II/4 do Código STCW.

3 O serviço em navegação em mar aberto, a formação e a experiência exigidos pelos sub-parágrafos 2.2.1 e 2.2.2 deverão estar relacionados às funções de serviço de quarto de navegação e envolver o desempenho das atribuições realizadas sob a supervisão directa do comandante, do oficial chefe de quarto de navegação ou de um subalterno qualificado.

Regra II/5

Requisitos mínimos obrigatórios para a certificação de marítimos de mestrança e marinhagem como marítimos qualificados de convés

1 Todo marítimo qualificado de convés que estiver servindo em um navio que opere na navegação em mar aberto com arqueação bruta igual ou superior a 500 deverá estar devidamente habilitado.

2 Todo candidato a certificação deverá:

.1 ter pelo menos 18 anos de idade;

.2 atender às exigências para a certificação como marítimo de mestrança e marinhagem que faça parte de um quarto de navegação;

.3 enquanto estiver qualificado para servir como um marítimo de mestrança e marinhagem que faça parte de um quarto de navegação, ter um período de aprovado serviço em navegação em mar aberto, no departamento de convés, de:

.3.1 pelo menos 18 meses;

.3.2 pelo menos 12 meses e ter completado uma aprovada formação; e

.4 satisfazer a norma de competência especificada na Secção A-II/5 do Código STCW.

3 Toda Parte deverá comparar as normas de competência que são exigidas de um Marítimo Apto para certificados emitidos antes de 1 de Janeiro de 2012 com os especificados para o certificado na Secção A-II/5 do Código STCW, e verificar a necessidade, se houver alguma, de exigir que esse pessoal actualize suas qualificações.

4 Até 1 de Janeiro de 2012, uma Parte que também é Parte da Convenção de Certificação de Marinheiro Apto da Organização Internacional do Trabalho, de 1946 (N° 74) pode continuar a emitir, reconhecer e endossar certificados de acordo com o disposto na convenção acima mencionada.

5 Até 1 de Janeiro de 2017, uma Parte que também é Parte da Convenção de Certificação de Marinheiro Apto da Organização Internacional do Trabalho, de 1946 (N° 74) pode continuar a renovar e a revalidar certificados e endossos de acordo com o disposto na convenção acima mencionada.

6 Os marítimos podem ser considerados pela Parte como tendo atendido às exigências desta regra, se tiverem servido em uma função pertinente no departamento de convés por um período não inferior a 12 meses nos últimos 60 meses anteriores à entrada em vigor desta regra para essa Parte.

CAPÍTULO III

Secção de máquinas

Regra III/1

Requisitos mínimos obrigatórios para a certificação de oficiais chefes de quarto de máquinas numa casa de máquinas de condução atendida, ou designados oficiais de serviço de máquinas numa casa de máquinas de condução periodicamente desatendida

1 Todo oficial chefe de quarto de serviço de máquinas numa casa de máquinas de condução atendida, ou designado oficial de serviço de máquinas numa casa de máquinas de condução periodicamente desatendida, num navio que opere na navegação em mar aberto cuja máquina principal tenha uma potência propulsora igual ou superior a 750 KW, deverá possuir um certificado de competência.

2 Todo candidato à certificação deverá:

.1 ter no mínimo 18 anos de idade;

.2 ter completado uma formação prática em oficina, combinada com um período de aprovado serviço em navegação em mar aberto não inferior a 12 meses, como parte de um aprovado programa de formação que inclua uma formação a bordo que atenda às exigências da Secção A-III/1 do Código STCW e que esteja documentado em um aprovado livro registo de formação, ou então, ter completado uma formação prática em oficina, combinada com um período de aprovado serviço em navegação em mar aberto não inferior a 36 meses, dos quais pelo menos 30 meses de serviço em navegação em mar aberto na secção de máquinas;

.3 ter desempenhado, durante o período de serviço exigido em navegação em mar aberto, atribuições relativas ao serviço de quarto em casa de máquinas, sob a supervisão do chefe de máquinas ou de um oficial de máquinas qualificado, por um período não inferior a seis meses;

.4 ter completado uma educação e uma formação aprovadas, e satisfazer as normas de competência especificadas na Secção A-III/1 do Código STCW; e

.5 satisfazer as normas de competência especificadas na Secção A-VI/1, parágrafo 2, Secção A-VI/2, parágrafos 1 a 4, Secção A-VI/3, parágrafos 1 a 4 e Secção A-VI/4, parágrafos 1 a 3 do Código STCW.

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Regra III/2

Requisitos mínimos obrigatórios para a certificação de chefes de máquinas e de segundos oficiais de máquinas em navios cuja máquina principal tenha uma potência propulsora igual ou superior a 3.000 kW

1 Todo chefe de máquinas e segundo oficial de máquinas em um navio que opere na navegação em mar aberto, cuja máquina principal tenha uma potência propulsora igual ou superior a 3.000 KW, deverá possuir um certificado de competência.

2 Todo candidato a certificação deverá:

.1 atender às exigências para a certificação como um oficial chefe de quarto de máquinas num navio cuja máquina principal tenha uma potência propulsora igual ou superior a 750 kW, e ter realizado um aprovado serviço em navegação em mar aberto naquela capacidade:

.1.1 para a certificação como segundo oficial de máquinas, pelo menos 12 meses como oficial de máquinas qualificado, e

.1.2 para a certificação como chefe de máquinas, pelo menos 36 meses. Esse período pode, entretanto, ser reduzido para pelo menos 24 meses, se em pelo menos 12 meses desse serviço em navegação em mar aberto tiver servido como segundo oficial de máquinas; e

.2 ter completado uma educação e uma formação aprovadas e satisfazer a norma de competência estabelecida na Secção A-III/2 do Código STCW.

Regra III/3

Requisitos mínimos obrigatórios para a certificação de chefes de máquinas e de segundos oficiais de máquinas em navios cuja máquina principal tenha uma potência propulsora entre 750 kW e 3.000 kW

1 Todo chefe de máquinas e segundo oficial de máquinas em um navio que opere na navegação em mar aberto, cuja máquina principal tenha uma potência propulsora entre 750 kW e 3.000 KW, deverá possuir um certificado de competência.

2 Todo candidato a certificação deverá:

.1 atender às exigências para a certificação como um oficial chefe de quarto de máquinas; e

.1.1 para certificação como segundo oficial de máquinas, deverá ter um período de pelo menos 12 meses de aprovado serviço em navegação em mar aberto, como oficial assistente de máquinas ou como oficial de máquinas, e

.1.2 para certificação como chefe de máquinas, deverá ter um período de pelo menos 24 meses de aprovado serviço em navegação em mar aberto , dos quais em pelo menos 12 meses deverá ter servido enquanto estava qualificado para servir como segundo oficial de máquinas; e

.2 ter completado uma educação e uma formação aprovadas e satisfazer a norma de competência especificada na Secção A-III/3 do Código STCW.

3 Todo oficial de máquinas que estiver qualificado para servir como segundo oficial de máquinas em navios cuja máquina principal tenha uma potência propulsora igual ou superior a 3.000 kW pode servir como chefe de máquinas em navios cuja máquina principal tenha uma potência propulsora inferior a 3.000 kW, desde que o certificado seja assim endossado.

Regra III/4

Requisitos mínimos obrigatórios para a certificação de marítimos de mestrança e marinhagem que façam parte de um quarto de serviço numa casa de máquinas de condução atendida, ou designados para desempenhar atribuições numa casa de máquinas de condução periodicamente desatendida

1 Todo marítimo de mestrança e marinhagem que faça parte de um quarto de serviço numa casa de máquinas, ou que seja designado para desempenhar atribuições numa casa de máquinas de condução periodicamente desatendida, em um navio que opere na navegação em mar aberto cuja máquina principal tenha uma potência propulsora igual ou superior a 750 kW, à excepção de marítimos de mestrança e marinhagem em formação e marítimos de mestrança e marinhagem cujas atribuições sejam de uma natureza que não exijam qualificação, deverão estar devidamente habilitados para desempenhar essas atribuições.

2 Todo candidato a certificação deverá:

.1 ter no mínimo 16 anos de idade;

.2 ter completado:

.2.1 um aprovado serviço em navegação em mar aberto, incluindo pelo menos seis meses de formação e de experiência, ou

.2.2 uma formação especial, seja anterior ao serviço no mar ou a bordo de um navio, incluindo um período de aprovado serviço em navegação em mar aberto que não deverá ser inferior a dois meses; e

.3 satisfazer a norma de competência estabelecida na Secção A-III/4 do Código STCW.

3 O serviço em navegação em mar aberto, a formação e a experiência exigidos pelos sub-parágrafos 2.2.1 e 2.2.2, deverão estar relacionados a funções relativas ao serviço de quarto de máquinas e envolver o desempenho das atribuições realizadas sob a supervisão directa de um oficial de máquinas qualificado, ou de um marítimo de mestrança e marinhagem qualificado.

Regra III/5

Requisitos mínimos obrigatórios para a certificação de marítimos de mestrança e marinhagem como marítimos qualificados de máquinas numa casa de máquinas de condução atendida, ou designados para desempenhar atribuições numa casa de máquinas de condução periodicamente desatendida

1 Todo marítimo apto de máquinas que sirva em um navio que opere na navegação em mar aberto cuja máquina principal tenha uma potência propulsora igual ou superior a 750 kW, deverá estar devidamente habilitado.

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2 Todo candidato a certificação deverá:

.1 ter no mínimo 18 anos de idade;

.2 atender às exigências para a certificação como um marítimo de mestrança e marinhagem que faz parte de um quarto de serviço numa casa de máquinas de condução desatendida, ou designado para desempenhar atribuições numa casa de máquinas de condução periodicamente desatendida;

.3 enquanto estiver qualificado para servir como um marítimo de mestrança e marinhagem que faz parte de um quarto de serviço de máquinas, realizar um período de aprovado serviço em navegação em mar aberto no departamento de máquinas de:

.3.1 pelo menos 12 meses, ou

.3.2 pelo menos 6 meses e ter completado uma aprovada formação; e

.4 satisfazer a norma de competência especificada na Secção A-III/5 do Código STCW.

3 Toda Parte deverá comparar os padrões de competência que são exigidos de marítimos de mestrança e marinhagem da secção de máquinas para certificados emitidos antes de 1 de Janeiro de 2012 com os especificados para o certificado na Secção A-III/5 do Código STCW e deverá verificar a necessidade, se houver alguma, de exigir que esse pessoal actualize suas qualificações.

4 Os marítimos podem ser considerados pela Parte como tendo atendido às exigências desta regra se tiverem servido numa função pertinente na secção de máquinas por um período não inferior a 12 meses, nos últimos 60 meses anteriores à entrada em vigor desta regra para essa Parte.

Regra III/6

Requisitos mínimos obrigatórios para a certificação de oficiais electrotécnicos

1 Todo oficial electrotécnico que sirva em um navio que opere na navegação em mar aberto cuja máquina principal tenha uma potência propulsora igual ou superior a 750 kW deverá possuir um certificado de competência.

2 Todo candidato a certificação deverá:

.1 ter no mínimo 18 anos de idade;

.2 ter completado um período não inferior a 12 meses de formação prática em oficina, combinada com um período de aprovado serviço em navegação em mar aberto não inferior a 6 meses, como parte de um aprovado programa de formação que atenda às exigências da Secção A-III/6 do Código STCW e que esteja documentado num aprovado livro registo de formação, ou então, ter completado um período não inferior a 36 meses de formação prática em oficina, combinada com um período de aprovado serviço em navegação em mar aberto, dos quais pelo menos 30 meses serão de serviço em navegação em mar aberto na secção de máquinas.

.3 ter completado uma educação e uma formação aprovadas e satisfazer as normas de competência especificadas na Secção A-III/6 do Código STCW; e

.4 satisfazer as normas de competência especificadas na Secção A-VI/1, parágrafo 2, Secção A-VI/2, parágrafos 1 a 4, Secção A-VI/3, parágrafos 1 a 4 e Secção A-VI/4, parágrafos 1 a 3 do Código STCW.

3 Toda Parte deverá comparar as normas de competência que são exigidos de oficiais electrotécnicos para certificados emitidos antes de 1 de Janeiro de 2012 com as especificadas para o certificado na Secção A-III/6 do Código STCW, e deverá verificar a necessidade de exigir que esse pessoal actualize suas qualificações.

4 Os marítimos podem ser considerados pela Parte como tendo atendido às exigências desta regra se tiverem servido numa função pertinente a bordo de um navio por um período não inferior a 12 meses, nos últimos 60 meses anteriores à entrada em vigor desta regra para essa Parte, e satisfazer as normas de competência especificadas na Secção A-III/6 do Código STCW.

5 Apesar das exigências dos parágrafos 1 a 4 acima, uma pessoa adequadamente qualificada pode ser considerada por uma Parte como sendo capaz de desempenhar certas funções da Secção A-III/6.

Regra III/7

Requisitos mínimos obrigatórios para a certificação de marítimos de mestrança electrotécnicos

1 Todo marítimo de mestrança electrotécnico que sirva em um navio que opere na navegação em mar aberto cuja máquina principal tenha uma potência propulsora igual ou superior a 750 kW deverá estar devidamente habilitado.

2 Todo candidato a certificação deverá:

.1 ter no mínimo 18 anos de idade;

.2 ter:

.2.1 completado um período de aprovado serviço em navegação em mar aberto incluindo um período não inferior a 12 meses de formação e de experiência; ou

.2.2 completado uma aprovada formação, inclusive um período de aprovado serviço em mar aberto, que não deverá ser inferior a 6 meses; ou

.2.3 qualificações que satisfaçam as competências técnicas da Tabela A-III/7 e um período de aprovado serviço em navegação em mar aberto, que não deverá ser inferior a 3 meses; e

.3 satisfazer a norma de competência especificada na Secção A-III/7 do Código STCW.

3 Toda Parte deverá comparar as normas de competência que são exigidas de marítimos de mestrança electrotécnicos para certificados emitidos antes de 1 de

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Janeiro de 2012 com os especificadas para o certificado na Secção A-III/7 do Código STCW, e deverá verificar a necessidade, se houver alguma, de exigir que esse pessoal actualize suas qualificações.

4 Os marítimos podem ser considerados pela Parte como tendo atendido às exigências desta regra se tiverem servido numa função pertinente a bordo de um navio por um período não inferior a 12 meses, nos últimos 60 meses anteriores à entrada em vigor desta regra para essa Parte, e satisfazer as normas de competência especificadas na Secção A-III/7 do Código STCW.

5 Apesar das exigências dos parágrafos 1 a 4 acima, uma pessoa adequadamente qualificada pode ser considerada por uma Parte como sendo capaz de desempenhar certas funções da Secção A-III/7.

CAPÍTULO IV

Radiocomunicações e rádio operadores

Nota explicativa

As disposições obrigatórias relativas ao serviço de quarto de radiocomunicações são apresentadas no Regulamento de Radiocomunicações e na Convenção Internacional para a Salvaguarda da Vida Humana no Mar, 1974, como emendada. As disposições para a manutenção das radiocomunicações são apresentadas na Convenção Internacional para a Salvaguarda da Vida Humana no Mar, como emendada, e nas directrizes adoptadas pela Organização[75].

Regra IV/1

Âmbito de aplicação

1 Excepto como disposto no parágrafo 2, as disposições deste capítulo se aplicam a rádio operadores em navios que operam no Sistema Global de Socorro e Segurança Marítima (GMDSS), como estabelecido na Convenção Internacional para a Salvaguarda da Vida Humana no Mar, 1974, emendada.

2 Os rádio operadores em navios dos quais não é exigido que cumpram as disposições do GMDSS constantes do Capítulo IV da Convenção SOLAS não estão obrigados a atender ao disposto neste capítulo. É exigido, contudo, que os rádio operadores desses navios cumpram o Regulamento de Radiocomunicações. A Administração deverá assegurar que sejam emitidos ou reconhecidos para esses rádio operadores os certificados apropriados, como estabelecido no Regulamento de Radiocomunicações.

Regra IV/2

Requisitos mínimos obrigatórios para a certificação de rádio operadores de GMDSS

1 Toda pessoa encarregada, ou que desempenhe atribuições de radiocomunicações em um navio do qual é exigido que participe do GMDSS, deverá possuir um certificado apropriado relativo ao GMDSS, emitido ou reconhecido pela Administração com base no disposto no Regulamento de Radiocomunicações.

2 Além disto, todo candidato a certificação de competência com base nesta regra, para servir em um navio do qual é exigido pela Convenção Internacional para a Salvaguarda da Vida Humana no Mar, 1974, como emendada, que possua instalação de radiocomunicações, deverá:

.1 ter no mínimo 18 anos de idade; e

.2 ter completado uma educação e uma formação aprovadas e satisfazer a norma de competência especificada na Secção A-IV/2 do Código STCW.

CAPÍTULO V

Normas relativas a exigências especiais de formação para o pessoal de certos tipos de navios

Regra V/1-1

Requisitos mínimos obrigatórios para a formação e as qualificações de comandantes, oficiais e marítimos de mestrança e marinhagem em petroleiros e em navios-tanque para produtos químicos

1 Os oficiais e marítimos de mestrança e marinhagem designados para atribuições e responsabilidades específicas relacionadas com a carga ou com os equipamentos de carga em petroleiros ou em navios-tanque para produtos químicos deverão possuir um certificado de formação básica para operações em petroleiros e navios-tanque para produtos químicos.

2 Todo candidato a um certificado de formação básica para operações em petroleiros e navios-tanque para produtos químicos deverá ter concluído uma formação básica, de acordo com o disposto na Secção A-VI-1 do Código STCW, e deverá ter completado:

.1 pelo menos três meses de aprovado serviço em navegação em mar aberto em petroleiros ou navios-tanque para produtos químicos e satisfazer a norma de competência especificada na Secção A-V/1-1, parágrafo 1 do Código STCW; ou

.2 uma aprovada formação básica para operações de carga de petroleiros e navios- tanque para produtos químicos, e satisfazer a norma de competência especificada na Secção A-V/1-1, parágrafo 1 do Código STCW.

3 Comandantes, chefes de máquinas, imediatos, segundos oficiais de máquinas e qualquer pessoa com responsabilidade directa pelo carregamento, descarga, cuidados em trânsito, manuseio da carga, limpeza de tanques ou outras operações relacionadas com a carga em petroleiros deverão possuir um certificado de formação avançada para operações de carga em petroleiros.

4 Todo candidato a um certificado de formação avançada para operações de carga em petroleiros deverá:

.1 atender às exigências para a certificação em formação básica para operações em petroleiros e navios-tanque para produtos químicos; e

[75]Consultar as Directrizes para Manutenção de Rádio para o Sistema Global de Socorro e Segurança Marítima (GMDSS)
Relativas às Áreas Marítimas A3 e A4, adoptadas pela Organização através da Resolução A.702(17).

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.2 enquanto estiver qualificado para a certificação em formação básica para operações em petroleiros e navios-tanque para produtos químicos, ter:

.2.1 pelo menos três meses de aprovado serviço em navegação em mar aberto em petroleiros, ou

.2.2 pelo menos um mês de aprovada formação a bordo de petroleiros, numa condição de extranumerário, que inclua pelo menos três operações de carregamento e três de descarga, e que esteja documentada num aprovado livro registo de formação, levando em consideração a orientação apresentada na Secção B-V/1; e

.3 ter completado com aprovação uma formação avançada para operações de carga em petroleiros e satisfazer a norma de competência especificada na Secção A-V/1-1, parágrafo 2 do Código STCW.

5 Comandantes, chefes de máquinas, imediatos, segundos oficiais de máquinas e qualquer pessoa com responsabilidade directa pelo carregamento, descarga, cuidados em trânsito, manuseio da carga, limpeza de tanques ou outras operações relacionadas com a carga em navios-tanque para produtos químicos deverão possuir um certificado de formação avançada para operações de carga em navios-tanque para produtos químicos.

6 Todo candidato a um certificado de formação avançada para operações de carga em navios-tanque para produtos químicos deverá:

.1 atender às exigências para a certificação em formação básica para operações em petroleiros e navios-tanque para produtos químicos; e

.2 enquanto estiver qualificado para a certificação em formação básica para operações em petroleiros e navios-tanque para produtos químicos, ter:

.2.1 pelo menos três meses de aprovado serviço em navegação em mar aberto em navios-tanque para produtos químicos, ou

.2.2 pelo menos um mês de aprovada formação a bordo de navios-tanque para produtos químicos, numa condição de extranumerário, que inclua pelo menos três operações de carregamento e três de descarga, e que esteja documentada num aprovado livro registo de formação, levando em consideração a orientação apresentada na Secção B-V/1; e

.3 ter completado uma aprovada formação avançada para operações de carga em navios-tanque para produtos químicos e satisfazer o padrão de competência especificado na Secção A-V/1-1, parágrafo 3 do Código STCW.

7 As administrações deverão assegurar que seja emitido um certificado de proficiência apropriado para os marítimos que forem qualificados de acordo com o parágrafo 2, 4 ou 6, como for adequado, ou que um certificado de competência, ou um certificado de proficiência, existente seja devidamente endossado.

Regra V/1-2

Requisitos mínimos obrigatórios para a formação e as qualificações de comandantes, oficiais e marítimos de mestrança e marinhagem em navios-tanque para gás liquefeito

1 Os oficiais e marítimos de mestrança e marinhagem designados para atribuições e responsabilidades específicas relacionadas com a carga ou com os equipamentos de carga em navios-tanque para gás liquefeito deverão possuir um certificado de formação básica para operações em navios-tanque para gás liquefeito.

2 Todo candidato a um certificado de formação básica para operações em e navios-tanque para gás liquefeito deverá ter concluído uma formação básica, de acordo com o disposto na Secção A-VI-1 do Código STCW, e deverá ter completado:

.1 pelo menos três meses de aprovado serviço em navegação em mar aberto em navios-tanque para gás liquefeito e satisfazer a norma de competência especificada na Secção A-V/1-2, parágrafo 1 do Código STCW; ou

.2 uma aprovada formação básica para operações de carga de navios-tanque para gás liquefeito, e satisfazer a norma de competência especificada na Secção A-V/1-2, parágrafo 1 do Código STCW.

3 Comandantes, chefes de máquinas, imediatos, segundos oficiais de máquinas e qualquer pessoa com responsabilidade directa pelo carregamento, descarga, cuidados em trânsito, manuseio da carga, limpeza de tanques ou outras operações relacionadas com a carga em navios-tanque para gás liquefeito deverão possuir um certificado de formação avançada para operações de carga em navios-tanque para gás liquefeito.

4 Todo candidato a um certificado de formação avançada para operações de carga em navios-tanque para gás liquefeito deverá:

.1 atender às exigências para a certificação em formação básica para operações em navios-tanque para gás liquefeito; e

.2 enquanto estiver qualificado para a certificação em formação básica para operações em navios-tanque para gás liquefeito, ter:

.2.1 pelo menos três meses de aprovado serviço em navegação em mar aberto em navios-tanque para gás liquefeito, ou

.2.2 pelo menos um mês de aprovada formação a bordo de navios-tanque para gás liquefeito, numa condição de extranumerário, que inclua pelo menos três operações de carregamento e três de descarga, e que esteja documentada

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num aprovado livro registo de formação, levando em consideração a orientação apresentada na Secção B-V/1; e

.3 ter completado uma aprovada formação avançada para operações de carga em navios-tanque para gás liquefeito e satisfazer a norma de competência especificada na Secção A-V/1-2, parágrafo 2 do Código STCW.

5 As administrações deverão assegurar que seja emitido um certificado de proficiência para os marítimos que forem qualificados de acordo com o parágrafo 2 ou 4, como for adequado, ou que um certificado de competência, ou um certificado de proficiência, existente seja devidamente endossado.

Regra V/2

Requisitos mínimos obrigatórios para a formação e as qualificações de comandantes, oficiais, marítimos de mestrança e marinhagem e outras pessoas em navios de passageiros

1 Esta regra se aplica a comandantes, oficiais, marítimos de mestrança e marinhagem e a outras pessoas que servem a bordo de navios de passageiros empregados em viagens internacionais. As Administrações deverão verificar a aplicabilidade destas exigências a pessoas que servem em navios de passageiros empregados em viagens domésticas.

2 Antes de ser designado para atribuições a de bordo em navios de passageiros, os marítimos deverão ter completado a formação exigida pelos parágrafos 4 a 7 abaixo, de acordo com a sua capacidade, atribuições e responsabilidades.

3 Os marítimos dos quais é exigido que sejam instruídos de acordo com os parágrafos 4, 6 e 7 abaixo deverão, a intervalos não superiores a cinco anos, realizar uma formação de recapitulação apropriada, ou deverá ser-lhes exigido que forneçam provas de terem atingido, nos cinco anos anteriores, o padrão de competência exigido.

4 Os comandantes, oficiais e outras pessoas designadas na tabela mestra (muster lists) para auxiliar passageiros em situações de emergência a bordo de navios de passageiros deverão ter concluído uma formação em controlo de multidões, como especificado na Secção A-V/2, parágrafo 1 do Código STCW.

5 O pessoal que presta serviços directamente a passageiros em compartimentos para passageiros a bordo de navios de passageiros deverá ter concluído a formação de segurança especificada na Secção A-V/2, parágrafo 2 do Código STCW.

6 Os comandantes, chefes de máquinas, imediatos, segundos oficiais de máquinas e qualquer pessoa designada na tabela mestra (muster lists) para ter responsabilidade pela segurança de passageiros em situações de emergência a bordo de navios de passageiros deverão ter concluído a formação aprovada em controlo de crises e comportamento humano, como especificado na Secção A-V/2, parágrafo 3 do Código STCW.

7 Os comandantes, chefes de máquinas, imediatos, segundos oficiais de máquinas e toda pessoa designada para funções de responsabilidade directa pelo embarque e pelo desembarque de passageiros, carregamento, descarga ou peação da carga, ou pelo fechamento de aberturas no casco em navios ro-ro de passageiros deverão ter concluído a aprovada formação em segurança de passageiros, segurança da carga e integridade do casco, como especificado na Secção A-V/2, parágrafo 4 do Código STCW.

8 As Administrações deverão assegurar que prova documental da formação que concluiu seja emitida a toda pessoa que for considerada qualificada de acordo com o disposto nesta regra.

CAPÍTULO VI

Funções de emergência, segurança do trabalho, protecção (security), cuidados médicos e sobrevivência

Regra VI/1

Requisitos mínimos obrigatórios para familiarização, treinamento e formação básica em segurança para todos os marítimos

1 Os marítimos deverão receber familiarização e treinamento ou formação básica em segurança, de acordo com a Secção A-VI/1 do Código STCW, e deverão satisfazer a norma de competência adequada especificada nessa Secção.

2 Quando a formação básica não estiver contida na qualificação para o certificado a ser emitido, deverá ser emitido um certificado de proficiência indicando que o portador frequentou o curso de formação básica.

Regra VI/2

Requisitos mínimos obrigatórios para a emissão de certificados de proficiência em embarcação de sobrevivência, embarcações de salvamento e embarcações rápidas de salvamento

1 Todo candidato a um certificado de proficiência em embarcação de sobrevivência e em embarcações de salvamento, com excepção das embarcações rápidas de salvamento, deverá:

.1 ter no mínimo 18 anos de idade;

.2 ter um período de apropriado serviço em navegação em mar aberto, não inferior a 12 meses, ou ter frequentado um aprovado curso de formação e ter um período de aprovado serviço em navegação em mar aberto não inferior a seis meses; e

.3 satisfazer a norma de competência para certificados de proficiência em embarcação de sobrevivência e em embarcações de salvamento estabelecidas na Secção A-VI/2, parágrafos 1 a 4 do Código STCW.

2 Todo candidato a um certificado de proficiência em embarcações rápidas de salvamento deverá:

.1 ser portador de um certificado de proficiência em embarcação de sobrevivência e em embarcações de salvamento, excepto embarcações rápidas de salvamento;

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.2 ter frequentado um aprovado curso de formação; e

.3 satisfazer a norma de competência para certificados de proficiência em embarcações rápidas de salvamento especificadas na Secção A-VI/2, parágrafos 7 a 10 do Código STCW.

Regra VI/3

Requisitos mínimos obrigatórios para formação em combate a incêndio avançado

1 Os marítimos designados para controlar fainas de combate a incêndio deverão ter completado com sucesso uma formação avançada em técnicas de combate a incêndio, com uma ênfase especial em organização, tácticas e comando, de acordo com o disposto na Secção A-VI/3, parágrafos 1 a 4 do Código STCW, e deverá satisfazer a norma de competência especificada nessa Secção e nesses parágrafos.

2 Quando a formação avançada em combate a incêndio não constar das qualificações para o certificado a ser emitido, deverá ser emitido um certificado de proficiência indicando que o portador frequentou um curso de formação avançada em combate a incêndio.

Regra VI/4

Requisitos mínimos obrigatórios relativos a primeiros socorros médicos e cuidados médicos

1 Os marítimos designados para prestar os primeiros socorros médicos a bordo de um navio deverão satisfazer a norma de competência em primeiros socorros médicos especificada na Secção A-VI/4, parágrafos 1 a 3 do Código STCW.

2 Os marítimos designados para serem encarregados de cuidados médicos a bordo de um navio deverão satisfazer a norma de competência em cuidados médicos a bordo de navios especificada na Secção A-VI/4, parágrafos 4 a 6 do Código STCW.

3 Sempre que a formação em primeiros socorros médicos, ou em cuidados médicos, não constar das qualificações para o certificado a ser emitido, deverá ser emitido um certificado de proficiência indicando que o portador frequentou um curso de formação em primeiros socorros médicos, ou em cuidados médicos.

Regra VI/5

Requisitos mínimos obrigatórios para a emissão de certificados de proficiência (qualificação) para oficiais de protecção do navio

1 Todo candidato a um certificado de proficiência como oficial de protecção do navio deverá:

.1 ter um período de aprovado serviço na navegação em mar aberto não inferior a 12 meses, ou um aprovado serviço em navegação em mar aberto e conhecimento das operações do navio; e

.2 atender à norma de competência para a certificação de proficiência como oficial de protecção do navio estabelecida na Secção A-VI/5, parágrafos 1 a 4 do Código STCW.

2 As Administrações deverão assegurar que seja emitido um certificado de proficiência para toda pessoa que for considerada qualificada de acordo com o disposto nesta regra.

Regra VI/6

Requisitos mínimos obrigatórios para o treinamento e a formação relativa à protecção (security) para todos os marítimos

1 Os marítimos deverão receber uma familiarização relativa à protecção e um treinamento ou uma formação relativos a uma conscientização quanto à protecção, de acordo com a Secção A-VI/6, parágrafos 1 a 4 do Código STCW, e deverão satisfazer o padrão de competência especificado nessa Secção e nesses parágrafos.

2 Quando a conscientização quanto à protecção não constar na qualificação para o certificado a ser emitido, deverá ser emitido um certificado de proficiência indicando que o portador frequentou um curso de formação em conscientização quanto à protecção.

3 Toda Parte deverá comparar o treinamento ou a formação relativa à protecção que exige dos marítimos que possuem, ou que podem documentar, qualificações antes da entrada em vigor desta regra, com os especificados na Secção A-VI/6, parágrafo 4 do Código STCW, e deverá verificar a necessidade de exigir que esses marítimos actualizem suas qualificações.

Marítimos com atribuições específicas de protecção (*security*)

4 Os marítimos com atribuições de protecção especificadas deverão satisfazer a norma de competência especificada na Secção A-VI/6, parágrafo 8 do Código STCW.

5 Quando a formação em atribuições de protecção especificadas não constar das qualificações para o certificado a ser emitido, deverá ser emitido um certificado de proficiência indicando que o portador frequentou um curso de formação em atribuições de protecção especificadas.

6 Toda Parte deverá comparar as normas de formação relativa à protecção que exige dos marítimos que possuem, ou que podem documentar, qualificações antes da entrada em vigor desta regra com as especificadas na Secção A-VI/6, parágrafo 8 do Código STCW, e deverá verificar a necessidade de exigir que esses marítimos actualizem suas qualificações.

CAPÍTULO VII

Certificação alternativa

Regra VII/1

Emissão de certificados alternativos

1 Não obstante os requisitos para certificação estabelecidos nos capítulos II e III deste Anexo, as Partes

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podem decidir emitir ou autorizar a emissão de outros certificados que não aqueles mencionados nas regras desses capítulos, desde que:

.1 as funções relacionadas com a certificação e os níveis de responsabilidade a serem declarados nos certificados e nos endossos sejam seleccionados entre aqueles mencionados nas secções A-II/1, A-II/2, A-II/3, A-II/4, A-II/5, A-III/1, A-III/2, A-III/3, A-III/4, A-III/5 e A-IV/2 do Código STCW, e sejam idênticos a eles;

.2 os candidatos tenham completado uma educação e uma formação aprovadas e atendam às exigências relativas às normas de competência estabelecidas nas secções pertinentes do Código STCW e apresentados na Secção A-VII/1 desse Código, para as funções e os níveis que serão declarados nos certificados e nos endossos;

.3 os candidatos tenham completado um período de aprovado serviço em navegação em mar aberto, adequado ao desempenho das funções e dos níveis que serão declarados nos certificados. A duração mínima desse período de serviço em navegação em mar aberto deverá ser equivalente à duração do período de serviço em navegação em mar aberto estabelecido nos Capítulos II e III deste Anexo. No entanto, a duração mínima do período de serviço em navegação em mar aberto não deverá ser inferior ao estabelecido na Secção A-VII/2 do Código STCW;

.4 os candidatos a certificação que irão desempenhar funções de navegação no nível operacional deverão atender às exigências aplicáveis das regras do Capítulo IV, como for adequado, para desempenhar atribuições de rádio especificadas de acordo com o Regulamento de Radiocomunicações; e

.5 os certificados são emitidos de acordo com as exigências da Regra I/2 e com as disposições apresentadas no Capítulo VII do Código STCW.

2 Nenhum certificado deverá ser emitido com base neste capítulo, a menos que a Parte tenha enviada as informações à Organização de acordo com o Artigo IV e a Regra I/7.

Regra VII/2

Certificação de marítimos

1 Todo marítimo que desempenha qualquer função ou grupo de funções especificado nas tabelas A-II/1, A-II/2, A-II/3, A-II/4 ou A-II/5 do Capítulo II, ou nas tabelas A-III/1, A- III/2, A-III/3, A-III/4 ou A-III/5 do Capítulo III, ou A-IV/2 do Capítulo IV do Código STCW, deverá possuir um certificado de competência ou um certificado de proficiência, como for adequado.

Regra VII/3

Princípios que regem a emissão de certificados alternativos

1 Qualquer Parte que decida emitir ou autorizar a emissão de certificados alternativos deverá assegurar-se de que os seguintes princípios sejam observados:

.1 nenhum sistema de certificação alternativa deverá ser implantado, a menos que assegure um grau de segurança no mar, e que tenha um efeito preventivo com relação à poluição, pelo menos equivalentes aos proporcionados pelos outros capítulos; e

.2 qualquer medida adoptada para uma certificação alternativa emitida com base neste capítulo deverá permitir a inter-cambialidade dos certificados com os emitidos com base nos outros capítulos.

2 O princípio de inter-cambialidade mencionado no parágrafo 1 deverá assegurar que:

.1 os marítimos habilitados com base nas medidas constantes dos Capítulos II e/ou III e aqueles habilitados com base no Capítulo VII são capazes de trabalhar em navios que tenham formas tradicionais, ou outras formas de organização a bordo; e

.2 os marítimos não são instruídos para arranjos específicos de instalações de bordo, de tal modo que isso venha a prejudicar a sua capacidade de empregar seus conhecimentos em qualquer outro tipo de instalação.

3 Ao emitir qualquer certificado com base nas disposições deste capítulo, deverão ser levados em consideração os seguintes princípios:

.1 a emissão de certificados alternativos não deverá ser utilizada por si só para:

.1.1 reduzir o número de tripulantes a bordo,

.1.2 reduzir a integridade da profissão ou as qualificações dos marítimos, ou

.1.3 justificar a designação de atribuições conjuntas de oficiais de serviço na máquina e no convés a um único portador de certificado, durante qualquer quarto de serviço específico; e

.2 a pessoa em função de comando será designada como comandante; e o estatuto legal e a autoridade do comandante e de outros tripulantes não deverão ser afectadas de maneira adversa pelo cumprimento de qualquer medida de certificação alternativa.

4 Os princípios contidos nos parágrafos 1 e 2 desta regra deverão assegurar que seja mantida a competência, tanto dos oficiais de convés quanto dos de máquinas.

CAPÍTULO VIII

Serviço de quarto

Regra VIII/1

Aptidão para o serviço

1 Toda Administração deverá, com a finalidade de prevenir a fadiga:

.1 estabelecer, e fazer com que sejam cumpridos, períodos de descanso para o pessoal que faz serviço de quartos e para aqueles cujas atribuições envolvem atribuições especificadas de segurança, prevenção da poluição e protecção, de acordo com o disposto na Secção A-VIII/1 do Código STCW; e

.2 exigir que os sistemas de serviços de quartos sejam organizados de modo que a eficiência

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do pessoal que faz serviço de quartos não seja prejudicada pela fadiga, e que as atribuições sejam organizadas de tal modo que o pessoal que irá fazer o primeiro quarto de serviço, no início da viagem, e os quartos subsequentes para substituição, esteja suficientemente descansado e, sob todos os aspectos, apto para o serviço.

2 Toda Administração deverá, com a finalidade de impedir o abuso de drogas e de álcool, assegurar que sejam criadas medidas adequadas, de acordo com o disposto na Secção A-VIII/1, levando em consideração, ao mesmo tempo, a orientação fornecida na Secção B-VIII/1 do Código STCW.

Regra VIII/2

Medidas e princípios a serem observados no serviço de quarto

1 As Administrações deverão chamar a atenção de companhias, comandantes, chefes de máquinas e de todo o pessoal que faz o serviço de quartos para as exigências, princípios e orientações estabelecidas no Código STCW, que deverão ser observadas para assegurar que seja mantido o tempo todo um quarto de serviço, ou quartos de serviços contínuos, seguros e apropriados às circunstâncias e condições existentes, em todos os navios que operem na navegação em mar aberto.

2 As Administrações deverão exigir que o comandante de todo navio assegure que as medidas relativas ao serviço de quartos sejam adequadas para manter um quarto de serviço, ou quartos de serviços, seguros, levando em conta as circunstâncias e condições existentes e que, sob a direcção geral do comandante:

.1 os oficiais encarregados do quarto de serviço de navegação sejam responsáveis por navegar o navio com segurança durante seus períodos de serviço, quando deverão estar o tempo todo fisicamente presentes na ponte, ou num local directamente relacionado com ela, como a casa das cartas ou a estação de controle da ponte;

.2 os rádio operadores sejam responsáveis por manter um serviço de quarto de radiocomunicações contínuo, nas frequências apropriadas, durante seus períodos de serviço;

.3 os oficiais encarregados de um quarto de serviço nas máquinas, como definido no Código STCW, sob a direcção do chefe de máquinas, deverão estar prontamente disponíveis e atentos para comparecer aos compartimentos de máquinas e, quando necessário, deverão estar fisicamente presentes no compartimento de máquinas durante seus períodos de responsabilidade;

.4 seja mantido um quarto, ou quartos de serviços, apropriados e eficazes, para fins de segurança todo o tempo em que o estiver fundeado, atracado ou amarrado à bóia e, se o navio estiver transportando carga perigosa, a organização desse quarto, ou quartos, de serviço deve tomar em consideração a natureza, a quantidade, a embalagem e a estivagem da carga perigosa e de quaisquer condições especiais existentes a bordo, a flutuar ou em terra; e

.5 como for aplicável, seja mantido um quarto, ou quartos de serviço apropriados e eficazes para fins de protecção.

RESOLUÇÃO 2

Emendas de Manila ao Código de Formação, Certificação e de Serviço de Quartos para os Marítimos (Código STCW)

A CONFERÊNCIA DE MANILA 2010,

APÓS TER ADOPTADO a Resolução 1 sobre a adopção das emendas de Manila ao anexo à Convenção Internacional sobre Normas de Formação, Cerificação e de Serviço de Quartos para os Marítimos (STCW), 1978;

RECONHECENDO a importância de estabelecer normas de competência detalhadas e outras disposições obrigatórias necessárias para garantir a todos os marítimos a sua adequada educação, formação, experiência, aptidão e competência para desempenharem as suas funções de modo a assegurarem a segurança da vida humana e de bens no mar, a protecção (security) e a protecção do meio ambiente marinho;

RECONHECENDO AINDA a necessidade de permitir a alteração atempada de tais normas e disposições obrigatórias, de modo a responder de forma eficiente às mudanças tecnológicas e operacionais e às práticas e procedimentos utilizados a bordo dos navios;

CONSIDERANDO que uma grande percentagem das perdas de vidas humanas no mar e dos incidentes de poluição marítima é provocada por erro humano,

TENDO EM CONSIDERAÇÃO que um meio efectivo para reduzir os riscos provenientes do erro humano na operação de navios de mar é garantir a manutenção dos mais elevados níveis de formação, cerificação e competência, no que se refere aos marítimos que desempenham as suas funções a bordo de tais navios;

DESEJANDO alcançar e manter os níveis mais elevados possível para a segurança da vida humana, dos bens e da protecção (security), com o navio a navegar e em porto, e a protecção do meio ambiente;

TOMANDO EM CONSIDERAÇAO as emendas ao Código de Formação, Certificação e de Serviço de Quartos para os Marítimos (Código STCW), composto pela parte A - Normas de cumprimento obrigatório relativas às disposições do anexo à Convenção STCW, de 1978, emendada e pela parte B – Orientações recomendadas relativas às disposições da Convenção STCW, de 1978, emendada, conforme propostas e distribuídas a todos os membros da Organização e a todas as Partes à Convenção,

TOMANDO NOTA que o parágrafo 2 da regra I/1 do anexo à Convenção STCW, de 1978, estipula que as emendas à parte A do Código STCW deverão ser adoptadas, entrar em vigor e produzir efeitos de acordo com as disposições do artigo XII da Convenção respeitantes ao procedimento de emendas aplicável ao anexo,

TOMANDO EM CONSIDERAÇÃO as emendas ao Código STCW, conforme propostas e distribuídas a todos os membros da Organização e a todas as Partes à Convenção,

1 - ADOPTA as emendas ao Código de Formação, Certificação e de Serviço de Quartos para os Marítimos (Código STCW), constante do anexo à presente Resolução;

2 - DETERMINA, em conformidade com o estipulado no artigo XII(l)(a)(vii) da Convenção que as emendas à parte A do Código STCW deverão ser consideradas como tendo sido adoptadas em 1 de Julho de 2011, a menos que, antes dessa data, mais de um terço das Partes, ou um conjunto

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de Partes cujas frotas mercantes representem no total um mínimo de 50% da tonelagem de arqueação bruta da frota mundial dos navios de comércio com uma arqueação bruta igual ou superior a 100, notificarem o Secretário-geral de que levantam uma objecção às emendas;

3 - CONVIDA as Partes a tomar nota que, em conformidade com o artigo XII(l)(a)(ix) da Convenção, as emendas à parte A do Código STCW agora em anexo, entrarão em vigor em 1 de Janeiro de 2012 após terem sido consideradas aceites, de acordo com o parágrafo 2 acima;

4 - RECOMENDA que as orientações constantes da parle B do Código STCW, emendado, deverão ser tomadas em consideração por todas as Partes à Convenção STCW de 1978 a partir da data de entrada em vigor das emendas à parte A do Código STCW;

5 - SOLICITA ao Comité de Segurança Marítima que mantenha sob revisão o Código STCW e que proceda às necessárias emendas, conforme apropriado;

6 - TAMBÉM SOLICITA ao Secretário-geral da Organização que proceda à distribuição de cópias autenticadas da presente resolução e do texto das emendas ao Código STCW constantes do anexo a todas as Partes à Convenção;

7 - MAIS SOLICITA ao Secretário-geral que proceda à distribuição de cópias da presente resolução e do respectivo anexo a todos os Membros da Organização que não são Partes à Convenção.

ANEXO 1

Emendas de Manila ao CÓDIGO DE FORMAÇÃO, CERTIFICAÇÃO E DE SERVIÇO DE QUARTOS PARA MARÍTIMOS (Código STCW)

PARTE A

Normas obrigatórias relativas ao disposto no Anexo da Convenção STCW

Introdução

1 A presente parte do Código STCW contém as disposições obrigatórias às quais é feita referência específica no Anexo da Convenção Internacional sobre Normas de Formação, Certificação e Serviço de Quartos para Marítimos, 1978, como emendada, daqui em diante referida como a Convenção STCW. Estas disposições fornecem em detalhe as normas mínimas que devem ser observadas e mantidas pelas Partes, de modo a dar pleno e total efeito à Convenção.

2 Também estão contidas nesta parte as normas de competência que se exige que sejam demonstradas pelos candidatos para a emissão e revalidação de certificados de competência com base no disposto na Convenção STCW. Para esclarecer a ligação entre as disposições relativas à certificação alternativa do Capítulo VII e as disposições relativas à certificação dos Capítulos II, III e IV, as aptidões especificadas nas normas de competência são agrupadas, como apropriado, de acordo com as sete funções seguintes:

.1 Navegação;

.2 Manuseio da carga e estiva;

.3 Controlo da operação do navio e cuidados com as pessoas a bordo;

.4 Engenharia marítima;

.5 Engenharia electrotécnica, electrónica e de controlo;

.6 Manutenção e reparação;

.7 Radiocomunicações;

nos seguintes níveis de responsabilidade:

.1 Nível de gestão;

.2 Nível operacional; e

.3 Nível de apoio.

As funções e níveis de responsabilidade estão identificados através de subtítulos nas tabelas das normas de competência fornecidas nos Capítulos II, III e IV desta parte. O escopo da função no nível de responsabilidade indicado num subtítulo é definido pelas aptidões listadas na coluna 1 da tabela. O significado de "função" e de "nível de responsabilidade" está definido em termos gerais na Secção A-I/1 abaixo.

3 A numeração das secções desta parte corresponde à numeração das regras contidas no Anexo da Convenção STCW. O texto das secções pode ser dividido em partes e parágrafos numerados, mas essa numeração é exclusiva somente desse texto.

CAPÍTULO I

Normas relativas às disposições gerais

Secção A-I/1

Definições e esclarecimentos

1 As definições e os esclarecimentos contidos no Artigo II e na Regra I/1 aplicam-se igualmente aos termos utilizados nas Partes A e B deste Código. Além disto, as seguintes definições suplementares aplicam-se somente a este Código:

.1 Norma de competência significa o nível de proficiência a ser obtido para o desempenho adequado de funções a bordo de um navio, de acordo com os critérios internacionalmente acordados apresentados neste Código, e incorporando normas prescritas ou níveis de conhecimento, de entendimento e de demonstrada aptidão;.2 Nível de gestão significa o nível de responsabilidade relacionado com:

.2.1 servir como comandante, imediato, chefe de máquinas ou segundo oficial de máquinas a bordo de um navio que opere na navegação em mar aberto, e

.2.2 assegurar que todas as funções dentro de uma área de responsabilidade sejam desempenhadas correctamente;

.3 Nível operacional significa o nível de responsabilidade relacionado com:

.3.1 servir como oficial chefe de quarto de navegação ou de máquinas, ou designado como oficial de serviço de máquinas numa casa de máquinas de condução periodicamente desatendida, ou como radioperador a bordo de um navio que opere na navegação em mar aberto, e

.3.2 manter um controlo directo sobre o desempenho de todas as funções dentro da área de responsabilidade designada, de acordo com os procedimentos adequados e sob a direcção de uma pessoa que sirva no nível de gestão para aquela área de responsabilidade;

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.4 Nível de apoio significa o nível de responsabilidade relacionado com o desempenho de tarefas, atribuições ou responsabilidades atribuídas a bordo de um navio que opere na navegação em mar aberto, sob a direcção de uma pessoa que sirva no nível operacional ou no nível de gestão;

.5 Critérios de avaliação são os lançamentos que aparecem na coluna 4 das tabelas de "Especificação de Norma Mínima de Competência", na Parte A, e fornecem os meios para um avaliador julgar se um candidato pode ou não desempenhar as tarefas, atribuições e responsabilidades afins; e

.6 Avaliação independente significa uma avaliação feita por pessoas adequadamente qualificadas, independentes da unidade ou da actividade que está sendo avaliada, ou estranhas a ela, para verificar se os procedimentos administrativos e operacionais em todos os níveis estão sendo geridos, organizados, realizados e monitorizados internamente de modo a assegurar a sua adequação ao propósito e à consecução dos objectivos declarados.

Secção A-I/2

Certificados e autenticações

1 Quando, como disposto na Regra I/2, parágrafo 6, a autenticação exigida pelo Artigo VI da Convenção é incorporado no texto do próprio certificado, o certificado deverá ser emitido no formato apresentado abaixo, desde que as palavras "ou até a data em que expira qualquer prorrogação da validade deste certificado, como possa estar indicado no verso" que aparecem na frente do formulário, e as disposições para registar a prorrogação da validade, que aparecem no verso do formulário, sejam omitidas quando for exigido que o certificado seja substituído quando expirar a sua validade. Na Secção B-I/2 deste Código está contida uma orientação para o preenchimento do formulário.

(Selo Oficial)

(PAÍS)

CERTIFICADO EMITIDO COM BASE NAS DISPOSIÇÕES DA CONVENÇÃO INTERNACIONAL SOBRE NORMAS DE FORMAÇÃO, CERTIFICAÇÃO E DE SERVIÇO DE QUARTOS PARA MARÍTIMOS, 1978 COMO EMENDADA

1753000 002215

O Governo de ..... certifica que..... foi considerado estar devidamente qualificado de acordo com as disposições da Regra ..... da Convenção acima, como emendada, e que foi considerado competente para desempenhar as seguintes funções, nos níveis especificados, sujeito a quaisquer limitações indicadas, até ....., ou até a data em que expira qualquer prorrogação da validade deste certificado, como possa estar indicado no verso.

FUNÇÃO	NÍVEL	LIMITAÇÕES APLICÁVEIS (SE HOUVER)

O legítimo titular do presente certificado pode desempenhar o cargo ou os cargos, a seguir mencionado(s) em conformidade com os requisitos de lotação mínima de segurança aplicáveis pela Administração.

CARGO	LIMITAÇÕES APLICÁVEIS (SE HOUVER)

N° do certificado ..... emitido em .....

(Selo oficial)

..... Assinatura do funcionário devidamente autorizado

..... Nome do funcionário devidamente autorizado

O original deste certificado deve ser mantido disponível de acordo com a Regra I/2, parágrafo 11 da Convenção, enquanto o seu titular estiver prestando serviço num navio.

Data de nascimento do titular do certificado.....

Assinatura do titular do certificado.....

Fotografia do titular do certificado

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A validade deste certificado é prorrogada por meio deste documento até .....
(Selo oficial)
..... Assinatura do funcionário devidamente autorizado
Data da revalidação .....
..... Nome do funcionário devidamente autorizado

A validade deste certificado é prorrogada por meio deste documento até .....
(Selo oficial)
..... Assinatura do funcionário devidamente autorizado
Data da revalidação .....
..... Nome do funcionário devidamente autorizado

2 Excepto como disposto no parágrafo 1, o formulário utilizado para atestar a emissão de um certificado deverá ser como apresentado abaixo, desde que as palavras "ou até a data em que expira qualquer prorrogação da validade deste autenticação, como possa estar indicado no verso", que aparecem na frente do formulário, e as disposições para registar a prorrogação da validade, que aparecem no verso do formulário, sejam omitidas quando for exigido que a autenticação seja substituída quando expirar a sua validade. Na Secção B-I/2 deste Código está contida uma orientação para preenchimento do formulário.

(Selo Oficial)

(PAÍS)

AUTENTICAÇÃO ATESTANDO A EMISÃO DE UM CERTIFICADO COM BASE NAS DISPOSIÇÕES DA CONVENÇÃO INTERNACIONAL SOBRE NORMAS DE FORMAÇÃO, CERTIFICAÇÃO E DE SERVIÇO DE QUARTOS PARA MARÍTIMOS, 1978, COMO EMENDADA

1753000 002215

O Governo de..... certifica que o certificado N° ..... foi emitido a ...., o qual foi considerado estar devidamente qualificado de acordo com as disposições da Regra .....da Convenção acima, como emendada, e que foi considerado competente para desempenhar as seguintes funções, nos níveis especificados, sujeito a quaisquer limitações indicadas, até ....., ou até a data em que expira qualquer prorrogação da validade da presente autenticação, conforme indicado no verso.

FUNÇÃO	NÍVEL	LIMITAÇÕES APLICÁVEIS (SE HOUVER)

O legítimo titular da presente autenticação pode desempenhar o cargo ou os cargos, a seguir mencionado(s) em conformidade com os requisitos de lotação mínima de segurança aplicáveis pela Administração.

CARGO	LIMITAÇÕES APLICÁVEIS (SE HOUVER)

N° da autenticação..... emitido em .....

(Selo oficial) ..... Assinatura do funcionário devidamente autorizado

..... Nome do funcionário devidamente autorizado

O original desta autenticação deve ser mantido disponível de acordo com a Regra I/2, parágrafo 11 da Convenção, enquanto o seu titular estiver prestando serviço num navio.

Data de nascimento do titular do certificado.....

Assinatura do titular do certificado.....

Fotografia do titular do certificado

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A validade da presente autenticação é prorrogada por meio deste documento até .....
(Selo oficial)
..... Assinatura do funcionário devidamente autorizado
Data da revalidação .....
..... Nome do funcionário devidamente autorizado

A validade da presente autenticação é prorrogada por meio deste documento até .....
(Selo oficial)
..... Assinatura do funcionário devidamente autorizado
Data da revalidação .....
..... Nome do funcionário devidamente autorizado

3 O formulário utilizado pata atestar o reconhecimento de um certificado deverá ser como apresentado abaixo, excepto que as palavras "ou até a data em que expira qualquer prorrogação da validade da presente autenticação, como possa estar indicado no verso", que aparecem na frente do formulário, e as disposições para registar a prorrogação da validade, que aparecem no verso do formulário, sejam omitidas quando for exigido que o autenticação seja substituído quando expirar a sua validade. Na Secção B-I/2 deste Código está contida uma orientação para o preenchimento do formulário.

(Selo Oficial)

(PAÍS)

AUTENTICAÇÃO ATESTANDO O RECONHECIMENTO DE UM CERTIFICADO COM BASE NAS DISPOSIÇÕES DA CONVENÇÃO INTERNACIONAL SOBRE NORMAS DE FORMAÇÃO, CERTIFICAÇÃO E DE SERVIÇO DE QUARTOS PARA MARÍTIMOS, 1978, COMO EMENDADA

1753000 002215

O Governo de ..... certifica que o certificado N° ....., emitido a ...., pelo Governo de ....., ou por sua representação, está devidamente reconhecido de acordo com as disposições da Regra I/10 da Convenção acima, como emendada, e que o seu legítimo titular está autorizado a desempenhar as seguintes funções, nos níveis especificados, sujeito a quaisquer limitações indicadas, até ....., ou até a data em que expira qualquer prorrogação da validade desta autenticação, como possa estar indicado no verso.

FUNÇÃO	NÍVEL	LIMITAÇÕES APLICÁVEIS (SE HOUVER)

O legítimo titular da presente autenticação pode desempenhar o cargo ou os cargos, a seguir mencionado(s) em conformidade com os requisitos de lotação mínima de segurança aplicáveis pela Administração.

CARGO	LIMITAÇÕES APLICÁVEIS (SE HOUVER)

N° da autenticação..... emitido em .....

(Selo oficial) ..... Assinatura do funcionário devidamente autorizado

..... Nome do funcionário devidamente autorizado

O original desta autenticação deve ser mantido disponível de acordo com a Regra I/2, parágrafo 11 da Convenção, enquanto o seu titular estiver prestando serviço num navio.

Data de nascimento do titular do certificado.....

Assinatura do titular do certificado.....

Fotografia do titular do certificado

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A validade da presente autenticação é prorrogada por meio deste documento até .....
(Selo oficial)
..... Assinatura do funcionário devidamente autorizado
Data da revalidação .....
..... Nome do funcionário devidamente autorizado

A validade da presente autenticação é prorrogada por meio deste documento até .....
(Selo oficial)
..... Assinatura do funcionário devidamente autorizado
Data da revalidação .....
..... Nome do funcionário devidamente autorizado

4 Ao utilizar formatos que possam ser diferentes dos apresentados nesta secção, de acordo com a Regra I/2, parágrafo 10, as Partes deverão assegurar, em todos os casos, o seguinte:

.1 todas as informações relativas à identidade e à descrição pessoal do titular, inclusive o nome, data de nascimento, fotografia e assinatura, juntamente com a data em que foi emitido o documento, estejam mostradas no mesmo lado dos documentos; e

.2 todas as informações relativas à função, ou funções, nas quais o portador está autorizado a servir, de acordo com as exigências aplicáveis da Administração com relação à tripulação de segurança, bem como quaisquer limitações, deverão ser claramente exibidas e sejam facilmente identificadas.

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EMISSÃO E REGISTO DE CERTIFICADOS

Aprovação de serviço em navegação em mar aberto

5 Ao aprovar um serviço em navegação em mar aberto exigido pela Convenção, as Partes devem assegurar que o serviço em questão é pertinente à qualificação que estiver sendo solicitada, tendo em mente, fora a familiarização inicial com o serviço em navios que operem na navegação em mar aberto, que o propósito desse serviço é o de permitir que o marítimo seja instruído e pratique, sob uma supervisão adequada, aquelas práticas, procedimentos e rotinas de navegação em mar aberto seguras e apropriadas, e que são pertinentes à qualificação que estiver sendo solicitada.

Aprovação de cursos de formação

6 Ao aprovar cursos e programas de formação, as Partes devem levar em conta que os Cursos Modelo da IMO pertinentes podem ajudar na elaboração daqueles cursos e programas e assegurar que sejam adequadamente abrangidos os objectivos de aprendizado recomendados naqueles cursos.

Acesso electrónico aos registos

7 Na manutenção do registo electrónico de acordo com o parágrafo 15 da Regra I/2, deverão ser tomadas medidas para permitir um acesso controlado e esse registo, ou registos, para permitir que as Partes e companhias confirmem:

.1 o nome do marítimo para o qual foi emitido aquele certificado, autenticação ou outra qualificação, seu número pertinente, data de emissão e data em que expira a sua validade;

.2 em que capacidade o titular pode servir e quaisquer limitações relacionadas com aquele documento; e

.3 as funções que o titular pode desempenhar, os níveis autorizados e quaisquer limitações que lhes são inerentes.

Elaboração de uma base de dados para o registo de certificados

8 Ao implementar as exigências do parágrafo 14 da Regra I/2 para a manutenção de um registo de certificados e autenticações, não é necessário que haja uma base de dados norma, desde que todas as informações pertinentes estejam registadas e disponíveis de acordo com a Regra I/2.

9 Os seguintes itens de informações devem ser registados e estar disponíveis, seja em papel ou electronicamente, de acordo com a Regra I/2:

.1 Situação do certificado

Válido

Suspenso

Cancelado

Informado como perdido

Destruído

devendo ser mantido um registo das alterações da situação, incluindo as datas das alterações.

.2 Detalhes do certificado

Nome do marítimo

Data de nascimento

Nacionalidade

Sexo

De preferência uma fotografia

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Número do documento pertinente

Data de emissão

Data do término da validade

Data da última revalidação

Detalhes da(s) licenças(s)

.3 Detalhes relativos à competência

Norma de competência do STCW (ex.: Regra II/1)

Capacidade

Função

Nível de responsabilidade

Autenticações

Limitações

.4 Detalhes médicos

Data de emissão do último certificado médico relativo à emissão ou revalidação do certificado de competência.

Secção A-I/3

Princípios que regem as viagens na navegação costeira

1 Quando uma Parte define viagens na navegação costeira, entre outras coisas, com a finalidade de empregar assuntos diferentes dos listados na coluna 2 das tabelas de norma de competência contidas nos Capítulos II e III da Parte A do Código, para a emissão de certificados válidos para serviço em navios autorizados a arvorar a sua bandeira e que sejam empregados nessas viagens, os seguintes factores deverão ser levados em consideração, tendo em mente a segurança e a protecção de todos os navios e do meio ambiente marinho:

.1 tipo de navio e tráfego marítimo em que está sendo empregado;

.2 arqueação bruta do navio e potência em quilowatts das máquinas de propulsão principal;

.3 natureza e extensão das viagens;

.4 distância máxima de um porto de refúgio;

.5 adequabilidade da cobertura e da precisão dos dispositivos de navegação para a determinação da posição;

.6 condições meteorológicas normalmente prevalecentes na área das viagens na navegação costeira;

.7 existência de recursos de comunicações, de bordo e costeiros, para busca e salvamento; e

.8 disponibilidade de apoio baseado em terra, especialmente com relação à manutenção técnica a bordo.

2 Não se pretende que navios empregados em viagens na navegação costeira estendam as suas viagens a todo mundo, com a desculpa de que estão navegando constantemente dentro dos limites estabelecidos para viagens na navegação costeira das Partes vizinhas.

Secção A-I/4

Procedimentos de controlo

1 O procedimento de avaliação previsto na Regra I/4, parágrafo 1.3, decorrente de quaisquer das ocorrências mencionadas nessa regra, deverá assumir a forma de uma verificação de que os membros da tripulação, dos quais é exigido que sejam competentes, possuem de facto as aptidões necessárias relacionadas com a ocorrência.

2 Ao fazer essa avaliação, deve-se ter em mente que os procedimentos de bordo são pertinentes ao Código Internacional de Gestão da Segurança (ISM) e que as disposições desta Convenção estão restritas à competência para executar com segurança esses procedimentos.

3 Os procedimentos de controlo desta Convenção deverão se restringir às normas de competência de cada marítimo a bordo e às suas aptidões relacionadas com a realização de serviços de quarto, como definido na Parte A deste Código. A avaliação da competência a bordo deverá começar pela verificação dos certificados dos marítimos.

4 Não obstante a verificação do certificado, a avaliação feita de acordo com a Regra I/4, parágrafo 1.3, pode exigir que o marítimo demonstre a competência relacionada com a avaliação feita no local em que realiza tal atribuição. Essa demonstração pode incluir uma verificação de que os requisitos operacionais com relação às normas de serviço de quarto estão sendo atendidos e que existe uma resposta adequada a situações de emergência, no nível de competência do marítimo.

5 Na avaliação, só deverão ser utilizados os métodos para demonstrar competência, juntamente com os critérios para a sua avaliação e o âmbito das normas fornecidas na Parte A do presente Código.

6 A avaliação de competência relacionada com a protecção só deverá ser realizada por aqueles marítimos com atribuições específicas de protecção quando houver motivos claros, como previsto no Capítulo XI/2 da Convenção Internacional para a Salvaguarda da Vida Humana no Mar (SOLAS). Em todos os outros casos, deverá se restringir à verificação dos certificados e/ou autenticações dos marítimos.

Secção A-I/5

Disposições nacionais

As disposições da Regra I/5 não deverão ser interpretadas como impeditivas da atribuição de tarefas para formação sob supervisão, ou em casos de força maior.

Secção A-I/6

Instrução e avaliação

1 Toda Parte deverá assegurar-se de que toda acção de formação e avaliação de marítimos para a certificação no âmbito da Convenção é:

.1 estruturada de acordo com programas escritos, contendo os métodos e meios de realização, procedimentos e material do curso, como for necessário para alcançar a norma de competência estabelecida; e

.2 realizada, monitorizada, avaliada e apoiada por pessoas qualificadas de acordo com os parágrafos 4, 5 e 6.

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2 As pessoas que realizarem a instrução em serviço, ou a avaliação a bordo de navios, só deverão realizá-las quando essa instrução ou avaliação não afectar de maneira adversa a operação normal do navio, e puderem dedicar o seu tempo e a sua atenção à instrução ou à avaliação.

Qualificação de formadores, supervisores e avaliadores[76]

3 Toda Parte deverá assegurar que instrutores, supervisores e avaliadores estejam adequadamente qualificados para os tipos e níveis específicos da instrução ou da avaliação de competência de marítimos, seja a bordo ou em terra, como exigido com base na Convenção, de acordo com o disposto nesta secção.

Formação em serviço

4 Qualquer pessoa que estiver realizando uma formação no posto de trabalho de um marítimo, seja a bordo ou em terra, destinada a ser utilizada para qualificar para certificação de acordo com a Convenção, deverá:

.1 fazer uma avaliação do programa de formação e ter um entendimento dos objectivos específicos da formação para o tipo específico de formação que estiver sendo realizada;

.2 estar qualificada na tarefa para a qual a formação estiver sendo realizada; e

.3 se estiver realizando uma formação utilizando um simulador:

.3.1 ter recebido uma orientação adequada quanto às técnicas de formação que envolvem a utilização de simuladores, e

.3.2 ter obtido experiência operacional prática no tipo específico de simulador que estiver sendo utilizado.

5 Qualquer pessoa responsável pela supervisão da formação no posto de trabalho de um marítimo, para efeitos da sua qualificação para certificação de acordo com a Convenção, deverá ter pleno entendimento do programa da formação e dos objectivos específicos de cada tipo de formação que estiver sendo ministrada.

Avaliação de competência

6 Qualquer pessoa que estiver realizando uma avaliação de competência no posto de trabalho de um marítimo, seja a bordo ou em terra, para efeitos da sua qualificação para certificação de acordo com a Convenção, deverá:

.1 ter um nível de conhecimento e de entendimento adequado da competência a ser avaliada;

.2 estar qualificada na tarefa para a qual estiver sendo feita a avaliação;

.3 ter recebido uma orientação adequada quanto aos métodos e práticas de avaliação;

.4 ter obtido experiência prática em avaliação; e

.5 se estiver realizando uma avaliação envolvendo a utilização de simuladores, ter obtido experiência prática em avaliação no tipo específico de simulador, sob a supervisão, e a contento, de um avaliador experiente.

[76] O(s) Curso(s) Modelo pertinente(s) da IMO pode(m) ser de ajuda na elaboração de cursos

Formação e avaliação no âmbito de uma instituição

7 Toda Parte que reconhecer um curso de formação, uma instituição de formação ou uma qualificação concedida por uma instituição de formação, como sendo parte das suas exigências para a emissão de um certificado exigido com base na Convenção, deverá assegurar-se de que as qualificações e a experiência dos formadores e avaliadores estejam abrangidas na aplicação das disposições relativas às normas de qualidade contidas na secção A-I/8. Tais qualificações, experiência e aplicação de normas de qualidade deverão incluir a formação apropriada em técnicas educacionais, práticas de formação e métodos de avaliação, bem como deverão atender às exigências aplicáveis dos parágrafos 4 a 6.

Secção A-I/7

Comunicação da informação

1 A informação exigida pela Regra I/7, parágrafo 1, deverá ser comunicada ao Secretário-geral no formato estabelecido no parágrafo abaixo.

PARTE 1 – COMUNICAÇÃO INICIAL DA INFORMAÇÃO

2 Dentro de um ano após a entrada em vigor da Regra I/7, toda Parte deverá informar as medidas tomadas para dar pleno e completo efeito à Convenção, informação essa que deverá conter o seguinte:

.1 detalhes das informações para contacto e o organograma do Ministério, Departamento ou Órgão Governamental responsável pela administração da Convenção;

.2 uma explanação concisa das medidas legais e administrativas existentes e tomadas para assegurar o cumprimento, especialmente, das Regras I/2, I/6 e I/9;

.3 um relato claro das políticas de educação, formação, exames, avaliação de competência e certificação adoptadas;

.4 um resumo conciso dos cursos, programas de formação, exames e avaliações existentes para cada certificado emitido de acordo com a Convenção;

.5 uma descrição concisa dos procedimentos seguidos para autorizar, credenciar ou aprovar uma formação e exames, aptidão médica e avaliações de competência exigidos pela Convenção, as condições que lhes são inerentes, e uma lista das autorizações, credenciamentos e aprovações concedidos;

.6 um resumo conciso dos procedimentos seguidos para conceder qualquer licença com base no Artigo VIII da Convenção; e

.7 os resultados da comparação realizada de acordo com a Regra I/11 e uma descrição concisa da formação de reciclagem e de actualização exigidas.

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PARTE 2 – RELATÓRIOS SUBSEQUENTES

3 Toda Parte deverá, até seis meses depois de:

.1 manter ou adoptar qualquer medida de educação ou de formação equivalente, de acordo com o Artigo IX, fornecer uma descrição completa dessa medida;

.2 reconhecer certificados emitidos por uma outra Parte, fornecer um relatório resumindo as medidas tomadas para assegurar o atendimento à Regra I/10; e

.3 autorizar o emprego de marítimos que possuam certificados alternativos emitidos com base na Regra VII/1 em navios autorizados a arvorar a sua bandeira, fornecer ao Secretário-geral uma cópia de um modelo dos documentos relativos ao tipo de tripulação de segurança emitidos para esses navios.

4 Toda Parte deverá informar os resultados de cada avaliação realizada de acordo com a Regra I/8, parágrafo 2, até seis meses após o seu término. O relatório sobre a avaliação deverá conter as seguintes informações:

.1 as qualificações e a experiência daqueles que realizaram a avaliação; (ex.: certificados de competência que possuem, experiência como marítimo e como avaliador independente, experiência no campo da formação marítima e da avaliação, experiência na administração de sistemas de certificação, ou quaisquer outras qualificações ou experiência pertinentes);

.2 os termos de referência para a avaliação independente e os referentes aos avaliadores;

.3 uma lista de instituições/centros de formação abrangidos pela avaliação independente; e

.4 os resultados da avaliação independente, contendo:

.1 verificação de que:

.1.1 todas as disposições aplicáveis da Convenção e do Código STCW, inclusive de suas emendas, estão abrangidas pelo sistema de norma de qualidade da Parte, de acordo com a Secção I/8, parágrafo 3.1; e

.1.2 todas as medidas de controlo interno da gerência e de monitorização e todas as acções de acompanhamento estão de acordo com as medidas planeadas e com os procedimentos documentados, e são eficazes para assegurar o cumprimento dos objectivos definidos de acordo com a Secção A-I/8, parágrafo 3.2;

.2 uma breve descrição das:

.2.1 não conformidades encontradas, se houver alguma, durante a avaliação independente,

.2.2 medidas correctivas recomendadas para tratar das não conformidades identificadas, e

.2.3 medidas correctivas tomadas para tratar as não conformidades identificadas.

5 As Partes deverão informar as medidas tomadas para implementar quaisquer emendas obrigatórias posteriores à Convenção e ao Código STCW, não contidas anteriormente no relatório sobre a comunicação da informação inicial, de acordo com a Regra I/7, ou em qualquer relatório anterior enviado de acordo com a Regra I/8. As informações deverão ser incluídas no texto do próximo relatório a ser enviado de acordo com a Regra I/8, parágrafo 3, após a entrada em vigor da emenda.

6 As informações sobre as medidas tomadas para implementar emendas obrigatórias à Convenção e ao Código STCW deverão conter os seguintes itens, quando forem aplicáveis:

.1 uma explanação concisa das medidas legais e administrativas estabelecidas e tomadas para assegurar o atendimento à emenda;

.2 um sumário conciso de quaisquer cursos, programas de formação, exames e avaliações estabelecidos para atender à emenda;

.3 uma descrição concisa dos procedimentos seguidos para autorizar, credenciar ou aprovar instrução e exames, aptidão médica e avaliações de competência exigidas com base na emenda;

.4 uma descrição concisa de qualquer instrução de reciclagem e de aperfeiçoamento exigida para atender às emendas; e

.5 uma comparação entre as medidas tomadas para implementar a emenda e as medidas existentes contidas nos relatórios anteriores, enviados de acordo com a Regra I/7, parágrafo 1 e/ou com a Regra I/8, parágrafo 2, quando for aplicável.

PARTE 3 – PAINEL DE PESSOAS COMPETENTES

7 O Secretário-geral deverá manter uma lista de pessoas competentes aprovadas pelo Comité de Segurança Marítima, inclusive pessoas competentes que tenham sido disponibilizadas ou recomendadas pelas Partes, cuja colaboração pode ser pedida para avaliar os relatórios submetidos de acordo com a Regra I/7 e a Regra I/8, e que podem ser chamadas a ajudar na elaboração do relatório exigido pela Regra I/7, parágrafo 2. Normalmente essas pessoas estarão disponíveis durante as sessões pertinentes do Comité de Segurança Marítima ou de seus órgãos auxiliares, mas não precisam realizar o seu trabalho somente durante essas sessões.

8 Com relação à Regra I/7, parágrafo 2, as pessoas competentes deverão ter conhecimento das exigências da Convenção e, pelo menos uma delas, deverá ter conhecimento do sistema de formação e de certificação da Parte em questão.

9 Quando for recebido um relatório de qualquer Parte, de acordo com a Regra I/8, parágrafo 3, o Secretário-geral designará pessoas competentes constantes da lista mantida de acordo com o parágrafo 7 para analisar o relatório e fornecer sua opinião quanto a se:

.1 o relatório está completo e demonstra que a Parte realizou uma avaliação independente

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da obtenção de conhecimento, entendimento, aquisição de aptidões e competência e das actividades de avaliação, e da administração do sistema de certificação (inclusive de autenticação e revalidação), de acordo com a Secção A-I/8, parágrafo 3;

.2 o relatório é suficiente para demonstrar que:

.2.1 os avaliadores eram qualificados,

.2.2 os termos de referência eram suficientemente claros para assegurar que:

.2.2.1 todas as disposições aplicáveis da Convenção e do Código STCW, inclusive de suas emendas, estão abrangidas pelo sistema de normas de qualidade da Parte; e

.2.2.2 a implementação de objectivos claramente definidos de acordo com a Regra I/8, parágrafo 1 pôde ser verificada ao longo de toda a gama de actividades pertinentes,

.2.3 os procedimentos seguidos durante a avaliação independente foram adequados para identificar quaisquer não conformidades significativas no sistema de formação, avaliação da competência e certificação de marítimos da Parte, como pode ser aplicável à Parte em questão, e

.2.4 as acções sendo tomadas para corrigir quaisquer não conformidades observadas foram oportunas e adequadas[77].

10 Qualquer reunião de pessoas competentes deverá:

.1 ser realizada a critério do Secretário-geral;

.2 ser constituída de um número ímpar de membros, normalmente não superior a cinco pessoas;

.3 designar o seu próprio presidente; e

.4 fornecer ao Secretário-geral a opinião acordada dos seus membros ou, se nenhum acordo for obtido, as opiniões tanto da maioria como da minoria.

11 As pessoas competentes deverão, numa base confidencial, expressar por escrito as suas opiniões sobre:

.1 uma comparação dos factos reportados nas informações comunicadas ao Secretário-geral pela Parte com todas as exigências pertinentes da Convenção;

.2 a informação de qualquer avaliação pertinente apresentada de acordo com a Regra I/8, parágrafo 3;

.3 a informação de quaisquer medidas tomadas para implementar as emendas à Convenção e ao Código STCW apresentadas de acordo com o parágrafo 5; e

.4 qualquer informação adicional fornecida pela Parte.

[77] *As acções correctivas devem ser oportunas e adequadas* significa que as acções devem se concentrar nas causas fundamentais das deficiências, e devem ser dispostas para ocorrer num momento programado estabelecido.

PARTE 4 – RELATÓRIO PARA O COMITÉ DE SEGURANÇA MARÍTIMA

12 Ao elaborar o relatório para o Comité de Segurança Marítima exigido pela Regra I/7, parágrafo 2, o Secretário-geral deverá:

.1 solicitar e levar em consideração as opiniões expressas pelas pessoas competentes seleccionadas da lista criada de acordo com o parágrafo 7:

.2 quando necessário, procurar obter da Parte esclarecimentos sobre qualquer assunto relacionado com as informações fornecidas de acordo com a Regra I/7, parágrafo 1; e

.3 identificar uma área em que a Parte poderia ter solicitado ajuda para implementar a Convenção.

13 A Parte em questão deverá ser informada das providências tomadas para a reunião de pessoas competentes, e seus representantes deverão ter o direito de estar presentes para esclarecer qualquer assunto relacionado com as informações fornecidas de acordo com a Regra I/7, parágrafo 1.

14 Se o Secretário-geral não estiver em condições de submeter o relatório exigido pelo parágrafo 2 da Regra I/7, a Parte em questão pode solicitar ao Comité de Segurança Marítima que tome a medida mencionada no parágrafo 3 da Regra I/7, levando em consideração as informações apresentadas de acordo com esta secção e as opiniões expressas de acordo com os parágrafos 10 e 11.

Secção A-I/8

Normas de qualidade

Objectivos nacionais e normas de qualidade

1 Toda Parte deverá assegurar que os objectivos relativos à educação e à formação, e as normas de competência relacionadas com eles, a serem atingidos sejam claramente definidos, e identificar os níveis de conhecimento, de entendimento e as aptidões adequados aos exames e avaliações exigidos com base na Convenção. Os objectivos e as respectivas normas de qualidade podem ser definidas de modo independente para diferentes cursos e programas de formação, e deverão abranger a administração do sistema de certificação.

2 O campo de aplicação das normas de qualidade deverá abranger a administração do sistema de certificação, todos os cursos e programas de formação, exames e avaliações realizados por uma Parte, ou sob a sua autoridade, e as qualificações e a experiência exigidas de formadores e avaliadores, levando em consideração o exame das políticas, sistemas, controlos e garantia de qualidade interna estabelecidos para assegurar a consecução dos objectivos definidos.

3 Toda Parte deverá assegurar que seja realizada, a intervalos não superiores a cinco anos, uma avaliação independente da obtenção de conhecimento, de entendi-

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mento, de aptidão e de competência, das actividades de avaliação e da administração do sistema de certificação, para verificar se:

.1 todas as disposições aplicáveis da Convenção e do Código STCW, inclusive de suas emendas, estão abrangidas pelo sistema de norma de competência;

.2 todo o controlo de gestão interna e medidas de monitorização e acções de acompanhamento estão de acordo com as disposições planeadas e com os procedimentos documentados, e são eficazes para assegurar que os objectivos definidos sejam atingidos;

.3 os resultados de cada avaliação independente são documentados e levados à atenção dos responsáveis pela área avaliada; e

.4 estão sendo tomadas medidas oportunas para corrigir as deficiências.

Secção A-I/9

Normas médicas

1 Ao estabelecer as normas de aptidão médica para marítimos, como exigido pela Regra I/9, as Partes deverão seguir os padrões mínimos de visão em serviço estabelecidos na tabela A-I/9, e levar em consideração os critérios de aptidão física e médica estabelecidos no parágrafo 2. Deverão levar em consideração, também, a orientação fornecida na Secção B-I/9 deste Código e na tabela B-I/9, relativa à avaliação da aptidão física mínima.

Esses padrões podem, na medida determinada pela Parte sem prejuízo para a segurança dos marítimos ou do navio, ser diferentes entre aquelas pessoas que procuram começar uma carreira no mar e aqueles marítimos que já servem no mar, e entre diferentes funções a bordo, tendo em mente as diferentes atribuições dos marítimos. Eles devem levar em consideração, também, qualquer debilitação ou doença que vá limitar a aptidão do marítimo de desempenhar suas atribuições durante o período de validade do certificado médico.

2 As normas de aptidão física e médica estabelecidas pela Parte deverão assegurar que os marítimos satisfaçam os seguintes critérios:

.1 ter a capacitação física, levando em conta o parágrafo 5 abaixo, de atender a todas as exigências da formação básica exigida pela Secção A-VI/1, parágrafo 2;

.2 demonstrar ter uma audição e uma fala adequadas para se comunicar de maneira eficaz e detectar quaisquer alarmes sonoros;

.3 não possuir qualquer problema de saúde ou debilitação que impeça a realização eficaz e segura de suas atribuições de rotina e de emergência a bordo, durante o período de validade do seu certificado médico;

.4 não estar sofrendo de qualquer problema de saúde que possa ser agravado pelo serviço no mar ou tornar o marítimo inapto para esse serviço, ou colocar em perigo a saúde e a segurança de outras pessoas a bordo; e

.5 não estar tomando qualquer medicamento que tenha efeitos colaterais que possam prejudicar o seu julgamento, seu equilíbrio ou quaisquer outros requisitos para um desempenho eficaz e seguro de atribuições de rotina e de emergência a bordo.

3 Os exames de aptidão médica de marítimos deverão ser realizados por médicos adequadamente qualificados e experientes, reconhecidos pela Parte.

4 Toda Parte deverá estabelecer disposições para o reconhecimento de médicos. Deverá ser mantido pela Parte um registo de médicos reconhecidos e disponibilizado, mediante solicitação, a outras Partes, companhias e marítimos.

5 Toda Parte deverá fornecer uma orientação para a realização de exames de aptidão médica e para a emissão de certificados médicos, levando em conta as disposições apresentadas na Secção B-I/9 deste Código. Toda Parte deverá determinar a extensão do arbítrio dado aos médicos reconhecidos na aplicação das normas médicas, tendo em mente as diferentes atribuições dos marítimos, excepto que não deverá haver arbítrio com relação às normas mínimas de visão para longe com correcção, de visão para perto/imediata e de visão de cores estabelecidas na tabela A-I/9 para marítimos do departamento de convés dos quais é exigido que desempenhem atribuições de vigilância. Uma Parte pode permitir um arbítrio na aplicação dessas normas com relação a marítimos do departamento de máquinas, com a condição de que a visão conjunta do marítimo atenda às exigências apresentadas na tabela A-I/9.

6 Toda Parte deverá estabelecer processos e procedimentos para permitir que os marítimos que, após um exame, não satisfizerem as normas de aptidão médica, ou que tenham limitações impostas à sua aptidão para trabalhar, em especial com relação ao tempo, campo de trabalho ou área de tráfego marítimo, tenham o seu caso revisto de acordo com as disposições da Parte relativas a recurso.

7 O certificado médico previsto na Regra I/9, parágrafo 3, deverá conter, pelo menos, as seguintes informações:

.1 Autoridade que autorizou e as exigências com base nas quais foi emitido o documento

.2 Informações sobre o marítimo

.2.1 Nome (Último, primeiro e do meio)

.2.2 Data de nascimento (dia/mês/ano)

.2.3 Sexo (Masculino/Feminino)

.2.4 Nacionalidade

.3 Declaração do médico reconhecido

.3.1 Confirmação de que os documentos de identidade foram verificados imediatamente antes do exame: S/N

.3.2 A audição satisfaz as normas estabelecidas no STCW A-I/9: S/N

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.3.3 Audição sem aparelho satisfatória? S/N

.3.4 A acuidade visual satisfaz as normas estabelecidas no STCW A-I/9: S/N

.3.5 A visão de cores[78] satisfaz as normas estabelecidas no STCW A-I/9: S/N

.3.5.1 Data do último teste de visão de cores.

.3.6 Apto para as atribuições de vigia? S/N

.3.7 Nenhuma limitação ou restrições à sua aptidão? S/N Se "N", especificar as limitações ou restrições

.3.8 O marítimo está livre de qualquer problema de saúde que possa ser agravado pelo serviço de navegação no mar ou tornar o marítimo inapto para esse serviço, ou colocar em perigo a saúde e a segurança de outras pessoas a bordo? S/N

.3.9 Data do exame: (dia/mês/ano)

.3.10 Data em que expira a validade do certificado: (dia/mês/ano)

.4 Detalhes relativos à autoridade emissora

.4.1 Carimbo oficial (contendo o nome) da autoridade emissora

.4.2 Assinatura da pessoa autorizada

.5 Assinatura do marítimo – confirmando que o marítimo foi informado do conteúdo do certificado e do direito a um recurso de acordo com o parágrafo 6 da Secção A-I/9.

8 Os certificados médicos deverão ser redigidos no idioma oficial do país emitente. Se o idioma utilizado não for o inglês, o texto deverá conter uma versão para aquele idioma.

[78]Nota: A avaliação da visão de cores só precisa ser feita a cada seis anos

Tabela A-I/9

Normas mínimas de visão em serviço para marítimos

Regra da Convenção STCW	Categoria do marítimo	Visão para longe com correção1		Visão para perto	Visão de cores3	Campos visuais4	Cegueira noturna4	Diplopia (visão dupla)4
		Um olho	Outro olho	Os dois olhos juntos, com ou sem correcção				
I/11 II/1 II/2 II/3 II/4 II/5 VII/2	Comandante, oficiais do departamento de convés, e marítimos de mestrança e marinhagem de convés dos quais é exigido que desempenhem atribuições de vigilância	0,52	0,5	Visão exigida para a navegação do navio (ex.: consulta a cartas e publicações náuticas, utilização dos instrumentos e equipamentos da ponte e identificação dos auxílios à navegação)	Ver Nota 6	Campos visuais normais	Visão exigida para desempenhar todas as funções necessárias no escuro, sem comprometer o seu desempenho	Nenhum problema significativo evidente
1/11 III/1 III/2 III/3 III/4 III/5 III/6 III/7 VII/2	Todos os oficiais de máquinas, oficiais electrotécnico, marítimos de mestrança e marinhagem electrotécnicos e marítimos de mestrança e marinhagem ou outros que façam parte de um quarto de serviço na máquina	0,45	0 , 4 (Ver Nota 5)	Visão exigida para ler instrumentos próximos, para operar equipamentos e para identificar sistemas/ componentes como for necessário	Ver Nota 7	Campos visuais suficientes	Visão exigida para desempenhar Todas as funções necessárias no escuro, Sem comprometer o seu desempenho	Nenhum problema significativo evidente
I/11 IV/2	Radioperadores de GMDSS	0,4	0,4	Visão exigida para ler instrumentos próximos, para operar equipamentos e para identificar sistemas/ componentes como for necessário	Ver Nota 7	Campos visuais suficientes	Visão exigida para desempenhar todas as funções necessárias no escuro, sem comprometer o seu desempenho	Nenhum problema significativo evidente

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Notas:

1 Valores fornecidos na escala decimal de Snellen.

2 É recomendado um valor de pelo menos 0,7 num olho, para reduzir o risco de uma doença subjacente não detectada nos olhos.

3 Como definido nas Recomendações Internacionais para Exigências para Visão de Cores para Transporte pela Commission Internationale de l'Eclairage (CIE-143-2001, inclusive quaisquer versões posteriores).

4 Sujeito a uma avaliação por um especialista clínico em visão, quando indicado por conclusões no exame inicial.

5 O pessoal do departamento de máquinas deverá ter uma visão conjunta de pelo menos 0,4.

6 Norma de visão de cores 1 ou 2 da CIE.

7 Norma de visão de cores 1, 2 ou 3 da CIE.

Secção A-I/10

Reconhecimento de certificados

1 As disposições contidas na Regra I/10, parágrafo 4, relativas ao não reconhecimento de certificados emitidos por uma não Parte, não deverão ser interpretadas como impedindo uma Parte, ao emitir o seu próprio certificado, de aceitar o serviço em navegação em mar aberto, a educação e a formação adquiridos sob autoridade de uma não Parte, desde que a Parte cumpra a Regra I/2 ao emitir cada um desses certificados e garanta que sejam atendidas as exigências da Convenção relativas ao serviço em navegação em mar aberto, à educação, à formação e à competência.

2 Quando uma Administração que tiver reconhecido um certificado retirar a sua autenticação de reconhecimento por motivos disciplinares, a Administração deverá informar as circunstâncias à Parte que emitiu o certificado.

Secção A-I/11

Revalidação de certificados

Competência profissional

1 A manutenção da competência profissional, como exigido pela Regra I/11, deverá ser confirmada por meio de:

.1 aprovado serviço em navegação em mar aberto, desempenhando funções apropriadas ao certificado que possui, por um período de pelo menos:

.1.1 doze meses no total, durante os cinco anos anteriores, ou

.1.2 três meses no total, durante os seis últimos meses imediatamente anteriores à revalidação; ou

.2 ter desempenhado funções consideradas equivalentes ao serviço em navegação em mar aberto exigido no parágrafo 1.1; ou

.3 ter passado em um aprovado teste ; ou

.4 ter concluído com êxito um aprovado curso, ou cursos de formação; ou

.5 ter completado um aprovado serviço em navegação em mar aberto, desempenhando funções apropriadas ao certificado que possui, por um período não inferior a três meses, em uma capacidade de extranumerário, ou num posto de oficial mais baixo do aquele para o qual o certificado que possui é válido, imediatamente antes de atingir o posto para o qual o certificado é válido.

2 Os cursos de reciclagem e de actualização exigidos pela Regra I/ 11 deverão ser aprovados e conter as mudanças pertinentes ocorridas nas regras nacionais e internacionais relativas à segurança da vida humana no mar e à protecção do meio ambiente marinho, e levar em consideração qualquer actualização havida nas normas de competência em questão.

3 A manutenção da competência profissional para navios-tanque, como exigido na Regra I/11, parágrafo 3, deverá ser confirmada por meio de:

.1 aprovado serviço em navegação em mar aberto, desempenhando atribuições apropriadas ao certificado para navio-tanque ou ao autenticação que possui, por um período total de pelo menos 3 meses, durante os 5 anos anteriores; ou

.2 ter concluído com êxito um aprovado curso, ou cursos, de formação pertinentes.

Secção A-I/12

Normas que regem a utilização de simuladores

PARTE 1 – NORMAS DE DESEMPENHO

Normas gerais de desempenho para os simuladores utilizados na formação

1 Toda Parte deverá assegurar que qualquer simulador utilizado para a formação obrigatoriamente baseada em simuladores:

.1 seja adequado aos objectivos seleccionados e às tarefas de formação;

.2 seja capaz de simular as capacitações de operação dos equipamentos de bordo envolvidos, com um nível de realismo físico adequado aos objectivos da formação, e de abranger as capacitações, limitações e possíveis erros de tais equipamentos;

.3 tenha um realismo comportamental suficiente para permitir que um aluno adquira a habilidade adequada aos objectivos da formação;

.4 proporcione um ambiente de operação controlado, capaz de produzir uma variedade de condições, que podem abranger situações de emergência, de perigo, ou incomuns, pertinentes aos objectivos da formação;

.5 proporcione uma interface por meio da qual um aluno possa interagir com o equipamento, com o ambiente simulado e, como for adequado, com o formador; e

.6 permita que um formador controle, monitore e registe os exercícios para que o comentário posterior com os alunos seja eficaz.

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Normas gerais de desempenho para simuladores utilizados na avaliação de competência

1 Toda Parte deverá assegurar que qualquer simulador utilizado para a avaliação de competência exigida com base na Convenção, ou para qualquer demonstração de manutenção da proficiência assim exigida:

.1 seja capaz de satisfazer aos objectivos de avaliação especificados;

.2 seja capaz de simular a capacitação de operação dos equipamentos de bordo envolvidos, com um nível de realismo físico adequado aos objectivos da avaliação, e abranger as capacitações, limitações e possíveis erros de tais equipamentos;

.3 possua um realismo comportamental suficiente para permitir que um candidato demonstre a sua habilidade adequada aos objectivos da avaliação;

.4 proporcione uma interface por meio da qual um candidato possa interagir com o equipamento e com o ambiente simulado;

.5 proporcione um ambiente de operação controlado, capaz de produzir uma variedade de condições, que podem abranger situações de emergência, de perigo, ou incomuns, pertinentes aos objectivos da formação; e

.6 permita que um avaliador controle, monitore e registe os exercícios para a eficaz avaliação do desempenho dos candidatos.

Padrões de desempenho adicionais

3 Além de atender aos requisitos básicos apresentados nos parágrafos 1 e 2, os equipamentos de simulação aos quais esta secção se aplica deverão atender às normas de desempenho fornecidas abaixo, de acordo com o seu tipo específico.

Simulação radar

4 Os equipamentos de simulação radar deverão ser capazes de simular as capacitações operacionais dos equipamentos de navegação radar que atendam a todos as normas de desempenho aplicáveis adoptados pela Organização[79] e incorporar recursos para:

.1 operar no modo de movimento relativo estabilizado e nos modos de movimento verdadeiro estabilizado em relação ao mar e à terra;

.2 modelar as condições de tempo, correntes de marés, correntes, sectores de sombra radar, ecos falsos e outros efeitos de propagação e gerar as linhas da costa, bóias de auxílio à navegação e transmissores-respondedores de busca e salvamento; e

.3 criar um ambiente de operação em tempo real, incorporando pelo menos duas estações do próprio navio com capacidade de alterar o rumo e a velocidade do próprio navio e de conter parâmetros de pelo menos 20 navios-alvo e os recursos de comunicação adequados.

Simulação de Auxílio Automático de Traçagem Radar (ARPA)

5 O equipamento de simulação do ARPA deverá ser capaz de simular as capacitações operacionais dos ARPAs, que deverão satisfazer todos os padrões de desempenho aplicáveis adoptados pela Organização[80], e deverão incorporar os recursos para:

.1 aquisição manual e automática de alvos.

.2 informações de trajectórias anteriores;

.3 utilização de áreas de exclusão;

.4 apresentação de escala de tempo vectorial/gráfica e de dados; e

.5 manobras de provas de mar.

PARTE 2 – OUTRAS DISPOSIÇÕES

Objectivos da formação em simuladores

6 Toda Parte deverá assegurar que os propósitos e objectivos da formação baseada em simuladores sejam definidos dentro de um programa geral de formação, e que os objectivos e as tarefas específicos da formação sejam seleccionados de modo a manter uma correlação tão próxima quanto possível com as tarefas e práticas de bordo.

Procedimentos de formação

7 Ao realizar uma formação obrigatória baseada em simuladores, os formadores deverão assegurar que:

.1 os alunos recebam antecipadamente uma orientação adequada sobre os objectivos e as tarefas do exercício, e que lhes seja dado um tempo suficiente para o planeamento antes de iniciar o exercício;

.2 os alunos tenham um tempo suficiente para uma familiarização adequada com o simulador e com seus equipamentos, antes de ser iniciada qualquer formação ou exercício de avaliação;

.3 a orientação dada e os incentivos ao exercício sejam adequados aos objectivos e às tarefas do exercício seleccionado e ao nível de experiência dos alunos;

.4 os exercícios sejam efectivamente monitorizados e apoiados, como for adequado, por observação áudio e visual das actividades dos alunos e por relatórios de avaliação antes e depois dos exercícios;

.5 os exercícios sejam efectivamente comentados com os alunos logo após o seu encerramento, para assegurarem-se de que os objectivos da formação tenham sido atingidos e de que as aptidões operacionais demonstradas sejam de um padrão aceitável;

.6 seja incentivado o uso de uma avaliação dos colegas durante os comentários feitos após os exercícios; e

.7 os exercícios com simuladores sejam planeados e testados de modo a garantir a sua adequabilidade aos objectivos especificados da formação.

[79]Ver os padrões de desempenho pertinentes/adequados adoptados pela Organização

[80]Ver os padrões de desempenho pertinentes/adequados adoptados pela Organização

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Procedimentos de avaliação

8 Quando forem utilizados simuladores para avaliar a aptidão dos candidatos em demonstrar seus níveis de competência, os avaliadores deverão assegurar que:

.1 os critérios de desempenho estejam clara e explicitamente identificados e que sejam válidos e estejam disponíveis para os candidatos;

.2 os critérios de avaliação sejam claros e explicitamente estabelecidos para assegurar a confiabilidade e a uniformidade das avaliações, e para optimizar as medições e as avaliações objectivas, de modo que os julgamentos subjectivos sejam mantidos no mínimo;

.3 os candidatos sejam orientados claramente sobre as tarefas e/ou as aptidões a serem avaliadas, e sobre as tarefas e os critérios de desempenho por meio dos quais será determinada a sua competência;

.4 a avaliação de desempenho leve em conta os procedimentos operacionais normais e qualquer interacção comportamental com outros candidatos no simulador, ou com a equipa do simulador;

.5 os métodos de pontuação ou de atribuição de notas para avaliar o desempenho sejam utilizados com cautela, até que tenham sido validados; e

.6 o critério principal seja que o candidato demonstre a aptidão para realizar uma tarefa com segurança e eficácia, de modo a satisfazer o avaliador.

Qualificações de formadores e avaliadores[81]

9 Toda Parte deverá assegurar que os formadores e avaliadores sejam adequadamente qualificados e experientes nos tipos e níveis específicos de formação e na correspondente avaliação de competência, como especificado na Regra I/6 e na Secção A-I/6.

Secção A-I/13

Realização de provas

(Nenhuma disposição)

Secção A-I/14

Responsabilidades das companhias

1 As companhias, comandantes e membros da tripulação têm, cada um, a responsabilidade por assegurar de que as obrigações apresentadas nesta secção produzam resultados totais e completos e que sejam tomadas outras medidas que podem ser necessárias para assegurar que cada membro da tripulação possa dar uma contribuição inteligente e informada à operação segura do navio.

2 A companhia deverá fornecer instruções escritas para o comandante de cada navio ao qual a se aplica a Convenção, estabelecendo as políticas e os procedimentos a serem seguidos para assegurar que seja dada a todos os marítimos recém-empregados a bordo do navio uma oportunidade razoável de familiarizar-se com os equipamentos de bordo, com os procedimentos de operação e com outras medidas necessárias ao bom desempenho de suas atribuições, antes de serem designados para essas atribuições. Essas políticas e procedimentos deverão abranger:

.1 a alocação de um período de tempo razoável durante o qual cada marítimo recém empregado tenha uma oportunidade de ficar familiarizado com:

.1.1 os equipamentos específicos que irá usar ou operar;

.1.2 os procedimentos específicos do navio para o serviço de quarto, a segurança, a protecção ambiental, a protecção do navio e emergências, e com medidas que precisa conhecer para desempenhar adequadamente as atribuições que lhe forem designadas; e

.2 a designação de um membro da tripulação habilitado que será responsável por assegurar que seja dada uma oportunidade a cada marítimo recém-empregado de receber as informações essenciais num idioma que o marítimo entenda.

3 As companhias deverão assegurar que os comandantes, oficiais e outras pessoas designadas para atribuições e responsabilidades específicas a bordo de seus navios ro-ro de passageiros tenham concluído uma formação de familiarização, para obter as aptidões adequadas à capacidade a ser ocupada e às atribuições e responsabilidades a serem assumidas, levando em conta a orientação fornecida na Secção B-I/14 deste Código.

Secção A-I/15

Disposições transitórias

(Nenhuma disposição)

CAPÍTULO II

Normas relativas ao comandante e à secção de convés

Secção A-II/1

Requisitos mínimos obrigatórios para a certificação de oficiais chefes de quarto de navegação em navios com arqueação bruta igual ou superior a 500

Norma de competência

1 Todo candidato a certificação deverá:

.1 ser exigido que demonstre competência para desempenhar, no nível operacional, as tarefas, atribuições e responsabilidades listadas na coluna 1 da tabela A-II/1;

.2 possuir pelo menos o certificado apropriado para realizar radiocomunicações em VHF, de acordo com as exigências do Regulamento de Radiocomunicações; e

.3 se for designado para ter a principal responsabilidade pelas radiocomunicações durante incidentes de perigo, possuir o certificado apropriado, emitido ou reconhecido com base no disposto no Regulamento de Radiocomunicações.

2 O conhecimento, o entendimento e a proficiência mínimos exigidos para certificação estão listados na coluna 2 da tabela A-II/1.

[81] O(s) Curso(s) Modelo da IMO pertinentes e a Resolução MSC.64(67), Recomendações sobre padrões de desempenho novos e emendados, podem ajudar na elaboração de cursos.

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3 O nível de conhecimento dos assuntos listados na coluna 2 da tabela A-II/1 deverá ser suficiente para que os oficiais de serviço desempenhem suas atribuições relativas ao serviço de quarto[82]

4 A formação e a experiência para atingir o nível necessário de conhecimento teórico, de entendimento e de proficiência deverão se basear na Secção A-VIII/2, parte 4-1 – Princípios a serem observados ao conduzir um quarto de serviço de navegação – e deverá, também, levar em consideração as exigências pertinentes desta parte e a orientação fornecida na Parte B deste Código.

5 Deverá ser exigido de todo candidato à certificação que forneça provas de ter atingido a norma de competência exigida, de acordo com os métodos para demonstrar competência e com os critérios para avaliar a competência listados nas colunas 3 e 4 da tabela A-II/1.

Formação a bordo

6 Todo candidato a certificação como oficial chefe de quarto de navegação de navios com uma arqueação bruta igual ou superior a 500, cujo serviço em navegação em mar aberto, de acordo com o parágrafo 2.2 da Regra II/1, faça parte de um aprovado programa de formação como atendendo às exigências desta secção, deverá seguir um aprovado programa de formação a bordo, que:

.1 assegure que, durante o período de serviço em navegação em mar aberto exigido, o candidato receba uma formação prática e sistemática e adquira uma experiência nas tarefas, atribuições e responsabilidades de um oficial chefe de quarto de navegação, levando em consideração a orientação fornecida na Secção B-II/1 deste Código;

.2 seja atentamente supervisionado e monitorizado por oficiais qualificados a bordo dos navios em que estiver sendo realizado o aprovado serviço em navegação em mar aberto; e

.3 esteja adequadamente documentado num livro registo da formação, ou num documento semelhante.[83]

Viagens na navegação costeira

7 Os seguintes assuntos podem ser omitidos dentre aqueles listados na coluna 2 da tabela A-II/1, para a emissão de certificados restritos a serviço em viagens na navegação costeira, tendo em mente a segurança de todos os navios que podem estar operando nas mesmas águas:

.1 navegação astronómica; e

.2 aqueles sistemas electrónicos de determinação da posição e de navegação que não abrangem as águas para as quais o certificado deverá ser válido.

[82]O(s) Curso(s) Modelo da IMO pode(m) ser de ajuda na elaboração de cursos.

[83]O(s) Curso(s) Modelo da IMO e um documento semelhante produzido pela Federação Internacional de Navegação podem ser de ajuda na elaboração de livros registo da formação.

Tabela A-II/1

Especificação da norma mínima de competência para oficiais chefes de quarto de navegação em navios com arqueação bruta igual ou superior a 500

Função: Navegação no nível operacional

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Planear e realizar uma travessia e determinar a posição	*Navegação astronómica* Habilidade para utilizar corpos celestes para determinar a posição do navio *Navegação terrestre e costeira* Habilidade para determinar a posição do navio por meio de: .1 marcas e referência em terra .2 ajudas à navegação, inclusive faróis, balizas e bóias .3 navegação estimada, levando em conta ventos, marés, correntes e a velocidade estimada Conhecimento pleno e habilidade para utilizar cartas e publicações náuticas, como roteiro, tabelas de marés, avisos aos navegantes, avisos rádio de navegação e informações sobre as derrotas de navios *Sistemas electrónicos de determinação da posição e de navegação* Habilidade de determinar a posição do navio mediante a utilização de ajudas à navegação electrónicos	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação a bordo .3 aprovada formação em simulador, quando adequado .4 aprovada formação em equipamentos de laboratório utilizando catálogos de cartas, cartas, publicações náuticas, avisos rádio de navegação, sextante, espelho azimutal, equipamentos electrónicos de navegação, eco-batímetro (sonda) e agulhas	As informações obtidas de cartas e publicações náuticas são pertinentes, interpretadas correctamente e adequadamente empregadas. Todos os possíveis perigos à navegação são precisamente identificados O principal método de determinar a posição do navio é o mais apropriado para as circunstâncias e as condições existentes A posição é determinada dentro dos limiteis de erros aceitáveis do instrumento/sistema A confiabilidade das informações obtidas mediante o principal método de determinar a posição é verificada a intervalos adequados Os cálculos e as medições das informações de navegação são precisos As cartas seleccionadas são as que possuem a maior escala adequada para a área de navegação, e as cartas e publicações estão corrigidas de acordo com as últimas informações disponíveis As verificações e testes de desempenho dos sistemas de navegação estão de acordo com as recomendações do fabricante e com as boas práticas de navegação

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Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Planear e realizar uma travessia e determinar a posição (*continuação*)	*Eco-batímetros (eco-sondas)* Habilidade para operar o equipamento e de utilizar correctamente as informações *Agulha – magnética e giroscópica* Conhecimento dos princípios das agulhas magnéticas e giroscópicas Habilidade para determinar os desvios das agulhas magnéticas e giroscópicas utilizando meios astronómicos e terrestres, e de levar em conta esses desvios *Sistemas de controlo do Governo* Conhecimento dos sistemas de controlo do governo, dos procedimentos operacionais e da transferência do controlo manual para o automático e vice-versa. Ajuste dos controlos para o melhor desempenho possível *Meteorologia* Habilidade para utilizar e Interpretar as informações obtidas dos instrumentos meteorológicos de bordo Conhecimento das características dos vários sistemas meteorológicos, procedimentos de relatórios e de sistemas de registo Habilidade para utilizar as informações meteorológicas disponíveis		Os desvios das agulhas Magnéticas e giroscópicas são determinados e correctamente utilizados para rumos e marcações A selecção do modo de governo é a mais adequada às condições de tempo, de mar e de tráfego existentes e às manobras pretendidas As medições e as observações das condições do tempo são precisas e adequadas à travessia As informações meteorológicas são correctamente interpretadas e utilizadas

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Conduzir um quarto de serviço de navegação seguro	*Serviço de Quarto* Conhecimento pleno do conteúdo, do emprego e do propósito do Regulamento Internacional para Evitar Abalroamentos no Mar, 1972, como emendado Conhecimento pleno dos princípios a serem observados ao conduzir um quarto de serviço de navegação Utilização de rotas de acordo com as Disposições Gerais sobre Rotas de Navios Utilização das informações dos equipamentos de navegação para conduzir um quarto de serviço de navegação seguro Conhecimento das técnicas de governo em baixa visibilidade A utilização de envio de informações de acordo com os Princípios Gerais para os Sistemas de Envio de Informações por Navios, e com os procedimentos de VTS	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador, quando for adequado .4 aprovada formação em equipamentos de laboratório	A condução, a assunção e a passagem do quarto de serviço estão de acordo com os princípios e procedimentos aceites É mantida o tempo todo uma vigilância adequada, de modo a estar de acordo com os princípios e procedimentos aceites Luzes, marcas e sinais sonoros estão de acordo com as exigências contidas no Regulamento Internacional para Evitar Abalroamentos no Mar, 1972, como emendado, e são correctamente reconhecidos A frequência e a extensão da monitorização do tráfego, do navio e do meio ambiente estão de acordo com os princípios e procedimentos aceites É mantido um registo adequado dos movimentos e das actividades relativas à navegação do navio A responsabilidade pela segurança da navegação está claramente definida o tempo todo, inclusive nos períodos em que o comandante está na ponte e enquanto o navio está com o piloto de barra/prático a bordo

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Coluna 1 **Competência**	Coluna 2 **Conhecimento, entendimento e proficiência**	Coluna 3 **Métodos para demonstrar competência**	Coluna 4 **Critérios para avaliar competência**
Conduzir um quarto de serviço de navegação seguro *(Continuação)*	*Administração dos recursos da ponte de comando* Conhecimento dos princípios de gestão dos recursos da ponte de comando, inclusive: .1 alocação, atribuição e priorização dos recursos .2 comunicação efectiva .3 firmeza e liderança .4 obtenção e manutenção de um conhecimento da situação .5 consideração a experiência de equipa	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 aprovada formação .2 experiência em aprovado serviço .3 aprovada formação em simulador	Os recursos são alocados e atribuídos como necessário, na prioridade correcta para desempenhar as tarefas necessárias A comunicação é dada e recebida de maneira clara e não ambígua As decisões e/ou acções discutíveis resultam em contestação e resposta apropriadas São percebidos comportamentos de liderança efectiva Os membros da equipa compartilham um entendimento preciso do estado actual e previsto da embarcação, da derrota e do ambiente externo
Utilizar o radar e o ARPA para manter a segurança da navegação *Observação:* Não são exigidas uma formação e uma avaliação da utilização do ARPA para aqueles que servem exclusivamente em navios não dotados de ARPA. Esta limitação deverá estar indicada na autenticação emitida para o marítimo em questão	*Navegação radar* Conhecimento dos fundamentos do radar e do auxílio automático de plotagem/traçagem radar (ARPA) Habilidade para operar, interpretar e analisar as informações obtidas do radar, inclusive o seguinte: Desempenho, abrangendo: .1 factores que afectam o desempenho e a precisão .2 ajustagem e manutenção das repetidoras .3 detecção de interpretação equivocada de informações, ecos falsos, retorno do mar, etc.., racons e SARTs	Avaliação de evidência obtida por aprovado simulador radar e de simulador ARPA e da experiência em serviço	As informações obtidas do radar e do ARPA são correctamente interpretadas e analisadas, levando em conta as limitações dos equipamentos e as circunstâncias e condições existentes

Coluna 1 **Competência**	Coluna 2 **Conhecimento, entendimento e proficiência**	Coluna 3 **Métodos para demonstrar competência**	Coluna 4 **Critérios para avaliar competência**
Utilizar o radar e o ARPA para manter a segurança da navegação *(Continuação)*	Utilização, abrangendo: .1 distância e marcação; rumo e velocidade de outros navios; hora e distância da maior aproximação de navios que estão cruzando e ultrapassando .2 identificação de ecos críticos; detecção de alterações de rumo e de velocidade de outros navios; efeito de alterações de rumo e de velocidade do próprio navio, ou de ambos .3 utilização do Regulamento Internacional para Evitar Abalroamentos no Mar, 1972, como emendado .4 técnicas de plotagem (traçagem) e conceitos de movimento relativo e verdadeiro .5 navegação paralela indexada		A acção realizada para evitar uma aproximação excessiva ou um abalroamento com outras embarcações está de acordo com o Regulamento Internacional para Evitar Abalroamentos no Mar, 1972, como emendado As decisões de corrigir o rumo e/ou a velocidade são tomadas a tempo e estão de acordo com as práticas de navegação aceites Os ajustes feitos no rumo e na velocidade do navio mantêm a segurança da navegação A comunicação é clara, concisa e o seu recebimento é acusado o tempo todo de uma maneira marinheira Os sinais de manobra são feitos no momento adequado e estão de acordo com o Regulamento Internacional para Evitar Abalroamentos no Mar, 1972, como emendado

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Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Utilizar o radar e o ARPA para manter a segurança da navegação *(Continuação)* *Nota:* Não são exigidas a formação e a avaliação da utilização do ARPA para aqueles que servem em navios não dotados de ARPA. Esta limitação deverá estar indicada na autenticação emitida para o marítimo em questão	Principais tipos de ARPA, suas características de apresentação, padrões de desempenho e os perigos de um excesso de confiança no ARPA Habilidade para operar, interpretar e analisar as informações obtidas do ARPA, inclusive: .1 desempenho e precisão do sistema, capacitações e limitações de acompanhamento e demoras no processamento .2 utilização de alertas operacionais e de testes do sistema .3 métodos de aquisição de alvos e suas limitações .4 vectores verdadeiros e relativos, representação gráfica das informações sobre alvos e áreas de perigo .5 obtenção e análise de informações, ecos críticos, áreas de exclusão e manobras de teste		
Usar o ECDIS para manter a segurança da Navegação Nota: Não são exigidas a formação e a avaliação na utilização do ECDIS para aqueles que servem exclusivamente em navios não dotados de ECDIS Estas limitações deverão estar indicadas nas autenticações emitidas para o marítimo em questão	*Navegação utilizando o ECDIS* Conhecimento das capacitações e limitações das operações do ECDIS, inclusive: .1 um entendimento pleno dos dados da Carta de Navegação Electrónica (ENC), da precisão dos dados, das regras de apresentação, das opções de apresentação e de outros formatos de carta .2 os perigos de um excesso de confiança .3 familiaridade com as funções do ECDIS exigidas pelos padrões de desempenho em vigor	Exame a avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovada formação em navios .2 aprovada formação em simulador do ECDIS	Monitoram as informações do ECDIS de uma maneira que contribui para uma navegação segura. As informações obtidas do ECDIS (inclusive cobertura radar e/ou funções de acompanhamento radar, quando houver) são correctamente interpretadas e analisadas, levando em conta as limitações do equipamento, de todos os sensores relacionados com ele (inclusive o radar e o AIS, quando houver uma interface entre eles) e as circunstâncias e condições existentes

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
	Proficiência na operação, interpretação e análise das informações obtidas do ECDIS, inclusive: .1 uso das funções que estão integradas a outros sistemas de navegação em várias instalações, inclusive o funcionamento e o ajuste adequado às ajustagens desejadas .2 monitoramento seguro e ajustagem de informações, inclusive a sua própria posição, a apresentação da área marítima, o modo e a orientação, os dados apresentados da carta, o monitoramento do rumo, as camadas de informações criadas pelo usuário, contactos (quando em interface com o AIS e/ou com o acompanhamento radar) e funções de cobertura radar (quando em interface) .3 confirmação da posição da embarcação por meios alternativos .4 uso eficiente de ajustagens para assegurar o cumprimento de procedimentos operacionais, inclusive alarme para parâmetros anti encalhe, proximidade de contactos e de áreas especiais, totalidade de dados da carta e situação da actualização das cartas e medidas de retorno de informações .5 ajustagem de regulagens e valores para se adequar às condições actuais.		A segurança da navegação é mantida mediante os ajustes feitos no rumo e na velocidade do navio, por meio das funções de manutenção da trajectória controladas pelo ECDIS (quando houver) A comunicação é clara, concisa o recebimento da mensagem é acusado o tempo todo de uma maneira marinheira

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Coluna 1 **Competência**	Coluna 2 **Conhecimento, entendimento e proficiência**	Coluna 3 **Métodos para demonstrar competência**	Coluna 4 **Critérios para avaliar competência**
Usar o ECDIS para manter a segurança da navegação *Continuação)*	.6 conhecimento da situação enquanto estiver utilizando o ECDIS, inclusive águas seguras e proximidade de perigos, direcção do vento e das correntes e abatimento, selecção de dados da carta e da escala, adequabilidade da derrota, detecção e administração de contactos e integridade dos sensores		
Responder a emergências	*Procedimentos de emergência* Precauções para a protecção e a segurança de passageiros em situações de emergência Acção inicial a ser realizada após um abalroamento, uma colisão ou um encalhe. Avaliação inicial e controlo das avarias Avaliação dos procedimentos a serem seguidos para resgatar pessoas do mar, auxiliar um navio em perigo, responder a emergências que surgem no porto	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navios .3 aprovada formação em simulador, quando apropriado .4 instrução prática	O tipo e escala da emergência é prontamente identificado As acções iniciais e, se for adequado, as manobras do navio estão de acordo com os planos de contingência e são adequados à urgência da situação e à natureza da emergência
Responder a um sinal de perigo	*Busca e salvamento* Conhecimento do conteúdo do Manual Internacional Aeronáutico e Marítimo de Busca e Salvamento (IAMSAR)	Exame a avaliação de evidência obtida por uma instrução prática ou de uma aprovada formação em simulador, quando for adequado	O sinal de perigo ou de emergência é reconhecido imediatamente Os planos de contingência e as instruções contidas em ordens permanentes são implementadas e cumpridas

Coluna 1 **Competência**	Coluna 2 **Conhecimento, entendimento e proficiência**	Coluna 3 **Métodos para demonstrar competência**	Coluna 4 **Critérios para avaliar competência**
Usar as Expressões Norma de Comunicação Marítima da IMO e usar o inglês na forma escrita e oral	*Língua inglesa* Conhecimento adequado da língua inglesa, para permitir que o oficial utilize cartas e outras publicações náuticas, compreenda as informações e mensagens meteorológicas relativas à segurança e à operação do navio, para se comunicar com outros navios, com estações costeiras e com centros de VTS, e para desempenhar também as atribuições de oficial, com uma tripulação multilíngue, inclusive a aptidão para utilizar e compreender as Expressões Norma de Comunicação Marítima da IMO (IMO SMPC)	Exame e a avaliação das informações obtidas de uma formação prática	As publicações náuticas e as mensagens pertinentes à segurança, escritas na língua inglesa, são correctamente interpretadas ou redigidas As comunicações são claras e compreendidas
Transmitir e receber informações por meio de sinalização visual	*Sinalização visual* Habilidade para usar o Código Internacional de Sinais. Habilidade de transmitir e receber, por meio de sinais luminosos em Morse, o sinal de perigo SOS, como especificado no Anexo IV do Regulamento Internacional para Evitar Abalroamentos no Mar, 1972, como emendado, e no apêndice 1 do Código Internacional de Sinais, e de sinalização visual utilizando sinais de uma única letra, como especificado também no Código Internacional de Sinais	Avaliação de evidência obtida por uma formação prática e/ou de simulação	As comunicações dentro da área de responsabilidade do operador são sistematicamente bem sucedidas

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Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Manobrar o navio	*Manobrar e conduzir o navio* Conhecimento: .1 dos efeitos da tonelagem de porte bruto, do calado , do trim, da velocidade e da folga abaixo da quilha sobre os círculos e giro e as distâncias de parada .2 dos efeitos do vento e da corrente sobre a condução do navio .3 das manobras e procedimentos para o resgate de uma pessoa que caiu no mar .4 dos efeitos de imersão da popa ("squat"), de águas rasas e de outros efeitos semelhantes .5 dos procedimentos correctos para fundear, amarrar à bóia e atracar	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação no navio .3 aprovada formação em simulador, quando for adequado .4 aprovada formação em um modelo em escala de um navio, tripulado, quando for adequado	Os limites seguros de operação da propulsão, do governo e dos sistemas de energia eléctrica do navio não são ultrapassados nas manobras normais Os ajustes feitos no rumo e na velocidade do navio mantêm a segurança da navegação

Função: Manuseio da carga e estiva no nível operacional

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Monitorizar o carregamento, a estivagem, a peação e o descarregamento de cargas e os cuidados com ela durante a viagem	*Manuseio, estivagem e peação de carga* Conhecimento do efeito da carga, inclusive de cargas pesadas, sobre a capacidade do navio aguentar o mar e sobre a estabilidade do navio Conhecimento de manuseio, estivagem e peação de cargas com segurança, inclusive de cargas perigosas, danosas, potencialmente perigosas e que oferecem riscos, e dos seus efeitos sobre a segurança da vida humana e do navio Habilidade para estabelecer e manter comunicações efectivas durante o carregamento e o descarregamento	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação no navio .3 aprovada formação em simulador, quando for adequado	As operações de carga são realizadas de acordo com o plano de carga, ou com outros documentos e regras/regulamentos de segurança estabelecidos, instruções de operação de equipamentos e limitações de estivagem a bordo O manuseio de cargas perigosas, danosas, potencialmente perigosas e que oferecem riscos cumpre as regras internacionais e as normas e códigos de práticas seguras As comunicações são claras, entendidas e sistematicamente bem sucedidas
Inspeccionar e informar defeitos e avarias em compartimentos e espaços de carga, tampas de escotilhas e tanques de lastro	Conhecimento[1] e habilidade para explicar onde procurar por danos e defeitos mais comumente encontrados, devidos a: .1 operações de carregamento e de descarregamento .2 corrosão .3 más condições de tempo Habilidade para dizer que partes do navio deverão ser inspeccionadas a cada vez, para abranger todas as partes num determinado período de tempo Identificar os elementos da estrutura do navio que são críticos para a segurança do navio	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação no navio .3 aprovada formação em simulador, quando for adequado	As inspecções são realizadas de acordo com os procedimentos estabelecidos, e os defeitos e danos são detectados e correctamente informados Quando não são detectados defeitos ou danos, os indícios obtidos por testes e exames indicam claramente uma competência adequada para cumprir os procedimentos e habilidades para distinguir entre partes normais e defeituosas ou danificadas do navio

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Inspeccionar e informar defeitos e danos em compartimentos e espaços de carga, tampas de escotilhas e tanques de lastro *(Continuação)*	Expor as causas de corrosão nos compartimentos e espaços de carga e nos tanques de lastro, e como a corrosão pode ser identificada e prevenida Conhecimento dos procedimentos sobre como deverá ser realizada a inspecção Habilidade para explicar como garantir uma detecção confiável de defeitos e danos Entendimento dos propósitos do "programa intensificado de vistorias"		

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Função: Controlo da operação do navio e cuidados com as pessoas a bordo no nível operacional

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Assegurar o atendimento às exigências relativas à prevenção da poluição	*Prevenção da poluição do meio ambiente marinho e procedimentos antipoluição* Conhecimento das precauções a serem tomadas para prevenir a poluição do meio ambiente marinho Procedimentos antipoluição e todos os equipamentos relacionados com eles Importância de medidas efectivas para proteger o meio ambiente marinho	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação no navio .3 aprovada formação	Os procedimentos para monitorizar as operações a bordo e para assegurar o atendimento às exigências da MARPOL são totalmente observados Ações para assegurar que seja mantida uma reputação ambiental favorável
Manter a capacidade de navegabilidade do navio e de enfrentar o mar	*Estabilidade do navio* Conhecimento prático e emprego das tabelas de estabilidade, de trim e de esforços, diagramas e equipamentos para calcular os esforços Entendimento das acções fundamentais a serem realizadas em caso de perda parcial da flutuabilidade intacta Entendimento dos fundamentos da integridade da estanqueidade à água *Construção do navio* Conhecimento geral dos principais membros estruturais de um navio e dos nomes correctos das várias partes	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada instrução no navio .3 aprovada formação em simulador, quando for adequado .4 aprovada formação em equipamento de laboratório	As condições de estabilidade atendem aos critérios de estabilidade intacta da IMO em todas as condições de carregamento As acções para assegurar e manter a integridade da estanqueidade à água estão de acordo com as práticas aceites

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Prevenir, controlar e combater incêndios a bordo	*Prevenção de incêndio e dispositivos de combate a incêndio* Habilidade para organizar exercícios de incêndio Conhecimento das classes de incêndio e da química do fogo Conhecimento dos sistemas de combate a incêndio Conhecimento das acções a serem realizadas em caso de incêndio, inclusive de incêndios envolvendo sistemas de óleo	Avaliação das informações obtidas da aprovada formação de combate a incêndio e da experiência, como especificado na Secção A-VI/3	O tipo e as proporções do problema são prontamente identificados e as acções iniciais estão de acordo com o procedimento de emergência e com os planos de contingência para o navio Os procedimentos de evacuação, paralisação de emergência e isolamento das máquinas são adequados à natureza da emergência e são executados prontamente A ordem de prioridade, os níveis e a cronologia de relatar as ocorrências e dar informações às pessoas a bordo são pertinentes à natureza da emergência e reflectem a urgência do problema
Operar dispositivos salva-vidas	*Salva-vidas* Habilidade para organizar exercícios de abandono do navio e conhecimento da operação de embarcações de sobrevivência e de embarcações de salvamento, de seus aparelhos e dispositivos de lançamento e de seus equipamentos, inclusive dos aparelhos de rádio salva-vidas, EPIRBs por satélite, SARTs, roupas de imersão e auxílios de protecção térmica	Avaliação das informações obtidas da aprovada formação e da experiência, como especificado na Secção A-VI/2, parágrafos 1 a 4	As acções realizadas para responder às situações de abandono do navio e de sobrevivência são adequadas às circunstâncias e às condições existentes e estão de acordo com as práticas e as normas de segurança aceites
Prestar o primeiro atendimento médico a bordo do navio	*Assistência médica* Emprego prático de guias médicos e de conselhos pelo rádio, inclusive a habilidade para realizar acções efectivas com base nesse conhecimento em caso de acidentes ou de doenças que possam ocorrer a bordo do navio	Avaliação das informações obtidas da aprovada formação, como especificado na Secção A-VI/4, parágrafos 1 a 3	A identificação da causa provável, da natureza e da extensão dos ferimentos ou condições é rápida e o tratamento minimiza a ameaça à vida
Monitorizar o cumprimento de exigências legais	Conhecimento prático básico das convenções pertinentes da IMO relativas à segurança da vida humana no mar e à protecção do meio ambiente marinho	Avaliação de evidência obtida por exames ou de aprovada formação	As exigências legais relativas à segurança da vida humana no mar e à protecção do meio ambiente marinho são correctamente identificadas

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Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Emprego da liderança e das aptidões de trabalhar em equipa	Conhecimento prático de gestão e de formação do pessoal de bordo Conhecimento das convenções marítimas internacionais, das recomendações e da legislação nacional relativas ao assunto Habilidade para empregar a gestão de tarefas e da carga de trabalho, inclusive: .1 planeamento e coordenação .2 designação de pessoal .3 escassez de tempo e de recursos .4 atribuição de prioridades Conhecimento e aptidão para empregar uma gestão de recursos eficaz: .1 alocação, atribuição e priorização de recursos .2 comunicação efectiva a bordo e em terra .3 as decisões reflectem o facto de levar em consideração as experiências da equipa .4 firmeza e liderança, inclusive motivação .4 obter e manter um conhecimento da situação	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 aprovada formação .2 experiência em aprovado serviço .3 demonstração prática	São distribuídas atribuições à tripulação e ela é informada dos padrões de trabalho e de comportamento esperados, de uma maneira adequada às pessoas envolvidas Os objectivos e as actividades da formação são baseados na avaliação da competência e das capacitações actuais e dos requisitos operacionais É demonstrado que as operações estão de acordo com as regras aplicáveis As operações são planeadas e os recursos são alocados como necessário, na prioridade correcta para desempenhar as tarefas necessárias A comunicação é dada e recebida de maneira clara e não ambígua São demonstrados comportamentos de uma liderança efectiva Os membros necessários da equipa compartilham um entendimento preciso da situação actual e prevista da embarcação, da situação operacional e do ambiente externo As decisões são as mais eficazes para a situação

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Emprego da liderança e das aptidões de trabalhar em equipa *(Continuação)*	Conhecimento e habilidade para empregar técnicas de tomada de decisões: .1 Avaliação da situação e dos riscos .2 Identificar e considerar as opções geradas .3 Seleccionar a linha de acção .4 Avaliação da eficácia do resultado		
Contribuir para a segurança do pessoal e do navio	Conhecimento das técnicas de sobrevivência pessoal Conhecimento de prevenção de incêndios e aptidão para combater e extinguir incêndios Conhecimento de primeiros socorros elementares Conhecimento de segurança pessoal e de responsabilidades sociais	Avaliação das informações obtidas da formação e da experiência aprovadas, como especificado na Secção A-VI/1, parágrafo 2	Os equipamentos de segurança e de protecção adequados são correctamente utilizados Os procedimentos e as práticas de trabalho com segurança, destinados a salvaguardar o pessoal e o navio, são observados o tempo todo Os procedimentos destinados a salvaguardar o meio ambiente são observados o tempo todo As acções iniciais e de acompanhamento ao tomar conhecimento de uma emergência estão de acordo com os procedimentos de resposta a emergências estabelecidos

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Secção A-II/2

Requisitos mínimos obrigatórios para a certificação de comandantes e imediatos em navios com arqueação bruta igual ou superior a 500

Norma de competência

1 Deverá ser exigido de todo candidato a certificação como comandante ou imediato de navios com arqueação bruta igual ou superior a 500 que demonstre competência para executar, no nível de gestão, as tarefas, atribuições e responsabilidades listadas na coluna 1 da tabela A-II/2.

2 O conhecimento, o entendimento e a proficiência mínimos exigidos para certificação estão listados na coluna 2 da tabela A-II/2. Essa tabela incorpora, amplia e aprofunda os tópicos relacionados na coluna 2 da tabela A-II/I para oficiais chefes de quarto de navegação.

3 Tendo em mente que o comandante possui a responsabilidade máxima pela segurança do navio, de seus passageiros, de seus tripulantes e de sua carga, bem como pela protecção do meio ambiente marinho contra a poluição causada pelo navio, e que o imediato deverá estar em condições de assumir essa responsabilidade a qualquer momento, a avaliação nesses assuntos deverá ser planeada de modo a testar a sua aptidão para assimilar todas as informações disponíveis que afectem a segurança do navio, de seus passageiros, de seus tripulantes e de sua carga, ou a protecção do meio ambiente marinho.

4 O nível de conhecimento dos assuntos listados na coluna 2 da tabela A-II/2 deverá ser suficiente para permitir que o candidato sirva na capacidade de comandante ou de imediato[84].

5 O nível de conhecimento teórico, de entendimento e de proficiência exigidos com base nas diferentes secções da coluna 2 da tabela A-II/2 pode variar conforme se o certificado é válido para navios com arqueação bruta igual ou superior a 3.000, ou para navios com arqueação bruta entre 500 e 3.000.

6 A formação e a experiência para atingir o nível necessário de conhecimento teórico, de entendimento e de proficiência deverão levar em consideração as exigências pertinentes desta parte, bem como a orientação fornecida na parte B deste Código.

7 Deverá ser exigido de todo candidato a certificação que forneça provas de ter atingido a norma de competência exigida, de acordo com os métodos para demonstrar competência e com os critérios para avaliar competência apresentados nas colunas 3 e 4 da tabela A-II/2.

Viagens na navegação costeira

8 A Administração pode emitir um certificado restrito ao serviço em navios empregados exclusivamente em viagens na navegação costeira, para emissão desse certificado, pode excluir os tópicos que não forem aplicáveis às águas ou navios em questão, tendo em mente os efeitos sobre a segurança de todos os navios que possam estar operando nas mesmas águas.

84O(s) Curso(s) Modelo pertinentes da IMO pode(m) ser de ajuda na elaboração de cursos.

Tabela A-II/2

Especificação da norma mínima de competência para comandantes e imediatos em navios com arqueação bruta igual ou superior a 500

Função: Navegação no nível de gestão

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Planear uma viagem e fazer a navegação	Planeamento da viagem e navegação para todas as condições, por meio de métodos aceitáveis de plotar/traçar derrotas oceânicas, levando em conta, por exemplo: .1 águas restritas .2 condições meteorológicas .3 gelo .4 visibilidade restrita .5 esquemas de separação de tráfego .6 áreas de serviço de tráfego de embarcações (VTS) .7 áreas de fortes efeitos de marés Traçar as derrotas de acordo com as Disposições Gerais sobre Rotas de Navios Enviar informações de acordo com os Princípios Gerais para os Sistemas de Envio de Informações por Navios e com os procedimentos de VTS	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 aprovada formação em simulador, quando adequado .3 aprovada formação em equipamentos de laboratório utilizando catálogos de cartas, cartas, publicações náuticas e informações sobre o navio	Os equipamentos, cartas e publicações náuticas necessários para a viagem são enumerados e são apropriados para a realização da viagem com segurança As razões para a derrota planeada são corroboradas por factos e por dados estatísticos obtidos de fontes e publicações pertinentes Os cálculos das posições, dos rumos, das distâncias e do tempo são correctos e estão dentro de padrões de precisão aceites para os equipamentos de navegação Todos os possíveis perigos à navegação são precisamente identificados

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Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Determinar a posição e a precisão da posição resultante por qualquer meio	Determinação da posição em todas as condições: .1 por observações astronómicas .2 por marcações terrestres, inclusive a habilidade para utilizar cartas, avisos aos navegantes e outras publicações adequadas para avaliar a precisão da posição resultante .3 utilizando modernos ajudas à navegação electrónicos, com conhecimento específico de seus princípios de operação, limitações, fontes de erros, detecção de interpretação equivocada de informações e métodos de correcção para obter uma posição precisa	Exame e avaliação das informações obtidas mediante um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 aprovada formação em simulador, quando adequado .3 aprovada formação em equipamentos de laboratório, utilizando: .1 cartas, almanaque náutico, folhas de plotagem/traçagem, cronómetro, sextante e uma calculadora .2 cartas, publicações náuticas e instrumentos de navegação (espelho azimutal, sextante, odómetro, eco-batímetro/sonda, agulha) e manuais dos fabricantes .3 radar, sistemas electrónicos terrestres de determinação de posição, sistemas de navegação por satélites e cartas e publicações náuticas adequadas	O principal método escolhido para a determinação da posição do navio é o mais apropriado para as circunstâncias e condições existentes A posição obtida por meio de observações astronómicas está dentro de níveis de precisão aceites A posição obtida por meio de marcações terrestres está dentro de níveis de precisão aceites A precisão da posição resultante é avaliada de maneira adequada A posição obtida por meio da utilização de auxílios electrónicos à navegação está dentro dos padrões de precisão dos sistemas em uso. Os possíveis erros que afectam a precisão da posição resultante são mencionados e os métodos de minimizar os efeitos dos erros dos sistemas sobre a posição resultante são empregados correctamente
Determinar e compensar os desvios da agulha	Habilidade para determinar e compensar os desvios das agulhas magnética e giroscópica Conhecimento dos princípios das agulhas magnéticas e giroscópicas Um entendimento dos sistemas sob o controlo da agulha giroscópica mestra e um conhecimento da operação e dos cuidados com os principais tipos de agulhas giroscópicas	Exame e avaliação das informações obtidas mediante um ou mais dos seguintes meios: .1 experiência em aprovado Serviço .2 aprovada formação em simulador, quando adequado .3 aprovada formação em equipamentos de laboratório utilizando observações astronómicas, marcações terrestres e comparação entre as agulhas magnética e giroscópica	O método e a frequência das verificações de desvios das agulhas magnética e giroscópica garantem a precisão das informações

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Coordenar operações de busca e salvamento	Um conhecimento pleno e habilidade para empregar os procedimentos contidos no Manual Internacional Aeronáutico e Marítimo de Busca e Salvamento (IAMSAR)	Exame e avaliação das informações obtidas mediante um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 aprovada formação em simulador, quando adequado .3 aprovada formação em equipamentos de laboratório utilizando publicações, cartas, dados meteorológicos pertinentes e informações dos navios envolvidos, equipamentos de radiocomunicações e outros recursos disponíveis, e um ou mais dos seguintes itens: .1 aprovado curso de formação sobre SAR .2 aprovada formação em simulador, quando adequado .3 aprovada formação em equipamentos de laboratório	O plano para coordenar as operações de busca e salvamento está de acordo com as directrizes e normas internacionais As radiocomunicações são estabelecidas e são seguidos os procedimentos de comunicação correctos em todos os estágios das operações de busca e salvamento
Estabelecer medidas e procedimentos relativos ao serviço de quarto	Conhecimento pleno do conteúdo, do emprego e da finalidade do Regulamento Internacional para Evitar Abalroamentos no Mar, 1972, como emendado Conhecimento pleno do conteúdo, do emprego e da finalidade dos Princípios a serem observados na condução de um quarto de serviço de navegação	Exame e avaliação das informações obtidas mediante um ou mais dos seguintes meios: .1 experiência em aprovado Serviço .2 aprovada formação em simulador, quando adequado	As medidas e os procedimentos relativos ao serviço de quarto são estabelecidos e mantidos de acordo com as regras e directrizes internacionais, de modo a assegurar a segurança da navegação, a protecção do meio ambiente marinho e a segurança do navio e das pessoas a bordo

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Coluna 1 **Competência**	Coluna 2 **Conhecimento, entendimento e proficiência**	Coluna 3 **Métodos para demonstrar competência**	Coluna 4 **Critérios para avaliar competência**
Conduzir uma navegação segura através do uso de informações dos equipamentos e sistemas de navegação, para ajudar a tomada de decisões de comando *Nota:* Não são exigidas a formação e a avaliação no uso do ARPA para aqueles que servem exclusivamente em navios não dotados de ARPA. Esta limitação deverá estar reflectida na autenticação emitida para o marítimo em questão	Uma avaliação dos erros do sistema e um entendimento pleno dos aspectos operacionais dos sistemas de navegação Planeamento de navegação em baixa visibilidade Avaliação das informações relativas à navegação obtidas de todas as fontes, inclusive do radar e do ARPA, para tomar e executar decisões de comando para evitar abalroamento e colisão e para dirigir uma navegação segura do navio A inter-relação e a melhor utilização possível de todos os dados de navegação disponíveis para conduzir a navegação	Exame e avaliação das informações obtidas mediante aprovada formação em simulador de ARPA e em um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 aprovada formação em simulador, quando adequado .3 aprovada formação em equipamentos de laboratório	As informações obtidas dos equipamentos e sistemas de navegação são interpretadas e analisadas correctamente, levando em conta as limitações dos equipamentos e as circunstâncias e condições existentes As acções realizadas para evitar uma aproximação excessiva ou um abalroamento com outra embarcação estão de acordo com o Regulamento Internacional Para Evitar Abalroamentos no Mar, 1972, como emendado

Coluna 1 **Competência**	Coluna 2 **Conhecimento, entendimento e proficiência**	Coluna 3 **Métodos para demonstrar competência**	Coluna 4 **Critérios para avaliar competência**
Manter a segurança da navegação através do uso do ECDIS e de sistemas de navegação associados, para ajudar na tomada de decisões de comando *Nota:* Não são exigidas a formação e a avaliação no uso do ECDIS para aqueles que servem exclusivamente em navios não dotados de ECDIS. Esta limitação deverá estar reflectida na autenticação emitida para o marítimo em questão	Gestão dos procedimentos operacionais e dos arquivos e dados de sistemas, inclusive: .1 obtenção, licenciamento e actualização de dados da carta e de sistemas de softwares para se adequar aos procedimentos estabelecidos .2 actualização de sistemas e de informações, inclusive a aptidão para actualizar a versão do sistema ECDIS de acordo com a evolução do produto do vendedor .3 criar e manter a configuração do sistema e cópias de segurança (“backup”) .4 criar e manter arquivos de livros de quarto de acordo com os procedimentos estabelecidos .5 criar e manter arquivos e planos e derrotas de acordo com os procedimentos estabelecidos .6 usar o livro de quarto do ECDIS e as funções relativas ao histórico da trajectória para inspecção das funções do sistema, das ajustagens dos alarmes e das respostas do usuário Utilizar o recurso de “playback” do ECDIS para exame da travessia, planeamento da derrota e exame das funções do sistema	Avaliação das informações obtidas por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador do ECDIS,	Os procedimentos operacionais para utilizar o ECDIS estão estabelecidos, são empregados e monitorizados Acções realizadas para minimizar os riscos à uma navegação segura

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Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Previsão do tempo e condições oceanográficas	Habilidade para compreender e interpretar uma carta sinóptica e de fazer a previsão do tempo para a área , levando em conta as condições meteorológicas locais e as informações recebidas por fax Conhecimento das características dos vários sistemas meteorológicos, inclusive de tempestades tropicais giratórias e de como evitar os centros das tempestades e os quadrantes Perigosos Conhecimento dos sistemas de correntes oceânicas Habilidade para calcular as condições das marés Utilizar todas as publicações náuticas apropriadas sobre marés e correntes	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 aprovada formação em equipamentos de laboratório	As prováveis condições do tempo previstas para um determinado período estão baseadas em todas as informações disponíveis As acções realizadas para manter a segurança da navegação minimizam qualquer risco à segurança do navio As razões para a acção pretendida se apoiam em dados estatísticos e na observação das condições reais do tempo
Responder a emergências na navegação	Precauções quando estiver fazendo a varação de um navio Acções a serem realizadas se o encalhe for iminente, e após o encalhe Reflutuação de um navio encalhado, com e sem ajuda Acções a serem realizadas se o abalroamento, ou a colisão, for iminente, e após o abalroamento, ou a colisão, ou a perda da integridade da estanqueidade do casco à água por qualquer causa Avaliação do controlo de avarias Governo de emergência Dispositivos de reboque de emergência e procedimentos de reboque	Exame e avaliação das informações obtidas da instrução prática, da experiência em serviço e de exercícios práticos de procedimentos de emergência	O tipo e as proporções de qualquer problema são prontamente identificados e as decisões e acções minimizam os efeitos de qualquer mau funcionamento dos sistemas do navio As comunicações são eficazes e estão de acordo com os procedimentos estabelecidos As decisões e as acções aumentam ao máximo a segurança das pessoas a bordo

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Manobrar e conduzir um navio em todas as condições	Manobra e condução de um navio em todas as condições, inclusive: .1 manobras quando se aproximando de pontos de espera de pilotos/práticos e embarcando ou desembarcando pilotos/práticos, levando na devida consideração as condições do tempo, a maré, e a distância percorrida do momento em que é dada a ordem de toda a força atrás até a parada do navio .2 condução do navio em rios, estuários e águas restritas, levando em consideração os efeitos da corrente, do vento e de águas restritas sob a resposta do leme .3 emprego de técnicas de velocidade de guinada constante .4 manobras em águas rasas, inclusive a redução da folga abaixo da quilha causada por imersão da popa ("squat"), jogo e caturro .5 interacção entre navios que passam e entre o próprio navio e as margens próximas (efeito de canal) .6 atracação e desatracação com várias condições de vento, maré e corrente, com e sem rebocadores .7 interacção entre navio e rebocador .8 utilização dos sistemas de propulsão e de governo .9 escolha do fundeadouro; fundeio com um ou dois ferros em fundeadouros restritos e factores envolvidos na determinação do comprimento da amarra a ser utilizada	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 aprovada formação em simulador, quando for adequado .3 aprovada formação em um modelo em escala de um navio, tripulado, quando for adequado	Todas as decisões relativas à atracação e ao fundeio estão baseadas numa avaliação correta das características de manobra e de máquinas do navio, bem como das forças esperadas enquanto estiver atracado no cais ou permanecendo fundeado Quando em movimento, é feita uma avaliação completa dos possíveis efeitos de águas rasas e de águas restritas, de gelo, das margens, das condições de marés, de navios que passam e das ondas geradas na proa e na popa do próprio navio, de modo que o navio possa ser manobrado com segurança sob várias condições de carregamento e de tempo

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Coluna 1 **Competência**	Coluna 2 **Conhecimento, entendimento e proficiência**	Coluna 3 **Métodos para demonstrar competência**	Coluna 4 **Critérios para avaliar competência**
Manobrar e conduzir um navio em todas as condições *(Continuação)*	.10 arrastamento do ferro; libertar/soltar ferros entocados/presos .11 docagem, tanto com avarias como sem avarias .12 gestão e condução de navios com mau tempo, inclusive prestação de auxílio a um navio ou uma aeronave em perigo; operações de reboque; meios de manter um navio sem governo fora dos cavados das ondas, redução do abatimento e utilização de óleo .13 precauções ao manobrar para lançar embarcações de salvamento ou embarcações de sobrevivência com mau tempo .14 métodos de recolher a bordo sobreviventes de embarcações de salvamento ou de embarcações de sobrevivência .15 Habilidade para determinar as características de manobra e da propulsão de tipos comuns de navios, com referência especial às distâncias de parada e aos círculos de giro com vários calados e várias velocidades .16 importância de navegar com velocidade reduzida para evitar danos causados pelas ondas geradas na proa e na popa do próprio navio		

Coluna 1 **Competência**	Coluna 2 **Conhecimento, entendimento e proficiência**	Coluna 3 **Métodos para demonstrar competência**	Coluna 4 **Critérios para avaliar competência**
Manobrar e conduzir um navio em todas as condições *(Continuação)*	.17 medidas práticas a serem tomadas quando estiver navegando no gelo, ou perto dele, ou na condição de acúmulo de gelo a bordo .18 uso de esquemas de separação de tráfego e de áreas de serviço de tráfego de embarcações (VTS) e manobra nesses esquemas ou áreas, ou perto deles		
Operar os controlos remotos da instalação de propulsão e dos sistemas de máquinas e de serviços	Princípios de operação de instalações de máquinas marítimas Máquinas auxiliares do navio Conhecimento geral dos termos de máquinas marítimas	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 aprovada formação em simulador, quando for adequado	A instalação, as máquinas e os equipamentos auxiliares são operados o tempo todo de acordo com as especificações técnicas e dentro de limites seguros de operação

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Função: Manuseio da carga e estiva no nível de gestão

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Planear e assegurar o carregamento, a estivagem e a fixação/peação de cargas com segurança, os cuidados com a carga durante a viagem e o seu descarregamento	Conhecimento e habilidade para empregar regras, códigos e normas internacionais pertinentes, relativos ao manuseio, à estivagem, à fixação e ao transporte de cargas com segurança Conhecimento do efeito das cargas e das operações de carga e de descarga sobre o trim e a estabilidade Utilização dos diagramas de estabilidade e de trim e dos equipamentos para calcular esforço, inclusive equipamentos de banco de dados automáticos (ADB), e conhecimento do carregamento de cargas e do lastro para manter dentro de limites aceitáveis os esforços a que é submetido o casco	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado Serviço .2 aprovada formação em simulador, quando for adequado utilizando tabelas e diagramas de estabilidade, de trim e de esforços, e equipamentos para calcular esforços	A frequência e a extensão do monitoramento das condições da carga são adequadas à sua natureza e às condições existentes Os desvios inaceitáveis ou imprevistos das condições ou da especificação da carga são prontamente percebidos, e são realizadas imediatamente as acções correctivas destinadas a salvaguardar a segurança do navio e dos que se encontram a bordo As operações de carga são planeadas e executadas de acordo com os procedimentos estabelecidos e com as exigências legais A estivagem e a fixação das cargas garantem que as condições de estabilidade e de esforços permaneçam dentro de limites seguros o tempo todo durante a viagem

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Planear e assegurar o carregamento, a estivagem e a fixação de cargas com segurança, os cuidados com a carga durante a viagem e o seu descarregamento *(Continuação)*	Estivagem e a fixação das cargas a bordo dos navios, inclusive os dispositivos para o manuseio da carga e os equipamentos de fixação e de peiação Operações de carga e descarga, com especial atenção ao transporte de cargas identificadas no Código de Práticas Seguras para a Estivagem e a Fixação de Cargas Conhecimento geral de navios tanque e de suas operações Conhecimento das limitações operacionais e de projecto de graneleiros Habilidade para utilizar todos os dados disponíveis a bordo relativos ao carregamento, aos cuidados e ao descarregamento de cargas a granel Habilidade para estabelecer procedimentos para o manuseio seguro da carga, de acordo com o disposto nos instrumentos pertinentes, como o Código IMDG, o Código IMSBC, a MARPOL 73/78, Anexos III e V e outras informações pertinentes Habilidade para explicar os princípios básicos para estabelecer comunicações efectivas e para melhorar as relações de trabalho entre o pessoal do navio e o do terminal		

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Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Avaliar os defeitos e avarias informados nos compartimentos e espaços de carga, nas tampas de escotilhas e nos tanques de lastro e realizar as acções apropriadas	Conhecimento das limitações relativas aos esforços a que são submetidas as partes vitais da estrutura de um graneleiro comum e habilidade para interpretar determina os números de momentos flectores e de forças de cisalhamento/corte Habilidade para explicar como evitar os efeitos prejudiciais da corrosão, da fadiga e do manuseio inadequado da carga sobre graneleiros	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado Serviço .2 aprovada formação em simulador, quando for adequado utilizando tabelas e diagramas de estabilidade, de trim e de esforços, e equipamentos para calcular esforços	As avaliações baseiam-se princípios aceites, em argumentos bem fundamentados e são correctamente realizadas. As decisões tomadas são aceitáveis, levando em consideração a segurança do navio e as condições existentes
Transportar produtos perigosos	Regras, normas, códigos internacionais e recomendações sobre o transporte de produtos perigosas, inclusive o Código Marítimo Internacional de Produtos Perigosas (IMDG) e o Código Marítimo Internacional de Cargas Sólidas a Granel (IMSBC) Transporte de cargas perigosas, danosas e potencialmente perigosas ou que oferecem risco; precauções durante o carregamento e o descarregamento e cuidados durante a viagem	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado Serviço .2 aprovada formação em simulador, quando for adequado .3 aprovada formação especializada	A distribuição planeada da carga baseia-se em informações confiáveis e está de acordo com directrizes estabelecidas e exigências legais As informações sobre perigos, riscos e exigências especiais são registradas num formato aceitável para uma consulta fácil em caso de um incidente

Função: Controlo da operação do navio e cuidados com as pessoas a bordo, no nível de gestão

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Controlar o trim, a estabilidade e os esforços	Entendimento dos princípios fundamentais da construção de navios e das teorias e factores que afectam o trim e a estabilidade, e das medidas necessárias para manter o trim e a estabilidade Conhecimento do efeito sobre o trim e a estabilidade de um navio em caso de avaria e do consequente alagamento de um compartimento, e das contramedidas a serem tomadas Conhecimento das recomendações da IMO relativas à estabilidade dos navios	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador, quando for adequado	As condições de estabilidade e de esforços são mantidas o tempo todo dentro de limites seguros
Monitorizar e controlar o cumprimento de exigências legais e as medidas para assegurar a segurança da vida humana no mar e a protecção do meio ambiente marinho	Conhecimento do direito internacional marítimo expresso em acordos e convenções internacionais Deverá ser dada atenção especialmente aos seguintes tópicos: .1 certificados e outros documentos que as convenções internacionais exigem que sejam levados a bordo dos navios, como podem ser obtidos e seu período de validade .2 responsabilidades em face das exigências pertinentes da Convenção Internacional sobre Linhas de Carga .3 responsabilidades em face das exigências pertinentes da Convenção Internacional para a Salvaguarda da Vida Humana no Mar .4 responsabilidades em face da Convenção Internacional para a Prevenção da Poluição Causada por Navios	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador, quando for adequado	Os procedimentos para monitorizar as operações e a manutenção estão de acordo com as exigências legais As possíveis não conformidades são pronta e totalmente identificadas A renovação e a prorrogação planeadas de certificados garante a manutenção da validade dos itens e equipamentos vistoriados

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Coluna 1 Competência	Coluna 2 Conhecimento, entendimento e proficiência	Coluna 3 Métodos para demonstrar competência	Coluna 4 Critérios para avaliar competência
	.5 atestados de saúde de marítimos e as exigências do Regulamento Internacional de Saúde .6 responsabilidades em face dos instrumentos internacionais que afectam a segurança do navio, dos passageiros, da tripulação e da carga .7 métodos e auxílios para prevenir a poluição do ambiente marinho por navios . 8 legislação nacional para a implementação de acordos e convenções internacionais		
Manter a segurança e a protecção da tripulação e dos passageiros do navio e as condições operacionais dos sistemas salva-vidas, de combate a incêndio e de outros sistemas de segurança	Conhecimento pleno das regras relativas a equipamentos salva-vidas (Convenção Internacional para a Salvaguarda da Vida Humana no Mar) Organização de exercícios de incêndio e de abandono do navio Manutenção das condições operacionais dos sistemas salva-vidas, de combate a incêndio e outros sistemas de segurança. Ações a serem realizadas para proteger e salvaguardas todas as pessoas a bordo em emergências Ações para limitar avarias e salvar o navio após um incêndio, uma explosão, um abalroamento, uma colisão, ou um encalhe	Exame e avaliação de evidência obtida por formação prática e de formação e experiência em aprovado serviços	Os procedimentos para monitorizar os sistemas de detecção de incêndio e de segurança garantem que todos os alarmes sejam detectados prontamente e que sejam tomadas medidas de acordo com os procedimentos de emergência estabelecidos

Coluna 1 Competência	Coluna 2 Conhecimento, entendimento e proficiência	Coluna 3 Métodos para demonstrar competência	Coluna 4 Critérios para avaliar competência
Elaborar planos de emergência e de controlo de avarias e lidar com situações de emergência	Elaboração de planos de contingência para resposta a emergências Construção do navio, inclusive controlo de avarias Métodos e auxílios para a prevenção, detecção e extinção de incêndios Funções e utilização de equipamentos salva-vidas	Exame e avaliação de evidência obtida a partir de serviços aprovados de formação prática e experiência	Os procedimentos de emergência estão de acordo com os planos estabelecidos para situações de emergência
Usar a liderança e a habilidade de gestão	Conhecimento de gestão e de formação do pessoal de bordo Conhecimento das convenções marítimas internacionais, de recomendações e da legislação nacional relativa ao assunto Habilidade para aplicar gestão de tarefa e de carga de trabalho, abrangendo: .1 planeamento e coordenação .2 designação de pessoal .3 escassez de tempo e de recursos .4 atribuição de prioridades Conhecimento e habilidade para pôr em prática uma administração de recursos eficaz: .1 alocação, designação e priorização de recursos .2 comunicação efectiva a bordo e em terra .3 as decisões reflectem o facto de levar em consideração as experiências da equipa	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 aprovada formação .2 experiência em aprovado serviço .3 aprovada formação em simulador	São distribuídas atribuições para a tripulação e ela é informada, de uma maneira adequada às pessoas envolvidas, dos padrões de trabalho e de comportamento esperados Os objectivos e as actividades de formação baseiam-se na avaliação da competência e das capacitações atuais e dos requisitos operacionais É demonstrado que as operações estão de acordo com as regras aplicáveis

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Coluna 1 Competência	Coluna 2 Conhecimento, entendimento e proficiência	Coluna 3 Métodos para demonstrar competência	Coluna 4 Critérios para avaliar competência
Usar a liderança e a habilidade de gestão *(Continuação)*	.4 firmeza e liderança, inclusive motivação .5 obtenção e manutenção do conhecimento da situação Conhecimento e habilidade para empregar técnicas de tomada de decisões: .1 avaliação da situação e dos riscos .2 identificar e criar opções .3 seleccionar linhas de acção .4 avaliação da eficácia do resultado Elaboração, implementação e supervisão de procedimentos de operações padrão		As operações são planeadas e os recursos são alocados como necessário, na prioridade correcta para desempenhar as tarefas necessárias A comunicação é clara e é dada e recebida de maneira clara e não ambígua São demonstrados comportamentos de liderança efectiva Os membros necessários da equipa compartilham um entendimento preciso da situação actual e prevista da embarcação, da situação operacional e do ambiente externo As decisões são as mais eficazes para a situação As operações demonstram ser eficazes de acordo com as regras aplicáveis
Organizar e administrar a prestação de cuidados médicos a bordo	Um conhecimento pleno[2] da utilização e do conteúdo das seguintes publicações: .1 Guia Médico Internacional para Navios, ou publicações nacionais equivalentes .2 secção médica do Código Internacional de Sinais .3 Guia de Primeiros Socorros Médicos para Uso em Acidentes Envolvendo Produtos Perigosos	Exame e avaliação de evidência obtida por uma aprovada formação	As acções realizadas e os procedimentos seguidos empregam correctamente e utilizam plenamente as recomendações disponíveis

Secção A-II/3

Requisitos mínimos obrigatórios para a certificação de oficiais chefes de quarto de navegação e de comandantes em navios com uma arqueação bruta inferior a 500, empregados em viagens na navegação costeira

OFICIAL CHEFE DE QUARTO DE NAVEGAÇÃO

Norma de competência

1 Todo candidato a certificação deverá:

.1 ser exigido que demonstre a competência para desempenhar, no nível operacional, as tarefas, atribuições e responsabilidades listadas na coluna 1 da tabela A-II/3;

.2 possuir pelo menos o certificado apropriado para realizar radiocomunicações em VHF, de acordo com as exigências do Regulamento de Radiocomunicações; e

.3 se for designado para ter a principal responsabilidade pelas radiocomunicações durante incidentes de perigo, possuir o certificado apropriado, emitido ou reconhecido de acordo como o disposto no Regulamento de Radiocomunicações.

2 O conhecimento, o entendimento e a proficiência mínimos exigidos para a certificação estão listados na coluna 2 da tabela A-II/3.

3 O nível de conhecimento dos assuntos listados na coluna 2 da tabela A-II/3 deverá ser suficiente para permitir que o candidato sirva na capacidade de oficial chefe de quarto navegação.

4 A formação e a experiência para atingir o nível necessário de conhecimento teórico, de entendimento e de proficiência deverão basear-se na Secção A-VIII/2, parte 4-1 - Princípios a serem observados ao conduzir um quarto de serviço de navegação e deverão, também, levar em consideração as exigências pertinentes desta parte e a orientação fornecida na parte B deste Código.

5 Deverá ser exigido de todo candidato a certificação que forneça provas de ter atingido a nível de competência exigido, de acordo com os métodos para demonstrar competência e com os critérios de avaliação de competência tabelados nas colunas 3 e 4 da tabela A-II/3.

Formação especial

6 Todo candidato a certificação como oficial chefe de quarto de navegação em navios com arqueação bruta inferior a 500, operando em viagens na navegação costeira, que, de acordo com o parágrafo 4.2.1 da Regra II/3, seja

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obrigado a ter concluído uma formação especial, deverá seguir um aprovado programa de formação especial a bordo, que:

.1 assegure que, durante o período de serviço em navegação em mar aberto exigido, o candidato receba uma formação prática sistemática e adquira experiência nas tarefas, atribuições e responsabilidades de um oficial chefe de quarto de navegação, levando em consideração a orientação fornecida na secção B – II /1 do presente Código;

.2 seja atentamente supervisionado e monitorizado por oficiais qualificados a bordo dos navios em que é realizado o aprovado serviço em navegação em mar aberto ; e

.3 seja devidamente documentado em um livro de registo de formação, ou em documento semelhante[85]

COMANDANTE

7 Todo candidato a certificação como comandante em navios com arqueação bruta inferior a 500, empregados em viagens na navegação costeira, deverá atender às exigências para um oficial chefe de quarto de navegação especificadas abaixo e, além disto, deverá ser exigido que forneça provas do conhecimento e da habilidade para desempenhar todas as atribuições de comandante.

[85]O(s) Curso(s) Modelo da IMO pertinentes, e um documento semelhante elaborado pela Federação Internacional de Navegação, podem ser de ajuda na elaboração dos livros registos de formação

Tabela A-II/3

Especificação das normas mínimas de competência para oficiais chefes de quarto de navegação e para comandantes em navios com arqueação bruta inferior a 500, empregados em viagens na navegação costeira

Função: Navegação no nível operacional

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Planear e conduzir uma travessia costeira e determinar posições Nota: Não são exigidas a formação e a avaliação na utilização do ECDIS para aqueles que servem exclusivamente em navios não dotados de ECDIS. Esta limitação deverá estar indicada no certificado emitido para o marítimo em questão	*Navegação* Habilidade para determinar a posição do navio mediante a utilização de: .1 pontos de referência em terra .2 auxílios à navegação, inclusive faróis, balizas e bóias .3 navegação estimada, levando em conta ventos, marés, correntes e a velocidade estimada Conhecimento pleno e habilidade para utilizar cartas e publicações náuticas, como roteiro, tabelas de marés, avisos aos navegantes, avisos rádio de navegação e informações sobre derrotas de navios Enviar informações de acordo com os Princípios Gerais para Sistemas de Envio de Informações por Navios e com os procedimentos de VTS *Nota:* Este item só é exigido para a certificação de comandantes	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado Serviço .2 aprovada formação e experiência em navio .3 aprovada formação em simulador, quando adequado .4 aprovada formação em equipamentos de laboratório utilizando catálogos de cartas, cartas e publicações náuticas, avisos rádio de navegação, sextante, espelho azimutal, equipamentos electrónicos de navegação, eco-batímetro(sonda), agulha	As informações obtidas de cartas e publicações náuticas são pertinentes, interpretadas correctamente e correctamente empregadas O principal método de determinar a posição do navio é o mais apropriado para as circunstâncias e as condições existentes A posição é determinada dentro dos limiteis de erros aceitáveis do instrumento/sistema A confiabilidade das informações obtidas através do método principal de determinar a posição é verificada a intervalos adequados Os cálculos e as medições das informações de navegação são precisos As cartas e publicações seleccionadas são as que possuem a maior escala adequada para a área de navegação, e as cartas e publicações estão corrigidas de acordo com as últimas informações disponíveis

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Planear e conduzir uma travessia costeira e determinar posições *(Continuação)*	Planeamento da viagem e navegação para todas as condições, por meio de métodos aceitáveis de plotar/traçar derrotas costeiras, levando em conta, por exemplo: .1 águas restritas .2 condições meteorológicas .3 gelo .4 visibilidade restrita .5 esquemas de separação de tráfego .6 áreas de serviço de tráfego de embarcações (VTS) .7 áreas de fortes efeitos de marés *Nota:* Este item só é exigido para a certificação de comandantes Conhecimento pleno do ECDIS e habilidade para utilizá-lo	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovada formação em navio .2 aprovada formação em simulador de ECDIS	

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Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Planear e conduzir uma travessia costeira e determinar posições *(Continuação)*	*Ajudas à navegação e equipamentos de navegação* Habilidade para operar com segurança e de determinar a posição do navio pelo uso de todas as ajudas à navegação e equipamentos comumente instalados a bordo dos navios envolvidos *Agulhas* Conhecimento dos desvios e correcções de agulhas magnéticas Habilidade para determinar os desvios das agulhas utilizando meios terrestres, e de compensar esses desvios *Piloto automático* Conhecimento dos sistemas e procedimentos do piloto automático; passagem do controlo manual para o automático e vice-versa; ajuste dos controlos para obter o melhor desempenho possível *Meteorologia* Habilidade para utilizar e interpretar as informações obtidas dos instrumentos meteorológicos de bordo Conhecimento das características dos vários sistemas meteorológicos, procedimentos de envio de informações e de sistemas de registo Habilidade para empregar as informações meteorológicas disponíveis	Avaliação de evidência obtida por simulador radar aprovado	As verificações e os testes de desempenho dos sistemas e navegação estão e acordo com as recomendações do fabricante, com as boas práticas de navegação e com as resoluções da IMO sobre padrões de desempenho para equipamentos de navegação A interpretação e a análise das informações obtidas do radar estão de acordo com as práticas de navegação aceites, e levam em conta os limites e os níveis de precisão do radar Os desvios das agulhas magnéticas são determinados e empregados correctamente para rumos e marcações A selecção do modo de governo é a mais adequada para as condições do tempo e mar, para condições de tráfego existentes e para as manobras pretendidas As medições e as observações das condições do tempo são precisas e adequadas para a travessia As informações meteorológicas são avaliadas e empregadas para manter uma travessia segura da embarcação

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Conduzir um quarto de serviço de navegação seguro	*Serviço de Quarto* Conhecimento pleno do conteúdo, do emprego e do propósito do Regulamento Internacional para Evitar Abalroamentos no Mar, 1972, como emendado Conhecimento do conteúdo dos Princípios a serem observados ao conduzir um quarto de serviço de navegação Utilização de derrotas de acordo com as Disposições Gerais sobre Rotas de Navios Utilização de envio de informações de acordo com os Princípios Gerais para os Sistemas de Envio de Informações por Navios, e com os procedimentos de VTS	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado Serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador, quando for adequado .4 aprovada formação em equipamentos de laboratório	A condução, o recebimento e a passagem do quarto de serviço estão de acordo com os princípios e procedimentos aceites É mantida o tempo todo uma vigilância adequada, de acordo com os princípios e procedimentos aceites As luzes, marcas e sinais sonoros estão de acordo com as exigências contidas no Regulamento Internacional para Evitar Abalroamentos no Mar, 1972, como emendado, e são correctamente reconhecidos A frequência e a extensão da monitorização do tráfego, do navio e do meio ambiente estão de acordo com os princípios e procedimentos aceites As acções para evitar uma aproximação excessiva e um abalroamento com outras embarcações estão de acordo com o Regulamento Internacional para Evitar Abalroamentos no Mar, 1972, como emendado As decisões de ajustar o rumo e/ou a velocidade estão ambas de acordo com os procedimentos de navegação aceites É mantido um registo adequado dos movimentos e actividades relativos à navegação do navio A responsabilidade pela segurança da navegação está claramente definida o tempo todo, inclusive nos períodos em que o comandante está na ponte de comando e enquanto o navio está com o piloto/prático a bordo

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Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Responder a emergências	Procedimentos de emergência, abrangendo: .1 precauções para a protecção e a segurança dos passageiros em situações de emergência; .2 avaliação inicial de danos e controlo de avarias .3 acções a serem realizadas após uma colisão, ou um abalroamento .4 acções a serem realizadas após um encalhe Além disto, os seguintes elementos deverão ser incluídos para a certificação como comandante: .1 governo de emergência .2 dispositivo para rebocar e ser rebocado .3 resgatar pessoas do mar .4 prestar auxílio a uma embarcação em perigo .5 avaliação das acções a serem realizadas quando surgir uma emergência no porto	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador, quando for adequado .4 formação prática	O tipo e as proporções da emergência são prontamente identificados As acções e, se for adequado, as manobras iniciais, estão de acordo com os planos de contingência e são apropriadas para a urgência da situação e para a natureza da emergência
Responder a um sinal de perigo no mar	*Busca e salvamento* Conhecimento do conteúdo do Manual Internacional Aeronáutico e Marítimo de Busca e Salvamento (IAMSAR)	Exame a avaliação das informações obtidas a partir de uma formação prática ou de uma aprovada formação em simulador, quando for adequado	O sinal de perigo ou de emergência é reconhecido imediatamente Os planos de contingência e as instruções contidas em ordens permanentes são implementadas e cumpridas

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Manobrar o navio e operar as instalações de máquinas de navios pequenos	*Manobra e condução do navio* Conhecimento dos factores que afectam a manobra e a condução do navio com segurança A operação de instalações de máquinas principais e auxiliares de navios pequenos Procedimentos correctos para fundear e amarrar à bóia e atracar	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador, quando for adequado	Os limites seguros de operação da propulsão, do governo e dos sistemas de energia eléctrica do navio não são ultrapassados nas manobras normais Os ajustes feitos no rumo e na velocidade do navio mantêm a segurança da navegação As instalações de máquinas principais e auxiliares e os equipamentos são operados o tempo todo de acordo com as especificações técnicas e dentro dos limites seguros de operação

Função: Manuseio da carga e estiva no nível operacional

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Monitorizar o carregamento, a estiva, a fixação/peação e o descarregamento de carga, e os cuidados com ela durante a viagem	*Manuseio, estiva e fixação* Conhecimento de manuseio, estivagem e fixação/peação de cargas com segurança, inclusive cargas perigosas, danosas, potencialmente perigosas e que oferecem riscos, e dos seus efeitos sobre a segurança da vida humana e do navio Utilização do Código Marítimo Internacional de Produtos Perigosos (IMDG)	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado Serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador, quando for adequado	As operações de carga são realizadas de acordo com o plano de carga, ou com outros documentos e regras/regulamentos de segurança estabelecidos, instruções de operação de equipamentos e limitações de estivagem a bordo O manuseio de cargas perigosas, danosas, potencialmente perigosas e que oferecem riscos, cumpre as regras internacionais e as normas e códigos de práticas seguras reconhecidos

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Função: Controlo da operação do navio e cuidados com as pessoas a bordo, no nível operacional

Coluna 1 **Competência**	Coluna 2 **Conhecimento, entendimento e proficiência**	Coluna 3 **Métodos para demonstrar competência**	Coluna 4 **Critérios para avaliar competência**
Assegurar o atendimento às exigências relativas à prevenção da poluição	*Prevenção da poluição do meio ambiente marinho e procedimentos antipoluição* Conhecimento das precauções a serem tomadas para prevenir a poluição do meio ambiente marinho Procedimentos antipoluição e todos os equipamentos relacionados com eles	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio	Os procedimentos para monitorizar as operações a bordo e para assegurar o atendimento às exigências da MARPOL são plenamente observados
Manter a capacidade do navio enfrentar o mar	*Estabilidade do navio* Conhecimento prático e emprego das tabelas e diagramas de estabilidade, trim e esforços, e dos equipamentos para calcular esforços Entendimento das acções fundamentais a serem realizadas em caso de perda parcial da flutuabilidade intacta Entendimento dos fundamentos da estanqueidade à água *Construção do navio* Conhecimento geral dos principais membros estruturais de um navio e dos nomes correctos das várias partes	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação no navio .3 aprovada formação em simulador, quando for adequado .4 aprovada formação em laboratório	As condições de estabilidade atendem aos critérios de estabilidade intacta da IMO em todas as condições de carregamento As acções para assegurar e manter a integridade da estanqueidade do navio à água estão de acordo com as práticas aceites
Prevenir, controlar e combater incêndios a bordo	*Prevenção de incêndio e dispositivos de combate a incêndio* Habilidade para organizar exercícios de incêndio Conhecimento das classes de incêndio e da química do fogo Conhecimento dos sistemas de combate a incêndio Entendimento das acções a serem realizadas em caso de incêndio, inclusive de incêndios envolvendo sistemas de óleo	Avaliação das informações obtidas da formação e da experiência aprovadas em combate a incêndio, como especificado na Secção A-VI/3	O tipo e as proporções do problema são prontamente identificados e as acções iniciais estão de acordo com o procedimento de emergência e com os planos de contingência para o navio Os procedimentos de evacuação, parada e isolamento das máquinas são adequados à natureza da emergência e são executados prontamente A ordem de prioridade e os níveis e a cronologia de relatar as ocorrências e dar informações às pessoas a bordo são pertinentes à natureza da emergência e reflectem a urgência do problema

Coluna 1 **Competência**	Coluna 2 **Conhecimento, entendimento e proficiência**	Coluna 3 **Métodos para demonstrar competência**	Coluna 4 **Critérios para avaliar competência**
Operar equipamentos salva-vidas	*Salva-vidas* Habilidade para organizar exercícios de abandono do navio e conhecimento da operação de embarcações de sobrevivência e de embarcações de salvamento, de seus aparelhos e dispositivos de lançamento e de seus equipamentos, inclusive dos aparelhos de rádio salva-vidas, EPIRBs por satélite, SARTs, roupas de imersão e auxílios de protecção térmica	Avaliação das informações obtidas da formação e da experiência aprovadas, como especificado na Secção A-VI/2, parágrafos 1 a 4	As acções realizadas para responder às situações de abandono do navio e de sobrevivência são adequadas às circunstâncias e condições existentes e estão de acordo com as práticas e as normas de segurança aceites

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Empregar os primeiros socorros Médicos a bordo do navio	*Assistência médica* Emprego prático de guias médicos e de recomendações pelo rádio, inclusive a habilidade para realizar acções eficazes com base nesse conhecimento em caso de acidentes ou de doenças que possam ocorrer a bordo do navio	Avaliação das informações obtidas da aprovada formação, como especificada na Secção A-VI/4, parágrafos 1 a 3	A identificação da causa provável, da natureza e da extensão dos ferimentos ou dos problemas é rápida e o tratamento minimiza a ameaça à vida
Monitorar o cumprimento de exigências legais	Conhecimento prático básico das convenções pertinentes da IMO relativas à segurança da vida humana no mar e à protecção do meio ambiente marinho	Avaliação de evidência obtida por exames ou da aprovada formação	As exigências legais relativas à segurança da vida humana no mar e à protecção do meio ambiente marinho são correctamente identificadas
Contribuir para a segurança das pessoas e do navio	Conhecimento das técnicas de sobrevivência pessoal Conhecimento de prevenção de incêndios e habilidade para combater e extinguir incêndios Conhecimento de primeiros socorros elementares Conhecimento de segurança pessoal e das responsabilidades sociais	Avaliação das informações obtidas da formação e de experiência aprovadas, como especificado na Secção A-VI/1, parágrafo 2	Os equipamentos de segurança e de protecção adequados são correctamente utilizados Os procedimentos e as práticas de trabalho com segurança destinados a salvaguardar o pessoal e o navio são observados o tempo todo Os procedimentos destinados a salvaguardar o meio ambiente são observados o tempo todo As acções iniciais e de acompanhamento ao tomar conhecimento de uma emergência estão de acordo com os procedimentos de resposta a emergências estabelecidos

Secção A-II/4

Requisitos mínimos obrigatórios para a certificação de marítimos de mestrança e marinhagem que fazem parte de um quarto de serviço de navegação

Norma de competência

1 Deverá ser exigido de todo marítimo de mestrança e marinhagem que faça parte de um quarto de serviço de navegação em um navio que opere na navegação em mar aberto, com arqueação bruta igual ou superior a 500, que demonstre competência para desempenhar as funções de navegação no nível de apoio, como especificado na coluna 1 da tabela A-II/4.

2 O conhecimento, o entendimento e a proficiência mínimos exigidos para subalternos que fazem parte de um quarto de serviço de navegação em um navio que opere na navegação em mar aberto com arqueação bruta igual ou superior a 500, estão listados na coluna 2 da tabela A-II/4.

3 Deverá ser exigido de todo candidato a certificação que forneça provas de ter atingido a norma de competência exigida, de acordo com os métodos para demonstrar competência e com os critérios de avaliação de competência especificados nas colunas 3 e 4 da tabela A-II/4. A referência feita ao "teste prático" na coluna 3 pode abranger uma aprovada formação realizada em terra, na qual os alunos são submetidos a testes práticos.

4 Quando não houver tabelas de competência para o nível de apoio com relação a certas funções, continua sendo responsabilidade da Administração estabelecer as exigências adequadas para a formação, avaliação e certificação a serem aplicadas ao pessoal designado para desempenhar aquelas funções no nível de apoio.

Tabela A-II/4

Especificação da norma mínima de competência para marítimos de mestrança e marinhagem que fazem parte de um quarto de navegação

Função: Navegação no nível de apoio

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Governar o navio e, também, cumprir as ordens de leme dadas na língua inglesa	Utilização das agulhas magnética e giroscópica Ordens de leme Passagem do piloto automático para o governo manual e vice-versa	Avaliação de evidência obtida por: .1 teste prático, ou .2 experiência em aprovado serviço , ou .3 experiência em aprovada formação no navio	É mantido um rumo constante, dentro de limites aceitáveis, tendo em vista a área de navegação e o estado do mar existente. As alterações de rumo são suaves e controladas As comunicações são o tempo todo claras e concisas, e o seu recebimento é acusado de uma maneira marinheira

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Manter uma boa vigilância visual e auditiva	Responsabilidades de uma vigilância, inclusive a informação da marcação aproximada de um sinal sonoro, de uma luz ou de outro objecto, em graus ou em pontos	Avaliação de evidência obtida por: .1 teste prático, ou .2 experiência em aprovado serviço, ou .3 experiência em aprovada formação no navio	Os sinais sonoros, as luzes o os objectos são prontamente detectados e a sua marcação correta, em graus ou pontos, é informada ao oficial de serviço
Contribuir para monitorizar e controlar um quarto de serviço seguro	Termos e definições empregados a bordo Uso de comunicações interiores e de sistemas de alarme adequados Habilidade para compreender ordens e de se comunicar com o oficial de serviço em questões pertinentes às atribuições do serviço de quarto Procedimentos para assumir, conduzir e passar o quarto de serviço Informações necessárias para conduzir um quarto de serviço seguro Procedimentos básicos de protecção ambiental	Avaliação de evidência obtida por experiência em aprovado serviço ou experiência em aprovada formação em navio	As comunicações são claras e concisas, e é procurado obter informações ou esclarecimentos do oficial de serviço quando as informações ou instruções relativas ao quarto de serviço não são claramente compreendidas A condução, a tomada e a passagem do quarto de serviço estão de acordo com as práticas e procedimentos aceites

Coluna 1	**Coluna 2**	**Coluna 3**	**Coluna 4**
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Operar equipamentos de emergência e empregar procedimentos de emergência	Conhecimento das atribuições de emergência e dos sinais de alarme Conhecimento dos sinais pirotécnicos de perigo; EPIRBs e SARTs via satélite Acções para evitar falsos alertas de perigo e a realizar em caso de um accionamento acidental	Avaliação de evidência obtida por demonstrações e de experiência em aprovado serviço ou formação em navio	As acções iniciais ao tomar conhecimento de uma situação de emergência ou anormal estão de acordo com as práticas e procedimentos estabelecidos As comunicações são o tempo todo claras e concisas e o recebimento das ordens é acusado de uma maneira marinheira A integridade dos sistemas de emergência e de alerta de perigo é mantida o tempo todo

Secção A-II/5

Requisitos mínimos obrigatórios para a certificação de marítimos de mestrança e marinhagem como marítimos qualificados de convés

Norma de competência

1 Deverá ser exigido de todo marítimo qualificado de convés que sirva em um navio que opere na navegação em mar aberto, com arqueação bruta igual ou superior a 500, que demonstre a competência para desempenhar as funções, no nível de apoio, especificadas na coluna 1 da tabela A-II/5.

2 O conhecimento, o entendimento e a proficiência mínimos exigidos de um marítimo qualificado de convés que sirva em um navio que opere na navegação em mar aberto, com arqueação bruta igual ou superior a 500, estão listados na coluna 2 da tabela A-II/5.

3 Deverá ser exigido de todo candidato a certificação que apresente provas de ter atingido a norma de competência exigida, de acordo com os métodos para demonstrar competência e com os critérios para avaliar competência especificados na coluna 3 e 4 da tabela A-II/5.

Tabela A-II/5

Especificação das normas mínimas de competência de marítimos de mestrança e marinhagem como marítimos qualificados de convés

Função: Navegação no nível de apoio

Coluna 1	**Coluna 2**	**Coluna 3**	**Coluna 4**
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Contribuir para um quarto de serviço de navegação seguro	Habilidade para compreender ordens e de se comunicar com o oficial de serviço em questões pertinentes às atribuições do serviço de quarto Procedimentos para assumir, conduzir e passar o serviço de quarto Informações necessárias para conduzir um quarto de serviço seguro	Avaliação de evidência obtida por experiência em aprovado serviço ou de testes práticos	As comunicações são claras e concisas A condução, o recebimento e a passagem do quarto de serviço estão de acordo com as práticas e procedimentos aceitáveis

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Contribuir para as fainas de atracar, fundear, amarrar à bóia e outras fainas correlatas	Conhecimento prático do sistema de amarração e dos procedimentos relacionados com ele, abrangendo: .1 a função das espias de amarração e dos cabos de reboque, e como cada espia funciona como parte de um sistema geral .2 as capacidades, as cargas de trabalho seguras e as cargas de ruptura dos equipamentos de amarração, abrangendo cabos de aço, espias sintéticas e cabos de fibra, guinchos, ferros, cabrestantes, abitas, cunhas e cabeços .3 os procedimentos e a ordem dos eventos para passar e para largar as espias, os cabos de reboque e os cabos de aço, inclusive cabos de reboque .4 os procedimentos e a ordem dos eventos para a utilização de ferros em várias fainas Conhecimento prático dos procedimentos e da ordem de eventos relacionados com a amarração a uma bóia ou a bóias	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado Serviço .2 formação prática .3 exame .4 experiência em aprovado serviço em navio .5 aprovada formação em simulador, quando for adequado	As fainas são realizadas de acordo com as práticas de segurança estabelecidas e com as instruções de operação dos equipamentos

Função: Manuseio da carga e estiva no nível de apoio

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Contribuir para o manuseio de cargas e de suprimentos	Conhecimento dos procedimentos para manuseio, estivagem e fixação de cargas com segurança, inclusive de substâncias perigosas, danosas, potencialmente perigosas e que oferecem risco e de líquidos Conhecimento básico de determinados tipos de carga e das precauções a serem tomadas em relação a ela e identificação da rotulagem estabelecida pelo IMDG	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado Serviço .2 formação prática .3 exame .4 experiência em aprovada formação em navio .5 aprovada formação em simulador, quando for adequado	As operações com a carga e com os suprimentos são realizadas de acordo com as práticas de segurança estabelecidas e com as instruções de operação dos Equipamentos O manuseio de cargas ou suprimentos perigosos, danosos, potencialmente perigosos e que oferecem risco está de acordo com as práticas de segurança estabelecidas

Função: Controlo da operação do navio e cuidados com as pessoas a bordo, no nível de Apoio

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Contribuir para a operação segura dos equipamentos e máquinas de convés	Conhecimento dos equipamentos de convés, abrangendo: .1 função e utilização de válvulas e bombas, talhas, guindastes, e equipamentos correlatos .2 função e utilização de guinchos, cabrestantes, máquinas de suspender e equipamentos correlatos .3 escotilhas, portas estanques e equipamentos correlatos .4 cabos de fibra e de arame, cabos e amarras, inclusive a sua confecção, utilização, marcação, manutenção e armazenamento correcto .5 habilidade para usar e compreender os sinais básicos para a operação de equipamentos, abrangendo guinchos, cabrestantes, guindastes e talhas	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 formação prática .3 exame .4 experiência em aprovada formação em navio Avaliação de evidência obtida por demonstração prática	As fainas são realizadas de acordo com as práticas de segurança estabelecidas e com as instruções de operação dos equipamentos As comunicações dentro da área de responsabilidade do operador são sistematicamente boas

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Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Contribuir para a operação segura dos equipamentos e máquinas de convés *(Continuação)*	.6 habilidade para operar os equipamentos de fundeio em várias condições, como fundeando, entrando o ferro, preparando para o mar e em emergências Conhecimento dos seguintes procedimentos e habilidade para: .1 instalar e retirar guindolas e andaimes .2 instalar e retirar escadas do piloto/prático, talhas, rateiras e pranchas .3 utilizar habilidade marinheira com merlim e espicha, inclusive a utilização correta de nós, emendas e boças Utilizar e manusear os acessórios e equipamentos do convés e de manuseio da carga: .1 dispositivos de acesso, escotilhas e tampas de escotilhas, rampas, portas do costado/proa/popa ou elevadores .2 sistemas de tubulações – aspiração do porão e de lastro e pocetos .3 guindastes, paus de carga, guinchos Conhecimento de içamento e de colocação de bandeira a meia adriça e dos principais sinais com uma única bandeira (A, B, G, H, O, P, Q)	Avaliação de evidência obtida por demonstração prática Avaliação de evidência obtida por demonstração prática	A operação dos equipamentos é feita com segurança e de acordo com os procedimentos estabelecidos Demonstrar os métodos correctos de instalar e retirar de acordo com as práticas seguras da actividade Demonstrar a confecção e a utilização correta de nós, emendas, boças, chicotes, forros, bem do manuseio correto de lona Demonstrar a correcta utilização de cadernais e talhas Demonstrar os métodos correctos para manusear espias, cabos de aço, cabos e amarras

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Tomar precauções de saúde e de segurança do trabalho	Conhecimento prático das práticas de trabalho com segurança e de segurança pessoal a bordo, abrangendo: .1 trabalho em locais elevados .2 trabalho no costado .3 trabalho em compartimentos e espaços fechados .4 sistemas de autorização para trabalhar .5 manuseio de espias .6 técnicas de içamento e métodos de prevenir danos às costas .7 segurança ao trabalhar com electricidade .8 segurança ao trabalhar com equipamentos mecânicos .9 segurança ao trabalhar com produtos químicos e riscos biológicos .10 equipamentos de segurança pessoal	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 formação prática .3 exame .4 experiência em aprovada formação em navio	Os procedimentos destinados a salvaguardar as pessoas e o navio são observados o tempo todo São observadas as práticas de trabalho com segurança, e os equipamentos adequados de segurança e de protecção são utilizados correctamente o tempo todo
Tomar precauções e contribuir para a prevenção da poluição do meio ambiente marinho	Conhecimento das precauções a serem tomadas para prevenir a poluição do meio ambiente marinho Conhecimento da utilização e da operação de equipamentos antipoluição Conhecimento dos métodos aprovados para a retirada de bordo de poluentes marinhos	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 formação prática .3 exame .4 experiência em aprovada formação em navio	Os procedimentos destinados a salvaguardar o meio ambiente marinho são observados o tempo todo

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Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Operar embarcações de sobrevivência e embarcações de salvamento	Conhecimento da operação de embarcações de sobrevivência e de embarcações de salvamento, de seu lançamento, de aparelhos e dispositivos e de seus equipamentos Conhecimento das técnicas de sobrevivência no mar	Avaliação de evidência obtida por experiência em aprovada formação, como especificado na Secção A-VI/2, parágrafos 1 a 4	As acções realizadas para responder a situações de abandono do navio e de sobrevivência são adequadas às circunstâncias e às condições existentes e estão de acordo com as práticas e os padrões de segurança aceites

Função: Manutenção e reparação no nível de apoio

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Contribuir para a manutenção e reparação a bordo	Habilidade para utilizar materiais e equipamentos de pintura, lubrificação e limpeza Habilidade para compreender e de executar procedimentos de rotina de manutenção e reparos Conhecimento das técnicas de preparo de superfícies Entendimento das directrizes de segurança do fabricante e das instruções de bordo Conhecimento do alijamento dos restos de material com segurança Conhecimento do emprego, manutenção e utilização de ferramentas manuais e eléctricas ou hidráulicas	Avaliação de evidência obtida por demonstração prática Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 formação prática .3 exame .4 experiência em aprovada formação em navio	As actividades de manutenção e reparação são realizadas de acordo com as especificações técnicas relativas à segurança e aos procedimentos determinados.

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CAPÍTULO III

Normas relativas à secção de máquinas

Secção A-III/1

Requisitos mínimos obrigatórios para a certificação de oficiais chefes de quarto de máquinas numa casa de máquinas de condução atendida, ou designados oficiais de serviço de máquinas numa casa de máquinas de condução periodicamente desatendida

Formação

1 A formação e a instrução exigidas pelo parágrafo 2.4 da Regra III/1 deverão incluir a instrução nas técnicas de trabalho em oficinas mecânicas e eléctricas, pertinentes às atribuições de um oficial de máquinas.

Formação a bordo

2 Todo candidato a certificação como oficial chefe de quarto de máquinas numa casa de máquinas de condução atendida, ou designado oficial de serviço de máquinas numa casa de máquinas de condução periodicamente desatendida de um navio cuja máquina principal tenha uma potência propulsora de 750 kW ou mais, cujo serviço em navegação em mar aberto, de acordo com o parágrafo 2.2 da Regra III/1, faça parte de um aprovado programa de formação que atenda às exigências desta secção, deverá seguir um aprovado programa de formação a bordo, que:

.1 assegure que, durante o período de serviço em navegação em mar aberto exigido, o candidato receba uma instrução prática e sistemática e adquira experiência em tarefas, atribuições e responsabilidades de um oficial chefe de quarto de serviço de máquinas, levando em consideração as orientações fornecidas na Secção B-III/1 deste Código;

.2 seja atentamente supervisionado e monitorizado por um oficial de máquinas qualificado e portador de certificado, a bordo dos navios em que será realizado o aprovado serviço em navegação em mar aberto ; e

.3 seja devidamente documentado em um livro de registo de formação.

Norma de competência

3 Deverá ser exigido de todo candidato a certificação como oficial chefe de quarto de máquinas numa casa de máquinas atendida, ou designado oficial de serviço de máquinas numa casa de máquinas de condução periodica-

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mente desatendida em navios que opere na navegação em mar aberto, cuja máquina principal tenha uma potência propulsora igual ou superior a 750 kW, que demonstre habilidade para realizar, no nível operacional, as tarefas, atribuições e as responsabilidades relacionadas na coluna 1 da tabela A-III/1.

4 O conhecimento, o entendimento e a proficiência mínimos exigidos para certificação estão listados na coluna 2 da tabela A-III/1.

5 O nível de conhecimento dos assuntos listados na coluna 2 da tabela A-III/1 deverá ser suficiente para que os oficiais de máquinas desempenhem suas atribuições relativas ao serviço de quarto.[86]

6 A formação e a experiência para atingir o nível necessário de conhecimento teórico, de entendimento e de proficiência deverão estar baseadas na Secção A-VIII/2, parte 4-2 – Princípios a serem observados ao conduzir um quarto de serviço de máquinas, e deverão levar em consideração as exigências pertinentes desta parte e as orientações fornecidas na parte B deste Código.

7 Os candidatos a certificação para servir a bordo de navios nos quais as caldeiras a vapor não fazem parte das suas instalações de máquinas podem omitir as exigências pertinentes da tabela A-III/1. Um certificado concedido nesta base não será válido para servir a bordo de navios em que as caldeiras a vapor façam parte das instalações de máquinas do navio, até que o oficial de máquinas satisfaça as normas de competência considerados nos itens omitidos da tabela A-III/1. Qualquer limitação deverá estar declarada no certificado e na autenticação.

8 A Administração pode omitir exigências relativas ao conhecimento para os tipos de máquinas de propulsão que não as instalações de máquinas para as quais o certificado a ser concedido será válido. Um certificado concedido nessa base não deverá ser válido para qualquer categoria de instalação de máquinas que tenha sido omitida, até que o oficial de máquinas prove ser competente naqueles requisitos de competência. Qualquer limitação deverá estar declarada no certificado e na autenticação.

9 Deverá ser exigido de todo candidato a certificação que forneça provas de ter atingido a norma de competência exigida, de acordo com os métodos para demonstrar competência e com os critérios para avaliar competência tabelados nas colunas 3 e 4 da tabela A-III/1.

Viagens na navegação costeira

10 As exigências dos parágrafos 2.2 a 2.5 da Regra III/1 relativas ao nível de conhecimento, de entendimento e de proficiência exigido com base nas diferentes secções listadas na coluna 2 da tabela A-III/1 podem ser diferentes para oficiais de máquinas de navios cuja máquina principal tenha uma potência propulsora inferior a 3.000 kW, empregados em viagens na navegação costeira, como for considerado necessário, tendo em mente a segurança de todos os navios que possam estar operando nas mesmas águas. Qualquer limitação deverá estar declarada no certificado e na autenticação.

[86] O(s) Curso(s) Modelo da IMO pode(m) ser de ajuda na elaboração de cursos.

Tabela A-III/1

Especificação das normas mínimas de competência para oficiais chefes de quarto de máquinas numa casa de máquinas de condução atendida, ou designados oficiais de serviço de máquinas numa casa de máquinas de condução periodicamente desatendida

Função: Engenharia marítima no nível operacional

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Conduzir um quarto de serviço de máquinas com segurança	Conhecimento pleno dos Princípios a serem observados ao conduzir um quarto de serviço de máquinas, abrangendo: .1 atribuições relacionadas com a recepção e a aceitação do quarto de serviço .2 atribuições de rotina realizadas durante um quarto de serviço .3 manutenção dos livros de quarto do compartimento de máquinas e a importância das leituras feitas .4 atribuições relacionadas com a passagem de um quarto de serviço Procedimentos de segurança e de emergência; passagem do controlo remoto/automático para o controlo local, e vice-versa Precauções de segurança a serem observadas durante um quarto de serviço e as acções imediatas a serem realizadas em caso de incêndio ou de acidente, com especial atenção aos sistemas de óleo	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador, quando for adequado .4 aprovada formação em equipamentos de laboratório	A condução, a recepção e a passagem do quarto de serviço estão de acordo com os princípios e procedimentos aceites A frequência e a extensão da monitorização dos equipamentos e sistemas de máquinas estão de acordo com as recomendações do fabricante e com os princípios e procedimentos aceites, inclusive com os Princípios a serem observados ao conduzir um quarto de serviço de máquinas É mantido um registo correto dos movimentos e das actividades relativas aos sistemas de máquinas do navio

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Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Conduzir um quarto de serviço de máquinas com segurança (*Continuação*)	*Gestão dos recursos da casa de máquinas* Conhecimento dos princípios de gestão dos recursos da casa de máquinas, abrangendo: .1 alocação, atribuição e priorização dos recursos .2 comunicação efectiva .3 firmeza e liderança .4 obtenção e manutenção do conhecimento da situação .5 levar em consideração a experiência da equipa	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 aprovada formação .2 experiência em aprovado serviço .3 aprovada formação em simulador	Os recursos são alocados e atribuídos como necessário, na prioridade correcta para o desempenho das tarefas necessárias A comunicação é transmitida e recebida de maneira clara e não ambígua As decisões e/ou acções discutíveis resultam em contestação e em reacções apropriadas São percebidos comportamentos de uma liderança efectiva Os membros da equipa compartilham um entendimento preciso do estado actual e previsto da casa de máquinas e do ambiente externo
Uso da língua inglesa nas formas escrita e oral	Conhecimento adequado da língua inglesa, para permitir que o oficial utilize publicações de máquinas e desempenhe atribuições relativas às máquinas	Exame e avaliação de evidência obtida por uma instrução prática	As publicações escritas na língua inglesa, pertinentes às atribuições de máquinas, são correctamente interpretadas As comunicações são claras e compreendidas
Utilização dos sistemas de comunicações interiores	Operação de todos os sistemas de comunicações interiores existentes a bordo	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador, quando for adequado .4 aprovada formação em equipamentos de laboratório	A transmissão e a recepção das mensagens obtêm êxito sistematicamente Os registos das comunicações são completos, precisos e atendem às exigências regulamentares

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Operar as máquinas principais e auxiliares e os sistemas de controlo relacionados com elas	Princípios básicos de construção e de operação de sistemas de máquinas, abrangendo: .1 motor diesel marítimo .2 turbina a vapor marítima .3 turbina a gás marítima .4 caldeira marítima .5 instalações do eixo propulsor, inclusive hélice .6 outras máquinas auxiliares, abrangendo várias bombas, compressor de ar, purificador, grupo destilatório, trocadores de calor, sistemas de refrigeração, de ar condicionado e de ventilação .7 máquina do leme .8 sistemas de controlo automático .9 escoamento de fluidos e características dos sistemas de óleo lubrificante, de óleo combustível e de resfriamento .10 máquinas de convés Procedimentos de segurança e de emergência para a operação da instalação de máquinas de propulsão, inclusive dos sistemas de controlo	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado Serviço .2 experiência em aprovada formação em navio .3 aprovada formação em equipamentos de laboratório	Os mecanismos de construção e de operação podem ser compreendidos e explicados com planos/instruções

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Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Operar as máquinas principais e auxiliares e os sistemas de controlo Relacionados com elas *(Continuação)*	Preparo, operação, detecção de defeitos e medidas necessárias para prevenir avarias para as seguintes máquinas e sistemas de controlo: .1 motor principal e máquinas auxiliares relacionadas com ele .2 caldeira a vapor e máquinas auxiliares e sistemas de vapor relacionados com ela .3 accionadores principais e sistemas relacionados com eles .4 outras máquinas auxiliares, inclusive sistemas de refrigeração, de ar condicionado e de ventilação	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador, quando for adequado .4 aprovada formação em equipamentos de laboratório	As operações são planeadas e realizadas de acordo com os manuais de operação e com regras e procedimentos estabelecidos, para assegurar a segurança das operações e para evitar a poluição do meio ambiente marinho As divergências em relação às normas são prontamente identificadas A potência de saída da instalação e dos sistemas de máquinas atende sistematicamente às exigências, inclusive as ordens da ponte de comando relativas a alterações de velocidade e de rumo As causas dos defeitos ocorridos nas máquinas são prontamente identificadas e as acções destinam-se a assegurar a segurança geral do navio e da instalação, levando em consideração as circunstâncias e as condições existentes
Operar sistemas de bombeamento de combustível, de lastro e outros sistemas de bombeamento e sistemas de controlo relacionados com eles	Características operacionais de bombas e sistemas de canalizações, inclusive os sistemas de controlo Operação de sistemas de bombeamento: .1 operações de bombeamento de rotina .2 operação dos sistemas de esgoto de porão, de lastro e de bombeamento da carga Exigências e operação de separadores de óleo e água (ou de equipamentos semelhantes)	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador, quando for adequado .4 aprovada formação em equipamentos de laboratório	As operações são planeadas e realizadas de acordo com os manuais de operação e com regras e procedimentos estabelecidos, para assegurar a segurança das operações e para evitar a poluição do meio ambiente marinho As divergências em relação às normas são prontamente identificadas e são realizadas as acções apropriadas

Função: Engenharia electrotécnica, electrónica e de controlo no nível operacional

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Operar sistemas eléctricos, electrónicos e de controlo	Configuração básica e princípios de operação dos seguintes equipamentos eléctricos, electrónicos e de controlo: .1 equipamentos eléctricos .a sistemas de geração e de distribuição .b preparar, dar partida, colocar em paralelo e passar a carga de um gerador para outro .c motores eléctricos, inclusive metodologias para dar partida .d instalações de alta tensão .e circuitos de controlo sequencial e dispositivos de sistemas relacionados com eles .2 equipamentos electrónicos: .a características dos componentes de circuitos electrónicos básicos .b fluxograma de sistemas automáticos e de controlo .c funções, características e aspectos de sistemas de controlo para máquinas, inclusive de controlo de operação da instalação de propulsão principal e de controlo automático de caldeiras a vapor .3 sistemas de controlo: .a várias metodologias e características de controlo automático .b características do controlo Proporcional-Integral-Derivado (PID) e dos dispositivos dos sistemas relacionados com ele para realizar o controlo	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador, quando for adequado .4 aprovada formação em equipamentos de laboratório	As operações são planeadas e realizadas de acordo com os manuais de operação e com regras e procedimentos estabelecidos, para assegurar a segurança das operações Os sistemas eléctricos, electrónicos e de controlo podem ser compreendidos e explicados por meio de planos/instruções

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Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Manutenção e reparação de equipamentos eléctricos e electrónicos	Requisitos de segurança para trabalhar em sistemas eléctricos de bordo, inclusive o isolamento de segurança de equipamentos eléctricos, necessário antes que as pessoas sejam autorizadas a trabalhar nesses equipamentos Manutenção e reparação de equipamentos de sistemas eléctricos, quadros eléctricos, motores eléctricos, geradores e sistemas e equipamentos de corrente contínua Detecção de defeitos eléctricos, localização dos defeitos e medidas para prevenir avarias Confecção e operação de equipamentos eléctricos de teste e de medida Testes de funcionamento e de desempenho dos seguintes equipamentos e a sua configuração: .1 sistemas de monitorização .2 dispositivos de controlo automático .3 dispositivos de protecção A interpretação de diagramas eléctricos e de diagramas electrónicos simples	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 aprovada formação em técnicas de oficina .2 experiência prática e testes aprovados .3 experiência em aprovado serviço .4 experiência em aprovada formação em navio	As medidas de segurança para trabalhar são adequadas A selecção e a utilização de ferramentas manuais, de instrumentos de medida e de equipamentos de teste são apropriadas, e a interpretação dos resultados é precisa A desmontagem, inspecção, reparação e remontagem estão de acordo com os manuais e com as boas práticas Os testes relativos à remontagem e ao desempenho estão de acordo com os manuais e com as boas práticas

Função: Manutenção e reparação no nível operacional

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Utilização adequada de ferramentas manuais, máquinas ferramentas e instrumentos de medida, para a confecção de peças e reparações a bordo	Características e limitações dos materiais utilizados na construção e em reparações de navios e equipamentos Características e limitações dos processos utilizados para a confecção de peças e reparações Propriedades e parâmetros considerados na confecção e reparação de sistemas e componentes Métodos de realizar reparos de emergência/provisórios com segurança Medidas de segurança a serem tomadas para assegurar um ambiente de trabalho seguro e para utilizar ferramentas manuais, máquinas ferramentas e instrumentos de medida Utilização de ferramentas manuais, máquinas ferramentas e instrumentos de medida Utilização de vários tipos de materiais de vedação e de embalagens	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 aprovada formação em técnicas de oficina .2 experiência prática e testes aprovados .3 experiência em aprovado serviço .4 experiência em aprovada instrução em navio	A identificação de parâmetros importantes para a confecção de componentes típicos relacionados com o navio é apropriada A selecção dos materiais é apropriada A confecção de peças está dentro das tolerâncias estabelecidas A utilização de equipamentos, de ferramentas manuais, de máquinas ferramentas e de instrumentos de medida é apropriada e segura
Manutenção e reparação de máquinas e equipamentos a bordo	Medidas de segurança a serem tomadas para reparações e manutenção, inclusive o isolamento de segurança de máquinas e equipamentos de bordo, necessário antes que as pessoas sejam autorizadas a trabalhar nessas máquinas equipamentos Conhecimento e habilidades adequadas em mecânica básica Manutenção e reparação, como desmontagem, ajustagem e remontagem de máquinas e equipamentos Utilização de ferramentas especializadas e instrumentos de medida adequados Características de projecto e selecção dos materiais utilizados na confecção de equipamentos	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 aprovada formação em técnicas de oficina .2 experiência prática e testes aprovados .3 experiência em aprovado serviço .4 experiência em aprovada instrução em navio	Os procedimentos de segurança seguidos são adequados A selecção de ferramentas e de sobressalentes é adequada A desmontagem, inspecção, reparação e remontagem dos equipamentos estão de acordo com os manuais e com as boas práticas Os testes de recolocação em serviço e de desempenho estão de acordo com os manuais e com as boas práticas A selecção de materiais e de peças é adequada

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Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Manutenção e reparação de máquinas e equipamentos a bordo (*Continuação)*	Interpretação de planos das máquinas e seus manuais Interpretação de diagramas de canalizações hidráulicas e pneumáticas		

Função: Controlo da operação do navio e cuidados com as pessoas a bordo, no nível operacional

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Assegurar o atendimento às exigências relativas à prevenção da poluição	*Prevenção da poluição do meio ambiente marinho* Conhecimento das precauções a serem tomadas para prevenir a poluição do meio ambiente marinho Procedimentos antipoluição e todos os equipamentos relacionados com eles Importância de medidas efectivas para proteger o meio ambiente marinho	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação	Os procedimentos para monitorizar as operações a bordo e para assegurar o atendimento às exigências da MARPOL são plenamente observados Ações para assegurar que seja mantida uma reputação ambiental favorável
Manter a capacidade do navio enfrentar o mar	*Estabilidade do navio* Conhecimento prático e emprego dos diagramas de estabilidade, trim e esforços e de equipamentos para calcular os esforços Entendimento dos fundamentos da integridade da estanqueidade à água Entendimento das acções fundamentais a serem realizadas em caso da perda parcial da flutuabilidade intacta *Construção do navio* Conhecimento geral dos principais membros estruturais de um navio e dos nomes correctos das várias partes	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador, quando for adequado .4 aprovada formação em equipamentos de laboratório	As condições de estabilidade atendem aos critérios de estabilidade intacta da IMO em todas as condições de carregamento As acções para assegurar e manter a integridade da estanqueidade à água estão de acordo com as práticas aceites

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Prevenir, controlar e combater incêndios a bordo	*Prevenção de incêndio e equipamentos de combate a incêndio* Habilidade para organizar exercícios de incêndio Conhecimento das classes de incêndio e da química do fogo Conhecimento dos sistemas de combate a incêndio Ações a serem realizadas em caso de incêndio, inclusive de incêndios envolvendo sistemas de óleo	Avaliação das informações obtidas da aprovada instrução de combate a incêndio e da experiência, como especificado na Secção A-VI/3, parágrafos 1 a 3	O tipo e as proporções do problema são prontamente identificados e as acções iniciais estão de acordo com o procedimento de emergência e com os planos de contingência para o navio Os procedimentos de evacuação, de parada e isolamento das máquinas em emergência são adequados à natureza da emergência e são executados prontamente A ordem de prioridade, os níveis e a cronologia de relatar as ocorrências e dar informações às pessoas a bordo são pertinentes à natureza da emergência e reflectem a urgência do problema

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Operar dispositivos salva-vidas	*Salva-vidas* Habilidade para organizar exercícios de abandono do navio e conhecimento da operação de embarcações de sobrevivência e de embarcações de salvamento, de seus aparelhos e dispositivos de lançamento e de seus equipamentos, inclusive dos aparelhos de rádio salva-vidas, EPIRBs por satélite, SARTs, roupas de imersão e auxílios de protecção térmica	Avaliação das informações obtidas da aprovada instrução e da experiência, como especificado na Secção A-VI/2, parágrafos 1 a 4	As acções realizadas para responder às situações de abandono do navio e de sobrevivência são adequadas às circunstâncias e às condições existentes e estão de acordo com as práticas e as normas de segurança aceites
Prestar o primeiro atendimento médico a bordo do navio	*Assistência médica* Emprego prático de guias médicos e de recomendações pelo rádio, inclusive a habilidade para realizar acções efectivas com base nesse conhecimento em caso de acidentes ou de doenças que possam ocorrer a bordo do navio	Avaliação das informações obtidas da aprovada instrução, como especificado na Secção A-VI/4, parágrafos 1 a 3	A identificação da causa provável, da natureza e da extensão dos ferimentos ou da condição indicada é rápida e o tratamento minimiza a ameaça à vida
Monitorizar o cumprimento de exigências legais	Conhecimento prático básico das convenções pertinentes da IMO relativas à segurança da vida humana no mar e à protecção do meio ambiente marinho	Avaliação de evidência obtida por exames ou da aprovada instrução	As exigências legais relativas à segurança da vida humana no mar e à protecção do meio ambiente marinho são correctamente identificadas

Coluna 1	**Coluna 2**	**Coluna 3**	**Coluna 4**
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Emprego da liderança e da habilidade para trabalhar em equipa	Conhecimento prático de gestão e de instrução do pessoal de bordo Conhecimento das convenções marítimas internacionais, das recomendações e da legislação nacional relativas ao assunto Habilidade de utilizar a gestão de tarefas e da carga de trabalho, inclusive: .1 planeamento e coordenação .2 designação de pessoal .3 escassez de tempo e de recursos .4 atribuição de prioridades Conhecimento e habilidade para empregar uma gestão de recursos eficaz: .1 alocação, atribuição e priorização de recursos .2 comunicação efectiva a bordo e em terra .3 as decisões reflectem o facto de levar em consideração as experiências da equipa .4 firmeza e liderança, inclusive Motivação .5 obter e manter um conhecimento da situação Conhecimento e habilidade de empregar técnicas de tomada de decisões: .1 Avaliação da situação e dos riscos .2 Identificar e considerar as opções geradas .3 Seleccionar a linha de acção .4 Avaliação da eficácia do resultado	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 aprovada formação .2 experiência em aprovado serviço .3 demonstração prática	São distribuídas atribuições à tripulação e ela é informada dos padrões de trabalho e de comportamento esperados, de uma maneira adequada às pessoas envolvidas Os objectivos e as actividades da instrução estão baseados na avaliação actual da competência e das capacitações e requisitos operacionais É demonstrado que as operações estão de acordo com as regras aplicáveis As operações são planeadas e os recursos são alocados como necessário, na prioridade correta para desempenhar as tarefas necessárias A comunicação é dada e recebida de maneira clara e não ambígua São demonstrados comportamentos de uma liderança efectiva Os membros necessários da equipa compartilham um entendimento preciso da situação actual e prevista da embarcação, da situação operacional e do ambiente externo As decisões são as mais eficazes para a situação

Coluna 1	**Coluna 2**	**Coluna 3**	**Coluna 4**
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Contribuir para a segurança do pessoal e do navio	Conhecimento das técnicas de sobrevivência pessoal Conhecimento de prevenção de incêndios e habilidade para combater e extinguir incêndios Conhecimento de primeiros socorros elementares Conhecimento de segurança pessoal e das responsabilidades sociais	Avaliação das informações obtidas da instrução e da experiência aprovadas, como especificado na Secção A-VI/1, parágrafo 2	Os equipamentos de segurança e de protecção adequados são correctamente utilizados Os procedimentos e as práticas de trabalho com segurança, destinados a salvaguardar o pessoal e o navio, são sempre observados Os procedimentos destinados para salvaguardar o meio ambiente são sempre observados As acções iniciais e de acompanhamento ao tomar conhecimento de uma emergência estão de acordo com os procedimentos estabelecidos de resposta a emergências

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Secção A-III/2

Requisitos mínimos obrigatórios para a certificação de chefes de máquinas e de segundo oficiais de máquinas em navios cuja máquina principal tenha uma potência propulsora igual ou superior a 3.000 kW

Norma de competência

1 Deverá ser exigido de todo candidato a certificação como chefe de máquinas e como segundo oficial de máquinas de navios que opere na navegação em mar aberto, cuja máquina principal tenha uma potência propulsora igual ou superior a 3.000 kW, que demonstre habilidade para realizar, no nível de gestão, as tarefas, atribuições e responsabilidades listadas na coluna 1 da tabela A-III/2.

2 O conhecimento, o entendimento e a proficiência mínimos exigidos para a certificação estão relacionados na coluna 2 da tabela A-III/2. Essa coluna incorpora, amplia e aprofunda os assuntos listados na coluna 2 da tabela A-III/1 para oficiais chefes de quartos de serviço de máquinas.

3 Tendo em mente que um segundo oficial de máquinas deverá estar em condições de assumir a qualquer momento as responsabilidades do chefe de máquinas, a avaliação nesses assuntos deverá ser destinada a testar a habilidade do candidato de assimilar todas as informações disponíveis que afectam a operação das máquinas do navio com segurança e a protecção do meio ambiente marinho.

4 O nível de conhecimento dos assuntos listados na coluna 2 da tabela A-III/2 deverá ser suficiente para permitir que o candidato exerça a capacidade de chefe de máquinas, ou de segundo oficial de máquinas.[87]

[87] O(s) Curso(s) Modelo pertinente(s) da IMO pode(m) ser de ajuda na elaboração de cursos

5 A formação e a experiência para atingir o nível necessário de conhecimento teórico, de entendimento e de proficiência deverão levar em consideração as exigências pertinentes desta parte e as orientações fornecidas na Parte B deste Código.

6 A Administração pode omitir exigências relativas ao conhecimento para tipos de máquinas de propulsão que não aquelas instalações de máquinas para as quais o certificado a ser concedido deverá ser válido. Um certificado concedido nesta base não será válido para qualquer categoria de instalação de máquinas que tenha sido omitida, até que o oficial de máquinas prove ser competente nessas exigências relativas ao conhecimento. Qualquer limitação deverá estar declarada nos certificados e nas autenticações.

7 Deverá ser exigido de todo candidato a certificação que forneça provas de ter atingido a norma de competência exigida, de acordo com os métodos de demonstrar competência e com os critérios para avaliar competência tabelados nas colunas 3 e 4 da tabela A-III/2.

Viagens na navegação costeira

8 O nível de conhecimento, de entendimento e de proficiência exigido com base nas diferentes secções listadas na coluna 2 da tabela A-III/2 pode ser diferente para oficiais de máquinas de navios propulsados por máquinas principais com uma potência de propulsão limitada, empregados em viagens na navegação costeira, como for considerado necessário, tendo em mente o efeito sobre a segurança de todos os navios que podem estar operando nas mesmas águas. Qualquer limitação deverá estar declarada no certificado e na autenticação.

Tabela A-III/2

Especificação da norma mínima de competência para chefes de máquinas e segundo oficiais de máquinas em navios cuja máquina principal tenha uma potência propulsora igual ou superior a 3.000 kW

Função: Engenharia marítima no nível de gestão

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Conduzir a operação da instalação de máquinas de propulsão	Características de projecto e mecanismos de funcionamento das seguintes máquinas, e das máquinas auxiliares relacionadas .1 motor diesel marítimo .2 turbina a vapor marítima .3 turbina a gás marítima .4 caldeira a vapor marítima	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em equipamentos de laboratório .4 aprovada formação em simulador, quando for adequado	A explanação e o entendimento das características de projecto e dos mecanismos de operação são adequados
Planear e programar operações	*Conhecimento teórico* Termodinâmica e transmissão de calor Mecânica e hidromecânica Características da propulsão de motores diesel, turbinas a vapor e a gás, inclusive velocidade e a potência de saída e o consumo de combustível Ciclo de calor, eficiência térmica e balanço térmico do seguinte: 1 motor diesel marítimo .2 turbina a vapor marítima .3 turbina a gás marítima .4 caldeira a vapor marítima	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador, quando for adequado .4 aprovada formação em equipamentos de laboratório	O planeamento e o preparo das operações é adequado aos parâmetros da instalação de força e às necessidades da viagem

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Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Planear e programar operações (*Continuação)*	Refrigeradores e ciclo de refrigeração Propriedades físicas e químicas de combustíveis e lubrificantes Tecnologia de materiais Engenharia naval e construção de navios, inclusive controlo de avarias *Conhecimento prático* Partida e parada das máquinas principais e auxiliares de propulsão, inclusive dos sistemas relacionados Limites de funcionamento da instalação de propulsão O funcionamento eficiente, a vigilância, a avaliação do desempenho e a manutenção da segurança da instalação de propulsão e das máquinas auxiliares Funções e mecanismos de controlo automático do motor principal Funções e mecanismos do controlo automático das máquinas auxiliares, inclusive, mas não se restringindo a: .1 gerador e sistemas de distribuição .2 caldeiras a vapor .3 purificador de óleo .4 sistema de refrigeração .5 sistemas de bombeamento e de canalizações .6 sistema da máquina do leme .7 equipamentos de manuseio de carga e máquinas de convés		
Funcionamento, vigilância, avaliação do desempenho e manutenção da segurança das máquinas principais e auxiliares da instalação de propulsão		Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador, quando for adequado .4 aprovada formação em equipamentos de laboratório	Os métodos de preparar para a partida e de disponibilizar combustíveis, lubrificantes, água de resfriamento e ar são ao mais adequados As verificações de pressões, de temperaturas e de rotações durante a partida e o período de aquecimento estão de acordo com as especificações técnicas e com os planos de trabalho acordados A vigilância da instalação de propulsão e dos sistemas auxiliares é suficiente para manter as condições de funcionamento com segurança Os métodos de preparar a parada e de supervisionar o resfriamento do motor são os mais adequados Os métodos de medir a capacidade de carga dos motores estão de acordo com as especificações técnicas O desempenho é verificado, comparando-o com as ordens da ponte de comando Os níveis de desempenho estão de acordo com as especificações técnicas

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Gerir as operações com combustível, lubrificantes e lastro	Funcionamento e manutenção das máquinas, inclusive bombas e sistemas de canalizações	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador, quando for adequado	As operações com combustível e lastro atendem aos requisitos operacionais e são realizadas de modo a prevenir a poluição do meio ambiente marinho

Função: Engenharia electrotécnica, electrónica e de controlo, no nível de gestão

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Conduzir a operação de equipamentos eléctricos, electrónicos e de controlo	*Conhecimento teórico* Electro-tecnologia marítima, electrónica, electrónica de potência, máquinas de controlo automático e dispositivos de segurança Características de projecto e configuração de sistemas de equipamentos de controlo automático e de dispositivos de segurança para os seguintes equipamentos: .1 motor principal .2 gerador e sistema de distribuição .3 caldeira a vapor Características de projecto e configuração de sistemas de equipamentos de controlo do funcionamento de motores eléctricos Características de projecto de instalações de alta tensão Características de equipamentos de controlo hidráulicos e pneumáticos	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador, quando for adequado .4 aprovada formação em equipamentos de laboratório	O funcionamento dos equipamentos e sistemas está de acordo com os manuais de operação Os níveis de desempenho estão de acordo com as especificações técnicas

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Conduzir pesquisa de avarias para restabelecer as condições de operação de equipamentos eléctricos, electrónicos e de controlo	*Conhecimento prático* Reparação de defeitos de equipamentos eléctricos e electrónicos de controlo Teste de funcionamento de equipamentos eléctricos e electrónicos de controlo e de dispositivos de segurança Reparo de defeitos de sistemas de monitorização Controlo das versões de software	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador, quando for adequado .4 aprovada formação em equipamentos de laboratório	As actividades de manutenção são correctamente planeadas de acordo com as especificações técnicas, legais, de segurança e de procedimento A inspecção, os testes e a reparação de defeitos de equipamentos são adequados

Função: Manutenção e reparação no nível de gestão

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Realizar procedimentos seguros e eficazes de manutenção e reparação	*Conhecimento teórico* Prática de máquinas marítimas *Conhecimento prático* Realizar procedimentos seguros e eficazes de manutenção e reparação Planeamento da manutenção, inclusive verificações regulamentares e de classe Planeamento das reparações	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em oficina	As actividades de manutenção são correctamente planeadas e realizadas de acordo com as especificações técnicas, legais, de segurança e de procedimento Existem planos, especificações, materiais e equipamentos disponíveis para a manutenção e os reparos As acções realizadas levam ao restabelecimento da instalação pelo método mais adequado
Detectar e identificar a causa de defeitos nas máquinas e corrigi-los	*Conhecimento prático* Detecção de mau funcionamento nas máquinas, localização dos defeitos e acções para prevenir avarias Inspecção e ajustagem de equipamentos Exame não destrutivo	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador, quando for adequado .4 aprovada formação em equipamentos de laboratório	Os métodos de comparar as condições reais de funcionamento estão de acordo com as práticas e procedimentos recomendados As acções e decisões estão de acordo com as especificações operacionais e limitações de funcionamento recomendadas
Assegurar práticas de trabalho seguras	*Conhecimento prático* Práticas seguras de trabalho	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em equipamentos de laboratório	As práticas de trabalho estão de acordo com as exigências legais, com os códigos de práticas, com as permissões para trabalhar e as preocupações ambientais

Função: Controlo da operação do navio e cuidados com as pessoas a bordo, no nível de gestão

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Controlar o trim, a estabilidade e os esforços	Entendimento dos princípios fundamentais da construção de navios e das teorias e factores que afectam o trim e a estabilidade, e das medidas necessárias para manter o trim e a estabilidade Conhecimento do efeito sobre o trim e a estabilidade em caso de avaria no navio e do consequente alagamento de um compartimento, e das contramedidas a serem tomadas Conhecimento das recomendações da IMO relativas à estabilidade dos navios	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador, quando for adequado	As condições de estabilidade e de esforços são sempre mantidas dentro de limites seguros

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Monitorizar e controlar o cumprimento de exigências legais e as medidas para assegurar a segurança da vida humana no mar e a protecção do meio ambiente marinho	Conhecimento do direito internacional marítimo pertinente expresso em acordos e convenções internacionais Deverá ser dada atenção especialmente aos seguintes tópicos: .1 certificados e outros documentos que as convenções internacionais exigem que sejam levados a bordo dos navios, como podem ser obtidos e seu período de validade .2 responsabilidades em face das exigências pertinentes da Convenção Internacional sobre Linhas de Carga .3 responsabilidades em face das exigências pertinentes da Convenção Internacional para a Salvaguarda da Vida Humana no Mar .4 responsabilidades em face da Convenção Internacional para a Prevenção da Poluição Causada por Navios	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador, quando for adequado	Os procedimentos para monitorizar as operações e a manutenção estão de acordo com as exigências legais As possíveis não conformidades são pronta e totalmente identificadas As exigências para a renovação e a prorrogação de certificados garantem a manutenção da validade dos itens e equipamentos vistoriados

Coluna 1	**Coluna 2**	**Coluna 3**	**Coluna 4**
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Monitorizar e controlar o cumprimento de exigências legais e as medidas para assegurar a segurança da vida humana no mar e a protecção do meio ambiente marinho (*Continuação)*	.5 atestados de saúde marítimos e as exigências do Regulamento Internacional de Saúde .6 responsabilidades em face dos instrumentos internacionais que afectam a segurança do navio, dos passageiros, da tripulação ou da carga .7 métodos e auxílios para prevenir a poluição do meio ambiente por navios .8 conhecimento da legislação nacional para a implementação de acordos e convenções internacionais		
Manter a segurança e a protecção da embarcação, da tripulação e dos passageiros e as condições operacionais dos sistemas salva-vidas, de combate a incêndio e de outros sistemas de segurança	Conhecimento pleno das regras relativas a equipamentos salva-vidas (Convenção Internacional para a Salvaguarda da Vida Humana no Mar) Organização de exercícios de incêndio e de abandono do navio Manutenção das condições de funcionamento dos sistemas salva-vidas e de combate a incêndio e de outros sistemas de segurança Ações a serem realizadas para proteger e salvaguardas todas as pessoas a bordo em emergências Ações para limitar avarias e salvar o navio após um incêndio, uma explosão, um abalroamento, uma colisão, ou um encalhe	Exame e avaliação de evidência obtida por instrução prática e de instrução e experiência em aprovado serviços	Os procedimentos para monitorizar os sistemas de detecção de incêndio e de segurança garantem que todos os alarmes sejam detectados prontamente e que sejam tomadas medidas de acordo com os procedimentos de emergência estabelecidos

Coluna 1	**Coluna 2**	**Coluna 3**	**Coluna 4**
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Elaborar planos de emergência e de controlo de avarias e lidar com situações de emergência	Construção do navio, inclusive controlo de avarias Métodos e auxílios para a prevenção, detecção e extinção de incêndios Funções e utilização de equipamentos salva-vidas	Exame e avaliação de evidência obtida por instrução prática e de instrução e experiência em aprovado serviços	Os procedimentos de emergência estão de acordo com os planos estabelecidos para situações de emergência

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Usar a liderança e a habilidade de gestão	Conhecimento de gestão de pessoal de bordo e de sua instrução Um conhecimento das convenções marítimas internacionais, de recomendações e da legislação nacional relacionada Habilidade para pôr em prática a gestão de tarefas e da carga de trabalho, abrangendo: .1 planeamento e coordenação .2 designação de pessoal .3 escassez de tempo e de recursos .4 atribuição de prioridades Conhecimento e habilidade para pôr em prática uma gestão de recursos eficaz: .1 alocação, designação e priorização de recursos .2 comunicação efectiva a bordo e em terra .3 as decisões reflectem o facto de levar em consideração as experiências da equipa	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 aprovada formação .2 experiência em aprovado serviço .3 aprovada formação em simulador	São distribuídas atribuições para a tripulação e ela é informada, de uma maneira adequada às pessoas envolvidas, dos padrões de trabalho e de comportamento esperados Os objectivos e as actividades de instrução baseiam-se na avaliação da competência e das capacitações atuais e dos requisitos operacionais É demonstrado que as operações estão de acordo com as regras aplicáveis As operações são planeadas e os recursos são alocados como necessário, na prioridade correta para o desempenho das tarefas necessárias A comunicação é dada e recebida de uma maneira clara e não ambígua

Coluna 1	**Coluna 2**	**Coluna 3**	**Coluna 4**
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Usar a liderança e a habilidade de gestão *(Continuação)*	.4 firmeza e liderança, inclusive motivação .5 obtenção e manutenção do conhecimento da situação Conhecimento e habilidade para empregar técnicas de tomada de decisões: .1 avaliação da situação e dos riscos .2 identificar e criar opções .3 seleccionar linhas de acção .4 avaliação da eficácia do resultado Elaboração, implementação e supervisão de procedimentos operacionais padrão		São demonstrados comportamentos de uma liderança efectiva Os membros necessários da equipa compartilham um entendimento preciso da situação actual e prevista da embarcação, das operações e do ambiente externo As decisões são as mais eficazes para a situação As operações demonstram ser eficazes e estar de acordo com as regras aplicáveis

Secção A-III/3

Requisitos mínimos obrigatórios para a certificação de chefes de máquinas e segundos oficiais de máquinas em navios cuja máquina principal tenha uma potência propulsora entre 750 kW e 3.000 kW

Norma de competência

1 Deverá ser exigido de todo candidato a certificação como chefe de máquinas e como segundo oficial de máquinas em navios que operem na navegação em mar aberto, cuja máquina principal tenha uma potência propulsora entre 750 kW e 3.000 kW, que deverá demonstrar habilidade para desempenhar, no nível de gestão, as tarefas, atribuições e responsabilidades listadas na coluna 1 da tabela A-III/2.

2 O conhecimento, o entendimento e a proficiência mínimos exigidos para a certificação estão listados na coluna 2 da tabela A-III/2. Essa coluna incorpora, amplia e aprofunda os assuntos listados na coluna 2 da tabela A-III/1 para oficiais chefes de quarto de máquinas numa casa de máquinas de condução atendida, ou designados oficiais de serviço de máquinas numa casa de máquinas de condução periodicamente desatendida.

3 Tendo em mente que um segundo oficial de máquinas deverá estar em condições de assumir a qualquer momento as responsabilidades do chefe de máquinas, a avaliação nesses assuntos deverá ser destinada a testar a habilidade do candidato de assimilar todas as informações disponíveis que afectem o funcionamento das máquinas do navio com segurança e a protecção do meio ambiente marinho.

4 O nível de conhecimento dos assuntos listados na coluna 2 da tabela A-III/2 pode ser reduzido, mas deverá ser suficiente para permitir que o candidato exerça as capacidades de chefe de máquinas, ou de segundo oficial de máquinas, na faixa de potências de propulsão especificada nesta secção.

5 A formação e a experiência para atingir o nível necessário de conhecimento teórico, de entendimento e de proficiência deverão levar em consideração as exigências pertinentes desta parte e as orientações fornecidas na Parte B deste Código.

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6 A Administração pode omitir exigências relativas ao conhecimento para tipos de máquinas de propulsão que não aquelas instalações de máquinas para as quais o certificado a ser concedido deverá ser válido. Um certificado concedido nesta base não será válido para qualquer categoria de instalação de máquinas que tenha sido omitida, até que o oficial de máquinas prove ser competente nessas exigências relativas ao conhecimento. Qualquer limitação deverá estar declarada nos certificados e nas autenticações.

7 Deverá ser exigido de todo candidato a certificação que forneça provas de ter atingido a norma e competência exigido, de acordo com os métodos para demonstrar competência e com os critérios para avaliar competência tabelados nas colunas 3 e 4 da tabela A-III/2.

Viagens na navegação costeira

8 O nível de conhecimento, de entendimento e de proficiência exigidos com base nas diferentes secções listadas na coluna 2 da tabela A-III/2, e as exigências dos parágrafos 2.1.1 e 2.1.2 da Regra III/3 podem ser diferentes, como for considerado necessário, para oficiais de máquinas de navios cuja máquina principal tenha uma potência propulsora inferior a 3.000 kW, empregados em viagens na navegação costeira, tendo em mente o efeito sobre a segurança de todos os navios que podem estar operando nas mesmas águas. Qualquer limitação dessas deverá estar declarada no certificado e na autenticação.

Secção A-III/4

Requisitos mínimos obrigatórios para a certificação de marítimos de mestrança e marinhagem que façam parte de quartos de serviço de máquinas numa casa de máquinas de condução atendida, ou que sejam designados para desempenhar atribuições numa casa de máquinas de condução periodicamente desatendida

Norma de competência

1 Deverá ser exigido de todo marítimo de mestrança e marinhagem que faça parte de um quarto de serviço na casa de máquinas de um navio que opere na navegação em mar aberto que demonstre competência para desempenhar as funções relativas a máquinas marítimas, no nível de apoio, como especificado na coluna 1 da tabela A-III/4.

2 O conhecimento, o entendimento e a proficiência mínimos exigidos de marítimos de mestrança e marinhagem que fazem parte de um quarto de serviço na casa de máquinas estão listados na coluna 2 da tabela A-III/4.

3 Deverá ser exigido de todo candidato à certificação que forneça provas de ter atingido a norma e competência exigidas, de acordo com os métodos para demonstrar competência e os critérios para avaliar competência tabelados nas colunas 3 e 4 da tabela A-III/4. A referência feita ao "teste prático" na coluna 3 pode abranger uma aprovada formação realizada em terra, na qual os alunos são submetidos a testes práticos.

4 Quando não houver tabelas de competência para o nível de apoio com relação a certas funções, continua sendo responsabilidade da Administração estabelecer as exigências adequadas para a formação, avaliação e certificação a serem aplicadas ao pessoal designado para desempenhar aquelas funções no nível de apoio.

Tabela A-III/4

Especificação da norma mínima de competência para marítimos de mestrança e marinhagem que fazem parte de um quarto de serviço de máquinas

Função: Engenharia marítima no nível de apoio

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Fazer um quarto de serviço de rotina, apropriado às atribuições de um marítimo de mestrança e marinhagem que faz parte de um quarto de serviço na casa de máquinas Compreender ordens e ser compreendido em questões pertinentes às atribuições relativas ao serviço de quarto	Termos utilizados em compartimentos de máquinas e nomes de máquinas e equipamentos Procedimentos relativos a um serviço de quarto na casa de máquinas Práticas de trabalho seguro relacionadas com as operações na casa de máquinas Procedimentos básicos de protecção ambiental Utilização do sistema de comunicações interiores adequado Sistemas de alarmes da casa de máquinas e habilidade para distinguir entre os vários alarmes, com referência especial aos alarmes de gases utilizados para a extinção de incêndios	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 teste prático	As comunicações são claras e concisas, e é procurado obter informações ou esclarecimentos do oficial de serviço quando as informações ou instruções relativas ao quarto de serviço não são claramente compreendidas A condução, o recebimento e a passagem do quarto de serviço estão de acordo com os princípios e procedimentos aceites

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Para conduzir um quarto de serviço de caldeiras: Manter os níveis da água e as pressões de vapor correctos	Operação segura de caldeiras	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço; .2 experiência em aprovada formação em navio; .3 teste prático; ou .4 aprovada formação em simulador, quando for adequado	A avaliação das condições da caldeira é precisa e se baseia nas informações pertinentes disponíveis dos indicadores locais e remotos e de inspecções físicas A sequência e o momento certo para a realização de ajustes mantêm a segurança e a eficiência máxima

Coluna 1 Competência	Coluna 2 Conhecimento, entendimento e proficiência	Coluna 3 Métodos para demonstrar competência	Coluna 4 Critérios para avaliar competência
Operar equipamentos de emergência e empregar procedimentos de emergência	Conhecimento das atribuições de emergência Rotas de escape dos compartimentos de máquinas Familiaridade com a localização e com a utilização dos equipamentos de combate a incêndio nos compartimentos de máquinas	Avaliação de evidência obtida por demonstrações e de experiência aprovada em serviço, ou de experiência em aprovada formação em navio	A acção inicial ao tomar conhecimento de uma emergência, ou de uma situação anormal, está de acordo com os procedimentos estabelecidos As comunicações são sempre claras e concisas e o recebimento das ordens é acusado de uma maneira marinheira

Secção A-III/5

Requisitos mínimos obrigatórios para a certificação de marítimos de mestrança e marinhagem como marítimos qualificados de máquinas numa casa de máquinas de condução atendida, ou designados para desempenhar atribuições numa casa de máquinas de condução periodicamente desatendida

Norma de competência

1 Deverá ser exigido de todo marítimo qualificado de máquinas que trabalhe num navio que opere na navegação em mar aberto cuja máquina principal tenha uma potência propulsora igual ou superior a 750 kW que demonstre a competência para desempenhar as funções, no nível de apoio, especificadas na coluna 1 da tabela A-III/5.

2 O conhecimento, o entendimento e a proficiência mínimos exigidos de um marítimo qualificado de máquinas que trabalhe num navio que opere na navegação em mar aberto cuja máquina principal tenha uma potência propulsora igual ou superior a 750 kW estão listados na coluna 2 da tabela A-III/5.

3 Deverá ser exigido de todo candidato a certificação que apresente provas de ter atingido a norma de competência exigida, de acordo com os métodos para demonstrar competência e os critérios para avaliar competência especificados nas colunas 3 e 4 da tabela A-III/5.

Tabela A-III/5

Especificação das normas mínimas de competência para marítimos de mestrança e marinhagem como marítimos qualificados de máquinas numa casa de máquinas de condução atendida, ou designados para desempenhar atribuições numa casa de máquinas de condução periodicamente desatendida

Função: Engenharia marítima no nível de apoio

Coluna 1 Competência	Coluna 2 Conhecimento, entendimento e proficiência	Coluna 3 Métodos para demonstrar competência	Coluna 4 Critérios para avaliar competência
Contribuir para um quarto de serviço de máquinas seguro	Habilidade para compreender ordens e de se comunicar com o oficial de serviço em questões pertinentes às atribuições do serviço de quarto Procedimentos para assumir, conduzir e passar o quarto de serviço Informações necessárias para conduzir um quarto de serviço seguro	Avaliação de evidência obtida por experiência em aprovado serviço ou de testes práticos	As comunicações são claras e concisas A condução, a assumpção e a passagem do quarto de serviço estão de acordo com as práticas e procedimentos aceitáveis
Contribuir para a monitorização e o controlo de um quarto de serviço de máquinas	Conhecimento básico da função e da operação de máquinas principais e auxiliares Entendimento básico das pressões de controlo, das temperaturas e dos níveis das máquinas principais e auxiliares	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço; .2 experiência em aprovada formação em navio; ou .3 teste prático	A frequência e a extensão da monitorização das máquinas principais e auxiliares estão de acordo com os princípios e procedimentos aceites As divergências em relação às normas são identificadas As condições inseguras ou os possíveis riscos são prontamente reconhecidos, informados e corrigidos antes que o trabalho prossiga

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Contribuir para as fainas de recebimento e transferência de óleo	Conhecimento da função e da operação do sistema de combustível e das fainas de transferência de óleo, abrangendo: .1 preparo das fainas de recebimento e transferência de Combustível .2 procedimentos para conectar e desconectar os mangotes de recebimento e de transferência de combustível	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço; .2 instrução prática .3 exame .4 experiência em aprovada formação em navio	As fainas de transferência são realizadas de acordo com as práticas de segurança estabelecidas e com as instruções de operação dos equipamentos O manuseio de líquidos perigosos, danosos e potencialmente perigosos está de acordo com as práticas de segurança estabelecidas As comunicações dentro da área de responsabilidade do operador obtêm êxito sistematicamente

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Contribuir para as fainas de recebimento e transferência de óleo (*Continuação)*	.3 procedimentos relacionados com incidentes que podem ocorrer durante fainas de recebimento ou de transferência de combustível .4 desfazer a faina de recebimento e transferência de combustível .5 habilidade para medir e informar correctamente os níveis nos tanques	Avaliação de evidência obtida por demonstração prática	
Contribuir para as operações de esgoto de porão e de lastro	Conhecimento do funcionamento, da operação e da manutenção com segurança dos sistemas de esgoto de porão e de lastro, abrangendo: .1 informação de incidentes relacionados com as fainas de transferência .2 habilidade para medir e informar correctamente os níveis nos tanques	A avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço; .2 instrução prática .3 exame .4 experiência em aprovada instrução em navio Avaliação de evidência obtida por demonstração prática	As operações e a manutenção são realizadas de acordo com as práticas de segurança estabelecidas e com as instruções de operação dos equipamentos, e é evitada a poluição do meio ambiente marinho As comunicações dentro da área de responsabilidade do operador obtêm êxito sistematicamente
Contribuir para a operação de equipamentos e máquinas	Operação segura de equipamentos, abrangendo: .1 válvulas e bombas .2 talhas e equipamentos de içamento .3 escotilhas, portas estanques à água, aberturas e equipamentos relacionados Habilidade para utilizar e compreender os sinais básicos utilizados com o funcionamento de guindastes, guinchos e talhas	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço; .2 instrução prática .3 exame .4 experiência em aprovada instrução em navio Avaliação de evidência obtida por demonstração prática	As operações são realizadas de acordo com as práticas de segurança estabelecidas e com as instruções de operação dos equipamentos As comunicações dentro da área de responsabilidade do operador obtêm êxito sistematicamente

Função: Engenharia electrotécnica, electrónica e de controlo, no nível de apoio

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Utilização de equipamentos eléctricos com segurança	Utilização e funcionamento de equipamentos eléctricos com segurança, abrangendo: .1 precauções de segurança antes de iniciar o trabalho ou os reparos .2 procedimentos de isolamento .3 procedimentos de emergência .4 diferentes tensões existentes a bordo Conhecimento das causas de choques eléctricos e precauções a serem tomadas para evitá-los	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço; .2 instrução prática .3 exame .4 experiência em aprovada formação em navio	Reconhece e informa os riscos eléctricos e os equipamentos inseguros Conhece as tensões seguras para equipamentos manuais Conhece os riscos relacionados com equipamentos de alta tensão e com o trabalho a bordo

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Função: Manutenção e reparação no nível de apoio

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Contribuir para a manutenção e as reparações a bordo	Habilidade para utilizar materiais e equipamentos de pintura, lubrificação e limpeza Habilidade para compreender e de executar procedimentos de rotina de manutenção e reparos Conhecimento das técnicas de preparo de superfícies Conhecimento da retirada de bordo dos restos de material com segurança Entendimento das directrizes de segurança do fabricante e das instruções de bordo Conhecimento do emprego, manutenção e utilização de ferramentas manuais e eléctricas ou hidráulicas e de instrumentos de medida Conhecimento de metalurgia	Avaliação de evidência obtida por demonstração prática Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 instrução prática .3 exame .4 experiência em aprovada formação em navio	As actividades de manutenção são realizadas de acordo com as especificações técnicas, de segurança e de procedimentos A selecção e a utilização de equipamentos e ferramentas é adequada

Função: Controlo da operação do navio e cuidados com as pessoas a bordo, no nível de apoio

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Contribuir para o manuseio de provisões	Conhecimento dos procedimentos para o manuseio, estivagem e fixação de provisões com segurança	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 instrução prática .3 exame .4 experiência em aprovada formação em navio	As operações com suprimentos são realizadas de acordo com as práticas de segurança estabelecidas e com as instruções de operação dos equipamentos O manuseio de provisões perigosas, danosas e potencialmente perigosas está de acordo com as práticas de segurança estabelecidas As comunicações dentro da área de responsabilidade do operador obtêm êxito sistematicamente
Tomar precauções e contribuir para a prevenção da poluição do meio ambiente marinho	Conhecimento das precauções a serem tomadas para prevenir a poluição do meio ambiente marinho Conhecimento da utilização e da operação de equipamentos antipoluição Conhecimento dos métodos aprovados para a disposição de poluentes marinhos	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 instrução prática .3 exame .4 experiência em aprovada formação em navio	Os procedimentos destinados a salvaguardar o meio ambiente marinho são sempre observados

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Utilizar procedimentos De saúde e de segurança do trabalho	Conhecimento prático das práticas de trabalho com segurança e de segurança pessoal a bordo, abrangendo: .1 segurança com electricidade .2 parada e isolamento de máquinas e equipamentos/ desenergização de circuitos eléctricos e colocação de etiquetas de aviso antes de iniciar trabalhos de manutenção ou reparação .3 segurança mecânica .4 sistemas de autorização para trabalhar .5 trabalho em locais elevados .6 trabalho em compartimentos e espaços fechados .7 técnicas de içamento e métodos de prevenir danos às costas .8 segurança ao trabalhar com produtos químicos e riscos biológicos .9 equipamentos de segurança pessoal	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 instrução prática .3 exame .4 experiência em aprovada formação em navio	Os procedimentos destinados a salvaguardar as pessoas e o navio são sempre observados São observadas as práticas de trabalho com segurança, e os equipamentos adequados de segurança e de protecção são sempre utilizados correctamente

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Secção A-III/6

Requisitos mínimos obrigatórios para a certificação de oficiais electrotécnicos

Formação

1 A educação e a formação exigidas no parágrafo 2.3 da Regra III/6 deverão incluir uma formação em técnicas de trabalho em oficina de electrónica e de electricidade, pertinentes às atribuições de um oficial electrotécnico.

Formação a bordo

2 Todo candidato a certificação como oficial electrotécnico deverá seguir um programa apropriado de formação a bordo, que:

.1 assegure que, durante o período exigido de serviço em navegação em mar aberto, o candidato receba uma instrução prática sistemática e adquira experiência nas tarefas, atribuições e responsabilidades de um oficial electrotécnico;

.2 seja atentamente supervisionado e monitorizado por oficiais qualificados e habilitados, a bordo dos navios em que for realizado o aprovado serviço em navegação em mar aberto; e

.3 seja adequadamente documentado num livro registo da formação.

Norma de competência

3 Deverá ser exigido de todo candidato a certificação como oficial electrotécnico que demonstre habilidade para desempenhar as tarefas, atribuições e responsabilidades listadas na coluna 1 da tabela A-III/6.

4 O conhecimento, o entendimento e a proficiência mínimos exigidos para a certificação estão listados na coluna 2 da tabela A-III/6 e deverão levar em consideração as orientações fornecidas na Parte B deste Código.

5 Deverá ser exigido de todo candidato a certificação que forneça provas de ter atingido a norma de competência exigida, tabelado nas colunas 3 e 4 da tabela A-III/6.

Tabela A-III/6

Especificação das normas mínimas de competência para oficiais electrotécnicos

Função: Engenharia electrotécnica, electrónica e de controlo, no nível operacional

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Monitorizar o funcionamento de sistemas eléctricos, electrónicos e de controlo	Entendimento básico do funcionamento de sistemas mecânicos de máquinas, abrangendo: .1 accionadores principais, inclusive a instalação de propulsão principal .2 máquinas auxiliares da casa de máquinas .3 sistemas de governo .4 sistemas de manuseio de carga .5 máquinas de convés .6 sistemas de hotelaria Conhecimento básico de transmissão de calor, mecânica e hidromecânica *Conhecimento de:* Electro-tecnologia e teoria de máquinas eléctricas Fundamentos de electrónica e de electrónica de potência Quadros de distribuição de energia eléctrica e equipamentos Eléctricos Fundamentos de automação, sistemas e tecnologia de controlo automático	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço; .2 experiência em aprovada formação em navio; .3 aprovada formação em simulador, quando for adequado .4 aprovada formação em equipamentos de laboratório	A operação de equipamentos e sistemas está de acordo com os manuais de operação Os níveis de desempenho estão de acordo com as especificações técnicas

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Monitorizar o funcionamento de sistemas eléctricos, electrónicos e de controlo (*Continuação*)	Instrumentação, sistemas de alarme e de monitorização Accionadores eléctricos Tecnologia de materiais eléctricos Sistemas de controlo electro-hidráulicos e electropneumáticos Avaliação dos riscos e precauções necessárias para a operação de sistemas eléctricos com tensão superior a 1.000 volts		

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Monitorizar o funcionamento de sistemas de controlo automático das máquinas principais e auxiliares	Preparo dos sistemas de controlo e das máquinas auxiliares para funcionar	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço; .2 experiência em aprovada formação em navio; .3 aprovada formação em simulador, quando for adequado .4 aprovada formação em equipamentos de laboratório	A vigilância da instalação de propulsão principal e dos sistemas auxiliares é suficiente para manter condições de funcionamento com segurança
Operar geradores e sistemas de distribuição	Acoplamento, divisão da carga e passagem da carga de um gerador para outro Acoplamento e abertura da conexão entre quadros eléctricos e painéis de distribuição	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço; .2 experiência em aprovada formação em navio; .3 aprovada formação em simulador, quando for adequado .4 aprovada formação em equipamentos de laboratório	As operações são planejadas e realizadas de acordo com os manuais de operação, com regras e procedimentos estabelecidos para assegurar a segurança das operações Os sistemas eléctricos de distribuição podem ser compreendidos e explicados com planos/instruções

Coluna 1	**Coluna 2**	**Coluna 3**	**Coluna 4**
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Operar e manter sistemas de força com uma tensão superior a 1.000 volts	*Conhecimento teórico* Tecnologia de alta tensão Precauções e procedimentos de segurança Propulsão eléctrica dos navios, motores eléctricos e sistemas de controlo *Conhecimento prático* Operação e manutenção de sistemas de alta tensão com segurança, inclusive conhecimento de tipos técnicos especiais de sistemas de alta tensão e os perigos decorrentes de uma tensão de funcionamento superior a 1.000 volts	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço; .2 experiência em aprovada formação em navio; .3 aprovada formação em simulador, quando for adequado .4 aprovada formação em equipamentos de laboratório	As operações são planeadas e realizadas de acordo com os manuais de operação, com regras e procedimentos estabelecidos para assegurar a segurança das operações
Operar computadores e redes de computadores em navios	Entendimento de: .1 principais aspectos do processamento de dados .2 instalação e utilização de redes de computadores em navios .3 utilização de computadores instalados na ponte de comando, na casa de máquinas e de computadores comerciais	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço; .2 experiência em aprovada formação em navio; .3 aprovada formação em simulador, quando for adequado .4 aprovada formação em equipamentos de laboratório	As redes de computadores e os computadores são verificados e manuseados correctamente
Uso da língua inglesa nas formas escrita e oral	Conhecimento adequado da língua inglesa, para permitir que o oficial utilize publicações de máquinas e desempenhe as atribuições de oficial	Exame e avaliação de evidência obtida por uma instrução prática	As publicações na língua inglesa, pertinentes às atribuições do oficial, são correctamente interpretadas As comunicações são claras e compreendidas

Coluna 1	**Coluna 2**	**Coluna 3**	**Coluna 4**
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Utilização dos sistemas de comunicações interiores	Operação de todos os sistemas de comunicações interiores existentes a bordo	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador, quando for adequado .4 aprovada formação em equipamentos de laboratório	A transmissão e a recepção das mensagens obtêm êxito sistematicamente Os registos das comunicações são completos, precisos e atendem às exigências regulamentares

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Função: Manutenção e reparação no nível operacional

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Manutenção e reparação de equipamentos eléctricos e electrónicos	Requisitos de segurança para trabalhar em sistemas eléctricos de bordo, inclusive o isolamento de segurança de equipamentos eléctricos, necessário antes que as pessoas sejam autorizadas a trabalhar nesses equipamentos Manutenção e reparação de equipamentos de sistemas eléctricos, quadros eléctricos, motores eléctricos, geradores e sistemas e equipamentos eléctricos de corrente contínua Detecção de mau funcionamento de equipamentos eléctricos, localização dos defeitos e medidas para impedir avarias Construção e operação de equipamentos eléctricos de teste e de medida Teste de funcionamento e de desempenho dos seguintes equipamentos e a sua configuração: .1 sistemas de monitorização .2 dispositivos de controlo automático .3 dispositivos de protecção A interpretação de diagramas eléctricos e electrónicos	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 aprovada formação em técnicas de oficina .2 experiência prática e testes aprovados .3 experiência aprovada em Serviço .4 experiência em aprovada formação em navio	As medidas de segurança para trabalhar são adequadas A selecção e a utilização de ferramentas manuais, dos instrumentos de medida e dos equipamentos de teste são apropriadas e a interpretação dos resultados é precisa A desmontagem, inspecção, reparo e remontagem dos equipamentos estão de acordo com os manuais e com as boas práticas Os testes relativos à remontagem e ao desempenho estão de acordo com os manuais e com as boas práticas

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Manutenção e reparação de sistemas de automação e de controlo das máquinas principais e auxiliares	Conhecimento e habilidades adequados de electricidade e de mecânica *Procedimentos de segurança e de emergência* Isolamento seguro de equipamentos e de sistemas relacionados é necessário antes que as pessoas sejam autorizadas a trabalhar naquela instalação ou naqueles equipamentos Conhecimento prático para o teste, manutenção, descoberta de defeitos e reparos Testar, detectar defeitos, manter e restabelecer as condições de funcionamento de equipamentos eléctricos e electrónicos de controlo	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência aprovada em serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador, quando for adequado .4 aprovada formação em equipamentos de laboratório	O efeito de defeitos sobre a instalação e os sistemas relacionados é precisamente identificado, os planos técnicos do navio são correctamente interpretados, os instrumentos de medida e de aferição são utilizados correctamente e as acções realizadas se justificam O isolamento, a desmontagem e a remontagem da instalação e dos equipamentos estão de acordo com as directrizes de segurança do fabricante, com as instruções de bordo e com as especificações legais e de segurança. As acções realizadas levam ao restabelecimento dos sistemas de automação e de controlo pelo método mais adequado e apropriado para as circunstâncias e as condições existentes
Manutenção e reparação de equipamentos de navegação da ponte de comando e dos sistemas de comunicações do navio	Conhecimento dos princípios e procedimentos de manutenção de equipamentos de navegação e de sistemas de comunicações interiores e externas *Conhecimento teórico:* Sistemas eléctricos e electrónicos que funcionam em locais inflamáveis *Conhecimento prático:* Realizar procedimentos de manutenção e reparos com segurança Detecção de mau funcionamento das máquinas, localização de defeitos e acções para prevenir avarias		O efeito de defeitos sobre a instalação e aos sistemas relacionados é precisamente identificado, os planos técnicos são correctamente interpretados, os instrumentos de medida e de aferição são utilizados correctamente e as acções realizadas se justificam O isolamento, a desmontagem e a remontagem da instalação e dos equipamentos estão de acordo com as directrizes de segurança do fabricante, com as instruções de bordo e com as especificações legais e de segurança. As acções realizadas levam ao restabelecimento dos equipamentos de navegação da ponte de comando e dos sistemas de comunicações do navio pelo método mais adequado e apropriado para as circunstâncias e as condições existentes

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Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Manutenção e reparação de sistemas eléctricos e electrónicos de controlo das máquinas de convés e dos equipamentos de manuseio de carga	Conhecimento e habilidades adequados de electricidade e de mecânica *Procedimentos de segurança e de emergência* Isolamento seguro de equipamentos e de sistemas relacionados é necessário antes que as pessoas sejam autorizadas a trabalhar naquela instalação ou naqueles equipamentos Conhecimento prático para o teste, a manutenção, a descoberta de defeitos e os reparos Testar, detectar defeitos, manter e restabelecer as condições de funcionamento de equipamentos eléctricos e electrónicos de controlo	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 aprovada formação em técnicas de oficina .2 experiência prática e testes aprovados .3 aprovada formação em simulador, quando for adequado .4 experiência em aprovada formação em navio	O efeito de defeitos sobre a instalação e os sistemas relacionados é precisamente identificado, os planos técnicos são correctamente interpretados, os instrumentos de medida e de aferição são utilizados correctamente e as acções realizadas se justificam O isolamento, a desmontagem e a remontagem da instalação e dos equipamentos estão de acordo com as directrizes de segurança do fabricante, com as instruções de bordo e com as especificações legais e de segurança. As acções realizadas levam ao restabelecimento das máquinas de convés e dos equipamentos de manuseio de carga pelo método mais adequado e apropriado para as circunstâncias e as condições existentes
Manutenção e reparação dos sistemas de controlo e segurança dos equipamentos de hotelaria	*Conhecimento teórico* Sistemas eléctricos e electrónicos que funcionam em locais inflamáveis *Conhecimento prático* Realizar procedimentos de manutenção e reparação com segurança Detecção de mau funcionamento das máquinas, localização de defeitos e acções para prevenir avarias		O efeito de defeitos sobre a instalação e os sistemas relacionados é precisamente identificado, os planos técnicos são correctamente interpretados, os instrumentos de medida e de aferição são utilizados correctamente e as acções realizadas se justificam O isolamento, a desmontagem e a remontagem da instalação e dos equipamentos estão de acordo com as directrizes de segurança do fabricante, com as instruções de bordo e com as especificações legais e de segurança. As acções realizadas levam ao restabelecimento dos sistemas de controlo e de segurança dos equipamentos de hotelaria pelo método mais adequado e apropriado para as circunstâncias e as condições existentes

Função: Controlo da operação do navio e cuidados com as pessoas a bordo, no nível operacional

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Assegurar o atendimento às exigências relativas à prevenção da poluição	*Prevenção da poluição do meio ambiente marinho* Conhecimento das precauções a serem tomadas para prevenir a poluição do meio ambiente marinho Procedimentos antipoluição e todos os equipamentos relacionados com eles A importância de medidas efectivas para proteger o meio ambiente marinho	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência aprovada em serviço .2 experiência em aprovada formação em navio .3 aprovada formação	Os procedimentos para monitorizar as operações a bordo e para assegurar o atendimento às exigências relativas à prevenção da poluição são plenamente observados Ações para assegurar que seja mantida uma reputação ambiental favorável

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Prevenir, controlar e combater incêndios a bordo	*Equipamentos de prevenção de incêndio e de combate a incêndio* Habilidade para organizar exercícios de incêndio Conhecimento das classes de incêndio e da química do fogo Conhecimento dos sistemas de combate a incêndio Acções a serem realizadas em caso de incêndio, inclusive de incêndios envolvendo sistemas de óleo	Avaliação das informações obtidas da formação e da experiência aprovadas em combate a incêndio, como especificado na Secção A-VI/3, parágrafos 1 a 3	O tipo e as proporções do problema são prontamente identificados e as acções iniciais estão de acordo com o procedimento de emergência e com os planos de contingência para o navio Os procedimentos de evacuação, parada e isolamento das máquinas em emergência são adequados à natureza da emergência e são executados prontamente A ordem de prioridade, os níveis e a cronologia de relatar as ocorrências e dar informações às pessoas a bordo são pertinentes à natureza da emergência e reflectem a urgência do problema
Operar dispositivos salva-vidas	*Salva-vidas* Habilidade para organizar exercícios de abandono do navio e conhecimento da operação de embarcações de sobrevivência e de embarcações de salvamento, de seus aparelhos e dispositivos de lançamento e de seus equipamentos, inclusive dos aparelhos de rádio salva-vidas, EPIRBs por satélite, SARTs, roupas de imersão e auxílios de protecção térmica	Avaliação das informações obtidas da formação e da experiência aprovadas, como especificado na Secção A-VI/2, parágrafos 1 a 4	As acções realizadas para responder às situações de abandono do navio e de sobrevivência são adequadas às circunstâncias e às condições existentes e estão de acordo com as práticas e as normas de segurança aceites

Coluna 1	**Coluna 2**	**Coluna 3**	**Coluna 4**
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Prestar os primeiros socorros Médicos a bordo do navio	*Assistência médica* Emprego prático de guias médicos e de recomendações pelo rádio, inclusive a habilidade para realizar acções efectivas com base nesse conhecimento em caso de acidentes ou de doenças que possam ocorrer a bordo do navio	Avaliação das informações obtidas da aprovada formação, como especificado na Secção A-VI/4, parágrafos 1 a 3	A identificação da causa provável, da natureza e da extensão dos ferimentos ou da condição indicada é rápida e o tratamento minimiza a ameaça à vida
Emprego da liderança e da habilidade para trabalhar em equipa	Conhecimento prático de gestão e de formação do pessoal de bordo Habilidade para empregar a gestão de tarefas e da carga de trabalho, inclusive: .1 planeamento e coordenação .2 designação de pessoal .3 escassez de tempo e de recursos .4 atribuição de prioridades Conhecimento e habilidade para empregar uma gestão de recursos eficaz: .1 alocação, atribuição e priorização de recursos .2 comunicação efectiva a bordo e em terra .3 as decisões reflectem o facto de levar em consideração as experiências da equipa .4 firmeza e liderança, inclusive Motivação .5 obtenção e manutenção do conhecimento da situação	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 aprovada formação .2 experiência em aprovado serviço .3 demonstração prática	São distribuídas atribuições à tripulação e ela é informada dos padrões de trabalho e de comportamento esperados, de uma maneira adequada às pessoas envolvidas Os objectivos e as actividades da formação estão baseados na avaliação da competência e das capacitações atuais e nos requisitos operacionais As operações são planeadas e os recursos são alocados como necessário, na prioridade correta para desempenhar as tarefas necessárias A comunicação é dada e recebida de maneira clara e não ambígua São demonstrados comportamentos de uma liderança efectiva Os membros necessários da equipa compartilham um entendimento preciso da situação actual e prevista da embarcação, das operações e do ambiente externo As decisões são as mais eficazes para a situação

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Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Emprego da liderança e da habilidade para trabalhar em equipa (*Continuação)*	Conhecimento e habilidade para empregar técnicas de tomada de decisões: .1 Avaliação da situação e dos riscos .2 Identificar e considerar as opções geradas .3 Seleccionar a linha de acção .4 Avaliação da eficácia do resultado		
Contribuir para a segurança do pessoal e do navio	Conhecimento das técnicas de sobrevivência pessoal Conhecimento de prevenção de incêndios e habilidade de combater e extinguir incêndios Conhecimento de primeiros socorros elementares Conhecimento de segurança pessoal e das responsabilidades sociais	Avaliação das informações obtidas da formação e da experiência aprovadas, como especificado na Secção A-VI/1, parágrafo 2	Os equipamentos adequados de segurança e de protecção são correctamente utilizados Os procedimentos e as práticas de trabalho com segurança, destinados a salvaguardar o pessoal e o navio, são sempre observados Os procedimentos destinados a salvaguardar o meio ambiente são sempre observados As acções iniciais e de acompanhamento ao tomar conhecimento de uma emergência estão de acordo com os procedimentos de resposta a emergências estabelecidos

Secção A-III/7

Requisitos mínimos obrigatórios para a certificação de marítimos de mestrança electrotécnicos

1 Deverá ser exigido de todo marítimo de mestrança electrotécnico que sirva em um navio que opere na navegação em mar aberto, cuja máquina principal tenha uma potência propulsora igual ou superior a 750 kW, que demonstre competência para desempenhar as funções especificadas na coluna 1 da tabela A-III/7, no nível de apoio.

2 O conhecimento, o entendimento e a proficiência mínimos exigidos de um marítimo de mestrança electrotécnico que sirva em um navio que opere na navegação em mar aberto, cuja máquina principal tenha uma potência propulsora igual ou superior a 750 kW, estão listados na coluna 2 da tabela A-III/7.

3 Deverá ser exigido de todo candidato a certificação que forneça provas de ter atingido a norma de competência, de acordo com os métodos para demonstrar competência e os critérios para avaliar competência tabelados nas colunas 3 e 4 da tabela A-III/7.

Tabela A-III/7

Especificação das normas mínimas de competência para marítimos de mestrança electrotécnicos

Função: Engenharia electrotécnica, electrónica e de controlo no nível de apoio

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Utilização de equipamentos eléctricos com segurança	Utilização e funcionamento de equipamentos eléctricos com segurança, abrangendo: .1 precauções de segurança antes de iniciar o trabalho ou os reparos .2 procedimentos de isolamento .3 procedimentos de emergência .4 diferentes tensões existentes a bordo Conhecimento das causas de choques eléctricos e precauções a serem tomadas para evitá-los	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço; .2 formação prática .3 exame .4 experiência em aprovada formação em navio	Entende e segue as instruções de segurança de equipamentos e máquinas eléctricas Reconhece e informa os riscos eléctricos e os equipamentos inseguros Entende as tensões seguras para equipamentos manuais Entende os riscos relacionados com equipamentos de alta tensão e com o trabalho a bordo
Contribuir para monitorizar o funcionamento de sistemas e máquinas eléctricas	Conhecimento básico do funcionamento de sistemas mecânicos de máquinas, abrangendo: .1 accionadores principais, inclusive a instalação de propulsão principal .2 máquinas auxiliares da casa de máquinas .3 sistemas de governo .4 sistemas de manuseio de carga .5 máquinas de convés .6 sistemas de hotelaria	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço; .2 formação prática .3 exame .4 experiência em aprovada formação em navio	Conhecimento que assegure que: .1 a operação dos equipamentos e sistemas esteja de acordo com os manuais de operação .2 os níveis de desempenho estejam de acordo com as especificações técnicas

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Coluna 1 Competência	Coluna 2 Conhecimento, entendimento e proficiência	Coluna 3 Métodos para demonstrar competência	Coluna 4 Critérios para avaliar competência
Contribuir para monitorizar o funcionamento de sistemas e máquinas eléctricas (*Continuação)*	*Conhecimento básico de:* .1 tecnologia de electricidade e teoria de máquinas eléctricas .2 quadros de distribuição de energia eléctrica e equipamentos Eléctricos .3 fundamentos de automação, de sistemas e tecnologia de controlo automático .4 instrumentação, sistemas de alarme e de monitorização .5 accionadores eléctricos .6 sistemas de controlo electro-hidráulicos e electropneumáticos .7 acoplamento, divisão da carga e alterações na configuração eléctrica		
Utilizar ferramentas manuais e equipamentos eléctricos e electrónicos de medida para pesquisa de avarias, operações de manutenção e de reparação	Requisitos de segurança para trabalhar em sistemas eléctricos de bordo Emprego de práticas de trabalho com segurança *Conhecimento básico de:* .1 construção e características de funcionamento de sistemas e equipamentos de corrente alternada e contínua de bordo .2 utilização de instrumentos de medida, máquinas ferramentas e ferramentas manuais e eléctricas	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 aprovada formação em técnicas de oficina .2 experiência prática e testes aprovados	O cumprimento dos procedimentos de segurança é satisfatório A selecção e a utilização de equipamentos de teste é apropriada e a interpretação dos resultados é precisa A selecção dos procedimentos para a realização de reparos e de manutenção está de acordo com os manuais e as boas práticas

Função: Manutenção e reparação no nível de apoio

Coluna 1 Competência	Coluna 2 Conhecimento, entendimento e proficiência	Coluna 3 Métodos para demonstrar competência	Coluna 4 Critérios para avaliar competência
Contribuir para a manutenção e as reparações a bordo	Habilidade para utilizar materiais e equipamentos de lubrificação e limpeza Conhecimento da retirada de bordo de restos de material com segurança Habilidade para compreender e de executar procedimentos de rotina de manutenção e reparos Entendimento das directrizes de segurança do fabricante e das instruções de bordo	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 instrução prática .3 exame .4 experiência em aprovada instrução em navio	As actividades de manutenção são realizadas de acordo com as especificações técnicas de segurança e de procedimentos A selecção e a utilização de equipamentos e ferramentas é adequada
Contribuir para a manutenção e os reparos de sistemas e máquinas eléctricas a bordo	*Procedimentos de segurança e de emergência* Conhecimento básico dos planos eléctricos e mecânicos e do isolamento de segurança de equipamentos e sistemas relacionados, necessário antes que as pessoas sejam autorizadas a trabalhar naquela instalação ou naqueles equipamentos Testar, detectar defeitos, manter e restabelecer as condições de funcionamento de equipamentos e máquinas eléctricos de controlo Sistemas eléctricos e electrónicos que funcionam em locais inflamáveis Fundamentos dos sistemas de detecção de incêndio do navio Realização de procedimentos seguros de manutenção e reparo Detecção de mau funcionamento nas máquinas, localização dos defeitos e acções para prevenir avarias Manutenção e reparo de luminárias/ candeeiros fixas e de sistemas de abastecimento	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador, quando for adequado .4 aprovada formação de equipamentos de laboratório	O efeito de defeitos sobre a instalação e os sistemas relacionados é precisamente identificado, os planos técnicos do navio são correctamente interpretados, os instrumentos de medida e de aferição são utilizados correctamente e as acções realizadas se justificam O isolamento, a desmontagem e a remontagem da instalação e dos equipamentos estão de acordo com as orientações de segurança do fabricante e com as instruções de bordo

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Função: Controlo da operação do navio e cuidados com as pessoas a bordo, no nível de apoio

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Contribuir para o manuseio de provisões	Conhecimento dos procedimentos para o manuseio, a armazenagem e a fixação de provisões com segurança	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 instrução prática .3 exame .4 experiência em aprovada instrução em navio	As fainas de armazenagem de provisões são realizadas de acordo com as práticas de segurança estabelecidas e com as instruções de operação dos equipamentos O manuseio de provisões perigosos, danosos e potencialmente perigosos está de acordo com as práticas de segurança estabelecidas As comunicações dentro da área de responsabilidade do operador obtêm êxito sistematicamente
Tomar precauções e contribuir para a prevenção da poluição do meio ambiente marinho	Conhecimento das precauções a serem tomadas para prevenir a poluição do meio ambiente marinho Conhecimento da utilização e da operação de equipamentos/ agentes anti-poluição Conhecimento dos métodos aprovados para a retirada de bordo de poluentes marinhos	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 instrução prática .3 exame .4 experiência em aprovada instrução em navio	Os procedimentos destinados a salvaguardar o meio ambiente marinho são sempre observados

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Utilizar procedimentos de saúde e de segurança do trabalho	Conhecimento prático das práticas de trabalho com segurança e de segurança pessoal a bordo, abrangendo: .1 segurança com electricidade .2 parada e isolamento de máquinas e equipamentos/ desenergização de circuitos eléctricos e colocação de etiquetas de aviso antes de iniciar trabalhos de manutenção ou reparação .3 segurança mecânica .4 sistemas de autorização para trabalhar .5 trabalho em locais elevados .6 trabalho em compartimentos e espaços fechados .7 técnicas de içamento e métodos de prevenir danos às costas .8 segurança ao trabalhar com produtos químicos e riscos biológicos .9 equipamentos de segurança pessoal	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 instrução prática .3 exame .4 experiência em aprovada instrução em navio	Os procedimentos destinados a salvaguardar as pessoas e o navio são sempre observados São observadas as práticas de trabalho com segurança, e os equipamentos adequados de segurança e de protecção são sempre utilizados correctamente

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CAPÍTULO IV

Normas relativas a radio-operadores

Secção A-IV/1

Aplicação

(Nenhuma disposição)

Secção A-IV/2

Requisitos mínimos obrigatórios para a certificação de radio-operadores do GMDSS

Norma de competência

1 O conhecimento, o entendimento e a proficiência mínimos exigidos para a certificação de radio-operadores do GMDSS deverão ser suficientes para que os radio-operadores desempenhem suas atribuições de radiocomunicações. O conhecimento exigido para obter cada tipo de certificado estabelecido no Regulamento de Radiocomunicações deverá estar de acordo com esse regulamento. Além disto, deverá ser exigido de todo candidato a certificação de competência que demonstre a aptidão para realizar as tarefas, atribuições e responsabilidades listadas na coluna 1 da tabela A-IV/2.

2 O conhecimento, o entendimento e a proficiência para autenticação, com base na Convenção, de certificados emitidos de acordo com o disposto no Regulamento de Radiocomunicações, estão listados na coluna 2 da tabela A-IV/2.

3 O nível de conhecimento dos assuntos listados na coluna 2 da tabela A-IV/2 deverá ser suficiente para que os candidatos desempenhem suas atribuições[88].

4 Todo candidato deverá fornecer provas de ter atingido a norma de competência exigido, mediante:

.1 demonstração de competência para desempenhar as tarefas e as atribuições e para assumir as responsabilidades listadas na coluna 1 da tabela A-IV/2, de acordo com os métodos para demonstrar competência e os critérios para avaliar competência tabelados nas colunas 3 e 4 daquela tabela; e

.2 exame ou avaliação contínua, como parte de um curso de formação aprovado, com base no material especificado na coluna 2 da tabela A-IV/2.

[88]O(s) Curso(s) Modelo da IMO pode(m) ser de ajuda na elaboração de cursos

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Tabela A-IV/2

Especificação da norma mínima de competência para radio-operadores do GMDSS

Função: Radiocomunicações no nível operacional

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Transmitir e receber informações Utilizando os subsistemas e os equipamentos do GMDSS e cumprir as exigências funcionais do GMDSS	Além das exigências do Regulamento de Radiocomunicações, um conhecimento de: .1 radiocomunicações para busca e salvamento, inclusive os procedimentos do Manual Internacional Aeronáutico e Marítimo de Busca e Salvamento (IAMSAR) .2 meios para impedir a transmissão de alertas de perigo falsos e dos procedimentos para atenuar os efeitos desses alertas .3 sistemas de envio de informações por navios .4 serviços médicos via rádio .5 utilização do Código Internacional de Sinais e das Expressões Norma de Comunicação Marítima, da IMO .6 a língua inglesa, tanto escrito como falado, para o envio de informações pertinentes à segurança da vida humana no mar *Nota:* Esta exigência pode ser reduzida no caso de Certificado de Radio-operador Restrito	Exame e avaliação de informações obtidas de demonstração prática de procedimentos operacionais, utilizando: .1 equipamentos aprovados .2 simulador de comunicação do GMDSS, quando for adequado[3] .3 equipamentos de radiocomunicações de laboratório	A transmissão e a recepção de comunicações estão de acordo com os regulamentos e procedimentos internacionais e são realizadas de maneira eficiente e eficaz As mensagens na língua inglesa, pertinentes à segurança do navio e das pessoas a bordo e à protecção do meio ambiente marinho são feitas correctamente

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Prestar serviços de rádio em emergências	A prestação de serviços de rádio em emergências, como: .1 abandono do navio .2 incêndio a bordo do navio .3 paralisação parcial ou total das instalações de rádio Medidas preventivas para a segurança do navio e das pessoas, juntamente com os riscos relacionados com os equipamentos de rádio, inclusive os riscos da radiação eléctrica e da radiação não ionizante	Exame e avaliação de informações obtidas de demonstração prática de procedimentos operacionais, utilizando: .1 equipamentos aprovados .2 simulador de comunicação do GMDSS, quando for adequado[4] .3 equipamentos de radiocomunicações de laboratório	A reacção é feita de maneira eficiente e eficaz

CAPÍTULO V

Normas relativas a exigências especiais de formação para as pessoas em certos tipos de navios

Secção A-V/1-1

Requisitos mínimos obrigatórios para a formação e a qualificação de comandantes, oficiais e marítimos de mestrança e marinhagem em petroleiros e em navios-tanque para produtos químicos

Norma de competência

1 Deverá ser exigido de todo candidato a certificação em formação básica para operações com a carga de petroleiros e de navios-tanque para produtos químicos que:

.1 demonstre competência para assumir as tarefas, atribuições e responsabilidades listados na coluna 1 da tabela A-V/1-1-1; e

.2 forneça provas de ter obtido:

.2.1 o conhecimento, o entendimento e a proficiência mínimos listados na coluna 2 da tabela A-V/1-1-1, e

.2.2 a norma de competência exigida, de acordo com os métodos para demonstrar competência e os critérios para avaliar competência tabelados nas colunas 3 e 4 da tabela A-V/1-1-1.

2 Deverá ser exigido de todo candidato a certificação em formação avançada para operações com a carga de petroleiros que:

.1 demonstre competência para assumir as tarefas, serviços e responsabilidades listados na coluna 1 da tabela A-V/1-1-2; e

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.2 forneça provas de ter obtido:

.2.1 o conhecimento, a entendimento e a proficiência mínimos listados na coluna 2 da tabela A-V/1-1-2, e

.2.2 a norma de competência exigida, de acordo com os métodos para demonstrar competência e os critérios para avaliar competência tabelados nas colunas 3 e 4 da tabela A-V/1-1-2.

3 Deverá ser exigido de todo candidato a certificação em formação avançada para operações com a carga de navios-tanque para produtos químicos que:

.1 demonstre competência para assumir as tarefas, atribuições e responsabilidades listados na coluna 1 da tabela A-V/1-1-3; e

.2 forneça provas de ter obtido:

.2.1 o conhecimento, a entendimento e a proficiência mínimos listados na coluna 2 da tabela A-V/1-1-3, e

.2.2 a norma de competência exigida, de acordo com os métodos para demonstrar competência e os critérios para avaliar competência tabelados nas colunas 3 e 4 da tabela A-V/1-1-3.

Tabela A-V/1-1-1

Especificação da norma mínima de competência em formação básica para operações com a carga de petroleiros e de navios-tanque para produtos químicos

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Contribuir para a operação segura com a carga de petroleiros e navios-tanque para produtos químicos	Conhecimento básico de navios-tanque: .1 tipos de petroleiros e de navios-tanque para produtos químicos .2 arranjo geral e construção Conhecimento básico de operações com a carga: .1 sistemas de tubulações e válvulas .2 bombas de carga .3 carregamento e descarregamento .4 limpeza de tanques, retirada de impurezas, desgaseificação e inertização Conhecimento básico das propriedades físicas do óleo e dos produtos químicos: .1 pressão e temperatura, inclusive da relação entre a pressão de vaporização e a temperatura .2 tipos de geração de carga electrostática .3 símbolos químicos Conhecimento e entendimento da cultura de segurança de navios-tanque e da gestão da segurança	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador .4 aprovado programa de formação	As comunicações na área de responsabilidade do operador são claras e eficazes As operações com a carga são realizadas de acordo com os princípios e procedimentos aceites, para assegurar a segurança das operações

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Tomar precauções para prevenir riscos	Conhecimento básico dos riscos relacionados com as operações de navios-tanque, abrangendo: .1 riscos à saúde .2 riscos ambientais .3 riscos de reacções químicas .4 riscos de corrosão .5 riscos de explosão e de inflamabilidade .6 fontes de ignição, inclusive riscos de electricidade estática .7 riscos de toxidade .8 vazamento e nuvens de vapores Conhecimento básico de controlo de riscos: .1 inertização, colchão d'água, agentes secantes e técnicas de monitorização .2 medidas anti-estática .3 ventilação .4 segregação .5 inibição da carga .6 importância da compatibilidade das cargas .7 controlo atmosférico .8 teste de presença de gás Entendimento das informações contidas numa Folha de Dados de Segurança do Material (MSDS)	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador .4 aprovado programa de formação	Identifica correctamente, numa MSDS, os riscos pertinentes relacionados com a carga, à embarcação e às pessoas, e realiza acções adequadas, de acordo com procedimentos estabelecidos A identificação e as acções ao tomar conhecimento de uma situação de risco estão de acordo com procedimentos estabelecidos, de acordo com a melhor prática

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Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Tomar precauções e empregar medidas de saúde e de segurança do trabalho	Função e utilização correta de instrumentos de medida da presença de gases e de equipamentos semelhantes Utilização correta de equipamentos e dispositivos de protecção, abrangendo: .1 aparelhos de respiração e equipamentos para a evacuação de tanques .2 roupas e equipamentos de protecção .3 ressuscitadores .4 equipamentos de salvamento e escape Conhecimento básico de práticas e procedimentos de trabalho com segurança de acordo com a legislação e as directrizes da indústria, e de segurança pessoal a bordo, pertinente a petroleiros e navios-tanque para produtos químicos, abrangendo: .1 precauções a serem tomadas ao entrar em espaços e compartimentos fechados .2 precauções a serem tomadas antes e durante trabalhos de reparos e de manutenção .3 medidas de segurança para trabalho a quente e a frio .4 segurança ao trabalhar com electricidade .5 lista de verificação de segurança do navio/de terra Conhecimento básico de primeiros socorros, com referência a uma Folha de Dados de Segurança do Material (MSDS)	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador .4 aprovado programa de formação	São observados os procedimentos para a entrada em espaços e compartimentos fechados Os procedimentos e as práticas de trabalho com segurança destinados a salvaguardar as pessoas e o navio são sempre observados Os equipamentos de segurança e de protecção adequados são utilizados correctamente O que fazer e o que não fazer em primeiros socorros

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Realizar operações de combate a incêndio	Organização da reacção a incêndio de navios-tanque e acções a serem tomadas Riscos de incêndio relacionados com o manuseio de carga e o transporte de líquidos a granel danosos e nocivos Agentes de combate a incêndio utilizados para extinguir incêndios em óleo e em produtos químicos Operações com sistemas fixos de combate a incêndio que utilizam espuma Operações com extintores portáteis que utilizam espuma Operações com sistema fixo de pó químico Contenção de derramamentos relacionada com operações de combate a incêndio	Exercícios práticos e formação, realizados de acordo com uma aprovada formação e em condições verdadeiramente realistas (ex.: condições de bordo simuladas) e, sempre que possível e praticável, no escuro	As acções iniciais e de acompanhamento realizadas ao tomar conhecimento de um incêndio a bordo estão de acordo com as práticas e procedimentos estabelecidos As acções realizadas ao identificar o sinal de guarnecer postos de incêndio são adequadas à emergência indicada e estão de acordo com os procedimentos estabelecidos As roupas e os equipamentos são adequados à natureza das operações de combate a incêndio O momento da realização e a sequência de cada acção são adequados às circunstâncias e às condições existentes A extinção do incêndio é conseguida utilizando procedimentos, técnicas e agentes de combate a incêndio adequados

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Reagir a emergências	Conhecimento básico de procedimentos de emergência, inclusive a parada e o isolamento das máquinas em emergência	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador .4 aprovado programa de formação	O tipo e o impacto da emergência são prontamente identificados e as acções de reacção estão de acordo com os procedimentos de emergência estabelecidos e com os planos de contingência

Coluna 1	**Coluna 2**	**Coluna 3**	**Coluna 4**
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Tomar precauções para prevenir a poluição do meio ambiente por libertação /descarga de óleo ou de produtos químicos	Conhecimento básico dos efeitos da poluição por óleo e produtos químicos sobre a vida humana e a vida marinha Conhecimento básico dos procedimentos de bordo para prevenir a poluição Conhecimento básico das medidas a serem tomadas em caso de derramamento, inclusive da necessidade de: .1 enviar informações pertinentes às pessoas responsáveis .2 ajudar no cumprimento dos procedimentos de bordo para conter vazamentos	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador .4 aprovado programa de formação	Os procedimentos destinados a salvaguardar o meio ambiente são sempre observados

Tabela A-V/1-1-2

Especificação da norma mínima de competência em formação avançada para operações com a carga de petroleiros

Coluna 1	**Coluna 2**	**Coluna 3**	**Coluna 4**
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**

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Habilidade para realizar e monitorizar com segurança todas as operações com a carga	*Projecto e características de um petroleiro* Conhecimento do projecto, de sistemas e dos equipamentos do petroleiro, abrangendo: .1 arranjo geral e construção .2 arranjo e equipamentos de bombeamento .3 arranjo dos tanques, do sistema de canalizações e de suspiro de tanques .4 sistemas de indicação de nível dos tanques e de alarme .5 sistemas de aquecimento da carga .6 sistemas de limpeza, desgaseificação e inertização de Tanques .7 sistema de lastro .8 suspiros da área de carga e ventilação dos compartimentos habitáveis .9 arranjo do sistema de armazenamento de resíduos .10 sistemas de recuperação de vapores .11 sistemas eléctricos e electrónicos de controlo relacionados com a carga .12 equipamentos de protecção ambiental, inclusive os Equipamentos de Monitorização das Descargas de Óleo (ODME)	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador .4 aprovado programa de formação	As comunicações são claras, compreendidas e bem sucedidas As operações com a carga são realizadas de uma maneira segura, levando em consideração os projectos, os sistemas e os equipamentos do petroleiro As operações com a carga são planeadas, os riscos são controlados, e elas são realizadas de acordo com princípios e procedimentos aceites, para assegurar a segurança das operações e evitar a poluição do meio ambiente marinho As possíveis não conformidades em relação aos procedimentos relacionados com as operações com a carga são prontamente identificadas e corrigidas O carregamento, o armazenamento e o descarregamento correctos das cargas asseguram que as condições de estabilidade e de esforços continuem sempre dentro de limites seguros As acções realizadas e os procedimentos seguidos são correctamente aplicados, e os equipamentos adequados de bordo, relacionados com a carga, são correctamente utilizados A aferição e a utilização dos equipamentos de monitorização e detecção da presença de gases estão de acordo com as práticas e os procedimentos operacionais
Coluna 1	**Coluna 2**	**Coluna 3**	**Coluna 4**
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Habilidade para realizar e monitorizar com segurança todas as operações com a carga (*Continuação*)	.13 revestimento de tanques .14 sistemas de controlo de temperatura e de pressão dos tanques .15 sistemas de combate a incêndio Conhecimento da teoria e das características das bombas, inclusive dos tipos de bombas de carga e da sua operação com segurança Proficiência na cultura de segurança de petroleiros e no cumprimento do sistema de gestão de segurança Conhecimento e entendimento dos sistemas de monitorização e de segurança, inclusive da parada em emergência *Carregamento, descarregamento, cuidados e manuseio da carga* Habilidade para realizar medições e cálculos da carga Conhecimento do efeito das cargas líquidas a granel sobre o trim, a estabilidade e a integridade da estrutura Conhecimento e entendimento das operações relacionadas com a carga de óleo, abrangendo: .1 planos de carregamento e de descarregamento .2 lastro e deslastro .3 operações de limpeza de tanques .4 inertização .5 desgaseificação .6 transferências entre navios		Os procedimentos para os sistemas de monitorização e segurança asseguram que todos os alarmes sejam detectados prontamente e que sejam realizadas as acções necessárias, de acordo com os procedimentos de emergência estabelecidos

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Coluna 1 **Competência**	Coluna 2 **Conhecimento, entendimento e proficiência**	Coluna 3 **Métodos para demonstrar competência**	Coluna 4 **Critérios para avaliar competência**
Habilidade para realizar e monitorizar com segurança todas as operações com a carga (*Continuação*)	.7 carregamento por cima da carga já existente no tanque .8 lavagem com óleo cru Elaboração e emprego de planos, procedimentos e listas de verificação para as operações relacionadas com a carga Habilidade para aferir e utilizar sistemas, instrumentos e equipamentos de monitorização e de detecção da presença de gases Habilidade para gerir e supervisionar as pessoas que possuem responsabilidades relacionadas com a carga		São distribuídas atribuições às pessoas, e elas são informadas dos procedimentos e dos padrões de trabalho a serem seguidos, de uma maneira adequada às pessoas envolvidas, e de acordo com práticas operacionais seguras
Familiaridade com as propriedades físicas e químicas das cargas de óleo	Conhecimento e entendimento das propriedades físicas e químicas das cargas de óleo Entendimento das informações contidas numa Folha de Dados de Segurança do Material (MSDS)	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador .4 aprovado programa de formação	É feito um uso eficaz dos recursos de informações para a identificação das propriedades e características das cargas de óleo e dos gases relacionados, e do seu impacto sobre a segurança, o meio ambiente e a operação da embarcação

Coluna 1 **Competência**	Coluna 2 **Conhecimento, entendimento e proficiência**	Coluna 3 **Métodos para demonstrar competência**	Coluna 4 **Critérios para avaliar competência**
Tomar precauções para prevenir riscos	Conhecimento e entendimento dos riscos e das medidas de controlo relacionadas com as operações com a carga de petroleiros, abrangendo: .1 toxidade .2 inflamabilidade e explosão .3 riscos à saúde .4 composição dos gases inertes .5 riscos relacionados à electricidade estática Conhecimento e entendimento dos perigos do não cumprimento de regras/regulamentos pertinentes	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador .4 aprovado programa de formação	Os riscos pertinentes, relacionados com a carga, a que estão submetidas a embarcação e as pessoas envolvidas nas operações com a carga de petroleiros são correctamente identificados e são tomadas as medidas corretas de controlo
Tomar precauções relativas à saúde e à segurança do trabalho	Conhecimento e entendimento das práticas de trabalho com segurança, inclusive de avaliação dos riscos e da segurança pessoal a bordo, pertinentes para petroleiros: .1 precauções a serem tomadas ao entrar em espaços e compartimentos fechados, inclusive a utilização correta dos diversos tipos de aparelhos de respiração .2 precauções a serem tomadas antes e durante os trabalhos de reparos e de manutenção .3 precauções para trabalho a quente e a frio .4 precauções relativas à segurança ao lidar com electricidade .5 uso de Equipamentos de Protecção Pessoal (PPE) apropriados	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador .4 aprovado programa de formação	Os procedimentos destinados a salvaguardar as pessoas e o navio são sempre observados As práticas de trabalho com segurança são observadas e os equipamentos de segurança e de protecção adequados são correctamente utilizados As práticas de trabalho estão de acordo com as exigências legais, com os códigos de práticas, com as autorizações para trabalhar e com as preocupações ambientais Utilização correta de aparelhos de respiração Os procedimentos para entrar em compartimentos e espaços fechados são observados

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Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Reagir a emergências	Conhecimento e entendimento de procedimentos de emergência em petroleiros, abrangendo: .1 planos de reacção a emergências .2 parada em emergência de equipamentos utilizados em operações com a carga .3 acções a serem realizadas em caso de falha de sistemas ou de serviços essenciais para a carga .4 combate a incêndio em petroleiros .5 salvamento em espaços ou compartimentos fechados .6 utilização de uma Folha de Dados de Segurança do Material (MSDS) Ações a serem realizadas após uma colisão, abalroamento, um encalhe ou um vazamento Conhecimento dos procedimentos de primeiros socorros médicos a bordo de petroleiros	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador .4 aprovado programa de formação	O tipo e o impacto da emergência são prontamente identificados e as acções de reacção estão de acordo com os procedimentos de emergência estabelecidos e com os planos de contingência A ordem de prioridade, os níveis e o cronograma de elaboração de relatórios e de informar as pessoas a bordo são pertinentes à natureza da emergência e reflectem a urgência do problema Os procedimentos de evacuação, de parada e isolamento dos equipamentos em emergência são adequados à natureza da emergência e são prontamente executados A identificação de uma emergência médica, e as acções realizadas nessa emergência, estão de acordo com as práticas actuais e reconhecidas de primeiros socorros e com as directrizes internacionais
Tomar precauções para prevenir a poluição do meio ambiente	Entendimento dos procedimentos para impedir a poluição da atmosfera e do meio ambiente	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador .4 aprovado programa de formação	As operações são realizadas de acordo com os princípios e procedimentos aceites, para prevenir a poluição do meio ambiente

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Monitorizar e controlar o atendimento às exigências legais	Conhecimento e entendimento dos dispositivos pertinentes da Convenção Internacional para a Prevenção da Poluição por Navios (MARPOL), como emendada, e de outros instrumentos pertinentes da IMO, de directrizes da indústria e de regras portuárias, como comumente empregadas	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador .4 aprovado programa de formação	O manuseio das cargas está de acordo com os instrumentos pertinentes da IMO, com as normas industriais estabelecidas e com os códigos de práticas de trabalho com segurança

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Tabela A-V/1-1-3

Especificação da norma mínima de competência em formação avançada para operações com a carga de navios-tanque para produtos químicos

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Habilidade para realizar e monitorizar com segurança todas as operações com a carga	*Projecto e características de um navio-tanque para produtos químicos* Conhecimento do projecto, de sistemas e dos equipamentos do navio-tanque para produtos químicos, abrangendo: .1 arranjo geral e construção .2 arranjo e equipamentos de bombeamento .3 construção e arranjo dos tanques .4 tubulações e sistemas de drenagem .5 sistemas de controlo e de alarmes de pressão e de temperatura nos tanques e nas tubulações de carga .6 sistemas de controlo e de alarmes do nível nos tanques .7 sistemas de detecção da presença de gases .8 sistemas de aquecimento e de resfriamento da carga .9 sistemas de limpeza de tanques .10 sistemas de controlo ambiental dos tanques de carga .11 sistemas de lastro .12 suspiros da área de carga e ventilação dos compartimentos habitáveis .13 sistemas de recuperação/retorno de vapores	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em Simulador .4 aprovado programa de formação	As comunicações são claras, compreendidas e bem sucedidas As operações com a carga são realizadas de uma maneira segura, levando em consideração os projectos, os sistemas e os equipamentos do navio-tanque para produtos químicos As operações com a carga são planeadas, os riscos são controlados, e elas são realizadas de acordo com princípios e procedimentos aceites, para assegurar a segurança das operações e evitar a poluição do meio ambiente marinho

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Habilidade para realizar e monitorizar com segurança todas as operações com a carga (*Continuação*)	14 sistemas de combate a incêndio .15 material e revestimentos de tanques, tubulações e acessórios .16 manuseio dos resíduos Conhecimento da teoria e das características das bombas, inclusive dos tipos de bombas de carga e da sua operação com segurança Proficiência na cultura de segurança de navios-tanque e no cumprimento do sistema de gestão de segurança Conhecimento e entendimento dos sistemas de monitorização e de segurança, inclusive do sistema de parada dos equipamentos em emergência *Carregamento, descarregamento, cuidados e manuseio da carga* Habilidade para realizar medições e cálculos da carga Conhecimento do efeito de cargas líquidas a granel sobre o trim, a estabilidade e a integridade da estrutura Conhecimento e entendimento das operações relacionadas com a carga de produtos químicos, abrangendo: .1 planos de carregamento e de descarregamento .2 lastro e deslastro .3 operações de limpeza de tanques .4 controlo da atmosfera nos tanques .5 inertização		Os procedimentos relativos aos sistemas de monitorização e de segurança asseguram que todos os alarmes sejam prontamente detectados e que sejam tomadas as medidas cabíveis, de acordo com os procedimentos estabelecidos O carregamento, o armazenamento e o descarregamento correctos das cargas asseguram que as condições de estabilidade e de esforços continuem sempre dentro de limites seguros As possíveis não conformidades em relação aos procedimentos relacionados com as operações com a carga são prontamente identificadas e corrigidas As acções realizadas e os procedimentos seguidos são correctamente aplicados, e os equipamentos adequados de bordo, relacionados com a carga, são correctamente utilizados

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Coluna 1 Competência	Coluna 2 Conhecimento, entendimento e proficiência	Coluna 3 Métodos para demonstrar competência	Coluna 4 Critérios para avaliar competência
Habilidade para realizar e monitorizar com segurança todas as operações com a carga (*Continuação*)	.6 desgaseificação .7 transferências entre navios 8 exigências relativas à inibição e à estabilização .9 exigências relativas ao aquecimento e ao resfriamento e as consequências para as cargas adjacentes .10 compatibilidade e segregação da carga .11 cargas de alta viscosidade .12 operações com resíduos de cargas .13 entrada para trabalhar nos tanques Elaboração e emprego de planos, procedimentos e listas de verificação para as operações relacionadas com a carga Habilidade de aferir e utilizar sistemas, instrumentos e equipamentos de monitorização e de detecção da presença de gases Habilidade para gerir e supervisionar as pessoas que possuem responsabilidades relacionadas com a carga		A aferição e a utilização dos equipamentos de monitorização e de detecção da presença de gases são coerentes com as práticas e procedimentos operacionais seguros São distribuídas atribuições às pessoas, e elas são informadas dos procedimentos e dos padrões de trabalho a serem seguidos, de uma maneira adequada às pessoas envolvidas, e de acordo com práticas operacionais seguras

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Coluna 1 Competência	Coluna 2 Conhecimento, entendimento e proficiência	Coluna 3 Métodos para demonstrar competência	Coluna 4 Critérios para avaliar competência
Familiaridade com as propriedades físicas e químicas das cargas de produtos químicos	Conhecimento e entendimento das propriedades físicas e químicas de substância líquidas nocivas, abrangendo: .1 categorias de cargas de produtos químicos (corrosiva, tóxica, inflamável, explosiva) .2 grupos químicos e uso industrial .3 reactividade de cargas Entendimento das informações contidas numa Folha de Dados de Segurança do Material (MSDS)	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador .4 aprovado programa de formação	É feito um uso eficaz dos recursos de informações para a identificação das propriedades e características de substâncias líquidas nocivas e dos gases relacionados, e do seu impacto sobre a segurança, a protecção do meio ambiente e a operação da embarcação
Tomar precauções para prevenir riscos	Conhecimento e entendimento dos riscos e das medidas de controlo relacionadas com as operações com a carga de navios-tanque para produtos químicos, abrangendo: .1 inflamabilidade e explosão .2 toxidade .3 riscos à saúde .4 composição dos gases inertes .5 riscos relacionados à electricidade estática .6 reactividade .7 corrosividade .8 cargas com baixo ponto de ebulição .9 cargas de alta densidade .10 cargas que se solidificam .11 cargas polimerizantes Conhecimento e entendimento dos perigos do não cumprimento de regras/regulamentos pertinentes	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador .4 aprovado programa de formação	Os riscos pertinentes, relacionados com a carga, a que estão submetidas a embarcação e as pessoas envolvidas nas operações com a carga de navios-tanque para produtos químicos são correctamente identificados e são tomadas as medidas de controlo corretas

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Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Tomar precauções relativas à saúde e à segurança do trabalho	Conhecimento e entendimento das práticas de trabalho com segurança, inclusive da avaliação de riscos e de segurança pessoal, pertinentes a navios-tanque para produtos químicos: .1 precauções a serem tomadas ao entrar em espaços e compartimentos fechados, inclusive a utilização correta dos diversos tipos de aparelhos de respiração .2 precauções a serem tomadas antes e durante os trabalhos de reparos e de manutenção .3 precauções para trabalho a quente e a frio .4 precauções relativas à segurança ao lidar com electricidade .5 uso de Equipamentos de Protecção Individual (EPI) apropriados	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador .4 aprovado programa de formação	Os procedimentos destinados a salvaguardar as pessoas e o navio são sempre observados As práticas de trabalho com segurança são observadas e os equipamentos de segurança e de protecção adequados são correctamente utilizados As práticas de trabalho estão de acordo com as exigências legais, com os códigos de práticas, com as autorizações para trabalhar e com as preocupações ambientais Utilização correta de aparelhos de respiração Os procedimentos para entrar em compartimentos e espaços fechados são observados

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Reagir a emergências	Conhecimento e entendimento de procedimentos de emergência em navios-tanque para produtos químicos, abrangendo: .1 planos de reacção a emergências do navio .2 parada em emergência de equipamentos utilizados em operações com a carga .3 acções a serem realizadas em caso de falha de sistemas ou de serviços essenciais para a carga .4 combate a incêndio em navios-tanque para produtos químicos .5 salvamento em espaços ou compartimentos fechados .6 reactividade da carga .7 alijamento de carga ao mar .8 utilização de uma Folha de Dados de Segurança do Material (MSDS) Ações a serem realizadas após uma colisão, um abalroamento, um encalhe ou um vazamento Conhecimento dos procedimentos de primeiros socorros médicos a bordo de navios-tanque para produtos químicos, com referência ao Guia de Primeiros Socorros Médicos para Uso em Acidentes Envolvendo Cargas Perigosas (MFAG)	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador .4 aprovado programa de formação	O tipo e o impacto da emergência são prontamente identificados e as acções de reacção estão de acordo com os procedimentos de emergência estabelecidos e com os planos de contingência A ordem de prioridade, os níveis e o cronograma de envio de informações e de informar as pessoas a bordo são pertinentes à natureza da emergência e reflectem a urgência do problema Os procedimentos de evacuação, de parada e isolamento dos equipamentos em emergência são adequados à natureza da emergência e são prontamente executados A identificação de uma emergência médica, e as acções realizadas nessa emergência, estão de acordo com as práticas actuais e reconhecidas de primeiros socorros e com as directrizes internacionais

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Tomar precauções para prevenir a poluição do meio ambiente	Entendimento dos procedimentos para impedir a poluição da atmosfera e do meio ambiente	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador .4 aprovado programa de formação	As operações são realizadas de acordo com os princípios e procedimentos aceites, para prevenir a poluição do meio ambiente
Monitorizar e controlar o atendimento às exigências legais	Conhecimento e entendimento dos dispositivos pertinentes da Convenção Internacional para a Prevenção da Poluição por Navios (MARPOL) e de outros instrumentos pertinentes da IMO, de directrizes da indústria e de regras portuárias, como comumente empregadas Proficiência na utilização do Código IBC e de documentos relacionados com ele	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador .4 aprovado programa de formação	O manuseio das cargas está de acordo com os instrumentos pertinentes da IMO, com as normas industriais estabelecidas e com os códigos de práticas de trabalho com segurança

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Secção A-V/1-2

Requisitos mínimos obrigatórios para a formação e a qualificação de comandantes, oficiais e marítimos de mestrança e marinhagem em navios-tanque que transportam gás liquefeito

Norma de competência

1. Deverá ser exigido de todo candidato a certificação em formação básica para operações com a carga de navios-tanque que transportam gás liquefeito que:

.1 demonstre competência para assumir as tarefas, atribuições e responsabilidades listados na coluna 1 da tabela A-V/1-2-1; e

.2 forneça provas de ter obtido:

.2.1 o conhecimento, o entendimento e a proficiência mínimos listados na coluna 2 da tabela A-V/1-2-1, e

.2.2 a norma de competência exigida, de acordo com os métodos para demonstrar competência e os critérios para avaliar competência tabelados nas colunas 3 e 4 da tabela A-V/1-1-2-1.

2 Deverá ser exigido de todo candidato a certificação em formação avançada para operações com a carga de navios-tanque que transportam gás liquefeito que:

.1 demonstre competência para assumir as tarefas, atribuições e responsabilidades listados na coluna 1 da tabela A-V/1-2-2; e

.2 forneça provas de ter obtido:

.2.1 o conhecimento, o entendimento e a proficiência mínimos listados na coluna 2 da tabela A-V/1-2-2, e

.2.2 a norma de competência exigida, de acordo com os métodos para demonstrar competência e os critérios para avaliar competência tabelados nas colunas 3 e 4 da tabela A-V/1-2-2.

Tabela A-V/1-2-1

Especificação da norma mínima de competência em formação básica para operações com a carga de navios-tanque que transportam gás liquefeito

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Contribuir para a operação segura com a carga de um navio-tanque que transporta gás liquefeito	*Características de projecto e operacionais de um navio-tanque que transporta gás liquefeito* Conhecimento básico de navios-tanque que transportam gás liquefeito: .1 tipos de navios-tanque que transportam gás liquefeito .2 arranjo geral e construção Conhecimento básico de operações com a carga: .1 sistemas de tubulações e válvulas .2 equipamentos de manuseio da carga .3 carregamento, descarregamento e cuidados em viagem .4 sistema de parada dos equipamentos em emergência (ESD) .5 limpeza de tanques, retirada de impurezas, desgaseificação e inertização Conhecimento básico das propriedades físicas dos gases liquefeitos, abrangendo: .1 propriedades e características .2 pressão e temperatura, inclusive da relação entre a pressão de vaporização e a temperatura .3 tipos de geração de carga electrostática .4 símbolos químicos Conhecimento e entendimento da cultura de segurança de navios-tanque e da gestão da segurança	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado Serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador .4 aprovado programa de formação	As comunicações na área de responsabilidade são claras e eficazes As operações com a carga são realizadas de acordo com os princípios e procedimentos aceites, para assegurar a segurança das operações

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Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Tomar precauções para prevenir riscos	Conhecimento básico dos riscos relacionados com as operações de navios-tanque, abrangendo: .1 riscos à saúde .2 riscos ambientais .3 riscos de reacções químicas .4 riscos de corrosão .5 riscos de explosão e de inflamabilidade .6 fontes de ignição .7 riscos relacionados com a electricidade estática .8 riscos de toxidade .9 vazamento e nuvens de vapores .10 temperaturas extremamente baixas .11 riscos relacionados com a pressão Conhecimento básico dos controlos de riscos: .1 técnicas de inertização, de secagem e de monitorização .2 medidas anti-estática .3 ventilação .4 segregação .5 inibição da carga .6 importância da compatibilidade das cargas .7 controlo atmosférico .8 teste de presença de gás Entendimento das informações contidas numa Folha de Dados de Segurança do Material (MSDS)	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador .4 aprovado programa de formação	Identifica correctamente, numa MSDS, os riscos pertinentes relacionados com a carga, à embarcação e às pessoas, e realiza as acções adequadas de acordo com procedimentos estabelecidos A identificação e as acções ao tomar conhecimento de uma situação de risco estão de acordo com procedimentos estabelecidos com a melhor prática

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Tomar precauções e empregar medidas de saúde e de segurança do trabalho	Função e utilização correcta de instrumentos de medida da presença de gases e de equipamentos semelhantes Utilização correcta de equipamentos e dispositivos de protecção, abrangendo: .1 aparelhos de respiração e equipamentos para a evacuação de tanques .2 roupas e equipamentos de protecção .3 ressuscitadores .4 equipamentos de salvamento e escape Conhecimento básico de práticas e procedimento de trabalho seguro, de acordo com a legislação e as directrizes da indústria, e de segurança pessoal a bordo, pertinente a navios-tanque que transportam gás liquefeito, abrangendo: .1 precauções a serem tomadas ao entrar em espaços e compartimentos fechados .2 precauções a serem tomadas antes e durante trabalhos de reparação e de manutenção .3 medidas de segurança para trabalho a quente e a frio .4 segurança ao trabalhar com electricidade .5 lista de verificação de segurança do navio/de terra Conhecimento básico de primeiros socorros, com referência a uma Folha de Dados de Segurança do Material (MSDS)	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador .4 aprovado programa de formação	São observados os procedimentos para a entrada em espaços e compartimentos fechados Os procedimentos e as práticas de trabalho com segurança, destinadas a salvaguardar as pessoas e o navio, são sempre observados Os equipamentos de segurança e de protecção adequados são utilizados correctamente Coisas que devem e que não devem ser feitas em primeiros socorros

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Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Realizar operações de combate a incêndio	Organização de reacção a incêndio de navios-tanque e acções a serem realizadas Riscos especiais relacionados com o manuseio de carga e com o transporte de gases liquefeitos a granel Agentes de combate a incêndio utilizados para extinguir incêndios em gases Operações com sistemas fixos de combate a incêndio que utilizam espuma Operações com extintores portáteis que utilizam espuma Operações com sistema fixo de pó químico Conhecimento básico de contenção de derramamentos relacionada com operações de combate a incêndio	Exercícios práticos e formação, realizados de acordo com uma aprovada formação e em condições verdadeiramente realistas (ex.: condições de bordo simuladas) e, sempre que possível e praticável, no escuro	As acções iniciais e de acompanhamento realizadas ao tomar conhecimento de uma emergência estão de acordo com as práticas e procedimentos estabelecidos As acções realizadas ao identificar o sinal de guarnecer postos de incêndio são adequadas à emergência indicada e estão de acordo com os procedimentos estabelecidos As roupas e os equipamentos são adequados à natureza das operações de combate a incêndio O momento da realização e a sequência de cada acção são adequados às circunstâncias e às condições existentes A extinção do incêndio é conseguida adequadamente utilizando procedimentos, técnicas e agentes de combate a incêndio
Reagir a emergências	Conhecimento básico de procedimentos de emergência, inclusive a parada e o isolamento das máquinas em emergência	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador .4 aprovado programa de formação	O tipo e o impacto da emergência são prontamente identificados e as acções de reacção estão de acordo com os procedimentos de emergência estabelecidos e com os planos de contingência

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Tomar precauções para prevenir a poluição do meio ambiente pela libertação de gases liquefeitos	Conhecimento básico dos efeitos da poluição sobre a vida humana e a vida marinha Conhecimento básico dos procedimentos de bordo para prevenir a poluição Conhecimento básico das medidas a serem tomadas em caso de derramamento, inclusive da necessidade de: .1 enviar informações pertinentes às pessoas responsáveis .2 ajudar no cumprimento dos procedimentos de bordo para conter vazamentos .3 prevenir fracturas frágeis	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador .4 aprovado programa de formação	Os procedimentos destinados a salvaguardar o meio ambiente são sempre observados

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Tabela A-V/1-2-2

Especificação da norma mínima de competência em formação avançada para operações com a carga de navios-tanque que transportam gás liquefeito

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Habilidade para realizar e monitorizar com segurança todas as operações com a carga	*Projecto e características de um navio-tanque que transporta gás liquefeito* Conhecimento do projecto, dos sistemas e dos equipamentos de navios-tanque que transportam gás liquefeito, abrangendo: .1 tipos de navios-tanque que transportam gás liquefeito e construção dos tanques de carga .2 arranjo geral e construção .3 sistemas de contenção da carga, inclusive materiais de construção e de isolamento .4 equipamentos e instrumentação de manuseio da carga, abrangendo: .1 bombas de carga e dispositivos de bombeamento .2 tubulações e válvulas de carga .3 dispositivos de expansão .4 telas anti-chamas .5 sistemas de monitorização da temperatura .6 sistemas de indicação de nível nos tanques de carga .7 sistemas de controlo e monitorização da pressão nos tanques .5 sistema de manutenção da temperatura da carga	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador .4 aprovado programa de formação	As comunicações são claras, compreendidas e bem sucedidas As operações com a carga são realizadas de uma maneira segura, levando em consideração os projectos, os sistemas e os equipamentos do navio-tanque que transporta gás liquefeito As operações de bombeamento são realizadas de acordo com princípios e procedimentos aceites e são pertinentes ao tipo de carga As operações com a carga são planeadas, os riscos são controlados, e são realizadas de acordo com princípios e procedimentos aceites, para assegurar a segurança das operações e para evitar a poluição do meio ambiente marinho

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Habilidade para realizar e monitorizar com segurança todas as operações com a carga (*Continuação*)	.6 sistema de controlo da atmosfera nos tanques (gás inerte, nitrogénio), inclusive sistemas de armazenagem, geração e distribuição .7 sistemas de aquecimento de coferdams .8 sistemas de detecção da presença de gases .9 sistema de lastro .10 sistemas de gases emanados do gás liquefeito por vaporização .11 sistemas de reliquefação .12 sistema de Parada em Emergência dos equipamentos de carga (ESD) .13 sistema de medição do volume de gás recebido, fornecido ou transferido Conhecimento da teoria e das características das bombas, inclusive dos tipos de bombas de carga e da sua operação com segurança *Carregamento, descarregamento, cuidados e manuseio da carga* Conhecimento do efeito de cargas líquidas a granel sobre o trim, a estabilidade e a integridade da estrutura Proficiência na cultura de segurança de navios-tanque e das exigências relativas à gestão da segurança		O carregamento, a armazenagem e o descarregamento correcto de gases liquefeitos asseguram que as condições de estabilidade e de esforços permaneçam sempre dentro de limites seguros As possíveis não conformidades em relação aos procedimentos relacionados com a carga são prontamente identificadas e corrigidas As acções realizadas e os procedimentos seguidos identificam correctamente e utilizam plenamente os equipamentos adequados de bordo

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Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Habilidade para realizar e monitorizar com segurança todas as operações com a carga (*Continuação*)	Proficiência para empregar com segurança preparativos, procedimentos e listas de verificação para todas as operações com a carga, abrangendo: .1 após a atracação e o carregamento: .1 inspecção do tanque .2 inertização (redução do teor de O2, redução do ponto de orvalho) .3 introdução de gás inerte no tanque contendo gás liquefeito .4 resfriamento .5 carregamento .6 deslastro .7 retirada de amostras, inclusive de anel fechado .2 travessia marítima .1 resfriamento .2 manutenção da pressão .3 controlo e manuseio do gás emanado do gás liquefeito por vaporização .4 inibição .3 descarregamento .1 descarregamento .2 lastro .3 sistema de esvaziamento e limpeza dos tanques .4 sistemas para tornar o tanque livre de líquidos .4 preparativos antes da atracação .1 aquecimento .2 inertização .3 desgaseificação .5 transferência entre navios		A aferição e a utilização dos equipamentos de monitorização e detecção da presença de gases estão de acordo com as práticas e os procedimentos operacionais Os procedimentos relativos aos sistemas de monitorização e de segurança asseguram que todos os alarmes sejam prontamente detectados e que sejam tomadas as medidas cabíveis, de acordo com os procedimentos estabelecidos

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Habilidade para realizar e monitorizar com segurança todas as operações com a carga (*Continuação*)	Proficiência para realizar medições da carga e cálculos, abrangendo: .1 fase líquida .2 fase gasosa .3 Quantidade Existente a Bordo (OBQ) .4 Quantidade Remanescente a Bordo (ROB) .5 cálculos do gás emanado do gás liquefeito por vaporização Proficiência para gerir e supervisionar as pessoas com responsabilidades relacionadas com a carga		São distribuídas atribuições às pessoas, e elas são informadas dos procedimentos e dos padrões de trabalho a serem seguidos, de uma maneira adequada às pessoas envolvidas, e de acordo com práticas operacionais seguras
Familiaridade com as propriedades físicas e químicas de cargas de gás liquefeito	Conhecimento e entendimento da química e da física básicas e das definições pertinentes relativas ao transporte seguro de gases liquefeitos a granel em navios, abrangendo: .1 a estrutura química dos gases .2 as propriedades e características dos gases liquefeitos (inclusive CO2) e dos seus vapores, abrangendo: .1 leis simples relativas aos gases .2 estados da matéria .3 densidades de líquidos e de vapores .4 difusão e mistura de gases .5 compressão de gases .6 liquefacção e refrigeração de gases	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador .4 aprovado programa de formação	É feito um uso eficaz dos recursos de informações para a identificação das propriedades e características dos gases liquefeitos e do seu impacto sobre a segurança, a protecção ambiental e a operação da embarcação

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Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Familiaridade com as propriedades físicas e químicas de cargas de gás liquefeito (*Continuação*)	.7 temperatura crítica dos gases e pressão .8 ponto de fulgor, limites inferiores de explosão, temperatura de auto-ignição .9 compatibilidade, reactividade e segregação positiva dos gases .10 polimerização .11 pressão de vapores saturados/ temperatura de referência .12 ponto de orvalho e ponto de bolha .13 lubrificação de compressores .14 formação de hidratos .3 as propriedades de líquidos isolados .4 a natureza e as propriedades das soluções .5 unidades termodinâmicas .6 leis e diagramas termodinâmicos básicos .7 propriedades dos materiais .8 efeito de baixas temperaturas – fractura frágil Entendimento das informações contidas numa Folha de Dados de Segurança do Material (MSDS)		

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Tomar precauções para prevenir riscos	Conhecimento e entendimento dos riscos e das medidas de controlo relacionadas com as operações com a carga de navios-tanque para gás liquefeito, abrangendo: .1 inflamabilidade .2 explosão .3 toxidade .4 reactividade .5 corrosividade .6 riscos à saúde .7 composição dos gases inertes .8 riscos relacionados à electricidade estática .9 cargas polimerizantes Proficiência para aferir e utilizar sistemas, instrumentos e equipamentos de monitorização e de detecção da presença de gases Conhecimento e entendimento dos perigos do não cumprimento de regras/regulamentos pertinentes	Exame e avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador .4 aprovado programa de formação	Os riscos pertinentes, relacionados com a carga, a que estão submetidas a embarcação e as pessoas envolvidas nas operações com a carga de navios-tanque que transportam gás liquefeito são correctamente identificados e são tomadas as medidas de controlo corretas A utilização de dispositivos para a detecção da presença de gases está de acordo com os manuais e com a boa prática

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Tomar precauções relativas à saúde e à segurança do trabalho	Conhecimento e entendimento das práticas de trabalho com segurança, inclusive da avaliação de riscos e de segurança pessoal, pertinentes a navios-tanque que transportam gás liquefeito: .1 precauções a serem tomadas ao entrar em espaços e compartimentos fechados (como compartimentos de compressores), inclusive a utilização correcta dos diversos tipos de aparelhos de respiração .2 precauções a serem tomadas antes e durante os trabalhos de reparação e de manutenção, inclusive de trabalhos que afectem sistemas de bombeamento, de canalizações, eléctricos e de controlo .3 precauções para trabalho a quente e a frio .4 precauções relativas à segurança ao lidar com electricidade .5 uso de Equipamentos de Protecção Individual (EPI) apropriados .6 precauções relativas a queimadura por frio e a ulcerações causadas pelo frio .7 uso correto de equipamentos individuais de monitorização da toxidade	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador .4 aprovado programa de formação	Os procedimentos destinados a salvaguardar as pessoas e o navio são sempre observados As práticas de trabalho com segurança são observadas e os equipamentos de segurança e de protecção adequados são correctamente utilizados As práticas de trabalho estão de acordo com as exigências legais, com os códigos de práticas, com as autorizações para trabalhar e com as preocupações ambientais Utilização correcta de aparelhos de respiração

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Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Reagir a emergências	Conhecimento e entendimento de procedimentos de emergência em navios-tanque que transportam gás liquefeito, abrangendo: .1 planos de reacção a emergências do navio .2 parada e procedimentos em emergência nas operações com a carga .3 accionamento das válvulas de carga em emergência .4 acções a serem realizadas em caso de falha de sistemas ou de serviços essenciais para as operações com a carga .5 combate a incêndio em navios-tanque que transportam gás liquefeito .6 alijamento de carga ao mar .7 salvamento em espaços ou compartimentos fechados Ações a serem realizadas após uma colisão, um abalroamento, um encalhe ou um vazamento e o envolvimento do navio por vapores tóxicos ou inflamáveis Conhecimento dos procedimentos de primeiros socorros médicos e de antídotos a bordo de navios-tanque que transportam liquefeito, com referência ao Guia de Primeiros Socorros Médicos para Uso em Acidentes Envolvendo Cargas Perigosas (MFAG)	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador .4 aprovado programa de formação	O tipo e o impacto da emergência são prontamente identificados e as acções de reacção estão de acordo com os procedimentos de emergência estabelecidos e com os planos de contingência A ordem de prioridade, os níveis e o cronograma de envio de informações e de informar as pessoas a bordo são pertinentes à natureza da emergência e reflectem a urgência do problema Os procedimentos de evacuação, de parada e isolamento dos equipamentos em emergência são adequados à natureza da emergência e são prontamente executados A identificação de uma emergência médica, e as acções realizadas nessa emergência, estão de acordo com as práticas atuais e reconhecidas de primeiros socorros e com as directrizes internacionais

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Tomar precauções para prevenir a poluição do meio ambiente	Entendimento dos procedimentos para impedir a poluição do meio ambiente	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador .4 aprovado programa de formação	As operações são realizadas de acordo com os princípios e procedimentos aceites, para prevenir a poluição do meio ambiente
Monitorizar e controlar o atendimento às exigências legais	Conhecimento e entendimento dos dispositivos pertinentes da Convenção Internacional para a Prevenção da Poluição por Navios (MARPOL) e de outros instrumentos pertinentes da IMO, de directrizes da indústria e de regras portuárias, como comumente empregadas Proficiência na utilização dos Códigos IBC e ICG e de documentos relacionados	Avaliação de evidência obtida por um ou mais dos seguintes meios: .1 experiência em aprovado serviço .2 experiência em aprovada formação em navio .3 aprovada formação em simulador .4 aprovado programa de formação	O manuseio das cargas de gás liquefeito está de acordo com os instrumentos pertinentes da IMO, com as normas industriais estabelecidas e com os códigos de práticas de trabalho com segurança

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Secção A-V/2

Requisitos mínimos obrigatórios para a formação e a qualificação de comandantes, oficiais, marítimos de mestrança e marinhagem e outro pessoal em navios de passageiros

Formação sobre controlo de multidões

1 A formação sobre controlo de multidões, exigida pela Regra V/2, parágrafo 4, para as pessoas designadas nas tabelas mestras para auxiliar passageiros em situações de emergência, deverá conter, mas não se restringindo necessariamente a:

.1 conhecimento dos dispositivos salva-vidas e dos planos de controlo, abrangendo:

.1.1 conhecimento das tabelas mestras e das instruções para emergências,

.1.2 conhecimento das saídas de emergência, e

.1.3 restrições relativas à utilização de elevadores;

.2 a aptidão de auxiliar passageiros no caminho para os pontos de reunião e de embarque, abrangendo:

.2.1 a aptidão para dar ordens claras e tranquilizadoras,

.2.2 o controlo dos passageiros nos corredores, escadas e passagens,

.2.3 manutenção das rotas de escape desobstruídas,

.2.4 métodos existentes para a evacuação de pessoas com deficiências e de pessoas que necessitam de uma assistência especial, e

.2.5 busca em compartimentos habitáveis;

.3 procedimentos para reunião, abrangendo:

.3.1 a importância de manter a ordem,

.3.2 a aptidão para utilizar procedimentos para reduzir e evitar o pânico,

.3.3 a aptidão para utilizar, quando for adequado, as listas de passageiros para fazer a contagem para a evacuação, e

.3.4 a aptidão para assegurar que os passageiros estejam adequadamente vestidos e que tenham vestido correctamente seus coletes salva-vidas.

Formação de segurança para as pessoas que prestam serviço directamente aos passageiros em compartimentos para passageiros

2 A formação adicional de segurança exigida pela Regra V/2, parágrafo 5, deverá assegurar, pelo menos, a obtenção de aptidão nos seguintes itens:

Comunicação

.1 aptidão para se comunicar com os passageiros durante uma emergência, levando em consideração:

.1.1 o idioma, ou idiomas apropriados para as principais nacionalidades dos passageiros levados por aquela rota específica,

.1.2 a probabilidade de que a aptidão para empregar um vocabulário elementar da língua inglesa para dar instruções básicas possa proporcionar um meio de se comunicar com um passageiro necessitado de ajuda, tenham ou não o passageiro e o tripulante um idioma comum,

.1.3 a possível necessidade de se comunicar durante uma emergência por algum outro meio, tal como por meio de demonstração, ou por sinais com as mãos, ou chamando a atenção para o local em que se encontram as instruções, os pontos de reunião, os dispositivos salva-vidas ou as rotas de evacuação, quando uma comunicação verbal for impraticável,

.1.4 até que ponto foram dadas aos passageiros instruções de segurança completas em seu idioma, ou idiomas nativos, e

.1.5 os idiomas em que os anúncios de emergência podem ser transmitidos pelos alto-falantes durante uma emergência ou um exercício, para transmitir orientações vitais aos passageiros e para facilitar os tripulantes a auxiliar os passageiros,

Dispositivos salva-vidas

.2 Aptidão para demonstrar aos passageiros o uso de dispositivos salva-vidas pessoais.

Procedimentos de embarque

.3 embarque e desembarque de passageiros, com atenção especial a pessoas deficientes e a pessoas que necessitam de assistência especial.

Formação sobre gestão de crises e comportamento humano

3 Os comandantes, chefes de máquinas, imediatos, segundo oficiais de máquinas e qualquer pessoa que tenha responsabilidade pela segurança dos passageiros em situações de emergência deverão:

.1 ter concluído com aproveitamento a aprovada formação sobre gestão de crises e comportamento humano exigida pela Regra V/2, parágrafo 6, de acordo com a sua capacidade, atribuições e responsabilidades, como especificado na tabela A-V/2; e

.2 ser-lhes exigido que forneçam provas de terem atingido a norma de competência exigida, de acordo com os métodos e os critérios para avaliar competência tabelados nas colunas 3 e 4 da tabela A-V/2.

Formação sobre segurança dos passageiros, segurança da carga e integridade do casco

4 A formação sobre segurança dos passageiros, segurança da carga e integridade do casco exigida pela Regra V/2, parágrafo 7, para comandantes, imediatos, chefes de má-

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quinas, segundo oficiais de máquinas e pessoas às quais for atribuída a responsabilidade directa por embarcar e desembarcar passageiros, pelo carregamento, descarregamento ou fixação da carga, ou pelo fechamento de aberturas no casco a bordo de navios ro-ro de passageiros deverá assegurar, pelo menos, a obtenção da habilidade apropriada às suas atribuições e responsabilidades, como se segue:

Procedimentos de carregamento e embarque

.1 Aptidão para empregar correctamente os procedimentos estabelecidos para o navio, com relação a:

1.1 carregamento e descarregamento de veículos, vagões ferroviários e outras unidades de transporte de carga, inclusive as comunicações relativas a essas operações,

.1.2 arriamento e levantamento de rampas,

.1.3 montagem e estivagem de conveses retrácteis para veículos, e

.1.4 embarque e desembarque de passageiros, com atenção especial a pessoas deficientes e pessoas que necessitam de assistência especial.

Transporte de produtos perigosos

.2 Aptidão para empregar quaisquer salvaguardas especiais, procedimentos e exigências relativas ao transporte de produtos perigosos a bordo de navios ro-ro de passageiros.

Fixação das cargas

.3 Aptidão para:

3.1 aplicar correctamente aos veículos, vagões ferroviários e outras unidades de transporte de carga transportadas as disposições do Código de Práticas Seguras para a Estivagem e Fixação de Carga, e

.3.2 utilizar correctamente os equipamentos e materiais de fixação de carga existentes, levando em consideração as suas limitações.

Cálculos de estabilidade, trim e esforços

.4 Aptidão para:

.4.1 utilizar correctamente das informações existentes sobre estabilidade e esforços,

.4.2 calcular a estabilidade e o trim para diferentes condições de carregamento, utilizando os calculadores de estabilidade ou os programas de computador existentes,

.4.3 calcular os factores de carga para conveses, e

.4.4 calcular o impacto do lastro e das transferências de combustível sobre a estabilidade, o trim e os esforços.

Abertura, fechamento e trancamento de aberturas no casco

.5 Aptidão para:

.5.1 empregar correctamente os procedimentos estabelecidos para o navio com relação à abertura, fechamento e trancamento das portas e rampas da proa, da popa e dos costados e de operar correctamente os sistemas relacionados com elas; e

.5.2 realizar inspecções para verificar a vedação correta.

Atmosfera no convés ro-ro

.6 Aptidão para:

.6.1 utilizar equipamentos, quando estiverem sendo transportados, para monitorizar a atmosfera nos compartimentos ro-ro, e

.6.2 empregar correctamente os procedimentos estabelecidos para o navio, para a ventilação dos compartimentos ro-ro durante o carregamento e o descarregamento de veículos, em viagem e em emergências.

Tabela A-V/2

Especificação da norma mínima de competência em gestão de crises e comportamento humano

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Organizar procedimentos de emergência a bordo	Conhecimento de: .1 projecto geral e layout do navio .2 regras de segurança .3 planos e procedimentos de emergência A importância dos princípios para a elaboração dos procedimentos de emergência específicos para aquele navio, abrangendo: .1 a necessidade de planear com antecedência e de realizar exercícios dos procedimentos de emergência a bordo .2 a necessidade de todo o pessoal estar ciente e cumprir os procedimentos de emergência planeados com antecedência e da maneira mais cuidadosa possível em caso de uma situação de emergência	Avaliação de evidência obtida por formação e exercícios aprovados, com um ou mais planos de emergência elaborados, e de demonstração prática	Os procedimentos de emergência de bordo asseguram um estado de prontidão para reagir a situações de emergência

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Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Optimizar a utilização dos recursos	Habilidade para optimizar a utilização dos recursos, levando em consideração: .1 a possibilidade de que os recursos disponíveis numa emergência possam ser limitados .2 a necessidade de fazer pleno uso do pessoal e dos equipamentos imediatamente disponíveis e, se necessário, de improvisar Habilidade para organizar exercícios realistas para manter um estado de prontidão, levando em consideração as lições aprendidas de acidentes anteriores envolvendo navios de passageiros; reunião de crítica após os exercícios	Avaliação de evidência obtida por formação, demonstração prática e instrução a bordo aprovadas e de exercícios de adestramento nos procedimentos de emergência	Os planos de contingência optimizam a utilização dos recursos disponíveis A alocação de atribuições e de responsabilidades reflecte a competência conhecida das pessoas As atribuições e as responsabilidades das equipas e das pessoas estão claramente definidas

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Controlar a reacção a emergências	Habilidade para fazer uma avaliação inicial e de dar uma resposta eficaz a situações de emergência, de acordo com os procedimentos de emergência estabelecidos *Habilidade para liderança* Habilidade para liderar e de dirigir outras pessoas em situações de emergência, inclusive a necessidade: .1 de dar um exemplo durante situações de emergência .2 de concentrar a tomada de decisões, tendo em vista a necessidade de agir rapidamente numa emergência .3 de motivar, incentivar e tranquilizar os passageiros e outras pessoas *Lidar com as tensões* Habilidade para identificar o desenvolvimento de tensões pessoais excessivas e de outros membros da equipa de emergência do navio Entendimento de que a tensão gerada por situações de emergência pode afectar o desempenho das pessoas e a sua habilidade para agir de acordo com as instruções e de seguir os procedimentos	Avaliação de evidência obtida por formação, demonstração prática e instrução a bordo aprovadas e de exercícios de adestramento nos procedimentos de emergência	Os procedimentos e as acções estão de acordo com os princípios e planos estabelecidos para o gestão de crises a bordo Os objectivos e a estratégia são adequados à natureza da emergência, levando em consideração as contingências e fazem o melhor uso dos recursos disponíveis As acções dos membros da tripulação contribuem para manter a ordem e o controlo

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Controlar os passageiros e outras pessoas durante situações de emergência	*Comportamento e reacções humanas* Habilidade para controlar os passageiros e outras pessoas em situações de emergência, abrangendo: .1 conhecimento dos padrões gerais de reacção de passageiros e de outras pessoas em situações de emergência, inclusive a possibilidade de que: .1.1 de um modo geral, leve algum tempo antes que as pessoas aceitem o facto de que existe uma situação de emergência .1.2 algumas pessoas possam entrar em pânico e não se comportar com um nível normal de racionalidade, que sua habilidade para entendimento possa ser prejudicada e que elas possam não seguir tão bem às instruções como seguiriam em situações em que não há uma emergência .2 estar ciente de que os passageiros e outras pessoas podem, entre outras coisas: .2.1 começar a procurar por parentes, amigos e/ou por seus pertences, como uma primeira reacção quando algo está errado .2.2 procurar segurança em seus camarotes ou em outros locais a bordo, onde acham que podem escapar do perigo .2.3 tender a se mover para o bordo mais elevado quando o navio estiver adernando .3 avaliação do possível problema do pânico resultante da separação de famílias	Avaliação de evidência obtida por formação, demonstração prática e instrução a bordo aprovadas e de exercícios de adestramento nos procedimentos de emergência	As acções dos membros da tripulação contribuem para manter a ordem e o controlo

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Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Estabelecer e manter comunicações efectivas	Habilidade para estabelecer e manter comunicações efectivas, abrangendo: .1 a importância de instruções e informações claras e concisas .2 a necessidade de incentivar uma troca de informações com os passageiros e com outras pessoas, e de uma realimentação dos passageiros e de outras pessoas Habilidade para fornecer informações pertinentes aos passageiros e a outras pessoas durante uma situação de emergência, para mantê-los informados da situação geral e de informar-lhes qualquer acção que seja necessário que eles realizem, levando em consideração: .1 o idioma, ou idiomas apropriados para as principais nacionalidades dos passageiros e de outras pessoas que estão sendo levadas por aquela rota específica .2 a possível necessidade de se comunicar durante uma emergência por algum outro meio, tal como por meio de demonstração, ou por sinais com as mãos, ou chamando a atenção para o local em que se encontram as instruções, os pontos de reunião, os dispositivos salva-vidas ou as rotas de evacuação, quando uma comunicação verbal for impraticável .3 o idioma em que os anúncios de emergência podem ser transmitidos pelos alto-falantes durante uma emergência ou um exercício, para transmitir orientações vitais aos passageiros e para facilitar os tripulantes ao auxiliar os passageiros	Avaliação de evidência obtida por instrução, exercícios e demonstração prática aprovados	As informações de todas as fontes disponíveis são obtidas, avaliadas e confirmadas o mais rápido possível, e examinadas durante toda a emergência As informações fornecidas às pessoas, às equipas de reacção de emergências e aos passageiros são precisas, pertinentes e oportunas As informações mantêm os passageiros informados quanto à natureza da emergência e das acções pedidas a eles

CAPÍTULO VI

Normas relativas às funções de emergência, segurança do trabalho, protecção do navio, cuidados médicos e sobrevivência

Secção A-VI/1

Requisitos mínimos obrigatórios para a familiarização de segurança, a formação básica e a instrução de todos os marítimos

Formação de familiarização de segurança

1 Antes de serem designadas para desempenhar atribuições a bordo, todas as pessoas empregadas ou que estejam trabalhando num navio que opere na navegação em mar aberto, que não de passageiros, deverão receber uma aprovada formação sobre familiarização em técnicas de sobrevivência pessoal, ou receber informações e instruções suficientes, levando em consideração as orientações fornecidas na Parte B, para que sejam capazes de:

.1 comunicar-se com outras pessoas a bordo sobre questões elementares e compreender os símbolos de informações relativas à segurança, indicações e sinais de alarme;

.2 saber o que fazer se:

.2.1 uma pessoa cair ao mar,

.2.2 for detectado fogo ou fumaça, ou

.2.3 se soar o alarme de incêndio ou de abandonar o navio;

.3 identificar os locais de reunião e de embarque e as rotas de escape de emergência;

.4 localizar e vestir coletes salva-vidas;

.5 dar o alarme e ter um conhecimento básico da utilização de extintores de incêndio portáteis;

.6 realizar uma acção imediata ao encontrar um acidente ou outra emergência médica, antes de procurar outra assistência médica a bordo; e

.7 abrir e fechar as portas de incêndio, portas estanques ao tempo e portas estanques à água instaladas naquele navio específico, excepto as aberturas no casco.

Formação básica[89]

2 Os marítimos empregados ou que estiverem trabalhando em qualquer capacidade a bordo de navios, na actividade daquele navio, como parte da tripulação do navio, com atribuições relativas à segurança ou à prevenção da poluição na operação do navio deverão, antes de serem designados para desempenhar quaisquer atribuições a bordo:

.1 receber uma instrução básica aprovada adequada, ou instruções sobre:

.1.1 técnicas de sobrevivência pessoal, como especificado na tabela A-VI/1-1,

[89]O(s) Curso(s) Modelo pertinentes da IMO pode(m) ser de ajuda na elaboração de cursos.

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.1.2 prevenção de incêndios e combate a incêndio, como especificado na tabela A-VI/1-2,

.1.3 primeiros socorros elementares, como especificado na tabela A-VI/1-3, e

.1.4 segurança pessoal e responsabilidades sociais, como especificado na tabela A-VI/1-4;

.2 ser-lhes exigido que forneçam provas de ter atingido a norma de competência exigida para assumir as tarefas, atribuições e responsabilidades listados na coluna 1 das tabelas A-VI/1-1, A-VI/1-2, A-VI/1-3 e A-VI/1-4, mediante:

.2.1 demonstração de competência, de acordo com os métodos e os critérios para avaliar competência tabelados nas colunas 3 e 4 dessas tabelas, e

.2.2 exame ou avaliação contínua, como parte de um aprovado programa de formação nos assuntos listados na coluna 2 dessas tabelas.

3 A cada cinco anos, deverá ser exigido dos marítimos qualificados em formação básica de acordo com o parágrafo 2 que forneçam provas de terem mantido as normas de competência exigidas para assumir as tarefas, atribuições e responsabilidades listadas na coluna 1 das tabelas A-VI/1-1, A-VI/1-2.

4 As Partes podem aceitar uma formação e experiência a bordo para manter a norma de competência exigida nas seguintes áreas:

.1 técnicas de sobrevivência pessoal, como especificado na tabela A-VI/1-1:

.1.1 vestir um colete salva-vidas;

.1.2 embarcar numa embarcação de sobrevivência, saindo do navio, usando um colete salva-vidas;

.1.3 realizar as acções iniciais ao embarcar numa embarcação salva-vidas, para aumentar a chance de sobrevivência;

.1.4 lançar ao mar um drogue ou uma âncora flutuante;

.1.5 operar os equipamentos de uma embarcação de sobrevivência; e

.1.6 operar os dispositivos de localização, inclusive equipamentos de rádio;

.2 prevenção de incêndios e combate a incêndio, como especificado na tabela A-VI/1-2;

.2.1 usar um aparelho de respiração autónomo; e

.2.2 realizar um salvamento num compartimento ou espaço cheio de fumaça, utilizando um dispositivo aprovado de geração de fumaça a bordo, usando um aparelho de respiração.

Isenções

5 A Administração pode, com relação a outros navios que não os de passageiros, com uma arqueação bruta superior a 500, empregados em viagens internacionais e navios-tanque, se considerar que o tamanho e o comprimento do navio, ou a natureza da sua viagem, são tais que tornam a aplicação de todas as exigências desta secção não razoável ou impraticável, isentar de algumas exigências os marítimos embarcados naquele navio, ou naquela classe de navios, tendo em mente a segurança das pessoas a bordo, do navio e das propriedades e a protecção do meio ambiente marinho.

Tabela A-VI/1-1

Especificação da norma mínima de competência em técnicas de sobrevivência pessoal

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Sobreviver no mar em caso de abandono do navio	Tipos de situações em que podem ocorrer emergências, como colisão, abalroamento, incêndio, naufrágio Tipos de dispositivos salva-vidas normalmente levados em Navios Equipamentos existentes numa embarcação de sobrevivência Localização dos dispositivos salva-vidas pessoais Princípios relativos à sobrevivência, abrangendo: .1 o valor da instrução e dos exercícios de adestramento .2 roupas e equipamentos de protecção individual .3 necessidade de estar pronto para qualquer emergência .4 acções a serem realizadas ao ser chamado para postos de embarcações de sobrevivência .5 acções a serem realizadas quando for preciso abandonar o navio .6 acções a serem realizadas quando estiver na água .7 acções a serem realizadas quando estiver a bordo de uma embarcação de sobrevivência .8 principais perigos para os sobreviventes	Avaliação de evidência obtida por uma aprovada formação, ou durante a frequência a um curso aprovado, ou da experiência em serviço e de exame, inclusive demonstração prática de competência para: .1 vestir um colete salva-vidas .2 vestir e usar uma roupa de Imersão .3 saltar na água de uma certa altura com segurança .4 desemborcar uma balsa salva-vidas emborcada, usando um colete salva- vidas .5 nadar usando um colete salva-vidas .6 manter-se flutuando sem um colete salva-vidas .7 embarcar numa embarcação de sobrevivência, saindo do navio e da água, usando um colete salva-vidas .8 realizar as acções iniciais ao embarcar numa embarcação de sobrevivência, para aumentar a chance de sobrevivência .9 lançar um drogue ou uma âncora flutuante .10 operar os equipamentos de uma embarcação de sobrevivência .11 operar dispositivos de localização, inclusive equipamentos de rádio	As acções realizadas ao identificar os sinais de reunir são adequadas à emergência indicada e estão de acordo com os procedimentos estabelecidos O momento de realizar cada acção e a sequência dessas acções são adequados à circunstância e às condições existentes, e minimizam os possíveis perigos e ameaças à sobrevivência O método de embarcar na embarcação de sobrevivência é adequado e evita perigos a outros sobreviventes As acções iniciais após deixar o navio e os procedimentos e acções na água minimizam as ameaças à sobrevivência

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Tabela A-VI/1-2

Especificação da norma mínima de competência em prevenção de incêndios e em combate a incêndio

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Minimizar o risco de incêndio e manter um estado de prontidão para reagir a situações de emergência envolvendo fogo	Organização de combate a incêndio de bordo Localização dos dispositivos de combate a incêndio e das rotas de escape de emergência Os elementos do fogo e da explosão (o triângulo do fogo) Tipos e fontes de ignição Materiais inflamáveis, riscos de incêndio e propagação do incêndio A necessidade de uma vigilância constante Ações a serem realizadas a bordo do navio Detecção de fogo e de fumaça e sistemas automáticos de alarme Classificação dos incêndios e dos agentes extintores aplicáveis	Avaliação de evidência obtida por uma aprovada formação, ou da frequência a um curso aprovado	As acções iniciais ao tomar conhecimento de uma emergência estão de acordo com as práticas e procedimentos aceites As acções realizadas ao identificar os sinais de reunir são adequadas à emergência indicada e estão de acordo com os procedimentos estabelecidos
Combater e extinguir incêndios	Equipamentos de combate a incêndio e a sua localização a bordo Instrução sobre: .1 instalações fixas .2 equipamentos do homem que combate incêndios .3 equipamentos pessoais .4 dispositivos e equipamentos de combate a incêndio .5 métodos de combate a incêndio .6 agentes de combate a incêndio .7 procedimentos de combate a incêndio	Avaliação de evidência obtida por uma aprovada formação, ou durante a frequência a um curso aprovado, inclusive uma demonstração prática em compartimentos que proporcionem condições verdadeiramente realistas (ex.: condições de bordo simuladas) e, sempre que possível e praticável, no escuro, da habilidade para: .1 usar os vários tipos de extintores de incêndio portáteis .2 usar aparelhos de respiração autónomos .3 extinguir incêndios menores, como por exemplo, incêndios eléctricos, incêndios em óleo e em gás propano	As roupas e os equipamentos são adequados à natureza das operações de combate a incêndio O momento da realização e a sequência de cada acção são adequados às circunstâncias e às condições existentes A extinção do incêndio é conseguida utilizando procedimentos, técnicas e agentes de combate a incêndio adequados Os procedimentos e técnicas de uso de aparelhos de respiração estão de acordo com as práticas e os procedimentos aceites

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Combater e extinguir incêndios (*Continuação*)	.8 usar aparelhos de respiração para combater incêndios e fazer salvamentos	.4 extinguir grandes incêndios com água, utilizando esguichos de jacto sólido e de neblina .5 extinguir incêndios com espuma, pó químico ou qualquer outro agente químico adequado .6 entrar e passar mediante um compartimento em que foi injectada espuma de alta expansão, com um cabo de segurança, mas sem um aparelho de respiração .7 combater um incêndio em compartimentos de trabalho fechados, cheios de fumaça, usando aparelho de respiração autónomo .8 extinguir incêndio com neblina de água ou com qualquer outro agente de combate a incêndio adequado, num compartimento habitável, ou numa casa de máquinas simulada, com fogo e fumaça intensa .9 extinguir um incêndio em óleo com aplicadores de neblina e esguichos de borrifo, aplicadores de pó químico ou de espuma .10 realizar um salvamento num compartimento cheio de fumaça, usando um aparelho de respiração	

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Tabela A-VI/1-3

Especificação da norma mínima de competência em primeiros socorros elementares

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Realizar uma acção imediata ao encontrar um acidente ou outra emergência médica	Avaliação das necessidades das vítimas e das ameaças à sua própria segurança Avaliação da estrutura e das funções do corpo da vítima Entendimento das medidas imediatas a serem tomadas em casos de emergência, inclusive a habilidade para: .1 posicionar a vítima .2 empregar técnicas de ressuscitamento .3 controlar sangramentos .4 empregar medidas adequadas de tratamento básico de choques .5 empregar medidas adequadas em caso de queimaduras por fogo ou calor e de queimaduras por líquido fervendo, inclusive de acidentes causados por corrente eléctrica .6 resgatar e transportar uma vítima .7 improvisar ataduras e utilizar materiais existentes no estojo de emergência	Avaliação de evidência obtida por uma aprovada formação, ou da frequência a um curso aprovado	A maneira e o momento certo de dar o alarme são apropriados para as circunstâncias do acidente ou da emergência médica A identificação da causa provável, da natureza e da extensão dos ferimentos é rápida e completa e a prioridade e a sequência das acções são proporcionais a qualquer possível ameaça à vida O risco de causar outros danos a si mesmo e à vítima é sempre minimizado

Tabela A-VI/1-4

Especificação da norma mínima de competência em segurança pessoal e responsabilidades sociais

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Agir de acordo com os procedimentos de emergência	Tipos de emergência que podem ocorrer, como colisão, abalroamento, incêndio, naufrá-gio Conhecimento dos planos de contingência de bordo para reagir a emergências Sinais de emergência e atribuições específicas alocadas aos membros da tripulação na tabela mestra; postos de reunião; uso correcto de equipamentos de segurança pessoal Ações a serem realizadas ao descobrir uma possível emer-gência, inclusive incêndio, colisão, abalroamento, naufrá-gio e entrada de água no navio Acção a ser realizada ao ouvir sinais de alarme de emergência Valor da instrução e dos exercícios de adestramento Conhecimento das rotas de escape e dos sistemas de comu-nicações interiores e de alarme	Avaliação de evidência obtida por uma aprovada formação, ou da frequência a um curso aprovado	A acção inicial ao tomar conhecimento de uma emergência está de acordo com os procedimentos estabelecidos em resposta a emergências As informações dadas ao dar o alarme são rápidas, precisas, completas e claras
Tomar precauções para prevenir a poluição do meio ambiente	Conhecimento básico do impacto da navegação marítima sobre o meio ambiente marinho e dos efeitos de uma poluição operacional ou acidental sobre ele Procedimentos básicos de protecção ambiental Conhecimento básico da complexidade e da diversidade do meio ambiente marinho	Avaliação de evidência obtida por uma aprovada formação, ou da frequência a um curso aprovado	Os procedimentos relativos à organização, destinados a salvaguardar o meio ambiente marinho, são sempre observados

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Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Observar práticas de trabalho com segurança	Importância de observar sempre as práticas de trabalho com segurança Dispositivos de segurança e de protecção disponíveis contra possíveis riscos a bordo do navio Precauções a serem tomadas antes de entrar em compar-timentos ou espaços fechados Familiarização com medidas internacionais relativas à prevenção de acidentes e à saúde do trabalho[5]	Avaliação de evidência obtida por uma aprovada formação, ou da frequência a um curso aprovado	As práticas de trabalho com segurança são observadas e os equipa-mentos de segurança e de protecção adequados são sempre usados correcta-mente
Contribuir para que haja comunicações efectivas a bordo do navio	Compreender os princípios de uma comunicação efectiva entre pessoas e equipas no navio, e das barreiras a essa comunicação Habilidade para estabelecer e manter comunicações efectivas	Avaliação de evidência obtida por uma aprovada formação, ou da frequência a um curso aprovado	As comunicações são sempre claras e efectivas
Contribuir para que haja relações humanas efectivas a bordo do navio	Importância de manter boas relações humanas e de trabalho a bordo do navio Princípios básicos e práticas de trabalho em equipa, inclusive de resolução de conflitos Responsabilidades sociais; condições de emprego; direitos individuais e obrigações; perigos das drogas e abuso de álcool.	Avaliação de evidência obtida por uma aprovada formação, ou da frequência a um curso aprovado	São sempre observados os padrões esperados de trabalho e de comportamento
Compreender e realizar as acções neces-sárias para controlar o cansaço	A importância de obter o descanso necessário Efeitos do sono, das escalas de trabalho e do ritmo circadiano sobre o cansaço Efeitos dos agentes causadores de tensões físicas sobre os marítimos Efeitos dos agentes causadores de tensão ambiental, dentro e fora do navio, e o seu impacto sobre os marítimos Efeitos das alterações na escala de trabalho sobre o cansaço do marítimo	Avaliação de evidência obtida por uma aprovada formação, ou da frequência a um curso aprovado	As práticas de controlo do cansaço são observadas e sempre são realizadas acções apropriadas

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Secção A-VI/2

Requisitos mínimos obrigatórios para a emissão de certificados de proficiência em embarcações de sobrevivência, embarcações de salvamento e embarcações rápidas de salvamento

PROFICIÊNCIA EM EMBARCAÇÃO DE SOBREVIVÊNCIA E EM EMBARCAÇÕES DE SALVAMENTO, EXCEPTO EMBARCAÇÕES RÁPIDAS DE SALVAMENTO

Norma de competência

1 Deverá ser exigido de todo candidato a um certificado de proficiência em embarcações de sobrevivência e em embarcações de salvamento, excepto embarcações rápidas de salvamento, que demonstre competência para assumir as tarefas, atribuições e responsabilidades listados na coluna 1 da tabela A-VI/2-1.

2 O nível de conhecimento dos assuntos listados na coluna 2 da tabela A-VI/2-1 deverá ser suficiente para permitir que o candidato lance e assuma as funções de encarregado de uma embarcação de sobrevivência ou de uma embarcação de salvamento em situações de emergência.[90]

3 A formação e a experiências para atingir o nível necessário de conhecimento teórico, de entendimento e de proficiência deverão levar em consideração as orientações fornecidas na Parte B deste Código.

4 Deverá ser exigido de todo candidato a certificação que forneça provas de ter atingido a norma de competência exigida, mediante:

.1 demonstração de competência para assumir as tarefas, atribuições e responsabilidades listados na coluna 1 da tabela A-VI/2-1, de acordo com os métodos para demonstrar competência e os critérios para avaliar competência tabelados nas colunas 3 e 4 dessa tabela; e

[90]O(s) Curso(s) Modelo pertinentes da IMO pode(m) ser de ajuda na elaboração de cursos.

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.2 exame ou avaliação contínua como parte de um aprovado programa de formação, abrangendo as matérias especificadas na coluna 2 da tabela A-VI/2-1.

5 A cada cinco anos, deverá ser exigido dos marítimos qualificados de acordo com o parágrafo 4 em embarcações de sobrevivência e em embarcações de salvamento, excepto embarcações rápidas de salvamento, que forneçam provas de terem mantido as normas de competência exigidas para assumir as tarefas, atribuições e responsabilidades listados na coluna 1 da tabela A-VI/2-1.

6 As Partes podem aceitar uma formação e experiência a bordo para manter a norma de competência exigida, constante da tabela A-VI/2-1, nas seguintes áreas:

.1 assumir as funções de encarregado de uma embarcação de sobrevivência ou de uma embarcação de salvamento durante e após o seu lançamento:

.1.1 interpretar as marcas existentes na embarcação de sobrevivência, relativas ao número de pessoas que se destinam a levar;

.1.2 dar ordens corretas para lançar e embarcar na embarcação de sobrevivência, para afastar a embarcação do navio e para controlar o embarque e o desembarque das pessoas naquela embarcação;

.1.3 preparar e lançar com segurança a embarcação de sobrevivência e afastá-la rapidamente do costado do navio; e

.1.4 recolher com segurança a embarcação de sobrevivência e as embarcações de salvamento;

.2 controlar os sobreviventes e a embarcação de sobrevivência após abandonar o navio:

.2.1 remar e governar uma embarcação e governar pela bússola;

.2.2 utilizar cada equipamento existente na embarcação de sobrevivência, excepto os sinais pirotécnicos, e

.2.3 instalar dispositivos para auxiliar a localização;

.3 utilizar dispositivos de localização, inclusive aparelhos de comunicação e de sinalização:

.3.1 utilização de equipamentos de rádio portáteis para embarcações de sobrevivência; e

.4 prestar os primeiros socorros aos sobreviventes.

PROFICIÊNCIA EM EMBARCAÇÕES RÁPIDAS DE SALVAMENTO

Norma de competência

7 Deverá ser exigido de todo candidato a um certificado de proficiência em embarcações rápidas de salvamento que demonstre competência para assumir as tarefas, atribuições e responsabilidades listados na coluna 1 da tabela A-VI/2-2.

8 O nível de conhecimento dos assuntos listados na coluna 2 da tabela A-VI/2-2 deverá ser suficiente para permitir que o candidato lance e assuma as funções de encarregado de uma embarcação rápida de salvamento em situações de emergência.[91]

9 A formação e as experiências necessárias para atingir o nível necessário de conhecimento teórico, de entendimento e de proficiência deverão levar em consideração as orientações fornecidas na Parte B deste Código.

10 Deverá ser exigido de todo candidato a certificação que forneça provas de ter atingido a norma de competência exigida, mediante:

.1 demonstração de competência para assumir as tarefas, atribuições e responsabilidades listados na coluna 1 da tabela A-VI/2-2, de acordo com os métodos para demonstrar competência e com os critérios para avaliar competência tabelados nas colunas 3 e 4 daquela tabela; e

.2 exame ou avaliação contínua como parte de um aprovado programa de formação, abrangendo as matérias especificadas na coluna 2 da tabela A-VI/2-2.

11 A cada cinco anos, deverá ser exigido dos marítimos qualificados de acordo com o parágrafo 10 em embarcações rápidas de salvamento que forneçam provas de terem mantido as normas de competência exigidas para assumir as tarefas, atribuições e responsabilidades listadas na coluna 1 da tabela A-VI/2-2

12 As Partes podem aceitar uma formação e experiência a bordo para manter a norma de competência exigida, constante da tabela A-VI/2-2, nas seguintes áreas:

.1 Assumir as funções de encarregado de uma embarcação rápida de salvamento durante e após o seu lançamento:

.1.1 controlar o lançamento e o recolhimento com segurança de uma embarcação rápida de salvamento;

.1.2 conduzir uma embarcação rápida de salvamento nas condições de tempo e de mar existentes;

.1.3 utilizar equipamentos de comunicação e de sinalização entre a embarcação rápida de salvamento e um helicóptero e um navio;

.1.4 utilizar os equipamentos de emergência levados na embarcação; e

.1.5 realizar padrões de busca, levando em consideração os factores ambientais.

[91] O(s) Curso(s) Modelo pertinentes da IMO pode(m) ser de ajuda na elaboração de cursos.

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Tabela A-VI/2-1

Especificação da norma mínima de competência em embarcações de sobrevivência e em embarcações de salvamento, excepto embarcações rápidas de salvamento

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Assumir as funções de encarregado de uma embarcação de sobrevi-vência ou de uma embarca-ção de salva-mento durante e após o seu lançamento	Construção e aparelhamento de embarcações de sobrevivência e de embarcações de salvamento e cada um dos seus equipamentos Características e recursos específi-cos de embarcações de sobrevivência e de embarcações de salvamento Vários tipos de dispositivos utilizados para lançar e recolher embarcações de sobrevivência e embarcações de salvamento Métodos de lançamento de embar-cações de sobrevivência com mar agitado Métodos de recolhimento de embar-cações de sobrevivência Ações a serem realizadas após dei-xar o navio Métodos de lançamento e de reco-lhimento de embarcações de salva-mento com mar agitado Perigos relacionados com a utiliza-ção de dispositivos de libertação/descarga com carga Conhecimento dos procedimen-tos de manutenção	Avaliação de evidência obtida por demonstração prática da habilidade para: .1 desemborcar uma balsa salva-vidas emborcada, usando um colete salva-vidas .2 interpretar as marcas exis-tentes na embarcação de sobre-vivência, relativas ao número de pessoas que destinam-se a levar .3 dar ordens corretas para lan-çar e embarcar na embarcação de sobrevi-vência, para afastar a embarcação do navio e para controlar o desembarque das pessoas dessa embarcação .4 preparar e lançar com segu-rança a embarcação de sobrevi-vência, afastá-la rapidamente do costado do navio e operar os dispositivos de libertação/descarga com e sem carga .5 recolher com segurança a embarcação de sobrevivên-cia e as embarcações de salvamento, inclusive a reactivação correc-ta, tanto do dispositivo de liber-tação/descarga sem carga como do dispositivo de libertação/descarga com carga, utilizando uma balsa salva-vidas inflável e uma embarcação salva-vidas aberta ou fechada, com motor de centro, ou numa aprovada formação em simulador, quan-do for adequado	Os preparativos, o embarque e o lançamento da embarcação de sobrevivência estão dentro das limitações dos equipamentos e permitem que a embarcação de sobrevivência se afaste do navio com segurança As acções iniciais ao deixar o navio minimizam a ameaça à sobrevivência O recolhimento da embar-cação de sobrevivência e das embarca-ções de salvamento estão dentro das limitações dos equipamentos O equipamento é operado de acor-do com as instruções do fabrican-te relativas à libertação/descarga e à reactivação do dispositivo

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Operar o motor de uma embarcação de sobrevivência	Métodos de dar partida e de operar o motor de uma embarcação de sobrevivência e seus acessórios, jun-tamente com a utilização do extintor de incêndio existente	Avaliação de evidência obtida por demonstração prática da habilidade para dar partida e operar um motor de centro instalado numa embarcação salva-vidas aberta ou fechada	Propulsão está disponível e é mantida como necessário para manobrar
Controlar os sobre-viventes e conduzir uma embarca-ção de so-bre-vivência após abandonar o navio	Conduzir uma embarcação de sobre-vivência com mau tempo Utilizar boça, âncora flutuante e todos os outros equipamentos Distribuição de alimentos e água na embarcação de sobrevivência Acção a ser realizada para maxi-mizar a possibilidade de detecção e de localização da embarcação de sobrevivência Método de resgate por helicóptero Efeitos da hipotermia e a sua pre-venção; uso de coberturas e roupas de protecção, inclusive de roupas de imersão e de auxílios de protecção térmica Utilização de embarcações de salva-mento e de embarcações salva-vidas a motor e resgate de sobreviventes e de pessoas que estiverem no mar Abicar uma embarcação de sobre-vivência	Avaliação de evidência obtida por demonstração prática da habilidade para: .1 remar e governar uma em-barcação e governar pela bús-sola .2 utilizar cada equipamento existente na embarcação de sobrevivência .3 instalar dispositivos para auxiliar a localização	O controlo da sobrevivência é adequado às circunstâncias e condições existentes

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Utilizar dis-positivos de localiza-ção, inclusive apa-relhos de co-municação e de sinaliza-ção e piro-técnicos	Aparelhos de rádio salva-vidas levados em embarcações de sobrevivência, inclusive EPIRBs e SARTs por satélites Sinais pirotécnicos de perigo	Avaliação de evidência obtida por demonstração prática da habilidade para: .1 utilizar equipamentos de rádio portáteis para embarcações de sobrevivência .2 utilizar equipamentos de sinalização, inclusive pirotécnicos	A utilização e a escolha dos aparelhos de comunicação e de sinalização são adequadas às circunstâncias e às condições existentes
Prestar os primeiros socorros aos sobreviventes	Utilização do estojo de primeiros socorros e as técnicas de ressuscitamento Tratamento de pessoas feridas, inclusive controlo de sangramento e choque	Avaliação de evidência obti-da por demonstração prática da habilidade para lidar com pessoas feridas, tanto duran-te o abandono como depois, usando o estojo de primeiros socorros e a técnica de ressuscitamento	A identificação da causa provável, da natureza e da extensão dos ferimentos ou da condição de saúde é rápida e precisa A prioridade e a sequência do tratamento minimizam qualquer ameaça à vida

Tabela A-VI/2-2

Especificação da norma mínima de competência em embarcações rápidas de salvamento

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Compreender a construção, a manutenção, a reparação e o equipamen-to de embar-cações rápidas de salvamento	Construção e equipamento de embarcações rápidas de salvamento e cada um dos seus equipamentos Conhecimento da manutenção e das reparações de emergência de embarcações rápidas de salvamento e do enchimento e esvaziamento normal dos compartimentos de flutuação de embarcações rápidas de salvamento infláveis	Avaliação de evidência obtida por demonstração prática	O método de realizar a manutenção de rotina e as reparações de emergência Identificar os componentes e os equipamentos exigidos para embarcações rápidas de salvamento
Encarregar-se dos equipa-mentos e dis-positivos de Lançamento normalmente instalados, durante o lan-çamento e o recolhimento	Avaliação do estado de prontidão dos equipamentos e dispositivos de lançamento de embarcações rápidas de salvamento para lançamento e operação imediata Compreender o funcionamento e as limitações do guincho, freios, tiradores das talhas, boças, equipamentos de com-pensação do movimento e de outros equipamentos normalmente instalados Precauções de segurança durante o lançamento e o recolhimento de uma embar-cação rápida de salvamento Lançamento e recolhimento de uma embarcação rápida de salvamento em condições adversas de tempo e de mar	Avaliação de evidência obtida por demonstração prática da habilidade para controlar o lançamento e o recolhimento com segurança de uma embarcação rápida de salvamento, com os equipamentos de que é dotada	Habilidade para preparar e encarregar-se dos equi-pamentos e dispositivos de lançamento durante o lançamento e o recolhimento de uma embarcação rápida de salvamento

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Assumir as funções de encarregado de uma em-barcação rápi-da de salvamento como normalmente equipadas du-rante o lança-mento e o recolhimento	Avaliação do estado de prontidão das embarcações rápidas de salvamento e dos equipamentos relacionados com elas para lançamento e operação imediata Precauções de segurança durante o lançamento e o recolhimento de uma embarcação rápida de salvamento Lançamento e recolhimento de uma embarcação rápida de salvamento em condições adversas de tempo e de mar	Avaliação de evidência obtida por demonstração prática da habilidade para conduzir o lançamento e o recolhimento com segurança de uma embarcação rápida de salvamento, com os equipamentos de que é dotada	Habilidade para assumir as funções de encarregado de uma embarcação rápida de salvamento durante o seu lançamento e o seu recolhimento

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Assumir as funções de encarregado de uma embarcação rápida de salvamento após o seu lançamento	Características, recursos e limitações específicas de embarcações rápidas de salvamento Procedimentos para o desemborcamento de uma embarcação rápida de salvamento emborcada Como conduzir uma embarcação rápida de salvamento em condições adversas de tempo e de mar Equipamentos de navegação e de segurança existentes numa embarcação rápida de salvamento Padrões de busca e factores ambientais que afectam a sua execução	Avaliação de evidência obtida por demonstração prática da habilidade de: .1 desemborcar uma embarcação rápida de salvamento emborcada .2 conduzir uma embarcação rápida de salvamento nas condições de tempo e de mar existentes .3 nadar com equipamento especial .4 utilizar equipamentos de comunicações e de sinaliza-ção entre a embarcação rápida de salvamento e um helicóptero e um navio .5 utilizar os equipamentos de emergência levados na embarcação .6 recolher uma vítima da água e transferi-la para um helicóptero ou um navio de salvamento ou para um local seguro .7 realizar padrões de busca, levando em consideração os factores ambientais	Demonstração da operação de embarcações rápidas de salvamento dentro das limitações dos equipamen-tos nas condições meteo-rológicas existentes
Operar o motor de uma embarcação rápida de salvamento	Métodos de dar partida e de operar o motor de uma embarcação rápida de salvamento e seus acessórios	Avaliação de evidência obtida por demonstração prática da habilidade para dar partida e operar um motor de uma embarcação rápida de salvamento	É dada partida no motor e ele é operado como necessário para manobrar

Secção A-VI/3

Formação mínima obrigatória sobre avançado combate a incêndio

Norma de competência

1 Os marítimos designados para controlar operações de combate a incêndio deverão ter concluído com aproveitamento uma formação avançada em técnicas para combater incêndios, com uma ênfase especial na organização, nas tácticas e no comando, e deverá ser-lhes exigido que demonstrem competência para assumir as tarefas, atribuições e responsabilidades listadas na coluna 1 da tabela A-VI/3.

2 O nível de conhecimento e de entendimento dos assuntos listados na coluna 2 da tabela A-VI/2-3 deverá ser suficiente para um controlo efectivo de operações de combate a incêndio a bordo de navios.[92]

3 A formação e a experiência para atingir o nível necessário de conhecimento teórico, de entendimento e de proficiência deverão levar em consideração as orientações fornecidas na Parte B deste Código.

4 Deverá ser exigido de todo candidato a certificação que forneça provas de ter atingido a norma de competência exigida, de acordo com os métodos para demonstrar competência e os critérios para avaliar competência tabelados nas colunas 3 e 4 da tabela A-VI/3.

5 A cada cinco anos, deverá ser exigido dos marítimos qualificados de acordo com o parágrafo 4 em combate a incêndio avançado que forneçam provas de terem mantido as normas de competência exigidas para assumir as tarefas, atribuições e responsabilidades listados na coluna 1 da tabela A-VI/3.

6 As Partes podem aceitar uma formação e experiência a bordo para manter a norma de competência exigida, especificado na tabela A-VI/3, nas seguintes áreas:

.1 Controlar operações de combate a incêndio a bordo de navios;

.1.1 procedimentos de combate a incêndio no mar e no porto, com uma ênfase especial na organização, nas tácticas e no comando;

.1.2 comunicação e coordenação durante as operações de combate a incêndio;

.1.3 controlo da ventilação, inclusive da extracção de fumaça;

.1.4 controlo dos sistemas de combustível e eléctrico;

.1.5 riscos ao processo de combate a incêndio (destilação a seco, reacções químicas, condutos de descarga dos gases das caldeiras);

.1.6 precauções contra incêndio e riscos relativos à armazenagem e ao manuseio de materiais;

.1.7 tratamento e controlo de pessoas feridas; e

.1.8 procedimentos para coordenação com a equipa de combate a incêndio de terra.

[92]O(s) Curso(s) Modelo pertinentes da IMO pode(m) ser de ajuda na elaboração de cursos.

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Tabela A-VI/3

Especificação da norma mínima de competência em avançado combate a incêndio

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Controlar operações de combate a incêndio a bor-do de navios	Procedimentos de combate a incêndio no mar e no porto, com ênfase especial na organização, nas tácticas e no comando Uso da água para extinguir incêndios, o efeito sobre a estabilidade do navio, precauções e procedimentos correctivos Comunicação e coordenação durante operações de combate a Incêndio Controlo da ventilação, inclusive da extracção de fumaça Controlo dos sistemas de combustível e eléctrico Riscos dos processos de combate a incêndio (destilação a seco, reacções químicas, incêndios em condutos de descarga de gases das caldeiras, etc.) Combate a incêndio envolvendo mercadorias perigosas Precauções contra incêndio e riscos relacionados com a armazenagem e o manuseio de materiais (tintas, etc.) Tratamento e controlo de pessoas feridas Procedimentos para coordenação com a equipa de combate a incêndio de terra	Exercícios práticos e formação realizados sob aprovação, e em condições de instrução verdadeira-mente realistas (ex.: condi-ções de bordo simuladas) e, sempre que possível e praticável, no escuro	As acções realizadas para controlar incêndios baseiam-se numa avaliação completa e precisa do incidente, utilizando todas as fontes de informação disponíveis A ordem de prioridade e a sequência das acções são adequadas às necessidades gerais do incidente e para minimizar as avarias, os possíveis danos ao navio, ferimentos nas pessoas e prejuízos à eficácia operacional do navio A transmissão das informações é rápida, precisa, completa e clara A segurança pessoal durante as actividades de controlo do incêndio é sempre salvaguardada

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Organizar e instruir as equipas de combate a incêndio	Elaboração de planos de contingência Composição e distribuição das pessoas entre os grupos de combate a incêndio Estratégias e tácticas para controlar incêndios em várias partes do navio	Exercícios práticos e formação realizados sob aprovação, e em condições de instrução verdadeiramente realistas, por exemplo, condições de bordo simuladas	A composição e a organização das equipas de controlo de incêndio asseguram a execução rápida e eficaz dos planos e procedimentos de emergência
Inspeccionar e fazer a manutenção dos sistemas e equipamentos de detecção e de extinção de incêndio	Sistemas de detecção de incêndio; sistemas fixos de extinção de incêndio, equipamentos portáteis e móveis de extinção de incêndio, inclusive aparelhos, bombas, e equipamentos de salvamento, de apoio à vida, de protecção pessoal e de comunicação	Exercícios práticos utilizando equipamentos e sistemas aprovados, num ambiente de instrução realista	A eficácia operacional de todos os sistemas e equipamentos de detecção e extinção de incêndio é sempre mantida, de acordo com as especificações de desempenho e com as exigências legais
Investigar e compilar rela-tórios sobre incidentes en-volvendo fogo	Avaliação das causas de incidentes envolvendo fogo	Exercícios práticos num ambiente de instrução realista	As causas do incêndio são identificadas e a eficácia das contramedidas é avaliada

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Secção A-VI/4

Requisitos mínimos obrigatórios relativos aos primeiros socorros médicos e aos cuidados médicos

Norma de competência para marítimos designados para prestar os primeiros socorros médicos a bordo de navios

1 Deverá ser exigido de todo marítimo que for designado para prestar os primeiros socorros médicos a bordo de navios que demonstre competência para assumir as tarefas, atribuições e responsabilidades listadas na coluna 1 da tabela A-VI/4-1.

2 O nível de conhecimento dos assuntos listados na coluna 2 da tabela A-VI/4-1 deverá ser suficiente para permitir que o marítimo designado realize acções imediatas em caso de acidentes ou de doenças que possam ocorrer a bordo do navio.[93]

3 Deverá ser exigido de todo candidato a certificação com base no disposto na Regra VI/4, parágrafo 1, que forneça provas de ter atingido a norma de competência exigida, de acordo com os métodos para demonstrar competência e os critérios para avaliar competência tabelados nas colunas 3 e 4 da tabela A-VI/4-1.

[93]O(s) Curso(s) Modelo pertinentes da IMO pode(m) ser de ajuda na elaboração de cursos.

Norma de competência para marítimos designados para assumir as funções de encarregado pelos cuidados médicos a bordo de navios

4 Deverá ser exigido de todo marítimo que for designado para assumir as funções de encarregado pelos cuidados médicos a bordo de navios que demonstre competência para assumir as tarefas, atribuições e responsabilidades listadas na coluna 1 da tabela A-VI/4-2.

5 O nível de conhecimento dos assuntos listados na coluna 2 da tabela A-VI/4-2 deverá ser suficiente para permitir que o marítimo designado realize acções imediatas em caso de acidentes ou de doenças que possam ocorrer a bordo do navio.[94]

6 Deverá ser exigido de todo candidato a certificação com base no disposto na Regra VI/4, parágrafo 2, que forneça provas de ter atingido a norma de competência exigida, de acordo com os métodos para demonstrar competência e os critérios para avaliar competência tabelados nas colunas 3 e 4 da tabela A-VI/4-2.

[94]O(s) Curso(s) Modelo pertinentes da IMO pode(m) ser de ajuda na elaboração de cursos.

Tabela A-VI/4-1

Especificação da norma mínima de competência em primeiros socorros médicos

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Prestar ime-diatamente primeiros socorros em caso de acidente ou de doença a bordo	Estojo de primeiros socorros Estrutura e funções do corpo Riscos toxicológicos a bordo, inclusive a utilização do Guia de Primeiros Socorros Médicos para Uso em Acidentes Envolvendo Mercadorias Perigosas (MFAG), ou do seu equivalente nacional Exame da vítima ou do paciente Ferimentos na coluna vertebral Queimaduras por fogo ou calor e queimaduras por líquido fervente, e efeitos do calor e do frio Fracturas, luxações e lesões musculares Assistência médica a pessoas resgatadas Recomendações médicas pelo rádio Farmacologia Esterilização Parada cardíaca, afogamento e asfixia	Avaliação de evidência obtida por instrução prática	A identificação da causa provável, da natureza e da extensão dos ferimentos é rápida, completa e de acordo com as práticas atuais de primeiros socorros O risco de causar danos a si mesmo e a outros é sempre minimizado O tratamento dos ferimentos e as condições do paciente são adequadas e estão de acordo com as práticas reconhecidas de primeiros socorros e com as directrizes internacionais

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Tabela A-VI/4-2

Especificação da norma mínima de competência em cuidados médicos

Coluna 1 **Competência**	Coluna 2 **Conhecimento, entendimento e proficiência**	Coluna 3 **Métodos para demonstrar competência**	Coluna 4 **Critérios para avaliar competência**
Prestar assistência médica aos doentes e fe-ridos enquan-to permanece-rem a bordo	Cuidados com os feridos, envolvendo: .1 ferimentos na cabeça e na coluna .2 ferimento nos ouvidos, no nariz, na garganta e nos olhos .3 hemorragia externa e interna .4 queimaduras por fogo ou calor, queimaduras por líquido fervente e ulcerações produzidas pelo frio .5 fracturas, luxações e lesões musculares .6 ferimentos, cicatrização e infecção de ferimentos .7 alívio de dores .8 técnicas de sutura e de emprego de torniquetes .9 tratamento de problemas abdominais agudos .10 pequenos tratamentos cirúrgicos .11 colocação de curativos e ataduras Aspectos de enfermagem: .1 princípios gerais .2 cuidados de enfermagem Doenças, abrangendo: .1 condições e emergências médicas .2 doenças sexualmente transmitidas	Avaliação de evidência obtida por formação e demonstração práticas Quando possível, experiência prática num hospital ou num estabelecimento semelhante	A identificação dos sintomas baseia-se nos conceitos de exames clínicos e do histórico médico A protecção contra infecções e propagação de doenças é completa e eficaz A atitude pessoal é calma, confiante e tranquilizadora O tratamento de ferimentos e a condição do paciente é adequado e está de acordo com a prática médica aceite e com os guias médicos nacionais e internacionais pertinentes A dosagem e o emprego de drogas e de medicamentos atendem às recomendações dos fabricantes e estão de acordo com a prática médica aceite As alterações significativas na condição do paciente são prontamente reconhecidas

Coluna 1 **Competência**	Coluna 2 **Conhecimento, entendimento e proficiência**	Coluna 3 **Métodos para demonstrar competência**	Coluna 4 **Critérios para avaliar competência**
Prestar assistência médica aos doentes e feridos enqu-anto permane-cerem a bordo (*Continuação*)	3. doenças tropicais e infecciosas Abuso de álcool e de drogas Cuidados odontológicos Ginecologia, gravidez e parto Assistência médica de pessoas resgatadas Morte no mar Higiene Prevenção de doenças, abrangendo: .1 desinfecção, desinfestação e desratização .2 vacinações Manter registos e cópias dos regulamentos aplicáveis .1 manter registos médicos .2 regulamentos médicos marítimos internacionais e nacionais		
Participar de esquemas coordenados para a assistência médica a navios	Assistência externa, abrangendo: .1 recomendações médicas pelo rádio .2 transporte dos doentes e feridos, inclusive evacuação por helicóptero .3 assistência médica de marítimos doentes, envolvendo a cooperação com as autoridades de saúde portuárias, ou com enfermarias para pacientes externos no porto		Os procedimentos para exames clínicos são completos e estão de acordo com as instruções recebidas O método e os preparativos para a evacuação estão de acordo com procedimentos reconhecidos e destinam-se a aumentar ao máximo o bem estar do paciente Os procedimentos para procurar obter recomendações médicas pelo rádio estão de acordo com as práticas e recomendações estabelecidas

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Secção A-VI/5

Requisitos mínimos obrigatórios para a emissão de certificados de proficiência para oficiais de protecção do navio

Norma de competência

1 Deverá ser exigido de todo candidato a certificação como um oficial de protecção do navio que demonstre competência para assumir as tarefas, atribuições e responsabilidades listadas na coluna 1 da tabela A-VI/5.

2 O nível de conhecimento dos assuntos listados na coluna 2 da tabela A-VI/5 deverá ser suficiente para permitir que o candidato actue como o oficial de segurança designado do navio.

3 A formação e a experiência para atingir o nível necessário de conhecimento teórico, de entendimento e de proficiência deverão levar em consideração as orientações contidas na Secção B-VI/5 deste Código.

4 Deverá ser exigido de todo candidato a certificação que forneça provas de ter atingido a norma de competência exigida, de acordo com os métodos para demonstrar competência e os critérios para avaliar competência tabelados nas colunas 3 e 4 da tabela A-VI/5.

Tabela A-VI/5

Especificação das normas mínimas de competência para oficiais de protecção do navio

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Manter e supervisionar o cumprimen-to do plano de protecção de um navio	Conhecimento da política marítima internacional de protecção e das atribuições de Governos, companhias e pessoas designadas, inclusive de elementos que podem estar relacionados a actos de pirataria e de roubo armado Conhecimento do propósito e dos elementos que constituem o plano de protecção de um navio, dos procedimentos relacionados com ele e da manutenção de registos, inclusive daqueles que podem estar relacionados a actos de pirataria e de roubo armado Conhecimento dos procedimen-tos a serem adoptados ao cumprir o plano de protecção de um navio e ao informar incidentes relativos à protecção Conhecimento dos níveis de protecção marítima e das medidas e procedimentos de protecção deles decorrentes, a bordo do navio e no ambiente das instalações portuárias Conhecimento das exigências e procedimentos para realizar auditorias internas, inspecções no local, controlo e monitorização das actividades de protecção especificadas no plano de protecção de um navio Conhecimento das exigências e procedimentos para informar ao oficial de protecção da companhia quaisquer deficiências e não conformidades identificadas durante auditorias internas e inspecções de protecção	Avaliação de evidência obtida por formação ou exame aprovado	Os procedimentos e as acções estão de acordo com os princípios estabelecidos pelo Código ISPS e pela Convenção SOLAS, como emendada As exigências legais relativas à protecção são identificadas correctamente Os procedimentos obtêm um estado de prontidão para reagir a alterações nos níveis de protecção marítima As comunicações dentro da área de responsabilidade do oficial de protecção do navio são claras e compreendidas

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Manter e supervisionar o cumprimen-to do plano de protecção de um navio (*Continuação*)	Conhecimento dos métodos e procedimentos usados para alterar o plano de protecção do navio Conhecimento dos planos de contingência relacionados com a protecção do navio e dos procedimentos para reagir a ameaças à protecção do navio ou a violações da protecção, inclusive das disposições para manter operações essenciais da interface entre o navio e o porto, inclusive também os elementos que podem ter relação com actos de pirataria e de roubo armado Conhecimento prático dos termos e definições relacionados com a protecção marítima, inclusive dos elementos que podem estar relacionados a actos de pirataria e de roubo armado		

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Avaliar os riscos, as ameaças e a vulnerabilidade da protecção do navio	Conhecimento de avaliação de riscos e das ferramentas para a avaliação Conhecimento da documentação relativa à avaliação da protecção, inclusive da Declaração de Protecção Conhecimento das técnicas usadas para burlar as medidas de protecção, inclusive daquelas utilizadas por piratas e ladrões armados Conhecimento que permita o reconhecimento, numa base não discriminatória, de pessoas que possam representar possíveis riscos à protecção do navio Conhecimento que permita o reconhecimento de armas, substâncias e dispositivos perigosos e noção dos danos que podem causar	Avaliação de evidência obtida por aprovada formação, ou de experiência aprovada e exames, inclusive de demonstração prática de competência para: .1 realizar buscas físicas .2 realizar inspecções sem o uso da força	Os procedimentos e as acções estão de acordo com os princípios estabelecidos pelo Código ISPS e pela Convenção SOLAS, como emendada Os procedimentos obtêm um estado de prontidão para reagir a alterações nos níveis de protecção marítima As comunicações dentro da área de responsabilidade do oficial de protecção do navio são claras e compreendidas

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Avaliar os riscos, as ameaças e a vulnerabilidade da protecção do navio (*Continuação*)	Conhecimento das técnicas de administração e controlo de multidões, quando for adequado Conhecimento de como lidar com informações sensíveis e comunicações relativas à protecção Conhecimento para realizar e coordenar buscas Conhecimento dos métodos para realizar buscas e inspecções físicas sem o uso da força		
Realizar inspecções regulares do navio para assegurar que as medidas de protecção apropriadas estão sendo cumpridas e mantidas	Conhecimento dos requisitos para designar e monitorizar áreas restritas Conhecimento do controlo do acesso ao navio e a áreas restritas a bordo do navio Conhecimento dos métodos para um monitorização eficaz das áreas do convés e em volta do navio Conhecimento dos aspectos da protecção relacionados com o manuseio da carga e dos suprimentos do navio com outras pessoas de bordo e com funcionários pertinentes da instalação portuária Conhecimento dos métodos para controlar e embarque, o desembarque e o acesso, enquanto estiverem a bordo, de pessoas e de seus pertences	Avaliação de evidência obtida por formação ou exame aprovados	Os procedimentos e as acções estão de acordo com os princípios estabelecidos pelo Código ISPS e pela Convenção SOLAS, como emendada Os procedimentos obtêm um estado de prontidão para reagir a alterações nos níveis de protecção marítima As comunicações dentro da área de responsabilidade do oficial de protecção do navio são claras e compreendidas

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Assegurar-se de que os equipamentos e os sistemas de protecção, se houver algum, sejam correctamente operados, testados e aferidos	Conhecimento dos vários tipos de equipamentos e sistemas de protecção e de suas limitações, inclusive daqueles que podem ser utilizados em caso de ataques por piratas ou por ladrões armados Conhecimento dos procedimentos, instruções e orientações sobre a utilização de sistemas de alerta da protecção do navio Conhecimento dos procedimentos para testar, aferir e manter os sistemas e equipamentos de protecção, especialmente enquanto o navio estiver no mar	Avaliação de evidência obtida por formação ou exame aprovados	Os procedimentos e as acções estão de acordo com os princípios estabelecidos pelo Código ISPS e pela Convenção SOLAS, como emendada
Incentivar a atenção com a protecção e a vigilância	Conhecimento das exigências relativas à formação e aos exercícios de adestramento, com base nas convenções, códigos e circulares da IMO , inclusive os pertinentes às acções contra a pirataria e os roubos armados Conhecimento dos métodos para reforçar a percepção da segurança e vigilância a bordo Conhecimento dos métodos para avaliar a eficácia dos treinos e exercícios	Avaliação de evidência obtida por formação ou exame aprovados	Os procedimentos e as acções estão de acordo com os princípios estabelecidos pelo Código ISPS e pela Convenção SOLAS, como emendada As comunicações dentro da área de responsabilidade do oficial de protecção do navio são claras e compreendidas

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Secção A-VI/6

Requisitos mínimos obrigatórios para o treinamento e a formação relativos à protecção do navio, para todos os marítimos

Norma de competência para a formação de familiarização relacionada com a protecção do navio

1 Antes de serem designadas para desempenhar atribuições a bordo, todas as pessoas empregadas ou que estejam trabalhando num navio que opere na navegação em mar aberto que seja obrigado a cumprir o disposto no Código ISPS, excepto os passageiros, deverão receber uma aprovada formação de familiarização relacionada com a protecção do navio, levando em consideração as orientações fornecidas na Parte B deste Código, para serem capazes de:

.1 informar um incidente relativo à protecção do navio, inclusive uma ameaça ou um ataque de piratas ou de ladrões armados;

.2 saber os procedimentos a seguir quando reconhecer uma ameaça à protecção do navio; e

.3 participar dos procedimentos de emergência e de contingência relacionados com a protecção do navio.

2 Os marítimos designados para desempenhar atribuições de protecção, trabalhando ou empregados num navio que opere na navegação em mar aberto, deverão, antes de serem designados para desempenhar tais atribuições, receber uma formação de familiarização relacionada com a protecção do navio, nas atribuições e responsabilidades que lhes forem ser designadas, levando em consideração as orientações fornecidas na Parte B.

3 A formação de familiarização relacionada com a protecção deverá ser dada pelo oficial de protecção do navio, ou por uma pessoa igualmente qualificada.

Norma de competência para a formação sobre atenção à protecção do navio

4 Os marítimos servindo ou engajados em qualquer capacidade a bordo de um navio do qual seja exigido que cumpra o disposto no Código ISPS na actividade daquele navio, como parte da tripulação do navio, sem que lhes tenham sido designadas atribuições de protecção, deverão, antes de serem designados para desempenhar quaisquer atribuições a bordo:

.1 receber um treinamento ou uma aprovada formação sobre atenção à protecção do navio, como especificado na tabela A-VI/6-1;

.2 ser-lhes exigido que forneçam provas de terem adquirido a norma de competência exigida para assumir as tarefas, atribuições e responsabilidades listados na coluna 1 da tabela A-VI/6-1:

.2.1 por meio de uma demonstração de competência, de acordo com os métodos e os critérios para avaliar competência tabelados nas colunas 3 e 4 da tabela A-VI/6-1; e

.2.2 por meio de exame ou avaliação contínua, como parte de um programa de formação aprovado nos assuntos listados na coluna 2 da tabela A-VI/6-1.

Disposições transitórias

5 Até 1 de Janeiro de 2014, os marítimos que iniciarem um serviço em navegação em mar aberto antes da entrada em vigor desta secção deverão confirmar que atenderam às exigências do parágrafo 4, por meio de:

.1 serviço em navegação em mar aberto aprovado, como parte do pessoal de bordo, com uma duração total de pelo menos seis meses nos três anos anteriores: ou

.2 ter desempenhado funções de protecção do navio consideradas equivalentes ao serviço em navegação em mar aberto exigido no parágrafo 5.1; ou

.3 ter passado num teste aprovado; ou

.4 ter concluído com aproveitamento uma aprovada formação.

Norma de competência para marítimos designados para atribuições de protecção do navio

6 Deverá ser exigido de todo marítimo designado para desempenhar atribuições de protecção, inclusive actividades relacionadas com o combate à pirataria e aos roubos armados, que demonstre competência para assumir as tarefas, atribuições e responsabilidades listados na coluna 1 da tabela A-VI/6-2.

7 O nível de conhecimento dos assuntos listados na coluna 2 da tabela A-VI/6-2 deverá ser suficiente para permitir que todo candidato desempenhe as atribuições de protecção que lhe forrem designadas, inclusive actividades relacionadas com o combate à pirataria a ao roubo armado.

8 Deverá ser exigido de todo candidato a certificação que forneça provas de ter atingido a norma de competência exigida, mediante:

.1 demonstração de competência para assumir as tarefas, atribuições e responsabilidades listados na coluna 1 da tabela A-VI/6-2, de acordo com os métodos para demonstrar competência e os critérios para avaliar competência tabelados nas colunas 3 e 4 daquela tabela; e

.2 exame ou avaliação contínua como parte de um aprovado programa de formação, abrangendo as matérias especificadas na coluna 2 da tabela A-VI/6-2.

Disposições transitórias

9 Até 1 de Janeiro de 2014, os marítimos designados para desempenhar atribuições de protecção, que iniciarem um serviço em navegação em mar aberto antes da entrada em vigor desta secção, poderão demonstrar competência para assumir as tarefas, atribuições e responsabilidades listados na coluna 1 da tabela A-VI/6-2, por meio de:

.1 aprovado serviço em navegação em mar aberto, como parte do pessoal de bordo, com uma duração total de pelo menos seis meses nos três anos anteriores: ou

.2 ter desempenhado funções de protecção do navio consideradas equivalentes ao serviço em navegação em mar aberto exigido no parágrafo 9.1; ou

.3 ter passado em um teste aprovado; ou

.4 ter concluído com aproveitamento uma aprovada formação.

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Tabela A-VI/6-1

Especificação da norma mínima de competência em atenção à protecção do navio

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Contribuir para o aumento da protecção marítima mediante uma maior atenção	Conhecimento prático básico dos termos relativos à protecção marítima, inclusive dos elementos que podem estar relacionados com actos de pirataria ou de roubo armado Conhecimento básico da política marítima internacional de protecção e das responsabilidades de Governos, companhias e pessoas Conhecimento básico dos níveis de protecção marítima e dos seus impactos sobre as medidas e procedimentos de protecção a bordo do navio e nas instalações portuárias Conhecimento básico dos procedimentos para elaboração de relatórios relativos à protecção do navio Conhecimento básico dos planos de contingência relacionados com a protecção do navio	Avaliação de evidência obtida por aprovada formação ou durante a frequência a um curso aprovado	As necessidades relativas a uma maior protecção marítima são correctamente identificadas
Reconhecimento de ameaças à protecção do navio	Conhecimento básico das técnicas usadas para burlar as medidas de protecção Conhecimento que permita o reconhecimento de possíveis ameaças à protecção do navio, inclusive dos elementos que podem estar relacionados a actos de pirataria e de roubo armado Conhecimento que permita o reconhecimento de armas, substâncias e dispositivos perigosos e noção dos danos que podem causar Conhecimento básico de como lidar com informações sensíveis e comunicações relativas à protecção	Avaliação de evidência obtida por aprovada formação ou durante a frequência a um curso aprovado	As ameaças à protecção marítima são correctamente identifi-cadas

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Entendimento da neces-sidade e dos métodos de manutenção e de atenção com a protec-ção e a vigilância	Conhecimento das exigências relativas à formação e aos exercícios de adestramento, com base nas convenções, códigos e circulares da IMO pertinentes, inclusive daquelas pertinentes às acções contra a pirataria e os roubos armados	Avaliação de evidência obtida por aprovada formação ou durante a frequência a um curso aprovado	As necessidades relativas a uma maior protecção marítima são correctamente identificadas

Tabela A-VI/6-2

Especificação da norma mínima de competência para marítimos designados para atribuições de protecção do navio

Coluna 1	Coluna 2	Coluna 3	Coluna 4
Competência	**Conhecimento, entendimento e proficiência**	**Métodos para demonstrar competência**	**Critérios para avaliar competência**
Manter as condições apresentadas no plano de protecção de um navio	Conhecimento prático dos termos e definições relativos à protecção, inclusive dos elementos que podem ter relação com actos de pirataria ou de roubo armado Conhecimento básico da política marítima internacional de protecção e das responsabilidades de Governos, companhias e pessoas, inclusive de elementos que podem ter relação com actos de pirataria ou de roubo armado Conhecimento dos níveis de protecção marítima e dos seus impactos sobre as medidas e procedimentos de protecção a bordo do navio e nas instalações Portuárias Conhecimento dos procedimen-tos para elaboração de relatórios relativos à protecção do navio Conhecimento dos procedimen-tos e das exigências relativas a exercícios de adestramento, com base nas convenções, códigos e circulares da IMO pertinentes, inclusive conhecimento prático daqueles que podem ter relação com actos de pirataria e de roubo armado Conhecimento dos procedimen-tos para realizar inspecções e vistorias e para o controlo e monitorização das actividades de protecção especificadas no plano de segurança do navio	Avaliação de evidência obtida por aprovada formação ou durante a frequência a um curso aprovado	Os procedimentos e as acções estão de acordo com os princípios estabelecidos pelo Código ISPS e pela Convenção SOLAS, como emendada As exigências legais relativas à protecção são identificadas cor-rectamente As comunicações dentro da área de responsabilidade são claras e compreendidas

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Coluna 1 Competência	Coluna 2 Conhecimento, entendimento e proficiência	Coluna 3 Métodos para demonstrar competência	Coluna 4 Critérios para avaliar competência
Manter as condições apresentadas no plano de protecção de um navio (*Continuação*)	Conhecimento dos planos de contingência relacionados com a protecção do navio e dos procedimentos para reagir a ameaças à protecção do navio ou a violações da protecção, inclusive das disposições para manter operações essenciais da interface entre o navio e o porto, inclusive também um conhecimento prático daqueles que podem ter relação com actos de pirataria e de roubo armado		
Reconhecimento dos riscos e das ameaças à pro-tecção do navio	Conhecimento da documenta-ção relativa à protecção, inclusive da Declaração de Protecção Conhecimento das técnicas usadas para burlar as medidas de protecção, inclusive daquelas utilizadas por piratas e ladrões armados Conhecimento que permita o reconhecimento de possíveis ameaças à protecção do navio Conhecimento que permita o reconhecimento de armas, substâncias e dispositivos perigosos e noção dos danos que podem causar Conhecimento das técnicas de gestão e controlo de multidões, quando for adequado Conhecimento de como lidar com informações sensíveis e comunicações relativas à protecção Conhecimento dos métodos para realizar buscas e inspecções físicas sem o uso da força	Avaliação de evidência obtida por aprovada formação ou durante a frequência a um curso aprovado	Os procedimentos e as acções estão de acordo com os princípios estabelecidos pelo Código ISPS e pela Convenção SOLAS, como emendada

Coluna 1 Competência	Coluna 2 Conhecimento, entendimento e proficiência	Coluna 3 Métodos para demonstrar competência	Coluna 4 Critérios para avaliar competência
Realizar inspecções regulares no navio, com o propósito da sua protecção	Conhecimento das técnicas para monitorizar áreas restritas Conhecimento do controlo do acesso ao navio e a áreas restritas a bordo do navio Conhecimento dos métodos para uma monitorização eficaz das áreas do convés e em volta do navio Conhecimento dos métodos de inspecção relativos à carga e aos suprimentos do navio Conhecimento dos métodos para controlar e embarque, o desembarque e o acesso, enquanto estiverem a bordo, de pessoas e de seus pertences	Avaliação de evidência obtida por aprovada formação ou durante a frequência a um curso aprovado	Os procedimentos e as acções estão de acordo com os princípios estabelecidos pelo Código ISPS e pela Convenção SOLAS, como emendada
Utilização correcta dos equipamentos e sistemas de protecção do navio, se houver algum	Conhecimento geral dos vários tipos de equipamentos e sistemas de protecção, inclusive daqueles que poderiam ser utilizados em caso de ataques por piratas ou por ladrões armados, inclusive de suas limitações Conhecimento da necessidade de testar, aferir e manter os sistemas e equipamentos de protecção, especialmente enquanto o navio estiver no mar	Avaliação de evidência obtida por formação ou exame aprovados	As operações com os equipamentos e sistemas são realizadas de acordo com as instruções estabelecidas para a operação dos equipamen-tos, levando em consideração as limitações dos equipamentos e dos sistemas Os procedimentos e as acções estão de acordo com os princípios estabelecidos pelo Código ISPS e pela Convenção SOLAS, como emendada

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CAPÍTULO VII

Normas relativas à certificação alternativa

Secção A-VII/1

Emissão de certificados alternativos

1 Deverá ser exigido de todo candidato a certificação no nível operacional, com base no Capítulo VII do anexo da Convenção, que conclua uma formação e uma instrução pertinentes e que atenda às normas de competência para todas as funções estabelecidas na tabela A-II/1, ou na tabela A-III/1. As funções especificadas na tabela A-II/1 ou A-III/1, respectivamente, podem ser acrescentadas, desde que o candidato complete, como for apropriado, uma formação e uma instrução adicionais pertinentes e atenda às normas de competência estabelecidas nessas tabelas para as funções em questão.

2 Deverá ser exigido de todo candidato a certificação no nível de gestão como a pessoa que detém o comando de um navio com uma arqueação bruta igual ou superior a 500, ou como a pessoa sob quem recairá o comando daquele navio em caso de incapacidade da pessoa em comando, além de satisfazer a norma de competência especificada na tabela A-II/1, que complete uma formação e uma instrução pertinentes e atenda à norma de competência para todas as funções estabelecidas na tabela A-II/2. As funções especificadas nas tabelas do Capítulo III dessa parte podem ser acrescentadas, desde que o candidato complete, como for apropriado, uma formação e uma instrução adicionais pertinentes e atenda às normas de competência estabelecidas dessas tabelas para as funções em questão.

3 Deverá ser exigido de todo candidato a certificação no nível de gestão como a pessoa responsável pela propulsão mecânica de um navio cuja máquina principal tenha uma potência propulsora de 750 kW ou mais, ou como a pessoa sob quem recairá essa responsabilidade em caso de incapacidade da pessoa responsável pela propulsão mecânica do navio, além de satisfazer a norma de competência especificada na tabela A-III/1, que complete uma formação e uma instrução pertinentes e atenda à norma de competência para todas as funções estabelecidas na tabela A-III/2. As funções especificadas nas tabelas do Capítulo II dessa parte podem ser acrescentadas, desde que o candidato complete, como for apropriado, uma formação e uma instrução adicionais pertinentes e atenda às normas de competência estabelecidos nessas tabelas para as funções em questão.

4 Deverá ser exigido de todo candidato a certificação no nível de apoio:

.1 em navegação ou em máquinas marítimas, deverá ser necessário concluir uma formação pertinente e que atenda a norma de competência para as funções estabelecidas na tabela A-II/4 ou A-III/4. As funções especificadas na tabela A-III/4 ou A-II/4, respectivamente, podem ser acrescentadas, desde que o candidato complete, como for apropriado, uma formação e uma instrução adicionais pertinentes e atenda às normas de competência estabelecidas nessas tabelas para as funções em questão;

.2 como marítimo apto de convés, além do atendimento à norma de competência especificada na tabela A-II/4, deverá ser necessário concluir uma formação pertinente e que atenda a norma de competência para todas as funções estabelecidas na tabela A-II/5. As funções especificadas na tabela A-III/4 ou A-III/5 podem ser acrescentadas, desde que o candidato complete, como for apropriado, uma formação adicional pertinente e atenda às normas de competência estabelecidos nessa(s) tabela(s) para a(s) função(ões) em questão; e

.3 como marítimo apto de máquinas, além do atendimento à norma de competência especificada na tabela A-III/4, deverá ser necessário concluir uma formação pertinente e que atenda à norma de competência para todas as funções estabelecidas na tabela A-III/5. As funções especificadas na tabela A-II/4 ou A-II/5 podem ser acrescentadas, desde que o candidato complete, como for apropriado, uma formação adicional pertinente e atenda às normas de competência estabelecidas naquela(s) tabela(s) para a(s) função(ões) em questão.

Secção A-VII/2

Certificação de marítimos

1 De acordo com as exigências da Regra VII/1, parágrafo 1.3, todo candidato a certificação com base no disposto no Capítulo VII, no nível operacional, em funções especificadas nas tabelas A-II/1 e A-III/1 deverá:

.1 possuir um período de aprovado serviço em navegação em mar aberto não inferior a 12 meses, que deverá conter um período não inferior a seis meses desempenhando atribuições na casa de máquinas, sob a supervisão de um oficial de máquinas qualificado e, quando for exigida a função de navegação, um período não inferior a seis meses desempenhando atribuições de serviço de quarto na ponte de comando, sob a supervisão de um oficial qualificado em serviço de quarto na ponte de comando; e

.2 ter concluído, durante esse período de serviço, aprovados programas de formação a bordo, como atendendo às exigências pertinentes das Secções A-II/1 e A-III/1 e que esteja documentado num livro registo de formação aprovado.

2 Todo candidato a certificação com base no disposto no Capítulo VII, no nível de gestão, num conjunto de

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funções especificadas nas tabelas A-II/2 e A-III/2 deverá possuir um serviço em navegação em mar aberto relacionado com as funções a serem indicadas na autenticação ao certificado, como se segue:

.1 *para outras pessoas que não as que detêm o comando ou a responsabilidade pela propulsão mecânica de um navio* – 12 meses desempenhando atribuições no nível operacional, relacionadas com a Regra III/2 ou III/3, como for adequado e, quando for exigida a função de navegação no nível de gestão, 12 meses desempenhando atribuições de serviço de quarto na ponte de comando, no nível operacional;

.2 *para aqueles que detêm o comando ou a responsabilidade pela propulsão mecânica de um navio* – pelo menos 48 meses, inclusive o disposto no parágrafo 2.1 dessa secção, desempenhando, como um oficial certificado, atribuições relacionadas com as funções a serem indicadas na autenticação ao certificado, dos quais 24 meses deverão ser no desempenho de funções especificadas na tabela A-III/1, e 24 meses deverão ser no desempenho de funções especificadas nas tabelas A-III/1 e A-III/2.

3 De acordo com as exigências da Regra VII/1, parágrafo 1.3, todo candidato a certificação com base no disposto no Capítulo VII, no nível de apoio, em funções especificadas nas tabelas A-II/4 e A-III/4 deverão ter concluído:

.1 serviço em navegação em mar aberto, incluindo pelo menos 12 meses de experiência, constituído de:

.1.1 pelo menos 6 meses, relacionado a atribuições de serviço de quarto de navegação; e

.1.2 pelo menos 6 meses, relacionado a atribuições na casa de máquinas; ou

.2 formação especial, seja antes de embarcar ou a bordo do navio, abrangendo um período de aprovado serviço em navegação em mar aberto , que não deverá ser inferior a 4 meses, constituído de:

.2.1 pelo menos 2 meses, relacionado a atribuições de serviço de quarto de navegação; e

.2.2 pelo menos 2 meses, relacionado a atribuições na casa de máquinas; ou

.3 o serviço em navegação em mar aberto, a formação e a experiência exigidas pelo parágrafo 3.1 ou 3.2 deverão ser realizadas sob a supervisão directa de um oficial ou um subalterno devidamente qualificado.

4 De acordo com as exigências da Regra VII/1, parágrafo 1.3, todo candidato a certificação com base no disposto no Capítulo VII, no nível de apoio, em funções especificadas nas tabelas A-II/5 e A-III/5 deverá, enquanto estiver qualificado para servir como um marítimo de mestrança e marinhagem que faça parte de um quarto de serviço de navegação e na casa de máquinas, atender às normas de competência especificadas nas Secções A-II/5 e A-III/5 do Código STCW, e ter concluído:

.1 um aprovado período de serviço em navegação em mar aberto, não inferior a 30 meses, constituído de:

.1.1 pelo menos 18 meses, relacionado a atribuições de marítimo apto de convés; e

.1.2 pelo menos 12 meses, relacionado a atribuições de marítimo apto de máquinas; ou

.2 um aprovado programa de formação e um período de aprovado serviço em navegação em mar aberto não inferior a 18 meses, constituído de:

.2.1 pelo menos 12 meses, relacionado a atribuições de marítimo apto de convés; e

.2.2 pelo menos 6 meses, relacionado a atribuições de marítimo apto de máquinas; ou

.3 um programa de formação especial e unificado de convés e de máquinas, contendo um período de aprovado serviço em navegação em mar aberto não inferior a 12 meses num departamento unificado de convés e máquinas, constituído de:

.3.1 pelo menos 6 meses, relacionado a atribuições de marítimo apto de convés; e

.3.2 pelo menos 6 meses, relacionado a atribuições de marítimo apto de máquinas.

Secção A-VII/3

Princípios que regem a emissão de certificados alternativos

(Nenhuma disposição)

CAPÍTULO VIII

Normas relativas ao serviço de quarto

Secção A-VIII/1

Aptidão para o serviço

1 As Administrações deverão levar em consideração o perigo oferecido pela fadiga dos marítimos, principalmente daqueles cujas atribuições envolvem a operação segura e protegida de um navio.

2 Deverá ser proporcionado a todas as pessoas a quem for designada a atribuição de oficial encarregado de um quarto de serviço, ou de um marítimo de mestrança e marinhagem que faça parte de um quarto de serviço, e àquelas cujas atribuições envolvam atribuições de segurança, de prevenção da poluição e de protecção do navio, um período de descanso não inferior a:

.1 um mínimo de 10 horas de descanso em qualquer período de 24 horas; e

.2 77 horas em qualquer período de 7 dias.

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3 As horas de descanso podem ser divididas em até dois períodos, um dos quais deverá ter uma duração de pelo menos 6 horas, e os intervalos entre períodos de descanso consecutivos não deverão ser superiores a 14 horas.

4 As exigências relativas aos períodos de descanso estabelecidas nos parágrafos 2 e 3 não precisam ser mantidas no caso de uma emergência ou de outras condições operacionais que se sobreponham a elas. Os exercícios de reunião, de combate a incêndio e envolvendo embarcações salva-vidas, e os exercícios estabelecidos por leis e regulamentos nacionais e por instrumentos internacionais deverão ser realizados de uma maneira que minimize a perturbação dos períodos de descanso, e que não leve à fadiga.

5 As Administrações deverão exigir que as escalas de serviço de quarto sejam afixadas onde sejam facilmente acessíveis. As escalas deverão ser elaboradas num formato padronizado[95], no idioma de trabalho, ou idiomas, do navio e em inglês.

6 Quando um marítimo estiver de sobreaviso, como quando um compartimento de máquinas estiver desatendido, ele deverá ter um período de descanso compensador adequado se o período de descanso normal for perturbado pelas chamadas ao trabalho fora do seu período normal de trabalho.

7 As Administrações deverão exigir que os registos de horas diárias de descanso dos marítimos sejam mantidos num formato padronizado[96], no idioma de trabalho, ou idiomas, do navio e em inglês, para permitir uma monitorização e uma verificação do cumprimento do disposto nesta secção. Os marítimos deverão receber uma cópia dos registos relativos a eles, que deverão ser autenticados pelo comandante, ou por uma pessoa autorizada por ele, e pelos marítimos.

8 Nada do contido nesta secção deverá ser considerado como prejudicando o direito do comandante de um navio de exigir que um marítimo cumpra quaisquer horas de trabalho que forem necessárias para a segurança imediata do navio, das pessoas a bordo ou da carga, ou com o propósito de prestar auxílio a outros navios ou a outras pessoas em perigo no mar. Consequentemente, o comandante pode suspender o esquema de horas de descanso e exigir que um marítimo cumpra quaisquer horas de trabalho que forem necessárias, até que tenha sido restabelecida uma situação normal. Logo que possível, após ter sido restabelecida a situação normal, o comandante deverá assegurar que seja proporcionado um período de descanso adequado a quaisquer marítimos que tenham realizado um trabalho num período de descanso programado.

9 As Partes podem permitir excepções quanto às horas de descanso exigidas nos parágrafos 2.2 e 3 acima, desde que o período de descanso não seja inferior a 70 horas em qualquer período de 7 dias.

As excepções quanto ao período de descanso semanal estabelecido no parágrafo 2.2 não deverão ser permitidas por mais de duas semanas consecutivas. Os intervalos entre dois períodos de excepção a bordo não deverão ser inferiores a duas vezes a duração da excepção.

As horas de descanso estabelecidas no parágrafo 2.1 podem ser divididas em até três períodos, um dos quais deverá ter uma duração de pelo menos 6 horas, e nenhum dos outros dois períodos deverá ter uma duração inferior a uma hora. Os intervalos entre períodos de descanso consecutivos não deverão ser superiores a 14 horas. As excepções não deverão ir além de dois períodos de 24 horas em qualquer período de 7 dias.

As excepções deverão, na medida do possível, levar em consideração as orientações relativas à prevenção do cansaço, fornecidas na Secção B-VIII/1.

10 Cada Administração deverá estabelecer, com o propósito de prevenir o abuso de álcool, um limite de até 0,05% do nível de álcool no sangue (BAC), ou de 0,25 mg/*l* de álcool no hálito ou, uma quantidade de álcool que leve a essa concentração de álcool, para comandantes, oficiais e outros marítimos, enquanto estiverem desempenhando atribuições relacionadas com a segurança, à protecção do navio e ao meio ambiente marinho.

Secção A-VIII/2

Medidas e princípios relativos ao serviço de quarto a serem observados

PARTE 1 – CERTIFICAÇÃO

1 O oficial chefe de quarto de navegação ou de convés deverá estar devidamente qualificado de acordo com as disposições do Capítulo II, ou do Capítulo VII, adequadas às atribuições relativas ao serviço de quarto de navegação ou de convés.

2 O oficial chefe quarto de máquinas deverá estar devidamente qualificado de acordo com as disposições do Capítulo III, ou do Capítulo VII, adequadas às atribuições relativas ao serviço de quarto de máquinas.

PARTE 2 - PLANEAMENTO DA VIAGEM

Exigências gerais

3 A viagem pretendida deverá ser planeada com antecedência, levando em consideração todas as informações pertinentes, e qualquer rumo traçado deverá ser verificado antes do início da viagem.

4 O chefe de máquinas deverá, mediante consulta ao comandante, determinar antecipadamente as necessidades da viagem pretendida, levando em consideração as necessidades de combustível, de água, de lubrificantes, de produtos químicos, de itens de consumo e de outras peças sobressalentes, de ferramentas, de suprimentos e quaisquer outras necessidades.

Planeamento antes de cada viagem

5 Antes de cada viagem, o comandante de todo navio deverá assegurar que a rota pretendida, do porto de partida até o primeiro porto de escala, seja planeada utili-

[95]Podem ser utilizadas as Directrizes da IMO/ILO para a elaboração de tabelas de escala de trabalho de marítimos a bordo e
para ver os formatos de registos de horas de trabalho de marítimos, ou de horas de descanso.

[96]Podem ser utilizadas as Directrizes da IMO/ILO para a elaboração de tabelas de escala de trabalho de marítimos a bordo e
para ver os formatos de registos de horas de trabalho de marítimos, ou de horas de descanso.

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zando as cartas e outras publicações náuticas adequadas e apropriadas, necessárias para a viagem pretendida, contendo informações precisas, completas e actualizadas relativas às limitações à navegação e aos riscos que forem de natureza permanente ou previsíveis e que sejam pertinentes à navegação do navio com segurança.

Verificação e apresentação da derrota planeada

6 Quando o planeamento da derrota tiver sido verificado, levando em consideração todas as informações pertinentes, a derrota planeada deverá ser apresentada claramente em cartas apropriadas e deverá estar continuamente disponível aos oficiais chefe do quarto, que deverão verificar cada rumo a ser seguido, antes de utilizá-la durante a viagem.

Desvio da derrota planeada

7 Se durante uma viagem for tomada uma decisão de alterar o próximo porto de escala constante da derrota planeada, ou se por outros motivos for necessário que o navio se desvie significativamente daquela derrota, deverá então ser planeada uma derrota alterada, antes de desviar o navio significativamente da derrota originalmente planeada.

PARTE 3 – PRINCÍPIOS GERAIS DO SERVIÇO DE QUARTO

8 Os quartos de serviço deverão ser conduzidos com base nos seguintes princípios de emprego dos recursos da ponte de comando e da casa de máquinas:

.1 deverão ser assegurados medidas adequadas para o pessoal que faz o serviço de quarto, de acordo com as situações;

.2 ao distribuir o pessoal que faz o serviço de quarto deverá ser levada em consideração qualquer limitação da qualificação ou da aptidão das pessoas;

.3 deverão ser entendidos os papéis e responsabilidades de cada tripulante que faz serviço de quarto e o papel da equipa deverá ser estabelecido;

.4 o comandante, o chefe de máquinas e o oficial chefe das atribuições do quarto de serviço deverão conduzir adequadamente um quarto de serviço, utilizando da melhor maneira possível os recursos disponíveis, como informações, instalações/equipamentos e outras pessoas;

.5 o pessoal que faz o serviço de quarto deverá conhecer as funções e o funcionamento das instalações/equipamentos, e estar familiarizado com a sua utilização;

.6 o pessoal que faz o serviço de quarto deverá compreender as informações e saber como reagir às informações provenientes de cada estação/instalação/equipamento;

.7 as informações provenientes das estações/instalações/equipamentos deverão ser adequadamente compartilhadas por todo o pessoal que faz o serviço de quarto;

.8 o pessoal que faz o serviço de quarto deverá se comunicar adequadamente entre si, em qualquer situação; e

.9 o pessoal que faz o serviço de quarto deverá informar ao comandante/chefe de máquinas/oficial chefe das atribuições do quarto de serviço, sem qualquer hesitação, quando tiver qualquer dúvida quanto à acção a ser realizada no interesse da segurança.

PARTE 4 – SERVIÇO DE QUARTO NO MAR

Princípios que se aplicam ao serviço de quarto em geral

9 As Partes deverão dirigir a atenção das companhias, dos comandantes, chefes de máquinas e do pessoal que faz o serviço de quarto para os seguintes princípios, que deverão ser observados para assegurar que os quartos de serviço sejam sempre conduzidos com segurança.

10 O comandante de todo navio é obrigado a assegurar que as medidas relativas ao serviço de quarto sejam adequadas para que um quarto de serviço de navegação, ou da carga, seja conduzido com segurança. Sob a direcção geral do comandante, os oficiais do quarto de navegação são responsáveis pela segurança da navegação durante seus períodos de serviço, quando estarão particularmente preocupados com evitar colisão, abalroamento e encalhe.

11 O chefe de máquinas de todo navio é obrigado, mediante consulta ao comandante, a assegurar que as medidas relativas ao serviço de quarto sejam adequadas para que um quarto de serviço de máquinas seja conduzido com segurança.

Protecção do meio ambiente marinho

12 O comandante, oficiais e marítimos de mestrança e marinhagem deverão estar cientes dos graves efeitos da poluição operacional ou acidental do meio ambiente marinho e deverão tomar todas as precauções possíveis para impedir essa poluição, principalmente dentro da estrutura dos regulamentos internacionais e portuários.

Parte 4-1 – Princípios a serem observados ao conduzir um quarto de serviço de navegação

13 O oficial chefe do quarto de serviço de navegação é o representante do comandante e é sempre o principal responsável pela navegação segura do navio e pelo cumprimento do Regulamento Internacional para Evitar Abalroamentos no Mar, 1972, como emendado.

Vigilância

14 Deverá ser mantida sempre uma vigilância adequada, de acordo com a Regra 5 do Regulamento Internacional para Evitar Abalroamentos no Mar, 1972, como emendado, e deverá ter o propósito de:

.1 manter um estado de vigilância constante por meios visuais e auditivos, bem como por todos os outros meios disponíveis, com relação a qualquer mudança no ambiente operativo;

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.2 avaliar plenamente a situação, o risco de colisão, abalroamento, de encalhe e de outros perigos à navegação; e

.3 detectar navios ou aeronaves em perigo, náufragos, destroços de naufrágio, objectos à deriva e outros riscos a uma navegação segura.

15 O vigia deve ser capaz de dedicar toda a sua atenção a manter uma vigilância adequada, e não deverá incumbir-se de, nem lhe deverá ser designada qualquer outra atribuição que possa interferir com essa tarefa.

16 As atribuições do vigia e do timoneiro são distintas, e o timoneiro não deverá ser considerado como sendo o vigia enquanto governa o navio, excepto em navios pequenos, onde da posição do timoneiro exista uma visão desobstruída a toda a sua volta e não haja redução da sua visão nocturna ou outro impedimento para realizar uma vigilância adequada. O oficial chefe do quarto de navegação pode ser o único vigia quando houver a luz do dia, desde que, em cada ocasião dessas:

.1 a situação tenha sido cuidadosamente avaliada e tenha sido verificado, sem qualquer dúvida, que seja seguro fazer isso;

.2 tenham sido levados plenamente em consideração todos os factores pertinentes, inclusive, mas não se restringindo a:

- condições do tempo,

- visibilidade,

- densidade do tráfego,

- proximidade de perigos à navegação,

- a atenção necessária quando estiver navegando em esquemas de separação do tráfego, ou perto deles; e

.3 possa ser chamado imediatamente à ponte de comando alguém para ajudá-lo quando qualquer alteração da situação assim o exigir.

17 Ao verificar se a composição do quarto de serviço de navegação é adequada para assegurar que possa ser mantida continuamente uma vigilância adequada, o comandante deverá levar em consideração todos os factores pertinentes, inclusive aqueles mencionados nesta secção do Código, bem como os seguintes:

.1 visibilidade, condições do tempo e estado do mar;

.2 densidade do tráfego e outras actividades que estejam ocorrendo na área em que a embarcação estiver navegando;

.3 a atenção necessária quando estiver navegando em esquemas de separação do tráfego, ou perto deles, ou outras medidas de estabelecimento de rotas;

.4 a carga de trabalho adicional causada pela natureza das funções do navio, pelas necessidades operativas imediatas e pelas manobras previstas;

.5 a aptidão para o serviço de quaisquer tripulantes que tenham sido escalados como membros do quarto de serviço;

.6 conhecimento da competência profissional dos oficiais e da tripulação do navio, e confiança nessa competência;

.7 a experiência de cada oficial do quarto de serviço de navegação e a sua familiaridade com os equipamentos, procedimentos e capacidade de manobra do navio;

.8 actividades que estejam sendo realizadas a bordo do navio em qualquer momento específico, inclusive actividades de radiocomunicações, e a existência de ajuda que possa ser chamada imediatamente à ponte de comando quando necessário;

.9 as condições de funcionamento da instrumentação e dos controlos da ponte de comando, inclusive dos sistemas de alarme;

.10 controlo do leme e do hélice e características de manobra do navio;

.11 o tamanho do navio e o campo de visão existente da posição de comando;

.12 a configuração da ponte de comando, na medida em que possa impedir que um membro do quarto de serviço detecte visual ou auditivamente qualquer acontecimento externo; e

.13 qualquer outra norma, procedimento ou orientação pertinente referente às medidas relativas ao serviço de quarto e à aptidão para o serviço que tenha sido adoptado pela Organização.

Medidas relativas ao serviço de quarto

18 Ao decidir a composição do quarto de serviço na ponte de comando, que pode conter subalternos adequadamente qualificados, os seguintes factores, entre outros, deverão ser levados em consideração:

.1 em nenhum momento a ponte pode ser deixado desatendido;

.2 as condições do tempo, a visibilidade e se há luz do dia ou está escuro;

.3 a proximidade de riscos à navegação que possam fazer com que seja preciso que o oficial chefe do quarto de serviço desempenhe outras atribuições de navegação;

.4 as condições de utilização e de funcionamento de auxílios à navegação, como o ECDIS, o radar ou os dispositivos de indicação da posição, e de quaisquer outros equipamentos que afectem a segurança da navegação do navio;

.5 se o navio é dotado de governo automático;

.6 se há serviços de rádio a serem realizados;

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.7 controlos, alarmes e indicadores de compartimentos de máquinas desatendidos (UMS) existentes na ponte de comando, procedimentos para a sua utilização e suas limitações; e

.8 quaisquer necessidades não usuais do quarto de serviço de navegação que possam surgir em decorrência de circunstâncias operacionais especiais.

Rendição do quarto de serviço

19 O oficial chefe do quarto de serviço de navegação não deverá passar o serviço ao oficial que o substitui se houver motivos para acreditar que este último não é capaz de desempenhar com eficácia as atribuições de serviço de quarto e, neste caso, o comandante deverá ser informado.

20 O oficial que vai assumir o serviço deverá assegurar-se de que os membros do quarto de serviço que vai assumir sejam plenamente capazes de desempenhar suas atribuições, especialmente com relação à sua adaptação para a visão nocturna. Os oficiais que vão assumir o serviço não deverão assumir o quarto de serviço até que a sua visão esteja totalmente adaptada às condições de iluminação.

21 Antes de assumir o serviço, os oficiais que estão assumindo deverão verificar posição estimada ou verdadeira do navio, e confirmar a sua derrota, o seu rumo e a sua velocidade pretendidos, bem como os controlos da casa de máquinas desatendida, como for adequado, e deverão observar quaisquer perigos à navegação que se possam esperar encontrar durante o seu serviço.

22 Os oficiais que vão assumir o serviço deverão verificar pessoalmente:

.1 ordens permanentes e outras instruções especiais do comandante relativas à navegação do navio;

.2 posição, rumo, velocidade e calado do navio;

.3 marés, correntes, condições do tempo e visibilidade, actuais e previstas, e o efeito desses factores sobre o rumo e a velocidade;

.4 procedimentos para a utilização das máquinas principais para manobrar quando essas máquinas estiverem sendo controladas da ponte do comando; e

.5 situação da navegação, abrangendo, mas não se restringindo a:

.5.1 as condições de funcionamento de todos os equipamentos de navegação e de segurança que estiverem sendo utilizados, ou que possam ser utilizados durante o quarto de serviço;

.5.2 os desvios das agulhas giroscópica e magnética;

.5.3 a presença e os movimentos dos navios que estiverem à vista, ou que se saiba que estão nas proximidades;

.5.4 as condições e os riscos que podem ser encontrados durante o quarto de serviço; e

.5.5 os possíveis efeitos da banda, do trim, da densidade da água e da imersão da popa ("squat") sobre a folga abaixo da quilha.

23 Se, a qualquer momento, o oficial chefe do quarto de serviço de navegação tiver que ser rendido quando estiver sendo realizada uma manobra, ou qualquer outra acção para evitar um risco, a sua rendição deverá ser retardada até que aquela acção tenha sido concluída.

Execução do quarto de serviço de navegação

24 O oficial chefe do quarto de serviço de navegação deverá:

.1 dar o serviço na ponte de comando;

.2 em nenhuma circunstância deixar a ponte de comando até que tenha sido devidamente substituído; e

.3 continuar a ser responsável pela navegação segura do navio, apesar da presença do comandante na ponte de comando, até que seja especificamente informado de que o comandante assumiu aquela responsabilidade, e que isto tenha sido mutuamente entendido.

25 Durante o quarto de serviço, o rumo seguido, a posição e a velocidade deverão ser verificados a intervalos suficientemente frequentes, utilizando quaisquer auxílios à navegação disponíveis, para assegurar que o navio siga o rumo planeado.

26 O oficial chefe do quarto de serviço de navegação deverá ter pleno conhecimento da localização e da operação de todos os equipamentos de navegação e de segurança existentes a bordo do navio e deverá estar ciente e levar em consideração as limitações de funcionamento desses equipamentos.

27 Não deverão ser atribuídas ao oficial chefe do quarto de serviço de navegação quaisquer atribuições que possam interferir com a segurança da navegação do navio, nem ele deverá executar essas tarefas.

28 Ao utilizar o radar, o oficial chefe do quarto de serviço de navegação deverá ter em mente a necessidade de cumprir sempre as disposições relativas à utilização do radar contidas no Regulamento Internacional para Evitar Abalroamentos no Mar, 1972, como emendado e em vigor.

29 Em casos de necessidade, o oficial chefe do quarto de serviço de navegação não deverá hesitar em utilizar o leme, as máquinas e os aparelhos de sinalização sonora. Sempre que possível, entretanto, deverá ser dado um aviso antecipado das alterações pretendidas nas rotações das máquinas, ou fazer uso efectivo dos controlos das máquinas de uma casa de máquinas desatendida existentes na ponte de comando, de acordo com os procedimentos aplicáveis.

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30 Os oficiais do quarto de serviço de navegação deverão conhecer as características de manobra do seu navio, inclusive as suas distâncias de parada, e devem considerar que outros navios podem ter características de manobra diferentes.

31 Durante o quarto de serviço deverá ser mantido um registo adequado dos movimentos e das actividades relativas à navegação do navio.

32 É de importância primordial que o oficial chefe do quarto de serviço de navegação assegure que seja mantida sempre uma vigilância adequada. Num navio em que o camarim de cartas for separado da ponte, o oficial chefe do quarto de serviço de navegação pode ir ao camarim de cartas, quando for essencial, por um curto período de tempo, para o desempenho das tarefas de navegação necessárias, mas deverá primeiro assegurar-se de que é seguro fazer isto, e que a vigilância adequada seja mantida.

33 No mar, deverão ser realizados testes de funcionamento dos equipamentos de navegação de bordo, tão frequentes quanto for praticável e as circunstâncias o permitirem, em especial antes que sejam esperadas condições de risco que afectem a navegação. Sempre que for adequado, esses testes deverão ser registados. Esses testes deverão ser feitos também antes da chegada ao porto, ou da saída do porto.

34 O oficial chefe do quarto de serviço de navegação deverá fazer verificações regulares para assegurar-se de que:

.1 a pessoa que estiver governando o navio, ou o piloto automático, esteja seguindo o rumo correcto;

.2 o desvio da agulha padrão seja determinado pelo menos uma vez por quarto e, quando possível, após qualquer grande alteração de rumo; as agulhas padrão e giroscópica sejam comparadas frequentemente e as repetidoras estejam sincronizadas com a sua agulha mestra;

.3 o piloto automático seja testado manualmente, pelo menos uma vez por quarto;

.4 as luzes de navegação e de sinalização e outros equipamentos de navegação estejam funcionando correctamente;

.5 os equipamentos de rádio estejam funcionando correctamente, de acordo com o parágrafo 86 desta secção; e

.6 os controlos, alarmes e indicadores da casa de máquinas desatendida estejam funcionando correctamente.

35 O oficial chefe do quarto de serviço de navegação deverá ter em mente a necessidade de atender sempre às exigências em vigor da Convenção Internacional para a Salvaguarda da Vida Humana no Mar (SOLAS), 1974[97]. O oficial chefe do quarto de serviço de navegação deverá levar em consideração:

.1 a necessidade de colocar uma pessoa para governar o navio e passar o governo para o controlo manual a tempo de permitir que qualquer situação potencialmente de risco seja tratada de uma maneira segura; e

.2 que, com o navio no governo automático, é altamente perigoso permitir que uma situação chegue ao ponto em que o oficial chefe do quarto de serviço de navegação fique sem ajuda e tenha que interromper a continuidade da vigilância para realizar acções de emergência.

36 Os oficiais do serviço de quarto de navegação deverão estar plenamente familiarizados com a utilização de todos os auxílios electrónicos à navegação levados a bordo, incluindo suas capacitações e limitações, e deverão utilizar cada um desses auxílios quando for adequado, tendo em mente que o eco-batímetro é um auxílio à navegação valioso.

37 O oficial chefe do serviço de quarto de navegação deverá utilizar o radar sempre que encontrar, ou esperar encontrar, uma visibilidade restrita, e sempre em águas com grande quantidade de tráfego, levando na devida consideração as suas limitações.

38 O oficial chefe do serviço de quarto de navegação deverá assegurar que as escalas de distâncias utilizadas sejam mudadas a intervalos suficientemente frequentes, de modo que os ecos sejam detectados o mais cedo possível. Deve-se ter em mente que ecos pequenos ou fracos podem não ser detectados.

39 Sempre que o radar estiver em uso, o oficial chefe do quarto de serviço de navegação deverá seleccionar uma escala de distâncias apropriada e observar cuidadosamente a tela, devendo assegurar-se de que a traçagem/plotagem ou a análise sistemática seja iniciada com tempo suficiente.

40 O oficial chefe do quarto de serviço de navegação deverá informar imediatamente ao comandante:

.1 se for encontrada, ou se esperar encontrar, visibilidade restrita;

.2 se as condições de tráfego, ou o movimento de outros navios, estiver causando preocupação;

.3 se for sentida dificuldade para manter o rumo;

.4 se não avistar terra, nem uma marca de navegação, nem obtiver sondagens no momento esperado;

.5 se, inesperadamente, for avistada terra ou uma marca de navegação, ou se ocorrer uma mudança nas sondagens;

.6 em caso de avaria nas máquinas, no controlo remoto das máquinas de propulsão, na máquina do leme ou em qualquer equipamento, alarme ou indicador de navegação essencial;

.7 se os equipamentos de radiocomunicações apresentarem defeitos;

[97]Ver SOLAS, Regras V/24, V/25 e V/26.

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.8 em caso de mau tempo, se tiver qualquer dúvida quanto à possibilidade do navio sofrer avarias devido às condições do tempo;

.9 se o navio encontrar qualquer risco à navegação, como gelo ou um objecto à deriva; e

.10 se ocorrer qualquer emergência ou se houver alguma dúvida.

41 Apesar das exigências de informar imediatamente ao comandante nas circunstâncias acima, o oficial chefe do quarto de serviço de navegação, além disso, não deverá hesitar em realizar as acções imediatas para a segurança do navio, se as circunstâncias assim o exigirem.

42 O oficial chefe do quarto de serviço de navegação deverá dar ao pessoal que faz serviço de quarto todas as instruções e informações adequadas que irão assegurar a condução de um quarto de serviço com segurança, inclusive uma vigilância adequada.

Serviço de quarto em diferentes condições e em áreas diferentes

Tempo bom e boa visibilidade

43 O oficial chefe do quarto de serviço de navegação deverá fazer marcações frequentes e precisas dos navios que se aproximam, como um meio de detectar antecipadamente um risco de abalroamento, e deverá ter em mente que algumas vezes esse risco existe, mesmo quando é evidente uma alteração significativa nas marcações, principalmente quando estiver se aproximando de um navio muito grande, ou de um reboque, ou quando estiver se aproximando de um navio a uma pequena distância. O oficial chefe do quarto de serviço de navegação deverá também realizar uma acção o mais cedo possível, de acordo com o Regulamento Internacional para Evitar Abalroamentos no Mar, 1972, como emendado, e posteriormente verificar se aquela acção está tendo o efeito desejado.

44 Com tempo bom e boa visibilidade, sempre que possível o oficial chefe do quarto de serviço de navegação deverá praticar a utilização do radar.

Visibilidade restrita

45 Quando for encontrada, ou esperada, visibilidade restrita, a primeira responsabilidade do oficial chefe do quarto de serviço de navegação é cumprir as regras pertinentes do Regulamento Internacional para Evitar Abalroamentos no Mar, 1972, como emendado, com especial atenção a soar os sinais sonoros de nevoeiro, a navegar com uma velocidade segura e a ter as máquinas prontas para uma manobra imediata. Além disto, o oficial chefe do quarto de serviço de navegação deverá:

.1 informar ao comandante;

.2 colocar um vigia adequado;

.3 exibir luzes d navegação; e

.4 operar e utilizar o radar.

Em horas de escuridão

46 O comandante e o oficial chefe do quarto de serviço de navegação, ao estabelecer a atribuição da vigilância, deverão levar na devida consideração os equipamentos e os auxílios à navegação disponíveis para utilização na ponte de comando, suas limitações, procedimentos e salvaguardas implementados.

Águas costeiras e congestionadas

47 Deverá ser utilizada a carta existente a bordo que tiver a maior escala, adequada para a área e corrigida com as últimas informações disponíveis. Deverão ser tomadas posições a intervalos frequentes, e deverão ser feitas por mais de um método, sempre que as circunstâncias permitirem. Quando estiver utilizando o ECDIS, deverão ser utilizadas cartas electrónicas de navegação com o código de utilização (escala) adequado, e a posição do navio deverá ser verificada por um meio independente de estabelecer a posição, a intervalos apropriados.

48 O oficial chefe do quarto de serviço de navegação deverá identificar perfeitamente todas as marcas de navegação pertinentes.

Navegação com piloto/prático a bordo

49 Apesar das atribuições e das obrigações dos pilotos/práticos, a sua presença a bordo não exime o comandante ou o oficial chefe do quarto de serviço de navegação das suas atribuições e obrigações para com a segurança do navio. O comandante e o piloto/prático deverão trocar informações relativas aos procedimentos de navegação, às condições locais e às características do navio. O comandante e/ou o oficial chefe do quarto de serviço de navegação deverão cooperar estreitamente com o piloto/prático e manter uma verificação cuidadosa da posição e dos movimentos do navio.

50 Se tiver qualquer dúvida quanto às acções ou intenções do piloto/prático, o oficial chefe do quarto de serviço de navegação deverá procurar obter esclarecimentos do piloto/prático e, se a dúvida persistir, deverá informar imediatamente ao comandante e realizar qualquer acção que seja necessária, antes da chegada do comandante.

Navio fundeado

51 Se o comandante considerar necessário, deverá ser mantido um serviço de quarto de navegação contínuo com o navio fundeado. Enquanto estiver fundeado, o oficial chefe do quarto de serviço de navegação deverá:

.1 determinar e traçar/plotar a posição do navio na carta adequada, logo que for possível;

.2 quando as circunstâncias permitirem, verificar a intervalos suficientemente frequentes se o navio continua fundeado com segurança, fazendo marcações de marcas de navegação fixas, ou de objectos facilmente identificáveis em terra.

.3 assegurar-se de que esteja sendo mantida uma vigilância adequada;

.4 assegurar-se de que sejam feitas periodicamente inspecções no navio;

.5 observar as condições meteorológicas e de marés e o estado do mar;

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.6 informar ao comandante e tomar todas as medidas necessárias se o navio garrar;

.7 assegurar-se de que o estado de prontidão das máquinas principais e de outras máquinas está de acordo com as instruções do comandante;

.8 se a visibilidade piorar, informar ao comandante;

.9 assegurar-se de que o navio esteja exibindo as luzes e marcas apropriadas e que sejam soados os sinais sonoros adequados, de acordo com todas as regras aplicáveis; e

.10 tomar medidas para proteger o meio ambiente de poluição pelo navio e cumprir as regras aplicáveis à poluição.

Parte 4-2 – Princípios a serem observados ao conduzir um quarto de serviço de máquinas

51 O termo quarto de serviço de máquinas, como utilizado nas partes 4-2, 5-2 e 5-4 desta secção, significa uma pessoa ou um grupo de pessoas fazendo o serviço de quarto, ou um período de responsabilidade de um oficial durante o qual a sua a presença física nos compartimentos de máquinas pode ser necessária ou não.

52 O oficial chefe do quarto de serviço de máquinas é o representante do chefe de máquinas e é sempre o principal responsável pela operação segura e eficiente e pela manutenção das máquinas que afectam a segurança do navio, e é responsável pela inspecção, operação e teste, como for necessário, de todas as máquinas e equipamentos sob a responsabilidade do quarto de serviço de máquinas.

Medidas relativas ao quarto de serviço

53 A composição do quarto de serviço de máquinas deverá ser sempre adequada para assegurar a operação segura de todas as máquinas que afectam a operação do navio, sejam automatizadas ou controladas manualmente, e apropriada para as circunstâncias e condições existentes.

54 Ao decidir a composição do quarto de serviço de máquinas, que pode conter marítimos de mestrança e marinhagem adequadamente qualificados, os seguintes critérios, entre outros, deverão ser levados em consideração:

.1 o tipo de navio e o tipo e as condições das máquinas;

.2 a supervisão adequada, o tempo todo, das máquinas que afectam a operação segura do navio;

.3 quaisquer modos de operação especiais ditados pelas condições, como as condições do tempo, gelo, água contaminada, águas rasas, situações de emergência, contenção de avarias ou redução da poluição;

.4 as qualificações e a experiência do quarto de serviço de máquinas;

.5 a segurança da vida humana, do navio, da carga e do porto e a protecção do meio ambiente;

.6 a observância dos regulamentos internacionais, nacionais e locais; e

.7 a manutenção das operações normais do navio.

Rendição do quarto de serviço

56 O oficial chefe do quarto de serviço de máquinas não deverá passar o serviço para o oficial que o irá substituir se houver motivos para acreditar que este último obviamente não é capaz de desempenhar com eficácia as atribuições do serviço de quarto e, neste caso, o chefe de máquinas deverá ser informado.

57 O oficial que vai assumir o quarto de serviço de máquinas deverá assegurar-se de que os membros do quarto de serviço de máquinas que vai assumir são aparentemente plenamente capazes de desempenhar suas atribuições com eficácia.

58 Antes de assumir o quarto de serviço de máquinas, os oficiais que vão assumir deverão se inteirar quanto aos seguintes aspectos:

.1 as ordens permanentes e as instruções especiais do chefe de máquinas relativas à operação dos sistemas e das máquinas do navio;

.2 a natureza de todo o trabalho que está sendo realizado nas máquinas e nos sistemas, o pessoal envolvido e os possíveis riscos;

.3 o nível e, quando for aplicável, as condições da água ou dos resíduos existentes nos porões, nos tanques de lastro, nos tanques de resíduos, nos tanques de reserva, nos tanques de água doce, nos tanques de águas servidas e quaisquer exigências especiais para a utilização ou o esgoto do conteúdo desses porões ou tanques;

.4 as condições e o nível de combustível nos tanques de reserva, no tanque de sedimentação, no tanque de serviço e em outros meios para armazenamento de combustível;

.5 quaisquer exigências especiais relativas ao esgoto do sistema sanitário;

.6 as condições e o modo de funcionamento dos vários sistemas principais e auxiliares, inclusive do sistema de distribuição de energia eléctrica;

.7 quando for aplicável, as condições dos equipamentos da consola de monitorização e controlo, e que equipamentos estão sendo operados manualmente;

.8 quando for aplicável, as condições e o modo de operação dos controlos automáticos das caldeiras, tais como sistemas de controlo de protecção contra chamas, sistemas de controlo do limite, sistemas de controlo da combustão, sistemas de controlo do suprimento de combustível e outros equipamentos relacionados com a operação das caldeiras a vapor;

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.9 quaisquer condições potencialmente adversas decorrentes de mau tempo, gelo ou águas contaminadas ou rasas;

.10 quaisquer modos de operação especiais ditados por falhas de equipamentos ou por condições adversas do navio;

.11 as informações dadas pelos subalternos da praça de máquinas em relação às atribuições que lhes foram atribuídas;

.12 a disponibilidade de aparelhos de combate a incêndio; e

.13 o estado de preenchimento do livro de quarto da casa de máquinas.

Execução do quarto de serviço de máquinas

59 O oficial chefe do quarto de serviço de máquinas deverá assegurar que sejam mantidas as medidas relativas ao serviço de quarto e que, sob sua orientação, os subalternos da casa de máquinas, se fizerem parte do quarto de serviço de máquinas, auxiliem a operação segura e eficiente das máquinas da propulsão e dos equipamentos auxiliares.

60 O oficial chefe do quarto de serviço de máquinas continuará a ser o responsável pelas operações dos compartimentos de máquinas, apesar da presença do chefe de máquinas naqueles compartimentos, até ser especificamente informado de que o chefe de máquinas assumiu aquela responsabilidade, e que isto tenha sido mutuamente compreendido.

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61 Todos os membros do quarto de serviço de máquinas deverão estar familiarizados com as atribuições de serviço de quarto que lhes forem atribuídas. Além disto, todo membro deverá, em relação ao navio em que estiver trabalhando, ter conhecimento:

.1 da utilização dos sistemas de comunicações interiores apropriados;

.2 das rotas de escape dos compartimentos de máquinas;

.3 dos sistemas de alarme da casa de máquinas e ser capaz de distinguir entre os vários alarmes, com referência especial ao alarme referente aos meios utilizados para a extinção de incêndio; e

.4 do número, da localização e dos tipos de equipamentos de combate a incêndio e do material de controlo de avarias existente nos compartimentos de máquinas, juntamente com a sua utilização e com as várias precauções de segurança a serem observadas.

62 Deverá ser observada qualquer máquina que não estiver funcionando correctamente, que se espere que funcione mal, ou que necessite de uma manutenção especial, juntamente com qualquer acção já realizada. Deverão ser feitos planos para qualquer outra acção, se for necessária.

63 Quando os compartimentos de máquinas estiverem sendo atendidos, o oficial chefe do quarto de serviço de máquinas deverá sempre ser capaz de operar prontamente os equipamentos de propulsão em resposta à necessidade de alterar o sentido de rotação ou o número de rotações.

64 Quando os compartimentos de máquinas estiverem sendo periodicamente desatendidos, o oficial de serviço escalado com chefe do quarto de serviço de máquinas deverá estar imediatamente disponível e pronto para comparecer aos compartimentos de máquinas quando for chamado.

65 Todas as ordens da ponte de comando deverão ser prontamente executadas. As alterações no sentido de rotação e no número de rotações das unidades da propulsão principal deverão ser registadas, excepto quando a Administração tiver determinado que o tamanho ou as características de um navio específico tornam esse registo impraticável. O oficial chefe do quarto de serviço de máquinas deverá assegurar que os controlos das unidades da propulsão principal, quando estiverem no modo de operação manual, estejam continuamente atendidos nas condições de atenção *("stand-by")* ou de manobras.

66 Deverá ser dada a devida atenção à manutenção e ao apoio em andamento de todas as máquinas , inclusive dos sistemas mecânicos, eléctricos, electrónicos, hidráulicos e pneumáticos, dos seus dispositivos de controlo e dos equipamentos de segurança relacionados , de todos os sistemas de serviço dos compartimentos habitáveis e ao registo do consumo de provisões e de sobressalentes.

67 O chefe de máquinas deverá assegurar que o oficial chefe do quarto de serviço de máquinas seja informado de todos os trabalhos de manutenção preventiva, de controlo de avarias ou de reparos que estiverem sendo realizados durante o quarto de serviço de máquinas. O oficial chefe do quarto de serviço de máquinas será responsável pelo isolamento, contorno *("bypassing")* e ajuste que tiver que ser feito em todas as máquinas sob a responsabilidade do quarto de serviço de máquinas, e deverá registar todo o trabalho realizado.

68 Quando a casa de máquinas for posta numa condição de atenção *("stand-by")*, o oficial chefe do quarto de serviço de máquinas deverá assegurar-se de que todas as máquinas e equipamentos que possam ser utilizados durante a manobra estejam numa condição de prontidão imediata, e de que haja uma reserva de potência adequada para a máquina do leme e para outras necessidades.

69 Não deverão ser atribuídas aos oficiais chefes de um quarto de serviço de máquinas quaisquer atribuições que possam interferir com as suas atribuições de supervisão relativas ao sistema da propulsão principal e aos equipamentos auxiliares, nem eles deverão desempenhar tais tarefas. Eles deverão manter a instalação de propulsão e os sistemas auxiliares sob uma supervisão constante, até que sejam devidamente substituídos, e deverão inspeccionar periodicamente as máquinas ao seu encargo. Deverão assegurar também que sejam feitas rondas adequadas nos compartimentos de máquinas e da máquina do leme, com o propósito de observar e informar mau

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funcionamento ou avarias nos equipamentos, realizando ou orientando ajustes de rotina, manutenções exigidas e outras tarefas necessárias.

70 Os oficiais chefes de um quarto de serviço de máquinas deverão orientar qualquer outro membro do quarto de serviço de máquinas no sentido de que os informem sobre condições potencialmente de risco que possam afectar de maneira adversa as máquinas, ou pôr em risco a segurança da vida humana ou do navio.

71 O oficial chefe do quarto de serviço de máquinas deverá assegurar que quarto de serviço num compartimento de máquinas seja supervisionado, e deverá providenciar a substituição de pessoal em caso de incapacidade de qualquer componente do quarto de serviço de máquinas. O quarto de serviço de máquinas não deverá deixar os compartimentos de máquinas desatendidos de uma maneira que possa impedir a operação manual da instalação da casa de máquinas ou dos controlos de combustível ou de vapor.

72 O oficial chefe do quarto de serviço de máquinas deverá realizar as acções necessárias para conter os efeitos dos danos causados por avaria nos equipamentos, incêndio, alagamento, rupturas, colisão, abalroamento, encalhe ou outra causa.

73 Antes de sair de serviço, o oficial chefe do quarto de serviço de máquinas deverá assegurar-se de que todos os eventos relacionados com as máquinas principais e auxiliares que tenham ocorrido durante o quarto de serviço de máquinas tenham sido adequadamente registados.

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74 O oficial chefe do quarto de serviço de máquinas deverá cooperar com qualquer maquinista encarregado dos trabalhos de manutenção durante toda manutenção preventiva, controlo de avarias ou reparação. Isto deverá abranger, mas não se restringir necessariamente a:

.1 isolar e contornar as máquinas em que vão ser feitos os trabalhos;

.2 ajustar o resto da instalação para funcionar adequadamente e com segurança durante o período de manutenção;

.3 registar, no livro de quarto da casa de máquinas ou em outro documento adequado, os equipamentos em que foram feitos os trabalhos e o pessoal envolvido, e que medidas de segurança foram tomadas, e por quem, em benefício dos oficiais que irão entrar de serviço e com o propósito de fazer um registo; e

.4 testar e colocar em serviço, quando necessário, as máquinas ou equipamentos reparados.

75 O oficial chefe do quarto de serviço de máquinas deverá assegurar que quaisquer subalternos que desempenham atribuições de manutenção na casa de máquinas estejam disponíveis para ajudar na operação manual das máquinas em caso de falha dos equipamentos automáticos.

76 O oficial chefe do quarto de serviço de máquinas deverá ter em mente que as alterações de velocidade decorrentes de mau funcionamento das máquinas, ou qualquer perda de governo, podem colocar em perigo a segurança do navio e da vida humana no mar. A ponte de comando deverá ser informado imediatamente em caso de incêndio ou de qualquer acção iminente nos compartimentos de máquinas que possa causar uma redução da velocidade do navio, uma falha iminente da máquina do leme, a parada do sistema de propulsão do navio, qualquer alteração na geração de energia eléctrica, ou qualquer ameaça semelhante à segurança. Essa informação deverá, quando possível, ser dada antes de serem feitas as alterações, para dar a ponte de comando o tempo máximo disponível para realizar qualquer acção que seja possível para evitar um possível acidente marítimo.

77 O oficial chefe do quarto de serviço de máquinas deverá informar ao chefe de máquinas, sem demora:

.1 quando ocorrer uma avaria ou um mau funcionamento das máquinas que possa colocar em perigo a operação segura do navio;

.2 quando ocorrer qualquer mau funcionamento que acredite que possa causar avarias ou parada das máquinas de propulsão, de máquinas auxiliares ou de sistemas de monitorização e sistema de governo; e

.3 em qualquer emergência, ou se estiver em dúvida quanto a que decisão ou medida tomar.

78 Apesar da exigência de informar ao chefe de máquinas nas circunstâncias acima, o oficial chefe do quarto de serviço de máquinas não deverá hesitar em realizar as acções imediatas para a segurança do navio, das suas máquinas e da tripulação, quando as circunstâncias o exigirem.

79 O oficial chefe do quarto de serviço de máquinas deverá dar ao pessoal que faz o serviço de quarto todas as instruções e informações adequadas que assegurem a condução de um quarto de serviço de máquinas seguro. A manutenção de rotina das máquinas, realizada como tarefas eventuais como parte da condução de um quarto de serviço seguro, deverá constituir-se em parte integrante da rotina do quarto de serviço. A manutenção detalhada envolvendo reparações em equipamentos eléctricos, mecânicos, hidráulicos, pneumáticos ou electrónicos aplicáveis, por todo o navio, deverá ser realizada com o conhecimento do oficial chefe do quarto de serviço de máquinas e do chefe de máquinas. As reparações deverão ser registadas.

Serviço de quarto de máquinas em diferentes condições e em diferentes áreas

Visibilidade restrita

80 O oficial chefe do quarto de serviço de máquinas deverá assegurar que haja uma pressão de ar ou de vapor disponível para sinais sonoros e que as ordens da ponte de comando relativas a alterações no número de rotações ou no sentido de rotação sejam sempre executadas imediatamente e, além disto, que as máquinas auxiliares utilizadas para manobrar estejam prontamente disponíveis.

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Águas costeiras e congestionadas

81 O oficial chefe do quarto de serviço de máquinas deverá assegurar que todas as máquinas envolvidas na manobra do navio possam ser colocadas imediatamente no modo de operação manual, quando for informado de que o navio está em águas congestionadas. O oficial chefe do quarto de serviço de máquinas deverá assegurar também que haja uma reserva de potência adequada disponível para governar e para outras necessidades da manobra. O governo de emergência e outros equipamentos auxiliares deverão estar prontos para funcionamento imediato.

Navio fundeado

82 Num fundeadouro desabrigado, o chefe de máquinas deverá consultar o comandante para saber se mantém ou não o mesmo quarto de serviço de máquinas que quando o navio está em movimento.

83 Quando o navio estiver fundeado numa enseada aberta, ou em qualquer outra condição de praticamente "no mar", o oficial chefe do quarto de serviço de máquinas deverá assegurar que:

.1 seja conduzido um quarto de serviço de máquinas eficiente;

.2 sejam feitas inspecções periódicas em todas as máquinas em funcionamento e de sobreaviso *("stand-by");*

.3 as máquinas principais e auxiliares sejam mantidas num estado de prontidão de acordo com as ordens da ponte de comando;

.4 sejam tomadas medidas para proteger o meio ambiente de poluição pelo navio, e que sejam cumpridas as regras de prevenção da poluição aplicáveis; e

.5 todos os sistemas de controlo de avarias e de combate a incêndio estejam prontos para funcionar.

Parte 4-3 – Princípios a serem observados ao conduzir um quarto de serviço de rádio

Disposições gerais

84 As Administrações deverão orientar a atenção de companhias, comandantes e pessoal que faz serviço de quarto de rádio para cumprir as seguintes disposições, para assegurar que seja conduzido adequada e seguramente um quarto de serviço de rádio enquanto o navio estiver no mar. Ao cumprir o disposto neste Código, deverá ser levado em consideração o Regulamento de Radiocomunicações.

Medidas relativas ao quaro de serviço

85 Ao decidir as medidas para o serviço de quarto de rádio, o comandante do todo navio que opere na navegação em mar aberto deverá:

.1 assegurar que o quarto de serviço rádio seja conduzido de acordo com as disposições pertinentes do Regulamento de Radiocomunicações e da Convenção SOLAS;

.2 assegurar que as atribuições primordiais do serviço de quarto de rádio não sejam afectadas de maneira adversa por atender a um tráfego rádio não relevante ao deslocamento com segurança e à segurança da navegação; e

.3 levar em consideração os equipamentos de rádio instalados a bordo e as suas condições de funcionamento.

Execução do quarto de serviço de rádio

86 O radio-operador que estiver desempenhando as atribuições do serviço de quarto de rádio deverá:

.1 assegurar que o quarto de serviço seja conduzido nas frequências especificadas no Regulamento de Radiocomunicações e na Convenção SOLAS; e

.2 enquanto estiver de serviço, verificar regularmente o funcionamento dos equipamentos de rádio e informar ao comandante qualquer falha observada naqueles equipamentos.

87 Deverão ser atendidas as exigências do Regulamento de Radiocomunicações e da Convenção SOLAS relativas à manutenção de um livro de quarto de radiotelegrafia ou de rádio.

88 A manutenção dos registos de rádio, de acordo com as exigências do Regulamento de Radiocomunicações e da Convenção SOLAS, é da responsabilidade do radio-operador designado como principal responsável pelas radiocomunicações durante incidentes de perigo. Deverão ser registadas as seguintes informações, juntamente com as horas em que ocorreram:

.1 um resumo das radiocomunicações de perigo, de urgência e de segurança;

.2 incidentes importantes relacionados com o serviço de rádio;

.3 quando adequado, a posição do navio, pelo menos uma vez por dia; e

.4 um resumo das condições dos equipamentos de rádio, inclusive das suas fontes de energia.

89 Os registos de rádio deverão ser mantidos no local em que são realizadas as comunicações de perigo, e deverão ser disponibilizadas:

.1 para inspecção pelo comandante; e

.2 para inspecção por qualquer funcionário autorizado da Administração e por qualquer funcionário devidamente autorizado que estiver exercendo o controlo com base no Artigo X da Convenção.

PARTE 5 – SERVIÇO DE QUARTO NO PORTO

Princípios que se aplicam a todo serviço de quarto

Generalidades

90 Em qualquer navio amarrado com segurança a bóias, atracado ou fundeado com segurança em circuns-

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tâncias normais no porto, o comandante deverá tomar medidas para que seja mantido um quarto de serviço apropriado e eficaz para fins de segurança. Podem ser necessárias exigências especiais para tipos especiais de sistemas de propulsão ou de equipamentos auxiliares de navios e para navios que transportam materiais que oferecem riscos, perigos, tóxicos ou altamente inflamáveis, ou outros tipos especiais de carga.

Medidas relativas ao serviço de quarto

91 As medidas para conduzir um quarto de serviço de convés quando o navio estiver no porto deverão ser sempre adequadas para:

.1 assegurar a segurança do navio, do porto e do meio ambiente e da operação com segurança de todas as máquinas relacionadas com as operações com a carga;

.2 observar as regras internacionais, nacionais e locais; e

.3 manter a ordem e a rotina normal do navio.

92 O comandante deverá decidir a composição e a duração do quarto de serviço de convés, dependendo das condições da amarração, do tipo de navio e da natureza das atribuições.

93 Se o comandante considerar necessário, um oficial qualificado deverá ser o encarregado do quaro de serviço de convés.

94 Deverão ser providenciados os equipamentos necessários, de modo a proporcionar um serviço de quarto eficiente.

95 O chefe de máquinas, mediante consulta ao comandante, deverá assegurar que todas as medidas relativas ao serviço de quarto de máquinas sejam adequadas para conduzir um quarto de serviço de máquinas seguro enquanto o navio estiver no porto. Ao decidir a composição do quarto de serviço de máquinas, que pode conter marítimos de mestrança e marinhagem apropriados na casa de máquinas, os seguintes aspectos estão entre os que deverão ser levados em consideração:

.1 em navios com uma potência de propulsão igual ou superior a 3.000 kW, deverá haver sempre um oficial chefe do quarto de serviço de máquinas;

.2 em navios com uma potência de propulsão inferior a 3.000 kW, a critério do comandante e mediante consulta ao chefe de máquinas, pode não haver um oficial chefe do quarto de serviço de máquinas; e

.3 enquanto estiverem encarregados de um quarto de serviço de máquinas, os oficiais não deverão ser designados para desempenhar qualquer atribuição ou serviço que possa interferir com a sua atribuição de supervisão com relação ao sistema de máquinas do navio, nem deverão desempenhar tais tarefas.

Rendição do quarto de serviço

96 Os oficiais chefes do quarto de serviço de convés ou de máquinas não deverão passar o serviço para o oficial que o substitui se houver qualquer motivo para crer que este último evidentemente não é capaz de desempenhar com eficácia as atribuições de serviço de quarto e, neste caso, o comandante ou o chefe de máquinas deverá ser informado disto. Os oficiais que vão assumir o quarto de serviço de convés ou de máquinas deverão assegurar que os membros dos quartos de serviço que vão assumir são, aparentemente, plenamente capazes de desempenhar suas atribuições com eficácia.

97 Se, no momento da rendição de um quarto de serviço de convés ou de máquinas, estiver sendo realizada uma operação importante, essa deverá ser concluída pelo oficial que está sendo substituído, excepto quando determinado em contrário pelo comandante ou pelo chefe de máquinas.

Parte 5-1 – Rendição do quarto de serviço de convés

98 Antes de assumir o quarto de serviço de convés, o oficial que está entrando de serviço deverá ser informado pelo oficial chefe do quarto de serviço de convés sobre seguinte:

.1 a profundidade da água no cais, o calado do navio, o nível e a hora da preamar e da baixa-mar; a fixação da amarração, a disposição dos ferros e o comprimento da amarra, e outros aspectos da amarração que sejam importantes para a segurança do navio; a situação das máquinas principais e a sua disponibilidade para utilização em emergências;

.2 todos os trabalhos a serem realizados a bordo do navio; a natureza, a quantidade e a disposição da carga, já carregada ou remanescente a bordo, e qualquer resíduo existente a bordo após o descarregamento do navio;

.3 o nível da água nos porões e nos tanques de lastro;

.4 as luzes que estiverem sendo exibidas e os sinais que estiverem sendo soados;

.5 o número necessário de tripulantes a bordo, e a presença de qualquer outra pessoa a bordo;

.6 a situação dos equipamentos de combate a incêndio;

.7 quaisquer regras portuárias especiais;

.8 as ordens permanentes e especiais do comandante;

.9 as linhas de comunicação disponíveis entre o navio e o pessoal de terra, inclusive com as autoridades portuárias, em caso de surgir uma emergência ou de ser necessário um auxílio;

.10 quaisquer outras circunstâncias de importância para a segurança do navio, da sua tripulação, da carga ou para a protecção do meio ambiente contra poluição; e

.11 os procedimentos para informar às autoridades adequadas qualquer poluição ambiental decorrente das actividades do navio;

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99 Os oficiais que vão entrar de serviço, antes de assumir as funções de chefe do quarto de serviço de convés, deverão verificar se:

.1 a fixação da amarração e da amarra é adequada;

.2 os sinais ou as luzes estão sendo correctamente exibidas ou soados;

.3 as medidas de segurança e as regras de protecção contra incêndio estão sendo mantidas;

.4 estão cientes da natureza de qualquer carga perigosa ou que ofereça risco que esteja sendo carregada ou descarregada e da acção adequada a ser realizada em caso de qualquer derramamento ou incêndio; e

.5 nenhuma condição ou circunstância externa coloca em perigo o navio e se não coloca outros em perigo.

Parte 5-2 – Rendição do quarto de serviço de máquinas

100 Antes de assumir o quarto de serviço de máquinas, o oficial que está entrando de serviço deverá ser informado pelo oficial chefe do quarto de serviço de máquinas sobre seguinte:

.1 as ordens permanentes do dia, quaisquer ordens especiais relativas às operações do navio, serviços de manutenção, reparações nas máquinas ou nos equipamentos de controlo do navio;

.2 a natureza de todos os trabalhos que estão sendo realizados nas máquinas e nos sistemas a bordo do navio, o pessoal envolvido e os possíveis riscos;

.3 o nível e as condições, quando for aplicável, de água ou de resíduos nos porões, tanques de lastro, tanques de resíduos, tanques de águas servidas, tanques de reserva e exigências especiais para a utilização ou esgoto do conteúdo desses porões ou tanques;

.4 quaisquer exigências especiais relativas ao esgoto do sistema sanitário;

.5 as condições e o estado de prontidão dos equipamentos portáteis de extinção de incêndio, das instalações fixas de extinção de incêndio e dos sistemas de detecção de incêndio;

.6 pessoal de reparações autorizado a bordo, empregado em actividades de máquinas, seu local de trabalho e os serviços de reparos, e outras pessoas autorizadas a bordo e a tripulação necessária;

.7 quaisquer regras portuárias relativas a efluentes do navio, exigências relativas a combate a incêndio e à prontidão do navio, especialmente durante condições de possível mau tempo;

.8 as linhas de comunicação disponíveis entre o navio e o pessoal de terra, inclusive com as autoridades portuárias, em caso de surgir uma emergência ou de ser necessário um auxílio;

.9 qualquer outra circunstância de importância para a segurança do navio, da sua tripulação, da carga ou para a protecção do meio ambiente contra poluição; e

.10 os procedimentos para informar às autoridades adequadas qualquer poluição ambiental decorrente das actividades do navio.

101 Os oficiais que estão entrando de serviço, antes de assumir as funções de chefe do quarto de serviço de máquinas, deverão se certificar de que foram plenamente informados pelo oficial que está sendo substituído, como mencionado acima, e:

.1 estar familiarizados com as fontes de energia, de luz, de calor e de iluminação existentes e possíveis e com a sua distribuição;

.2 saber a disponibilidade e as condições do combustível, dos lubrificantes e de todo o suprimento de água do navio

.3 estar pronto para preparar o navio e suas máquinas, na medida do possível, para condições de sobreaviso *("stand-by ")* ou de emergência, como for necessário.

Parte 5-3 – Execução do quarto de serviço de convés

102 O oficial chefe do quarto de serviço de convés deverá:

.1 fazer rondas para inspeccionar o navio a intervalos regulares;

.2 ter atenção especial:

.2.1 às condições e à fixação da prancha, da amarra e da amarração, principalmente nos horários de mudança da maré e em cais em que a amplitude da maré é grande, se for necessário, tomando medidas para assegurar que estejam em condições normais de trabalho;

.2.2 ao calado, à folga abaixo da quilha e ao estado geral do navio, para evitar um adernamento/banda ou um trim perigoso durante o manuseio da carga ou durante operações de lastro;

.2.3 às condições do tempo e ao estado do mar;

.2.4 à observância de todas as regras relativas à segurança e à protecção contra incêndio;

.2.5 ao nível de água nos porões e nos tanques de lastro;

.2.6 a todas as pessoas a bordo e à sua localização, principalmente àqueles que estiverem em compartimentos ou espaços distantes ou fechados; e

.2.7 à exibição de luzes e à emissão de sinais, quando for adequado.

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.3 com mau tempo, ou ao receber um alerta de tempestade, tomar as medidas necessárias para proteger o navio, as pessoas a bordo e a carga;

.4 tomar todas as precauções para evitar a poluição do meio ambiente pelo navio;

.5 numa emergência que ameace a segurança do navio, dar o alarme, informar ao comandante, tomar todas as medidas possíveis para evitar qualquer avaria ao navio, à sua carga e qualquer dano às pessoas a bordo e, se necessário, solicitar auxílio às autoridades de terra ou aos navios próximos;

.6 estar ciente das condições de estabilidade do navio, de modo que, em caso de incêndio, a autoridade de terra responsável pelo combate ao incêndio seja informada da quantidade aproximada de água que pode ser bombeada para bordo sem colocar o navio em perigo;

.7 oferecer ajuda a navios ou pessoas em perigo;

.8 tomar as precauções necessárias para impedir acidentes ou avarias quando os hélices tiverem que ser girados; e

.9 lançar, no livro de quarto adequado, todos os eventos importantes que afectaram o navio.

Parte 5-4 – Execução do quarto de serviço de máquinas

103 Os oficiais chefes do quarto de serviço de máquinas deverão ter atenção especial:

.1 à observância de todas as ordens, procedimentos e regras de operação relativos a condições de risco e à sua prevenção, em todas as áreas de que é encarregado;

.2 à instrumentação e aos sistemas de controlo, à monitorização de todas as fontes de energia, dos componentes e sistemas em funcionamento;

.3 às técnicas, métodos e procedimentos necessários para impedir a violação das regras contra poluição das autoridades locais; e

.4 à situação dos porões.

104 Os oficiais chefes do quarto de serviço de máquinas deverão:

.1 em emergências, dar o alarme quando, na sua opinião, a situação assim o exigir, e tomar todas as medidas possíveis para impedir danos ao navio, às pessoas a bordo e à carga;

.2 estar ciente das necessidades do oficial de convés com relação aos equipamentos necessários para o carregamento ou descarregamento da carga e de outras necessidades dos sistemas de lastro e de outros sistemas de controlo da estabilidade do navio;

.3 fazer inspecções frequentes para verificar o possível mau funcionamento ou falhas de equipamentos, e realizar as acções correctivas imediatas para assegurar a segurança do navio, das operações com a carga, do porto e do meio ambiente;

.4 assegurar que sejam tomadas as precauções necessárias, na sua área de responsabilidade, para impedir acidentes ou danos aos vários sistemas eléctricos, electrónicos, hidráulicos, pneumáticos e mecânicos do navio; e

.5 assegurar que todos os eventos importantes que afectam o funcionamento, as ajustagens ou os reparos das máquinas do navio sejam satisfatoriamente registados.

Parte 5-5 – Quarto de serviço no porto, em navios que transportam carga de risco

Generalidades

105 O comandante de todo navio que estiver transportando carga danosa, seja ela explosiva, inflamável, tóxica, que ameace a saúde, ou que polua o meio ambiente, deverá assegurar que sejam mantidas medidas para um serviço de quarto seguro. Nos navios que transportam carga danosa a granel, isto será conseguido pela pronta disponibilidade a bordo de um oficial, ou oficiais, marítimos de mestrança ou marinhagem devidamente qualificados, quando for adequado, mesmo quando o navio estiver amarrado, atracado ou fundeado com segurança no porto.

106 Em navios que transportam carga danosa ou perigosa, excepto cargas a granel, o comandante deverá levar em consideração a natureza, a quantidade, a embalagem e a estivagem da carga danosa ou perigosa e de qualquer condição especial a bordo, flutuando e em terra.

Parte 5-6 – Quarto de serviço da carga

107 Os oficiais que tenham responsabilidade para o planeamento e a realização de operações com a carga deverão assegurar que essas operações sejam realizadas com segurança através do controlo dos riscos específicos, inclusive quando estiverem envolvidas pessoas que não pertencem ao navio."

ANEXO 2

Emendas de Manila ao

CÓDIGO DE FORMAÇÃO, CERTIFICAÇÃO E DE SERVIÇO DE QUARTOS PARA MARÍTIMOS (Código STCW)

PARTE B

Orientações relativas às disposições da Convenção STCW e dos seus anexos

Introdução

1 - A presente parte do Código STCW contém orientações destinadas a auxiliar as Partes signatárias da Convenção e a todos os que estejam envolvidos na implementação, aplicação ou em fazer cumprir as suas disposições, de modo que a Convenção vigore de forma completa, abrangente e uniforme.

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2 - As medidas propostas não são obrigatórias e os exemplos dados pretendem unicamente ilustrar o modo como determinados requisitos da Convenção podem ser cumpridos. As orientações representam, em geral, uma linha de conduta face às matérias em questão, harmonizada através da discussão no seio da IMO envolvendo, quando apropriado, consultas com a Organização Internacional do Trabalho, a União Internacional das Telecomunicações e a Organização Mundial de Saúde.

3 - A observância das orientações contidas nesta parte auxiliará a Organização a atingir os seus objectivos de manter os mais elevados padrões de competência das tripulações de todas as nacionalidades e dos navios de todas as bandeiras.

4 - Nesta parte são fornecidas orientações relativamente a determinados artigos da Convenção, assim como a determinadas regras do seu anexo. A numeração das secções desta parte corresponde à numeração dos artigos e das regras da Convenção. Tal como na parte A, o texto de cada secção pode apresentar-se dividido em partes numeradas e parágrafos, mas tal numeração é exclusiva deste texto.

ORIENTAÇÕES RELATIVAS A DISPOSIÇÕES DOS ARTIGOS

Secção B-I

Orientações relativas a obrigações gerais no âmbito da Convenção

(Sem disposições)

Secção B-II

Orientações relativas a definições e clarificações

1 - As definições constantes do artigo II da Convenção e as definições e clarificações contidas na regra I/1 do seu anexo aplicam-se igualmente aos termos utilizados nas partes A e B do presente Código. As definições suplementares aplicáveis somente às disposições do presente Código estão incluídas na secção A-I/1.

2 - A definição de *certificado* constante do artigo II (c) permite três possibilidades:

.1 A Administração pode emitir o certificado;

.2 A Administração pode autorizar a emissão do certificado;

.3 A Administração pode reconhecer um certificado emitido por outra Parte, conforme estabelecido na regra I/10.

Secção B-III

Orientações relativas à aplicação da Convenção

1 - Apesar da definição de *navio de pesca* constante do parágrafo (h) do artigo II excluir navios utilizados para a captura de peixe, baleias, focas, morsas e outros recursos marinhos vivos da aplicação da Convenção, os navios não utilizados em actividades de captura não poderão usufruir dessa exclusão.

2 - A Convenção exclui todos os navios de casco em madeira de construção primitiva, incluindo os juncos.

Secção B-IV

Orientações relativas à comunicação de informação

1 - No parágrafo (1) (b) do artigo IV, a expressão *quando aplicável* pretende incluir:

.1 o reconhecimento de um certificado emitido por outra Parte; ou

.2 a emissão de um certificado pela Administração, se aplicável, com base no reconhecimento de um certificado emitido por outra Parte.

Secção B-V

Orientações relativas a outros tratados e à sua interpretação

O termo *acordos* constante do parágrafo (1) do artigo V pretende incluir disposições previamente estabelecidas entre Estados para o reconhecimento recíproco de certificados.

Secção B-VI

Orientações relativas a certificados

(Ver as orientações constantes das secções B-I/2 e B-II.)

Uma declaração dos termos aplicáveis e uma descrição geral dos procedimentos a seguir deverão ser publicadas para informação das companhias que operam navios sob bandeira da Administração.

Secção B-VII

Orientações relativas a disposições transitórias

Os certificados emitidos para o exercício de funções num determinado cargo e que sejam presentemente reconhecidos por uma Parte como qualificação adequada para o exercício de funções num outro cargo, por exemplo, certificados de imediato reconhecidos para o exercício de funções como comandante, deverão ser aceites como válidos para essa função, de acordo com o disposto no artigo VII. Essa aceitação é igualmente aplicável aos certificados do mesmo tipo emitidos ao abrigo das disposições do parágrafo (2) do artigo VII.

Secção B-VIII

Orientações relativas a dispensas

Deverão ser publicadas, uma declaração dos termos aplicáveis e uma descrição geral dos procedimentos a seguir para informação das companhias que operam navios sob bandeira da Administração. Deverão ser fornecidas orientações aos funcionários autorizados pela Administração a emitir dispensas. A informação sobre as acções tomadas deverá ser sumariada no relatório inicial comunicado ao Secretário-Geral, em conformidade com os requisitos constantes da secção A-I/7.

Secção B-IX

Orientações relativas a equivalências

Os certificados emitidos pelas marinhas de guerra poderão continuar a ser aceites e as certidões de exercício de funções poderão continuar a ser emitidas aos oficiais das marinhas de guerra, como equivalentes ao abrigo do disposto no artigo IX, desde que sejam cumpridos os requisitos da Convenção.

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Secção B-X

Orientações relativas ao controlo

(Sem disposições. Ver secção B-I/4.)

Secção B-XI

Orientações relativas à promoção da cooperação técnica

1 - Os governos deverão fornecer, ou providenciar o fornecimento, em colaboração com a IMO, de assistência aos Estados com dificuldades no cumprimento dos requisitos da Convenção e que solicitem tal assistência.

2 - Realça-se a importância de uma formação adequada para os comandantes e outro pessoal que preste serviço a bordo de petroleiros, de navios de transporte de produtos químicos, de navios de transporte de gases liquefeitos e de navios ro-ro de passageiros e reconhece-se que em alguns casos poderão existir limitações nas infra-estruturas para a obtenção da experiência necessária e para proporcionar programas de formação especializada, em especial nos países em vias de desenvolvimento.

Bases de dados relativas a exames

3 - As Partes que possuam instituições de formação para marítimos ou centros de exames que sirvam vários países e que estejam interessadas em criar bases de dados de perguntas e respostas de exames são encorajadas a proceder desse modo, na base da cooperação bilateral com um ou mais países que já possuam tais bases de dados.

Disponibilidade de simuladores de formação marítima

4 - O Secretariado da IMO mantém uma lista de simuladores de formação marítima, como fonte de informação para as Partes e outras organizações, da disponibilidade de diferentes tipos de simuladores para formação de marítimos, em especial para os casos em que tais instalações de formação possam não estar disponíveis nos seus países de origem.

5 - As Partes são aconselhadas a fornecer informação sobre os seus simuladores de formação marítima ao Secretariado da IMO e a actualizar a informação fornecida sempre que forem introduzidas alterações ou ampliações nas suas instalações de simuladores.

Informação sobre cooperação técnica

6 - As informações sobre serviços de consultoria técnica, acesso a instituições internacionais da formação afiliadas com a IMO e sobre condições de apoio e outras formas de cooperação técnica que possam ser fornecidas por ou através da IMO podem ser obtidas contactando o Secretário-Geral para o seguinte endereço: 4 Albert Embankment, London SE 1 7SR, Reino Unido.

(Sem disposições relativamente aos artigos XII a XVII.)

ORIENTAÇÕES RELATIVAS ÀS DISPOSIÇÕES DO ANEXO À CONVENÇÃO STCW

CAPÍTULO I

Orientações relativas às disposições gerais

Secção B-I/1

Orientações relativas a definições e clarificações

1 - As definições constantes do artigo II da Convenção e as definições e interpretações constantes da regra I/1 do seu anexo são igualmente aplicáveis aos termos utilizados nas partes A e B do presente Código. As definições complementares aplicáveis somente às disposições do presente Código constam da secção A-I/1.

2 - Os oficiais com os cargos abrangidos pelas disposições do capítulo VII podem ser designados por *"oficiais polivalentes"*, *"bivalentes"* ou por qualquer outra designação aprovada pela Administração, de acordo com a terminologia utilizada nos requisitos de lotação mínima de segurança aplicáveis.

3 - O pessoal da mestrança e marinhagem qualificados para a prestação de serviço em funções abrangidas pelas disposições do capítulo VII podem ser designados por *"pessoal polivalente"* ou por outra designação aprovada pela Administração, de acordo com a terminologia utlizada nos requisitos de lotação mínima de segurança aplicáveis.

Secção B-I/2

Orientações relativas a certificados e autenticações

1 - Quando uma autenticação for integrada no modelo de um certificado, de acordo com o disposto no parágrafo 1 da secção A-I/2, a informação pertinente deverá ser incluída no certificado do modo a seguir descrito, excepto no que se refere à omissão do espaço com o número (2). Nos restantes casos, na preparação de autenticações que atestem a emissão de um certificado, os espaços numerados de (1) a (17) do modelo incluído após o texto seguinte deverão ser preenchidos como a seguir se indica:

.1 nome do país emissor;

.2 número atribuído ao certificado pela Administração;

.3 nome completo do marítimo titular do certificado. O nome deverá ser o mesmo que consta do passaporte do marítimo, do seu documento de identificação ou de outro documento oficial emitido pela Administração;

.4 o número ou números da regra ou regras da Convenção STCW para os quais o marítimo foi considerado qualificado deverão ser inscritos neste espaço, por exemplo:

.4.1 "Regra II/1", se o marítimo foi considerado qualificado para desempenhar a função de oficial chefe de quarto de navegação;

.4.2 "Regra III/1-, se o marítimo foi considerado qualificado para desempenhar as funções de oficial chefe de quarto de máquinas numa casa de máquinas de condução atendida, ou como oficial de serviço de máquinas numa casa de máquinas periodicamente desatendida;

.4.3 "Regra IV/2", se o marítimo foi considerado qualificado para ocupar a função de operador de rádio;

.4.4 "Regra VII/1", se o certificado for um certificado para o exercício de funções e o marítimo foi considerado qualificado para desempenhar as funções especificadas na parte A do Código, por exemplo, as funções de oficial de máquinas ao nível de gestão; e

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.4.5 "Regra III/1 e V/1", se o marítimo foi considerado qualificado para desempenhar as funções de oficial chefe de quarto de máquinas numa casa de máquinas de condução atendida, ou como oficial de serviço de máquinas numa casa de máquinas periodicamente desatendida em navios tanque (consultar as restrições constantes dos parágrafos .8 e .10 seguintes);

.5 data limite da validade da autenticação. Esta data não deverá ser posterior à data limite de validade do certificado em relação ao qual a autenticação é emitida, nos casos em que tal data está estabelecida e inferior a cinco anos contados a partir da data de emissão da autenticação;

.6 nesta coluna deverão ser inscritas cada uma das funções especificadas na parte A do presente código para as quais o marítimo está qualificado a desempenhar. As funções e os respectivos níveis de responsabilidade estão especificados nos quadros de competências incluídas nos capítulos II, III e IV da parte A do código e estão igualmente enumeradas para uma fácil consulta na introdução à parte A, já referida. Quando for feita referência nos termos do parágrafo .4 acima, às regras constantes dos capítulos II, III ou IV, não é necessário enumerar as funções específicas;

.7 nesta coluna deverão ser inscritos os níveis de responsabilidade para os quais o marítimo está qualificado a desempenhar as funções inscritas na coluna 6. Estes níveis estão especificados nos quadros de competências incluídos nos capítulos II, III e IV da parte A do código e estão igualmente enumerados, para uma fácil consulta, na introdução à parte A;

.8 uma restrição de carácter geral, tal como o requisito de usar lentes de correcção durante o desempenho de funções, deverá ser inscrita, de forma bem evidente, no topo da coluna das restrições. As restrições aplicáveis às funções enumeradas na coluna (6) devem ser inscritas na linha apropriada à função correspondente, por exemplo:

.8.1 "Não é válido para funções em navios tanque", se não for qualificado nos termos do capítulo V;

.8.2 "Não é válido para funções em navios tanque, excepto petroleiros", se for qualificado nos termos do capítulo V para funções somente em navios petroleiros;

.8.3 "Não é válido para funções em navios que incluam caldeiras a vapor nas suas instalações de máquinas", se os conhecimentos relativos a caldeiras a vapor foram omitidos em conformidade com as disposições do Código STCW; e

.8.4 "válido somente para viagens costeiras", se os conhecimentos respectivos foram omitidos em conformidade com o estipulado nas disposições respectivas do Código STCW.

Nota: As limitações na tonelagem e na potência não necessitam de ser inscritas neste espaço, se tiverem sido previamente inscritas no título do certificado e referidas no cargo inscrito na coluna (9).

.9 o cargo ou cargos inscritos nesta coluna devem ser os especificados no título da regra ou regras aplicáveis da convenção STCW, no caso de certificados emitidos ao abrigo dos capítulos II ou III, ou devem ser especificados nos requisitos de lotação mínima de segurança aplicáveis da Administração, conforme apropriado;

.10 uma restrição de carácter geral, como a do uso de lentes de correcção durante o desempenho de funções, deve ser igualmente inscrita, de modo bem visível, no topo desta coluna. As restrições inscritas na coluna .l0 devem ser idênticas às inscritas na coluna .8 para as funções desempenhadas e relativas a cada cargo;

.11 o número inscrito neste espaço deve ser idêntico ao constante do certificado, de modo que tanto o certificado como a autenticação possuam um único número para referência e localização no registo de certificados e/ou autenticações, etc.;

.12 a data da emissão original da autenticação deve ser inscrita neste espaço e poderá ser idêntica, ou diferente, da data de emissão do certificado, conforme as circunstâncias;

.13 o nome do funcionário competente para emitir a autenticação deverá ser inscrito neste espaço em maiúsculas, sob a assinatura do funcionário;

.14 a data de nascimento deverá ser confirmada a partir de registos da Administração ou verificada de outro modo;

.15 a autenticação deverá ser assinada pelo marítimo na presença de um funcionário, ou poderá ser obtida a partir do requerimento, desde que devidamente verificada;

.16 a fotografia deverá ser uma fotografia do tipo passe, a preto e branco ou a cores, mostrando a cabeça e os ombros, entregue pelo marítimo, em duplicado, com vista a que uma delas possa permanecer apensa ao registo de certificados;

.17 se os campos destinados à prorrogação da validade constarem do impresso de autenticação (ver parágrafo 1 da secção A-I/2), a Administração pode revalidar a autenticação, completando o campo respectivo, depois de ter sido comprovado pelo marítimo que este continua apto, em conformidade com os requisitos da regra I/11.

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(Selo/timbre Oficial)

(PAÍS)

AUTENTICAÇÃO ATESTANDO A EMISSÃO DE UM CERTIFICADO NOS TERMOS DAS DISPOSIÇÕES DA CONVENÇÃO INTERNACIONAL SOBRE NORMAS DE FORMAÇÃO, CERTIFICAÇÃO E DE SERVIÇO DE QUARTOS PARA MARÍTIMOS, 1978, EMENDADA

O Governo de .....(.1)..... certifica que o Certificado nº.....(.2)..... foi emitido a ..... (.3)....., o qual foi considerado estar devidamente qualificado de acordo com as disposições da Regra .....(.4)..... da Convenção acima, como emendada, e que foi considerado competente para desempenhar as seguintes funções, nos níveis especificados, sujeito a quaisquer limitações indicadas, até .....(.5)....., ou até a data em que expira qualquer prorrogação da validade desta autenticação, como possa estar indicado no verso:

(.6) FUNÇÃO	(.7) NÍVEL	(.8) LIMITAÇÕES APLICÁVEIS (SE HOUVER)

O legítimo titular da presente autenticação pode desempenhar o cargo ou os cargos, a seguir mencionado(s) em conformidade com os requisitos de lotação mínima de segurança aplicáveis pela Administração.

(.9) CARGO	(.10) LIMITAÇÕES APLICÁVEIS (SE HOUVER)

N° da autenticação .....(.11)..... emitida em .....(.12).....

(Selo oficial)

..... *Assinatura do funcionário devidamente autorizado*

.....(.13)..... *Nome do funcionário devidamente autorizado*

O original desta autenticação deve ser mantido disponível de acordo com a Regra I/2, parágrafo 11 da Convenção, enquanto o seu titular estiver prestando serviço num navio.

Data de nascimento do titular do certificado.....(.14).....

Assinatura do titular do certificado.....(.15).....

Fotografia do titular do certificado

A validade desta autenticação é prorrogada por meio deste documento até .....

(Selo oficial)

..... *Assinatura do funcionário devidamente autorizado*

Data da revalidação .....(.17).....

..... *Nome do funcionário devidamente autorizado*

A validade desta autenticação é prorrogada por meio deste documento até .....

(Selo oficial)

..... *Assinatura do funcionário devidamente autorizado*

Data da revalidação .....(.17).....

..... *Nome do funcionário devidamente autorizado*

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2 - Uma autenticação que ateste o reconhecimento de um certificado poderá ser anexada ao certificado e dele fazer parte integrante, ou poderá ser emitida como um documento separado (ver parágrafo 8 da regra I/2 da Convenção STCW). Todos os dados registados no impresso deverão ser em caracteres romanos e algarismos árabes (ver parágrafo 10 da regra I/2 da Convenção STCW). Os espaços numerados de (.1) a (.17) no impresso devem ser preenchidos conforme indicado no parágrafo 1, excepto nos casos a seguir referidos:

(.2) onde deve ser inscrito o número atribuído pela Parte que emitiu o certificado objecto de reconhecimento;

(.3) onde deve ser inscrito o nome, que deverá ser coincidente com o constante do certificado objecto de reconhecimento;

(.4) onde deve ser inscrito o nome da Parte que emitiu o certificado objecto de reconhecimento;

(.9) onde deve ser inscrito o cargo ou cargos, adequadamente seleccionados a partir dos especificados nos requisitos de lotação mínima de segurança da Administração que reconhece o certificado;

(.11) onde o número inscrito deve ser exclusivo da autenticação, para efeitos de referência e localização no registo de autenticações; e

(.12) onde deve ser inscrita a data de emissão do original da autenticação.

(Selo/timbre Oficial)

(PAÍS)

AUTENTICAÇÃO ATESTANDO O RECONHECIMENTO DE UM CERTIFICADO NOS TERMOS DAS DISPOSIÇÕES DA CONVENÇÃO INTERNACIONAL SOBRE NORMAS DE FORMAÇÃO, CERTIFICAÇÃO E DE SERVIÇO DE QUARTOS PARA MARÍTIMOS, 1978, EMENDADA

O Governo de .....(.1)..... certifica que o Certificado nº.....(.2)..... emitido a ..... (.3)..... pelo ou em representação do Governo de .....(.4).....é devidamente reconhecido nos termos das disposições da regra I/10 da Convenção, emendada, e o seu legítimo titular está autorizado a desempenhar as seguintes funções, nos níveis especificados, sujeito às restrições indicadas, até .....(.5)....., ou até a data em que expira qualquer prorrogação da validade desta autenticação, como possa estar indicado no verso:

(.6) FUNÇÃO	(.7) NÍVEL	(.8) LIMITAÇÕES APLICÁVEIS (SE HOUVER)

O legítimo titular da presente autenticação pode desempenhar o cargo ou os cargos, a seguir mencionado(s) em conformidade com os requisitos de lotação mínima de segurança aplicáveis pela Administração.

(.9) CARGO	(.10) LIMITAÇÕES APLICÁVEIS (SE HOUVER)

N° da autenticação .....(.11)..... emitida em .....(.12).....

(Selo oficial)

..... *Assinatura do funcionário devidamente autorizado*

.....(.13)..... *Nome do funcionário devidamente autorizado*

O original desta autenticação deve ser mantido disponível de acordo com a Regra I/2, parágrafo 11 da Convenção, enquanto o seu titular estiver prestando serviço num navio.

Data de nascimento do titular do certificado.....(.14).....

Assinatura do titular do certificado.....(.15).....

Fotografia do titular do certificado

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A validade desta autenticação é prorrogada por meio deste documento até .....

(Selo oficial)

..... *Assinatura do funcionário devidamente autorizado*

Data da revalidação .....(.17).....

..... *Nome do funcionário devidamente autorizado*

A validade desta autenticação é prorrogada por meio deste documento até .....

(Selo oficial)

..... *Assinatura do funcionário devidamente autorizado*

Data da revalidação .....(.17).....

..... *Nome do funcionário devidamente autorizado*

3- Quando haja necessidade de substituir um certificado ou autenticação extraviada ou destruída, as Partes devem emitir a sua substituição com um novo número de registo, com vista a evitar confusão com o documento original substituído.

4- Quando um requerimento para revalidação é efectuado no prazo de 6 meses antes do final da validade do certificado/autenticação, os certificados/autenticações referidos nos parágrafos 5, 6 e 7 da regra I/2, podem ser revalidados até:

.1 à data em que fizer cinco anos de validade, ou da extensão da validade, do certificado/autenticação a revalidar; ou

.2 à data em que a autenticação do certificado expire;

o que acontecer mais cedo.

5- A emissão de um certificado de qualificação deve, pelo menos, conter a seguinte informação:

.1 a designação da Parte e da autoridade/entidade emissoras;

.2 o número atribuído ao certificado pela autoridade/entidade emissora;

.3 o nome completo e a data de nascimento do marítimo titular do certificado. O nome e a data de nascimento devem ser os que constam no passaporte ou no documento de identificação do marítimo;

.4 a designação do certificado. Por exemplo, se o certificado for emitido no âmbito do parágrafo 2 da Regra VI/3, o título utilizado deve ser "avançado de combate a incêndios" e se for emitido no âmbito do parágrafo l da Regra VI/5, o título deve ser "oficial de protecção do navio";

.5 o número ou números da regra ou regras da Convenção ou da secção do Código STCW, ao abrigo dos quais o marítimo se encontra qualificado;

.6 as datas de emissão e de validade do certificado. Caso o certificado não tenha validade então, por uma questão de clarificação, deve ser inserido no espaço da validade o termo "sem validade";

.7 se aplicável, as limitações, quer de carácter geral (como o requisito para uso de lentes correctivas), quer para determinados tipos de navios (como o "válido só para funções em navios de tonelagem com arqueação bruta inferior a 500") ou limitações para determinados tipos de viagem (como o "válido somente para viagens costeiras");

.8 o nome e a assinatura da pessoa autorizada a emitir o certificado;

.9 a fotografia do marítimo. A fotografia deve ser do tipo passe a preto e branco ou a cores;

.10 as datas de revalidação e de extensão da validade, o nome e a assinatura da pessoa autorizada no caso em que se pretenda a revalidação do certificado; e

.11 os contactos da autoridade/entidade emissora.

Tabela B-I/2

Lista de certificados ou provas documentais exigidos nos termos da Convenção STCW

A lista contida na tabela abaixo identifica todos os certificados ou provas documentais referidos na Convenção, os quais permitem ao seu titular o exercício de funções a bordo de determinados tipos de navios. Os certificados estão sujeitos aos requisitos constantes na regra I/2 relativos ao idioma e disponibilidade dos seus originais.

A lista contém, também referência às regras pertinentes e aos requisitos de autenticação, registo e revalidação.

Regras	Tipo de certificado e breve descrição	Autenticação de reconhecimento de um certificado 1	Registo obrigatório 2	Revalidação do certificado 3
II/1, II/2, II/3, III/1, III/2, III/3, III/6, IV/2, VII/2	Certificado de Competência – para comandantes, oficiais e operadores GMDSS	Sim	Sim	Sim
II/4, III/4, VII/2	Certificado de Qualificação – para o pessoal da mestrança e marinhagem devidamente certificados para fazerem parte de um quarto de navegação ou de máquinas	Não	Sim	Não

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II/5, III/5, III/7, VII/2	Certificado de Qualificação – para o pessoal da mestrança e marinhagem devidamente certificados como marinheiros de leme, motoristas ou electrotécnicos	Não	Sim	Não
V / 1 - 1 ; V/1-2	Certificado de Qualificação ou autenticação do Certificado de Competência – para comandantes e oficiais em navios tanque petroleiros, químicos ou de gás liquefeitos	Sim	Sim	Sim
V / 1 - 1 ; V/1-2	Certificado de Qualificação – para o pessoal da mestrança e marinhagem em navios tanque petroleiros, químicos ou de gás liquefeitos	Não	Sim	Não
V/2	Prova documental – formação para comandantes, oficiais, mestrança e marinhagem e outro pessoal que presta serviço em navios de passageiros	Não	Não	Não 4
VI/1	Certificado de Qualificação 5 – formação básica	Não	Sim	Sim 6
VI/2	Certificado de Qualificação 5 – Embarcações salva-vidas, de salvamento e de salvamento rápidas	Não	Sim	Sim 6
VI/3	Certificado de Qualificação 5 – Avançado de combate a incêndios	Não	Sim	Sim 6
VI/4	Certificado de Qualificação 5 – Primeiros socorros e cuidados médicos	Não	Sim	Não
VI/5	Certificado de Qualificação – Oficial de protecção do navio	Não	Sim	Não
VI/6	Certificado de Qualificação 7 – Formação de sensibilização de protecção para marítimos com funções de protecção (security) atribuídas	Não	Sim	Não

Notas:

1 *Autenticação de reconhecimento de um certificado* significa uma autenticação nos termos do parágrafo 7 da regra I/2.

2 *Registo obrigatório* significa estar contida no registo ou registos previstos no parágrafo 14 da regra I/2.

3 *Revalidação de um certificado* significa a continuidade da manutenção de competência profissional nos termos da regra I/11 ou a manutenção dos requisitos dos padrões de competência nos termos das secções A-VI/1 a A-VI/3, conforme o caso.

4 Como é exigido no parágrafo 3 da regra V/2, os marítimos que tenham completado formação em "gestão de multidões", "gestão de crises e comportamento humano" ou "segurança dos passageiros, carga e integridade do casco", devem, a intervalos não superiores a cinco anos, obter formação adequada de reciclagem ou providenciar evidência de terem obtido nos últimos cinco anos os requisitos dos padrões de competência exigidos.

5 Os certificados de competência emitidos nos termos das regras II/1, II/2, II/3, III/1, III/2, III/3, III/6 e VII/2 incluem os requisitos de qualificação em "formação básica", "embarcações salva-vidas e de salvamento, excepto de salvamento rápidas", "avançado de combate a incêndios" e "primeiros socorros", por isso aos seus titulares não é exigível a titularidade dos respectivos certificados de qualificação no que diz respeito a estas competências constantes no capítulo VI.

6 Nos termos previstos nas secções A-VI/1, A-VI/2 e A-VI/3, os marítimos devem demonstrar evidências de terem mantido, nos últimos cinco anos, os padrões de competência exigidos.

7 Quando a formação de sensibilização em protecção ou formação para funções atribuídas de protecção, não estiver incluída no certificado a emitir.

Secção B-I/3

Orientações relativas a viagens costeiras

Os Estados Costeiros podem adoptar "limites para viagens costeiras" de âmbito regional, através de acordos bilaterais ou multilaterais.

As especificações destes acordos devem ser relatadas ao Secretário Geral, o qual deverá fazê-las circular por todas as Partes.

Secção B-I/4

Orientações relativas a procedimentos de controlo

Introdução

1 - A finalidade dos procedimentos de controlo constantes da regra I/4 é permitir que os inspectores devidamente autorizadas pelos Estados do porto garantam que os marítimos a bordo têm competência suficiente para assegurar uma operação em condições de segurança, de protecção (security) e não causadora de poluição por parte do navio.

2 - Esta disposição não difere, em princípio, da necessidade de efectuar verificações às estruturas e equipamentos do navio. Os resultados de tais inspecções permitem, de facto, efectuar uma avaliação do sistema global de segurança, de protecção (security) e de prevenção da poluição existente a bordo.

Avaliação

3 - Através da restrição da avaliação, conforme indicado na secção A-I/4, a inevitável subjectividade inerente a todos os processos de controlo é reduzida ao mínimo, ficando a um nível igual ou inferior ao existente em outros tipos de processos de controlo.

4 - As razões objectivas constantes do parágrafo 1.3 da regra I/4 serão normalmente suficientes para orientar a atenção do inspector para áreas de competência específicas, as quais poderão ser acompanhadas através da obtenção da prova de formação para as respectivas

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aptidões. Se a prova for inadequada ou não convincente, os inspectores autorizados poderão solicitar uma demonstração das aptidões relevantes.

5 - Constitui matéria para avaliação profissional por parte do inspector, quando for a bordo após ocorrer um acidente como descrito na regra I/4 ou quando, com a finalidade de efectuar uma inspecção de rotina, se verifica que o navio é operado de modo a poder constituir um perigo para as pessoas, os bens ou o meio ambiente.

Secção B-l/5

Orientações relativas a disposições nacionais

(Sem disposições.)

Secção B-I/6

Orientações relativas a formação e avaliação

Qualificações dos instrutores e avaliadores

1 - Cada Parte deverá garantir que os instrutores e avaliadores possuem as qualificações e a experiência apropriadas para os tipos e níveis de formação e avaliação de competência dos marítimos, conforme exigido pela convenção e em conformidade com as orientações desta secção.

Formação e avaliação no posto de trabalho

2 - Qualquer indivíduo que ministre formação no posto de trabalho a um marítimo, quer a bordo quer em terra, destinada a ser utilizada como qualificação para certificação nos termos da convenção, deve ter previamente recebido orientação sobre técnicas de formação.

3 - Qualquer indivíduo responsável pela supervisão de formação no posto de trabalho a um marítimo, destinada a ser utlizada como qualificação para certificação nos termos da Convenção, deve possuir conhecimentos adequados sobre técnicas pedagógicas, métodos e práticas de formação.

4 - Qualquer indivíduo, quer a bordo quer em terra, que proceda à avaliação de competência no posto de trabalho de um marítimo, destinada a ser utilizada como qualificação para certificação nos termos da Convenção, deve ter:

.1 recebido orientação adequada sobre métodos e práticas de avaliação;

.2 adquirido experiência prática de avaliação, sob a supervisão e a aprovação de um avaliador experimentado.

5- Qualquer indivíduo responsável pela supervisão da avaliação de competência no posto de trabalho de um marítimo, destinada a ser utilizada como qualificação para certificação nos termos da Convenção, deve compreender na totalidade o sistema, os métodos e as práticas de avaliação.

Recurso ao ensino à distância e ao e-ensino (e-learning)

6 - As Partes podem permitir a formação dos marítimos por métodos de ensino à distância e e-learning, de acordo com os padrões de formação e de avaliação especificados na secção A-I/6 e das orientações a seguir indicadas.

Orientações para a formação por ensino à distância e por e-ensino (e-learning)

7 - Cada Parte deve assegurar que qualquer programa de ensino à distância ou de e-learning:

.1 é ministrado por una entidade aprovada pela Parte;

.2 é adequado para os objectivos definidos e que as tarefas da formação vão ao encontro do nível de competência abrangido;

.3 dispõe de instruções claras e inequívocas para que os formadores percebam como o programa funciona;

.4 proporciona resultados de ensino que cumprem todos os requisitos que permitem fornecer os conhecimentos subjacentes e a qualificação exigida;

.5 está estruturado de forma que permita ao formando a reflexão sistemática do progresso da aprendizagem quer por via da auto avaliação quer pela marcação de tarefas pelo tutor;

.6 fornece apoio profissional do tutor via telefone, fax ou correio electrónico.

8 - As companhias devem assegurar a existência de um ambiente de aprendizagem seguro e de que é disponibilizado ao formando o tempo necessário para estudar.

9 - No caso de e-learning devem ser utilizadas as formatações de informação mais comuns como o XML (Extensible Markup Language), a qual é uma forma flexível de partilha quer do formato quer dos dados na internet (www), em redes internas e outras.

10 - O sistema de e-learning deve estar protegido contra falsificações e tentativas de pirataria informática contra o sistema.

Orientações para avaliar o progresso dos formandos e os resultados da formação, do ensino à distância e do e-ensino (e-learning)

11 - Cada Parte deve assegurar a existência de procedimentos aprovados de avaliação, para os programas de ensino à distância e de e-learnig, que incluam:

.1 informação clara para os formandos da forma como os testes e os exames são realizados e de como são comunicados os resultados;

.2 as questões dos testes são abrangentes e avaliam de forma adequada a competência dos formandos e são apropriadas para o nível que estiver a ser examinado;

.3 a existência de procedimentos que assegurem a actualização das questões;

.4 as condições onde os exames podem ser realizados e os procedimentos de vigilância a adoptar;

.5 procedimentos de segurança adequados para o sistema de exames e que previnam a fraude; e

.6 procedimentos seguros de validação do registo dos resultados para benefício da Parte.

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Registo das entidades formadoras aprovadas, cursos e programas de formação

12 - Cada Parte deve assegurar a existência e manutenção de um registo ou registos de entidades formadoras aprovadas, cursos e programas de formação, os quais deverão ser disponibilizados às companhias ou outras Partes a pedido.

Secção B-I/7

Orientações relativas a comunicação de informação

Relatórios de dificuldades encontradas

1 - Incentivam-se as Partes, aquando da comunicação da informação nos termos do artigo IV e da regra I/7 da Convenção, a incluir um índice localizando especificamente a informação exigida, como se segue:

Índice dos materiais submetidos nos termos do artigo IV e da regra I/7 da Convenção STCW

Artigo IV da Convenção STCW	**Localização**
.1 texto das leis, decretos, portarias, ordens, regras e outros instrumentos (artigo IV(1)(a));	
.2 detalhes dos planos de estudo dos cursos (artigo IV(l)(b));	
.3 exames nacionais e outros requisitos (artigo IV(1)(b));	
.4 modelos de certificados (artigo IV(1)(c)).	
Secção A-I/7 parte 1 do Código STCW	**Localização**
.5 informação da orgânica Governamental (secção A-I/7, parágrafo 2.1);	
.6 explicação das medidas legais e administrativas (secção A-I/7, parágrafo 2.2);	
.7 declaração das políticas de educação, formação, exames, avaliação e certificação (secção A-I/7, parágrafo 2.3);	
.8 resumo por certificado, dos cursos, programas de formação, exames e avaliação (secção A-I/7, parágrafo 2.4);	
.9 esquema dos procedimentos e condições de autorizações, acreditações e aprovações (secção A-I/7, parágrafo 2.5);	
.10 lista das autorizações, acreditações e aprovações concedidas (secção A-I/7, parágrafo 2.5);	
.11 resumo dos procedimentos das dispensas (secção A-I/7, parágrafo 2.6);	
.12 comparação efectuada nos termos da regra I/11 (secção A-I/7, parágrafo 2.7);	
.13 esquema da formação obrigatória de reciclagem e de progressão (secção A-I/7, parágrafo 2.7).	
Parte 2 do parágrafo 3 da Secção A-I/7 do Código STCW	**Localização**
.14 descrição dos mecanismos de equivalência adoptados nos termos do artigo IX (secção A-I/7, parágrafo 3.1);	
.15 resumo das medidas tomadas para assegurar o cumprimento da regra I/10 (secção A-I/7, parágrafo 3.2);	
.16 modelo dos documentos de lotação de segurança emitidos aos navios tripulados por marítimos titulares de cerificação alternativa ao abrigo da regra VII/1 (secção A-I/7, parágrafo 3.3).	
Parte 2 do parágrafo 4 da Secção A-I/7 do Código STCW	**Localização**
.17 Relatório das avaliações independentes efectuadas nos termos da regra I/8 cobrindo:	
.1 os termos de referência utilizados pelos avaliadores na avaliação independente;	
.2 as qualificações e experiência dos avaliadores;	
.3 a data e o âmbito da avaliação;	
.4 as não conformidades encontradas;	
.5 as acções correctivas recomendadas;	
.6 as medidas correctivas implementadas; e	
.7 a lista das instituições/centros de formação/entidades formadoras cobertas pela avaliação independente.	
Parte 2 do parágrafo 6 da Secção A-I/7 do Código STCW	**Localização**
.18 explicação das medidas legais e administrativas (secção A-I/7, parágrafo 6.1);	
.19 declaração das políticas de educação, formação, exames, avaliação e certificação (secção A-I/7, parágrafo 6.2);	
.20 resumo por certificado, dos cursos, programas de formação, exames e avaliação (secção A-I/7, parágrafo 6.3);	
.21 esquema da formação obrigatória de reciclagem e de progressão (secção A-I/7, parágrafo 6.4); e	
.22 comparação efectuada nos termos da regra I/11 (secção A-I/7, parágrafo 6.5).	

2 - As Partes deverão incluir nos relatórios exigidos na regra I/7, a indicação de qualquer orientação relevante contida na parte B do presente Código, cuja observância se tenha revelado impraticável.

Secção B-I/8

Orientações relativas a normas de qualidade

1 - Na implementação de normas de qualidade, nos termos das disposições da regra I/8 e da secção A-I/8 à gestão do sistema de certificação, cada Parte deve considerar os modelos existentes, nacionais ou internacionais, e incluir os seguintes elementos chave:

.1 um plano de acção relativo à qualidade e aos meios para a sua implementação;

.2 um sistema de qualidade incorporando a estrutura organizacional, as responsabilidades, os procedimentos, os processos e os recursos necessários para a gestão da qualidade;

.3 as técnicas e actividades operacionais para garantir o controlo da qualidade;

.4 os planos de monitorização sistemática, incluindo auditorias internas de garantia de qualidade, para assegurar que todos os objectivos definidos estão a ser alcançados; e

.5 os planos das auditorias externas de qualidade, conforme descrito nos parágrafos seguintes.

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2 - Ao implementar um sistema de normas de qualidade para a gestão do seu sistema de certificação, as Administrações devem procurar garantir que os planos adoptados:

.1 são suficientemente flexíveis para permitir que o sistema de certificação tenha em consideração as várias necessidades do sector e que facilite e fomente a aplicação de novas tecnologias:

.2 incluem todos os aspectos administrativos que dão cumprimento às várias disposições da convenção, em particular às regras I/2 e I/15 e às outras disposições que permitem à Administração conceder certificados e dispensas e retirar, cancelar e suspender certificados;

.3 envolvem as responsabilidades da Administração na aprovação da formação e avaliação a todos os níveis, desde cursos do tipo bacharelato a cursos de actualização para os certificados de competência, incluindo cursos de curta duração de formação profissional; e

.4 incorporam planos para a auditoria interna de garantia de qualidade nos termos do parágrafo 1.4, envolvendo um estudo próprio aprofundado dos procedimentos administrativos, a todos os níveis, com vista a quantificar a consecução dos objectivos definidos e a fornecer a base para a auditoria externa independente requerida nos termos do parágrafo 3 da secção A-I/8.

Modelo de normas de qualidade para a avaliação de conhecimentos, compreensão, aptidões e competência

3 - Os modelos de normas de qualidade para a avaliação de conhecimentos, compreensão, aptidões e competência deve incluir as orientações desta secção, dentro do quadro geral de:

.1 um sistema nacional de acreditação para educação e formação ou de normas de qualidade; ou

.2 um modelo alternativo de normas de qualidade aceitável para a Organização.

4 - Os modelos de normas de qualidade acima referidos devem incluir:

.1 uma política da qualidade, incluindo a obrigação pela instituição ou unidade de formação, da prossecução das suas metas e objectivos e ao consequente reconhecimento pela autoridade de acreditação ou de qualidade adequada;

.2 os procedimentos de gestão da qualidade que estabelecem e implementam a política da qualidade, relativos aos aspectos do trabalho que possam prejudicar a qualidade do mesmo, incluindo as disposições que permitam avaliar o progresso ao longo de um programa de formação;

.3 a cobertura pelo sistema de qualidade, quando apropriado, da estrutura organizacional administrativa e académica, das responsabilidades, dos procedimentos, dos processos e dos recursos humanos e materiais;

.4 as funções de controlo da qualidade a aplicar a todos os níveis de actividade do ensino, da formação, dos exames e da avaliação e à sua organização e execução, com vista a garantir a sua adequação aos fins pretendidos e ao alcance dos objectivos definidos;

.5 os processos de auditoria interna da qualidade e da revisão do sistema destinados a monitorizar o modo como a instituição, ou unidade de formação, estão a atingir os objectivos dos programas que fornece e está efectivamente a monitorizar os processos de controlo da qualidade que utiliza; e

.6 os planos elaborados para as auditorias externas periódicas exigidas nos termos do parágrafo 2 da regra I/8 e descritos nos parágrafos seguintes, para os quais o resultado da revisão do sistema da qualidade constituem a base e o ponto de partida.

5 - Ao estabelecerem normas de qualidade para programas de educação, de formação e de avaliação, as organizações responsáveis pela sua execução devem tomar em consideração os seguintes factores:

.1 quando existirem disposições nacionais estabelecidas para acreditação, ou normas de qualidade relativas a educação, essas disposições deverão ser utilizadas em cursos que incluam os requisitos de conhecimentos e compreensão da Convenção. As normas de qualidade deverão ser aplicadas tanto ao nível operacional como ao nível de gestão das actividades e devem ter em consideração o modo como o sistema é gerido, organizado, executado e avaliado com vista a garantir que os objectivos identificados são atingidos;

.2 quando a aquisição de uma determinada aptidão ou a realização de uma determinada tarefa forem os objectivos primordiais, as normas de qualidade devem tomar em consideração a utilização de equipamento real ou de um simulador para este fim e a adequação das qualificações e da experiência dos avaliadores, com vista a garantir o cumprimento das normas estabelecidas; e

.3 as auditorias internas da garantia de qualidade devem incluir um estudo próprio aprofundado do programa, a todos os níveis, com vista a monitorizar a prossecução dos objectivos definidos, através da aplicação das normas de qualidade. Estas revisões do sistema da qualidade devem englobar o planeamento, o projecto, a apresentação e a avaliação de programas, assim como as actividades de ensino, de aprendizagem e de comunicação. o resultado fornece as bases para a avaliação independente requerida pelo parágrafo 3 da secção A-I/8.

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A avaliação independente

6 - Cada avaliação independente deve incluir um exame sistemático e independente de todas as actividades relacionadas com a qualidade, porém não deve avaliar a validade dos objectivos definidos. A equipa de análise deverá:

.1 realizar a avaliação de acordo com os procedimentos documentados;

.2 garantir que os resultados de cada avaliação são documentados e transmitidos aos responsáveis pela área avaliada; e

.3 verificar se são tomadas atempadamente as acções para corrigir quaisquer deficiências.

7 - A finalidade da avaliação é fornecer uma análise independente da eficácia dos planos e normas de qualidade, a todos os níveis. No caso de uma instituição de ensino ou formação, deve ser utilizada uma entidade de acreditação académica reconhecida, uma entidade de credenciação de normas de qualidade ou um departamento governamental. Deverá ser fornecida uma quantidade suficiente de informação à equipa de avaliação com a antecedência necessária, com vista a permitir a obtenção de uma ideia geral das tarefas em apreço. No caso de uma instituição ou programa de formação de grande dimensão, os aspectos seguintes são indicativos do tipo de informação a fornecer:

.1 a missão da instituição;

.2 detalhes sobre as estratégias académicas e de formação;

.3 um organograma e informação da composição dos comités e órgãos consultivos;

.4 informação sobre o corpo docente e discente;

.5 descrição dos equipamentos e instalações destinados à formação; e

.6 descrição geral das políticas e procedimentos relativos a:

.6.1 admissão de alunos;

.6.2 desenvolvimento de novos cursos e revisão dos existentes;

.6.3 sistema de exames, incluindo recursos e repetições de provas;

.6.4 recrutamento, formação, desenvolvimento, avaliação e progressão na carreira do pessoal docente;

.6.5 informação de retorno dos alunos e do sector, e

.6.6 envolvimento do corpo docente em actividades de investigação e desenvolvimento.

O relatório

8 - Antes de apresentar o relatório final, a respectiva equipa de avaliação deve enviar um relatório preliminar para a direcção, solicitando os respectivos comentários às suas conclusões. Depois de receber os comentários, os avaliadores devem apresentar o relatório final, que deverá:

.1 incluir uma breve informação dos antecedentes acerca da instituição ou do programa de formação;

.2 ser completo, claro e preciso;

.3 salientar os pontos fortes e fracos da instituição;

.4 descrever os procedimentos de avaliação utilizados;

.5 incluir os vários aspectos identificados no parágrafo 4;

.6 indicar em que medida os requisitos da Convenção estão a ser cumpridos e qual a eficácia das normas de qualidade na garantia da prossecução dos fins e objectivos; e

.7 apontar claramente as áreas com deficiências, apresentar sugestões para melhorias e apresentar quaisquer outros comentários que considerem relevantes.

Secção B-I/9

Orientações relativas a normas médicas

EXAMES MÉDICOS E CERTIFICAÇÃO

1 - As Partes, ao estabelecerem as normas e disposições de aptidão médica para os marítimos, devem ter em consideração os mínimos de aptidão médica, definidas na Tabela B-I/9 e as orientações constantes nesta secção, tendo presente as diferentes funções dos marítimos.

2 - As Partes, ao estabelecerem as normas e disposições de aptidão médica para os marítimos, devem seguir as orientações contidas na publicação da OIT/OMS "Orientações para a Realização de Exames Médicos, Iniciais e Periódicos, a Marítimos", incluindo quaisquer versões subsequentes e outras orientações internacionais aplicáveis, publicadas pela Organização internacional do Trabalho, a Organização Marítima Internacional ou a Organização Mundial de Saúde.

3 - A experiência e qualificações apropriadas, para os médicos que realizam os exames de aptidão médica aos marítimos, podem incluir saúde ocupacional ou qualificações de medicina marítima, experiência de trabalho como médico de bordo ou médico de uma companhia de transporte marítimo ou o trabalho sob a supervisão de alguém com a experiência e qualificações referidas.

4 - Os locais onde os exames médicos são efectuados devem possuir as instalações e equipamentos exigidos para a realização de exames médicos aos marítimos.

5 - As Administrações devem assegurar que os médicos reconhecidos, têm total independência profissional no exercício do seu julgamento clínico, ao realizarem os procedimentos de exames médicos.

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6 - Os indivíduos que solicitam um certificado médico devem apresentar ao médico reconhecido, documento de identificação apropriado para confirmação da sua identidade. Deverão também entregar o certificado médico anterior, quando aplicável.

7 - Cada Administração tem a autoridade discricionária para conceder alterações ou derrogações aos padrões estabelecidos no quadro B-I/9 a seguir indicado, com base numa avaliação de um relatório médico e de qualquer outra informação relevante relativa a adaptação do indivíduo, à condição e capacidade para desempenhar satisfatoriamente as suas funções a bordo.

8 - As normas de aptidão médica deverão, tanto quanto possível, definir critérios objectivos relativamente à aptidão para o serviço de mar, tomando em consideração a possibilidade de acesso a instalações médicas e aos conhecimentos médicos do profissional prestando serviço a bordo. Devem, sobretudo, especificar as condições em que os marítimos que sofrem de doenças que podem pôr em risco a vida mas que controladas através de medicação podem ser autorizados a continuar a exercer funções a bordo.

9 - As normas médicas devem igualmente identificar condições médicas especiais, tais como daltonia, que possam impedir os marítimos de desempenhar determinadas funções a bordo.

10 - A visão ao longe, não corrigida, em cada olho, para o exercício de funções, deverá ser igual ou superior a 0,1[98].

11 - Os indivíduos que necessitem de usar óculos ou lentes de contacto para o desempenho das suas funções a bordo devem possuir um par sobressalente, sempre disponível a bordo do navio. Qualquer necessidade de usar auxiliares da visão para atingir os padrões requeridos deve ser registada em todos os certificados ou autenticações emitidos.

12 - Os testes de visão de cores devem ser efectuados de acordo com a publicação "Recomendações Internacionais dos Requisitos de Visão de Cores para os Transportes", publicado pela Comissão Internacional de Iluminação (CIE 143-2001 incluindo qualquer versão subsequente) ou por outra metodologia de testes equivalente.

Tabela B-I/9

Avaliação no níveis mínimos de aptidão física, inicial e contínua, para os marítimos 3

Tarefa, função, evento ou condição a bordo 3	**Aptidão física relacionada**	**Um exame médico deverá confirmar que o candidato** 4
Movimentos de rotina no navio: - movimentação no convés - entre pavimentos - entre compartimentos *A nota 1 aplica-se a esta linha*	Manutenção do equilíbrio e mover-se com agilidade. Subir e descer escadas e escadas verticais. Passar por cima de braçolas (por exemplo a Convenção de Linhas de Carga exige que as braçolas tenham 600 mm de altura). Abrir e fechar portas estanques	Não tem distúrbios do equilíbrio Não tem nenhum impedimento ou doença que impeça movimentos e actividades físicas relevantes. É capaz, sem ajuda, de: 5 - subir escadas verticais e outras escadas - passar por cima de soleiras altas - manusear sistemas de fecho de portas
Tarefas de rotina a bordo: - Utilização de ferramentas manuais - Movimentação dos sobressalentes /mantimentos - Trabalho em altura - Operações co válvulas - Fazer quartos de quatro horas em pé - Trabalhar em espaços fechados /confinados - Resposta a alarmes, avisos e instruções - Comunicação verbal *A nota 1 aplica-se a esta linha*	Força, destreza e vigor para manusear dispositivos mecânicos. Içar, empurrar e carregar um peso (ex. 18 Kgs). Erguer-se. Manter-se em pé, andar e permanecer alerta por períodos longos. Trabalhar em espaços apertados e mover-se através de aberturas restritas (ex.: a regra 3.6.5.1 da SOLAS, exige que as aberturas nos espaços de carga e nas saídas de emergência tenham 600x600 mm de dimensão mínima. Distinguir visualmente, objectos, formas e sinais. Ouvir avisos e instruções. Fazer uma descrição oral clara.	Não tem impedimento definido ou uma condição médica diagnosticada que reduza a aptidão para realizar tarefas essenciais de rotina para a operação segura do navio Tem aptidão para: - trabalhar de braços levantados - manter-se em pé e andar por períodos longos - entrar em espaços fechados /confinados - cumprir com as normas de acuidade visual (tabela A-I/9) -cumprir com as normas de audição estabelecidas pelas autoridades competentes ou consideradas em orientações internacionais - manter uma conversação normal
Funções de emergência 6 a bordo: - Salvamento - Combate a Incêndios - Evacuação/Abandono *A nota 2 aplica-se a esta linha*	Envergar um colete salva vidas ou um fato de imersão. Saída de espaços cheios de fumo. Participar em funções de combate a incêndios, incluindo a utilização de aparelhos respiratórios. Participar nos procedimentos de abandono do navio	Não ter um impedimento definido ou uma condição médica diagnosticada que reduza a aptidão para realizar deveres essenciais de rotina para a operação segura do navio Ter aptidão para: - envergar um colete salva vidas ou um fato de imersão - rastejar - sentir diferenças de temperatura - manobrar equipamento de combate a incêndios - envergar aparelhos respiratórios (quando necessário no exercício das funções)

Notas:

1- As linhas 1 e 2 da tabela acima descrevem:

a) as tarefas, funções eventos e condições mais vulgares exercidas a bordo;

b) as aptidões físicas correspondentes, que podem ser consideradas necessárias para a segurança do marítimo, dos outros tripulantes e do navio; e

c) critérios de alto nível a seguir pelos médicos no exame de aptidão médica, tendo presente as diferentes funções dos marítimos a bordo e a natureza do trabalho a executar pelo marítimo.

2- A linha 3 da tabela acima descreve:

a) as tarefas, funções eventos e condições mais vulgares exercidas a bordo;

b) as aptidões físicas correspondentes, que podem ser consideradas necessárias para a segurança do marítimo, dos outros tripulantes e do navio; e

c) critérios de alto níve1 a seguir pelos médicos no exame de aptidão médica, tendo presente as diferentes funções dos marítimos a bordo e a natureza do trabalho a bordo a executar pelo marítimo.

[98]Valor constante na classificação decimal de Snellen

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3- Esta tabela não pretende identificar todas as condições possíveis a bordo ou todas as potenciais condições de não aptidão médica. As Partes devem especificar aptidões físicas em função do tipo de marítimos (ex: "Oficial do Convés" ou "Mestrança e Marinhagem de Máquinas"). Deve ser dada a devida consideração a circunstâncias especiais dos indivíduos e àqueles que tenham funções limitadas ou específicas.

4- Na dúvida, o médico deverá quantificar o grau ou a severidade de qualquer deficiência relevante, através de testes objectivos, quando existam testes apropriados, ou referenciar o candidato para exames adicionais.

5- O termo "assistência" significa a ajuda de outra pessoa para completar uma tarefa.

6- O termo "funções de emergência" é utilizado para cobrir todas as respostas a situações normais de emergência, tais como, abandono do navio ou combate a incêndios assim como aos procedimentos a seguir por cada marítimo para assegurar a sobrevivência pessoal.

Secção B-I/10

Orientações relativas ao reconhecimento de certificados

1 - A formação ministrada de acordo com a Convenção STCW, que não conduz à emissão de um certificado de competência e cuja informação submetida pela Parte foi considerada pelo Comité de Segurança Marítima, como dando cumprimento integral da Convenção, nos termos do parágrafo 2 da regra I/7, pode ser aceite por outras Partes à Convenção, como se cumprisse os respectivos requisitos de formação relevantes.

2 - As Administrações contactadas deverão emitir as provas documentais referidas no parágrafo 5 da regra I/10, que permitam às autoridades de controlo pelo Estado do Porto a sua aceitação em substituição da autenticação de um certificado emitido por outra Parte, por um período de 3 meses desde a data de emissão, contendo a informação listada abaixo:

.1 nome do marítimo;

.2 data de nascimento;

.3 número do Certificado de Competência original;

.4 cargo;

.5 limitações;

.6 detalhes de contacto da Administração; e

.7 datas de emissão e de validade.

3 - Esta prova documental pode ser disponibilizada por meios electrónicos.

Secção B-I/11

Orientações relativas a revalidação de certificados

1 - Os cursos exigidos pela regra I/11 devem incluir as alterações relevantes verificadas na legislação e tecnologia marítima e as orientações relativas à segurança da vida humana no mar, à protecção (security) e à protecção do meio ambiente marinho.

2 - Um teste, pode tomar a forma de um exame oral ou escrito, a utilização de simuladores ou outros meios apropriados.

3 - O tempo de embarque aprovado, especificado no parágrafo 1, da secção A-I/11, pode ser exercido pelo oficial numa categoria inferior à categoria constante do certificado que possui.

4 - Se o pedido de revalidação de um certificado referido no parágrafo 1 da regra I/11, for feito no período dos seis meses antes de terminar a sua validade, o certificado pode ser revalidado por um período de cinco anos a contar da sua data de validade, ou da extensão da sua validade.

Secção B-I/12

Orientações relativas à utilização de simuladores

1 - Quando forem utilizados simuladores para formação e avaliação de competências devem ser tomadas em consideração as seguintes linhas de orientação:

FORMAÇÃO E AVALIAÇÃO DE OBSERVAÇÃO E DE TRAÇAGEM RADAR

2 - A formação e avaliação de observação e de traçagem radar devem:

.1 incluir a utilização de equipamentos de simulação de radar; e

.2 satisfazer pelo menos o estabelecido nas normas constantes dos parágrafos 3 a 17 seguintes.

3 - As demonstrações e exercícios práticos de observação radar devem ser efectuados, sempre que apropriado, em equipamento radar marítimo activo incluindo a utilização de simuladores. Os exercícios de traçagem deverão preferencialmente efectuar-se em tempo real com vista a aumentar a consciencialização dos formandos para os perigos da utilização inadequada da informação fornecida pelo radar e aperfeiçoar as suas técnicas de traçagem até um nível compatível com as necessidades impostas pela execução de manobras seguras para evitar abalroamentos em situações reais de navegação no mar.

Geral

Factores que afectam o funcionamento e o rigor

4 - A compreensão elementar dos princípios de funcionamento do radar deverá ser atingida em conjunto com um conhecimento prático completo do seguinte:

.1 medições de distância e de marcação, das características do conjunto dos componentes do radar que determinam a qualidade da imagem do radar, das antenas do radar; de diagramas polares, dos efeitos da potência irradiada em direcções fora dos limites de abertura do feixe principal, de descrições sem carácter técnico de sistemas radar, incluindo as diferenças de características entre diferentes tipos de sistemas de radar, do funcionamento dos monitores e dos factores inerentes ao equipamento, que afectam as distâncias máximas e mínimas e o rigor da informação;

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.2 especificações do funcionamento dos radares marítimos actuais, adoptadas pela Organização;

.3 efeitos da fixação da antena do radar, dos sectores de sombra e dos arcos de redução de sensibilidade, de ecos falsos, dos efeitos da altura da antena na detecção de distâncias e dos efeitos de unidades do sistema de radar e do armazenamento de sobressalentes junto de agulhas magnéticas, incluindo distâncias seguras relativas a efeitos de campo magnético; e

.4 perigos inerentes à radiação e precauções de segurança a tomar, quando na proximidade de antenas ou de guias de ondas abertas.

Detecção e representação deficiente de informação, incluindo ecos falsos e reflexos de mar

5 - O conhecimento das limitações à detecção de um alvo é essencial, com vista a permitir ao operador estimar os riscos de falhar a detecção de um determinado alvo. Os seguintes factores deverão ser realçados:

.1 padrões de funcionamento do equipamento;

.2 comandos da regulação do brilho, ganho e processador de vídeo;

.3 horizonte radar;

.4 dimensão, forma, aspecto e composição dos alvos;

.5 efeitos do movimento do navio num corredor de tráfego;

.6 condições de propagação;

.7 condições meteorológicas, interferências provocadas pelo mar e pela chuva;

.8 comandos das regulações anti-interferências;

.9 sectores de sombra; e

.10 interferências mútuas entre radares.

6 - Deve ser atingido o conhecimento dos factores que podem conduzir a falsas interpretações, incluindo ecos falsos, efeitos de pilares próximos ou estruturas de grande dimensão, efeitos de linhas de transporte de energia atravessando rios e estuários e ecos de alvos distantes que aparecem no segundo anel de distância ou em anéis posteriores.

7 - Deve ser atingido o conhecimento das ajudas à interpretação, incluindo os reflectores de radar, marcas emissoras - receptoras radar, detecção e reconhecimento de alvos em terra, os efeitos das características topográficas, efeitos do comprimento do impulso e da largura de banda, alvos de radar característicos e não característicos e factores que afectam a intensidade dos ecos.

Prática

Regulação e manutenção das imagens

8 - Deve ser atingido o conhecimento do seguinte:

.1 os diversos modos de apresentação da imagem radar, movimento relativo não estabilizado com a proa no zero; movimento relativo estabilizado com a proa no zero, com o rumo no zero e com o norte no zero, e movimento real;

.2 efeitos dos erros no rigor da informação apresentada; efeitos da transmissão de erros da agulha, em movimento relativo estabilizado ou movimento real; efeitos da transmissão de erros do odómetro, no movimento real e dos efeitos de uma regulação manual da velocidade pouco rigorosa no caso de movimento real;

.3 métodos de detecção de uma regulação da velocidade pouco rigorosa nos comandos de movimentos reais; dos efeitos do ruído na recepção que reduzem a possibilidade de apresentar ecos fracos e dos efeitos da saturação devido a ruído do receptor, etc.; da regulação dos comandos de operação; dos critérios que indicam valores de regulação óptimos; da importância de uma sequência de regulação correcta e dos efeitos de comandos deficientemente regulados, da detecção de regulações deficientes e das respectivas medidas de correcção:

.3.1 comandos que afectam os alcances de detecção; e

.3.2 comandos que afectam o rigor;

.4 perigos de utilização do radar com os comandos deficientemente regulados;

.5 necessidade de verificações regulares do funcionamento e da relação entre a indicação fornecida pelo controlador de funcionamento e o alcance do equipamento de radar.

Alcance e marcação

9 - Deverá ser atingido o conhecimento do seguinte:

.1 métodos de medição de distância; anéis de distâncias fixos e variáveis;

.2 rigor de cada método e do rigor relativo dos diferentes métodos;

.3 modo de representação da informação sobre as distâncias; intervalos fixos, contadores digitais e escalas graduadas;

.4 métodos de medição de marcações; cursor rotativo montado numa cobertura transparente do ecrã, cursor de marcação electrónica e outros métodos;

.5 rigor nas marcações e faltas de rigor causadas por erros de paralaxe, movimento do marcador da proa, incorrecto ajustamento do centro;

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.6 representação das marcações; escala graduada e contador digital; e

.7 necessidade de verificações regulares do rigor das distâncias e marcações e dos métodos para verificar deficiências de rigor, para as corrigir ou para as ter em consideração.

Técnicas de traçagem e conceitos de movimento relativo

10 - Deverão ser efectuados exercícios práticos, em técnicas de traçagem manuais, incluindo o uso de traçadores de reflexão, com o objectivo de proporcionar um conhecimento profundo da correlação entre o movimento do próprio navio e dos restantes navios, incluindo os efeitos das manobras para evitar abalroamentos. Nos estados preliminares deste treino, exercícios de traçagem simples devem ser concebidos para permitir uma apreciação completa da geometria da traçagem e dos conceitos de movimento relativo. O grau de complexidade dos exercícios deverá aumentar ao longo da acção de treino até que o formando tenha atingido um conhecimento profundo de todos os aspectos da matéria em questão. A competência poderá ser realçada, de um modo mais adequado, expondo o formando a exercícios em tempo real, realizados em simulador ou utilizando outros meios igualmente eficazes.

Identificação de ecos críticos

11 - Deverá ser atingida uma compreensão aprofundada do seguinte:

.1 determinação da posição por radar, utilizando alvos em terra e marcas de navegação;

.2 rigor da posição obtida por meio de distâncias e marcações;

.3 importância da verificação do rigor do radar por comparação com outras ajudas à navegação; e

.4 importância do registo de distâncias e marcações a intervalos frequentes e regulares, quando se utiliza o radar como ajuda para evitar abalroamentos.

Rumo e velocidade de outros navios

12 - Deverá ser atingida uma compreensão aprofundada do seguinte:

.1 métodos diversos para a determinação do rumo e da velocidade de outros navios, a partir de distâncias e marcações registadas, incluindo:

.1.1 traçagem em movimento relativo não estabilizado;

.1.2 traçagem em movimento relativo estabilizado;

.1.3 traçagem em movimento real; e

.2 a relação existente entre as observações visual e radar, incluindo a precisão e a precisão do rumo estimado e da velocidade dos outros navios e a detecção das mudanças nos movimentos dos outros navios.

Tempo e distância mínima para cruzamento, encontro ou alcance

13 - Deverá ser atingida uma compreensão aprofundada do seguinte:

.1 utilização de informação registada para determinar:

.1.1 a distância mínima de aproximação e respectiva marcação; e

.1.2 tempo para atingir a distância mínima; e

.2 importância de observações regulares e frequentes.

Detecção de alterações de rumo e de velocidade noutros navios

14 - Deverá ser atingida uma compreensão aprofundada do seguinte:

.1 efeitos de alterações de rumo e ou de velocidade dos outros navios nas suas rotas marcadas no ecrã de radar;

.2 intervalo de tempo entre a alteração de rumo ou velocidade e a detecção dessa alteração;

.3 riscos de pequenas alterações de rumo ou velocidade quando comparados com alterações importantes em relação com a rapidez e a precisão da detecção.

Efeitos das alterações de rumo ou da velocidade (ou de ambas) do próprio navio

15 - Deverá ser atingida uma compreensão aprofundada dos efeitos na imagem em movimento relativo dos movimentos do próprio navio e dos efeitos dos movimentos de outros navios e das vantagens da estabilização de um movimento relativo com a ajuda da agulha.

16 - Em relação às imagens de movimentos reais deverá ser atingida uma compreensão aprofundada do seguinte:

1. efeitos das imprecisões:

.1.1 na regulação do rumo e da velocidade; e

.1.2 nas informações da agulha, no caso de uma imagem estabilizada em movimento relativo;

.2 efeitos de alterações de rumo, de velocidade, ou de ambos, pelo próprio navio, nas rotas de outros navios marcadas no ecrã; e

.3 relação entre a velocidade e a frequência das observações.

Aplicação do Regulamento Internacional para Evitar Abalroamentos no Mar, COLREG 1972, emendado

17 - Deverá ser atingida uma compreensão aprofundada da relação entre o COLREG 1972, emendado, com a utilização do radar, incluindo o seguinte:

.1 manobras para evitar abalroamentos, riscos de hipóteses baseadas em informação inadequada e riscos de pequenas alterações no rumo ou na velocidade;

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.2 vantagens de uma velocidade segura quando é utilizado o radar para evitar abalroamentos;

.3 relação entre a distância e o tempo de aproximação mínimos, as características de manobra e os vários tipos de navios;

.4 importância de definir, com detalhe, os relatórios de observação do radar e os procedimentos de registo do radar;

.5 utilização do radar em condições de bom tempo, com vista a quantificar as suas capacidades e limitações, comparar observações radar e visuais e avaliar o rigor relativo da informação fornecida pelo radar;

.6 necessidade de usar o radar atempadamente em condições de tempo limpo à noite e em situações em que existam indicações de que a visibilidade se possa vir a reduzir;

.7 comparação das informações mostradas pelo radar com a informação constante das cartas; e

.8 comparação dos efeitos das diferenças entre as várias escalas de alcance do radar.

FORMAÇÃO E AVALIAÇÃO DA UTILIZAÇÃO OPERACIONAL DO ARPA

18 - A formação e a avaliação da utilização operacional dos auxiliares automáticos de traçagem radar (ARPA) deverão:

.1 ter como requisito prévio a formação em observação e traçagem radar ou associar essa formação com a formação descrita nos parágrafos 19 a 35 da presente secção;

.2 incluir a utilização de equipamento de simulação de ARPA; e

.3 estar de acordo com padrões equivalentes ou superiores aos constantes dos parágrafos 19 a 35 desta secção.

19 - Quando for ministrada formação sobre sistemas ARPA, que faça parte do programa geral de formação, nos termos da Convenção STCW 1978, emendada, os comandantes, imediatos e oficiais chefes de quarto de navegação devem compreender os factores envolvidos no processo de decisão baseado na informação fornecida pelo ARPA, em conjunto com informação fornecida por outras ajudas à navegação e avaliar da mesma forma os aspectos operacionais dos erros dos sistemas electrónicos de navegação modernos, incluindo o ECDIS. Esta formação deverá ser de natureza progressiva e proporcional às responsabilidades do indivíduo e aos certificados emitidos pelas Partes nos termos da Convenção STCW de 1978, emendada.

Teoria e demonstração

Perigos possíveis do excesso de confiança no ARPA

20 - Considera-se que o ARPA é somente uma ajuda à navegação e que:

.1 as suas limitações, incluindo as limitações dos seus sensores, tornam perigoso depositar demasiada confiança no ARPA, particularmente quando utilizado para substituir o serviço de vigia; e

.2 se torna necessário cumprir, em todas as circunstâncias, os princípios a observar durante um quarto de navegação e as orientações relativas ao serviço de quartos de navegação.

Principais tipos de sistemas ARPA e características da informação apresentada

21 - Conhecimento dos principais tipos de sistemas ARPA em utilização, as características da informação apresentada e uma compreensão das situações em que devem ser utilizados os modos de estabilização relativamente ao fundo ou ao mar e apresentação da informação nos modos de norte no zero, rumo no zero ou proa no zero.

Normas IMO sobre o desempenho dos sistemas ARPA

22 - Apreciação das normas da IMO relativas ao funcionamento de sistemas ARPA, em particular normas relativas ao rigor.

Factores que influenciam o funcionamento e o rigor do sistema

23 - Conhecimento dos parâmetros de entrada no ARPA provenientes dos vários sensores radar, agulha e velocidade e os efeitos de deficiências de funcionamento dos sensores no rigor dos dados fornecidos pelo ARPA.

24 - Conhecimento do seguinte:

.1 efeitos das limitações de discriminação e da precisão da marcação e distância, assim como das limitações dos dados fornecidos pela agulha e dos de velocidade no rigor da informação fornecida pelo ARPA; e

.2 factores com influência no rigor vectorial.

Capacidades de seguimento e limitações

25 - Conhecimentos de:

.1 critérios de selecção de alvos por aquisição automática;

.2 factores tendentes à escolha correcta de alvos por aquisição manual;

.3 efeitos da perda ou enfraquecimento de alvo, no seguimento;

.4 as circunstâncias causadoras de "troca de alvos", bem como os seus efeitos na informação apresentada.

Processamento de atrasos

26 - Conhecimento dos atrasos inerentes à apresentação da informação processada pelo ARPA, em particular durante a aquisição ou reaquisição ou quando o alvo objecto de seguimento executa manobras.

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Avisos operacionais, vantagens e limitações

27 Compressão do uso, vantagens e limitações dos avisos operacionais do ARPA e da sua correcta regulação, quando aplicável, para evitar falsas interferências.

Testes operacionais ao sistema

28 - Conhecimento de:

.1 métodos de verificação de deficiências de funcionamento de sistemas ARPA, incluindo o seu autodiagnóstico; e

.2 precauções a tomar depois de observada uma deficiência de funcionamento.

Aquisição manual e automática de alvos e respectivas limitações

29 - Conhecimento dos limites impostos em ambos os tipos de aquisição em cenários multialvo e seus efeitos na aquisição de alvos enfraquecidos ou trocados.

Vectores verdadeiros e relativos e representação gráfica típica de informação relativa a alvos e a áreas perigosas

30 - Conhecimento aprofundado de vectores de movimentos verdadeiros e de movimentos relativos, determinação de rumos e de velocidades verdadeiros de alvos, incluindo:

.1 avaliação de perigos, determinação do ponto máximo de aproximação previsto e da hora prevista de aproximação máxima a partir de extrapolação de vectores e utilização da representação gráfica de áreas de perigo;

.2 efeitos das alterações de rumo e ou velocidade do próprio navio e ou alvos no ponto máximo de aproximação previsto e na hora prevista de aproximação máxima e nas áreas de perigo;

.3 efeito de vectores e áreas de perigo incorrectas; e

.4 vantagem de permutação entre vectores de movimentos relativos e de movimentos verdadeiros.

Informação sobre posições anteriores de alvos objecto de seguimento

3l - Conhecimentos da derivação de posições anteriores de alvos seguidos, reconhecimento da informação histórica como meio de indicação de manobras recentes dos alvos e como método de verificação da validade do seguimento efectuado pelo ARPA.

Prática

Regulação e manutenção das imagens

32 - Capacidade para demonstrar:

.1 o procedimento de arranque correcto para obter uma visualização óptima da informação do ARPA;

.2 a selecção do tipo de apresentação de imagem; movimentos relativos estabilizados em azimute e movimentos verdadeiros;

.3 o ajustamento correcto de todos os comandos variáveis, de modo a obter uma apresentação optimizada da informação;

.4 a selecção, conforme apropriado, dos dados referentes à velocidade no ARPA;

.5 a selecção dos comandos de traçagem do ARPA, do sistema manual ou automático de aquisição e de apresentação de informação nos modos de vectores ou de gráficos;

.6 selecção da escala de tempo dos vectores/gráficos;

.7 a utilização de zonas de exclusão quando o modo de aquisição automática é utilizado pelo ARPA; e

.8 a verificação do funcionamento do ARPA e dos sensores associados ao radar, agulha e velocidade.

Testes operacionais ao sistema

33 - Capacidade para efectuar ensaios operacionais ao sistema e determinar o rigor da informação do ARPA, incluindo a opção de manobra de ensaio, por comparação com a traçagem geral efectuada no radar.

Obtenção de informação no monitor ARPA

34 - Demonstração da capacidade para obter informação tanto no modo de apresentação de movimentos relativos como no de movimentos verdadeiros, incluindo:

.1 identificação de ecos críticos;

.2 velocidade e direcção do movimento relativo dos alvos;

.3 hora e distância previstas para o ponto de aproximação máxima ao alvo;

.4 rumo e velocidade dos alvos;

.5 detecção de alterações de rumo e de velocidade dos alvos e as limitações de tal informação;

.6 detecção de alterações no rumo e na velocidade do próprio navio, ou em ambos os parâmetros;

.7 operação da opção de manobra de ensaio.

Aplicação do Regulamento Internacional para Evitar Abalroamentos no Mar, COLREG, 197 2, emendado

35 - Análise de situações de abalroamento potencial a partir da informação apresentada, determinação e execução de manobras para evitar situações de quase abalroamento, de acordo com o COLREG, 1972, emendado.

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FORMAÇÃO E AVALIAÇÃO NA UTILIZAÇÃO OPERACIONAL DE ECDIS (CARTAS DE ECRÃ ELECTRÓNICO E SISTEMAS DE INFORMAÇÃO)

Introdução

36 - Quando forem utilizados simuladores para a formação e avaliação na utilização operacional de ECDIS, deverão ser tidas em consideração as seguintes orientações provisórias.

37 - A formação e avaliação na utilização operacional de ECDIS, deve:

.1 incluir a utilização de equipamento de simulação ECDIS; e

.2 estar conforme com os padrões, nunca inferiores aos contidos nos parágrafos 38 a 65 seguintes.

38 - O equipamento de simulação de ECDIS deve, para além de cumprir todos os padrões aplicáveis estabelecidos na secção A-I/12 do código STCW, emendado, ser capaz de simular os equipamentos de navegação e os controlos operacionais da ponte, os quais devem cumprir com todos os padrões de desempenho aplicáveis adoptados pela organização, e incluir especificações que gerem medições de altura do fundo, e:

.1 criar um ambiente de operação em tempo real, incluindo o controlo da navegação e equipamentos de comunicações e o equipamento apropriado às tarefas de navegação e de quartos a realizar e às competências de manobra a serem avaliadas; e

.2 simular de forma realista as características do "próprio navio", em condições de mar aberto, assim como o efeito da meteorologia, das correntes de maré e das correntes.

39 - Demonstrações de, e prática na utilização de ECDIS, devem ser efectuadas, quando apropriado, recorrendo ao uso de simuladores. Os exercícios de formação devem ser preferencialmente executados em tempo real, tendo em vista aumentar a sensibilização dos formandos para os riscos da utilização inapropriada do ECDIS. Escalas de tempo aceleradas podem ser utilizadas só para demonstração.

Geral

Objectivos de um programa de formação ECDIS

40 - O formando ECDIS deve ser capaz de:

.1 operar o equipamento ECDIS, utilizar as funções de navegação do ECDIS, seleccionar e avaliar toda a informação relevante e tomar as acções apropriadas no caso de funcionamento deficiente;

.2 identificar os erros potenciais da informação apresentada e os erros comuns de interpretação; e

.3 explicar porque é que não se deve confiar no ECDIS como a única ajuda à navegação confiável.

Teoria e demonstração

41 - Como a utilização segura do ECDIS exige conhecimento e compreensão dos princípios básicos que regulam a informação ECDIS e as suas regras de apresentação, assim como os erros potenciais da informação apresentada, as limitações relativas ao ECDIS e os perigos potenciais, devem ser proporcionadas aulas que cubram a explicação da teoria. Sempre que possível, essas aulas devem ser ministradas num contexto familiar fazendo uso de exemplos práticos. Devem ser reforçadas durante os exercícios de simulador.

42 - Para a operação segura do equipamento ECDIS e da informação fornecida (uso das funções de navegação do ECDIS, selecção e avaliação da informação relevante, familiarização com a interface homem-máquina), o curso deve ser constituído principalmente por exercícios práticos e formação nos simuladores ECDIS.

43 - Para se definirem os objectivos da formação deve ser definida a estrutura das actividades. Deverá ser desenvolvida uma especificação detalhada dos objectivos de aprendizagem para cada tópico da estrutura.

Exercícios de simulação

44 - Devem ser realizados exercícios em simuladores individuais de ECDIS, ou em simuladores integrais de navegação incluindo ECDIS, para permitir aos formandos a aquisição das competências práticas necessárias. Para os exercícios de navegação em tempo real, são recomendados os simuladores de navegação para cobrir as situações complexas de navegação. Os exercícios devem propiciar formação na utilização de várias escalas, nos diversos modos de navegação e de apresentação disponíveis, para que os formandos venham a ser capazes de adequar a utilização do equipamento às situações particulares respectivas.

45 - A escolha dos exercícios e dos cenários é regulada pela disponibilidade das especificações do simulador. No caso de existir mais do que uma estação de trabalho ECDIS e um simulador integral, as estações de trabalho podem ser prioritariamente utilizadas para a realização dos exercícios básicos de utilização das especificações do ECDIS e para os exercícios de planeamento de viagem, enquanto que os simuladores integrais podem ser prioritariamente utilizados para os exercícios, os mais reais possível, relacionados com as funções de monitorização de viagem em tempo real, interligados com a totalidade do trabalho de um quarto de navegação. O grau de complexidade deve ir aumentando no decurso do programa de formação ate que o formando tenha dominado todos os aspectos dos tópicos da aprendizagem.

46 - Os exercícios devem proporcionar a maior impressão de realismo possível. Para o conseguir, os cenários deverão ser localizados numa zona de mar fictícia. As situações, funções e acções para os diferentes objectivos de aprendizagem, que ocorrem em diferentes áreas marítimas, podem ser integradas num único exercício e experimentadas em tempo real.

47 - O principal objectivo dos exercícios de simulador, é assegurar que os formandos compreendem as

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suas responsabilidades na utilização operacional do ECDIS em todos os aspectos relevantes de segurança e que estão completamente familiarizados com o sistema e equipamento utilizado.

Principais tipos de sistemas ECDIS e respectivas características de apresentação de imagens

48 - O formando deve adquirir conhecimento dos principais tipos de ECDIS em utilização, as diversas características de apresentação de imagens, a estrutura dos dados e compreender:

.1 as diferenças entre cartas vectoriais (ENC) e cartas "raster" (RNC - cartas copiadas ou digitalizadas directamente das cartas em papel);

.2 as diferenças entre ECDIS e ECS;

.3 as diferenças entre ECDIS e RCDS;

.4 as características do ECDIS e das suas diferentes potencialidades; e

.5 as características dos sistemas para fins especiais (situações invulgares/emergências).

Riscos do excesso de confiança no ECDIS

49 - A formação na utilização operacional de ECDIS deve abordar:

.1 as limitações do ECDIS enquanto equipamento de navegação;

.2 os riscos potenciais do funcionamento inapropriado do sistema;

.3 os limitações do sistema incluindo dos respectivos sensores;

.4 inexactidão dos dados hidrográficos; limitações das cartas electrónicas (vectoriais e "raster") (ECDIS versus RCDS e ENC versus RNC); e

.5 o risco potencial do erro humano.

Deve ser enfatizada a necessidade de se manter uma atenção apropriada e de se realizarem verificações periódicas do ECDIS, por métodos independentes, sobretudo à verificação da posição do navio.

Detecção de deturpação de informação

50 - O conhecimento das limitações dos equipamentos e a detecção de deturpação da informação são essenciais pata a úllização segura do ECDIS. Durante a formação deve ser dada ênfase aos seguintes factores:

.1 os padrões de desempenho do equipamento;

.2 a representação dos dados do radar nas cartas electrónicas, a eliminação da discrepância entre a imagem do radar e a carta electrónica;

.3 as possíveis discrepâncias de projecção entre as cartas de papel e as cartas electrónicas;

.4 as possíveis discrepâncias de escala (escala a mais ou a menos) entre a apresentação das imagens na carta electrónica e a sua escala original;

.5 os efeitos da utilização de diferentes sistemas de referência para o posicionamento;

.6 os efeitos da utilização de diferentes datums verticais e horizontais;

.7 os efeitos do movimento do navio na sua rota;

.8 as limitações do ECDIS no modo de apresentação de imagens nas cartas "raster";

.9 os potencias erros na apresentação das imagens:

.9.1 da posição do próprio navio;

.9.2 dos dados do radar e da informação ARPA e AIS;

.9.3 dos diferentes sistemas de coordenadas geodésicas; e

.10 da verificação dos resultados da correcção manual ou automática dos dados:

.10.1 comparação entre os dados da carta e a imagem radar; e

.10.2 verificação da posição do navio utilizando outros sistemas independentes de determinação da posição.

51 - Deve ser explicada a interpretação falsa dos dados e as acções apropriadas a tomar para evitar erros de interpretação. Devem ser enfatizadas as seguintes implicações:

.1 o ignorar do excesso de escala na apresentação de imagens;

.2 a aceitação acrítica da posição do navio;

.3 a confusão do modo de apresentação de imagens;

.4 a confusão da escala das cartas;

.5 a confusão dos sistemas de referência;

.6 os diferentes modos de apresentação;

.7 os diferentes modos de estabilização vectorial;

.8 as diferenças entre norte verdadeiro e norte da giro (radar);

.9 a utilização do mesmo sistema de referência de dados;

.10 a utilização da escala adequada;

.11 a utilização do sensor mais adequado em função da situação e das circunstâncias;

.12 a introdução dos valores correctos dos dados de segurança:

.12.1 o perfil de segurança do navio;

.12.2 a profundidade de segurança (safe water);

.12.3 eventos; e

.13 o uso apropriado de todos os dados disponíveis.

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52 - A consciencialização de que o RCDS é unicamente uma ajuda à navegação e que, quando em operação no modo RCDS, o equipamento ECDIS deve ser utlizado em conjunto com uma adequada colecção de cartas de papel actualizadas:

.1 a consciencialização das diferenças na operação em modo RCDS, conforme descrita na SN.1/Circ.207/ver.l, diferenças entre RCDS e ECDIS; e

.2 o ECDIS, em qualquer modo, dever ser utilizado na formação com uma adequada colecção de cartas de papel actualizadas.

Factores que afectam o desempenho e a precisão do sistema

53 - Deve ser atingida a compreensão elementar dos princípios do ECDIS, conjuntamente com um conhecimento prático total de:

.1 iniciação e regulação do ECDIS; conexão dos sensores de dados: receptores de satélite e de rádio dos sistemas de navegação, radar, girobússola, diário, sonda, precisão e limitações destes sensores, incluindo os efeitos da medição dos erros e da precisão da posição do navio, manobrar a precisão de desempenho do indicador de rumo, erro da agulha na precisão do indicador de rumo, pouca profundidade das águas no desempenho do odómetro, correcção do odómetro na precisão do cálculo da velocidade, influência do estado do mar na precisão do desempenho da sonda; e

.2 os actuais padrões de desempenho, de apresentação de imagens das cartas electrónicas e dos sistemas de informação, adoptados pela Organização.

Prática

Regulação e manutenção das imagens

54 - Deve ser adquirido conhecimento e competência no (a):

.1 procedimento correcto de iniciação para obter a optimização da imagem da informação ECDIS;

.2 selecção da apresentação da imagem (imagem padrão, imagem de base, toda a informação solicitada e apresentada individualmente);

.3 ajustamento correcto de todas as variáveis de controlo da imagem radar/ARPA, para optimização dos dados apresentados;

.4 selecção da configuração conveniente;

.5 selecção da introdução requerida da velocidade, conforme apropriado;

.6 selecção da escala de tempo vectorial; e

.7 verificações de desempenho da posição, do Radar/ARPA, da agulha, dos sensores de introdução de velocidade e de ECDIS.

Utilização operacional de ECDIS

55 - Deve ser adquirido conhecimento e competência na(s):

.1 principais características dos dados de imagem ECDIS e no seleccionar da informação apropriada para as tarefas de navegação;

.2 funções automáticas necessárias à monitorização da segurança do navio, tais como a apresentação da posição, da rumo verdadeiro e do rumo da giro, velocidade, valores de segurança e de tempo;

.3 funções manuais (pelo cursor, linha de marcação electrónica, anéis de distância);

.4 seleccionar e modificar o conteúdo das cartas electrónicas;

.5 escalas (incluindo escalas superiores ou inferiores);

.6 aproximação rápida (zooming);

.7 regulação dos dados de segurança do navio;

.8 utilização do modo diurno ou nocturno da imagem;

.9 leitura de todos os símbolos e abreviaturas das cartas;

.10 utilização de diferentes tipos de cursores e de barras electrónicas para obtenção dos dados de navegação;

.11 visualização de uma área com indicações diferentes e retomo á posição do navio;

.12 localização da área pretendida , utilizando coordenadas geográficas;

.13 apresentação dos diferentes conjuntos de dados apropriados para uma situação de navegação;

.14 seleccionar dados apropriados e inequívocos;

.15 introdução de notas dos navegantes;

.16 utilização da apresentação orientação norte para cima e outras orientações; e

.17 utilização dos modos de movimento verdadeiro e movimento relativo.

Planeamento de viagem

56 - Deve ser adquirido conhecimento e competência em:

.1 introdução das características do navio no ECDIS;

.2 selecção da zona marítima da viagem:

.2.1 revisão dos fundos necessários à navegação;

.2.2 mudança na escala da carta;

.3 verificação da existência de cartas adequadas e actualizadas;

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.4 apresentação do planeamento de viagem através do ECDIS, utilizando o editor gráfico, tendo presente o rumo e a ortodromia:

.4.1 utilização da base de dados ECDIS para obtenção de dados de navegação, hidrometeorológicos e outros;

.4.2 ter em consideração o raio de giração e os círculos de pontos/linhas, quando são apresentados na escala da carta;

.4.3 marcação de profundidades e de áreas perigosas e a exibição de perímetros de segurança de profundidade;

.4.4 marcação de pontos de rumo com os cruzamentos dos contornos de profundidade e de desvios críticos do rumo estabelecido, assim como a adição, alteração e anulação de pontos de rumo;

.4.5 ter em consideração a velocidade de segurança;

.4.6 verificação da rota pré planeada para a segurança da navegação;

.4.7 criação de avisos e alarmes.

.5 planeamento de viagem através do cálculo por tabelas, incluindo:

.5.1 selecção dos pontos de mudança de rumo;

.5.2 memorando da lista dos pontos de mudança de rumo;

.5.3 notas de planeamento;

.5.4 ajustamento da rota planeada;

.5.5 verificação da rota pré planeada para segurança da navegação;

.5.6 planeamento de rota alternativa;

.5.7 guardar rotas planeadas, carregar e descarregar ou apagar rotas;

.5.8 fazer cópias gráficas do monitor de ecrã e imprimir uma rota;

.5.9 editar e modificar uma rota planeada;

.5.10 estabelecer valores de segurança de acordo com a dimensão do navio e os parâmetros de manobrabilidade;

.5.11 planeamento da viagem de regresso; e

.5.12 ligar diferentes viagens.

Monitorização de viagem/rota

57 - Deve ser adquirido conhecimento e competência em:

.1 utilização independente de dados para o controlo da posição do navio ou a utilização de sistemas alternativos dentro do ECDIS;

.2 utilização de funções de, "olhar em frente":

.2.1 mudança de cartas e de escalas;

.2.2 revisão das cartas de navegação;

.2.3 selecção do vector tempo;

.2.4 previsão da posição do navio num determinado período de tempo;

.2.5 mudança da rota pré planeada (alteração de rota);

.2.6 introdução de dados autónomos para cálculo do abatimento do vento e do efeito da corrente;

.2.7 reacção apropriada aos alarmes;

.2.8 introdução de correcções das discrepâncias dos dados geodésicos;

.2.9 apresentação dos marcadores de tempo na rota do navio;

.2.10 introdução manual da posição do navio; e

.2.11 medição das coordenadas, do rumo, das marcações e das distâncias na carta.

Tratamento de alarmes

58 - Devem ser adquiridos conhecimentos e aptidões para interpretar e reagir adequadamente a todos os tipos de sistema tais como, sensores de navegação, indicadores, dados e cartas, alarmes e avisos de indicadores, incluindo a ligação do sistema de sinalização dos alarmes visuais e sonoros, em caso de:

.1 ausência da próxima carta na base de dados ECDIS;

.2 atravessar um perímetro de segurança;

.3 ultrapassar os limites de travessia dos trajectos;

.4 desvio da rota planeada;

.5 aproximação a um ponto de mudança de rumo;

.6 aproximação de um ponto crítico;

.7 discrepância entre o tempo estimado e o tempo actual de chegada a um ponto de mudança de rumo;

.8 informação de escala a mais e a menos;

.9 aproximação de um perigo isolado de navegação ou de uma zona perigosa;

.10 atravessar uma área especifica;

.11 selecção de um datum geodésico diferente;

.12 aproximação de outros navios:

.13 fim do quarto;

.14 comutação do temporizador;

.15 teste de falha do sistema;

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.16 mau funcionamento do sistema de posicionamento utilizado pelo ECDIS;

.17 falha na estima; e

.18 incapacidade para determinar a posição do navio utilizando o sistema de navegação.

Correcção manual da posição do navio e dos parâmetros de movimento

59 - Deve ser adquirido conhecimento e competência na correcção manual :

.1 da posição do navio em modo de navegação estimada, quando o receptor de satélite e de rádio do sistema de navegação estiver desligado;

.2 a posição do navio, quando as coordenadas obtidas automaticamente não são exactas; e

.3 os valores do rumo e velocidade.

Registos no diário de bordo

60 - Devem ser adquiridos conhecimentos e competências em:

.1 registo automático de viagem;

.2 reconstituição de percursos anteriores, tendo presente:

.2.1 meios de gravação;

.2.2 intervalos de gravação;

.2.3 verificação da base de dados em utilização;

.3 verificação dos registos no diário de bordo electrónico;

.4 gravação instantânea no diário de bordo electrónico;

.5 alteração da hora a bordo;

.6 introdução de dados adicionais;

.7 impressão do conteúdo do diário de bordo electrónico;

.8 regulação dos intervalos de tempo de gravação automáticos;

.9 composição dos dados e relatório de viagem; e

.10 interface com o VDR (gravador dos dados de viagem).

Actualização de cartas

6l - Devem ser adquiridos conhecimentos e competências em:

.1 efectuar a actualização das cartas electrónicas manualmente. Deve ser dada especial atenção à conformidade com o elipsóide de referência e às unidades de medida utilizadas no texto de correcção das cartas;

.2 efectuar a actualização das cartas electrónicas de forma semi-automática, utilizando os dados obtidos por meios electrónicos no formato de carta electrónica; e

.3 efectuar a actualização automática das cartas electrónicas, utilizando ficheiros actualizados obtidos por via electrónica através de linhas de comunicação de dados.

Nos cenários em que os dados não actualizados são empregues para criar situações críticas, os formandos devem realizar a actualização “ad hoc” da carta.

Utilização operacional do ECDIS ligado com o Radar/ARPA

62 - Devem ser adquiridos conhecimentos e competências em:

.1 ligação do ARPA ao ECDIS;

.2 indicação dos vectores de velocidade dos alvos;

.3 indicação dos percursos dos alvos,

.4 arquivo dos percursos dos alvos;

.5 visualização da tabela dos alvos;

.6 verificação do alinhamento do revestimento do radar com as características geográficas da carta;

.7 simulação de uma ou mais manobras;

.8 correcções da posição do navio, utilizando pontos de referência adquiridos pelo ARPA; e

.9 correcções utilizando o cursor ARPA e a barra electrónica.

Ver também a secção B-I/12, Orientações relativas à utilização de simuladores (relativos ao radar e ARPA), especialmente os parágrafos 17 a 19 e 36 a 38.

Utilização operacional do ECDIS ligado com o AIS

63 - Devem ser adquiridos conhecimentos e competências em:

.1 interface com o AIS;

.2 interpretação dos dados AIS;

.3 indicação dos vectores de velocidade dos alvos;

.4 indicação dos percursos dos alvos; e

.5 arquivo dos percursos dos alvos.

Avisos operacionais, benefícios e limitações

64 - Os formandos devem adquirir uma apreciação dos usos, benefícios e limitações dos avisos operacionais do ECDIS e quando aplicável das configurações correctas, para evitar falsas interferências.

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Testes operacionais do sistema

65 - Devem ser adquiridos conhecimentos e competências em:

.1 métodos de teste de avarias do ECDIS, incluindo o auto teste de funcionamento;

.2 precauções a tomar após a ocorrência de uma avaria; e

.3 disposições adequadas de apoio (assumir o controlo e navegar utilizando o sistema de apoio).

Reunião de análise

66 - O instrutor deve analisar e imprimir os resultados de todos os exercícios efectuados por todos os formandos. O tempo gasto nesta análise deve corresponder entre 10% a 15% do tempo total gasto nos exercícios de simulador.

NORMAS DE FUNCIONAMENTO RECOMENDADAS PARA TIPOS DE SIMULADORES NÃO OBRIGATÓRIOS

67 - As normas de funcionamento recomendadas para equipamentos de simulação não obrigatórios, utilizados para formação e/ou avaliação da competência ou demonstração de aptidões, são apresentadas de seguida. Essas formas de simulação incluem, entre outros, os seguintes tipos:

.1 navegação e serviço de vigia;

.2 governo e manobra do navio;

.3 manuseamento e estiva de carga;

.4 relatórios e radiocomunicações; e

.5 operação de máquinas principais e auxiliares.

Simulação de navegação e de vigia

68- Os equipamentos de simulação de navegação e de vigia devem, para além de cumprirem todas as normas de funcionamento aplicáveis constantes da secção A-I/12, ser capazes de simular o equipamento de navegação e os formandos operacionais da ponte, que satisfaçam todas as normas aplicáveis adoptadas pela Organização, disponham de meios para a emissão de sinais sonoros e:

.1 criar um ambiente de operação em tempo real, incluindo instrumentos de controlo da navegação e de comunicações e equipamento apropriado às funções de navegação e de vigia a desempenhar e às aptidões de manobra a ser avaliadas;

.2 apresentar um cenário visual realista, quer de dia quer de noite, incluindo visibilidade variável, ou somente de noite, conforme observado a partir da ponte, com um campo de visão horizontal disponível para o formando nos sectores de visão adequados às tarefas e objectivos da navegação e da vigia; e

.3 simular de um modo realista as reacções dinâmicas do navio em condições de mar aberto, incluindo os efeitos meteorológicos, das correntes de maré, das correntes e das interacções com os outros navios.

.4 simular de forma realista os procedimentos de comunicações VTS entre o navio e terra.

Simulação de governo e manobra de navios

69 - Para além de cumprir os padrões de funcionamento constantes do parágrafo 37, o equipamento para a simulação de governo e manobra de navios deve:

.1 apresentar um cenário visual realista conforme observado da ponte, quer de dia quer de noite, com visibilidade variável com um campo de visão horizontal disponível para o formando nos sectores de visão adequados às tarefas e objectivos do governo e da manobra do navio; e

.2 simular de um modo realista as reacções dinâmicas do navio em condições de águas restritas, incluindo os efeitos de águas pouco profundas e os efeitos de fundo.

70 - Quando forem utilizados modelos reduzidos tripulados para simular o governo e a manobra de navios, em complemento dos padrões de desempenho constantes dos parágrafos 68.3 e 69.2. Tais equipamentos deverão:

.1 incluir factores de escala que representem com rigor as dimensões, as áreas, o volume de deslocamento, a velocidade, o tempo e velocidade de giração do navio real; e

.2 incluir comandos para o leme e para as máquinas com capacidade de resposta numa escala de tempo correcta.

Simulação de operações de carga e estiva

71- O equipamento de simulação de operações de carga deve permitir a simulação de operações de carga e dos equipamentos de controlo que satisfaçam os padrões de funcionamento aplicáveis adoptados pela Organização e incluir meios para:

.1 criar um ambiente operacional efectivo, incluindo estação de controlo de carga equipada com a instrumentação adequada ao tipo de sistema de carga simulado;

.2 modelar as funções de carga e descarga. assim como a informação relativa à estabilidade e às tensões no casco, de modo adequado às tarefas de carga e descarga a desempenhar e às aptidões a avaliar; e

.3 simular as operações de carga, de descarga, de lastragem e de deslastragem, assim como os cálculos associados relativos à estabilidade, caimento, adornamento, resistência longitudinal, tensões torsionais e estabilidade em avaria.

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Simulação de comunicações do Sistema Mundial de Socorro e Segurança Marítima (GMDSS)

72 - Os equipamentos de simulação de comunicações do Sistema Mundial de Socorro e Segurança Marítima (GMDSS) devem permitir a simulação de equipamentos de comunicações GMDSS que cumpram todos os requisitos de funcionamento aplicáveis adoptados pela Organização e incluir meios para:

.1 simular equipamentos operando em ondas métricas (VHF), ondas métricas com chamada selectiva digital (VHF-DSC), do serviço de radiodifusão coordenada e recepção automática em 518 kHz de informações de segurança marítima por meio de telegrafia de impressão directa de faixa estreita (NAVTEX), radiobalizas de localização de sinistros (por satélite) (EPIRB) e equipamento de recepção do quarto conforme requerido para a obtenção do certificado restrito de operador (ROC);

.2 simular a operação de estações de navio-terra de equipamentos do tipo dos desenvolvidos na sequência da criação da Convenção Relativa à Organização Internacional sobre Comunicações de Satélites Marítimos (INMARSAT) dos tipos A, B e C, equipamentos operando em ondas métricas (VHF), equipamentos operando em ondas métricas com chamada selectiva digital (VHF-DSC), equipamentos telegráficos de impressão directa operando em ondas hectométricas e decamétricas (MF/HF NBDP), equipamentos operando em ondas hectométricas e decamétricas com chamada selectiva digital (MF-HF DSC), NAVTEX, radiobalizas de localização de sinistros (por satélite) (EPIRB) e equipamento de recepção do quarto conforme requerido para a obtenção do celificado geral de operador (GOC);

.3 permitir comunicação por voz com ruído de fundo;

.4 incluir uma estação de comunicações por texto escrito; e

.5 criar um ambiente de operação em tempo real, constituído por um sistema integrado incorporando no mínimo uma estação para o instrutor/avaliador e duas estações de comunicações do Sistema Mundial de Socorro e Segurança Marítima (GMDSS) de bordo ou de terra.

Simulação de funcionamento das máquinas principais e auxiliares

73 - Os equipamentos de simulação de casa da máquina devem permitir a simulação de sistemas de máquinas principais e auxiliares e incluir meios para:

.1 criar um ambiente em tempo real para operações de mar aberto ou em porto com equipamentos de comunicações e simulação dos equipamentos de propulsão adequados pertencentes às instalações principal ou auxiliar, bem como os painéis de controlo;

.2 simular subsistemas importantes que deverão incluir, entre outros, a caldeira, a máquina do leme, o sistema geral de energia eléctrica, o sistema de distribuição de energia eléctrica incluindo fontes de energia de emergência e também os sistemas de combustível, de água, de arrefecimento, de refrigeração, de esgoto dos porões e de lastro;

.3 monitorizar e avaliar o comportamento das máquinas e sistemas de sensores remotos:

.4 simular deficiências de funcionamento das máquinas;

.5 permitir a alteração pelo instrutor de variáveis externas que influenciam as operações simuladas, tais como as condições meteorológicas, o calado do navio e as temperaturas da água do mar e do ar;

.6 permitir a alteração pelo instrutor de variáveis externas, tais como vapor para o convés, vapor para os alojamentos, ar para o convés, condições de gelo, aparelhos de elevação do convés, distribuição de energia para os circuitos de potência, propulsor de proa e sistema de carregamento;

.7 permitir a alteração pelo instrutor das características dinâmicas do simulador, tais como funcionamento de emergência, resposta do programa e resposta do navio; e

.8 providenciar mecanismos que permitam isolar certos processos tais como velocidade, sistema eléctrico, sistema de combustível, sistema de óleo de lubrificação, sistema de combustíveis pesados, sistema de água salgada, sistemas de vapor, sistema de evacuação das caldeiras e dos turbogeradores, para o desempenho de tarefas específicas relacionadas com a formação.

Secção B-I/13

Orientações relativas à execução de ensaios

(Sem disposições.)

Secção B-I/14

Orientações relativas às responsabilidades das companhias, dos comandantes e dos membros das tripulações

Companhias

1 - As companhias devem estabelecer programas introdutórios específicos do navio, concebidos para ajudar os marítimos recentemente empregados a familiarizarem-se com todos os procedimentos e equipamentos relacionados com as suas áreas de responsabilidade. As Companhias devem também assegurar que:

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.1 todos os marítimos a bordo de navios equipados com embarcações de salvamento de queda livre deverão receber formação de familiarização nos procedimentos de embarque e de lançamento das baleeiras;

.2 antes do embarque, os marítimos com funções atribuídas nas embarcações de salvamento de queda livre devem ter efectuado formação apropriada no embarque, lançamento e recuperação dessas baleeiras, incluindo a participação em pelo menos um lançamento de queda livre; e

.3 o pessoal, o qual poderá ser requisitado para operar com equipamento GMDSS, receba formação de familiarização em GMDSS, no momento do embarque e depois a intervalos regulares.

2. A formação de familiarização exigida pelo parágrafo 3 da secção A-I/14 deve pelo menos assegurar a obtenção das aptidões apropriadas ao cargo a ser exercido e às funções e responsabilidades a desempenhar, como se refere de seguida:

Limitações operacionais e de projecto

.1 aptidão para compreender de forma apropriada e observar quaisquer limitações operacionais impostas ao navio, e perceber e aplicar restrições de desempenho, incluindo limitações de velocidade em condições de tempo adversas, cuja intenção é a manutenção da segurança do navio, das pessoas e da carga.

Procedimentos de abertura, fecho e peação de escotilhas de porão

.2 aptidão para aplicar de forma apropriada os procedimentos existentes a bordo para a abertura, fecho e peação das portas da proa, popa, dos bordos e das rampas e de operar correctamente os sistemas relacionados.

Legislação, códigos e acordos com aplicação aos navios ro-ro de passageiros

.3 aptidão para compreender e aplicar requisitos internacionais e nacionais para navios ro-ro de passageiros relevantes para o navio em causa e as funções a desempenhar.

Requisitos e limitações de estabilidade e de tensão

.4 aptidão para ter em conta de forma apropriada as limitações de tensão em partes mais sensíveis do navio, tais como portas da proa e outros dispositivos de fecho que mantenham a integridade da estanquicidade, e considerandos especiais de estabilidade os quais possam afectar a segurança dos navios ro-ro de passageiros.

Procedimentos de manutenção de equipamento especial em navios ro-ro de passageiros

.5 aptidão para aplicar de forma apropriada os procedimentos existentes a bordo de manutenção de equipamento específico dos navios ro-ro de passageiros, tais como portas de proa, popa e dos bordos, rampas, embornais e sistemas associados.

Manuais de carga e peamento e calculadores

.6 aptidão para utilizar de forma apropriada os manuais de carga e peamento relativos a todos os tipos de veículos e vagões ferroviários quando aplicável, e para calcular e aplicar as limitações de tensão dos pavimentos dos veículos.

Áreas de cargas perigosas

.7 aptidão para assegurar uma observância apropriada das limitações e precauções especiais que se aplicam às áreas de cargas perigosas designadas.

Procedimentos de emergência

.8 aptidão para assegurar a aplicação apropriada de quaisquer procedimentos especiais para:

.8.1 prevenir ou reduzir a entrada de água no pavimento dos veículos;

.8.2 remover a água dos pavimentos dos veículos, e

.8.3 minimizar os efeitos da água nos pavimentos dos veículos.

Comandante

3 - O comandante deverá tomar as medidas necessárias para a implementação de quaisquer instruções da companhia, emitidas de acordo com o disposto na secção A-I/14. Tais medidas deverão incluir:

.1 identificação de todos os marítimos recentemente empregados a bordo do navio, antes de lhes serem atribuídas quaisquer funções;

.2 providenciar as oportunidades necessárias a todos os marítimos recém- chegados, de modo a permitir o seguinte:

.2.1 visitar os compartimentos onde as suas funções principais serão desempenhadas;

.2.2 familiarizarem-se com a localização, comandos e características dos painéis de comando dos equipamentos que irão conduzir ou utilizar;

.2.3 activar o equipamento, sempre que possível, e executar tarefas utilizando os comandos do equipamento;

.2.4 observar e formular perguntas a alguém que já esteja familiarizado com os equipamentos, procedimentos e outras normas ou instruções e ser capaz de comunicar a informação numa linguagem que o marítimo compreenda; e

3. providenciar o estabelecimento de um período conveniente de supervisão, findo o qual não restem quaisquer dúvidas que o novo marítimo está familiarizado com os equipamentos de bordo, com os procedimentos e com quaisquer outras normas ou instruções necessárias para o desempenho adequado das suas funções.

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Membros da tripulação

4 - Os marítimos recém-designados para serviço a bordo de um navio devem tirar toda a vantagem das oportunidades que lhes forem proporcionadas para a sua familiarização com os equipamentos de bordo, com os procedimentos de condução, bem como com quaisquer outras normas ou instruções necessárias para o desempenho adequado das suas funções. Imediatamente após a chegada a bordo pela primeira vez, cada marítimo tem a responsabilidade de se familiarizar com o ambiente de trabalho a bordo do navio, particularmente no que respeita a equipamentos novos ou que não lhe são familiares e aos procedimentos e à organização do serviço.

5 - Os marítimos que não atinjam com rapidez o nível de familiarização requerido para o desempenho das suas funções têm a obrigação de chamar a atenção do seu supervisor para esse facto, ou a atenção do membro da tripulação designado de acordo com o disposto no parágrafo 2.2 da secção A-I/14 e de identificar quaisquer equipamentos, procedimentos ou outras disposições com que não se conseguiram familiarizar.

Secção B-I/15

Orientações relativas a disposições transitórias

(Sem disposições.)

CAPITULO II

Orientações relativas ao comandante e à secção de convés

Secção B-II/1

Orientações relativas à certificação de oficiais chefes de quarto de navegação em navios com arqueação bruta igual ou superior a 500 AB

Formação

1 - Todo o candidato à certificação como oficial chefe de quarto de navegação deve ter concluído um programa de formação, devidamente estruturado e planeado, concebido para ajudar o futuro oficial a atingir os níveis de competência constantes do quadro A-II/1.

2 - A estrutura dos programas de formação deverá ser organizada num plano de formação que expresse claramente, para todas as partes envolvidas, os objectivos de cada etapa da formação, tanto a bordo como em terra. É importante que o futuro oficial, os tutores, o pessoal dos navios e o pessoal da companhia estejam esclarecidos acerca das competências que devem ser adquiridas no final do programa e da forma como essa aquisição deverá ser feita através da combinação de educação, formação e experiência prática, quer a bordo quer em terra.

3 - Os períodos obrigatórios de serviço de mar são da maior importância para a aprendizagem das funções desempenhadas por um oficial a bordo de um navio e para a aquisição dos níveis globais de competência exigidos. Devidamente planeados e estruturados, os períodos de serviço de mar permitirão aos futuros oficiais a aquisição e a prática de aptidões e oferecerão oportunidades para que as competências alcançadas sejam demonstradas e avaliadas.

4 - Quando o serviço de mar estiver integrado num programa de formação aprovado, deverão ser observados os seguintes princípios:

.1 o programa de formação a bordo deverá constituir parte integrante do plano de formação global;

.2 o programa de formação a bordo deverá ser dirigido e coordenado pela companhia que gere o navio no qual o serviço de mar será desempenhado;

.3 ao futuro oficial deverá ser fornecido um livro de registo da formação, com vista a permitir a manutenção de um completo registo da formação e experiência de mar. O livro de registo de formação deverá ser concebido e preenchido de modo a poder fornecer informação detalhada sobre as tarefas e funções que deverão ser desempenhadas e sobre os progressos realizados tendo em vista a sua conclusão, Após o seu completo preenchimento, o livro de registo de formação deverá fornecer uma prova inequívoca de que o programa estruturado de formação a bordo foi completado, o que poderá ser tomado em consideração no processo de avaliação da competência para a emissão de um certificado;

.4 em qualquer circunstância o futuro oficial deverá conhecer os dois indivíduos imediatamente responsáveis pela gestão do programa de formação a bordo. O primeiro destes indivíduos deverá ser um oficial qualificado, referenciado como o oficial responsável pela formação a bordo, o qual, sob a autoridade do comandante, deverá organizar e fiscalizar o programa de formação durante a duração de cada viagem. O segundo deverá ser uma pessoa nomeada pela companhia, referenciado como o "oficial de formação da companhia", que deverá ter uma responsabilidade global pelo programa de formação e pela coordenação com outros colegas e instituições de formação; e

.5 a companhia deverá assegurar a reserva de períodos apropriados para a conclusão do programa de formação a bordo, dentro dos requisitos de operação normal do navio.

Papéis e responsabilidades

5 - A secção seguinte resume os papéis e as responsabilidades dos indivíduos envolvidos na organização e condução da formação a bordo dos navios:

.1 o oficial de formação da companhia deverá ser responsável pelo seguinte:

.1.1 administração global do programa de formação;

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.1.2 monitorização de todo o progresso do futuro oficial;

.1.3 emissão de recomendações, quando e conforme for necessário, e pela garantia de que todos os intervenientes no programa de formação desempenham as respectivas funções.

.2 o oficial responsável pela formação a bordo deverá ser responsável pelo seguinte:

.2.1 organização do programa de formação prática no mar;

.2.2 garantia de que, numa posição de supervisor, o livro de registo de formação é devidamente preenchido e mantido e que todos os outros requisitos são cumpridos; e

.2.3 assegurar que, tanto quanto praticável, o tempo que o futuro oficial permanece a bordo seja tão útil quanto possível do ponto de vista de formação e experiência e esteja consistente com os objectivos do programa de formação, do progresso da formação e com os constrangimentos operacionais do navio.

.3 as responsabilidades do comandante deverão ser as seguintes:

.3.1 proporcionar a ligação entre o oficial responsável pela formação a bordo e o oficial de formação da companhia, em terra;

.3.2 garantir a continuidade da formação, no caso de o oficial responsável pela formação a bordo ser substituído durante a viagem;

.3.3 assegurar que todos os intervenientes estão efectivamente a executar o programa de formação de bordo.

.4 as responsabilidades do futuro oficial deverão ser as seguintes:

.4.1 seguir diligentemente o programa de formação conforme estabelecido;

.4.2 tirar o maior partido possível das oportunidades, independentemente de estas ocorrerem dentro ou fora do horário normal de trabalho; e

.4.3 manter o livro de registo de formação actualizado e assegurar que o mesmo está permanentemente disponível para ser verificado.

Introdução

6 - No início de cada programa de formação e no início de cada viagem num navio diferente, deverão ser fornecidas aos futuros oficiais informação e recomendações completas sobre o que deles é esperado, bem como sobre o modo como o programa de formação irá ser organizado. A introdução representa uma oportunidade para fornecer informação aos futuros oficiais sobre os aspectos importantes das funções que irão desempenhar, com particular atenção para as regras de segurança no trabalho e protecção do meio ambiente marinho.

Programa de formação a bordo

7 - O livro de registo da formação deverá conter, entre outros, um conjunto de tarefas de formação ou de funções que deverão ser desempenhadas como parte integrante do programa aprovado de formação a bordo. Essas tarefas e funções deverão estar relacionadas, no mínimo, com as seguintes áreas:

.1 sistemas de governo;

.2 marinharia;

.3 atracar, fundear e operações portuárias;

.4 meios de salvação e equipamentos de combate a incêndios;

.5 sistemas e equipamentos;

.6 operações com a carga;

.7 tarefas na ponte e serviço de vigia; e

.8 familiarização com a casa das máquinas.

8 - É extremamente importante que seja dada oportunidade adequada ao futuro oficial para este adquirir experiência de serviço de vigia na ponte, devidamente supervisionado, em especial nas últimas fases do programa de formação a bordo.

9 - O desempenho do futuro oficial em cada uma das tarefas e funções discriminadas no livro de registo da formação deverá ser rubricada por um oficial qualificado quando, na opinião deste oficial, o futuro oficial tiver adquirido um nível satisfatório de aptidão. E importante reconhecer que um futuro oficial poderá ter necessidade de demonstrar capacidades em diversas ocasiões, antes de um oficial qualificado estar seguro de ter sido atingido um nível satisfatório.

Monitorização e análise

10 - A orientação e a análise são essenciais para assegurar que os futuros oficiais estão completamente conscientes dos progressos que estão a fazer e para lhes permitir tomar parte do processo de decisão acerca do seu futuro programa. Para efeitos de garantia de eficácia, as análises devem basear-se na informação obtida a partir do livro de registo da formação e outras fontes, conforme apropriado. O livro de registo da formação deverá ser examinado em pormenor e autenticado formalmente pelo comandante e pelo oficial responsável pelo treino a bordo no início, no decurso e no fim de cada viagem. O livro de registo da formação deverá também ser examinado em pormenor e autenticado pelo oficial de formação da companhia no período entre viagens.

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Avaliação das capacidades e aptidões no serviço de quartos de navegação

11 - Um candidato à certificação ao qual foi exigido formação e avaliação especiais de capacidades e aptidões em funções relacionadas com o serviço de quartos de navegação deverá ser exigida prova, através de demonstração, ou num simulador ou a bordo de um navio, como parte de um programa de formação de bordo aprovado, de que as aptidões e capacidades necessárias para o desempenho das funções de oficial chefe de quarto de navegação foram adquiridas, pelo menos, nas áreas a seguir indicadas:

.1 preparação para, e condução de uma viagem, incluindo:

.1.1 interpretação e aplicação de informação obtida a partir das cartas de navegação;

.1.2 determinação de posições em águas costeiras;

.1.3 aplicação de informação básica obtida a partir de tabelas de marés e de outras publicações náuticas;

.1.4 verificação e operação de equipamentos da ponte;

.1.5 verificação de agulhas magnéticas e de girobússolas;

.1.6 avaliação da informação meteorológica disponível;

.1.7 utilização dos astros para determinação da posição;

.1.8 determinação dos erros das agulhas utilizando os astros ou marcas terrestres; e

.1.9 execução de cálculos para viagens até vinte e quatro horas.

.2 operação e aplicação da informação obtida a partir de sistemas electrónicos de navegação;

.3 operação do radar, do ARPA e do ECDIS e aplicação da informação do radar para navegação e para evitar abalroamentos;

.4 operação dos sistemas de propulsão e de governo para controlo do rumo e da velocidade;

.5 implementação de rotinas e procedimentos para o serviço de quartos de navegação;

.6 implementação das manobras necessárias para o salvamento de pessoas na água;

.7 início das acções necessárias em caso de uma situação de emergência eminente (por exemplo, incêndio, abalroamento, encalhe) e acções necessárias para minorar as consequências imediatas de uma emergência;

.8 início das acções necessárias em caso de deficiência de funcionamento ou de avaria de equipamentos principais ou de unidades principais da instalação (por exemplo: máquina do leme, potência e sistemas de navegação);

.9 execução das radiocomunicações e de sinais visuais e sonoros em situações normais e de emergência; e

.10 controlo e operação dos sistemas de segurança e de alarme incluindo os sistemas de comunicações internas.

12 - A avaliação das capacidades e das aptidões relacionadas com o serviço de quartos de navegação deverá:

.1 ser efectuada em função dos critérios para a avaliação da competência para funções de quartos de navegação descritos no quadro A-II/1;

.2 garantir que o candidato desempenha as suas funções de quarto de navegação de acordo com o constante nos princípios a observar durante um quarto de navegação em condições de segurança (secção A-VIII/2, parte 4-1) e nas orientações relativas aos quartos de navegação (secção B-VIII/2, parte 4-1).

Avaliação da competência

13 - A norma de competência a ser atingida para a certificação como oficial chefe de quarto de navegação está descrita no quadro A-II/1. A norma especifica os conhecimentos e aptidões obrigatórios e a aplicação desses conhecimentos e aptidões aos padrões de desempenho requeridos a bordo do navio.

14 - O âmbito dos conhecimentos está implícito no conceito de competência. A avaliação da competência deverá, portanto, incluir outros requisitos para além dos requisitos técnicos específicos da função e das tarefas e aptidões susceptíveis de serem desempenhadas a bordo e deverá reflectir os aspectos necessariamente mais amplos, mas determinantes, para preencher as expectativas de um desempenho competente das funções de oficial do navio. Estes aspectos incluem conhecimentos relevantes, teoria, princípios e aptidões cognitivas que, em variados níveis, sustentam os níveis de competência. Este aspecto, também inclui a capacidade para decidir o que fazer, quando, como e porque determinada tarefa deve ser executada. Devidamente aplicado este método assegurará que o candidato poderá:

.1 desempenhar as suas funções com competência, em diversos navios e em circunstâncias variadas;

.2 prever, preparar e gerir situações inesperadas; e

.3 adaptar-se a novos requisitos e respectivas alterações.

15 - O critério para avaliação da competência (coluna 4 do quadro A-II/1) identifica, principalmente em termos

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de resultados, os aspectos essenciais de um desempenho com competência. Esses critérios estão concebidos de modo que a avaliação do desempenho de um candidato possa ser efectuada por métodos comparativos e adequadamente documentada no livro de registo de formação.

16 - A avaliação da competência deverá ser um processo de:

.1 recolha de provas suficientemente fiáveis e válidas acerca dos conhecimentos do candidato, da compreensão e das capacidades demonstradas pelo candidato para o desempenho das tarefas, funções e responsabilidades enumeradas na coluna 1 do quadro A-II/1; e

.2 classificação e julgamento das provas quando comparadas com os critérios especificados nas normas.

17 - Os métodos concretos para avaliação da competência deverão ser concebidos para tomar em consideração os diversos métodos de avaliação que poderão fornecer diferentes formas de prova acerca da competência do candidato, como, por exemplo:

1. observação directa de actividades laborais (incluindo desempenho do serviço a bordo);

.2 teste da perícia, da aptidão e da competência;

.3 projectos e nomeações;

.4 prova da experiência anteriormente adquirida; e

.5 técnicas de interrogação escritas, orais e assistidas por computador.

18 - Pelo menos um dos primeiros quatro métodos acima indicados deverá ser utilizado invariavelmente para fornecer prova de capacidade como complemento das técnicas de interrogação apropriadas, com vista a fornecer prova evidente dos conhecimentos e compreensão.

Formação em navegação astronómica

19 - As áreas seguintes resumem a formação recomendada em navegação astronómica:

.1 regular correctamente o sextante e corrigir os erros de regulação;

.2 determinar a correcção das leituras da altitude dos corpos celestes obtidas pelo sextante;

.3 cálculo da redução exacta da observação, utilizando um método preferencial;

.4 cálculo da hora da altura meridiana do sol;

.5 cálculo da latitude através da estrela polar ou da altura meridiana do sol;

.6 mapeação exacta das linhas de posição e da determinação da posição;

.7 determinação das horas do nascer e pôr do sol, utilizando um método preferencial;

.8 identificar e seleccionar os corpos celestes mais adequados nos períodos de crepúsculo;

.9 calcular o erro da agulha por azimute ou por amplitude, utilizando um método preferencial; e

.10 astronomia náutica necessária para sustentar a competência exigida nos parágrafos 19.1 a 19.9 acima.

20 - A formação em navegação astronómica pode incluir a utilização do almanaque náutico electrónico e de software de cálculo de navegação astronómica.

Secção B-II/2

Orientações relativas à certificação de comandantes e imediatos em navios com arqueação bruta igual ou superior a 500 AB

(Ver secção B-II/1 para orientações.)

Secção B-II/3

orientações relativas à certificação de oficiais chefes de quarto de navegação e comandantes em navios com arqueação bruta inferior a 500 AB.

(Ver secção B-II/1 para orientações.)

Secção B-II/4

Orientações relativas à formação e certificação do pessoal da mestrança e marinhagem que presta serviço de quartos de navegação

1 - Como complemento dos requisitos constantes do quadro A-II/4 do presente Código, as Partes são aconselhadas a incluir os assuntos abaixo enumerados nos planos de formação do pessoal da mestrança e marinhagem que presta serviço de quartos de navegação e na ponte:

.1 conhecimento geral do COLREG 1972, emendado;

.2 montagem de uma escada de piloto;

.3 compreensão das ordens para o leme, dadas por pilotos em língua inglesa;

.4 formação para aptidão de condução de embarcações salva-vidas e embarcações de salvamento;

.5 funções de apoio durante as manobras de atracação e de desatracação e durante operações de reboque;

.6 conhecimentos básicos das manobras de fundear;

.7 conhecimentos básicos sobre cargas perigosas;

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.8 conhecimentos básicos de procedimentos de estiva e dos procedimentos necessários para o abastecimento do navio; e

.9 conhecimentos sobre procedimentos para a manutenção do convés e sobre as ferramentas utilizadas no convés.

Secção B-II/5

Orientações relativas à certificação de marítimos da mestrança e marinhagem como marítimos qualificados do convés

A formação a bordo deve ser documentada num livro de registo de formação aprovado.

CAPÍTULO III

Orientações relativas à secção de máquinas

Secção B-III/1

Orientações relativas à certificação de oficiais de máquinas chefes de quarto numa casa de máquinas em condução atendida ou oficiais de máquinas de serviço numa casa de máquinas em condução periodicamente desatendida.

1 - As ferramentas referidas no campo superior da coluna 1 do quadro A-III/1 deverão incluir ferramentas de uso manual, instrumentos de medida comum, tornos horizontais, engenhos de furar, equipamento para soldadura e fresadoras, conforme adequado.

2 - A formação sobre aptidões oficinais poderá ser efectuada em terra em instituição de formação ou oficina aprovada.

3 - A formação ministrada a bordo deverá ser devidamente documentada através do preenchimento do livro de registo de formação por avaliadores qualificados.

Secção B-III/2

Orientações relativas à certificação de chefes de máquinas e segundos-oficiais de máquinas de navios cuja máquina principal tenha uma potência propulsora igual ou superior a 3000 kW

(Sem disposições.)

Orientações relativas à formação do pessoal de engenharia com responsabilidades ao nível de gestão da operação e segurança de instalações de energia eléctrica acima de 1000 volts

1 - A formação do pessoal de engenharia com responsabilidades ao nível de gestão da operação e segurança de instalações de energia eléctrica acima de 1000 volts, deve incluir, pelo menos:

.1 os requisitos funcionais, operacionais e de segurança para um sistema marítimo de alta voltagem;

.2 a designação de pessoas adequadamente qualificadas para desempenhar a manutenção e reparação de comutadores de alta voltagem de vários tipos;

.3 a tomada de medidas correctivas necessárias no caso de falhas no sistema de alta voltagem;

.4 a elaboração de estratégias de comutação para isolar componentes de um sistema de alta voltagem;

.5 seleccionar aparelhos adequados de isolamento e teste de equipamento de alta voltagem;

.6 executar procedimentos de isolamento e comutação em sistemas marítimos de alta voltagem, complementado com documentação de segurança; e

.7 realizar testes de isolamento, resistência e de índice de polarização em equipamentos de alta voltagem.

Secção B-III/3

Orientações relativas à certificação de chefes de máquinas e segundos-oficiais de máquinas de navios cuja máquina principal tenha uma potencia propulsora entre 750 kW e 3000 kW.

(Sem disposições.)

Secção B-III/4

Orientações relativas à formação e à certificação de pessoal da mestrança e marinhagem de máquinas que façam parte de quartos em casa de máquinas de condução atendida ou tenham sido nomeados para o desempenho de funções numa casa de máquinas de condução periodicamente desatendida

1 - Como complemento dos requisitos constantes do quadro A-III/4 do presente Código, as Partes são aconselhadas, por razões de segurança, a incluir os assuntos abaixo enumerados nos planos de formação do pessoal da mestrança e marinhagem que presta serviço de quartos de máquinas:

.1 conhecimento geral de operações de rotina da bombagem e trasfega, incluindo conhecimento dos sistemas de esgoto de porões, dos sistemas de lastro e dos sistemas de carga;

.2 conhecimentos gerais sobre instalações eléctricas e sobre os perigos a elas associados;

.3 conhecimentos gerais sobre manutenção e reparação de máquinas e sobre as ferramentas utilizadas nos compartimentos de máquinas; e

.4 conhecimentos gerais de procedimentos de estiva e sobre procedimentos necessários para o abastecimento do navio.

Secção B-III/5

Orientações relativas à certificação de marítimos qualificados da mestrança e marinhagem de máquinas

A formação a bordo deve ser documentada num livro de registo de formação aprovado.

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Secção B-III/6

Orientações relativas à formação e certificação dos oficiais electrotécnicos

Como complemento dos requisitos constantes do quadro A-III/6 do presente código, as Partes são aconselhadas a tomar em consideração, no conteúdo dos seus programas de formação, a resolução A.702 (17) relativa às orientações de manutenção rádio do GMDSS.

Secção B-III/7

Orientações relativas à formação e certificação dos marítimos da mestrança electrotécnicos

(Sem disposições.)

CAPÍTULO IV

Orientações relativas às radiocomunicações e aos operadores de rádio

Secção B-IV/1

Orientações relativas à aplicação do capítulo IV

(Nenhuma disposição.)

Secção B-IV/2

Orientações relativas à formação e à certificação de operadores de rádio no GMDSS

FORMAÇÃO RELATIVA AO CERTIFICADO DE RADIOELECTRÓNICO DE 1ª CLASSE

Generalidades

1 - Os requisitos de aptidão médica, em especial no que respeita à acuidade auditiva e visual e à locução, devem ser cumpridos por todos os candidatos antes do início da formação.

2 - A formação deve ser adequada às disposições relevantes da convenção STCW, às disposições do Regulamento das Radiocomunicações anexo à convenção Internacional das Telecomunicações (Regulamento das Radiocomunicações) e às disposições da convenção Internacional para a Salvaguarda da Vida Humana no Mar (convenção SOLAS) em vigor, devendo ser dada atenção especial às disposições relativas ao Sistema Mundial de Socorro e Segurança Marítima (GMDSS). Durante o desenvolvimento dos requisitos para a formação devem ser tomados em conta, pelo menos, os conhecimentos e formação constantes dos parágrafos 3 a 14 seguintes.

Teoria

3 - Conhecimento dos princípios gerais e factores básicos necessários para uma utilização eficiente e segura de todos os subsistemas e equipamentos requeridos pelo GMDSS, suficiente para apoiar a formação prática constante das disposições do parágrafo 13.

4 - Conhecimentos sobre a utilização, operação e áreas de serviço dos subsistemas do GMDSS, incluindo as características dos sistemas de satélites, os sistemas de navegação e meteorológicos e a selecção dos circuitos de radiocomunicações adequados.

5 - Conhecimento dos princípios de electricidade e da teoria de rádio e electrónica, suficientes para o cumprimento das disposições constantes dos parágrafos 6 a 10 seguintes.

6 - Conhecimento teórico dos equipamentos de radiocomunicações do GMDSS, incluindo os transmissores e receptores de impressão directa de banda estreita, e de radiotelefonia, equipamentos de chamada selectiva digital, estações terrestres de navio, radiobalizas de localização de sinistros (EPIRB), sistemas de antenas marítimas, equipamento de radiocomunicações para embarcações salva-vidas e todo o material auxiliar, incluindo as fontes de alimentação e os princípios de funcionamento de outros equipamentos utilizados na radionavegação, com especial relevância para a manutenção dos equipamentos em serviço.

7 - Conhecimento dos factores que afectam a fiabilidade e a disponibilidade dos sistemas, os procedimentos de manutenção e a utilização correcta dos equipamentos de teste.

8 - Conhecimentos de microprocessadores e de diagnóstico de avarias em sistemas que utilizam microprocessadores.

9 - Conhecimento de sistemas de controlo do equipamento de radiocomunicações do GMDSS, incluindo testes e análise.

10 - Conhecimento da utilização de programas informáticos para os equipamentos de radiocomunicações do GMDSS e dos métodos de correcção das avarias causadas pela perda de controlo dos programas informáticos.

Regulamentação e documentação

11 - Conhecimentos:

.1 da convenção SOLAS e do Regulamento das Radiocomunicações com ênfase especial em:

.1.1 radiocomunicações de socorro, urgência e segurança;

.1.2 prevenção de interferências prejudiciais, em especial com o tráfego de socorro e de segurança; e

.1.3 prevenção de transmissões não autorizadas;

.2 de outros documentos relacionados com os procedimentos operacionais e de comunicações de socorros, de segurança e os serviços de correspondência pública, incluindo taxas, avisos à navegação e boletins meteorológicos, do Serviço Móvel Marítimo e o Serviço Móvel Marítimo por Satélite; e

.3 da utilização do Código Internacional de Sinais e da Fraseologia Padrão nas Comunicações Marítimas, da IMO.

Escuta e procedimentos

12 - Conhecimentos e formação em:

.1 procedimentos de comunicação e disciplina a observar para prevenir interferências nos subsistemas do GMDSS;

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.2 procedimentos de utilização dos dados de previsão das condições de propagação para determinar as frequências óptimas de comunicação;

.3 escuta radioeléctrica em todos os subsistemas do GMDSS, escoamento do tráfego de radiocomunicações, em especial no que diz respeito aos procedimentos de socorro, de urgência e segurança e aos registos radioeléctricos;

.4 utilização do alfabeto fonético internacional;

.5 monitorização de uma frequência de socorro, em simultâneo com a monitorização ou utilização de, pelo menos, outra frequência;

.6 sistemas e métodos de indicação da posição dos navio;

.7 procedimentos de radiocomunicações constantes no Manual IAMSAR;

.8 sistemas e métodos de obtenção de consultas médicas por rádio; e

.9 causas dos falsos alertas de socorro e meios para os evitar.

Prática

13 - A formação prática, apoiada em trabalho de laboratório adequado, deve abranger as seguintes áreas:

.1 operação eficaz e correcta de todos os subsistemas e equipamentos do GMDSS em condições de propagação normais e em condições de interferência típicas;

.2 funcionamento em segurança de todos os equipamentos e dispositivos auxiliares de comunicação do GMDSS, incluindo as respectivas precauções de segurança;

.3 utilização precisa e rigorosa dos teclados com vista a possibilitar troca satisfatória de comunicações;

.4 técnicas operacionais de:

.4.1 regulação dos transmissores e receptores para o modo adequado de operação, incluindo a chamada selectiva digital e a telegrafia de impressão directa;

.4.2 regulação e reajustamento das antenas, conforme apropriado;

.4.3 utilização do equipamento de rádio dos meios de salvação; e

.4.4 utilização de radiobalizas de localização de sinistros (EPIRB);

.5 instalação, reparação e manutenção de antenas, conforme apropriado;

.6 leitura e interpretação de esquemas pictográficos e circuitos, lógicos e eléctricos;

.7 utilização e manutenção das ferramentas e dos instrumentos de teste necessários para a manutenção no mar dos equipamentos electrónicos;

.8 técnicas de soldadura e de dessoldadura manuais, incluindo as que envolvem semicondutores e circuitos modernos e a capacidade para distinguir quando um circuito pode ser soldado ou dessoldado manualmente;

.9 pesquisa e reparação das avarias ao nível dos componentes, se possível, e, noutros casos, ao nível dos circuitos/módulos;

.10 reconhecimento e correcção das condições que propiciam a ocorrência de avarias;

.11 procedimentos de manutenção, tanto correctiva como preventiva, para todos os equipamentos de comunicações do GMDSS e dos equipamentos de radionavegação; e

.12 métodos para reduzir as interferências eléctricas e electromagnéticas, nomeadamente os de ligação à terra, blindagem e derivação.

Diversos

14 - Conhecimentos e ou formação em:

.1 língua inglesa, tanto oral como escrita, para permitir a troca satisfatória de comunicações relacionadas com a salvaguarda da vida humana no mar;

.2 geografia mundial, especialmente as principais rotas marítimas, serviços dos centros de coordenação das operações de busca e salvamento (RCC) e as vias de comunicação conexas;

.3 sobrevivência no mar, manobra de embarcações salva-vidas, embarcações de salvamento, jangadas salva-vidas, balsas e respectivo equipamento, com especial relevância para os equipamentos de radiocomunicações dos meios de salvação;

.4 prevenção e combate a incêndios, com especial incidência nas instalações de radiocomunicações;

.5 medidas preventivas para garantir a segurança do navio e da tripulação, no que respeita aos perigos relacionados com o equipamento de radiocomunicações, incluindo os perigos devidos à electricidade, às radiações e aos de origem química e mecânica;

.6 primeiros socorros, incluindo técnicas de reanimação por massagem cardíaca e respiração artificial; e

.7 tempo universal coordenado (TUC), fusos horários e linha internacional de mudança de data.

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FORMAÇÃO RELATIVA AO CERTIFICADO DE RADIOELECTRÓNICO DE 2ª CLASSE

Generalidades

15 - Os requisitos de aptidão médica, em especial no que respeita à acuidade auditiva e visual e à locução, devem ser cumpridos por todos os candidatos antes do início da formação.

16 - A formação deve ser adequada às disposições relevantes da Convenção STCW e da Convenção SOLAS em vigor, devendo ser dada atenção especial às disposições relativas ao Sistema Mundial de Socorro e Segurança Marítima (GMDSS). Durante o desenvolvimento dos requisitos para a formação devem ser tomados em conta, pelo menos, os conhecimentos e formação constantes dos parágrafos 17 a 28 seguintes.

Teoria

17 - Conhecimento dos princípios gerais e factores básicos necessários para uma utilização eficiente e segura de todos os subsistemas e equipamentos requeridos pelo GMDSS, suficiente para apoiar a formação prática constante das disposições do parágrafo 27 seguinte.

18 - Conhecimentos sobre a utilização, operação e áreas de serviço dos subsistemas do GMDSS, incluindo as características dos sistemas de satélites, sistemas de navegação e meteorológicos e selecção dos circuitos de radiocomunicações adequados.

19 - Conhecimento dos princípios de electricidade e da teoria de rádio e electrónica, suficientes para o cumprimento das disposições constantes dos parágrafos 20 a 24 seguintes.

20 - Conhecimento teórico geral dos equipamentos de radiocomunicações do GMDSS, incluindo os transmissores e receptores de impressão directa de banda estreita, e radiotelefonia, equipamentos de chamada selectiva digital, estações terrestres de navio, radiobalizas de localização de sinistros (EPIRB), sistemas de antenas marítimas, equipamento de radiocomunicações para embarcações salva-vidas e todo o material auxiliar incluindo as fontes de alimentação, assim como um conhecimento geral de outros equipamentos utilizados na radionavegação, com especial relevância na manutenção dos equipamentos em serviço.

21 - Conhecimento geral dos factores que afectam a fiabilidade e a disponibilidade do sistema, os procedimentos de manutenção e a utilização correcta dos equipamentos de teste.

22 - Conhecimento geral de microprocessadores e de diagnóstico de avarias em sistemas que utilizam microprocessadores.

23 - Conhecimento geral de sistemas de controlo do equipamento de radiocomunicações do GMDSS, incluindo testes e análise.

24 - Conhecimento da utilização de programas informáticos de computador, para os equipamentos de radiocomunicações do GMDSS e dos métodos para correcção de avarias causadas pela perda de controlo dos programas informáticos.

Regulamentação e documentação

25 - Conhecimentos:

.1 da convenção SOLAS e do Regulamento das Radiocomunicações com especial ênfase em:

.1.1 radiocomunicações de socorro, urgência e segurança;

.1.2 prevenção de interferências prejudiciais, em especial com o tráfego de socorro e de segurança; e

.1.3 prevenção de transmissões não autorizadas;

.2 de outros documentos relacionados com os procedimentos operacionais e de comunicações de socorro, de segurança e os serviços de correspondência pública, incluindo taxas, avisos à navegação e boletins meteorológicos do Serviço Móvel Marítimo e do Serviço Móvel Marítimo por Satélite; e

.3 da utilização do Código Internacional de Sinais e da Fraseologia Padrão nas Comunicações Marítimas, da IMO.

Escuta e procedimentos

26 - Deve ser proporcionada formação em:

.1 procedimentos de comunicação e disciplina a observar para prevenir interferências nos subsistemas do GMDSS;

.2 procedimentos de utilização dos dados de previsão das condições de propagação para determinar as frequências óptimas de radiocomunicação;

.3 escuta radioeléctrica em todos os subsistemas do GMDSS, escoamento do tráfego de radiocomunicações, em especial no que diz respeito aos procedimentos de socorro, urgência e segurança e aos registos radioeléctricos;

.4 utilização do alfabeto fonético internacional;

.5 monitorização de uma frequência de socorro em simultâneo com a monitorização ou utilização de, pelo menos, outra frequência;

.6 sistemas e métodos de indicação da posição dos navios;

.7 procedimentos de radiocomunicações constantes do Manual IAMSAR;

.8 sistemas e métodos de obtenção de consultas médicas por rádio; e

.9 causas dos falsos alertas de socorro e meios para os evitar.

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Prática

27 - A formação prática, apoiada em trabalhos de laboratório adequados, deve abranger as seguintes áreas:

.1 operação eficaz e correcta de todos os subsistemas e equipamentos do GMDSS em condições e propagação normais e em condições de interferência típicas;

.2 funcionamento, em segurança, de todos os equipamentos e dispositivos auxiliares de comunicação do GMDSS, incluindo as respectivas precauções de segurança;

.3 utilização precisa e rigorosa dos teclados com vista a possibilitar uma troca satisfatória de comunicações;

.4 técnicas operacionais para:

.4.1 regulação dos transmissores e receptores para o modo adequado de operação, incluindo chamada selectiva digital e telegrafia de impressão directa;

.4.2 regulação e reajustamento das antenas, conforme apropriado;

.4.3 utilização do equipamento de rádio dos meios de salvação; e

.4.4 utilização de radiobalizas de localização de sinistros (EPIRB);

.5 instalação, reparação e manutenção de antenas, conforme apropriado;

.6 leitura e interpretação de esquemas pictográficos, dos circuitos lógicos e de esquemas de interligação de módulos;

.7 utilização e manutenção das ferramentas e dos instrumentos de teste necessários para a manutenção no mar dos equipamentos electrónicos, ao nível da substituição de módulos ou unidades;

.8 técnicas de soldadura e dessoldadura manuais básicas e as suas limitações;

.9 pesquisa e reparação de avarias a bordo e ao nível dos módulos;

.10 reconhecimento e correcção das condições que propiciam a ocorrência de avarias;

.11 procedimentos básicos de manutenção, tanto correctiva como preventiva, para todos os equipamentos de comunicações do GMDSS e dos equipamentos de radionavegação; e

.12 métodos para reduzir as interferências eléctricas e electromagnéticas, nomeadamente as de ligação à terra, blindagem e derivação.

Diversos

28 - Conhecimentos e ou formação em:

.1 língua inglesa, tanto oral como escrita, para permitir a troca satisfatória de comunicações, relacionadas com a salvaguarda da vida humana no mar;

.2 geografia mundial, especialmente as principais rotas marítimas, serviços dos centros de coordenação das operações de busca e salvamento (RCC) e as vias de comunicação conexas;

.3 sobrevivência no mar, manobra de embarcações salva-vidas, embarcações de salvamento, jangadas salva-vidas, balsas e respectivo equipamento, com especial relevância para os equipamentos de radiocomunicações dos meios de salvação;

.4 prevenção e combate a incêndios, com especial incidência nas instalações de radiocomunicações;

.5 medidas preventivas para garantir a segurança do navio e da tripulação, no que respeita aos perigos relacionados com o equipamento de radiocomunicações, incluindo os perigos devidos à electricidade, às radiações e aos de origem química e mecânica;

.6 primeiros socorros, incluindo técnicas de reanimação por massagem cardíaca e respiração artificial; e

.7 tempo universal coordenado (TUC), fusos horários e linha internacional de mudança de data.

FORMAÇÃO RELATIVA AO CERTIFICADO GERAL DE OPERADOR

Generalidades

29 - Os requisitos de aptidão médica, em especial no que respeita à acuidade auditiva e visual e à locução, deverão ser cumpridos por todos os candidatos antes do início da formação.

30 - A formação deve ser adequada às disposições relevantes da Convenção STCW, do Regulamento das Radiocomunicações, da Convenção SOLAS em vigor, devendo ser dada atenção especial às disposições relativas ao Sistema Mundial de Socorro e Segurança Marítima (GMDSS). Durante o desenvolvimento dos requisitos para a formação devem ser tomados em conta, pelo menos, os conhecimentos e formação constantes dos parágrafos 3l a 36 seguintes.

Teoria

31 - Conhecimento dos princípios gerais e factores básicos necessários para uma utilização eficiente e segura de todos os subsistemas e equipamentos requeridos pelo GMDSS, suficiente para apoiar a formação prática constante das disposições do parágrafo 35 seguinte.

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32 - Conhecimentos sobre a utilização, operação e áreas de serviço dos subsistemas do GMDSS, incluindo as características dos sistemas de satélites, os sistemas de navegação e meteorológicos e selecção dos circuitos de radiocomunicações adequados.

Regulamentação e documentação

33 - Conhecimentos:

.1 da Convenção SOLAS e do Regulamento das Radiocomunicações, com especial ênfase em:

.1.1 radiocomunicações de socorro, urgência e segurança;

.1.2 prevenção de interferências prejudiciais, em especial com o tráfego de socorro e de segurança;

.1.3 prevenção de transmissões não autorizadas;

.2 de outros documentos relacionados com procedimentos operacionais e de comunicações de socorro, de segurança e os serviços de correspondência pública, incluindo taxas, avisos à navegação e boletins meteorológicos do Serviço Móvel Marítimo e o Serviço Móvel Marítimo por Satélite; e

.3 da utilização do Código Internacional de Sinais e da Fraseologia Padrão nas Comunicações Marítimas, da IMO.

Escuta e procedimentos

34 - Deve ser proporcionada formação em:

.1 procedimentos de comunicação e disciplina a observar para prevenir interferências nos subsistemas do GMDSS;

.2 procedimentos de utilização dos dados de previsão das condições de propagação para determinar as frequências óptimas de comunicação;

.3 escuta radioeléctrica em todos os subsistemas do GMDSS, escoamento do tráfego de radiocomunicações, em especial no que diz respeito aos procedimentos de socorro de urgência e de segurança e aos registos radioeléctricos;

.4 utilização do alfabeto fonético internacional;

.5 monitorização de uma frequência de socorro em simultâneo com a monitorização ou utilização de, pelo menos, outra frequência;

.6 sistemas e métodos de indicação da posição dos navios;

.7 procedimentos de radiocomunicações constantes do Manual IAMSAR;

.8 sistemas e métodos de obtenção de consultas médicas por rádio; e

.9 causas dos falsos alertas de socorro e meios para os evitar.

Prática

35 - A formação prática deve abranger as seguintes áreas:

.1 operação eficaz e correcta de todos os subsistemas e equipamentos do GMDSS em condições de propagação normais e em condições de interferência típicas;

.2 funcionamento, em segurança, de todos os equipamentos e dispositivos auxiliares de comunicação do GMDSS, incluindo as respectivas precauções de segurança;

.3 utilização precisa e rigorosa dos teclados com vista a possibilitar uma troca satisfatória de comunicações;

.4 técnicas operacionais para:

.4.1 regulação dos transmissores e receptores para o modo adequado de operação, incluindo chamada selectiva digital e telegrafia de impressão directa;

.4.2 regulação e reajustamento das antenas conforme apropriado;

.4.3 utilização do equipamento de rádio dos meios de salvação; e

.4.4 utilização de radiobalizas de localização de sinistros (EPIRB).

Diversos

36 - Conhecimentos e ou formação em:

.1 língua inglesa, tanto oral como escrita, para permitir a troca satisfatória de comunicações, relacionadas com a salvaguarda da vida humana no mar;

.2 geografia mundial, especialmente para as principais rotas marítimas, serviços dos centros de coordenação das operações de busca e salvamento (RCC) e as vias de comunicações conexas;

.3 sobrevivência no mar, manobra de embarcações salva-vidas, embarcações de salvamento, jangadas salva-vidas, balsas e respectivo equipamento, com especial relevância para os equipamentos de radiocomunicações dos meios de salvação;

.4 prevenção e combate a incêndios, com especial incidência nas instalações de radiocomunicações;

.5 medidas preventivas para garantir a segurança do navio e da tripulação, no que respeita aos perigos relacionados com o equipamento de radiocomunicações, incluindo os perigos devidos à electricidade, às radiações e aos de origem química e mecânica;

.6 primeiros socorros, incluindo técnicas de reanimação por massagem cardíaca e respiração artificial; e

.7 tempo universal coordenado (TUC), fusos horários e linha internacional de mudança de data.

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FORMAÇÃO RELATIVA AO CERTIFICADO RESTRITO DE OPERADOR

Generalidades

37 - Os requisitos de aptidão médica, em especial no que respeita à acuidade auditiva e visual e à locução, deverão ser cumpridos por todos os candidatos antes do início da formação.

38 - A formação deve ser adequada às disposições relevantes da Convenção STCW, do Regulamento das Radiocomunicações (RR) e da Convenção (SOLAS) em vigor, devendo ser dada atenção especial às disposições relativas ao Sistema Mundial de Socorro e Segurança Marítima (GMDSS). Durante o desenvolvimento dos requisitos para a formação devem ser tomados em conta, pelo menos, os conhecimentos e formação constantes dos parágrafos 39 a 44 seguintes.

Teoria

39 - Conhecimento dos princípios gerais e factores básicos, incluindo limitações de alcance das ondas métricas (VHF), e a altura efectiva das antenas para uma utilização eficiente e segura de todos os subsistemas e equipamentos requeridos pero GMDSS na área A1, suficientes para apoio à formação constante das disposições do parágrafo 43 seguinte.

40 - Conhecimentos sobre a utilização, operação e zonas de serviço dos subsistemas do GMDSS utilizados na área Al, por exemplo, sistemas de avisos à navegação e meteorológicos e circuitos de comunicação adequados.

Regulamentação e documentação

41 - Conhecimentos:

.1 das partes da Convenção SOLAS e do Regulamento das Radiocomunicações relevantes para a área A1, com especial ênfase em:

.1.1 radiocomunicações de socorro, urgência e segurança;

.1.2 prevenção de interferências prejudiciais, em especial com o tráfego de socorro e de segurança; e

.1.3 prevenção de transmissões não autorizadas;

.2 de outros documentos relacionados com procedimentos operacionais e de comunicações de socorro, de segurança e os serviços de correspondência pública, incluindo taxas, avisos à navegação e boletins meteorológicas do Serviço Móvel Marítimo na área A1; e

.3 da utilização do Código Internacional de Sinais e da Fraseologia Padrão nas Comunicações Marítimas, da IMO.

Escuta e procedimentos

42 - Deve ser proporcionada formação em:

.1 procedimentos de comunicação e disciplina a observar para prevenir interferências nos subsistemas do sistema GMDSS utilizados na área Al;

.2 procedimentos de radiocomunicações utilizando ondas métricas (VHF) destinados a:

.2.1 escuta radioeléctrica, escoamento do tráfego de radiocomunicações, em especial no que diz respeito aos procedimentos de socorro, de urgência e de segurança e aos registos radioeléctricos;

.2.2 monitorização de uma frequência de socorro em simultâneo com a monitorização ou utilização de, pelo menos, outra frequência; e

.2.3 sistema de chamada selectiva digital;

.3 utilização do alfabeto fonético internacional;

.4 sistemas e métodos de indicação da posição dos navios;

.5 procedimentos de radiocomunicações em ondas métricas (VHF) constantes do Manual IAMSAR;

.6 sistemas e métodos de obtenção de consultas médicas por rádio; e

.7 causas dos falsos alertas de socorro e meios para os evitar.

Prática

43 - A formação prática deve abranger as seguintes áreas:

.1 operação eficaz e correcta de todos os subsistemas e equipamentos do GMDSS, obrigatórios para os navios que operam na área A1, em condições de propagação normais e em condições de interferência típicas:

.2 funcionamento, em segurança, dos equipamentos e dispositivos auxiliares de comunicação do GMDSS, incluindo as respectivas precauções de segurança; e

.3 técnicas operacionais para a utilização:

.3.1 das ondas métricas (VHF), incluindo os ajustes do canal, do ruido de fundo e do modo, conforme apropriado;

.3.2 dos equipamentos de rádio dos meios de salvação;

.3.3 das radiobalizas de localização de sinistros (EPIRB); e

.3.4 dos receptores NAVTEX.

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Diversos

44 - Conhecimentos e ou formação em:

.1 língua inglesa, tanto oral como escrita, para permitir a troca satisfatória de comunicações relacionadas com a salvaguarda da vida humana no mar;

.2 serviços dos centros de coordenação das operações de busca e salvamento (RCC) e as vias de comunicação conexas;

.3 sobrevivência no mar, manobra de embarcações salva-vidas, embarcações de salvamento, jangadas salva-vidas, balsas e respectivo equipamento, com especial relevância para os equipamentos de radiocomunicações dos meios de salvação;

.4 prevenção e combate a incêndios, com especial incidência nas instalações de radiocomunicações;

.5 medidas preventivas para garantir a segurança do navio e da tripulação, no que respeita aos perigos relacionados com o equipamento de radiocomunicações, incluindo os perigos devidos à electricidade, às radiações e aos de origem química e mecânica; e

.6 primeiros socorros, incluindo técnicas de reanimação por massagem cardíaca e respiração artificial.

FORMAÇÃO RELATIVA À MANUTENÇÃO DAS INSTALAÇÕES DO GMDSS A BORDO DOS NAVIOS

Generalidades

45 - Faz-se referência aos requisitos de manutenção estabelecidos na regra IV/15 da convenção SOLAS e à Resolução A.702 (17) da IMO sobre normas de manutenção dos equipamentos de radiocomunicações do GMDSS relacionados com as áreas A3 e A4, no anexo da qual contém a disposição seguinte:

"4.2 A pessoa nomeada para desempenhar funções relacionadas com a manutenção electrónica no mar deve ser possuidora de um dos certificados apropriado previstos no Regulamento das Radiocomunicações, conforme o caso, ou possuir qualificações equivalentes de manutenção electrónica no mar, de acordo com a Administração, tomando em consideração as recomendações da Organização sobre a formação desse pessoal".

46 - As orientações que se seguem, relativas a qualificações equivalentes para a manutenção electrónica, são incluídas para utilização da Administração conforme apropriado.

47 - A formação, conforme recomendada a seguir, não qualifica nenhuma pessoa, como operador dos equipamentos radioeléctricos do GMDSS, que não seja possuidora de um certificado de operador apropriado.

Formação sobre manutenção equivalente ao Certificado de Radioelectrónico de 1ª Classe

48 - Para determinação da formação considerada equivalente aos elementos enumerados no certificado de radioelectrónico de 1ª classe:

.1 o conteúdo teórico deve incluir, como mínimo, os assuntos enumerados nos parágrafos 3 a 10;

.2 o conteúdo prático deve incluir, como mínimo, os assuntos enumerados no parágrafo 13; e

.3 os conhecimentos diversos devem incluir, como mínimo, os assuntos enumerados no parágrafo 14.

Formação sobre manutenção equivalente ao Certificado de Radioelectrónico de 2ª Classe

49 - Para determinação da formação considerada equivalente aos elementos enumerados no certificado radioelectrónico de 2ª classe:

.1 o conteúdo teórico deve incluir, como mínimo, os assuntos enumerados nos parágrafos 17 a 24;

.2 o conteúdo prático deve incluir, como mínimo, os assuntos enumerados no parágrafo 27; e

.3 os conhecimentos diversos devem incluir, como mínimo, os assuntos enumerados no parágrafo 28.

CAPÍTULO V

Orientações relativas a requisitos de formação especiais para tripulantes de certos tipos de navios

Secção B-V/1

Orientações relativas à formação e qualificação de tripulantes de navios tanque

Pessoa com responsabilidade imediata

1 - O termo "pessoa com responsabilidade imediata", utilizado nos parágrafos 3 e 5 da regra V/1-1 e no parágrafo 3 da regra V/1-2, significa a pessoa que ocupa uma posição de tomada de decisão relativa à carga, descarga, cuidado em viagem e manuseamento da carga, limpeza dos tanques e outras operações relacionadas com a carga.

FORMAÇÃO DE FAMILIARIZAÇÃO PARA TODO O PESSOAL DE NAVIOS TANQUE

2 - Todo o pessoal que presta serviço em navios tanque, antes de ser designado para o exercício de funções a bordo, deve receber formação a bordo e, sempre que adequado em terra, a qual deve ser ministrada por pessoal qualificado e com a experiência no manuseamento e características de cargas constituídas por hidrocarbonetos, por produtos químicos ou por gases liquefeitos, conforme for aplicável, e as medidas de segurança correspondentes. A formação deve abranger as matérias constantes dos parágrafos 3 a 8 seguintes.

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Regulamentos

3 - Conhecimento das regras e regulamentos relacionados com a segurança do pessoal a bordo de um navio tanque, tanto em porto como no mar.

Perigos para a saúde e precauções a tomar

4 - Perigos de contacto com a pele; inalação ou ingestão acidental dos produtos que constituem a carga; propriedades perigosas dos produtos transportados, acidentes envolvendo pessoas e correspondentes medidas de primeiros socorros, listagem das atitudes correctas e incorrectas.

Prevenção e combate a incêndios

5 - Controlo de fumar e restrições relativas à operação da cozinha; fontes de ignição; prevenção de incêndios e de explosões; métodos de combate a incêndios; utilização de extintores portáteis ou instalações fixas de combate a incêndios.

Prevenção de Poluição

6 - Procedimentos a seguir para prevenir a poluição do ar e da água e medidas a tomar no caso de ocorrência de derrame.

Equipamentos de segurança e sua utilização

7 - Utilização correcta de equipamento e vestuário de protecção, reanimadores e equipamento para fuga e salvamento.

Procedimentos de emergência

8 - Familiarização com os procedimentos previstos nos planos de emergência.

PROVA DE QUALIFICAÇÃO

9 - O comandante de qualquer navio tanque petroleiro, químico ou de gás liquefeito deve garantir que o oficial ou a pessoa imediatamente responsável pela carga é possuidora de um certificado apropriado emitido ou autenticado ou validado em conformidade com o exigido no parágrafo 3 da regra V/1-1; parágrafo 5 da regra V/1-1 ou parágrafo 3 da regra V/1-2, conforme aplicável, e que possui experiência prática recente e adequada, adquirida a bordo de um tipo apropriado de navio tanque que permita o desempenho das funções para as quais foram nomeados, em condições de segurança.

ORIENTAÇÕES RELATIVAS A FORMAÇÃO A BORDO APROVADA

Generalidades

10 - O objectivo do serviço qualificante a bordo é ministrar a formação e o conhecimento para o transporte seguro de cargas específicas em tanques.

11 - Para assegurar a experiência apropriada para o exercício de funções no respectivo tipo de navio tanque e referidas no parágrafo 4.2.2 da regra V/1-1, no parágrafo 6.2.2 da regra V/1-1 e no parágrafo 4.2.2 da regra V/1-2, a formação a bordo deve:

.1 realçar a prática em contexto de trabalho e estar relacionada com o emprego do marítimo, ou seja, a formação para as secções do convés e da máquina podem ser diferentes;

.2 ser ministrada sob a supervisão de pessoal qualificado e com experiência no manuseamento, características e procedimentos de segurança das cargas a transportar pelo navio;

.3 ser ministrada a bordo do tipo de navio tanque que transporte os produtos relacionados com o certificado de qualificação/autenticação de navio tanque pretendido e deve incluir a operação dos equipamentos especializados. No entanto poderá ser em parte realizada no período em que o navio se encontra em lastro, em trânsito entre cargas.

.4 participar pelo menos em três operações de carga e de descarga[99]; e

.5 pelo menos cobrir as matérias contantes no parágrafo 19 "Critérios de Formação a Bordo".

12 - O programa de formação a bordo, não pode em caso algum, afectar a operação segura do navio e a sua navegabilidade.

Programa de formação a bordo

13 - O formando deve embarcar na qualidade de supranumerário (ou seja, o formando não tem quaisquer outras funções atribuídas, com excepção das relacionadas com o programa de formação e as funções de emergência).

14 - O programa de formação a bordo deve ser gerido e coordenado pela companhia que gere o navio no qual será desempenhado o serviço de mar e o navio deverá ser designado como navio de formação pela companhia[100].

15 - O formando deve, a todo o momento, estar informado dos dois indivíduos identificados como imediatamente responsáveis pelo programa de formação a bordo. o primeiro é um oficial qualificado, designado como o "oficial de formação a bordo" o qual, sob a autoridade do comandante, deve organizar e supervisionar o programa de formação. O segundo deve ser uma pessoa designada pela companhia, designado como o "oficial de formação da companhia", o qual, deve ter a responsabilidade global pelo programa de formação e pela coordenação com as organizações de formação.

16 - O formando deve estar munido de um livro de registo da formação aprovado, que permita a manutenção do registo global da formação prática e da experiência de mar. O livro de formação aprovado deve ser elaborado de forma a poder fornecer informação detalhada acerca das funções e tarefas que devem ser desempenhadas e do progresso obtido após a respectiva efectivação. Devidamente completado e autenticado pelo comandante, o livro de registo de formação aprovado, é o único meio de evidência, em como foi completado um programa de formação estruturado a bordo, tendo em vista a emissão de um certificado, conforme aplicável, de formação avançada na operação de navios tanque.

[99]Considera-se uma operação de carga ou descarga, como sendo a carga ou descarga de mais de 60% da capacidade total de carga do navio. As cargas e descargas inferiores poderão ser adicionadas conjuntamente até se tomarem equivalentes a este valor.

[100] Um navio de formação, é um navio de comércio designado pela companhia e adequado, conforme aplicável, para os efeitos destas orientações.

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17 - No decurso do programa de formação aprovado a bordo, o formando deve receber instrução na carga, descarga, cuidado em viagem, manuseamento da carga, limpeza de tanques ou outras operações relacionadas com a carga do navio, de modo a assegurar que a experiência adquirida é pelo menos semelhante àquela que obteria em três meses de serviço normal.

18 - Caso o critério, das três cargas e três descargas, não possa ser alcançado no espaço do mês do período de formação a bordo, então o período de formação deve ser estendido até que o critério definido seja alcançado de forma satisfatória.

Critério de formação a bordo

19 - A formação a bordo deve, pelo menos, proporcionar o conhecimento e a experiência, relevante para o tipo de navio tanque, do seguinte:

.1 Segurança

.1.1 Todos os tipos de navios tanque

.1 sistema de gestão de segurança do navio;

.2 procedimentos e equipamento de combate a incêndios específicos da carga;

.3 procedimentos de primeiros socorros específicos da carga, incluindo o Guia Médico de Primeiros Socorros para Utilização em Acidentes Envolvendo Matérias Perigosas (MFAG);

.4 riscos específicos do navio e da carga, incluindo regras para fumadores, atmosferas pobres em oxigénio, narcose e toxicidade das cargas de hidrocarbonetos;

.5 sistemas de avaliação de risco;

.6 autorizações de trabalho, incluindo trabalhos "a quente" e procedimentos de entrada em espaços fechados/confinados;

.7 utilização de equipamento de protecção individual;

.1.2 Adicional para os navios tanque de gases liquefeitos

.1 perigos e precauções relacionadas com o manuseamento e armazenamento de cargas com temperaturas criogénicas;

.2 Construção, carga, tanques de cargas e tubagens

.2.1 Todos os tipos de navios tanque

.1 construção e limitações do casco e dos tanques;

.2 conexões de carga;

.3 propriedades e riscos associados com os tipos de carga a transportar, incluindo a utilização das MSDS (Material Safety Data Sheets);

.4 os riscos que as operações de carga (ex: purga/desgaseificações/limpeza de tanques) podem ter nos sistemas de ventilação do casario e as acções para minimizar esses riscos;

.5 configuração dos sistemas de carga e de lastro;

.6 bombas e equipamentos associados;

.7 equipamento especializado associado às operações de carga;

.8 especificidades da construção dos navios tanques e como isso afecta as operações de carga;

.2.2 Adicional para os navios tanque de gases liquefeitos

.1 uso de segregação, separação e câmaras pressurizadas para manutenção de zonas seguras de gás;

.2 tanques de carga, inter barreiras, espaços isolados e sistemas de válvulas de escape das tubagens e de ventilação de vapor;

.3 compressores de vapor de carga e equipamento associado;

.3 Caimento e estabilidade

.3.1 Todos os tipos de navios tanque

.1 informação de estabilidade dos navios tanque e equipamento de cálculo;

.2 importância da manutenção dos níveis de stress nos limites aceitáveis;

.3 perigos dos efeitos das superfícies livres e do espelho líquido;

.4 Operações de carga

.4.1 Todos os tipos de navios tanque

.1 planeamento prévio dos cuidados com a carga/viagem, das operações de descarga/lastro;

.2 manutenção de registos;

.3 procedimentos de arranque/paragem, incluindo a paragem de emergência;

.4 atenção necessária para os sistemas de atracação durante as operações de carga;

.5 procedimentos de purga e inertização e riscos associados;

.6 operações de carga incluindo operações de "deitar por fora";

.7 operações de descarga, incluindo a drenagem e esvaziamento;

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.8 monitorização da carga durante as operações de carga/descarga, incluindo as amostras quando aplicável;

.9 medição dos tanques e sistemas de alarmes;

.10 perigos e prevenção de descargas electroestáticas;

.11 operações de lastragem e deslastragem;

.12 requisitos de manutenção, incluindo as inspecções dos revestimentos;

.4.2 Adicional para os navios tanque químicos

.1 polimerização, compatibilidade de cargas, compatibilidade do revestimento dos tanques e outras reacções;

.2 funções dos inibidores e catalisadores;

.3 dispersão de vapores/gases;

.4.3 Adicional para os navios tanque de gases liquefeitos

.1 polimerização, compatibilidade de cargas, compatibilidade do revestimento dos tanques e outras reacções;

.2 funções dos inibidores e catalisadores;

.3 causas dos efeitos contrapressão e de aumento da pressão;

.4 utilização de gases de ebulição como combustível;

.5 dispersão de vapores/gases;

.6 operações de purga e arrefecimento;

.7 operações e manutenção do equipamento de reliquidificação;

.8 compreensão e utilização dos sistemas de transferência de vigilância (Custody Transfer Systems);

.4.4 Adicional para petroleiros

.1 sistemas de lavagem por petróleo bruto;

.5 Lavagem/limpeza de tanques

.5.1 Todos os tipos de navios tanque

.1 sistemas de lavagem de tanques e equipamentos instalados nos navios;

.2 planeamento prévio das operações de lavagem/limpeza de tanques;

.3 procedimentos de lavagem de tanques, incluindo a purga e a inertização;

.4 controlo de resíduos líquidos/sólidos;

.5 riscos electroestáticos;

.6 requisitos de limpeza;

.7 requisitos de manutenção;

.5.2 Adicional para os navios tanque químicos

.1 remoção de inibidores e resíduos;

.2 utilização de absorventes, detergentes e outros agentes de limpeza;

.5.3 Adicional para os navios tanque de gases liquefeitos

.1 aquecimento e ebulição dos gases dos resíduos líquidos e processos de regaseificação;

.6 Sistemas de gás inerte

.6.1 Todos os tipos de navios tanque

.1 sistemas de inertização e equipamentos instalados nos navios;

.2 riscos associados à inertização de espaços, com particular referência à entrada segura em tanques;

.3 purga, manutenção de atmosfera inerte e operações de libertação de gases

.4 requisitos de manutenção

.7 Controlo e prevenção da poluição

.7.1 Todos os tipos de navios tanque

.1 regras, documentos e planos, da companhia, do Estado de bandeira e internacionais;

.2 operação dos sistemas e equipamentos de prevenção da poluição dos navios tanque, incluindo a monitorização da descarga;

.3 operação do equipamento dos navios tanque, de contenção da poluição;

.8 Equipamento e instrumentos de detecção de gases

.8.1 Todos os tipos de navios tanque

.1 utilização e calibração de detectores de gases fixos, portáteis e pessoais, com particular referência ao equipamento de monitorização de oxigénio e de hidrocarbonetos;

.2 operação, manutenção e limitações da medição dos níveis de carga nos tanques, dos níveis de alarme e dos sistemas de medição da temperatura;

.8.2 Adicional para os navios tanque de gases liquefeitos

.1 operação e manutenção da medição da temperatura do casco;

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.9 Publicações

.9.1 Todos os tipos de navios tanque

.1 publicações da companhia, do Estado de bandeira e internacionais, relevantes para a operação do navio tanque, incluindo a SOLAS, MARPOL e os manuais de orientação aplicáveis;

.2 manuais de operação e manutenção para os equipamentos específicos de bordo;

.3 padrões existentes da indústria e códigos de práticas de trabalho seguro (ex: ICS, OCIMF, SIGTTO);

Secção B-V/1-1

Orientações relativas à formação e qualificação de comandantes, oficiais e marítimos da mestrança e marinhagem em navios tanque petroleiros e químicos

FORMAÇÃO PARA NAVIOS TANQUE PETROLEIROS

20 - A formação exigida nos parágrafos 2.2 e 4.3 da regra V/1-1 relativamente a navios tanque petroleiros deve estar estabelecida num plano de formação que expresse claramente, para todas as partes envolvidas, os objectivos da formação. A formação aqui referida pode ser ministrada tanto a bordo como em terra, conforme apropriado. A formação deve ser complementada com instrução prática a bordo e, onde apropriado, numa instalação adequada em terra. Toda a formação e instrução deve ser ministrada por pessoal devidamente qualificado e com a experiência adequada.

21 - É aconselhada, sempre que possível, a utilização de manuais de operação e dos equipamentos do navio, de filmes e de meios visuais adequados e deve ser aproveitada a oportunidade para introduzir a discussão sobre a importância da organização de segurança a bordo dos navios e os papéis desempenhados pelos oficiais encarregados da segurança e pelos comités de segurança.

FORMAÇÃO PARA NAVIOS TANQUE QUÍMICOS

22 - A formação exigida pelos parágrafos 2.2 e 6.3 da regra V/1-1 relativamente a navios tanque químicos dever estar estabelecida num plano de formação que expresse claramente, para todas as partes envolvidas, os objectivos da formação. A formação aqui referida pode ser ministrada tanto a bordo como em terra, conforme apropriado. A formação deve ser complementada com instrução prática a bordo e, onde apropriado, numa instalação adequada em terra. Toda a formação e instrução deve ser ministrada por pessoal devidamente qualificado e com a experiência adequada.

23 - É aconselhada, sempre que possível, a utilização de manuais de operação e dos equipamentos do navio, de filmes e de meios visuais adequados e deve ser aproveitada a oportunidade para introduzir a discussão sobre a importância da organização de segurança a bordo dos navios e os papéis desempenhados pelos oficiais encarregados da segurança e pelos comités de segurança.

Secção B-V/1-2

Orientações relativas à formação e qualificação de comandantes, oficiais e marítimos da mestrança e marinhagem em navios tanque de gás liquefeito

24 - A formação exigida nos parágrafos 2.2 e 4.3 da regra V/1-2 relativamente a navios tanque de gás liquefeito, deve estar estabelecida num plano de formação que expresse claramente, para todas as partes envolvidas, os objectivos da formação. A formação aqui referida pode ser ministrada tanto a bordo como em terra, conforme apropriado. A formação deve ser complementada com instrução prática a bordo e, onde apropriado, numa instalação adequada em terra. Toda a formação e instrução deve ser ministrada por pessoal devidamente qualificado e com a experiência adequada.

25 - É aconselhada, sempre que possível, a utilização de manuais de operação e dos equipamentos do navio, de filmes e de meios visuais adequados e deve ser aproveitada a oportunidade para introduzir a discussão sobre a importância da organização de segurança a bordo dos navios e os papéis desempenhados pelos oficiais encarregados da segurança e pelos comités de segurança.

Secção B-V/2

Orientações relativas à formação de marítimos em navios de passageiros

AVANÇADO DE COMBATE A INCÊNDIOS

1 - Deve ser ministrada formação adicional para os oficiais e tripulação dos navios de passageiros, que realce as dificuldades do combate a incêndios incluindo o acesso a espaços fechados/confinados e a prevenção da propagação do fogo aos espaços adjacentes.

CONTROLO DE DANOS

2 - Ao desenvolver os padrões de competência especificados nas regras A-II/1, A-II/2 e A-III/2, tendo em vista a aquisição dos níveis necessários de conhecimentos teóricos, de compreensão e de capacidade, em controlo de danos e estanquicidade, as companhias e as entidades formadoras devem ter em atenção os mínimos de conhecimentos, de compreensão e de capacidade, em controlo de danos e estanquidade, seguintes:

Competência

Minimizar o risco de inundação e manutenção de um estado de prontidão para responder a situações de emergência que envolvam danos à integridade da estanquidade do navio.

Conhecimento, compreensão e capacidade

Organização e planos de controlo de danos a bordo.

Sistemas de controlo de danos, equipamento (armários) e percursos de evacuação de emergência.

Os elementos chave na manutenção da estabilidade e da estanquidade.

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Importância da contenção de inundações e do estabelecimento de fronteiras estanques.

Acções a realizar a bordo no caso de explosão, encalhe, colisão ou incêndio

Técnicas de controlo de danos, consistentes com os equipamentos existentes a bordo, incluindo os sistemas de esgoto e bombagem.

Secção B-V/a[101]

Orientações relativas a formação complementar para comandantes e imediatos de navios de grandes dimensões e de navios com características de manobra pouco comuns

1 - É da maior importância que os comandantes e imediatos possuam a formação e experiência prévia adequada antes de assumirem funções de comandantes ou de imediatos de navios de grandes dimensões ou de navios com características de manobra pouco comuns ou características substancialmente diferentes das apresentadas pelos navios onde recentemente prestaram serviço.

Tais características são geralmente encontradas em navios com um deslocamento ou comprimento consideráveis, de concepção especial ou de alta velocidade.

2 - Antes da sua nomeação para a prestação de serviço num navio desse tipo, os comandantes e os imediatos devem:

.1 ser informados, pela companhia, das características de manobra do navio, em especial no que respeita aos conhecimentos, compreensão e aptidão enumerados no parágrafo referente a características de governo e manobra constantes da coluna 2 do quadro A-II/2, "Especificação de normas mínimas de competência para comandantes e imediatos de navios de arqueação bruta igual ou superior a 500 AB"; e

.2 estar perfeitamente familiarizados com a utilização de todas as ajudas à navegação e à manobra instaladas no navio em apreço, incluindo a indicação das suas capacidades e limitações.

3 - Antes da tomada de posse como comandante de um navio do tipo acima referido, o futuro comandante deve possuir experiência geral suficiente e adequada, adquirida no desempenho das funções de comandante ou imediato, e em alternativa:

.1 possuir experiência suficiente e adequada de manobra do mesmo navio sob supervisão, ou de manobra de um navio com características de manobra semelhantes; ou

.2 ter frequentado um curso aprovado de manobra de navios em simulador numa instalação capaz de simular as características de manobra de um navio idêntico.

4 - As qualificações e formação complementares para comandantes ou imediatos de navios de sustentação hidrodinâmica e de embarcações de alta velocidade devem estar de acordo com as recomendações relevantes constantes do Código de Segurança para Navios de Sustentação Hidrodinâmica e do Código de Segurança para Embarcações de Alta Velocidade (Código HSC,1994 e Código HSC, 2000), ambos da IMO, conforme aplicável.

Secção B-V/b

Orientações relativas à formação de oficiais e pessoal da mestrança e marinhagem responsáveis pelo manuseamento da carga em navios que transportam substâncias perigosas, no estado sólido a granel

1 - A formação deve ser dividida em duas partes, uma parte geral relativa aos princípios envolvidos e uma outra parte sobre a aplicação desses princípios à operação do navio. Toda a formação e o treino devem ser ministrados por pessoal devidamente qualificado e com a experiência pessoal adequada e abranger no mínimo os assuntos enumerados nos parágrafos 2 a 14 seguintes.

PRINCÍPIOS

Características e propriedades

2 - As características físicas mais importantes e as propriedades químicas das substâncias perigosas, suficientes para permitir uma compreensão básica dos perigos intrínsecos e dos riscos envolvidos.

Classificação de materiais possuidores de perigosidade química

3 - Mercadorias perigosas das classes 4.9 da IMO e riscos associados a cada classe, e materiais perigosos quando a granel (MHB), listados no Código Marítimo Internacional de Cargas Sólidas a Granel (Código IMSBC).

Riscos para a saúde

4 - Perigos provenientes do contacto através da pele, da inalação, da ingestão e das radiações.

Convenções, regulamentos e recomendações

5 - Familiarização geral com os requisitos relevantes dos capítulos II-2 e VII da Convenção SOLAS, 1974, emendada.

6 - Utilização geral e familiarização com o Código IMSBC, com especial referência a:

.1 segurança do pessoal, incluindo equipamentos de segurança, instrumentos de medida, assim como a sua utilização e aplicação prática e a interpretação de resultados;

.2 riscos associados a cargas com tendência para escorregamento; e

.3 materiais que representam perigos químicos.

[101]Note-se que não existem regras correspondentes na Convenção, nem nas secções da parte A do Código, para as secções B-V/a, B-V/b, B-V/c, B-V/d, B-V/e, B-V/f e B-V/g.

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APLICAÇÃO A BORDO

Classe 4.1 - Sólidos inflamáveis

Classe 4.2 - Substâncias susceptíveis de combustão espontânea

Classe 4.3 - Substâncias que, em contacto com a água, emitem gases inflamáveis

7 - Transporte, armazenamento e controlo de temperatura para prevenir a decomposição e a possível explosão, categorias de armazenamento, precauções gerais de armazenamento, incluindo as aplicáveis às substancias auto-reactivas e afins, requisitos de segregação para prevenir o aquecimento e a ignição; a emissão de gases venenosos ou inflamáveis e a formação de misturas explosivas.

Classe 5.1 - Substâncias oxidantes

8 - Transporte, armazenamento e controlo da temperatura para prevenir a decomposição e a possível explosão, categorias de armazenamento, precauções gerais de armazenamento e requisitos de segregação para assegurar a separação de materiais combustíveis, de ácidos e de fontes de calor para prevenção de incêndios, explosões e formação de gases tóxicos.

Classe 6.1 - Substâncias tóxicas

9 - Contaminação de produtos alimentares, dos locais de trabalho e das áreas dos alojamentos e de ventilação.

Classe 7 - Material radioactivo

10 - Índice de transporte, tipos de minérios e de concentrados, armazenamento e segregação de pessoas, películas e chapas fotográficas não reveladas e produtos alimentares; categorias de armazenamento, requisitos gerais de armazenamento, requisitos de segregação e de distâncias de separação, segregação de outras substâncias perigosas.

Classe 8 - Substâncias corrosivas

11 - Perigo derivado das substâncias húmidas.

Classe 9 - Substâncias e artigos perigosos diversos

12 - Exemplos e perigos afins; perigos dos materiais somente perigosos quando a granel (Código IMSBC), precauções de armazenamento gerais e específicas, precauções relacionadas com o transporte e manuseamento e requisitos de segregação.

Precauções de segurança e procedimentos de emergência

13 - Segurança das instalações eléctricas em espaços de carga, precauções a tomar antes da entrada em compartimentos fechados que possam conter uma atmosfera pobre em oxigénio, envenenados ou com atmosferas inflamáveis; os efeitos possíveis de incêndio nas substâncias de cada classe, a utilização dos Procedimentos de Emergência para Navios que Transportam Substâncias Perigosas, planos de emergência e procedimentos a seguir em caso de incidentes envolvendo substâncias perigosas e a utilização das rubricas apropriadas neste contexto contidas no Código IMSBC.

Primeiros socorros

14 - Guia Médico de primeiros socorros em Acidentes Envolvendo Substâncias Perigosas (MFAG) da IMO e a sua utilização e aplicação em conjunto com outros guias e consultas médicas por rádio.

Secção B-V/c

Orientações relativas à formação de oficiais e pessoal da mestrança e marinhagem responsáveis pelo manuseamento da carga em navios que transportam substâncias perigosas embaladas

1 - A formação deve ser dividida em duas partes, uma parte geral relativa aos princípios envolvidos e uma outra parte sobre a aplicação desses princípios à operação do navio. A formação e o treino deveriam ser ministrados por pessoal devidamente qualificado e com a experiência adequada e abranger no mínimo os assuntos enumerados nos parágrafos 2 a 19 seguintes.

PRINCÍPIOS

Características e propriedades

2 - Características físicas mais importantes e as propriedades químicas das substâncias perigosas suficientes para permitir uma compreensão básica dos perigos intrínsecos e dos riscos envolvidos.

Classificação de substâncias perigosas e de materiais possuidores de perigosidade química

3 - Mercadorias perigosas das classes 1-9 da IMO e riscos associados a cada classe.

Riscos para a saúde

4 - Perigos provenientes do contacto com a pele, da inalação, da ingestão e das radiações.

Convenções regulamentos e recomendações

5 - Familiarização geral com os requisitos relevantes dos capítulos II-2 e VII da Convenção SOLAS, 1974, e do anexo III da Convenção MARPOL 73/78, incluindo a sua implementação através do Código IMDG.

Utilização e familiarização do Código Marítimo Internacional sobre Mercadorias Perigosas (Código IMDG)

6 - Conhecimentos gerais dos requisitos do Código IMDG, envolvendo a declaração, a documentação, a embalagem, a etiquetagem e a afixação de avisos, as embalagens para transporte em contentores e o carregamento de veículos, os tanques portáteis, os contentores-cisterna e os veículos-cisterna e outras unidades de transporte utilizadas para substâncias perigosas.

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7 - Conhecimentos sobre a identificação, marcação, etiquetagem, armazenamento, peamento, separação e segregação nos diferentes tipos de navios mencionados no Código IMDG.

8 - Segurança do pessoal, incluindo equipamento de segurança, instrumentos de medida e sua utilização e aplicação prática, bem como a interpretação dos resultados.

APLICAÇÃO A BORDO

Classe 1 - Explosivos

9 - As seis classes de perigosidade e os 13 grupos de compatibilidade, as embalagens e os paióis utilizados para o transporte de explosivos, a capacidade estrutural dos contentores e veículos de transporte, as disposições relativas a armazenamento, incluindo os planos específicos para armazenamento no convés ou nos pavimentos inferiores, a segregação de mercadorias perigosas de outras mercadorias classificáveis na classe 1 e de mercadorias não perigosas, o transporte e o armazenamento em navios de passageiros, a adequabilidade dos compartimentos de carga e as precauções de segurança a tomar durante as operações de carga e descarga.

Classe 2 - Gases (comprimidos, liquefeitos, liquefeitos refrigerados ou em solução) inflamáveis, não inflamáveis, não tóxicos e tóxicos

10 - Tipos de reservatórios sob pressão e tanques portáteis incluindo os acessórios de fecho e de segurança utilizados, as categorias de armazenamento, as precauções gerais de armazenamento incluindo as respeitantes a gases inflamáveis e tóxicos e aos gases poluidores do meio ambiente marinho.

Classe 3 - Líquidos inflamáveis

11 - Embalagens, contentores-tanque, tanques portáteis e veículos-tanque rodoviários, categorias de armazenamento, incluindo os requisitos específicos para os recipientes plásticos, precauções gerais relacionadas com o armazenamento, incluindo as referentes aos agentes poluidores do meio ambiente marinho, requisitos de segregação, precauções a tomar durante o transporte de líquidos inflamáveis a elevadas temperaturas.

Classe 4.1- Sólidos inflamáveis

Classe 4.2 - Substâncias susceptíveis de combustão espontânea

Classe 4.3 - Sustâncias que, em contacto com a água, emitem gases inflamáveis

12 - Tipos de embalagem, transporte e armazenamento em condições de temperatura controlada para prevenir a decomposição ou a possível explosão, as categorias de armazenamento, as precauções gerais de armazenamento, incluindo aquelas aplicáveis às substâncias auto-reactivas e relacionadas, explosivos desactivados e poluentes do meio ambiente marinho, os requisitos de segregação para prevenir aquecimento e ignição, a emissão de gases tóxicos ou inflamáveis e a formação de misturas explosivas.

Classe 5.1 - Substâncias oxidantes

Classe 5.2 - Peróxidos orgânicos

13 - Tipos de embalagem, transporte e armazenamento em condições de temperatura controlada para prevenir a decomposição ou a possível explosão, as categorias de armazenamento, as precauções gerais de armazenamento, incluindo aquelas aplicáveis às substâncias poluentes do meio ambiente marinho, os requisitos de segregação para garantir a separação de matérias combustíveis, de ácidos e de fontes de calor para a prevenção de incêndios, de explosões e de formação de gases tóxicos, as precauções para minimizar a fricção e o impacte susceptíveis de iniciar a decomposição.

Classe 6.1 - Substâncias tóxicas

Classe 6.2 - Substâncias infecciosas

14 - Tipos de embalagem, categorias de armazenamento, precauções gerais de armazenamento, incluindo as aplicáveis às substâncias tóxicas, inflamáveis ou poluentes do meio ambiente marinho, requisitos de segregação, considerando, em especial, que a característica comum a todas estas substâncias é a sua capacidade para provocar a morte ou danos graves à saúde humana, e as medidas de descontaminação em caso de ocorrência de derrame.

Classe 7 - Material Radioactivo

15 - Tipos de embalagem, índice de transporte relacionado com o armazenamento e a segregação, armazenamento e a segregação das pessoas, de películas e chapas fotográficas não reveladas e dos produtos alimentares; as categorias de armazenamento, os requisitos gerais de armazenamento, os requisitos de segregação e de distâncias de separação e a segregação de outras substâncias perigosas.

Classe 8 - Substâncias corrosivas

16 - Tipos de embalagem, categorias de armazenamento, precauções gerais de armazenamento, incluindo as aplicáveis às substâncias corrosivas, líquidos inflamáveis ou poluentes do meio ambiente marinho, os requisitos de segregação, considerando, em especial, que a característica comum a todas estas substâncias é a sua capacidade para provocar danos graves aos tecidos vivos.

Classe 9 - Substâncias e artigos perigosos diversos

17 - Exemplos dos riscos, incluindo o de poluição do meio ambiente marinho.

Precauções de segurança e procedimentos de emergência

18 - Segurança das instalações eléctricas em espaços de carga, precauções a tomar antes da entrada em compartimentos fechados que possam conter atmosferas com deficiência de oxigénio, envenenadas ou inflamáveis; os efeitos possíveis de derrames ou de incêndio nas substâncias de cada classe, consideração dos casos de acidente abaixo ou acima do convés, utilização dos Procedimentos

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de Emergência para Navios Que Transportam Substâncias Perigosas, planos de emergência e procedimentos a seguir em caso de incidentes envolvendo substâncias perigosas.

Primeiros socorros

19 - Guia Médico de Primeiros Socorros para Acidentes Envolvendo Substâncias Perigosas (MFAG) da IMO e a sua utilização e aplicação em conjunto com outros guias e consultas médicas por rádio.

Secção B-V/d

Orientações para a aplicação da Convenção STCW às unidades móveis offshore (MOU's)

1 - As disposições da Convenção STCW, aplicam-se ao pessoal marítimo das MOU's com propulsão própria, quando prossigam viagem.

2 - As disposições da convenção STCW não se aplicam às MOU's sem propulsão própria ou às MOU's que se encontram em posição fixa.

3 - Ao considerar os padrões apropriados de formação e certificação, quando uma MOU se encontra em posição fixa, o país de registo deve ter em conta as recomendações relevantes da IMO. Em particular, todo o pessoal marítimo das MOU's com propulsão própria e quando exigido, de outras unidades, devem cumprir os requisitos da Convenção STCW, emendada.

4 - As MOU's com propulsão própria ao efectuarem viagens internacionais, é exigido a existência dos documentos de lotação de segurança.

5 - As MOU's em posição fixa estão sujeitas à legislação nacional do Estado costeiro, em cuja Zona Económica Exclusiva estejam a operar. Esses Estados devem também ter em consideração as recomendações relevantes da IMO e não deverão estabelecer padrões mais elevados, para as MOU's registadas noutros Estados, do que os aplicados às MOU's registadas nesse Estado costeiro.

6 - A todo o pessoal especializado empregado a bordo das MOU's (quer tenham ou não propulsão própria) deve ser proporcionada formação básica e de familiarização apropriada, de acordo com as recomendações relevantes da IMO.

Secção B-V/e

Orientações relativas à formação e qualificações de comandantes e oficiais chefes de quarto de navegação a bordo de navios de abastecimento offshore

1 - É importante que os comandantes e os oficiais dos navios de abastecimento offshore tenham experiência e formação relevantes, antes de assumirem funções neste tipo de navios. Deve ser realçada a experiência operacional a bordo ou uma combinação entre experiência operacional e a formação em simulador.

2 - Os comandantes e os oficiais devem entender as características específicas de manobra e manuseamento comuns aos navios de abastecimento offshore.

3 - Antes de efectuarem operações de abastecimento offshore, o comandante e os oficiais devem:

.1 ter conhecimento da indústria offshore e dos termos utilizados nas diversas operações;

.2 compreender a importância de manter, a todo o momento, uma distância de trabalho de segurança, ao trabalhar numa localização/instalação offshore;

.3 ter conhecimento da manobrabilidade do navio e da manutenção da posição fixa, sob várias condições de tempo;

.4 compreender os parâmetros específicos do modelo do navio;

.5 compreender a necessidade de ter uma visibilidade sem restrições e visualização das zonas de trabalho.

4 - A bordo de um navio de abastecimento offshore, o comandante e os oficiais devem:

.1 ter conhecimento das características de manuseamento e do comportamento dos navios, equipados com diversas formas de propulsão; e

.2 ser capaz de operar um navio de abastecimento offshore em situações de proximidade de uma instalação offshore e de outros navios.

5 - Os comandantes devem compreender a necessidade de que todo o pessoal a bordo que esteja envolvido na execução de operações de abastecimento offshore, esteja familiarizado com as suas funções.

Navios de abastecimento offshore envolvidos em operações de manuseamento de ferros/âncoras

6 - É, importante que os comandantes e os oficiais chefes de quarto de navegação dos navios de abastecimento offshore envolvidos em operações de manuseamento de ferros/âncoras tenham experiência e formação relevantes.

7 - Antes de desempenharem operações de manuseamento de ferros/âncoras, o comandante e os oficiais chefes de quarto de navegação, devem:

.1 estar bem informados das características do comportamento do navio relativamente ao manuseamento de ferros/âncoras, incluindo, mas não limitado, a:

.1.1 navegação e manutenção da posição;

.1.2 manuseamento do navio;

.1.3 conhecimento profundo de estabilidade dos navios de abastecimento offshore, em especial a combinação de um baixo braço endireitante (GZmax), conveses abertos baixos e grandes forças externas. Utilização de calculadores de carga e do conflito entre um navio rígido e duro e um bom ambiente

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de trabalho no convés. Potencial redução de estabilidade devido à utilização de equipamentos anti-balanço; e

.1.4 operações em zonas de risco de campos de petróleo, incluindo a colocação de tubagens (pipelines).

.2 totalmente familiarizados com a utilização de todos os instrumentos e sistemas instalados a bordo do respectivo navio para o manuseamento de ferros/âncoras, suas capacidades e limitações, incluindo, mas não limitado, a:

.2.1 utilização de vários propulsores, de propulsão convencional ou azimutal;

.2.2 apanhar e manusear pesos pesados, rebocar, manusear ferros/âncoras e colocar ferros em plataformas e instalações offshore e barcaças;

.2.3 reboque de plataformas, barcaças e outros navios;

.2.4 operações de içar e de rebocar com guinchos até 600 toneladas métricas de força de tracção;

.2.5 conhecimento profundo e detalhado dos princípios de operação dos guinchos de reboque e de manuseamento de ferros/âncoras; e

.2.6 a diferença significativa entre a libertação de emergência dos ganchos de reboque e dos guinchos.

8 - Os comandantes e os oficiais chefes de quarto de navegação responsáveis pelo manuseamento de ferros/âncoras devem ter formação e experiência suficiente e apropriada através da execução, sob supervisão, de um número de movimentações de plataformas, considerado apropriado pela Administração. A formação pode ser complementada por formação apropriada em simulador.

Secção B-V/f

Orientações relativas à formação e experiência do pessoal que opera sistemas de posicionamento dinâmico

1 - Define-se posicionamento dinâmico (DP) como o sistema pelo qual a posição e o rumo, de um navio com propulsão, são controlados automaticamente pelo recurso às suas próprias unidades de propulsão.

2 - O pessoal afecto à operação de sistemas DP deve receber formação relevante e ter experiência prática dos sistemas. Os conteúdos teóricos da formação devem permitir aos operadores DP (DPO's) a compreensão da operação do sistema DP e dos seus componentes. Conhecimento, compreensão e experiência adquirida, devem tornar o pessoal capaz de operar em segurança os navios com DP, tendo em conta a salvaguarda da vida humana no mar e a protecção do meio ambiente marinho.

3 - O conteúdo da formação e a experiência devem cobrir os seguintes componentes de um sistema DP:

.1 estação de controlo DP;

.2 geração e gestão de energia;

.3 unidades propulsoras;

.4 sistemas de referência de posição;

.5 sistemas de referência de orientação;

.6 sistemas de referência ambientais; e

.7 sistemas de referência de forças externas, como os medidores de tensão dos cabos de amarração.

4 - A formação e experiência deve cobrir o âmbito das operações de rotina DP, bem como o tratamento das falhas, faltas, incidentes e emergências dos sistemas DP, de forma a assegurar a continuidade ou a finalização das operações em segurança. A formação não deve ser limitada aos DPO's e aos comandantes dos navios com DP; a outro pessoal de bordo, como os oficiais electrotécnicos e os engenheiros de máquinas, pode ser exigida formação e experiência adicionais que assegurem a sua preparação para desempenhar as suas funções a bordo de um navio DP. Deve-se considerar a realização de exercícios como parte integrante da formação e experiência a bordo. Os DPO's devem ser conhecedores do tipo e da objectivo da documentação relacionada com as operações DP, tais como manuais operacionais, Análise de Modos de Falhas e Efeitos (FMEA's) e parcelas de capacidade.

5 - Toda a formação deve ser ministrada por uma pessoa devidamente qualificada e com experiência adequada.

6 - Após a designação para um navio que opere em modo DP, o comandante, os DPO's e o restante pessoal com formação DP, deve ser sujeito a familiarização ao equipamento específico e às características do navio. Deve ser dada especial atenção à natureza do trabalho do navio e á importância do sistema DP nesse trabalho.

Secção B-V/g

Orientações relativas à formação dos comandantes e oficiais dos navios que operem em águas polares

1 - É importante que os comandantes, os oficiais chefes de quarto de navegação e os oficiais chefes de quarto de máquinas, a bordo de navios que operem em águas polares, tenham formação e experiência relevantes, de acordo com o seguinte:

.1 antes de serem designados para o exercício de funções nestes navios:

.1.1 para os comandantes e oficiais chefes de quarto de navegação, a formação deve incluir conhecimento básico de pelo menos os assuntos referidos nos parágrafos 2 a 11 seguintes; e

.1.2 para os oficiais chefes de quarto de máquinas, a formação deve incluir

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conhecimento básico de pelo menos, os assuntos referidos nos parágrafos 3, 6, 10 e 11 seguintes.

.2 os Comandantes e Chefes de Máquinas devem ter experiência suficiente e apropriada na operação de navios em águas polares.

Características do gelo - zonas de gelo

2 - Interpretação das diferentes cartas de gelo e consciência das limitações dos dados meteorológicos e oceanográficos, constituição do gelo, formação, crescimento, idade e estado de liquefação; tipos e concentrações de gelo; pressão do gelo; fricção do gelo coberto por neve; acumulação e formação de gelo; precauções contra a formação de gelo e mitigação das suas consequências; a formação de gelo em diferentes regiões e diferentes épocas, incluindo as diferenças entre o Árctico e o Antárctico; reconhecimento das consequências das mudanças rápidas nas condições de tempo e de gelo; movimento dos icebergues e dos blocos de gelo.

Desempenho do navio no gelo e em climas frios

3 - Características do navio; tipos de navios, formas do casco; requisitos de fortalecimento para o gelo; classe de gelo das diferentes sociedades classificadoras - classe polar e regras locais; limitações de classe de gelo; invernação e estado de prevenção do navio; desempenho do sistema de baixas temperaturas.

Planeamento de viagem e da travessia de um navio no gelo

4 - Desenvolvimento de um planeamento de travessia e de trajecto seguros para evitar o gelo onde for possível, incluindo a interpretação dos diversos tipos de imagem e de dados de gelo para ajudar na preparação do planeamento estratégico de uma travessia; entrada no gelo vindo do mar aberto evitando icebergues e condições de gelo perigosas, determinando quando é ou não segura a entrada em zonas contendo gelo ou icebergues, devido às condições de escuridão, ondulação, nevoeiro ou pressão do gelo.

Operação e manobra de um navio no gelo

5 - Preparação e avaliação de risco antes da aproximação de uma zona de gelo; operações desatendidas de navios de diferentes classes de gelo em zonas de diferentes tipos de gelo; velocidade de segurança na presença de gelo e de icebergues; comunicações com navios quebra-gelos e outros navios; navegação em vários tipos de concentração e de cobertura de gelos; consciência do aumento da energia do movimento; utilização dos icebergues como abrigo e acessibilidade numa zona de blocos de gelos.

6 - Utilização de diferentes sistemas de propulsão e de leme, incluindo a consciência da força e das limitações de capacidade do sistema; sistemas de inclinação transversal e de equilíbrio longitudinal, pressão das máquinas e problemas de arrefecimento.

Regras e recomendações

7 - Requisitos locais de entrada em diferentes regiões, incluindo no Tratado do Antárctico; regras e orientações internacionais.

Limitações de equipamento

8 - Utilização de ajudas terrestres de navegação em zonas polares e riscos associados; erros da agulha nas altas latitudes; discriminação dos alvos radar e das características do gelo nos ecos de gelo indesejados, limitações dos sistemas de posição electrónicos nas altas latitudes; limitações das cartas e dos roteiros (pilots) náuticos; limitações dos sistemas de comunicações.

Precauções de segurança e procedimentos de emergência

9 - Disponibilidade de dados oceanográficos suficientes para uma navegação segura; precauções de navegação em zonas com fraca representação cartográfica; limitações no grau de prontidão e responsabilidade dos sistema de busca e salvamento, incluindo a área GMDSS, A4 e respectivas limitações de instalações de comunicação SAR; sensibilização de planeamento de emergência; conhecimentos de procedimentos de reboque; mais valia do contacto com outros navios e as organizações SAR locais; reconhecimento dos perigos de exposição da tripulação a temperaturas muito baixas; procedimentos e técnicas de sobrevivência e abandono do navio no gelo; problemas de fadiga da tripulação devido ao barulho e vibração; transporte de recursos adicionais de combustíveis, alimentação e roupa extra; sensibilização para a gravidade acrescida das consequências dos incidentes em águas polares.

10 - Estabelecimento de procedimentos de trabalho seguros; consciência dos danos mais comuns do casco e do equipamento e como os evitar; limitações dos sistemas de combate a incêndios.

Considerações ambientais

11 - Áreas marítimas sensíveis no que diz respeito a descargas; áreas onde o transporte marítimo é proibido ou deve ser evitado; áreas especiais de acordo com a MARPOL; limitações dos equipamentos de fugas de hidrocarbonetos; planos para lidar com o aumento da quantidade dos lixos, das águas das cavernas, dos resíduos, dos esgotos, etc.; consequências da poluição em climas frios.

CAPÍTULO VI

Orientações relativas a funções de emergência, segurança ocupacional, protecção (security), cuidados médicos e sobrevivência

Secção B-VI/1

Orientações relativas aos requisitos obrigatórios de formação de familiarização e instrução em segurança, e de segurança básica para todos os marítimos

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Prevenção e combate a incêndios

1 - A formação básica em prevenção e combate a incêndios, obrigatória nos termos da secção A-VI/1, deve incluir, pelo menos, os elementos teóricos e práticos descritos nos parágrafos 2 a 4 seguintes.

Formação teórica

2 - A formação teórica deve abranger:

.1 os três elementos do fogo e da explosão (o triângulo do fogo), combustível, fonte de ignição e oxigénio;

.2 as fontes de ignição: químicas, biológicas e físicas;

.3 os materiais inflamáveis, a inflamabilidade, o ponto de ignição e temperatura de combustão, a velocidade de combustão, o valor térmico, o limite inferior de inflamabilidade (LFL), o limite superior de inflamabilidade (UFL), o intervalo de inflamabilidade, a introdução de gás inerte, a electricidade estática, o ponto de inflamação e a auto-ignição;

.4 os riscos de incêndio e de propagação do fogo por irradiação, convecção e condução;

.5 a reactividade;

.6 as classes de incêndios e agentes de extinção aplicáveis a cada classe;

.7 as principais causas de incêndio a bordo de navios: derrames de hidrocarbonetos na casa das máquinas, cigarros, sobreaquecimento (chumaceiras), equipamentos de cozinhas (fornos, chaminés, fritadeiras, chapas de grelhados, etc.), inflamações espontâneas (carga, desperdícios, etc.), realização de trabalhos com chama (soldadura, corte, etc.), equipamentos eléctricos (curtos-circuitos, reparações realizadas por pessoal não especializado),reacção, auto-aquecimento e auto-ignição, fogo posto e electricidade estática;

.8 a prevenção de incêndios;

.9 os sistemas de detecção de incêndios, fumos e alarmes automáticos de incêndio;

.10 os equipamentos de combate a incêndios, incluindo:

.10.1 instalações fixas e sua localização a bordo, colectores do serviço de incêndios, bocas-de-incêndio, união internacional de ligação a terra, equipamento de extinção por abafamento, dióxido de carbono (CO2), espumífero, hidrocarbonetos halogenados, sistemas de chuveiro (sprinklers) utilizando água pressurizada em compartimentos de carga especiais, etc., sistemas automáticos de chuveiro, bombas de serviço de incêndio de emergência, geradores de emergência, dispersores de pó químico, descrição geral dos equipamentos de combate a incêndios necessários e disponíveis, tanto móveis como fixos, sistemas de nevoeiro de água de alta pressão, espumífero de alta taxa de expansão, novas técnicas e novos equipamentos;

.10.2 equipamento de bombeiro, equipamento pessoal, aparelho respiratório autónomo, equipamento de reanimação, máscaras e capacetes protectores de fumo, retenida e cinto à prova de fogo, incluindo a sua localização a bordo; e

.10.3 equipamento geral incluindo mangueiras de extinção de incêndio, agulhetas, uniões, machados de combate a incêndios, extintores portáteis e cobertores para extinção por abafamento;

.11 construção e plano do navio, incluindo caminhos de fuga, meios para desgasificação de tanques, divisórias das classes A, B e C e sistemas de gás inerte;

.12 organização do navio para combate a incêndios, incluindo alarme geral, planos para combate a incêndios, locais de concentração para combate a incêndios e funções do pessoal, comunicações, incluindo navio-terra, quando em porto, procedimentos de segurança pessoal, exercícios periódicos a bordo, sistemas de rondas;

.13 conhecimentos práticos de técnicas de reanimação;

.14 métodos de combate a incêndios, incluindo o accionamento do alarme, localização e circunscrição, inundação, inibição, arrefecimento, abafamento, extinção, rescaldo, extracção de fumos; e

.15 agentes extintores de incêndios, incluindo água, jacto pressurizado, jacto de chuveiro, nevoeiro de água, alagamento, espumíferos de alta, média e baixa taxa de expansão, dióxido de carbono (CO2), halon, espumífero de filme aquoso (AFFF), pó químico seco, novas técnicas e novos equipamentos.

Formação prática

3 - A formação prática abaixo indicada deve ser ministrada em locais que proporcionem condições de treino verdadeiramente realistas (por exemplo, simulação das condições do navio) e, sempre que possível e praticável, devem igualmente processar-se em condições de ausência de luz, mesmo que de dia, devendo possibilitar aos formandos adquirir capacidade para:

.1 utilizar vários tipos de extintores portáteis de combate a incêndios;

.2 utilizar o aparelho respiratório autónomo;

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.3 extinguir pequenos incêndios, por exemplo, incêndios de origem eléctrica, de hidrocarbonetos petrolíferos e de gás propano;

.4 extinguir incêndios de grande extensão utilizando água (agulhetas de jacto e de chuveiro);

.5 extinguir incêndios utilizando espumífero, pó ou qualquer outro agente químico adequado;

.6 entrar e atravessar um compartimento no interior do qual foi injectado espumífero de alta taxa de expansão;

.7 combater incêndios em compartimentos fechados/confinados e cheios de fumo, envergando o aparelho respiratório autónomo;

.8 extinguir incêndios utilizando nevoeiro de água, ou qualquer outro agente de extinção adequado, num alojamento ou numa casa de máquinas simulada com fogo e fumo densos;

.9 extinguir um incêndio de hidrocarbonetos utilizando monitores de nevoeiro de água e agulhetas de jacto, pó químico seco ou monitores de espumífero; e

.10 executar um salvamento num espaço cheio de fumo, envergando o aparelho respiratório autónomo.

Generalidades

4 - Deve também ser chamada a atenção dos formandos para a necessidade de se manter sempre um estado de disponibilidade imediata.

NOÇÕES BÁSICAS DE PRIMEIROS SOCORROS

5 - A formação emoções básicas de primeiros socorros, conforme exigida pela regra VI/1, como parte integrante da formação básica, deve ser ministrada numa fase inicial da formação profissional, de preferência durante a formação antes de ter embarcado, com vista a permitir aos marítimos tomar acções imediatas quando em presença de um acidente ou qualquer outra emergência médica, até à chegada de uma pessoa com conhecimentos de primeiros socorros ou da pessoa responsável pela prestação dos cuidados médicos a bordo.

SEGURANÇA PESSOAL E RESPONSABILIDADES SOCIAIS

6 - As Administrações devem ter em consideração a importância da capacidade de comunicação e da capacidade linguística na salvaguarda da vida humana e de bens no mar e na prevenção da poluição do meio ambiente marinho. Face ao carácter internacional da indústria marítima, a confiança nas comunicações telefónicas entre navios e entre navios e terra, a crescente utilização de tripulações multinacionais e a preocupação de que os membros da tripulação devem ter a capacidade para comunicar com os passageiros em caso de emergência, a adopção de uma língua comum para comunicações marítimas promoveria práticas seguras reduzindo os riscos de erro humano nos casos de transmissão de informação essencial.

7 - Embora não seja universal, devido à prática comum, a língua inglesa está rapidamente a tornar-se a língua padrão nas comunicações para fins de segurança marítima em grande parte devido à utilização da Fraseologia Padrão nas Comunicações Marítimas, editado pela Organização Marítima Internacional (IMO).

8 - As Administrações devem considerar as vantagens de assegurar que os marítimos tenham a capacidade para utilizar, pelo menos, um vocabulário elementar em língua inglesa, com especial ênfase em termos e situações náuticas.

Secção B-VI/2

Orientações relativas à certificação de aptidão para a condução de embarcações salva-vidas, embarcações de salvamento e embarcações de salvamento rápidas

1 - Antes do início da formação devem ser cumpridos por todos candidatos os requisitos de aptidão médica, em particular os respeitantes acuidade visual e auditiva.

2 - A formação deve ser relevante no que respeita às disposições da Convenção SOLAS, emendada.

3 - As Partes podem também aceitar formação e experiência a bordo (ex: a participação em exercícios) para efeitos de manutenção dos padrões de competência estabelecidos no quadro A-VI/2, nas áreas mencionadas nos parágrafos 6.1.2, 6.1.3, 6.1.4, 6.2.1 e 12.1.5 da secção A-VI/2. As Administrações devem ter presente que a formação a bordo nestas áreas só pode ser efectuada com boas condições de tempo e quando os regulamentos portuários o permitam.

Secção B-VI/3

Orientações relativas à formação avançada em combate a incêndios

(Sem disposições.)

Secção B-V/4

Orientações relativas aos requisitos de primeiros socorros e de cuidados médicos

Os programas de formação para ministrar os primeiros socorros a bordo dos navios pelos marítimos designados para desempenharem as tarefas, funções responsabilidades constantes na coluna 1 do quadro A-VI/4-1, devem ter em consideração, conforme apropriado, as orientações contidas no Guia Médico Internacional para Navios, revisto.

Secção B-VI/5

Orientações relativas à formação e certificação dos oficiais de protecção (security) do navio

1 - A formação deve estar de acordo com as disposições do código ISPS e da Convenção SOLAS, emendada.

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2 - Ao completar a formação, um oficial de protecção do navio deve ter um conhecimento adequado da língua inglesa de forma a poder interpretar e comunicar correctamente, mensagens relevantes de protecção (security) para o navio e a instalação portuária.

3 - Em circunstâncias de excepcional necessidade, quando a pessoa titular do certificado de qualificação de oficial de protecção do navio estiver temporariamente indisponível, a Administração pode permitir que um marítimo que tenha funções e responsabilidades específicas de protecção (security) e que compreenda o plano de protecção (security) do navio, possa desempenhar as funções de oficial de protecção do navio e exercer as respectivas funções e responsabilidades, até ao próximo porto de escala ou por um período que não exceda os 30 dias, o que for maior. A companhia deve, tão breve quanto possível, informar as autoridades competentes do próximo(s) porto(s) de escala, das disposições entretanto tomadas.

Secção B-VI/6

Orientações relativas aos requisitos mínimos obrigatórios para a formação e instrução relativa à protecção (security) para todos os marítimos

Familiarização e sensibilização em protecção (security)

1 - Os marítimos e o pessoal de bordo não são especialistas em protecção (security) e não é objectivo da Convenção e deste Código torna-los especialistas em protecção (security).

2 - Os marítimos e o pessoal de bordo devem receber formação, instrução e familiarização adequadas relativas à protecção (security) por forma a adquirirem o conhecimento e compreensão exigidos ao exercício das funções para os quais forem designados e contribuírem colectivamente para o reforço da protecção (security).

3 - Os marítimos aos quais não tenham sido atribuídas funções de protecção (security) devem concluir a formação ou instrução em sensibilização para a protecção (security) estabelecida na secção A-VI/6 pelo menos uma vez no decurso da sua carreira profissional. Não é necessário reciclagem ou revalidação desta formação, desde que os respectivos marítimos ou pessoal de bordo, cumpram os requisitos relativos à familiarização em protecção (security) constantes na regra VI/6 e participem nos exercícios exigidos pelo Código ISPS.

Marítimos com funções atribuídas de protecção (security)

4 - A expressão "com funções atribuídas de protecção (security)" da secção A-VI/6, designa aqueles que têm funções e responsabilidades especificas de protecção (security) de acordo com o plano de protecção do navio.

5 - Os marítimos com funções atribuídas de protecção devem receber a formação estabelecida na secção A-VI/6, pelo menos uma vez no decurso da sua carreira profissional. Não é necessária reciclagem ou revalidação desta formação, desde que os respectivos marítimos ou pessoal de bordo, cumpram os requisitos relativos à familiarização em protecção (security) constantes na regra VI/6 e participem nos exercícios exigidos pelo Código ISPS.

6 - Aqueles que ministram "formação de familiarização relativa a protecção (security)" de acordo com a secção A-VI/6, não lhes deve ser exigido o cumprimento dos requisitos, quer da regra I/6 quer da secção A-I/6.

7 - Em circunstâncias de excepcional necessidade, quando as funções relativas à protecção (security) de bordo tenham que ser desempenhadas por uma pessoa qualificada para desempenhar funções designadas de protecção (security) e essa pessoa estiver temporariamente indisponível, a Administração pode permitir que um marítimo que não tenha funções designadas de protecção (security), possa desempenhar essas funções, até ao próximo porto de escala ou por um período que não exceda os 30 dias, o que for maior, desde que essa pessoa compreenda o plano de protecção do navio.

CAPITULO VII

Orientações respeitantes à certificação alternativa

Secção B-VII/1

Orientações relativas à emissão de certificados alternativos

(Sem disposições.)

Secção B-VII/2

Orientações relativas aos programas de formação especiais integrados convés e máquinas

1 - Cada Parte deve assegurar que qualquer programa de formação especial integrado convés e máquinas:

.1 é ministrado através de um programa de formação aprovado;

.2 tem lugar em terra em entidades formadoras e/ou em navios escola aprovados; e

.3 está documentado num livro de registo da formação aprovado.

Secção B-VII/3

Orientações relativas aos princípios a observar para a emissão de c certificados alternativos

(Sem disposições.)

CAPÍTULO VIII

Orientações relativas ao serviço de quartos

Secção B-VIII/1

Orientações relativas à aptidão para o serviço

Prevenção da fadiga

1 - Na observância dos requisitos relativos a períodos de descanso, as "condições de operação inadiáveis" devem ser interpretadas como o trabalho essencial a bordo do

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navio que não possa ser adiado por razões de segurança, protecção (security) ou de protecção ambiental, ou que não houve a mínima possibilidade de prever no início da viagem.

2 - Embora não exista uma definição técnica de fadiga aceite universalmente, todas as pessoas envolvidas na operação dos navios devem estar conscientes dos factores que podem contribuir pata a fadiga, incluindo, entre outros, os identificados pela organização, e a tomá-los em consideração durante o processo de tomada de decisões relacionadas com a operação do navio.

3 - Para aplicação da regra VIII/1, os factores seguintes devem ser tomados em consideração:

.1 as disposições elaboradas com o objectivo de prevenir a fadiga devem assegurar o não estabelecimento de horários de trabalho excessivos e pouco razoáveis. Em especial, os períodos mínimos de descanso especificados na secção A-VIII/1 não devem ser interpretados como se todas as horas restantes se destinassem, implicitamente, a ser utilizadas em tarefas do serviço de quartos ou outras;

.2 a frequência e a duração dos períodos de folga e a concessão de folgas para compensação são factores fundamentais para a prevenção do aumento da fadiga ao longo de um período de tempo específico; e

.3 as disposições poderão ser diferentes no caso de navios afectos a viagens curtas, desde que sejam tomadas medidas especiais de segurança.

4 - As excepções previstas no parágrafo 9 da secção A-VIII/1, devem ser elaboradas para corresponder às excepções estabelecidas na Convenção nº 180 de 1996, da OIT sobre Horas de Trabalho e Lotação dos Navios, ou da Convenção do Trabalho Marítimo da OIT, 2006, quando estiver em vigor. As circunstâncias sob as quais, as excepções são aplicadas, devem ser definidas pelas Partes.

5 - Com base na informação recebida, como resultado das investigações a acidentes marítimos, as Administrações devem manter sob permanente análise as suas disposições relativas à prevenção da fadiga.

Prevenção do abuso de drogas e de álcool

6 - O abuso do consumo de drogas e de álcool afectam directamente a aptidão e a capacidade dos marítimos para o desempenho das funções do serviço de quartos ou funções que incluam tarefas de segurança, prevenção da poluição ou de protecção (security). Os marítimos considerados sob a influência de drogas ou de álcool não devem ser autorizados a desempenhar funções de serviço de quartos ou funções designadas que envolvam aspectos de segurança, prevenção da poluição ou protecção, até que deixem de estar diminuídos nas suas capacidades para o exercício dessas funções.

7 - A Administração deve assegurar a implementação de medidas adequadas para evitar que a droga e o álcool diminuam a capacidade do pessoal dos quartos e dos que tenham funções designadas de segurança, prevenção da poluição e protecção, e deve estabelecer programas de rastreio, conforme necessário, que:

.1 identifiquem o abuso de drogas e de álcool;

.2 respeitem a dignidade, a privacidade, a confidencialidade e os direitos legais fundamentais dos indivíduos em questão; e

.3 tenham em consideração as directivas internacionais relevantes.

8 - As companhias devem considerar a implementação de políticas escritas e claras de prevenção do abuso de drogas e álcool, incluindo a proibição do consumo de bebidas alcoólicas nas quatro horas antes do exercício de funções de quarto, quer seja através do sistema de gestão da qualidade da companhia quer por meios que proporcionem aos marítimos informação e educação adequadas.

9 - Quem estiver envolvido no estabelecimento de programas de prevenção de abuso de drogas e álcool, devem ter em consideração as orientações contidas na publicação da OIT, "Programas de Prevenção de Drogas e Álcool na Indústria Marítima (Manual para os responsáveis pelos planos)", emendada.

Secção B-VIII/2

Orientações relativas à organização do serviço de quartos e princípios a observar

1 - As orientações operacionais seguintes devem ser tomadas em consideração pelas companhias, pelos comandantes e pelos oficiais de quarto.

PARTE 1 - ORIENTAÇÕES RELATIVAS À CERTIFICAÇÃO

(Sem disposições.)

PARTE 2 - ORIENTAÇÕES RELATIVAS AO PLANEAMENTO DA VIAGEM

(Sem disposições.)

PARTE 3 - ORIENTAÇÕES RELATIVAS AO SERVIÇO DE QUARTOS EM GERAL

(Sem disposições.)

PARTE 4 - ORIENTAÇÕES RELATIVAS AO SERVIÇO DE QUARTOS A NAVEGAR

Parte 4.1 - Orientações relativas ao serviço de quartos de navegação

Introdução

2 - Podem ser necessárias orientações especiais para tipos especiais de navios, assim como para navios que transportam cargas perigosas, nocivas, tóxicas ou altamente inflamáveis. O comandante deve fornecer estas orientações operacionais conforme aplicável.

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3 - É fundamental que os oficiais chefes de quarto de navegação reconheçam que o desempenho eficiente das suas funções é necessário para a defesa dos interesses relativos à salvaguarda da vida humana e de bens no mar, à protecção (security) e à prevenção da poluição do meio ambiente marinho.

Quartos em fundeadouro

4 - O comandante de um navio fundeado, num fundeadouro desabrigado, numa enseada ou em qualquer outro fundeadouro virtualmente em condições como "no mar", de acordo com a parte 4-1 do parágrafo 51, da secção A-VIII/2, do capítulo VIII, deve assegurar que a organização dos quartos é adequada para manter sempre um quarto seguro. Um oficial do convés deve ser sempre responsável pela segurança de um quarto em fundeadouro.

5 - O comandante, ao estabelecer a organização do serviço de quartos, proporcional à manutenção da segurança, protecção (security) e protecção do meio ambiente marinho, deve ter em consideração todas as circunstâncias e condições pertinentes, tais como:

.1 manter um estado contínuo de vigia visual, auditiva assim como por todos os outros meios disponíveis;

.2 requisitos de comunicações navio/navio e navio/terra;

.3 as condições de tempo, mar e gelo predominantes e actuais;

.4 a necessidade de monitorização da posição do navio;

.5 a natureza. dimensão e características do fundeadouro;

.6 condições de tráfego;

.7 situações que possam afectar a protecção (security) do navio;

.8 operações de carga e descarga;

.9 a designação de tripulantes de atenção (stand-by);

.10 o procedimento de alerta ao comandante e de manutenção da prontidão da máquina.

Parte 4.2 - Orientações relativas ao serviço de quartos na casa das máquinas

6 - Poderão ser necessárias orientações especiais para tipos de sistemas de propulsão, equipamentos auxiliares especiais e para navios que transportar substâncias nocivas, perigosas, tóxicas, altamente inflamáveis, ou qualquer outro tipo de carga especial. o chefe de máquinas deve fornecer, conforme aplicável, estas orientações operacionais.

7 - É essencial que os oficiais chefes de quarto de máquinas reconheçam que o desempenho eficiente das suas funções é necessário para a defesa dos interesses relacionados com a salvaguarda da vida humana e de bens no mar com a prevenção da poluição do meio ambiente marinho.

8 - Antes de assumir as funções de oficial chefe de quarto de máquinas, oficial que rende um quarto deve:

.1 estar familiarizado com a localização e com utilização do equipamento disponível e destinado a funções de salvaguarda da vida humana num ambiente nocivo ou tóxico;

.2 verificar se os materiais necessários para a administração de primeiros socorros estão facilmente disponíveis, em especial os necessários ao tratamento de queimaduras e escaldões; e

.3 quando em porto, fundeado ou atracado, ter em consideração:

.3.1 as actividades de carga ou descarga, o estado das actividades de reparação e manutenção e todas as outras operações que possam afectar o quarto; e

.3.2 as máquinas auxiliares utilizadas para serviços relacionados com o alojamentos da tripulação ou passageiros, com as operações de carga e descarga, com o abastecimento de água e com os sistemas de evacuação.

Parte 4.3 - Orientações relativas ao serviço de escuta radioeléctrica

Disposições gerais

9 - O Regulamento das Radiocomunicações obriga a que, entre outros requisitos, todas as estações de rádio de bordo estejam licenciadas, estejam sob a responsabilidade do comandante ou de outra pessoa responsável pelo navio e que sejam operadas unicamente sob o controlo de pessoal devidamente qualificado. O Regulamento das Radiocomunicações também exige que uma mensagem de socorro só seja enviada com autorização do comandante ou da pessoa responsável pelo navio.

10 - O comandante deve ter em consideração que todo o pessoal com responsabilidades no envio de mensagem de socorro deve ser instruído relativamente a, e ter conhecimento de, e ser capaz de operar correctamente todo o equipamento de radiocomunicações exigido pelo parágrafo 1.5 da regra I/14. Este aspecto deve ser registado no Diário de navegação ou das radiocomunicações.

Serviço de escuta radioeléctrica

11 - Em complemento aos requisitos respeitantes à escuta radioeléctrica, o comandante de qualquer navio deve garantir:

.1 o número adequado de tripulantes para opera a estação do navio com a finalidade de assegurar a troca de radiocomunicações em geral e em particular a correspondência pública, tendo em consideração as limitações impostas pelas funções daqueles que estão autorizados a operar a estação; e

.2 a disponibilidade do equipamento de radiocomunicações disponível a bordo e, quando instaladas, a manutenção em condições eficientes de operação das fontes de energia de emergência.

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12 - A instrução e a informação necessárias para utilização do equipamento de radiocomunicações e sobre os procedimentos para radiocomunicações de socorro para a segurança devem ser fornecidas periodicamente a todos os membros relevantes da tripulação, pela pessoa indicada na lista da tripulação como responsável principal pelas radiocomunicações durante operações de socorro. Tais factos devem ser registados no Diário de radiocomunicações.

13 - O comandante de qualquer navio não abrangido pela Convenção SOLAS deve assegurar que a escuta radioeléctrica é mantida de acordo com as determinações da Administração, tendo em conta as disposições relevantes do Regulamento das Radiocomunicações.

Operacional

14 - Antes do início de cada viagem, o operador de rádio responsável durante as operações de socorro deve assegurar que:

.1 todos os equipamentos de rádio para socorro e segurança, assim como as fontes de energia de emergência, estão a funcionar em condições eficientes e que estes factos são registados no Diário de radiocomunicações;

.2 todos os documentos exigidos por acordos internacionais, por avisos às estações de radiocomunicações dos navios e por documentos adicionais exigidos pela Administração estão disponíveis e actualizados em conformidade com os últimos suplementos e que o comandante é informado de qualquer discrepância;

.3 o relógio da estação de radiocomunicações é correctamente comparado com uma estação que emite sinais horários padrão;

.4 as antenas estão correctamente posicionadas, sem avarias e correctamente ligadas à massa; e

.5 tanto quanto praticável, os avisos de rotina aos navegantes e meteorológicos para a área em que o navio vai navegar estão actualizados, em conjunto com quaisquer outros avisos determinados pelo comandante e referentes a outras áreas e que estas informações são transmitidas ao comandante.

15 - Durante a navegação e operação da estação, o operador de radio deve:

.1 efectuar escuta nas frequências de socorro adequadas, para a possibilidade de identificar qualquer pedido de socorro; e

.2 enviar um registo de tráfego (nome, posição e destino, etc.) para a estação costeira local, ou para qualquer outra estação costeira apropriada, da qual possam ser esperadas comunicações de rotina.

16 - Durante o período em que a estação estiver em operação, o operador de rádio de quarto deve:

.1 verificar por comparação o relógio com um sinal horário padrão, pelo menos uma vez por dia;

.2 enviar um registo de tráfego à entrada e à saída da área de serviço da estação costeira da qual possam ser esperadas comunicações de rotina; e

.3 transmitir relatórios aos centros de controlo das posições dos navios, de acordo com as instruções do comandante.

17 - Durante o período de permanência no mar, o operador de rádio responsável pelo serviço de radiocomunicações em operações de socorro deve garantir o adequado funcionamento dos seguintes sistemas:

.1 do equipamento de radiocomunicações de socorro e segurança com Chamada Selectiva Digital (DSC), através de chamadas de verificação, pelo menos uma vez por semana; e

.2 do equipamento de radiocomunicações de socorro e segurança, através de chamadas de verificação, pelo menos uma vez por dia, mas sem emissão de qualquer sinal radioeléctrico.

Os resultados destes testes devem ser registados no Diário de radiocomunicações.

18 - O operador de rádio designado para operar as radiocomunicações de rotina deve assegurar a manutenção de um efectivo serviço de escuta radioeléctrica nas frequências em que é previsível a existência de trocas de radiocomunicações, tendo em atenção a posição do navio em relação às estações costeiras e às estações de terra das quais poderá ser esperado tráfego. Durante as trocas de tráfego, os operadores de rádio devem seguir as recomendações da União Internacional das Telecomunicações (IUT).

19 - No momento do encerramento da estação por chegada a um porto, o operador de rádio de quarto deve avisar a estação costeira local e outras estações com as quais tenha mantido contactos de radiocomunicações da chegada do navio e do enceramento da estação.

20 - No momento do encerramento da estação, o operador de rádio responsável pela mesma durante operações de socorro deve:

.1 assegurar-se de que todas as antenas estão ligadas à massa;

.2 verificar que as fontes de energia de emergência dispõem de carga suficiente.

Mensagens de socorro e procedimentos respectivos

21 - As mensagens e as chamadas de socorro têm absoluta prioridade sobre todas as outras transmissões. Todas as estações que recebem tais sinais são obrigadas, pelo Regulamento das Radiocomunicações, a cessar imediatamente todas as transmissões que possam interferir com as comunicações de socorro.

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22 - No caso de um pedido de socorro pelo próprio navio, o operador de rádio responsável pelas radiocomunicações de socorro deve assumir imediatamente a responsabilidade pelos procedimentos subsequentes, de acordo com as disposições do Regulamento das Radiocomunicações e com as recomendações relevantes da União Internacional das Telecomunicações (IUT).

23 - Aquando da recepção de um pedido de socorro:

.1 o operador de rádio de quarto deve informar o comandante e, se apropriado, o operador de rádio responsável pelas radiocomunicações em operações de socorro; e

.2 o operador de rádio responsável pelas radiocomunicações em operações de socorro deve avaliar a situação e assumir imediatamente a responsabilidade pelos procedimentos subsequentes de acordo com as disposições do Regulamento das Radiocomunicações e com as recomendações relevantes da União Internacional das Telecomunicações (IUT).

Mensagens de urgência

24 - Em casos de urgência afectando o próprio navio, o operador de rádio responsável pelas radiocomunicações em operações de socorro deve assumir imediatamente a responsabilidade pelos procedimentos subsequentes de acordo com as disposições do Regulamento das Radiocomunicações e com as recomendações relevantes da União Internacional das Telecomunicações (IUT).

25 - Em casos de radiocomunicações relacionadas com conselhos médicos, o operador de rádio responsável pelas radiocomunicações em operações de socorro deve seguir os procedimentos do Regulamento das Radiocomunicações e cingir-se às condições constantes da documentação internacional relevante (ver parágrafo 14.2), ou conforme for especificado pelo serviço via satélite disponível.

26 - Em casos de radiocomunicações relacionadas com transportes médicos, como definidos no anexo I ao Protocolo Adicional à Convenção de Genebra de 12 de Agosto de 1949, relativa à protecção das vítimas de conflitos armados internacionais (Protocolo I), o operador de rádio responsável pelas radiocomunicações em operações de socorro deverá seguir os procedimentos do Regulamento das Radiocomunicações.

27 - Aquando da recepção de uma mensagem urgente, o operador de rádio de quarto deve informar o comandante e, se apropriado, o operador de radiocomunicações responsável pelas mesmas em operações de socorro.

Mensagens de segurança

28 - Aquando da transmissão de uma mensagem de segurança, o comandante e o operador de rádio de quarto devem seguir os procedimentos do Regulamento das Radiocomunicações.

29 - Aquando da recepção de uma mensagem de segurança, o operador de rádio de quarto deve registar o seu conteúdo e agir de acordo com as instruções do comandante.

30 - As radiocomunicações navio-navio devem ser efectuadas no canal 13 de ondas métricas (VHF). As radiocomunicações navio-navio estão descritas no Regulamento das Radiocomunicações como "radiocomunicações de segurança de navegação entre navios".

Registo de radiocomunicações

31 - Os registos adicionais no Diário de radiocomunicações devem ser efectuados de acordo com os parágrafos 10, 12, 14, 17 e 33.

32 - As transmissões não autorizadas e incidentes com interferências prejudiciais devem, se possível, ser identificadas, registadas no Diário de radiocomunicações e colocadas à consideração da Administração de acordo com as disposições do Regulamento das Radiocomunicações, acompanhadas por um extracto do livro do Diário de radiocomunicações.

Manutenção de baterias

33 - As baterias que constituem uma fonte de energia para qualquer parte da instalação de radiocomunicações, incluindo as associadas a fontes de energia de emergência, são da responsabilidade do operador de rádio responsável pelas radiocomunicações em operações de socorro e devem ser:

.1 testadas diariamente em carga e em descarga e, quando necessário, ser carregadas ate ao seu limite de carga;

.2 testadas quando praticável semanalmente por intermédio de um densímetro, ou, quando não puder ser utilizado um densímetro, através de um ensaio de carga adequado; e

.3 verificada mensalmente a segurança da totalidade das baterias e das suas ligações, assim como o estado das baterias e do seu compartimento, ou compartimentos.

Os resultados destes ensaios devem ser registados no Diário de radiocomunicações.

PARTE 5 - RECOMENDAÇÕES RESPEITANTES AO SERVIÇO DE QUARTOS EM PORTO

(Sem disposições.)

(Footnotes)

[1]Deve ser entendido que os oficiais de convés não precisam estar qualificados na vistoria de navios

[2]O(s) Curso(s) Modelo da IMO pode(m) ser de ajuda na elaboração de cursos.

[3]Ver parágrafo 72 da Secção B-I/12 deste Código

[4]Ver parágrafo 72 da Secção B-I/12 deste Código

[5]O Código de Práticas da ILO sobre "Prevenção de Acidentes a Bordo de Navios no Mar e no Porto" pode ser de ajuda na elaboração de cursos.

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