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# 澳門特別行政區公報 BOLETIM OFICIAL DA REGIÃO ADMINISTRATIVA ESPECIAL DE MACAU

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## 澳門特別行政區

REGIÃO ADMINISTRATIVA ESPECIAL  
DE MACAU

## 行政長官辦公室

## GABINETE DO CHEFE DO EXECUTIVO

## 第39/2013號行政長官公告

## Aviso do Chefe do Executivo n.º 39/2013

中華人民共和國於二零零五年七月八日以照會通知國際海事組織秘書長，經修訂的1978年海員培訓、發證和值班標準國際公約及其1991年、1994年、1995年、1997年、1998年修正案（下稱“公約及修正案”）適用於澳門特別行政區；

Considerando que a República Popular da China, por nota datada de 8 de Julho de 2005, notificou o Secretário-Geral da Organização Marítima Internacional (OMI), sobre a aplicação na Região Administrativa Especial de Macau da Convenção Internacional sobre Normas de Formação, de Certificação e de Serviços de Quartos para os Marítimos (STCW), 1978, tal como emendada, e das suas emendas de 1991, 1994, 1995, 1997 e de 1998, adiante designado por Convenção e Emendas;

國際海事組織秘書長於二零零五年七月二十六日以照會確認公約及修正案適用於澳門特別行政區，並自二零零五年七月十八日起生效；

Considerando igualmente que o Secretário-Geral da OMI, por nota datada de 26 de Julho de 2005, confirmou a aplicação da Convenção e Emendas na Região Administrativa Especial de Macau, com efeitos a partir de 18 de Julho de 2005;

公約締約國於二零一零年六月二十五日馬尼拉大會上透過第1號及第2號決議分別通過了有關《1978年海員培訓、發證和值班標準國際公約》附則及《海員培訓、發證和值班規則》的修正案（下稱“2010年馬尼拉修正案”）；

Considerando ainda que a Conferência das Partes na Convenção, realizada em 25 de Junho de 2010 em Manila, através das resoluções n.º 1 e n.º 2, adoptou as Emendas ao Anexo da Convenção Internacional sobre Normas de Formação, de Certificação e de Serviço de Quartos para os Marítimos (STCW), 1978, e ao Código de Formação, de Certificação e de Serviço de Quartos para os Marítimos, adiante designado por Emendas de Manila de 2010;

2010年馬尼拉修正案取代了《1978年海員培訓、發證和值班標準國際公約》附則及《海員培訓、發證和值班規則》的原文本內容及其修正案，並以默認接受方式自二零一二年一月一日起對中華人民共和國生效，包括對澳門特別行政區生效；

Mais considerando que as Emendas de Manila de 2010, que substituem as versões anteriores do texto com as respectivas emendas, quer do Anexo da Convenção Internacional sobre Normas de Formação, de Certificação e de Serviço de Quartos para os Marítimos, 1978, quer do Código de Formação, de Certificação e de Serviço de Quartos para os Marítimos, são de aceitação tácita e entraram em vigor em relação à República Popular da China, incluindo a Região Administrativa Especial de Macau, em 1 de Janeiro de 2012;

基於此，行政長官根據澳門特別行政區第3/1999號法律第六條第一款的規定，命令公佈：

O Chefe do Executivo manda publicar, nos termos do n.º 1 do artigo 6.º da Lei n.º 3/1999 da Região Administrativa Especial de Macau:

——二零一零年六月二十五日通過有關《1978年海員培訓、發證和值班標準國際公約》附則的馬尼拉修正案的中、英文正式文本；及

— as Emendas de Manila ao Anexo da Convenção Internacional sobre Normas de Formação, de Certificação e de Serviço de Quartos para os Marítimos (STCW), 1978, adoptadas em 25 de Junho de 2010, nos seus textos autênticos em línguas chinesa e inglesa; e

——二零一零年六月二十五日通過有關《海員培訓、發證和值班規則》的馬尼拉修正案的中、英文正式文本。

— as Emendas de Manila ao Código de Formação, de Certificação e de Serviço de Quartos para os Marítimos, adoptadas em 25 de Junho de 2010, nos seus textos autênticos em línguas chinesa e inglesa.

二零一三年十月十日發佈。

Promulgado em 10 de Outubro de 2013.

行政長官 崔世安

O Chefe do Executivo, *Chui Sai On*.

《1978年海員培訓、發證和值班標準國際公約》附則

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

《1978年海員培訓、發證和值班標準國際公約》附則由以下文字替代：

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

“附則

“ANNEX

第 I 章

CHAPTER I

總則

General provisions

第I/1條

**Regulation I/1**

定義和說明

*Definitions and clarifications*

1 除另有明文規定外，就本公約而言：

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

.1 規則係指本公約附則中的規則；

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

.2 經認可係指締約國按照上述第一款規則認可；

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

.3 船長係指指揮船舶的人；

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

.4 高級海員係指除船長以外的，根據國家法律或法規所指定，或在沒有這種指定時根據集體協議或習慣做法指定的海員；

.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 甲板部高級海員係指符合本公約第II章規定的合格的高級海員；

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

.6 大副係指級別僅低於船長並且在船長不能工作時替代船長指揮船舶的高級海員；

.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 輪機部高級海員係指符合本公約第III/1、III/2或III/3條規定的合格的高級海員；

.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 輪機長係指負責船舶機械推進以及機械和電氣裝置的操作和維護的資深的輪機部高級海員；

.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 大管輪係指級別僅低於輪機長，並且在輪機長不能工作時替代輪機長負責船舶機械推進以及機械和電氣裝置的操作和維護的輪機部高級海員；

.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 助理輪機員係指正在接受培訓以成為輪機部高級海員並為國家法律或法規指定為輪機員助理的人；

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

.11 無線電操作員係指持有主管機關根據《無線電規則》簽發或承認的適任證書的人員；

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

- .12 全球海上遇險與安全系統 (GMDSS) 無線電操作員係指符合本公約第IV章規定的合格的人員;
- .13 普通海員係指除船長或高級海員以外的海員;
- .14 近岸航行係指在締約國劃定的該國附近水域內的航行;
- .15 推進功率係指在船舶登記證書或其他正式文件上標明的以千瓦計的船舶所有主推進機械的最大連續額定輸出功率的總和;
- .16 無線電職責包括按照相應的《無線電規則》、《國際海上人命安全公約》以及由主管機關自行決定採用的本組織有關建議案所進行的值班、技術保養和維修;
- .17 油船係指建造並且用於載運散裝石油和石油產品的船舶;
- .18 化學品船係指建造或改建成並且用於散裝載運《國際散裝化學品規則》第17章所列的任何液體產品的船舶;
- .19 液化氣體船係指建造或改建成並且用於散裝載運《國際氣體運輸船規則》第19章所列的任何液化氣體或其他產品的船舶;
- .20 客船係指經修正的《1974年國際海上人命安全公約》所界定的船舶;
- .21 滾裝客船係指經修正的《1974年國際海上人命安全公約》所界定的設有滾裝貨物處所或特種處所的客船;
- .22 月係指日曆月或由少於1個月的時間段所累積成的30天;
- .23 《培訓規則》係指由1995年大會第2號決議通過，並可由本組織加以修正的《海員培訓發證和值班 (STCW) 規則》;
- .24 職能係指《培訓規則》指明的船舶操作、海上人命安全或保護海洋環境所需的一組任務、職責和責任;
- .25 公司係指船舶所有人或任何其他組織或人員，諸如自船舶所有人處接過船舶營運責任並同意承擔這些規則規定的所有義務和責任的船舶管理人或光船承租人;
- .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, 1974 (SOLAS), as amended 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 spaces or special category spaces as defined in the International Convention for the Safety of Life at Sea, 1974 (SOLAS), 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 by the Organization;
- .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 海上服務資歷係指與簽發的證書或其他資格有關的船上服務；

.27 《船港保安規則》係指由《1974年國際海上人命安全公約》締約國大會在2002年12月12日以第2號決議通過，並可由本組織加以修正的《國際船舶和港口設施保安（ISPS）規則》；

.28 船舶保安員係指由公司指定向船長負責的負責船舶保安的船上人員；船舶保安包括船舶保安計劃的實施和維持以及與公司保安員和港口設施保安員進行聯絡；

.29 保安職責包括經修正的《1974年國際海上人命安全公約》（經修正的《1974年安全公約》）第XI/2章以及《國際船舶和港口設施保安規則》（ISPS規則）所界定的所有保安任務及職責；

.30 適任證書係指依據本附則第II、III、IV或第VII章的規定向船長、高級海員以及全球海上遇險與安全系統無線電操作員簽發和簽註的，並准許其合法持有人按證書標明的責任等級擔任職務和履行職能的證書；

.31 培訓合格證書係指向海員簽發的除適任證書以外的，表明符合本公約的有關培訓、適任或海上服務資歷相關要求的證書；

.32 書面證明係指除適任證書或培訓合格證書以外的、用以證明已符合本公約的相關要求的文件；

.33 電子員係指符合本公約第III/6條規定的合格高級海員；

.34 高級值班水手係指符合本公約第II/5條規定的合格普通海員；

.35 高級值班機工係指符合本公約第III/5條規定的合格普通海員；

.36 電子技工係指符合本公約第III/7條規定的合格的普通海員；

2 本附則中的規則由《培訓規則》A部分的強制性條款作補充，並且：

.1 提及任何一條規則的要求時，則也提及《培訓規則》A部分中的對應章節；

.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;

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

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

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 在適用這些規則時，應最大限度地考慮到《培訓規則》B部分中的有關指導和解釋材料，以達到在全球更為統一地實施本公約的規定；

.3 對《培訓規則》A部分的任何修正均須按照本公約第XII條關於適用於規則的修正程序的規定予以通過、生效和實施；並且

.4 《培訓規則》B部分須由海上安全委員會按照其議事規則進行修正。

3 本公約第VI條所述及的“主管機關”和“發證的主管機關”不得被解釋為妨礙任何締約國根據這些規則的規定進行證書的簽發和簽註。

## 第I/2條

### 證書和簽註

1 適任證書須在核實必要的書面證明的真實性和有效性後僅由主管機關簽發。

2 根據規則第V/1-1條和第V/1-2條的規定簽發給船長及高級海員的證書須僅由主管機關簽發。

3 證書須使用發證國的一種或數種官方語言。如使用的語言不是英文，證書文本須包括英文譯文。

4 關於無線電操作員，締約國可以：

.1 在為簽發符合《無線電規則》的證書所進行的考試中，包括有關規則所要求的附加知識；或

.2 簽發一張單獨的證書，指明持有人具有相關規則所要求的附加知識。

5 本公約第VI條所要求的、用以證明簽發證書的簽註須僅在全部公約要求得到遵守的情況下簽發。

6 締約國可自行決定將簽註併入按《培訓規則》第A-I/2節規定所簽發證書的格式中。若併入，所用的格式須是第A-I/2節第1段規定的格式。若另行簽註，簽註所使用的格式須是該節第2款規定的格式。

7 主管機關根據規則第I/10條承認：

.1 適任證書；或

.2 根據規則第V/1-1條及第V/1-2條的規定簽發給船長及高級海員的培訓合格證書，須僅在確保證書的真實性及有效性之後方可對該證書進行簽註，以證明其認可。

.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.

簽註須僅在公約全部的要求得到遵守的情況下簽發。簽註所使用的格式須是《培訓規則》第A-I/2節第3款所規定的格式。

8 第5、6和7款所述的簽註：

.1 可作為單獨的文件簽發；

.2 須僅由主管機關簽發；

.3 每份須使用單獨的編號，只有證明簽發證書的簽註可使用與相關證書相同的編號，但該編號應是單獨的；並且

.4 須在所簽註的證書到期時或在簽發證書的締約國撤銷、暫停有效或註銷該證書時到期，並且在任何情況下，自簽發之日起不得超過5年。

9 允許證書持有人擔任的職務須在簽註表格中載明，其用語應與主管機關的適用的安全配員要求中的用語一致。

10 主管機關可以採用不同於《培訓規則》第A-I/2節規定的格式，但最低限度是對需填寫的項目使用羅馬字母和阿拉伯數字，並考慮到第A-I/2節所允許的不同形式。

11 以規則第I/10條第5款的規定為條件，本公約所要求的任何證書的原件須保存在證書持有人服務的船上。

12 各締約國須確保證書僅簽發給符合本條規則要求的證書申請人。

13 證書申請人須提供下列符合要求的證明：

.1 身份；

.2 年齡不小於有關申請證書的規則中規定的年齡；

.3 符合《培訓規則》第A-I/9節規定的健康標準；

.4 完成所申請證書規定的海上服務資歷和相關強制性培訓；並且

.5 達到這些規則為在證書的簽註中指明的職務、職能和級別所規定的適任標準。

14 各締約國應根據適用情況保持對船長、高級海員和普通海員的所有證書和簽註的簽發、到期、再有效、暫停有效、註銷或報失、損毀以及簽發特免證明的登記；

15 各締約國承諾，當海員向其他締約國和公司呈交其證書以求根據規則第I/10條得到承認或被僱用上船，而這些國家和

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.

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

公司需要核查證書的真實性和有效性時，向其提供適任證書、簽註和特免證明情況的資料。

16 本條規則第15款要求提供的資料狀況信息須從2017年1月1日起，用英文，以電子手段提供。

### 第I/3條

#### 關於近岸航行的原則

1 任何為實施本公約而規定近岸航行的締約國不得將培訓、資歷或發證要求強加於在懸掛另一締約國國旗並從事此類航行的船舶上服務的海員，以致造成對這些海員的要求比在懸掛本國國旗的船舶上服務的海員更為嚴格的情況。在任何情況下，任何締約國不得將超過公約中對從事非近岸航行船舶的要求，強加於在懸掛另一締約國國旗的船舶上服務的海員。

2 對於享受公約近岸航行（包括在其他締約國定義範圍內的近岸航行）規定惠利的一締約國船舶，該締約國須與相關締約國達成約定，具體規定所涉及航區和其他有關條件。

3 對於懸掛一締約國國旗，經常在另一締約國海岸附近從事近岸航行的船舶，其船旗國應為在此種船舶上服務的海員規定至少相當於船舶所航經的締約國的培訓、資歷和發證要求，但這些要求不得超出本公約對從事非近岸航行船舶所規定的要求。航行超出一締約國所規定的近岸航行範圍並進入定義未包括水域的船舶的海員須滿足本公約相應的適任要求。

4 締約國對懸掛其國旗的船舶，當其經常在一非締約國海岸附近從事該締約國規定的近岸航行時，可給予本公約有關近岸航行規定的惠利。

5 在規定的近岸航行區域航行時，若某一締約國與有關締約國就航區和其它相關條件等具體事宜達成約定，則其簽發的近岸航行區域海員證書，有關締約國可予以接受。

6 根據本條規則的要求規定近岸航行的締約國須：

.1 符合第A-I/3節所明確的有關近岸航行的原則；

.2 遵照規則第I/7條的要求將所採用的規定的細節通知秘書長；並且

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 fulfil 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 在依據規則第I/2條第5、6或7款要求簽發的簽註中包含近岸航行限制。

7 本規則不以任何方式限制任何國家的管轄權，不論其是否為締約國。

#### 第I/4條

##### 監督程序

1 經正式授權的監督官員按第X條規定所行使的監督須限於下列各項：

.1 按照第X(1)條核實所有在船上服務又被要求按本公約規定取得證書的海員是否都持有適當的證書或有效的特免證明；或是否根據規則第I/10條第5款向主管機關提供了文件，證明已提交簽註申請；

.2 核實在船上服務的海員的人數和證書是否符合主管機關的適用的安全配員要求；和

.3 如果因為發生了下列任一情況而有明顯理由認為未能維持恰當的值班和保安標準，則根據《培訓規則》第A-I/4節，酌情對上海員維持本公約要求的值班和保安標準的能力進行評估；

.3.1 船舶發生碰撞、擱淺或觸礁；或

.3.2 船舶在航、錨泊或靠泊時，違反任一國際公約而非法排放物質；或

.3.3 以不穩定或不安全方式操縱船舶，從而未遵循本組織通過的定線措施或安全航行方法和程序；或

.3.4 以其它危及人員、財產或環境的方式或危及保安的方式操縱船舶。

2 可被認為危及人員、財產或環境的缺陷包括下列各項：

.1 海員未持有證書、適當的證書或有效的特免證明，或未能依據規則第I/10條第5款向主管機關提供文件，證明已提交了簽註申請；

.2 未符合主管機關適用的安全配員要求；

.3 未按主管機關為船舶規定的要求作出航行或輪機值班安排；

.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

.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 routing 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 沒有專門負責操作安全航行、安全無線電通信或防止海洋污染必要設備的合格人員值班；以及

.5 未能為航次開始第一個班次和其後的接班提供經過充分休息並適於值班職責的人員。

3 只有未能糾正第2款所提及的任何缺陷，而且實施監督的締約國確定這些缺陷危及人員、財產或環境，才構成締約國按本公約第X條滯留船舶的理由。

## 第I/5條

### 國家規定

1 各締約國須制定有關程序，用於對締約國簽發的證書或簽註的持有人在履行其與證書有關的職責時出現的可能對海上人命或財產安全或對海洋環境構成直接威脅的所舉報的不適任表現、行為、不為或危及保安的行為進行公正的調查，並就此原因和防止欺詐而撤銷、暫停或註銷這種證書。

2 各締約國須採取並且實施恰當的措施，以防止與所簽發的證書和簽註有關的欺詐和其它非法行為。

3 各締約國須對懸掛其國旗的船舶或由其正式發證的海員不遵守其為實施本公約而制定的國內法規規定的情況，規定處罰或紀律措施。

4 這種處罰或紀律措施應特別就下列情況作出規定並加以實施：

.1 公司或船長僱用了未持有本公約所要求的證書的人員；

.2 船長准許未持有所要求的證書、有效的特免證明或規則第I/10條第5款所要求的證明文件的人員，去執行按這些規則規定應由持有適當證書的人員執行的職能或擔任的職務；

.3 個人利用欺騙或偽造文件的方式得到僱用，執行按這些規則規定應由持有適當證書或特免證明的人員執行的職能或擔任的職務。

5 當一締約國有明顯理由相信，在其管轄權範圍內的任何公司或人員對第4款所述的任何明顯不符合本公約的情況負有責任或了解內情時，該締約國須儘可能與通知它的、欲在其管轄權內提起訴訟的任何締約國進行合作。

.4 absence in a watch of a person qualified to operate equipment essential to safe navigation, safety radio-communications 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.

**第I/6條***培訓和評估*

各締約國須保證：

.1 本公約所要求的對海員的培訓和評估是按照《培訓規則》第A-I/6節規定進行管理、監督和檢查的；以及

.2 按本公約要求負責海員培訓和適任評估的人員，按照《培訓規則》第A-I/6節規定，對所涉及培訓或評估的種類和級別是稱職合格的。

**第I/7條***資料交流*

1 除第IV條要求交流的資料外，各締約國須將《培訓規則》可能要求的關於締約國為使本公約得以充分和完全實施而採取的其他步驟的有關資料，在規定時間內按照《培訓規則》第A-I/7節所述的格式送交秘書長。

2 在收到第IV條和《培訓規則》第A-I/7節規定的全部資料，並且這些資料可確定本公約規定已得以充分和完全實施後，秘書長須就此事向海上安全委員會提交一份報告。

3 在海上安全委員會按其通過的程序確認所提供的資料表明本公約規定已得以充分和完全實施後：

.1 海上安全委員會須認定這些有關的締約國；並且

.2 複查已交流資料且所提供資料表明其充分和完全實施了本公約相關規定的締約國清單，僅將有關締約國保留在清單裡；並且

.3 其他締約國須有權根據規則第I/4條和第I/10條的規定，原則上承認由第3.1款認定的締約國所簽發或代表其簽發的證書是符合本公約規定的。

4 本公約及《培訓規則》的修正案，若其生效日期遲於第1款規定的資料已送交或將送交秘書長的日期，則不受第A-I/7節第1和2款規定的約束。

**第I/8條***質量標準*

1 各締約國須保證：

.1 按照《培訓規則》第A-I/8節的規定，所有由其授權的非政府機構或實體所執行的培訓、適任評估、發證（包括健康證

**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.

**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 shall 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 compe-

書)、簽註和再有效工作,要通過一個質量標準體系受到連續的監控,以確保達到既定目標,其中包括有關教員和評估員的資格和經歷的目標;以及

.2 如果政府機構或實體進行這種工作,須有一個質量標準體系。

2 各締約國還須保證由不參與該項工作的合格人員,按照《培訓規則》第A-I/8節的規定,定期進行評價。評價應包括按照本公約和《培訓規則》修正案對國家規則和程序所作的變更,且其生效日期應在資料送交秘書長的日期之後。

3 第2款要求的含有評價結果的報告須按照《培訓規則》第A-I/7節指明的格式送交秘書長。

## 第I/9條

### 健康標準

1 各締約國須根據本規則以及《培訓規則》第A-I/9節的規定制定海員健康標準和健康證書簽發程序。

2 各締約國須根據《培訓規則》第A-I/9節的規定確保由該締約國認可的海員體檢從業醫生評估海員的健康狀況。

3 持有按本公約規定簽發的證書並正在海上服務的每位海員,也應持有按本規則和《培訓規則》第A-I/9節要求簽發的有效健康證書。

4 每位證書申請人須:

- .1 年齡不小於16歲;
- .2 提供令人滿意的身份證明;並且
- .3 符合該締約國制定的適用的健康標準。

5 健康證書的有效期最長為兩年,若海員年齡小於18歲,則有效期最長為一年。

6 若在航行中健康證書有效期期滿,則該健康證書在到達下一個有締約國認可的從業醫生的停靠港之前仍然有效,但為期不得超過3個月。

tence, 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 在緊急情形裡，主管機關可允許一位海員在無有效健康證書的情況下工作，直至有該締約國認可的從業醫生的下一停靠港，但

- .1 這一允許期限不得超過3個月；以及
- .2 該海員持有近期的有效期期滿後的健康證書。

## 第I/10條

### 證書的承認

1 各主管機關須保證遵守本條規則的規定，以便根據規則第I/2條第7款規定的簽註來承認其他締約國簽發或授權簽發給船長、高級海員或無線電操作員的證書，並保證：

.1 主管機關通過對該締約國的評價，其中可包括對設施和程序的檢查，確認本公約有關適任標準、培訓、發證以及質量標準的要求得以完全遵守；

.2 與有關締約國約定，承諾迅速通知為遵守本公約而提供的培訓和發證安排中的任何重大變化。

2 須採取措施以確保那些為了得到承認而提交按規則第II/2、III/2或III/3條簽發的證書或按規則第VII/1條簽發的《培訓規則》規定的管理級證書的海員，具有與允許其履行的職能有關的、主管機關的海事法規的適當知識。

3 須按照規則第I/7條的要求向秘書長提交根據本條規則所提供的資料和所約定的措施。

4 對非締約國簽發或授權簽發的證書不予承認。

5 儘管規則第I/2條第7款已有要求，但主管機關在需要時，可在第1款規定的前提下，允許海員持有按另一締約國要求簽發和簽註而用於該締約國船上的適當和有效證書，在懸掛其國旗的船上服務不超過3個月，雖然該證書尚未經過簽註而使其適於在懸掛該主管機關國旗的船上服務。應隨時可提供已向該主管機關提交簽註申請的證明文件。

6 根據本條規則的規定，由一主管機關為承認或證明承認另一締約國所發證書而簽發的證書和簽註，不得作為另一主管機關進一步承認的基礎。

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.

## 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 regulation 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.

**第I/11條***證書的再有效*

1 所有在海上服務或在岸上一段時間後意欲重返海上服務的持有根據本公約除第VI章外的各章簽發或承認的證書的船長、高級海員和無線電操作員，為了繼續有資格從事海上服務，應按要求在不超過5年的間隔中：

- .1 符合規則第I/9條規定的健康標準；並且
- .2 按照《培訓規則》第A-I/11節具備持續的專業適任能力。

2 在國際上議定的特殊培訓要求約束的船上繼續從事海上服務的所有船長、高級海員和無線電操作員須圓滿完成經認可的有關培訓。

3 在油船上繼續從事海上服務的所有船長和高級海員須符合本規則第1款的規定，並按《培訓規則》第A-I/11節第3款的要求，在不超過5年的間隔內取得繼續從業適任資格。

4 各締約國須將2017年1月1日前簽發證書的申請人所要滿足的適任標準，與《培訓規則》A部分中為取得適當證書所指明的適任標準作一比較，並須決定是否有必要要求這類證書的持有人接受適當的知識更新培訓或評估。

5 締約國須與有關方面協商，制訂或促使制訂一個《培訓規則》第A-I/11節中所規定的知識更新課程大綱。

6 為了使船長、高級海員和無線電操作員達到知識更新的目的，各主管機關須保證向懸掛其國旗的船舶提供有關海上人命安全、保安和海洋環境保護的國內和國際規則最新變動的文本。

**第I/12條***模擬器的使用*

1 下列各項須符合《培訓規則》第A-I/12節規定的性能標準和其他規定，以及《培訓規則》A部分中為任何有關證書規定的其他要求：

- .1 所有強制性的基於模擬器的培訓；
- .2 《培訓規則》A部分要求的、需使用模擬器進行的任何適任評估；以及
- .3 《培訓規則》A部分要求的、需使用模擬器進行的任何持續熟練程度的演示。

**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 boardships 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.

**第I/13條***試驗的實施*

1 這些規則不妨礙主管機關授權懸掛其國旗的船舶參與試驗。

2 就本條規則而言，*試驗*一詞係指在一段有限的時間內實施的一項或一系列可能包括自動或綜合系統的使用在內的試驗，其目的在於評價執行具體任務或滿足本公約規定的特定安排的可供選擇的辦法。這種可供選擇的辦法所提供的安全和防止污染程度至少與這些規則規定的相同。

3 授權船舶參與試驗的主管機關須確信這種試驗的安全和防止污染水平至少與這些規則規定的相同。這種試驗應按照本組織通過的導則進行。

4 這類試驗的詳情須儘早報告本組織，不得晚於計劃開始試驗之日前6個月。本組織須將這些資料轉發所有締約國。

5 按照第1款授權的試驗的結果和主管機關對這些結果可能提出的任何建議須報告本組織。本組織須將這些結果和建議轉發所有締約國。

6 任何締約國如對按照本規則授權的特定試驗持反對意見，須儘早將反對意見通知本組織。本組織須將反對意見的詳情轉發所有締約國。

7 授權進行試驗的主管機關須尊重收到的其他主管機關對該項試驗的反對意見，指示懸掛其國旗的船舶在航行於向本組織提出反對意見的沿海國水域時不進行試驗。

8 當主管機關在試驗的基礎上斷定，某一特定系統所提供的安全和防止污染水平至少與這些規則規定的相同時，則可授權懸掛其國旗的船舶不受限制地繼續使用該系統進行試驗，但應滿足下列要求：

.1 在按照第5款提交了試驗結果後，主管機關須向本組織提供任何這類授權的詳情，包括指明可能獲得該授權的具體船舶，本組織將把這些資料轉發所有締約國；

.2 根據本款授權的任何試驗須按照本組織制定的任何有關導則來進行，並達到試驗時同樣的應用程度；

.3 這類試驗須按第7款規定尊重收自其他主管機關的反對意見，只要這類反對意見還未撤回；並且

**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.

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, security 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, security 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, security 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 只有在海上安全委員會對本公約的修正案適當與否作出決定期間，而且如果適當，對在修正案生效以前這類操作應暫停或繼續進行與否作出決定期間，按照本款授權的試驗才能被准許。

9 應任一締約國的請求，海上安全委員會須確定審議試驗結果並作出適當決定的日期。

#### 第I/14條

##### 公司的責任

1 各主管機關須按照第A-I/14節的規定責成各公司按照本公約的規定負責指派海員到其船上服務，並須要求各公司確保做到：

.1 每位被指派到其任一船上的海員均按照本公約規定和主管機關制定的規定持有適當的證書；

.2 其船舶是按照主管機關適用的安全配員要求進行海員配備的；

.3 指派到其任一船上的海員均接受了本公約要求的知識更新培訓；

.4 保持並隨時可查其船上僱用的所有海員的有關文件和數據，包括但不限於海員的經歷、培訓、健康狀況以及對所指派工作的適任情況的文件和數據；

.5 被指派到任一船上服務的海員熟悉其具體職責以及與其日常或應急職責有關的所有船舶佈置、裝置、設備、程序和船舶特性；

.6 船舶在編人員在緊急情況下和執行與安全或防止、減輕污染有關的重要職能時，能有效地協調其活動；並且

.7 在任何時候都須按《1974年國際海上人命安全公約》第V章第14條第3和4款的規定進行有效的口頭溝通。

#### 第I/15條

##### 過渡性條款

1 在2017年1月1日之前，締約國可按照本公約在2012年1月1日之前適用的規定，對在2013年7月1日之前開始了經認可的海上服務資歷、經認可的教育和培訓計劃或經認可的培訓課程的海員，繼續簽發、承認和簽註其證書。

.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 on 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 International Convention for the Safety of Life at Sea, 1974 (SOLAS), as amended.

#### Regulation I/15

##### Transitional provisions

1 Until 1 January 2017, a Party may continue to issue, recognize and endorse certificates in accordance with the 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 在2017年1月1日之前，締約國可按照本公約在2012年1月1日之前適用的規定，繼續更新證書和簽註及使證書和簽註再有效。

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.

## 第 II 章 船長和甲板部

## CHAPTER II Master and deck department

### 第II/1條

對500總噸或以上船舶的負責航行值班的高級海員發證的強制性最低要求

1 每位在500總噸或以上的海船上負責航行值班的高級海員，須持有適任證書。

2 每位證書申請人須：

.1 年齡不小於18歲；

.2 具有不少於12個月的經認可的海上服務資歷，作為包括符合《培訓規則》第A-II/1節要求的船上培訓在內的經認可的培訓計劃的組成部分，並在經認可的培訓記錄簿中載明，或具有不少於36個月的經認可的海上服務資歷；

.3 在所要求的海上服務資歷中，已在船長或合格的高級海員的監督下履行駕駛台值班職責不少於6個月；

.4 視情況符合第IV章有關規則的可適用的要求，以按照《無線電規則》履行指定的無線電職責；

.5 已完成經認可的教育和培訓，並且達到《培訓規則》第A-II/1節規定的適任標準；並且

.6 達到《培訓規則》第A-VI/1節第2款、第A-VI/2節第1至4款、第A-VI/3節第1至4款以及第A-VI/4節第1至3款規定的適任標準。

### 第II/2條

對500總噸或以上船舶的船長和大副發證的強制性最低要求

3000總噸或以上船舶的船長和大副

1 每位在3000總噸或以上的海船上的船長和大副，須持有適任證書。

2 每位證書申請人須：

.1 符合對500總噸或以上船舶的負責航行值班的高級海員的發證要求，並在該職位上具有經認可的海上服務資歷：

### 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 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.

### 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 申請大副證書，不少於12個月；和

.1.2 申請船長證書，不少於36個月；但是，如果已具有不少於12個月的大副海上服務資歷，則此段時間可縮短為不少於24個月；並且

.2 已完成經認可的教育和培訓，並且達到《培訓規則》第A-II/2節為3000總噸或以上船舶的船長和大副規定的適任標準。

#### 500至3000總噸船舶的船長和大副

3 每位在500至3000總噸海船上的船長和大副，須持有適任證書。

4 每位證書申請人：

.1 申請大副證書，須符合對500總噸或以上船舶的負責航行值班的高級海員的要求；

.2 申請船長證書，須符合對500總噸或以上船舶的負責航行值班的高級海員的要求，並在該職位上具有不少於36個月的經認可的海上服務資歷；但是，如果已具有不少於12個月的大副海上服務資歷，則此段時間可縮短為不少於24個月；並且

.3 須已完成經認可的培訓，並且達到《培訓規則》第A-II/2節為500至3000總噸船舶的船長和大副規定的適任標準。

#### 第II/3條

對未滿500總噸船舶的負責航行值班的高級海員和船長發證的強制性最低要求

#### 不從事近岸航行的船舶

1 每位在不從事近岸航行的未滿500總噸海船上負責航行值班的高級海員，須持有500總噸或以上船舶的適任證書。

2 每位在不從事近岸航行的未滿500總噸海船上服務的船長，須持有500至3000總噸船舶的船長的適任證書。

#### 從事近岸航行的船舶

##### 負責航行值班的高級海員

3 每位在從事近岸航行的未滿500總噸海船上負責航行值班的高級海員，須持有適任證書。

4 每位申請從事近岸航行的未滿500總噸海船的負責航行值班的高級海員證書的申請人須：

.1 年齡不小於18歲；

.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.

#### 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 已完成：

.2.1 專門的培訓，包括主管機關要求的足夠時間的相應海上服務資歷；或

.2.2 不少於36個月在甲板部工作的經認可的海上服務資歷；

.3 視情況符合第IV章有關規則的可適用的要求，以按照《無線電規則》履行指定的無線電職責；

.4 已完成經認可的教育和培訓，並且達到《培訓規則》第A-II/3節為從事近岸航行的未滿500總噸船舶的負責航行值班的高級海員所規定的適任標準；並且

.5 達到《培訓規則》第A-VI/1節第2款、第A-VI/2節第1至4款、第A-VI/3節第1至4款以及第A-VI/4節第1至3款規定的適任標準。

#### 船長

5 每位在從事近岸航行的未滿500總噸海船上服務的船長，須持有適任證書。

6 每位從事近岸航行的未滿500總噸海船的船長證書的申請人須：

.1 年齡不小於20歲；

.2 具有不少於12個月的負責航行值班的高級海員的經認可的海上服務資歷；

.3 已完成經認可的教育和培訓，並且達到《培訓規則》第A-II/3節為從事近岸航行的未滿500總噸船舶的船長規定的適任標準；並且

.4 達到《培訓規則》第A-VI/1節第2款、第A-VI/2節第1至4款、第A-VI/3節第1至4款以及第A-VI/4節第1至3款規定的適任標準。

#### 免除

7 主管機關如果認為某一船舶的尺度及航行條件會使適用本條規則和《培訓規則》第A-II/3節的全部要求成為不合理或不切實可行時，則可適當免除對該船或該類船舶的船長或負責航行值班的高級海員的某些要求，但要考慮可能同一水域航行的所有船舶的安全。

#### 第II/4條

對參加航行值班的普通海員發證的強制性最低要求

1 每位在500總噸或以上的海船上參加航行值班的普通海員，須為履行其職責取得適當證書，但培訓中的普通海員和值班時其職責屬非技術性的普通海員除外。

.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*

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 每位證書申請人須：

.1 年齡不小於16歲；

.2 已完成：

.2.1 經認可的海上服務資歷，包括不少於6個月的培訓和經驗；或

.2.2 上船前的或船上的專門培訓，包括不得少於2個月的經認可的海上服務資歷；並且

.3 達到《培訓規則》第A-II/4節規定的適任標準。

3 第2.2.1和2.2.2項所要求的海上服務資歷、培訓和經驗須與航行值班職能相關，並且涉及到在船長、負責航行值班的高級海員或合格的普通海員的直接監督之下履行職責。

**第II/5條**

*對擔任高級值班水手的普通海員發證的強制性最低要求*

1 每位在500總噸或以上的海船上服務的高級值班水手，須取得適當證書。

## 2 每位證書申請人須：

.1 年齡不小於18歲；

.2 達到對參加航行值班的普通海員的發證要求；

.3 在取得參加航行值班的普通海員資格的同時，還應具有經認可的甲板部海上服務資歷：

.3.1 不少於18個月，或

.3.2 不少於12個月，且已完成經認可的培訓；和

.4 達到《培訓規則》第A-II/5節規定的適任標準。

3 各締約國須將對在2012年1月1日前簽發證書的一等水手所要求的適任標準與《培訓規則》第A-II/5節對證書規定的適任標準進行比較，並決定是否有必要要求這些人員更新其資格。

4 在2012年1月1日之前，已加入《1946年國際勞工組織一等水手發證公約》（第74號公約）的締約國可按照上述公約的規定，繼續簽發、承認和簽註其證書。

5 在2017年1月1日之前，已加入《1946年國際勞工組織一等水手發證公約》（第74號公約）的締約國可按照上述公約的規定，繼續進行證書的更新、再有效和簽註。

## 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 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 如果海員在本公約對締約國生效前的60個月內有不少於12個月的時間在甲板部相應的職位上服務，則該締約國可以認為其已符合本條規則的要求。

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.

### 第 III 章 輪機部

### CHAPTER III Engine department

#### 第III/1條

對有人值班機艙負責輪機值班的高級海員或週期性無人值班機艙指定值班的輪機員發證的強制性最低要求

#### 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 每位在主推進裝置推進功率為750千瓦或以上海船上的有人值班機艙負責輪機值班的高級海員或在周期性無人值班機艙指定值班的輪機部高級海員，須持有適任證書。

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 每位證書申請人須：

2 Every candidate for certification shall:

.1 年齡不小於18周歲；

.1 be not less than 18 years of age;

.2 已完成綜合車間實習且具有不少於12個月的經認可的海上服務資歷，該資歷作為包括符合《培訓規則》第A-III/1節的要求的船上培訓在內的經認可的培訓計劃的組成部分，並在經認可的培訓記錄簿中載明；或已完成綜合車間實習並具有不少於36個月的經認可的海上服務資歷，其中不少於30個月須是在輪機部的海上服務資歷；

.2 have completed combined workshop skills 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 skills training and an approved seagoing service of not less than 36 months of which not less than 30 months shall be seagoing service in the engine department;

.3 在所要求的海上服務資歷中，在輪機長或合格的輪機員的監督下，履行機艙值班職責不少於6個月；

.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 已完成經認可的教育和培訓，並且達到《培訓規則》第A-III/1節規定的適任標準；並且

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

.5 達到《培訓規則》第A-VI/1節第2款、第A-VI/2節第1至4款，第A-VI/3節第1至4款及第A-VI/4節第1至4款規定的適任標準。

.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.

#### 第III/2條

對主推進裝置推進功率為3000千瓦或以上船舶的輪機長和大管輪發證的強制性最低要求

#### 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 每位在主推進裝置推進功率為3000千瓦或以上海船上的輪機長和大管輪須持有適任證書。

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 每位證書申請人：

.1 須達到對在主推進裝置推進功率為750千瓦或以上的海船上負責輪機值班的高級海員的發證要求，並在該等級船舶上具有經認可的海上服務資歷；

.1.1 申請大管輪證書，須擔任合格的輪機員不少於12個月，並且

.1.2 申請輪機長證書，須擔任合格的輪機員不少於36個月；但是，如果已具有不少於12個月的大管輪海上服務資歷，則此段時間可縮短為不少於24個月；並且

.2 須已完成經認可的教育和培訓，並達到《培訓規則》第A-III/2節規定的適任標準。

**第III/3條**

*對主推進裝置推進功率為750千瓦至3000千瓦船舶上的輪機長和大管輪發證的強制性最低要求*

1 每位在主推進裝置推進功率為750千瓦至3000千瓦海船上任職的輪機長和大管輪須持有適任證書。

## 2 每位證書申請人：

.1 須達到對負責輪機值班的高級海員的發證要求，並且：

.1.1 申請大管輪證書，須具有不少於12個月的作為助理輪機員或輪機員的經認可的海上服務資歷，並且

.1.2 申請輪機長證書，須具有不少於24個月的經認可的海上服務資歷，其中具備大管輪資格並實際擔任大管輪不少於12個月；並且

.2 須已完成經認可的教育和培訓，並達到《培訓規則》第A-III/3節規定的適任標準。

3 每位有資格擔任主推進裝置推進功率為3000千瓦或以上的船舶上的大管輪的輪機部高級海員，只要其證書已如此簽註，則可在主推進裝置推進功率為3000千瓦以下的船舶上擔任輪機長。

**第III/4條**

*對參加有人值班機艙值班或被指定在周期性無人值班機艙履行職責的普通海員發證的強制性最低要求*

1 每位在主推進裝置推進功率為750千瓦或以上的海船上參加有人值班機艙值班或被指定在周期性無人值班機艙履行職責

## 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, have not less than 12 months as qualified engineer officer, and

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

.1.2 for certification as chief engineer officer, 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

的普通海員，須為履行其職責取得適當證書，但培訓中的普通海員和其職責屬非技術性的普通海員除外。

2 每位證書申請人須：

.1 年齡不小於16周歲；

.2 已完成：

.2.1 經認可的海上服務資歷，包括不少於6個月的培訓和經驗；或

.2.2 上船前或船上的專門培訓，包括不得少於2個月的經認可的海上服務資歷；並且

.3 達到《培訓規則》第A-III/4節規定的適任標準。

3 第2.2.1和2.2.2項要求的海上服務資歷、培訓和經驗須與機艙值班職能相關，並且涉及在合格的輪機員或合格的普通海員的直接監督之下履行職責。

### 第III/5條

對參加有人值班機艙值班或被指定在周期性無人值班機艙履行職責的高級值班機工發證的強制性最低要求

1 每位在主推進裝置推進功率為750千瓦或以上的海船上任職的高級值班機工須取得適當證書；

2 每位證書申請人須：

.1 年齡不小於18周歲；

.2 達到參加有人值班機艙值班或被指定在周期性無人值班機艙履行職責的普通海員的發證要求；

.3 在有資格擔任參加輪機值班的普通海員的同時，具有經認可的輪機部海上服務資歷：

.3.1 不少於12個月，或；

.3.2 不少於6個月且已完成經認可的培訓；和

.4 達到《培訓規則》中第A-III/5節規定的適任標準。

3 各締約國須對在2012年1月1日前為簽發輪機部普通海員證書所要求的適任標準與《培訓規則》第A-III/5節規定的發證標準進行比較，並應決定是否有必要要求這些人員更新其資格。

4 如果海員在本公約對締約國生效前的60個月內有不少於12個月的時間在輪機部相應的職位上服務，則締約國可以認為其已符合本條規則的要求。

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 standard 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.

**第III/6條***對電子員發證的強制性最低要求*

1 每位在主推進裝置推進功率為750千瓦或以上海船上任職的電子員須持有適任證書。

2 每位證書申請人須：

.1 年齡不小於18周歲；

.2 已完成不少於12個月的綜合車間實習和經認可的海上服務資歷，其中有不少於6個月是作為包括滿足《培訓規則》第A-III/6節要求的船上培訓在內的經認可的培訓計劃的組成部分的海上服務資歷，並在經認可的培訓記錄簿中載明；或具有不少於36個月的綜合車間實習和經認可的海上服務資歷，其中有不少於30個月的輪機部海上服務資歷；

.3 已完成經認可的教育和培訓，並達到《培訓規則》第A-III/6節規定的適任標準；和

.4 達到《培訓規則》第A-VI/1節第2款、第A-VI/2節第1至4款、第A-VI/3節第1至4款和第A-VI/4節第1至3款規定的適任標準。

3 各締約國須對在2012年1月1日前為簽發電子員證書所要求的適任標準與《培訓規則》第A-III/6節規定的發證標準進行比較，並決定是否有必要要求這些人員更新其資格。

4 如果海員在本公約對締約國生效前的60個月內有不少於12個月的時間在船上相應的職位上服務並達到《培訓規則》第A-III/6節規定的適任標準，則該締約國可認為其已符合本條規則的要求。

5 儘管有以上第1至4款的要求，締約國可以認為有適當資格的人員能夠履行第A-III/6節的特定職能。

**第III/7條***對電子技工發證的強制性最低要求*

1 每位在主推進裝置推進功率為750千瓦或以上的海船上服務的電子技工須取得適當證書。

2 每位證書申請人須：

.1 年齡不小於18周歲；

.2 已經

.2.1 完成經認可的海上服務資歷，包括不少於12個月的培訓和經驗，或

**Regulation III/6***Mandatory minimum requirements for certification of electro-technical officers*

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 shall 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 shall be seagoing service in the engine department;

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

3 Every Party shall compare the standard 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 standard 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 ratings*

1 Every electro-technical rating 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 have:

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



.2.2 完成經認可的培訓，須包括一段不少於6個月的經認可的海上服務資歷，或

.2.3 具有符合第A-III/7節規定的技術能力的資格，和不少於3個月的經認可的海上服務資歷；和

.3 達到《培訓規則》第A-III/7節規定的適任標準。

3 各締約國須對在2012年1月1日前為簽發電子技工證書所要求的適任標準與《培訓規則》第A-III/7節規定的發證標準進行比較，並決定是否有必要要求這些人員更新其資格。

4 如果海員在本公約對締約國生效前的60個月內有不少於12個月的時間在船上相應的職位上服務並達到《培訓規則》第A-III/7節規定的適任標準，則該締約國可認為其已符合本條規則的要求。

5 儘管有以上1至4款的要求，締約國可以認為有合適資格的人員能夠履行第A-III/7節的特定職能。

.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 standard 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 standard 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.

#### 第IV章

##### 無線電通信和無線電操作員

###### 說明

關於無線電值班的強制性規定，已在《無線電規則》和經修正的《1974年國際海上人命安全公約》中闡明。關於無線電維修的規定，已在經修正的《1974年國際海上人命安全公約》和本組織通過的導則中闡明。

###### 第IV/1條

###### 適用範圍

1 除第2款規定者外，本章的規定適用於在參加經修正的《1974年國際海上人命安全公約》規定的全球海上遇險與安全系統(GMDSS)的船舶上工作的無線電操作員。

2 無須符合《安全公約》第IV章的全球海上遇險與安全系統規定的船舶無線電操作員，也無須符合本章的規定。但是，該類船舶的無線電操作員須符合《無線電規則》的規定。主管機關須保證對該類無線電操作員簽發或承認《無線電規則》規定的適當證書。

###### 第IV/2條

對全球海上遇險與安全系統無線電操作員發證的強制性最低要求

1 在已按要求加入全球海上遇險與安全系統的船上負責或

#### 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 (SOLAS), as amended, and the guidelines adopted by the Organization.

###### 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

履行無線電職責的每位人員，須持有主管機關按《無線電規則》的規定簽發或承認的適當證書。

2 此外，每位按本條規則，在按經修正的《1974年國際海上人命安全公約》要求配備無線電設備的船舶上工作的適任證書申請人須：

- .1 年齡不小於18歲；並且
- .2 已完成經認可的教育和培訓，並且達到《培訓規則》第A-IV/2節規定的適任標準。

## 第V章

### 關於特定類型船舶海員的特殊培訓要求

#### 第V/1-1條

對油船和化學品船船長、高級海員和普通海員的培訓和資格的強制性最低要求

1 在油船或化學品船上承擔特定的與貨物或貨物設備有關的職責和責任的高級海員和普通海員須持有油船和化學品船貨物作業基本培訓證書。

2 油船和化學品船貨物作業基本培訓證書的每位申請人，須按照《培訓規則》第A-VI/1節的規定完成基本培訓，並完成：

- .1 至少為期3個月的經認可的油船或化學品船海上服務資歷，並且滿足《培訓規則》第A-V/1-1節第1款中規定的適任標準；或者
- .2 經認可的油船和化學品船貨物作業基本培訓，並且滿足《培訓規則》第A-V/1-1節第1款中規定的適任標準。

3 船長、輪機長、大副、大管輪和任何與油船上貨物裝卸、運輸中貨物照料、貨物作業、洗艙或其他與貨物相關的操作有直接責任的人員，須持有油船貨物作業高級培訓證書。

4 油船貨物作業高級培訓證書的申請人須：

- .1 滿足油船和化學品船貨物作業基本培訓發證的要求；並且
- .2 在獲得油船和化學品船貨物作業基本培訓證書時，具有：
  - .2.1 至少3個月經認可的油船海上服務資歷，或者

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

### 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*

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 至少1個月的作為編外人員的經認可的油船在船培訓資歷，其中至少包括3次裝貨和3次卸貨操作，並參照第B-V/1節中的指導，記錄在經認可的培訓記錄簿上；並且

.3 完成經認可的油船貨物作業高級培訓，並且滿足《培訓規則》第A-V/1-1節第2款中規定的適任標準。

5 船長、輪機長、大副、大管輪和任何與化學品船上貨物裝卸、運輸中貨物照料、貨物作業、洗艙或其他與貨物相關的操作有直接責任的人員，須持有化學品船貨物作業高級培訓證書。

6 每位化學品船貨物作業高級培訓證書的申請人須：

.1 滿足油船和化學品船貨物作業基本培訓發證的要求；並且

.2 在獲得油船和化學品船貨物作業基本培訓證書時，具有：

.2.1 至少3個月經認可的化學品船海上服務資歷；或者

.2.2 至少1個月的在化學品船上作為編外人員的經認可培訓，其中至少包括3次裝貨和3次卸貨操作並參照第B-V/1節中的指導，記錄在經認可的培訓記錄簿上；並且

.3 完成經認可的化學品船貨物作業高級培訓，並且滿足《培訓規則》第A-V/1-1節第3款中規定的適任標準。

7 主管機關須確保對符合本條第2、4或6款規定的海員酌情簽發培訓合格證書，或對現有的適任證書或培訓合格證書進行正式簽註。

#### 第V/1-2條

*對液化氣體船船長、高級海員和普通海員的培訓和資格的強制性最低要求*

1 在液化氣體船船上承擔特定的與貨物或貨物設備有關的職責和責任的高級海員和普通海員須持有液化氣體船貨物作業基本培訓證書。

2 每位液化氣體船貨物作業基本培訓證書的申請人，須按照《培訓規則》第A-VI/1節的規定完成基本培訓，並完成：

.1 至少為期3個月的經認可的液化氣體船海上服務資歷，並且滿足《培訓規則》第A-V/1-2節第1款中規定的適任標準；或者

.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 paragraphs 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 經認可的液化氣體船貨物作業基本培訓，並且滿足《培訓規則》第A-V/1-2節第1款中規定的適任標準。

3 船長、輪機長、大副、大管輪和任何與液化氣體船上貨物裝卸、運輸中貨物照料、貨物作業、洗艙或其他與貨物相關的操作有直接責任的人員，須持有液化氣體船貨物作業高級培訓證書。

4 每位液化氣體船貨物操作高級培訓證書的申請人須：

.1 滿足液化氣體船貨物作業基本培訓發證的要求；並且

.2 在獲得液化氣體船貨物作業基本培訓證書時，具有：

.2.1 至少3個月經認可的液化氣體船海上服務資歷；或者

.2.2 至少1個月的作為編外人員的經認可的液化氣體船在船培訓，其中至少包括3次裝貨和3次卸貨操作，並參照第B-V/1節中的指導，記錄在經認可的培訓記錄簿上；並且

.3 完成經認可的液化氣體船貨物作業高級培訓，並且滿足《培訓規則》第A-V/1-2節第2款中規定的適任標準。

5 主管機關須確保對符合本條第2或4款規定的海員酌情簽發培訓合格證書，或對現有的適任證書或培訓合格證書進行正式簽註。

## 第V/2條

對客船船長、高級海員、普通海員和其他人員的培訓和資格的強制性最低要求

1 本條適用於在從事國際航行的客船上服務的船長、高級海員、普通海員和其他人員。主管機關須確定這些要求對在國內航行的客船上服務的人員的可適用性。

2 海員在被指定在客船上任職之前，須按照其職務、職責和責任完成以下第4至7款所要求的培訓。

3 被要求按以下第4、6和7款進行培訓的海員須以不超過5年的時間間隔接受適當的更新知識培訓或需要提供在最近5年內已達到規定的適任標準的證據。

.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:

.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 paragraphs 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 客船上的船長、高級海員和應急部署表中指定在緊急情況下協助旅客的其他人員，須完成《培訓規則》第A-V/2節第1款規定的有關密集人群管理的培訓。

5 在客船旅客處所向旅客提供直接服務的人員，須完成《培訓規則》第A-V/2節第2款規定的安全培訓。

6 客船上的船長、大副、輪機長、大管輪和應急部署表中指定在船舶緊急情況下負責旅客安全的任何人員，須完成《培訓規則》第A-V/2節第3款規定的有關危機管理和人的行為的經認可的培訓。

7 滾裝客船的船長、大副、輪機長、大管輪和直接負責旅客上下船、貨物裝卸和繫固或關閉船體開口的每一人員，須完成《培訓規則》第A-V/2節第4款規定的關於旅客安全、貨物安全和船體完整性的經認可的培訓。

8 主管機關須保證向根據本條規則經查合格的每位人員簽發已完成培訓的書面證明。

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.

## 第 VI 章

### 應急、職業安全、保安、醫護和救生職能

#### 第VI/1條

對所有海員的安全熟悉和基本培訓以及訓練的強制性最低要求

1 海員須按照《培訓規則》第A-VI/1節的規定接受安全熟悉和基本培訓或訓練，並達到該節所述的相應適任標準。

2 在發給的證明資格的證書中未包含基本培訓時，須簽發培訓合格證書，以證明持證人已經參加過基本培訓課程。

#### 第VI/2條

簽發救生艇筏、救助艇及快速救助艇培訓合格證書的強制性最低要求

1 每位救生艇筏和除快速救助艇以外的救助艇培訓合格證書申請人須：

.1 年齡不小於18歲；

.2 具有不少於12個月的經認可的海上服務資歷，或參加過經認可的培訓課程和不少於6個月的經認可的海上服務資歷；並且

## 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 達到《培訓規則》第A-VI/2節第1至4款規定的救生艇筏、救助艇培訓合格證書的適任標準。

2 每位快速救助艇培訓合格證書申請人須：

.1 持有救生艇筏和除快速救助艇外的救助艇培訓合格證書；

.2 參加過經認可的培訓課程；並且

.3 達到《培訓規則》第A-VI/2節第7至10款所述快速救助艇培訓合格證書的適任標準。

### 第VI/3條

#### 高級消防培訓的強制性最低要求

1 指定為控制消防作業的海員須遵照《培訓規則》第A-VI/3節第1至4款規定的要求，圓滿完成着重於消防組織、戰術及指揮方面的消防技術的高級培訓，並達到該節規定的適任標準。

2 在發給的證明資格的證書中未包含高級消防培訓時，須簽發培訓合格證書，以證明持證人已參加過高級消防培訓課程。

### 第VI/4條

#### 急救和醫護的強制性最低要求

1 指定為在船上提供急救的海員須達到《培訓規則》第A-VI/4節第1至3款規定的急救適任標準。

2 指定為負責船上醫護的海員須達到《培訓規則》第A-VI/4節第4至6款規定的船上醫護適任標準。

3 在發給的證明資格的證書中未包含急救或醫護培訓時，須簽發培訓合格證書，以證明持證人已參加過急救或醫護的培訓課程。

### 第VI/5條

#### 簽發船舶保安員培訓合格證書的強制性最低要求

1 每位申請船舶保安員培訓合格證書的申請人須：

.1 具有不少於12個月經認可的海上服務資歷或適當的海上服務資歷和船舶操作的知識；並且

.2 達到《培訓規則》第A-VI/5節第1至4款列出的船舶保安員培訓合格證書的適任標準。

.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.

### 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 主管機關須確保向根據本條規定經查合格的每一人員簽發培訓合格證書。

#### 第VI/6條

對所有海員與保安培訓和訓練有關的強制性最低要求

1 海員須接受符合《培訓規則》第A-VI/6節第1至4款要求的與保安有關的熟悉和保安意識培訓或訓練，並達到該節規定的適當的適任標準。

2 在發給的證明資格的證書中未包含保安意識培訓時，須簽發培訓合格證書，以證明持證人已經參加過保安意識的培訓課程。

3 每一締約國須將本規則生效之前它對海員獲得或能夠授予資格所要求的和保安有關的培訓或指導與《培訓規則》第A-VI/6節第4款所規定的進行比較，並決定是否有必要要求這些人員更新其資格。

#### 負有指定的保安職責的海員

4 負有指定的保安職責的海員須達到《培訓規則》第A-VI/6節第6至8款所規定的適任標準。

5 在發給的證明資格的證書中未包含有關指定的保安職責培訓時，須簽發培訓合格證書，以證明持證人已經參加過指定的保安職責的培訓課程。

6 各締約國須將本規則生效之前對負有指定的保安職責的海員獲得或能夠授予資格所要求的保安培訓標準與《培訓規則》第A-VI/6節第8款所規定的進行比較，並決定是否有必要要求這些人員更新其資格。

### 第VII章 可供選擇的發證

#### 第VII/1條

簽發可供選擇的證書

1 儘管本附則第II章和第III章對發證作出要求，締約國仍可選擇簽發或授權簽發與這些章節提及的證書不同的證書，只要：

.1 此種證書和簽註上指明的相關職能和責任級別是選自並等同於《培訓規則》第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和A-IV/2節所規定者；

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 證書申請人已完成經認可的教育和培訓，並且符合《培訓規則》有關章節所規定的以及在第A-VII/1節提出的、對證書和簽註上所載明的職能和級別的適任標準要求；

.3 證書申請人已具備與履行證書上所載明的職能和級別相適應的經認可的海上服務資歷。最短的海上服務時間須相當於本附則第II章和第III章所規定的時間。但是，最短的海上服務時間不得少於《培訓規則》第A-VII/2節規定的時間；

.4 履行操作級航行職能的證書申請人須達到第IV章中各條規則規定的適用的要求，如適用，還須履行按照《無線電規則》指定的無線電職責；和

.5 證書係根據第I/2條及《培訓規則》第VII章的規定簽發。

2 除非締約國根據第IV條和第I/7條已向本組織提交資料，否則不得按本章規定簽發證書。

#### 第VII/2條

##### 對海員的發證

1 每位履行《培訓規則》第II章表A-II/1、A-II/2、A-II/3、A-II/4或A-II/5或第III章表A-III/1、A-III/2、A-III/3、A-III/4或A-III/5或第IV章表A-IV/2中規定的任何一種職能或一組職能的海員，須持有相應的適任證書或培訓合格證書。

#### 第VII/3條

##### 簽發可供選擇的證書的原則

1 選擇簽發或授權簽發可供選擇的證書的任何締約國須遵循以下原則：

.1 除非保證海上安全的程度和防污染的效果至少相當於其他各章的規定，否則不得實施可供選擇的發證制度；和

.2 按本章簽發可供選擇的證書的任何安排須規定與按其他章節簽發的證書的互通性。

2 第1款所述的互通性原則須確保：

.1 按第II章和（或）第III章的安排而取得證書的海員和那些按第VII章規定取得證書的海員可以在傳統的組織形式或其他組織形式的船上服務；並且

.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 in the certificates and in the endorsements;

.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 對海員進行特定船舶配置的培訓以不影響他們在其他船上發揮其技術能力的方式進行。

3 按本章簽發任何證書，須考慮到以下原則：

.1 簽發可供選擇的證書本身並非用於：

.1.1 減少船上的海員人數，

.1.2 削弱專業完整性或降低海員的技能，或

.1.3 證明在任何特定的值班時指定一名單一證書持有人擔任輪機值班和航行值班高級海員相結合的職責是正當的；以及

.2 負責指揮的人須被指定為船長；船長和其他人員的法律地位和權限不應因實施可供選擇的發證安排而受到負面影響。

4 本條規則第1款和第2款中的原則須確保甲板部和輪機部高級海員都保持適任。

.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.

## 第 VIII 章 值班

### 第VIII/1條

#### 適於值班

1 為防止疲勞，各主管機關須：

.1 按照《培訓規則》第A-VIII/1節的規定，制定和實施值班人員以及被指定安全、防污染和保安職責的人員休息時間制度；並且

.2 要求值班制度的安排能使所有值班人員的效率不致因疲勞而削弱，並且班次的組織能使航次開始的第一個班次及其後各班次人員均已充分休息，或者用其它辦法使其適於值班。

2 為防止吸毒和酗酒，主管機關須確保按照第A-VIII/1節的規定制定適當的措施，並考慮到本規則第B-VIII/1節中的指導。

### 第VIII/2條

#### 值班安排和應遵循的原則

1 主管機關須使公司、船長、輪機長和全體值班人員注意到《培訓規則》中須遵守的要求、原則和指導，以確保在所有海船

## 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, security and prevention of pollution 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

上始終保持安全、連續並適合當時環境和條件的值班。

2 主管機關須要求每船船長在考慮到船舶當時環境和條件的情況下，確保其值班安排足以保持安全值班，並且在船長全面指導下：

.1 負責航行值班的高級海員在值班時間內對船舶航行安全負責，屆時始終在駕駛台或與之直接相連的場所，如海圖室或駕駛台控制室；

.2 無線電操作員在值班時間內，在適當的頻率上負責保持連續值守；

.3 《培訓規則》界定的、負責輪機值班的高級海員，在輪機長的指導下，須在召喚時立即到達機艙，在需要時須在其負責的任何時間內始終身在機艙；

.4 當船舶錨泊或繫泊時，須始終保持適當和有效的安全值班。如果船上載有危險貨物，值班安排須充分考慮到危險貨物的性質、數量、包裝、積載和當時船上、水上或岸上的任何特殊情況；以及

.5 如適用，保持適當和有效的保安值班。”

#### 《海員培訓、發證和值班規則》馬尼拉修正案

1 《海員培訓、發證和值班規則》的A部分由以下文字替代：

#### “A 部分

#### 關於《培訓公約》附則的規定的強制性標準

#### 引言

1 《培訓規則》的本部分含有經修正的《1978年海員培訓、發證和值班標準國際公約》（以下稱“本公約”）附則具體提及的強制性規定。這些規定詳細地列明了為全面徹底實施本公約而要求締約國維持的最低標準。

2 本部分還含有根據《培訓公約》的規定要求簽發和再有效適任證書的申請人表明能力的標準。為澄清第VII章中可供選擇

in the STCW Code which shall be observed to ensure that a safe continuous watch or watches appropriate to the prevailing circumstances and conditions are maintained on 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.”

#### 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 provi-

的發證規定與第II、III和IV章中發證規定的關聯，適任標準中具體規定的能力按以下七種職能酌情分類：

- .1 航行
- .2 貨物裝卸和積載
- .3 控制船舶操作和關護船上人員
- .4 船舶輪機工程
- .5 電器、電子和控制工程
- .6 保養和維修
- .7 無線電通信

責任分以下級別：

- .1 管理級
- .2 操作級
- .3 支持級

在本部分第II、III和IV章給出的適任標準表中，以小標題標識職能和責任級別。小標題說明的責任級別上的職能範圍，由表中第一欄小標題下所列的能力給予界定。在以下表A-I/1中，原則界定“職能”和“責任級別”的含義。

1 本部分各節的編號與《培訓公約》附則所含規則的編號相對應。各節的正文可分為帶編號的款項，但此編號是只用於該文的獨特編號。

## 第 I 章 關於總則的標準

### 第A-I/1節

#### 定義和說明

1 本公約第II條和規則第I/1條中的定義和說明同樣適用於本規則A和B部分所使用的術語。此外，以下補充定義僅適用於本規則：

.1 適任標準係指按照本部分所列的國際公認的標準並結合所規定的知識、理解和所表明的技能的標準或水平，為正確履行船上的有關職能應達到的熟練程度；

.2 管理級係指與下列內容有關的責任級別：

.2.1 作為船長、大副、輪機長或大管輪在海船上服務，並

sions 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 確保正確履行指定職責範圍內的所有職能；
- .3 操作級係指與下列內容有關的責任級別：
- .3.1 作為負責航行或輪機值班的高級海員或被指定為周期性無人值班機艙的值班輪機員或作為無線電操作員在海船上服務，以及
- .3.2 在相同責任範圍的管理級人員的指導下，按照正規程序，對指定職責範圍內的所有職能的履行保持直接的控制；
- .4 支援級係指在操作級或管理級人員的指導下，在海船上與履行指定的任務、職責和責任有關的責任等級；
- .5 評價標準是A部分中“最低適任標準規範”表第4欄的記載內容，為評估人員提供判定申請人能否履行有關的任務、職責和責任的方法；以及
- .6 獨立評價係指由獨立於被評價的單位或工作或被評價的單位或工作以外的有適當資格的人員所做的評價，審核各個層次的管理和操作程序是否在內部得到管理、組織、實施和監控，以確保適合其用途並達到既定的目標。

#### 第A—I/2節

##### 證書和簽註

1 如果按照規則第I/2條第6款的規定，將本公約第VI條要求的簽註併入證書本身的文字中，則該證書須以如下所示的格式簽發，如果要求該證書在有效期屆滿時換新證書，則須刪除格式正面的“或至可能在背面載明的此證書有效期的任何延期屆滿之日止”一段文字以及格式背面有關記錄有效期延長的內容。對填寫本格式的指導見本規則第B—I/2節。

- .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;
- .5 *Evaluation criteria* are the entries appearing in column 4 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.

( 公章 )

( 國家名稱 )

**根據經修正的《1978年海員培訓、發證和值班標準國際公約》  
的規定簽發的證書**

.....政府證明，.....按照經修正的  
上述公約的規則第.....條的規定完全合格，有資格履行指  
定級別的下列職能，但受載明的任何限制的制約，有效期  
至.....或至可能在背面載明的此證書有效期的任何延期  
屆滿之日止：

職能	級別	適用的限制（如有）

本證書的合法持有人可擔任主管機關在相應的安全配員要求中規定  
的下列一種或幾種職務：

職務	適用的限制（如有）

證書編號..... 簽發日期.....

( 公章 )

.....  
經正式授權的官員簽字

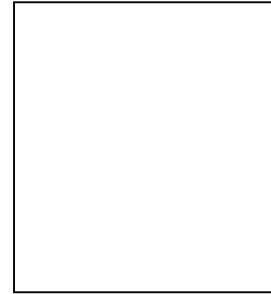
.....  
經正式授權的官員姓名

按本公約規則第 I/2 條第 11 款規定，當持證人在船上服務時，本證書原件必須保持隨時可用。

持證人出生日期.....

持證人簽字.....

持證人照片



<p>本證書的有效期特此延至.....</p> <p>( 公章 ) .....</p> <p>再有效日期.....</p>	<p>.....</p> <p>經正式授權的官員簽字</p> <p>.....</p> <p>經正式授權的官員姓名</p>
<p>本證書的有效期特此延至.....</p> <p>( 公章 ) .....</p> <p>再有效日期.....</p>	<p>.....</p> <p>經正式授權的官員簽字</p> <p>.....</p> <p>經正式授權的官員姓名</p>

(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*

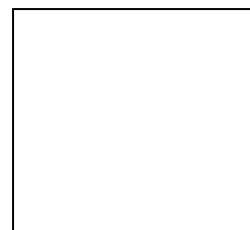
.....  
*Name of duly authorized official*

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



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

2 除第1款規定者外，用於證明簽發證書的格式應是如下所示的格式。但是，如果該簽註在有效期屆滿時需要換新簽註，則須刪除格式正面的“或至可能在背面載明的此簽註有效期的任何延期屆滿之日止”一段文字以及格式背面有關記錄有效期延長的内容。對填寫本格式的指導見本規則第B—I/2節。

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.



( 公 章 )

( 國 家 名 稱 )

**證明根據經修正的《1978年海員培訓、發證和值班標準國際公約》  
的規定簽發證書的簽註**

.....政府證明，編號為.....的證書已簽發給.....，該持證人按照經修正的上述公約的規則第.....條的規定完全合格，有資格履行指定級別的下列職能，但受載明的任何限制的制約，有效期至.....或至可能在背面載明的此簽註有效期的任何延期屆滿之日止：

職能	級別	適用的限制（如有）

本簽註的合法持有人可擔任主管機關在相應的安全配員要求中規定的下列一種或幾種職務：

職務	適用的限制（如有）

簽註編號..... 簽發日期.....

( 公 章 )

.....  
經正式授權的官員簽字

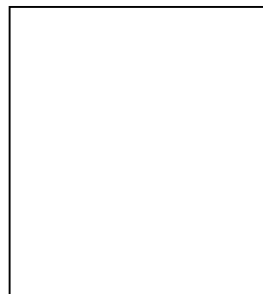
.....  
經正式授權的官員姓名

按本公約規則第 I/2 條第 11 款規定，當持證人在船上服務時，本證書原件必須保持隨時可用。

持證人出生日期.....

持證人簽字.....

持證人照片



<p>本證書的有效期特此延至.....</p> <p>( 公章 ) .....</p> <p>再有效日期 .....</p>	<p>.....</p> <p>經正式授權的官員簽字</p> <p>.....</p> <p>經正式授權的官員姓名</p>
<p>本證書的有效期特此延至.....</p> <p>( 公章 ) .....</p> <p>再有效日期 .....</p>	<p>.....</p> <p>經正式授權的官員簽字</p> <p>.....</p> <p>經正式授權的官員姓名</p>

(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



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 the authorized official .....
Date of revalidation .....	Name of duly authorized official .....

3 用於證明承認證書的簽註格式應是如下所示的格式。如果該簽註在有效期屆滿時需要換新簽註，則須刪除格式正面的“或至可能在背面載明的此簽註有效期的任何延期屆滿之日止”以及格式背面有關記錄有效期延長的内容。對填寫本格式的指導見本規則第B—I/2節。

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.

( 公章 )

( 國家名稱 )

**證明根據經修正的《1978年海員培訓、發證和值班標準國際公約》  
的規定承認證書的簽註**

.....政府證明，對由或者代表.....  
政府簽發給.....的編號為.....的證書，按照  
經修正的上述公約規則第 I/10 條的規定予以正式承認，並且准許合法  
持證人履行指定級別的下列職能，但受載明的任何限制的制約，有效期  
期至.....或至可能在背面載明的此簽註有效期的任何延  
期屆滿之日止：

職能	級別	適用的限制（如有）

本證書的合法持有人可擔任主管機關在相應的安全配員要求中規定  
的下列一種或幾種職務：

職務	適用的限制（如有）

簽註編號..... 簽發日期.....

( 公章 )

.....  
經正式授權的官員簽字

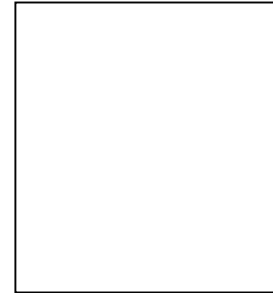
.....  
經正式授權的官員姓名

按本公約規則第 I/2 條第 11 款規定，當持證人在船上服務時，本證書原件必須保持隨時可用。

持證人出生日期.....

持證人簽字.....

持證人照片



<p>本證書的有效期特此延至.....</p> <p>(公章) .....</p> <p>再有效日期.....</p>	<p>.....</p> <p>經正式授權的官員簽字</p> <p>.....</p> <p>經正式授權的官員姓名</p>
<p>本證書的有效期特此延至.....</p> <p>(公章) .....</p> <p>再有效日期.....</p>	<p>.....</p> <p>經正式授權的官員簽字</p> <p>.....</p> <p>經正式授權的官員姓名</p>

(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*

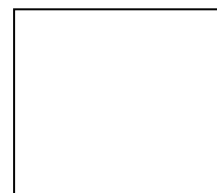
.....  
*Name of duly authorized official*

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



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

4 在採用可能不同於本節所規定的格式時，根據規則第I/2條第10款規定，締約國須保證在任何情況下：

- .1 有關持證人身份和個人情況的所有資料，包括姓名、出生日期、照片和簽字以及該文件的簽發日期，應在該文件的同一頁面上顯示；並且
- .2 關於按照主管機關適用的安全配員要求而授權持證人擔任的一種或多種職務的資料和任何限制，須明顯地列出並易於識別。

**證書的簽發和登記**

**海上服務資歷的認可**

5 在認可本公約要求的海上服務資歷時，締約國須確保所涉及的服務資歷與所申請的資格是相關的，並考慮除初步熟悉海船工作外，這種服務的目的在於使海員在適當的指導下對與其申請的職位相關的海上實踐、程序和日常工作進行安全和正規的培訓與實習。

**培訓課程的認可**

6 在認可培訓課程和計劃時，締約國須考慮到國際海事組織示範課程有助於編寫該類課程和計劃，並且確保適當涵蓋所建議的詳細學習目標。

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.

**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 practice, 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.



## 登記的電子查詢

7 在根據第I/2條第14款規定維持電子登記時，須制定規定，允許有控制地對登記作電子查詢，以使締約國和公司能確認：

- .1 已為其簽發證書、簽註或其他資格證明的海員的姓名，及其相應編號、簽發日期和失效日期；
- .2 持證人可擔任的職務和附帶的任何限制；以及
- .3 持證人可履行的職能、所授級別和附帶的任何限制。

## 證書登記數據庫的開發

8 在履行規則第I/2條第14款中有關維持證書和簽註登記的要求時，若所有相關信息已按照規則第I/2條記錄並可供使用，則無需建立一個標準數據庫。

9 下列各項信息應按照規則第I/2條以書面或電子方式記錄並可供使用：

### .1 證書現狀

有效

暫停

註銷

報失

銷毀

保持證書現狀更改的記錄，包括日期的更改

### .2 證書信息

海員姓名

出生日期

國籍

性別

照片（最好附有）

相關文件編號

簽發日期

失效日期

上一再有效日期

特免證明

### .3 適任信息

《培訓公約》適任標準（例如規則第II/1條）

職務

## 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 attached 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.

### .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 standard of competence (e.g., regulation II/1)

Capacity

職能

Function

責任級別

Level of responsibility

簽註

Endorsements

限制

Limitations

**.4 健康證書信息**

與適任證書簽發或再有效相關的最新的健康證書的簽發日期。

**第A—I/3節***關於近岸航行的原則*

1 當締約國對近岸航行進行定義，特別是為在懸掛其國旗並從事近岸航行的船上服務的海員簽發證書而改動本規則A部分第II章和第III章適任標準表第2欄內所列科目時，須考慮到下列因素，並考慮對所有船舶的安全、保安和海洋環境的影響：

- .1 船舶種類及所從事的業務；
- .2 船舶總噸位和主推進功率（kW）；
- .3 航次性質和長短；
- .4 距避風港的最遠距離；
- .5 導航定位設施的覆蓋範圍和定位精度；
- .6 近岸航行區域的通常氣象條件；
- .7 用於搜救的船上和岸上通信設施；以及
- .8 岸基支持的可用性，特別是有關船上技術保養的岸基支持。

2 本原則無意使從事近岸航行的船舶以其總是在相鄰國家指定的近岸航行區內航行為理由而將其航行擴展到全世界。

**第A—I/4節***監督程序*

1 因發生規則第I/4條第1.3款所列任何情況而引起的評估程序須採用一種核實的方式，即核實按要應適任的海員是否確實具備與所發生的情況有關的必要技能。

2 進行此類評估時須切記，船上的程序與《國際安全管理（ISM）規則》有關，而本公約的規定只限於安全實施那些程序的適任能力。

**.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 on 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 propulsion power in kilowatts of the main 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 本公約的監督程序須限於船上海員個人的適任標準，以及本規則A部分規定的與海員值班有關的技能。在船上對適任能力進行評估須從核實海員的證書開始。

4 儘管核實了證書，在按規則第I/4條第1.3款進行評估時，可以要求海員在其崗位上表明其有關的適任能力。這種能力的表明可包括核查是否符合值班標準方面的操作要求，以及該海員對緊急情況是否能作出其適任級別範圍內的適當反應。

5 在評估時，只能採用本規則A部分中的表明適任能力的方法以及評價標準和適任標準的範圍。

6 有關保安的適任能力的評估，僅應在有明顯理由的情況下，依照《國際海上人命安全公約》第XI/2章的規定，對承擔特定保安職責的海員實施。在其它情況下，該項評估僅限於對海員證書和（或）簽註的核實。

#### 第A—I/5節

##### 國家規定

規則第I/5條的規定不得被解釋為妨礙在監督下以培訓為目的的任務分派，或在不可抗力情況下的任務分派。

#### 第A—I/6節

##### 培訓和評估

1 各締約國須確保，對按公約申請發證的海員的所有培訓和評估須：

.1 按照書面計劃來組織進行，該計劃中應包括為達到規定的適任標準所必需的授課方法和媒介、程序和教材；以及

.2 按照第4、5和6款的規定由具備資格的人員來實施、監督、評價並予以支持。

2 在船上進行在職培訓或評估的人員，須僅在該培訓或評估不會影響船舶的正常操作以及在他們能集中時間和精力時進行培訓或評估。

##### 教員、監督人員和評估人員的資格

3 各締約國須按照本節的規定確保教員、監督人員和評估人員完全勝任公約所要求的船上或岸上特定種類和級別的培訓或對海員適任能力的評估。

##### 在職培訓

4 在船上或岸上對海員進行旨在用於根據公約取得發證資格的在職培訓的任何人員須：

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 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

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 對培訓計劃有正確認識並對所進行的特定種類的培訓的具體目標有充分了解；

.2 勝任所進行的培訓工作；並且

.3 如果使用模擬器進行培訓：

.3.1 接受過有關使用模擬器的教學技術的適當指導；並且

.3.2 已獲得對所使用的特定種類模擬器的實際操作經驗。

5 負責對海員旨在用於根據公約取得發證資格的在職培訓進行監督的任何人員，須對培訓計劃和正在進行的各種培訓的具體目標有充分的了解。

#### 適任評估

6 在船上或岸上對海員進行旨在用於根據公約取得發證資格的在職適任評估的任何人員須：

.1 對所評估的適任能力具有適當水平的知識和理解；

.2 勝任所執行的評估任務；

.3 接受過有關評估方法和實踐的適當指導；

.4 取得評估的實際經驗；並且

.5 如果所進行的評估涉及模擬器的使用，應在有經驗的評估人員指導下，取得特定種類模擬器的實際評估經驗，並令有經驗的評估人員滿意。

#### 培訓機構內的培訓和評估

7 將認可培訓課程、培訓機構或培訓機構所核准的資格作為其按公約簽發證書的部分要求的各締約國須保證，將教員和評估員的資格和經歷納入第A—I/8節的質量標準條款的適用範圍。該資格、經歷和質量標準的運用須納入適當的教學技術培訓以及培訓和評估方法與實踐，並須符合第4至6款所有適用的要求。

#### 第A—I/7節

##### 資料交流

1 規則第I/7條第1款要求的資料須以下述第2款規定的格式提交秘書長。

.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.

**第1部分—初始資料交流**

2 在規則第I/7條生效後的一個日曆年內，各締約國須就其採取的使本公約充分和完全實施的有關措施提交報告，該報告須包括下列內容：

.1 負責主管本公約的部委、局或政府機構的聯繫方式和組織機構圖；

.2 為確保遵守，特別是遵守規則第I/2、I/6和I/9條而制定並採取的法律和行政措施的簡明介紹；

.3 對所採取的教育、培訓、考試、適任評估以及發證政策的明確說明；

.4 對按公約簽發的每種證書規定的課程、培訓計劃、考試及評估的簡要說明；

.5 對為授權、認可或批准公約所要求的培訓和考試、體格檢查和適任評估而遵循的程序及其附加條件的簡要說明，以及一份授權、認可和批准清單；

.6 對依據公約第VIII條規定核准任何特免證書所遵循的程序的簡要說明；和

.7 對按照規則第I/11條所做比較的結果以及強制性知識更新培訓的簡要介紹。

**第2部分—後續報告**

3 各締約國須：

.1 在按照第IX條規定保持或採用任何等效教育或培訓安排的6個月內，提交一份有關這種安排的全面說明；

.2 在承認由另一締約國簽發的證書的6個月內，提交一份為保證符合規則第I/10條所採取措施的簡要報告；並且

.3 在批准懸掛其國旗的船舶上僱用持有根據規則第VII/1條簽發的可供選擇證書的海員的6個月內，向秘書長提供對此類船舶簽發的安全配員文件的樣本。

4 各締約國須在按照規則第I/8條第2款的規定完成評價後6個月內，報告評價的結果。評價報告須包含下列資料：

.1 實施評價人員的資格和經歷；（如所持適任證書、作為海員以及獨立評價人員的經歷、在海事培訓及評估領域的經歷、發證體系管理經驗、或其他相關的資格/經歷）；

**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 attached thereto, and a list of the authorizations, accreditations and approvals granted;

.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 獨立評價以及評價人員的職責範圍；
- .3 獨立評價包含的培訓機構/中心清單；以及
- .4 獨立評價的結果，包括：
- .1 核實：
- .1.1 本公約及《培訓規則》所有適用條款，包括其修正案，都應包括在締約國遵照第A—I/8節第3.1款規定所建立的質量標準體系內；且
- .1.2 所有內部的管理監督和監控措施以及補充措施符合計劃安排和文件規定的程序，並有效地確保第A—I/8節第3.2款既定目標的實現；
- .2 簡明描述：
- .2.1 獨立評價中發現的不符合項（如有），
- .2.2 解決已發現不符合項的推薦糾正措施，以及
- .2.3 用以解決已發現的不符合項的糾正措施。

5 締約國須報告為實施任何本公約和《培訓規則》後續強制性修正案所採取的措施，即沒有包含在依據第I/7條所作的初始資料交流報告或任何依據第I/8條做的先前報告中的措施。修正案生效後，資料須包含在依據第I/8節第3款所送交的下一個報告中。

6 有關實施本公約和《培訓規則》強制性修正案所採取措施的資料，如適用，須包括下列內容：

- .1 為確保遵守修正案而制定並採取的法律和行政措施的簡明介紹；
- .2 為遵守修正案而規定的任何課程、培訓計劃、考試及評估的簡要說明；
- .3 對為授權、認可或批准修正案所要求的培訓和考試、體檢和適任評估而遵循的程序的簡要說明；
- .4 為滿足修正案而要求的任何知識更新培訓和提高培訓的簡要說明；以及
- .5 如適用，為實施修正案的措施與按照規則第I/7條第1款及（或）第I/8節第2款所採取的包含在以前報告中的現有措施間的比較。

- .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.

**第3部分—具有資格人員的小組**

7 秘書長須保持一份經海上安全委員會批准的具有資格的人員名單，其中包括由締約國提供或推薦的具有資格的人員，這些人員可受邀評價遵照第I/7和I/8條提交的報告和幫助準備規則第I/7條第2款所要求的報告。這些人員一般須在海上安全委員會或其下屬機構召開有關會議時到會，但他們不必僅在這些會議期間進行工作。

8 關於規則第I/7條第2款，具有資格的人員須了解公約的要求，其中至少有1人了解有關締約國的培訓和發證制度。

9 秘書長在收到任何締約國依照第I/8條第3款規定提交的報告後，應從根據上述第7款保持的名單中指定具有資格的人員審議此報告並就下列各項表達意見：

.1 報告是否完整，並且是否表明該締約國已根據第A—I/8節第3款對知識、理解、技能和適任能力的獲得和評價活動以及對發證體系（包括簽註和再有效）的管理進行了獨立的評價；

.2 報告是否足以表明：

.2.1 評價人員是合格的，

.2.2 職責範圍明確，足以保證：

.2.2.1 本公約和《培訓規則》的所有適用條款，包括其修正案，都納入該締約國的質量標準體系中；以及

.2.2.2 依照第I/8條第1款制定的明確目標的實施能夠通過全面的相關活動得以證實，

.2.3 獨立評價中所遵循的程序，根據對有關締約國的適用情況，適合於確認該締約國的培訓體系、適任能力評估以及海員發證中的任何重大不符合項，以及

.2.4 為糾正所發現的不符合項而採取的行動是及時和恰當的。

10 具有資格的人員的任何會議須：

.1 由秘書長決定召開；

.2 由奇數成員組成，通常不超過5人；

.3 任命會議主席；並且

**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.

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 above, 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.

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 向秘書長提供與會成員的一致意見，如果達不成一致意見，則將多數意見和少數意見一併報告。

11 具有資格的人員須在保守秘密的基礎上，就以下內容用書面形式表達他們的意見：

- .1 將締約國提交給秘書長的資料中所報告的事實與本公約的所有有關要求進行比較；
- .2 根據規則第I/8條第3款提交的任何有關的評價報告；
- .3 根據第5款提交的有關為實施《培訓公約》和《培訓規則》修正案而採取的任何措施的報告；以及
- .4 締約國提供的任何附加資料。

#### 第4部分—向海上安全委員會提交的報告

12 秘書長在根據規則第I/7條第2款起草向海上安全委員會提交的報告時，須：

- .1 向根據第7款確定的名單中所選出的具有資格的人員徵詢意見並考慮這些意見；
- .2 必要時要求締約國澄清其根據規則第I/7條第1款提供的資料中的任何有關事宜；並且
- .3 確定締約國為履約可能要求幫助的任何領域。

13 須通知有關締約國關於具有資格人員會議的安排，同時，締約國的代表須有權到會澄清根據規則第I/7條第1款所提供的資料的任何相關事宜。

14 如果秘書長未能提交規則第I/7條第2款所要求的報告，有關締約國可要求海上安全委員會採取規則第I/7條第3款預料的行動，並考慮到根據本節所提交的資料和按照第10和第11款所表達的意見。

#### 第A—I/8節

##### 質量標準

##### 國家的目標和質量標準

1 各締約國須保證對其擬達到的教育和培訓目標以及有關的適任標準作出明確規定，並對公約要求的適於考試和評估的各種知識、理解和技能水平予以確定。該目標和有關的適任標準可針對不同的課程和培訓計劃分別作出規定，並須包括對發證體系的管理。

2 質量標準的適用範圍須覆蓋發證體系的管理、所有的培訓課程和計劃、締約國直接或授權進行的考試和評估以及教員和

.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 that the levels of knowledge, understanding and skills appropriate to the examinations and assessments required under the Convention are identified. 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 qualifica-



評估人員需要具備的資格和經歷，並注意到為確保達到既定目標而制定的方針、制度、監督和內部質量保證審驗等。

3 各締約國須保證每隔最多不超過5年，對知識、理解、技能和適任能力的獲得和評估活動以及對發證體系的管理進行一次獨立的評價，以核實：

.1 本公約及《培訓規則》所有適用條款，包括其修正案，均包含在質量標準體系內；

.2 所有內部的管理監督和監控措施以及補充措施是否符合計劃安排和文件規定的程序，以及是否能有效地確保既定目標的實現；

.3 每次獨立評價的結果是否形成文件並提請被評價部門的負責人注意；以及

.4 是否已及時採取糾正缺陷的行動。

#### 第A—I/9節

##### 健康標準

1 各締約國在依據第I/9條制定海員的健康標準時，須遵守表A—I/9中列出的在職視力最低標準，並考慮到第2款列出的身體能力和健康標準。它們還須考慮到本規則第B—I/9節給出的指導和關於評估最低體能的表B—I/9。

在締約國決定的、不影響海員和船舶安全的範圍內，對於開始尋求海上職業的人員和已在海上服務的海員，和對於船上的不同職能，在考慮海員的不同職責的情況下，健康標準可有所不同。這些標準還須考慮到將會限制海員的能力而使其無法在健康證書有效期內有效履行職責的任何損傷或疾病。

2 締約國制定的體能和健康標準須保證海員滿足以下標準：

.1 具備體能，在考慮到以下第5款的情況下，達到第A—VI/1節第2款規定的所有基本培訓要求；

.2 表明聽力和口頭表達能力足以有效地交流和察覺出聲響警報；

.3 沒有在健康證書有效期內使他們不能有效和安全履行日常和應急職責的疾病、不適或損傷；

tions 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;

.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 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.

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 emergency duties on board during the validity period of the medical certificate;

.4 未患可能因海上服務而惡化，或使海員不適合此類服務，或危及船上他人安全的任何疾病；和

.5 未服用具有副作用而將妨礙判斷力、平衡或有效和安全履行船上日常和應急職責的任何其他要求的藥物。

3 海員的健康檢查須由該締約國認可的、有合適資格的、有經驗的從業醫生執行。

4 各締約國須制定認可從業醫生的規定。締約國須保持對經認可的從業醫生註冊，並根據其他締約國、公司及海員的請求提供註冊情況。

5 各締約國須為執行健康檢查和簽發健康證書提供指導，並考慮到《培訓規則》第B—I/9節所列條款。各締約國須考慮海員的不同職責，決定給予經認可的從業醫生適用健康標準的自行決定權的範圍，但表A—I/9所列的對需要履行瞭望職責的甲板部海員的最低矯正遠距視力、近視力及辨色力標準除外。對輪機部海員，締約國可允許適用這些標準的自行決定權，但海員的雙眼視力須滿足表A—I/9所列的要求。

6 各締約國須制定程序，以使那些健康檢查後不符合健康標準或有工作能力限制，特別是有關時間、工作領域或航區的限制的海員，可根據締約國的申訴規定對其情況進行複查。

7 按第I/9條第3款提供的健康證書須至少包含下列信息：

**.1 授權機關以及文件簽發要求**

**.2 海員信息**

.2.1 姓名：(姓、名、中間名)

.2.2 出生日期：(日/月/年)

.2.3 性別：(男/女)

.2.4 國籍

**.3 經認可的從業醫生的聲明**

.3.1 身份證明文件在健康檢查時經過確認：是/否

.3.2 聽力符合《培訓公約》第A—I/9節的標準：是/否

.3.3 裸耳聽力符合要求？是/否

.3.4 視力符合《培訓公約》第A—I/9節的標準？是/否

.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 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 seafarers' combined vision fulfils the requirements set out 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 section A-I/9: Y/N

.3.3 Unaided hearing satisfactory? Y/N

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

.3.5 辨色力符合《培訓公約》第A—I/9節的標準？是/否

.3.5.1 上一次辨色力測試日期。

.3.6 適合瞭望職責？是/否

.3.7 對健康無限制？是/否

若有限制，具體說明何種限制。

.3.8 海員是否沒有患可能由於海上服務而惡化，或可能使海員不適合該服務，或危及船上他人健康的疾病？是/否

.3.9 檢查日期：(日/月/年)

.3.10 證書失效日期：(日/月/年)

**.4 發證機關信息**

.4.1 發證機關的官方印章(包括名稱)

.4.2 經授權人員的簽字

**.5 海員簽字**—確認已了解海員證書的內容以及依據第A—I/9節第5款享有的複查權利。

8 健康證書須使用發證國的官方語言。如使用的語言不是英文，證書文本應包括英文譯文。

.3.5 Colour vision meets standards in section A-I/9? Y/N

.3.5.1 Date of last colour vision test.

.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.

表 A—I/9  
在職海員視力最低標準

《培訓公約》規則	海員類別	矯正遠距視力 <sup>1</sup>		近視力	辨色力 <sup>3</sup>	視野 <sup>4</sup>	暗適應 <sup>4</sup>	複視(雙影) <sup>4</sup>
		一隻眼	另一隻眼	兩眼都已矯正或未矯正				
I/11 II/1 II/2 II/3 II/4 II/5 VII/2	船長、甲板部高級海員和履行瞭望職責的普通海員	0.5 <sup>2</sup>	0.5	船舶航行所要求的視力(如查閱海圖、航海出版物，使用駕駛台儀器設備和辨別航標)	參見注6	正常視野	在黑暗中履行所有必要職能所要求的視力(不得降低標準)	無明顯狀況的證據
I/11 III/1 III/2 III/3 III/4 III/5 III/6 III/7 VII/2	所有輪機部高級海員、電子員(電子技工)和參與機艙值班的普通海員	0.4 <sup>5</sup>	0.4 (參見注5)	近距離讀出儀器數據、操作設備和辨別必要的系統/部件所需要的視力	參見注7	足夠的視野	在黑暗中履行所有必要職能所要求的視力(不得降低標準)	無明顯狀況的證據
I/11 IV/2	全球海上遇險與安全系統無線電操作員	0.4	0.4	近距離讀出儀器數據、操作設備和辨別必要的系統/部件所需要的視力	參見注7	足夠的視野	在黑暗中履行所有必要職能所要求的視力(不得降低標準)	無明顯狀況的證據

Table A-I/9

## Minimum in-service eyesight standards for seafarers

STCW Convention regulation	Category of seafarer	Distance vision Aided <sup>1</sup>		Near/immediate vision Both eyes together, aided or unaided	Colour vision <sup>3</sup>	Visual fields <sup>4</sup>	Night blindness <sup>4</sup>	Diplopia (double vision) <sup>4</sup>
		One eye	Other eye					
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	0.5 <sup>2</sup>	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, electro-technical ratings and ratings or others forming part of an engine-room watch	0.4 <sup>5</sup>	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

注：

<sup>1</sup> 以十進位記數 (Snellen記數法) 表示的數值。<sup>2</sup> 建議一隻眼的數值起碼為0.7，以減少未檢查出的眼疾的危險性。<sup>3</sup> 按國際照明委員會 (CIE) 頒發的《運輸領域辨色力要求國際建議案》(CIE-143-2001) 中的規定。<sup>4</sup> 如有最初檢驗結果，服從臨床視力專家的評估。<sup>5</sup> 輪機部人員的雙眼視力起碼達0.4。<sup>6</sup> 國際照明委員會 (CIE) 辨色力標準1或2。<sup>7</sup> 國際照明委員會 (CIE) 辨色力標準1、2或3。

Notes:

<sup>1</sup> Values given in Snellen decimal notation.<sup>2</sup> A value of at least 0.7 in one eye is recommended to reduce the risk of undetected underlying eye disease.<sup>3</sup> 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).<sup>4</sup> Subject to assessment by a clinical vision specialist where indicated by initial examination findings.<sup>5</sup> Engine department personnel shall have a combined eyesight vision of at least 0.4.<sup>6</sup> CIE colour vision standard 1 or 2.<sup>7</sup> CIE colour vision standard 1, 2 or 3.

**第A—I/10節**

*證書的承認*

1 規則第I/10條第4款關於不承認非締約國簽發的證書的規定，不得被解釋為妨礙一締約國在簽發自己的證書時承認經非締約國准許而取得的海上服務資歷、教育和培訓，只要該締約國在簽發每一此類證書時遵守了規則第I/2條的規定並保證遵守本公約對海上服務資歷、教育、培訓和適任的要求。

2 如果承認證書的主管機關出於紀律原因而撤銷其承認證書的簽註，則該主管機關須將有關情況通知簽發證書的締約國。

**第A—I/11節**

*證書的再有效*

**專業適任能力**

1 規則第I/11條要求的持續專業適任能力須通過以下方式來達到：

.1 履行所持證書上相應職能的經認可的海上服務資歷至少：

.1.1 在前5年中累計12個月，或

.1.2 在再有效之前6個月中累計3個月；或

.2 履行了被認為是等同於第1.1項要求的海上服務資歷的職能；或

.3 通過了經認可的測試；或

.4 圓滿地完成了經認可的一種或幾種培訓課程；或

.5 在擔任證書有效職務之前，以一種編外職務或低於所持證書有效職務的高級海員職務，完成了至少3個月履行所持證書上的相應職能的經認可的海上服務資歷。

2 規則第I/11條所要求的知識更新課程須經過認可，並包括涉及海上人命安全、保安和海洋環境保護的有關國內和國際規則的變動，同時考慮到有關適任標準的任何更新。

3 第I/11條第3款要求的適合油船的持續專業適任能力須通過以下方式來達到：

.1 在前5年中累計不少於3個月的，履行所持油船證書或簽註上相應職責的經認可的海上服務資歷；或

**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, security 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 圓滿地完成了經認可的一種或幾種培訓課程。

#### 第A—I/12節

##### 關於使用模擬器的標準

#### 第1部分—性能標準

##### 用於培訓的模擬器的一般性能標準

1 各締約國須保證任何用於基於模擬器的強制性培訓的模擬器須：

.1 適合選定的目標和培訓任務；

.2 能夠模擬船上有關設備的操作性能，達到合乎培訓目標的物理真實水平，並包括這種設備的性能、局限性和可能產生的誤差；

.3 具有足夠的行為真實性，使被培訓者能夠獲得合乎培訓目標要求的技能；

.4 能提供一個可控制的操作環境，並能生成各種情況，其中可包括與培訓目標有關的緊急、危險或異常情況；

.5 提供一個界面，被培訓者可借此與設備、模擬的環境以及視情與教員相互作用；並且

.6 能由教員控制、監控和記錄訓練情況，以便對被培訓者作出有效的小結。

##### 用於適任評估的模擬器的一般性能標準

2 各締約國須保證，任何用於評估本公約所要求的適任能力或表明為此要求的持續熟練程度的模擬器須：

.1 能夠達到規定的評估目標；

.2 能夠模擬船上有關設備的操作性能，達到合乎評估目標的物理真實水平，並包括這種設備的性能、局限性和可能產生的誤差；

.3 具有足夠的行為真實性，使證書申請人能夠表明合乎評估目標要求的技能；

.4 提供一個界面，證書申請人可借此與設備和模擬的環境相互作用；

.5 能提供一個可控制的操作環境，並能生成各種情況，其中包括與評估目標有關的緊急、危險或異常狀況；並且

.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 能由評估員控制、監控和記錄訓練情況，以便有效評估證書申請人的操作。

### 附加的性能標準

3 除滿足第1和第2款提出的基本要求外，本節所適用的模擬設備按其特定種類還須符合下述性能標準：

#### 雷達模擬

4 雷達模擬設備須能夠模擬符合本組織通過的所有適用的性能標準的航海雷達設備的操作性能，並配備有關設施以便能：

- .1 在穩定的相對運動模式和海、陸穩定的真運動模式上操作；
- .2 模仿天氣、潮流、海流、陰影扇形、假回波和其他電波傳播影響，並產生岸線、導航浮標和搜救應答器；並且
- .3 創造一個包括至少兩個能夠改變本船航向和航速的本船船台的實時操作環境，並包括至少20個目標船和相應的通信設備的參數。

#### 自動雷達標繪儀 (ARPA) 模擬

5 自動雷達標繪儀模擬設備須能夠模擬符合本組織通過的所有適用性能標準的自動雷達標繪儀操作性能，還須配備有關設施以便用於：

- .1 手動和自動捕捉目標；
- .2 航跡線信息；
- .3 除外區域的利用；
- .4 矢量/圖解時間刻度和數據顯示；以及
- .5 試操縱。

### 第2部分—其他規定

#### 模擬器培訓的目標

6 各締約國須保證基於模擬器培訓的目的和目標要在一個總體培訓計劃中加以規定，並應保證選擇具體的培訓目標和任務以使其儘可能接近船上的工作和實踐。

#### 培訓程序

7 在進行基於模擬器的強制性培訓時，教員須確保：

- .1 事先對被培訓者就訓練目標和任務作充分的說明，並且在訓練開始前給其足夠的準備時間；

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

### 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, 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 被培訓者在任何培訓或評估訓練開始前，有足夠的時間熟悉模擬器及其設備；

.3 所給予的指導和訓練的促進因素要適於選定的訓練目標和任務並適於被培訓者的經驗水平；

.4 通過聽覺和視覺觀察被培訓者的活動並通過訓練前後的評價報告，來有效地監控訓練情況並在必要時給予支持；

.5 有效地對被培訓者進行小結以確保達到培訓目標，並使被培訓者表明的操作技能達到經認可的標準；

.6 在小結時，提倡被培訓者相互評估；並且

.7 對模擬器訓練進行設計和檢驗以確保其適於具體的培訓目標。

### 評估程序

8 如果使用模擬器來評估證書申請人表明適任水平的能力，評估人員須確保：

.1 清楚、明確地確定操作標準，並且該操作標準對證書申請人而言是有效的和可獲得的；

.2 清楚地確立評估標準，並做到詳盡明晰，以確保評估的可靠性和統一性，以優化客觀測定和評價，使主觀判斷保持在最低限度；

.3 向證書申請人清楚地說明擬進行評估的工作和（或）技能，以及擬用於確定其適任的工作和操作標準；

.4 對操作的評估要考慮到正常的操作程序和模擬器上與其他證書申請人或模擬器教員行為的相互影響；

.5 評估操作的評分或評級方法在被確認有效之前應慎用；並且

.6 首要的標準是證書申請人能夠表明其安全有效地執行任務的能力並使評估人員滿意。

### 教員和評估員的資格

9 各締約國須確保，教員和評估人員具備從事規則第I/6條和第A—I/6節規定的特定種類和等級的培訓和相應的適任評估的適當資格和經驗。

### 第A—I/13節

#### 試驗的實施

(無條文)

.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 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)



**第A—I/14節**

*公司的責任*

1 公司、船長和海員都有責任確保本節規定的義務得以充分和完全地履行，而且確保採取其他必要措施以確保每位海員均能利用其知識和經驗為船舶的安全操作發揮作用。

2 公司須向所有適用於本公約的船舶的船長提供書面指示，規定應該遵循的有關政策和程序，以確保為新僱用到船上工作的每位海員提供一個合理的機會，使其在履行其職責之前熟悉船上的設備、操作程序以及為正確履行其職責而需熟悉的其他安排。這些政策和程序應包括：

.1 給出一段合理的時間使每位新僱用的海員在此期間均有機會了解：

.1.1 該海員即將使用或操作的具體設備；

.1.2 船上具體的值班、安全、環境保護和應急程序以及海員需要知曉的正確履行指定職責的有關安排；以及

.2 指定一名熟悉業務的海員，讓其負責確保向新僱用的每位海員提供以一種他懂得的語言獲得基本信息的機會。

3 公司須確保滾裝客船船長、高級海員以及其他承擔特別職責及責任的人員已完成熟悉培訓，獲得適於所擔任職務和所承擔職責和責任的能力，並考慮到《培訓規則》第B—I/14節所述的指導。

**第A—I/15節**

*過渡性條款*

(無條文)

**第 II 章**

**關於船長和甲板部的標準**

**第A—II/1節**

*對500總噸或以上船舶的負責航行值班的高級海員發證的強制性最低要求*

**適任標準**

1 每位證書申請人須：

.1 按要求表明具有承擔表A—II/1第1欄所列的操作級的任務、職責和責任的適任能力；

**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 至少持有按照《無線電規則》的要求進行甚高頻無線電通信的適當證書；並且

.3 如果被指定在遇險事件中負有無線電通信的主要職責，持有根據《無線電規則》的規定簽發或承認的適當證書。

2 發證所要求的最低知識、理解和熟練列於表A—II/1第2欄。

3 表A—II/1第2欄所列各科目的知識水平，須足以能使值班的高級海員履行其值班職責。

4 為獲取所需水平的理論知識、理解和熟練的培訓和經驗，須以第A—VIII/2節4—1部分—航行值班時應遵循的基本原則為依據，並須考慮到本規則本部分的有關要求和B部分給予的指導。

5 每位證書申請人須按照表A—II/1第3和第4欄所列的表明適任的方法和評價適任的標準，提供已達到所要求的適任標準的證明。

#### 在船培訓

6 每位500總噸或以上船舶負責航行值班的高級海員的證書申請人，如其海上服務資歷按照規則第II/1條第2.2款構成經認可的作為符合本節要求的培訓計劃的一部分，須參加一個經認可的在船培訓計劃。該培訓計劃：

.1 保證證書申請人在海上服務期間，接受關於在負責航行值班高級海員的任務、職責和責任方面的系統的實踐培訓並獲得經驗，同時考慮到本規則第B—II/1節給予的指導；

.2 在執行經認可的海上服務中，密切地受到船上合格的高級海員的監督和指導；並且

.3 在培訓記錄簿或類似的文件中予以充分載明。

#### 近岸航行

7 為簽發限於近岸航行的證書，可從表A—II/1第2欄所列科目中刪除下列科目，但須切記可能在同一水域航行的所有船舶的安全：

.1 天文航海；和

.2 不覆蓋證書有效水域的電子定位和導航系統。

.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 radio-communications 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.

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.

#### 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.

表 A – II/1

500 總噸或以上船舶負責航行值班的  
高級海員的最低適任標準

職能：航行（操作級）

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
計劃並引導航行和定位	<p>天文航海</p> <p>使用天體確定船位的能力</p> <p>地文航海和沿海航行</p> <p>使用下列各項確定船位的能力：</p> <p>.1 陸標</p> <p>.2 燈塔、立標和浮標等助航標誌</p> <p>.3 考慮風、潮汐、水流和推算船速進行航跡推算</p> <p>使用諸如航路指南、潮汐表、航海通告、無線電航行警告和船舶定線資料等的全面知識和能力</p> <p>電子定位和導航系統</p> <p>使用電子助航儀器確定船位的能力</p> <p>回聲測深儀</p> <p>正確操作該設備和應用所得信息的能力</p> <p>磁羅經和陀螺羅經</p> <p>磁羅經和陀螺羅經原理的知識</p> <p>採用天文和地文方法確定磁羅經和陀螺羅經的誤差的能力以及修正這種誤差的能力</p> <p>操舵控制系統</p> <p>操舵控制系統，操作程序以及從手動轉自動控制及相反操作的知識。調整控鈕至最佳性能</p> <p>氣象學</p> <p>應用和解釋從船用氣象儀器獲取的信息的能力</p> <p>各種天氣系統的特性、報告程序和記錄系統的知識</p> <p>運用所獲得的氣象資料的能力</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓，如適合</p> <p>.4 經認可的實驗室設備培訓</p> <p>使用：海圖目錄、海圖、航海出版物、無線電航行警告、六分儀、方位鏡、電子導航設備、回聲測深儀、羅經</p>	<p>從海圖和航海出版物獲取的信息是恰當的、並能正確地解釋和恰當地應用該信息，準確識別所有潛在的航行危險</p> <p>主要定位方法最適合於當時環境和條件</p> <p>確定的船位在公認的儀器/系統誤差限度內</p> <p>以適當時間間隔核查從主要定位方法獲得的資料的可信性</p> <p>航海信息的計算和測量是精確的。</p> <p>所選的海圖是適合於航行區域的最大比例尺的，並且海圖和航海圖書已按照船上可用的最新資料進行了改正</p> <p>按照廠家的建議和良好的航海習慣核對和測試導航系統的性能</p> <p>所選擇的操舵方式，對於當時天氣、海況和交通條件以及擬採取的操縱是最適合的</p> <p>對天氣情況的測量和觀測是精確的並適合其航行</p> <p>正確解釋和運用氣象資料</p>

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
<p>保持安全的航行值班</p>	<p>值班</p> <p>關於經修正的《1972年國際海上避碰規則》的內容、應用和意圖的全面知識</p> <p>關於航行值班中應遵守的基本原則的全面知識</p> <p>根據船舶定線制的一般規定使用定線制</p> <p>使用來自導航設備的信息保持安全航行值班</p> <p>依靠儀器的引航技術的知識</p> <p>根據船舶報告制的一般原則和船舶交通服務 (VTS) 程序使用報告制</p> <p>駕駛台資源管理</p> <p>駕駛台資源管理原則的知識, 包括:</p> <ol style="list-style-type: none"> <li>.1 資源的分配、分派和優先排序</li> <li>.2 有效的交流</li> <li>.3 決斷力和領導力</li> <li>.4 領悟並保持情景意識</li> <li>.5 考慮團隊經驗</li> </ol>	<p>考試並評估從下列一項或數項獲取的證據:</p> <ol style="list-style-type: none"> <li>.1 經認可的工作經歷</li> <li>.2 經認可的培訓船經歷</li> <li>.3 經認可的模擬器培訓, 如適合</li> <li>.4 經認可的實驗室設備培訓</li> </ol> <p>評估從下列一項或數項獲取的證據:</p> <ol style="list-style-type: none"> <li>.1 經認可的培訓</li> <li>.2 經認可的工作經歷</li> <li>.3 經認可的模擬器培訓</li> </ol>	<p>按照公認的原則和程序值班、接班和交班</p> <p>隨時保持正規的瞭望, 並遵守公認的原則和程序</p> <p>符合《1972年國際海上避碰規則》中有關號燈、號型和聲號的要求並正確辨認</p> <p>監測交通、船舶和環境的頻度和程度符合公認的原則和程序</p> <p>對有關船舶航行的運動和活動保持正規的記錄</p> <p>始終明確安全航行的責任, 包括船長在駕駛台和船舶正在被引領時</p> <p>根據需要按正確的優先順序分配和分派資源, 以執行必要的任務</p> <p>語言交流的發出和接收是清楚和毫不含糊的</p> <p>有疑問的決定和(或)行動引起適當的質疑和反應</p> <p>確定有效的領導行為</p> <p>對於當前和預測的船舶狀態、航路和外部環境, 小組成員有着共同的準確理解</p>
<p>使用雷達和自動雷達標繪儀保持安全航行</p> <p>註: 對僅在不配備自動雷達標繪儀的船舶上的工作人員, 不必進行該設備使用的培訓和評估, 但該限制須反映在給當事海員簽發的簽註中</p>	<p>雷達導航</p> <p>雷達和自動雷達標繪儀 (ARPA) 的基本知識</p> <p>操作雷達、解釋和分析由雷達獲得的信息的能力, 包括下列各項:</p> <p>性能方面包括:</p> <ol style="list-style-type: none"> <li>.1 影響性能和精度的因素</li> <li>.2 設定和保持顯示</li> <li>.3 探測信息錯誤顯示、假回波和海浪雜波等, 以及雷達應答器和搜救雷達應答器</li> </ol> <p>使用方面包括:</p> <ol style="list-style-type: none"> <li>.1 距離和方位; 他船航向和航速; 交遇、對遇、追越船的最接近點的時間和距離</li> <li>.2 識別重要回波; 探測他船航向和航速變化; 本船航向或航速或兩者都變化的影響</li> <li>.3 經修正的《1972年國際海上避碰規則》的適用</li> <li>.4 標繪技術以及相對運動和真運動概念</li> <li>.5 平行標線法</li> </ol>	<p>評估從經認可的雷達模擬器和自動雷達標繪儀模擬器培訓加上從工作經歷中獲得的證據</p>	<p>正確地解釋和分析從雷達和自動雷達標繪儀獲取的信息, 並考慮到設備的局限性以及當時的環境和條件</p> <p>按照經修正的《1972年國際海上避碰規則》採取行動, 以避免和他船在很近距離上會遇或碰撞</p> <p>及時地並遵照公認的航海習慣作出修正航向和(或)航速的決定</p> <p>調整航向和航速保持航行安全</p> <p>隨時以海員的方式清楚簡要的交流並確認</p> <p>在適當的時刻發出操縱信號, 並符合經修正的《1972年國際海上避碰規則》</p>

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
	<p>自動雷達標繪儀的主要類型，其顯示特點、性能標準和過分依賴自動雷達標繪儀的危險性</p> <p>操作自動雷達標繪儀以及解釋和分析從該設備獲取的信息的能力，包括：</p> <ol style="list-style-type: none"> <li>.1 系統性能和精度，跟蹤能力和局限性，以及處理延遲</li> <li>.2 工作報警和系統測試的應用</li> <li>.3 錄取目標的方法及其局限性</li> <li>.4 真運動矢量和相對運動矢量，目標信息和危險區域的圖形顯示</li> <li>.5 導出和分析信息，重要回波、排除區域和試操縱</li> </ol>		
<p>使用電子海圖顯示與信息系統保持安全航行</p> <p>註：對僅在不必配備電子海圖顯示與信息系統的船舶上的工作人員，不必進行該設備使用的培訓和評估，但該限制須反映在給當事海員簽發的簽註中</p>	<p><i>使用電子海圖顯示與信息系統導航</i></p> <p>電子海圖顯示與信息系統運行的性能和限制的知識，包括：</p> <ol style="list-style-type: none"> <li>.1 全面理解電子航海圖（ENC）數據、數據精度、呈現規則、顯示選擇和其他海圖數據格式</li> <li>.2 過分依賴的危險性</li> <li>.3 熟悉現行的性能標準所要求的電子海圖顯示與信息系統功能</li> </ol> <p>熟練地操作、解釋和分析從電子海圖顯示與信息系統獲取的信息，包括：</p> <ol style="list-style-type: none"> <li>.1 電子海圖顯示與信息系統與各類裝置中其他導航系統集成功能的使用，包括正確使用功能和調整到所需設置</li> <li>.2 安全監測和調整下列信息，包括：本船位置、海區顯示、模式和方向、顯示的海圖數據、航路監測、用戶創建的信息層、物標（當接入自動識別系統和（或）雷達跟蹤時）和雷達疊加功能（當接入時）</li> <li>.3 使用不同方式確認船位</li> <li>.4 充分使用參數設置以確保操作程序的符合性，包括預防擱淺、臨近物標和特殊區域的報警參數、海圖數據的完整性、海圖更新狀態和備用方案</li> <li>.5 調整設置和數值以適合當前情況</li> <li>.6 使用電子海圖顯示與信息系統時的情景意識，包括安全水域和對危險的臨近程度、流向和流速、海圖數據和比例尺選擇、航路的適合性、物標探測和管理，以及傳感器的集成性</li> </ol>	<p>考試並評估從下列一項或數項獲取的證據：</p> <ol style="list-style-type: none"> <li>.1 經認可的培訓船經歷</li> <li>.2 經認可的電子海圖顯示與信息系統模擬器培訓</li> </ol>	<p>以有助於安全航行的方式監控電子海圖顯示與信息系統信息</p> <p>正確地解釋和分析從電子海圖顯示與信息系統（包括雷達疊加和（或）雷達跟蹤功能，如裝有）獲取的信息，並考慮到設備的局限性、所有相連的傳感器（包括雷達和自動識別系統，如連接）以及當時的環境和條件</p> <p>通過電子海圖顯示與信息系統控制的航跡保持功能（當裝有時）調節船舶航向和航速，使船舶的航行安全得以保持</p> <p>隨時以海員的方式清楚和簡明地交流並確認</p>
<p>應急反應</p>	<p><i>應急程序</i></p> <p>緊急情況下旅客保護和安全的預防措施</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <ol style="list-style-type: none"> <li>.1 經認可的工作經歷</li> </ol>	<p>迅速確認緊急情況的類型和範圍</p> <p>初始行動和船舶的操縱（如合適）符合應急計劃並適合於形勢的緊迫性和緊急情況的性質</p>

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
	碰撞或擱淺後應採取的初步措施；損害的初步評估和控制  救助落水人員、協助遇險船舶、港內應急反應要遵循的程序的知識	.2 經認可的培訓船經歷 .3 經認可的模擬器培訓，如適合 .4 實踐培訓	
對海上遇險信號的反應	<i>搜尋和救助</i>  關於《國際空中和海上搜尋救助手冊》(IAMSAR)內容的知識	考試並評估從實際訓練或經認可的模擬器培訓(如適合)獲取的證據	立即判明遇險和應急信號  實施並遵守應急計劃和常規命令中的指示
使用海事組織《標準航海通信用語》，以書面和口語形式使用英語	<i>英語</i>  足夠的英語知識，能使高級海員使用海圖和其他出版物，了解氣象資料和有關船舶安全和操作的信息，並能在和他船、岸台和船舶交通服務(VTS)中心通信以及與使用多種語言的海員履行高級海員職責時清楚地表達意思，其中包括使用並理解海事組織《標準航海通信用語》(SMCP)的能力	考試並評估從實際訓練中獲取的證據	正確解釋或起草英文版航海出版物和有關船舶安全的信息  語言交流清楚並能理解
用視覺信號發出和接收信息	<i>視覺信號通信</i>  使用《國際信號規則》的能力  用莫爾斯信號燈收發經修正的《1972年國際海上避碰規則》附則4和《國際信號規則》附錄1規定的遇險信號SOS以及同樣在《國際信號規則》中規定的單字母信號的視覺信號的能力	評估從實際訓練和/或模擬中獲取的證據	在操作者職責範圍內始終保持順暢的通信交流
操縱船舶	<i>船舶操縱和操作</i>  具有下列知識： .1 載重量、吃水、縱傾、航速和龍骨下水深對旋迴圈和衝程的影響 .2 風、水流對船舶操縱的影響 .3 救助落水人員的操縱和程序 .4 船體下坐、淺水和類似影響 .5 錨泊和繫泊的正確程序	考試並評估從下列一項或數項獲取的證據： .1 經認可的工作經歷 .2 經認可的培訓船經歷 .3 經認可的模擬器培訓，如適合 .4 經認可的有人操縱船模的培訓，如適合	在正常的操縱中，船舶推進、操舵和動力系統不超出安全操作的限度  調整船舶航向和航速以保持安全航行

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	<i>Celestial navigation</i>  Ability to use celestial bodies to determine the ship's position	Examination and assessment of evidence obtained from one or more of the following:  .1 approved in-service experience	The information obtained from nautical charts and publications is relevant, interpreted correctly and properly applied. All potential navigational hazards are accurately identified

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p><i>Terrestrial and coastal navigation</i></p> <p>Ability to determine the ship's position by use of:</p> <p>.1 landmarks</p> <p>.2 aids to navigation, including lighthouses, beacons and buoys</p> <p>.3 dead reckoning, taking into account winds, tides, currents and estimated speed</p> <p>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</p> <p><i>Electronic systems of position fixing and navigation</i></p> <p>Ability to determine the ship's position by use of electronic navigational aids</p> <p><i>Echo-sounders</i></p> <p>Ability to operate the equipment and apply the information correctly</p> <p><i>Compass – magnetic and gyro</i></p> <p>Knowledge of the principles of magnetic and gyro-compasses</p> <p>Ability to determine errors of the magnetic and gyro-compasses, using celestial and terrestrial means, and to allow for such errors</p> <p><i>Steering control system</i></p> <p>Knowledge of steering control systems, operational procedures and change-over from manual to automatic control and vice versa. Adjustment of controls for optimum performance</p>	<p>.2 approved training ship experience</p> <p>.3 approved simulator training, where appropriate</p> <p>.4 approved laboratory equipment training</p> <p>using chart catalogues, charts, nautical publications, radio navigational warnings, sextant, azimuth mirror, electronic navigation equipment, echo-sounding equipment, compass</p>	<p>The primary method of fixing the ship's position is the most appropriate to the prevailing circumstances and conditions</p> <p>The position is determined within the limits of acceptable instrument/system errors</p> <p>The reliability of the information obtained from the primary method of position fixing is checked at appropriate intervals</p> <p>Calculations and measurements of navigational information are accurate</p> <p>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</p> <p>Performance checks and tests to navigation systems comply with manufacturer's recommendations and good navigational practice</p> <p>Errors in magnetic and gyro-compasses are determined and correctly applied to courses and bearings</p> <p>The selection of the mode of steering is the most suitable for the prevailing weather, sea and traffic conditions and intended manoeuvres</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p><i>Meteorology</i></p> <p>Ability to use and interpret information obtained from shipborne meteorological instruments</p> <p>Knowledge of the characteristics of the various weather systems, reporting procedures and recording systems</p> <p>Ability to apply the meteorological information available</p>		<p>Measurements and observations of weather conditions are accurate and appropriate to the passage</p> <p>Meteorological information is correctly interpreted and applied</p>
Maintain a safe navigational watch	<p><i>Watchkeeping</i></p> <p>Thorough knowledge of the content, application and intent of the International Regulations for Preventing Collisions at Sea, 1972, as amended</p> <p>Thorough knowledge of the Principles to be observed in keeping a navigational watch</p> <p>The use of routing in accordance with the General Provisions on Ships' Routing</p> <p>The use of information from navigational equipment for maintaining a safe navigational watch</p> <p>Knowledge of blind pilotage techniques</p> <p>The use of reporting in accordance with the General Principles for Ship Reporting Systems and with VTS procedures</p> <p><i>Bridge resource management</i></p> <p>Knowledge of bridge resource management principles, including:</p> <p>.1 allocation, assignment, and prioritization of resources</p> <p>.2 effective communication</p> <p>.3 assertiveness and leadership</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience;</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training, where appropriate</p> <p>.4 approved laboratory equipment training</p> <p>Assessment of evidence obtained from one or more of the following:</p> <p>.1 approved training</p> <p>.2 approved in-service experience</p> <p>.3 approved simulator training</p>	<p>The conduct, handover and relief of the watch conforms with accepted principles and procedures</p> <p>A proper look-out is maintained at all times and in such a way as to conform to accepted principles and procedures</p> <p>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</p> <p>The frequency and extent of monitoring of traffic, the ship and the environment conform with accepted principles and procedures</p> <p>A proper record is maintained of the movements and activities relating to the navigation of the ship</p> <p>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</p> <p>Resources are allocated and assigned as needed in correct priority to perform necessary tasks</p> <p>Communication is clearly and unambiguously given and received</p> <p>Questionable decisions and/or actions result in appropriate challenge and response</p> <p>Effective leadership behaviours are identified</p>



Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>.4 obtaining and maintaining situational awareness</p> <p>.5 consideration of team experience</p>		<p>Team member(s) share accurate understanding of current and predicted vessel state, navigation path, and external environment</p>
<p>Use of radar and ARPA to maintain safety of navigation</p> <p><i>Note:</i> 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</p>	<p><i>Radar navigation</i></p> <p>Knowledge of the fundamentals of radar and automatic radar plotting aids (ARPA)</p> <p>Ability to operate and to interpret and analyse information obtained from radar, including the following:</p> <p>Performance, including:</p> <p>.1 factors affecting performance and accuracy</p> <p>.2 setting up and maintaining displays</p> <p>.3 detection of misrepresentation of information, false echoes, sea return, etc., racons and SARTs</p> <p>Use, including:</p> <p>.1 range and bearing; course and speed of other ships; time and distance of closest approach of crossing, meeting overtaking ships</p> <p>.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</p> <p>.3 application of the International Regulations for Preventing Collisions at Sea, 1972, as amended</p> <p>.4 plotting techniques and relative- and true-motion concepts</p> <p>.5 parallel indexing</p>	<p>Assessment of evidence obtained from approved radar simulator and ARPA simulator plus in-service experience</p>	<p>Information obtained from radar and ARPA is correctly interpreted and analysed, taking into account the limitations of the equipment and prevailing circumstances and conditions</p> <p>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</p> <p>Decisions to amend course and/or speed are both timely and in accordance with accepted navigation practice</p> <p>Adjustments made to the ship's course and speed maintain safety of navigation</p> <p>Communication is clear, concise and acknowledged at all times in a seamanlike manner</p> <p>Manoeuvring signals are made at the appropriate time and are in accordance with the International Regulations for Preventing Collisions at Sea, 1972, as amended</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>Principal types of ARPA, their display characteristics, performance standards and the dangers of over-reliance on ARPA</p> <p>Ability to operate and to interpret and analyse information obtained from ARPA, including:</p> <ul style="list-style-type: none"> <li>.1 system performance and accuracy, tracking capabilities and limitations, and processing delays</li> <li>.2 use of operational warnings and system tests</li> <li>.3 methods of target acquisition and their limitations</li> <li>.4 true and relative vectors, graphic representation of target information and danger areas</li> <li>.5 deriving and analysing information, critical echoes, exclusion areas and trial manoeuvres</li> </ul>		
<p>Use of ECDIS to maintain the safety of navigation</p> <p>Note: Training and assessment in the use of ECDIS is not required for those who serve exclusively on ships not fitted with ECDIS</p> <p>These limitations shall be reflected in the endorsements issued to the seafarer concerned</p>	<p><i>Navigation using ECDIS</i></p> <p>Knowledge of the capability and limitations of ECDIS operations, including:</p> <ul style="list-style-type: none"> <li>.1 a thorough understanding of Electronic Navigational Chart (ENC) data, data accuracy, presentation rules, display options and other chart data formats</li> <li>.2 the dangers of over-reliance</li> <li>.3 familiarity with the functions of ECDIS required by performance standards in force</li> </ul> <p>Proficiency in operation, interpretation, and analysis of information obtained from ECDIS, including:</p> <ul style="list-style-type: none"> <li>.1 use of functions that are integrated with other navigation systems in various installations, including proper functioning and adjustment to desired settings</li> </ul>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <ul style="list-style-type: none"> <li>.1 approved training ship experience</li> <li>.2 approved ECDIS simulator training</li> </ul>	<p>Monitors information on ECDIS in a manner that contributes to safe navigation</p> <p>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</p> <p>Safety of navigation is maintained through adjustments made to the ship's course and speed through ECDIS-controlled track-keeping functions (when fitted)</p> <p>Communication is clear, concise and acknowledged at all times in a seamanlike manner</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>.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)</p> <p>.3 confirmation of vessel position by alternative means</p> <p>.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</p> <p>.5 adjustment of settings and values to suit the present conditions</p> <p>.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</p>		
Respond to emergencies	<p><i>Emergency procedures</i></p> <p>Precautions for the protection and safety of passengers in emergency situations</p> <p>Initial action to be taken following a collision or a grounding; initial damage assessment and control</p> <p>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</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training, where appropriate</p> <p>.4 practical training</p>	<p>The type and scale of the emergency is promptly identified</p> <p>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</p>
Respond to a distress signal at sea	<p><i>Search and rescue</i></p> <p>Knowledge of the contents of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual</p>	<p>Examination and assessment of evidence obtained from practical instruction or approved simulator training, where appropriate</p>	<p>The distress or emergency signal is immediately recognized</p> <p>Contingency plans and instructions in standing orders are implemented and complied with</p>

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	<p><i>English language</i></p> <p>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)</p>	Examination and assessment of evidence obtained from practical instruction	<p>English language nautical publications and messages relevant to the safety of the ship are correctly interpreted or drafted</p> <p>Communications are clear and understood</p>
Transmit and receive information by visual signalling	<p><i>Visual signalling</i></p> <p>Ability to use the International Code of Signals</p> <p>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</p>	Assessment of evidence obtained from practical instruction and/or simulation	Communications within the operator's area of responsibility are consistently successful
Manoeuvre the ship	<p><i>Ship manoeuvring and handling</i></p> <p>Knowledge of:</p> <p>.1 the effects of deadweight, draught, trim, speed and under-keel clearance on turning circles and stopping distances</p> <p>.2 the effects of wind and current on ship handling</p> <p>.3 manoeuvres and procedures for the rescue of person overboard</p> <p>.4 squat, shallow-water and similar effects</p> <p>.5 proper procedures for anchoring and mooring</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training, where appropriate</p> <p>.4 approved training on a manned scale ship model, where appropriate</p>	<p>Safe operating limits of ship propulsion, steering and power systems are not exceeded in normal manoeuvres</p> <p>Adjustments made to the ship's course and speed to maintain safety of navigation</p>

**職能：貨物裝卸和積載（操作級）**

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
<p>監測貨物的裝載、積載、繫固、航行中的照料和卸載</p>	<p><i>貨物裝卸、積載和繫固</i></p> <p>貨物包括大件貨對船舶適航性和穩性的影響的知識</p> <p>安全裝卸、積載和繫固貨物，包括危險和有害貨物的知識及其對人命和船舶安全的影響</p> <p>在裝卸期間建立和保持有效交流的能力</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓，如適合</p>	<p>按照配載圖或其他文件、所制定的安全規則、設備操作規程和船舶積載限制，進行貨物作業</p> <p>遵照國際規則和公認的安全操作標準和規則裝卸危險和有害貨物</p> <p>交流清楚、明白並且始終是成功的</p>
<p>檢查和報告貨艙、艙蓋和壓載艙的缺陷和損壞</p>	<p>解釋何處最常遇到下列情況引起的損壞和缺陷的知識和能力：</p> <p>.1 裝卸操作</p> <p>.2 腐蝕</p> <p>.3 惡劣天氣條件</p> <p>說明每次檢查船舶哪一部分以便在給定時間內檢查完所有部分的能力</p> <p>確認對船舶安全至關重要的船體結構構件</p> <p>說明貨艙和壓載艙腐蝕的原因及如何識別和防止腐蝕</p> <p>關於如何實施檢查的程序的知識</p> <p>關於解釋如何確保可靠探測缺陷和損壞的能力</p> <p>理解“加強檢驗計劃”的目的</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓，如適合</p>	<p>根據規定程序進行檢查，探測和正確報告缺陷和損壞</p> <p>在沒有探測到缺陷或損壞的情況下，則從測試和考試中獲取的證據清楚地表明在遵循程序上的充分適任和在區分船體結構部件正常和有缺陷或受損的能力</p>

**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
<p>Monitor the loading, stowage, securing, care during the voyage and the unloading of cargoes</p>	<p><i>Cargo handling, stowage and securing</i></p> <p>Knowledge of the effect of cargo, including heavy lifts, on the seaworthiness and stability of the ship</p> <p>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</p> <p>Ability to establish and maintain effective communications during loading and unloading</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training, where appropriate</p>	<p>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</p> <p>The handling of dangerous, hazardous and harmful cargoes complies with international regulations and recognized standards and codes of safe practice</p> <p>Communications are clear, understood and consistently successful</p>

Column 1	Column 2	Column 3	Column 4
<b>Competence</b>	<b>Knowledge, understanding and proficiency</b>	<b>Methods for demonstrating competence</b>	<b>Criteria for evaluating competence</b>
Inspect and report defects and damage to cargo spaces, hatch covers and ballast tanks	<p>Knowledge and ability to explain where to look for damage and defects most commonly encountered due to:</p> <p>.1 loading and unloading operations</p> <p>.2 corrosion</p> <p>.3 severe weather conditions</p> <p>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</p> <p>Identify those elements of the ship structure which are critical to the safety of the ship</p> <p>State the causes of corrosion in cargo spaces and ballast tanks and how corrosion can be identified and prevented</p> <p>Knowledge of procedures on how the inspections shall be carried out</p> <p>Ability to explain how to ensure reliable detection of defects and damages</p> <p>Understanding of the purpose of the “enhanced survey programme”</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training, where appropriate</p>	<p>The inspections are carried out in accordance with laid-down procedures, and defects and damage are detected and properly reported</p> <p>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</p>

控制船舶操作和關照船上人員 (操作級)

第1欄	第2欄	第3欄	第4欄
<b>適任</b>	<b>知識、理解和熟練</b>	<b>表明適任的方法</b>	<b>評價適任的標準</b>
保證遵守防污染要求	<p>防止海洋環境污染和防止污染的程序</p> <p>為防止海洋環境污染採取的預防措施的知識</p> <p>防止污染的程序和所有相關設備</p> <p>保護海洋環境的主動措施的重要性</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的培訓</p>	<p>完全遵守有關船上操作監控及保證符合《防污公約》要求的程序</p> <p>採取行動以保證積極的環保聲譽得以保持</p>
保持船舶的適航性	<p>船舶穩性</p> <p>穩性、縱傾、應力圖表和應力計算儀器的實際知識和應用</p> <p>懂得一旦喪失部分完整浮力時應採取的基本行動</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓，如適合</p> <p>.4 經認可的實驗室設備培訓</p>	<p>在各種裝載條件下穩性狀況符合海事組織的完整穩性標準</p> <p>按照公認的做法採取保證和維持水密完整性的行動</p>

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
	<p>了解水密完整性的基本知識</p> <p><i>船舶構造</i></p> <p>船舶主要構件的一般知識和各種部件的正確名稱</p>		
船上防火、控制火災和滅火	<p><i>防火和滅火設備</i></p> <p>組織消防演習的能力</p> <p>火的種類及其化學性質的知識</p> <p>滅火系統的知識</p> <p>一旦失火，包括油類系統着火時應採取的行動的知識</p>	<p>評估從第A—VI/3節規定的經認可的消防培訓和實踐經驗中獲取的證據</p>	<p>迅速確認問題的種類和範圍，初始行動符合船舶的應急程序和應急計劃</p> <p>撤離、緊急關閉和隔離程序與緊急情況的性質相適應，並迅速實施</p> <p>作出報告和通知船上人員的優先順序和等級和時間範圍與緊急情況的性質相適應，並反映出問題的緊急程度</p>
操作救生設備	<p><i>救生</i></p> <p>組織棄船演習的能力和操作救生艇筏和救助艇、其釋放裝置和佈置，以及艇筏設備（包括無線電救生設備、衛星應急無線電示位標、搜救應答器、救生服和保暖用具）的知識</p>	<p>評估從第A—VI/2節第1至第4款規定的經認可的培訓和實踐經驗中獲取的證據</p>	<p>棄船和求生情況下的應急行動適合於當時環境和條件，並符合公認的安全做法和標準</p>
在船上應用醫療急救	<p><i>醫護</i></p> <p>醫療指南和無線電諮詢的實際應用，包括根據這種知識對船上易於發生的事故和疾病採取有效行動的能力</p>	<p>評估從第A—VI/4節第1至第3款規定的經認可的培訓中獲取的證據</p>	<p>迅速確認可能的原因、性質和傷害程度或狀況，採取治療以減少對生命的緊急威脅</p>
監督遵守法定要求	<p>涉及海上人命安全和保護海洋環境的海事組織有關公約的基本實用知識</p>	<p>評估從考試或經認可的培訓中獲取的證據</p>	<p>正確確認有關海上人命安全和保護海洋環境的法定要求</p>
領導和管理技能的運用	<p>船上人員管理和培訓的實用知識</p> <p>有關國際海事公約和建議案以及國內立法的知識</p> <p>應用任務和工作量管理的能力，包括：</p> <ol style="list-style-type: none"> <li>.1 計劃和協調</li> <li>.2 人員分派</li> <li>.3 時間和資源的制約</li> <li>.4 優先排序</li> </ol> <p>應用有效資源管理的知識和能力：</p> <ol style="list-style-type: none"> <li>.1 資源的分配、分派和優先排序</li> <li>.2 船上和岸上的有效交流</li> <li>.3 決策反映出對團隊經驗的考慮</li> <li>.4 決斷和領導力，包括激勵</li> <li>.5 獲取並保持情景意識</li> </ol> <p>運用決策技能的知識和能力：</p> <ol style="list-style-type: none"> <li>.1 局面和風險評估</li> <li>.2 確定並形成選擇項</li> <li>.3 選出行動過程</li> <li>.4 評價結果的有效性</li> </ol>	<p>評估從下列一項或數項獲取的證據：</p> <ol style="list-style-type: none"> <li>.1 經認可的培訓</li> <li>.2 經認可的工作經歷</li> <li>.3 實際演示</li> </ol>	<p>以適合有關個人的方式分配海員工作，並告知所期待的工作和行為標準</p> <p>培訓目標和培訓活動是基於對目前適任性和能力的評估和操作要求的</p> <p>表明操作符合適用的規則</p> <p>操作是有計劃的，並根據需要按正確的優先順序分配和分派資源，以執行必要的任務</p> <p>交流的發出和接收是清楚和毫不含糊的</p> <p>表明有效的領導行為</p> <p>對於當前和預測的船舶和操作狀態以及外部環境，必要的小組成員有着共同的準確理解</p> <p>決策對於局面是最有效的</p>

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
致力於人員和船舶的安全	<p>人員求生技能的知識</p> <p>防火知識和滅火能力</p> <p>基本急救的知識</p> <p>人員安全和社會責任的知識</p>	評估從第A—VI/1節第2款規定的經認可的培訓中獲取的證據	<p>正確使用適當的安全和防護設備</p> <p>始終遵守為保護人員和船舶而設計的程序和安全工作做法</p> <p>始終遵守為保護環境而設計的程序</p> <p>遇到緊急情況的初始和後續行動符合已建立的應急反應程序</p>

**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	<p><i>Prevention of pollution of the marine environment and anti-pollution procedures</i></p> <p>Knowledge of the precautions to be taken to prevent pollution of the marine environment</p> <p>Anti-pollution procedures and all associated equipment</p> <p>Importance of proactive measures to protect the marine environment</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved training</p>	<p>Procedures for monitoring shipboard operations and ensuring compliance with MARPOL requirements are fully observed</p> <p>Actions to ensure that a positive environmental reputation is maintained</p>
Maintain seaworthiness of the ship	<p><i>Ship stability</i></p> <p>Working knowledge and application of stability, trim and stress tables, diagrams and stress-calculating equipment</p> <p>Understanding of fundamental actions to be taken in the event of partial loss of intact buoyancy</p> <p>Understanding of the fundamentals of watertight integrity</p> <p><i>Ship construction</i></p> <p>General knowledge of the principal structural members of a ship and the proper names for the various parts</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training, where appropriate</p> <p>.4 approved laboratory equipment training</p>	<p>The stability conditions comply with the IMO intact stability criteria under all conditions of loading</p> <p>Actions to ensure and maintain the watertight integrity of the ship are in accordance with accepted practice</p>



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	<p><i>Fire prevention and fire-fighting appliances</i></p> <p>Ability to organize fire drills</p> <p>Knowledge of classes and chemistry of fire</p> <p>Knowledge of fire-fighting systems</p> <p>Knowledge of action to be taken in the event of fire, including fires involving oil systems</p>	Assessment of evidence obtained from approved fire-fighting training and experience as set out in section A-VI/3	<p>The type and scale of the problem is promptly identified and initial actions conform with the emergency procedure and contingency plans for the ship</p> <p>Evacuation, emergency shut-down and isolation procedures are appropriate to the nature of the emergency and are implemented promptly</p> <p>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</p>
Operate life-saving appliances	<p><i>Life-saving</i></p> <p>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</p>	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	<p><i>Medical aid</i></p> <p>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</p>	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, security and protection of the marine environment	Assessment of evidence obtained from examination or approved training	Legislative requirements relating to safety of life at sea, security and protection of the marine environment are correctly identified
Application of leadership and teamworking skills	<p>Working knowledge of ship-board personnel management and training</p> <p>A knowledge of related international maritime conventions and recommendations, and national legislation</p>	<p>Assessment of evidence obtained from one or more of the following:</p> <p>.1 approved training</p> <p>.2 approved in-service experience</p>	<p>The crew are allocated duties and informed of expected standards of work and behaviour in a manner appropriate to the individuals concerned</p> <p>Training objectives and activities are based on assessment of current competence and capabilities and operational requirements</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>Ability to apply task and workload management, including:</p> <ul style="list-style-type: none"> <li>.1 planning and co-ordination</li> <li>.2 personnel assignment</li> <li>.3 time and resource constraints</li> <li>.4 prioritization</li> </ul> <p>Knowledge and ability to apply effective resource management:</p> <ul style="list-style-type: none"> <li>.1 allocation, assignment, and prioritization of resources</li> <li>.2 effective communication onboard and ashore</li> <li>.3 decisions reflect consideration of team experiences</li> <li>.4 assertiveness and leadership, including motivation</li> <li>.5 obtaining and maintaining situational awareness</li> </ul> <p>Knowledge and ability to apply decision-making techniques:</p> <ul style="list-style-type: none"> <li>.1 situation and risk assessment</li> <li>.2 identify and consider generated options</li> <li>.3 selecting course of action</li> <li>.4 evaluation of outcome effectiveness</li> </ul>	<p>.3 practical demonstration</p>	<p>Operations are demonstrated to be in accordance with applicable rules</p> <p>Operations are planned and resources are allocated as needed in correct priority to perform necessary tasks</p> <p>Communication is clearly and unambiguously given and received</p> <p>Effective leadership behaviours are demonstrated</p> <p>Necessary team member(s) share accurate understanding of current and predicted vessel status and operational status and external environment</p> <p>Decisions are most effective for the situation</p>
<p>Contribute to the safety of personnel and ship</p>	<p>Knowledge of personal survival techniques</p> <p>Knowledge of fire prevention and ability to fight and extinguish fires</p> <p>Knowledge of elementary first aid</p> <p>Knowledge of personal safety and social responsibilities</p>	<p>Assessment of evidence obtained from approved training and experience as set out in section A-VI/1, paragraph 2</p>	<p>Appropriate safety and protective equipment is correctly used</p> <p>Procedures and safe working practices designed to safeguard personnel and the ship are observed at all times</p> <p>Procedures designed to safeguard the environment are observed at all times</p> <p>Initial and follow-up action on becoming aware of an emergency conforms with established emergency response procedures</p>

**第A—II/2節**

對500總噸或以上船舶的船長和大副發證的強制性最低要求

**適任標準**

1 每位500總噸或以上船舶的船長和大副的證書申請人，須表明承擔表A—II/2第1欄所列的管理級的任務、職責和責任的適任能力。

2 發證所要求的最低知識、理解和熟練程度列於表A—II/2第2欄中。其內容包括、擴大和加深了表A—II/1第2欄所列的對負責航行值班高級海員的有關科目。

3 鑑及船長對船舶、旅客、海員和貨物的安全以及保護海洋環境免受船舶污染負有最高責任，而大副則處於隨時承擔這種責任的地位，這些科目的評估須旨在考查他們從影響船舶、旅客、海員或貨物安全和保安或保護海洋環境的一切可用的資料中吸收知識的能力。

4 表A—II/2第2欄所列各科目的知識水平，須足以能使證書申請人在船長或大副職位上服務。

5 表A—II/2第2欄不同部分所要求的理論知識、理解和熟練的水平，可按照證書對3000總噸或以上的船舶和對500至3000總噸船舶有效與否而有所不同。

6 為獲取所需水平的理論知識、理解和熟練的培訓和經驗，須考慮到本規則本部分的有關要求和B部分給予的指導。

7 每位證書申請人須依照表A—II/2第3欄和第4欄所列的表明適任的方法和評價適任的標準，提供已達到所要求的適任標準的證據。

**近岸航行**

8 主管機關可簽發一種僅限於在專門從事近岸航行船舶上服務的證書。簽發該類證書，可刪去不適用於有關水域或船舶的那些科目，但要切記對可能同一水域航行的所有船舶安全的影響。

**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.

3 Bearing in mind that the master has ultimate responsibility for the safety and security 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 and security 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

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.

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.

表 A — II/2

## 500 總噸或以上船舶的船長和大副的最低適任標準規範

## 職能：航行（管理級）

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
制訂航次計劃並引導航行	<p>通過公認的標繪遠洋航線的方法制訂航次計劃和各種條件下的航行，並考慮：</p> <ol style="list-style-type: none"> <li>.1 受限水域</li> <li>.2 氣象條件</li> <li>.3 冰況</li> <li>.4 能見度不良</li> <li>.5 分道通航制</li> <li>.6 船舶交通服務（VTS）區域</li> <li>.7 潮汐影響大的區域</li> </ol> <p>按照船舶定線制的一般規定進行定線</p> <p>按照關於船舶報告制的一般原則和船舶交通服務程序進行報告</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <ol style="list-style-type: none"> <li>.1 經認可的工作經歷</li> <li>.2 經認可的模擬器培訓，如適合</li> <li>.3 經認可的實驗室設備培訓</li> </ol> <p>使用：海圖目錄、海圖、航海出版物和船舶資料</p>	<p>列舉航次所需的設備、海圖和航海出版物，並與安全地引導航行相適應</p> <p>用從有關資料和出版物獲取的事實和統計數據來支持所計劃的航線</p> <p>正確計算船位、航向、航程和時間，並處於航行設備的公認的精度標準之內</p> <p>準確地判明所有潛在的航行危險物</p>
定位和確定各種定位方法獲取的最終船位的精度	<p>在各種條件下定位：</p> <ol style="list-style-type: none"> <li>.1 利用天文觀測</li> <li>.2 利用地文觀測，包括使用適當的海圖、航海通告和其他航海出版物，以判斷最終所得船位的精度的能力</li> <li>.3 使用現代電子助航儀器，具有其操作原理、局限性、誤差源、錯誤信息的檢測和獲得準確船位的正確方法等專門知識</li> </ol>	<p>考試並評估從下列一項或數項獲取的證據：</p> <ol style="list-style-type: none"> <li>.1 經認可的工作經歷</li> <li>.2 經認可的模擬器培訓，如適合</li> <li>.3 經認可的實驗室設備培訓，使用： <ol style="list-style-type: none"> <li>.1 海圖、航海天文曆、海圖作業圖紙、天文鐘、六分儀和計算器</li> <li>.2 海圖、航海出版物、儀器（方位鏡、六分儀、計程儀、測深設備、羅經）和廠家手冊</li> <li>.3 雷達、地文定位系統、衛星導航系統和有關航海海圖和出版物</li> </ol> </li> </ol>	<p>所選的主要船舶定位方法最適合於當時環境和條件</p> <p>利用天文觀測獲得的船位在公認的精度範圍內</p> <p>利用地文觀測獲得的船位在公認的精度範圍內</p> <p>正確地評估最終船位的精度</p> <p>使用電子助航設備獲得的船位在所用系統的精度標準內。說明影響最終船位精度的可能誤差，以及正確應用減少影響最終船位的系統誤差的方法</p>
測定和修正羅經差	<p>測定和修正磁羅經和陀螺羅經誤差的能力</p> <p>磁羅經和陀螺羅經原理的知識</p> <p>了解主羅經控制下的系統和主要類型陀螺羅經的操作和保養知識</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <ol style="list-style-type: none"> <li>.1 經認可的工作經歷</li> <li>.2 經認可的模擬器培訓，如適合</li> <li>.3 經認可的實驗室設備培訓</li> </ol> <p>使用：天文觀測、陸標方位以及磁羅經和陀螺羅經之間的比較</p>	<p>測定磁羅經和陀螺羅經誤差的方法和頻度保證有關信息的精度</p>
協調搜尋和救助行動	<p>對《國際空中和海上搜救手冊》（IAMSAR）所載程序的全面知識和應用該程序的能力</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <ol style="list-style-type: none"> <li>.1 經認可的工作經歷</li> <li>.2 經認可的模擬器培訓，如適合</li> <li>.3 經認可的實驗室設備培訓</li> </ol> <p>使用：有關的出版物、海圖、氣象數據、當事船舶的技術資料、無線電通信設備和其他可用的設施以及下列一項或數項：</p> <ol style="list-style-type: none"> <li>.1 經認可的搜救培訓課程</li> <li>.2 經認可的模擬器培訓，如適合</li> <li>.3 經認可的實驗室設備培訓</li> </ol>	<p>協調搜救行動的計劃符合國際導則和標準</p> <p>建立無線電通信，並在搜救作業所有階段遵循正確的通信程序</p>

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
<p>確立值班安排和程序</p>	<p>關於經修正的《1972年國際海上避碰規則》的內容、適用範圍和意圖的全面知識</p> <p>關於航行值班中應遵守的基本原則的內容、適用範圍和意圖的全面知識</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的模擬器培訓，如適合</p>	<p>按照有關國際規則和導則制定並保持值班安排和程序，從而保證航行安全，保護海洋環境以及船舶和船上人員的安全</p>
<p>使用有助於指揮決策的從導航設備和系統獲得的信息，以保持航行安全</p> <p>注：對在不必配備自動雷達標繪儀的船舶上的工作人員，不必進行該設備使用的培訓和評估，但該限制須反映在給當事海員簽發的簽註中</p>	<p>懂得系統誤差，全面了解導航系統的操作事宜</p> <p>依靠儀器的引航計劃</p> <p>為了作出並實施避碰指揮決策和指揮船舶安全航行，評價從所有來源（包括雷達和自動雷達標繪儀）獲取的導航信息</p> <p>引導航行可用的所有導航數據的內在關係和最佳利用</p>	<p>考試並評估從經認可的自動雷達標繪儀模擬器培訓以及下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的模擬器培訓，如適合</p> <p>.3 經認可的實驗室設備培訓</p>	<p>正確解釋和分析從導航設備和系統中獲得的信息，並考慮到該設備的局限性和當時的環境和條件</p> <p>按照經修正的《1972年國際海上避碰規則》採取行動以避免與另一船舶近距離會遇或碰撞</p>
<p>通過使用協助指揮決策的電子海圖顯示與信息系統和關聯導航系統，保持航行安全</p> <p>註：對不要求配備電子海圖顯示與信息系統的船上的工作人員，無須進行該設備使用方面的培訓和評估，但該限制須反映在給有關海員簽發的簽註中</p>	<p>操作程序、系統文件和數據的管理，包括：</p> <p>.1 管理海圖數據和系統軟體的採購、許可和更新，以符合已建立的程序</p> <p>.2 系統和信息更新，包括依據廠商產品開發更新電子海圖顯示與信息系統版本的能力</p> <p>.3 創建和維護系統配置和備份文件</p> <p>.4 依據已建立的程序創建和維護運行記錄文件</p> <p>.5 依據已建立的程序創建和維護航線計劃文件</p> <p>.6 使用電子海圖顯示與信息系統日誌和航跡歷史的功能，檢查系統功能、警報設定和用戶反應</p> <p>使用電子海圖顯示與信息系統回放功能進行航行審查、航線設計和系統功能的審查</p>	<p>評估從下列一項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的電子海圖顯示與信息系統模擬器培訓</p>	<p>使用電子海圖顯示與信息系統的操作程序得以建立、應用和監控</p> <p>採取盡量減少航行安全風險的行動</p>
<p>預報天氣和海洋水文狀況</p>	<p>考慮到當地天氣狀況和用氣象傳真收到的信息，理解 and 解釋天氣圖並預報地區天氣的能力</p> <p>各種氣象系統特性的知識，包括熱帶風暴及避開風暴中心和危險象限的知識</p> <p>洋流系統的知識</p> <p>計算潮汐狀況的能力</p> <p>使用所有適當的關於潮汐和水流的航海出版物</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的實驗室設備培訓</p>	<p>基於所有可用的信息，預測給定時間段的大致天氣狀況</p> <p>為保持航行安全而採取的行動盡量減少對船舶安全的任何危險</p> <p>擬採取行動的理由基於統計數據和對實際天氣狀況的觀測</p>

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
航行的應急反應	船舶擱淺時的注意事項 擱淺前後應採取的措施 在有或無外來協助情況下使擱淺船脫淺 在碰撞前後或無論何種原因造成船體的水密完整性受損時應採取的措施 損害控制的評估 應急操舵 應急拖帶裝置和拖帶程序	考試並評估從實際訓練、工作經歷和有關應急程序的實際演習中獲取的證據	迅速確定緊急情況的種類和範圍，作出決定並採取行動以減小船艙任何系統故障的影響 通信是有效的，並遵守規定的程序 決定和行動最大程度地確保船上人員的安全
在各種條件下操縱和操作船舶	在各種條件下操縱和操作船舶，包括下列各項： .1 在接近引航站和引航員登、離船時的船舶操縱，充分注意天氣、潮汐、淌航距離和衝程 .2 在河道、江河口和受限水域操作船舶，注意風、水流和受限水域對舵效的影響 .3 恆定旋迴速率技術的運用 .4 淺水中的船舶操縱，包括由於船體下坐、橫搖和縱搖的影響而造成龍骨下富餘水深的減少 .5 會船時船與船之間以及本船與附近岸邊之間的相互作用（運河效應） .6 在各種不同的風、潮汐和水流條件下，使用或不使用拖輪靠離泊位 .7 船與拖輪的相互作用 .8 推進和操縱系統的使用 .9 錨地選擇，在受限錨地內使用單錨和雙錨錨泊，確定使用的錨鏈長度的有關因素 .10 走錨，清解纏絞的錨鏈 .11 在船舶有損壞或無損壞的狀態下進出乾船塢 .12 在惡劣天氣中管理和操縱船舶，包括援助遇險船舶或飛機；拖帶作業；使失去控制船舶脫離浪谷，減少漂流和使用鎮浪油等方法 .13 在惡劣天氣中釋放救助艇或救生艇筏的操縱注意事項 .14 從救助艇或救生艇筏上把倖存者救上船的方法 .15 確定普通種類船舶的操縱和推進特性的能力，特別是對船舶在各種吃水和速度下的衝程和旋迴圈的確定 .16 減速航行以避免因本船的首波和尾波造成浪損的重要性 .17 當航行在或接近冰區，或在船上積冰的情況下應採取的實用措施 .18 使用分道通航制和船舶交通服務（VTS）區域，以及在或臨近該類區域時的操縱	考試並評估從下列一項或數項獲取的證據： .1 經認可的工作經歷 .2 經認可的模擬器培訓，如適合 .3 經認可的有人操縱的縮尺船模，如適合	基於對船舶操縱和主機特性的正確評估，以及對靠泊或錨泊時可能產生的力的估算，作出一切有關繫泊和錨泊的決定 在航時，全面評估淺水和受限水域、浮冰、淺灘、潮汐情況、過往船隻以及本船的首波和尾波的可能影響，以使該船在各種裝載和天氣條件下能夠安全地操縱

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
推進裝置和輪機系統與設施的遙控	船舶動力裝置的工作原理 船舶輔機 船舶輪機術語的一般知識	考試並評估從下列一項或數項獲取的證據： .1 經認可的工作經歷 .2 經認可的模擬器培訓，如適合	隨時按照技術規程並在安全操作的限制內，操作動力裝置、輔機和設備

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 .3 using modern electronic	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	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  The fix obtained by terrestrial observations is

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>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</p>	<p>using:</p> <p>.1 charts, nautical almanac, plotting sheets, chronometer, sextant and a calculator</p> <p>.2 charts, nautical publications and navigational instruments (azimuth mirror, sextant, log, sounding equipment, compass) and manufacturers' manuals</p> <p>.3 radar, terrestrial electronic position-fixing systems, satellite navigation systems and appropriate nautical charts and publications</p>	<p>within accepted accuracy levels</p> <p>The accuracy of the resulting fix is properly assessed</p> <p>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</p>
<p>Determine and allow for compass errors</p>	<p>Ability to determine and allow for errors of the magnetic and gyro-compasses</p> <p>Knowledge of the principles of magnetic and gyro-compasses</p> <p>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</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved simulator training, where appropriate</p> <p>.3 approved laboratory equipment training</p> <p>using: celestial observations, terrestrial bearings and comparison between magnetic and gyro-compasses</p>	<p>The method and frequency of checks for errors of magnetic and gyro- compasses ensures accuracy of information</p>
<p>Coordinate search and rescue operations</p>	<p>A thorough knowledge of and ability to apply the procedures contained in the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved simulator training, where appropriate</p> <p>.3 approved laboratory equipment training</p> <p>using: relevant publications, charts, meteorological data, particulars of ships involved, radiocommunication equipment and other available facilities and one or more of the following:</p> <p>.1 approved SAR training course</p>	<p>The plan for coordinating search and rescue operations is in accordance with international guidelines and standards</p> <p>Radiocommunications are established and correct communication procedures are followed at all stages of the search and rescue operations</p>



Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
		.2 approved simulator training, where appropriate  .3 approved laboratory equipment training	
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
Maintain safe navigation through the use of information from navigation equipment and systems to assist command decision making  <i>Note:</i> 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 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  <i>Note:</i> 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	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
	<p>.5 create and maintain route plan files in accordance with established procedures</p> <p>.6 use ECDIS log-book and track history functions for inspection of system functions, alarm settings and user responses</p> <p>Use ECDIS playback functionality for passage review, route planning and review of system functions</p>		
Forecast weather and oceanographic conditions	<p>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</p> <p>Knowledge of the characteristics of various weather systems, including tropical revolving storms and avoidance of storm centres and the dangerous quadrants</p> <p>Knowledge of ocean current systems</p> <p>Ability to calculate tidal conditions</p> <p>Use all appropriate nautical publications on tides and currents</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved laboratory equipment training</p>	<p>The likely weather conditions predicted for a determined period are based on all available information</p> <p>Actions taken to maintain safety of navigation minimize any risk to safety of the ship</p> <p>Reasons for intended action are backed by statistical data and observations of the actual weather conditions</p>
Respond to navigational emergencies	<p>Precautions when beaching a ship</p> <p>Action to be taken if grounding is imminent, and after grounding</p> <p>Refloating a grounded ship with and without assistance</p> <p>Action to be taken if collision is imminent and following a collision or impairment of the watertight integrity of the hull by any cause</p> <p>Assessment of damage control</p> <p>Emergency steering</p> <p>Emergency towing arrangements and towing procedure</p>	<p>Examination and assessment of evidence obtained from practical instruction, in-service experience and practical drills in emergency procedures</p>	<p>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</p> <p>Communications are effective and comply with established procedures</p> <p>Decisions and actions maximize safety of persons on board</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
<p>Manoeuvre and handle a ship in all conditions</p>	<p>Manoeuvring and handling a ship in all conditions, including:</p> <ul style="list-style-type: none"> <li>.1 manoeuvres when approaching pilot stations and embarking or disembarking pilots, with due regard to weather, tide, head-reach and stopping distances</li> <li>.2 handling ship in rivers, estuaries and restricted waters, having regard to the effects of current, wind and restricted water on helm response</li> <li>.3 application of constant-rate-of-turn techniques</li> <li>.4 manoeuvring in shallow water, including the reduction in under-keel clearance caused by squat, rolling and pitching</li> <li>.5 interaction between passing ships and between own ship and nearby banks (canal effect)</li> <li>.6 berthing and unberthing under various conditions of wind, tide and current with and without tugs</li> <li>.7 ship and tug interaction</li> <li>.8 use of propulsion and manoeuvring systems</li> <li>.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</li> <li>.10 dragging anchor; clearing fouled anchors</li> <li>.11 dry-docking, both with and without damage</li> <li>.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</li> </ul>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <ul style="list-style-type: none"> <li>.1 approved in-service experience</li> <li>.2 approved simulator training, where appropriate</li> <li>.3 approved manned scale ship model, where appropriate</li> </ul>	<p>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</p> <p>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</p>

Column 1	Column 2	Column 3	Column 4
<b>Competence</b>	<b>Knowledge, understanding and proficiency</b>	<b>Methods for demonstrating competence</b>	<b>Criteria for evaluating competence</b>
	.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 .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

## 職能：貨物裝卸和積載（管理級）

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
計劃並保證安全地裝貨、積載、繫固、航行中照管貨物和卸貨	運用有關貨物的安全裝卸、積載、繫固和運輸的國際規定、規則和標準的知識和能力 貨物和貨物裝卸對縱傾和穩性影響的知識 使用穩性和吃水差圖表和應力計算設備，包括自動化數據設備，保持船體應力在公認的限度以內及裝貨和壓載的知識	考試並評估從下列一項或數項獲取的證據： .1 經認可的工作經歷 .2 經認可的模擬器培訓，如適合 使用：穩性、吃水差和應力圖表及應力計算設備	監測貨物情況的頻度和程度適合於貨物特性和當時情況 迅速確認貨物狀況或規格上的不可接受或未料到的變化，並迅速採取保證船舶和船上人員安全的補救措施 按照規定的程序和法定的要求計劃並執行貨物作業

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
	<p>在船上積載和繫固貨物，包括貨物裝卸設備和繫固與綁紮設備</p> <p>裝卸作業，特別注意《貨物積載和繫固安全操作規則》中指定的貨物運輸</p> <p>液貨船和液貨船操作的一般知識</p> <p>散貨船操作和設計局限性的知識</p> <p>使用與散裝貨物裝載、照管和卸載有關的所有可用的船上數據的能力</p> <p>根據例如《國際危規》、《國際海運固體散貨規則》、《73/78年防污公約》附則III和V等相關文件的規定以及其他相關信息建立安全貨物作業程序的能力</p> <p>解釋在船舶與碼頭人員之間建立有效交流並改善工作關係的基本原則的能力</p>		<p>貨物的積載和繫固保證整個航次中穩性和應力狀況始終處在安全限度之內</p>
<p>評估報告的貨艙、艙蓋和壓載艙的缺陷和損壞並採取適當的行動</p>	<p>標準散貨船關鍵構件強度的限制的知識以及解釋彎曲力矩和剪力的給定數值的能力</p> <p>解釋如何避免腐蝕、疲勞和不適當的貨物裝卸對散貨船的不利影響的能力</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的模擬器培訓，如適合</p> <p>使用：穩性、吃水差和應力圖表及應力計算設備</p>	<p>評價基於所接受的原則和依據充分的理由並得到正確實施。採取的決策得到認可並考慮到船舶安全和當前情況。</p>
<p>危險貨物運輸</p>	<p>有關危險貨物運輸的國際規定、標準、規則和建議案，包括《國際海運危險貨物規則》和《國際海運固體散裝貨物規則》</p> <p>危險和有害貨物的運輸；裝卸貨物的預防措施和運輸途中對貨物的照管</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的模擬器培訓，如適合</p> <p>.3 經認可的專家培訓</p>	<p>貨物的配載計劃基於可信的資料，並按確定的導則和法定要求進行</p> <p>有關危險性和危害性及特殊要求的資料要以適當的格式記載，以便於在一旦發生事故時參考</p>

**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
<p>Plan and ensure safe loading, stowage, securing, care during the voyage and unloading of cargoes</p>	<p>Knowledge of and ability to apply relevant international regulations, codes and standards concerning the safe handling, stowage, securing and transport of cargoes</p> <p>Knowledge of the effect on trim and stability of cargoes and cargo operations</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved simulator training, where appropriate</p> <p>using: stability, trim and stress tables, diagrams and stress-calculating equipment</p>	<p>The frequency and extent of cargo condition monitoring is appropriate to its nature and prevailing conditions</p> <p>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</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>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</p> <p>Stowage and securing of cargoes on board ships, including cargo-handling gear and securing and lashing equipment</p> <p>Loading and unloading operations, with special regard to the transport of cargoes identified in the Code of Safe Practice for Cargo Stowage and Securing</p> <p>General knowledge of tankers and tanker operations</p> <p>Knowledge of the operational and design limitations of bulk carriers</p> <p>Ability to use all available shipboard data related to loading, care and unloading of bulk cargoes</p> <p>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</p> <p>Ability to explain the basic principles for establishing effective communications and improving working relationship between ship and terminal personnel</p>		<p>Cargo operations are planned and executed in accordance with established procedures and legislative requirements</p> <p>Stowage and securing of cargoes ensures that stability and stress conditions remain within safe limits at all times during the voyage</p>
<p>Assess reported defects and damage to cargo spaces, hatch covers and ballast tanks and take appropriate action</p>	<p>Knowledge of the limitations on strength of the vital structural parts of a standard bulk carrier and ability to interpret given figures for bending moments and shear forces</p> <p>Ability to explain how to avoid the detrimental effects on bulk carriers of corrosion, fatigue and inadequate cargo handling</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved simulator training, where appropriate</p> <p>using: stability, trim and stress tables, diagrams and stress-calculating equipment</p>	<p>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</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Carriage of dangerous goods	<p>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</p> <p>Carriage of dangerous, hazardous and harmful cargoes; precautions during loading and unloading and care during the voyage</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved simulator training, where appropriate</p> <p>.3 approved specialist training</p>	<p>Planned distribution of cargo is based on reliable information and is in accordance with established guidelines and legislative requirements</p> <p>Information on dangers, hazards and special requirements is recorded in a format suitable for easy reference in the event of an incident</p>

職能：控制船舶操作和關照船上人員（管理級）

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
控制吃水差、穩性和應力	<p>了解船舶構造的基本原理和影響吃水差和穩性的因素以及保持吃水差和穩性的必要措施</p> <p>因一艙受損進水而影響船舶吃水差和穩性的知識以及應採取的對策</p> <p>海事組織有關船舶穩性的建議案的知識</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓，如適合</p>	<p>穩性和應力狀況始終保持在安全限度之內</p>
監督和控制法定要求的遵守以及保證海上人命安全與保護海洋環境的措施	<p>國際協定和公約中包括的有關國際海事法律的知識</p> <p>特別應注意下列各項：</p> <p>.1 國際公約要求隨船攜帶的證書和其他文件，如何取得這些證件以及這些證件的有效期</p> <p>.2 經修正的《1966年國際載重線公約》有關要求規定的職責</p> <p>.3 經修正的《1974年國際海上人命安全公約》有關要求規定的職責</p> <p>.4 經修正的《國際防止船舶造成污染公約》有關要求規定的職責</p> <p>.5 海員健康證明和《國際衛生條例》的要求</p> <p>.6 影響船舶、旅客、海員和貨物安全的國際文件所規定的職責</p> <p>.7 防止船舶污染海洋環境的方法和設備</p> <p>.8 為實施國際協定和公約的國內立法</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓，如適合</p>	<p>監督操作和維護保養的程序符合法定要求</p> <p>迅速和全面確認潛在的不符合項的情況</p> <p>按計劃換新證書和給證書展期以保證經檢驗的項目和設備繼續有效</p>

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
保持海員和旅客的安全和保安以及保持救生、消防及其他安全系統的工作狀態	<p>救生設備有關規則（《國際海上人命安全公約》）的全面知識</p> <p>組織消防和棄船有關演習</p> <p>保持救生、消防及其他安全系統的工作狀態</p> <p>在緊急情況下為保護和保障船上所有人員安全而採取的行動</p> <p>在失火、爆炸、碰撞或擱淺時限制損害和救助本船的行動</p>	考試並評估從實際訓練和經認可的在職培訓和經歷中獲取的證據	探火和安全系統的監測程序保證迅速探測到所有報警，並按所建立的應急程序採取行動
制定應急和損害控制計劃並處理緊急情況	<p>起草應急反應計劃</p> <p>船舶構造，包括損害控制</p> <p>防火、探火和滅火的方法和設備</p> <p>救生設備的功能和使用</p>	考試並評估從經認可的在職培訓和經歷中獲取的證據	應急程序符合所制定的應急計劃
領導和管理技能的運用	<p>船上人員管理和培訓的實用知識</p> <p>有關國際海事公約和建議案以及國家立法的知識</p> <p>應用任務和工作量管理的能力，包括：</p> <ol style="list-style-type: none"> <li>.1 計劃和協調</li> <li>.2 人員分派</li> <li>.3 時間和資源的制約</li> <li>.4 優先排序</li> </ol> <p>應用有效資源管理的知識和能力：</p> <ol style="list-style-type: none"> <li>.1 資源的分配、分派和優先排序</li> <li>.2 船上和岸上的有效交流</li> <li>.3 決策反映出團隊的經驗</li> <li>.4 決斷和領導力，包括激勵</li> <li>.5 獲取並保持情景意識</li> </ol> <p>運用決策技能的知識和能力：</p> <ol style="list-style-type: none"> <li>.1 局面和風險評估</li> <li>.2 確定並形成選擇項</li> <li>.3 選出行動過程</li> <li>.4 評價結果的有效性</li> </ol> <p>制定、貫徹和監督標準操作程序</p>	<p>評估從下列一項或數項獲取的證據：</p> <ol style="list-style-type: none"> <li>.1 經認可的培訓</li> <li>.2 經認可的工作經歷</li> <li>.3 經實際演示</li> </ol>	<p>以適合有關個人的方式分配海員工作，並告知所期待的工作和行為標準</p> <p>培訓目標和培訓活動以對目前適任性和能力的評估和操作要求為依據</p> <p>表明操作符合適用的規則</p> <p>操作是有計劃的並根據需要按正確的優先順序分配和分派資源，以執行必要的任務</p> <p>語言交流的發出和接收是清楚和毫不含糊的</p> <p>表明有效的領導行為</p> <p>對於當前和預測的船舶和操作狀態以及外部環境，必要的小組成員有着共同的準確理解</p> <p>決策對於局面是最有效的</p> <p>表明操作是有效的並符合適用的規則</p>
組織和管理船上醫療的提供	<p>下列出版物的使用和內容的全面知識：</p> <ol style="list-style-type: none"> <li>.1 《國際船舶醫療指南》或等效的國內出版物</li> <li>.2 《國際信號規則》的醫療部分</li> <li>.3 《危險貨物事故醫療急救指南》</li> </ol>	考試並評估從經認可的培訓中獲取的證據	所採取的行動和所遵循的程序應正確運用並充分使用所得到的建議



**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	<p>Understanding of fundamental principles of ship construction and the theories and factors affecting trim and stability and measures necessary to preserve trim and stability</p> <p>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</p> <p>Knowledge of IMO recommendations concerning ship stability</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training, where appropriate</p>	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, security and the protection of the marine environment	<p>Knowledge of international maritime law embodied in international agreements and conventions</p> <p>Regard shall be paid especially to the following subjects:</p> <p>.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</p> <p>.2 responsibilities under the relevant requirements of the International Convention on Load Lines, 1966, as amended</p> <p>.3 responsibilities under the relevant requirements of the International Convention for the Safety of Life at Sea, 1974, as amended</p> <p>.4 responsibilities under the International Convention for the Prevention of Pollution from Ships, as amended</p> <p>.5 maritime declarations of health and the requirements of the International Health Regulations</p> <p>.6 responsibilities under international instruments affecting the safety of the ship, passengers, crew and cargo</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training, where appropriate</p>	<p>Procedures for monitoring operations and maintenance comply with legislative requirements</p> <p>Potential non-compliance is promptly and fully identified</p> <p>Planned renewal and extension of certificates ensures continued validity of surveyed items and equipment</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>.7 methods and aids to prevent pollution of the marine environment by ships</p> <p>.8 national legislation for implementing international agreements and conventions</p>		
<p>Maintain safety and security of the ship's crew and passengers and the operational condition of life-saving, fire-fighting and other safety systems</p>	<p>Thorough knowledge of life-saving appliance regulations (International Convention for the Safety of Life at Sea)</p> <p>Organization of fire drills and abandon ship drills</p> <p>Maintenance of operational condition of life-saving, fire-fighting and other safety systems</p> <p>Actions to be taken to protect and safeguard all persons on board in emergencies</p> <p>Actions to limit damage and save the ship following a fire, explosion, collision or grounding</p>	<p>Examination and assessment of evidence obtained from practical instruction and approved in-service training and experience</p>	<p>Procedures for monitoring fire-detection and safety systems ensure that all alarms are detected promptly and acted upon in accordance with established emergency procedures</p>
<p>Develop emergency and damage control plans and handle emergency situations</p>	<p>Preparation of contingency plans for response to emergencies</p> <p>Ship construction, including damage control</p> <p>Methods and aids for fire prevention, detection and extinction</p> <p>Functions and use of life-saving appliances</p>	<p>Examination and assessment of evidence obtained from approved in-service training and experience</p>	<p>Emergency procedures are in accordance with the established plans for emergency situations</p>
<p>Use of leadership and managerial skill</p>	<p>Knowledge of shipboard personnel management and training</p> <p>A knowledge of related international maritime conventions and recommendations, and national legislation</p> <p>Ability to apply task and workload management, including:</p> <p>.1 planning and co-ordination</p> <p>.2 personnel assignment</p>	<p>Assessment of evidence obtained from one or more of the following:</p> <p>.1 approved training</p> <p>.2 approved in-service experience</p> <p>.3 approved simulator training</p>	<p>The crew are allocated duties and informed of expected standards of work and behaviour in a manner appropriate to the individuals concerned</p> <p>Training objectives and activities are based on assessment of current competence and capabilities and operational requirements</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>.3 time and resource constraints</p> <p>.4 prioritization</p> <p>Knowledge and ability to apply effective resource management:</p> <p>.1 allocation, assignment, and prioritization of resources</p> <p>.2 effective communication on board and ashore</p> <p>.3 decisions reflect consideration of team experiences</p> <p>.4 assertiveness and leadership, including motivation</p> <p>.5 obtaining and maintaining situation awareness</p> <p>Knowledge and ability to apply decision-making techniques:</p> <p>.1 situation and risk assessment</p> <p>.2 identify and generate options</p> <p>.3 selecting course of action</p> <p>.4 evaluation of outcome effectiveness</p> <p>Development, implementation, and oversight of standard operating procedures</p>		<p>Operations are demonstrated to be in accordance with applicable rules</p> <p>Operations are planned and resources are allocated as needed in correct priority to perform necessary tasks</p> <p>Communication is clearly and unambiguously given and received</p> <p>Effective leadership behaviours are demonstrated</p> <p>Necessary team member(s) share accurate understanding of current and predicted vessel state and</p> <p>operational status and external environment</p> <p>Decisions are most effective for the situation</p> <p>Operations are demonstrated to be effective and in accordance with applicable rules</p>
<p>Organize and manage the provision of medical care on board</p>	<p>A thorough knowledge of the use and contents of the following publications:</p> <p>.1 International Medical Guide for Ships or equivalent national publications</p> <p>.2 medical section of the International Code of Signals</p> <p>.3 Medical First Aid Guide for Use in Accidents Involving Dangerous Goods</p>	<p>Examination and assessment of evidence obtained from approved training</p>	<p>Actions taken and procedures followed correctly apply and make full use of advice available</p>

**第A—II/3節**

對從事近岸航行未滿500總噸船舶的船長和負責航行值班的高級海員發證的強制性最低要求

**負責航行值班的高級海員****適任標準**

1 每位證書申請人須：

.1 按要求表明承擔表A—II/3第1欄所列的操作級任務、職責和責任的適任能力；

.2 至少持有按照《無線電規則》要求進行甚高頻無線電通信的適當證書；並且

.3 如果被指定在遇險事件中負有無線電通信的主要責任，則持有根據《無線電規則》的規定簽發或承認的適當證書。

2 發證所要求的最低知識、理解和熟練列於表A—II/3第2欄。

3 表A—II/3第2欄所列各科目的知識水平，須足以能使證書申請人在負責航行值班的高級海員職位上服務。

4 為獲取所需水平的理論知識、理解和熟練的培訓和經驗，須以第A—VIII/2節第4—1部分—航行值班時應遵守的基本原則為依據，並須考慮到本規則本部分的有關要求和B部分給予的指導。

5 每位證書申請人須按照表A—II/3第3和第4欄所列的表明適任的方法和評價適任的標準，提供已達到所要求的適任標準的證明。

**特殊培訓**

6 每位從事近岸航行未滿500總噸船舶的負責航行值班的高級海員的證書申請人，按照規則第II/3條第4.2.1款已完成特殊培訓的，須參加經認可的在船培訓計劃，該培訓計劃：

.1 保證證書申請人在要求的海上服務期間，受到關於在負責航行值班高級海員的任務、職責和責任方面的系統化實踐培訓並獲得經驗，同時考慮到本規則第B—II/1節給予的指導；

.2 在執行經認可的海上服務中密切地受到船上合格的高級海員的監督和指導；並且

.3 在培訓記錄簿或類似的文件中予以充分載明。

**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.

**船長**

**MASTER**

7 每位從事近岸航行未滿500總噸船舶的船長證書申請人，須滿足以下對負責航行值班的高級海員的要求。此外，還須提供有關履行該類船長職責的知識和能力的證明。

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.

表 A – II/3

從事近岸航行未滿 500 總噸船舶的船長和負責航行值班的高級海員的最低適任標準

職能：航行（操作級）

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
<p>計劃並引導沿海航行和定位</p> <p>註：對在不必配備電子海圖顯示與信息系統的船舶上的工作人員，不必進行該設備使用的培訓和評估，但該限制須反映在給當事海員簽發的簽註中</p>	<p>航行</p> <p>使用下列各項確定船位的能力：</p> <p>.1 陸標</p> <p>.2 燈塔、立標和浮標等助航標誌</p> <p>.3 考慮到風、潮汐、水流和估計航速，進行航跡推算</p> <p>使用海圖和航海出版物，諸如航路指南、潮汐表、航海通告、無線電航行警告和船舶定線資料等的全面知識和能力</p> <p>按照船舶報告制的一般原則和船舶交通服務程序進行報告</p> <p>註：本項目僅對船長證書的申請人提出要求</p> <p>通過公認的標繪沿海航線的方法制定航次計劃和各種條件下的航行，並考慮到如下情形：</p> <p>.1 受限水域</p> <p>.2 氣象條件</p> <p>.3 冰況</p> <p>.4 能見度不良</p> <p>.5 分道通航制</p> <p>.6 船舶交通服務（VTS）區域</p> <p>.7 潮汐影響大的區域</p> <p>註：本項目僅對船長證書的申請人提出要求</p> <p>使用電子海圖顯示與信息系統的全面知識和能力</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓，如適合</p> <p>.4 經認可的實驗室設備培訓</p> <p>使用：海圖目錄、海圖、航海出版物、無線電航行警告、六分儀、方位鏡、電子導航設備、回聲測深儀、羅經</p> <p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的培訓船經歷</p> <p>.2 經認可的電子海圖顯示與信息系統模擬器培訓</p>	<p>從海圖和航海出版物獲取的信息是相關的，解釋是正確的，應用是恰當的</p> <p>主要定位方法最適合於當時環境和條件</p> <p>確定的船位在公認的儀器/系統誤差限度內</p> <p>以適當的時間間隔核查從主要定位方法獲得的信息的可靠性</p> <p>航海信息的計算和測量是精確的</p> <p>所選的海圖和出版物是船上適合於航行區域的最大比例尺的，並按照船上可用的最新資料進行過更正</p>

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
計劃並引導沿海航行和定位 (續)	<p><b>導航儀器和設備</b></p> <p>使用有關船舶上通常安裝的一切導航儀器和設備安全地操作並確定船位的能力</p> <p><b>羅經</b></p> <p>磁羅經誤差及校正的知識</p> <p>使用地文航海手段確定羅經誤差和修正誤差的能力</p> <p><b>自動操舵</b></p> <p>自動操舵系統和程序，從手動到自動舵的相互轉換，調整按鈕至最佳性能的知識</p> <p><b>氣象學</b></p> <p>應用和解釋從船用氣象儀器上獲取的信息的能力</p> <p>各種氣象系統的特性、報告程序和記錄系統的知識</p> <p>運用可利用的氣象信息的能力</p>	<p>評估從經認可的雷達模擬器培訓中獲取的證據</p>	<p>導航系統性能的檢查和測試符合廠家的建議和良好的航海習慣以及海事組織關於導航設備性能標準的決議</p> <p>按照公認的航海習慣解釋和分析從雷達上獲得的信息，並考慮到雷達的局限性和精度水平</p> <p>測定磁羅經的誤差並正確運用到航向和方位上</p> <p>操舵方式的選擇最適合於當時天氣、交通狀況和擬採取的操縱</p> <p>對氣象狀況的測量和觀測是精確的並適合於航行</p> <p>評價和運用氣象信息以保持船舶安全航行</p>
保持安全航行值班	<p><b>值班</b></p> <p>關於經修正的《1972年國際海上避碰規則》的內容、適用範圍和意圖的全面知識</p> <p>航行值班中應遵守的基本原則的內容的知識</p> <p>按照船舶定線制的一般規定使用定線制</p> <p>根據船舶報告制的一般原則和船舶交通服務程序使用報告制</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <ol style="list-style-type: none"> <li>.1 經認可的工作經歷</li> <li>.2 經認可的培訓船經歷</li> <li>.3 經認可的模擬器培訓，如適合</li> <li>.4 經認可的實驗室設備培訓</li> </ol>	<p>按照公認的原則和程序進行值班、接班和交班</p> <p>隨時保持正規的瞭望，並符合公認的原則和程序</p> <p>號燈、號型和聲號符合經修正的《1972年國際海上避碰規則》中的有關要求，並能被正確辨認</p> <p>監測交通、船舶和環境的頻度和程度符合公認的原則和程序</p> <p>按照經修正的《1972年國際海上避碰規則》採取行動，以避免與他船近距離會遇或碰撞</p> <p>及時地按照公認的航海程序作出調整航向和(或)航速的決定</p> <p>對有關船舶航行的運動和活動保持正規的記錄</p> <p>始終明確安全航行的責任，包括船長在駕駛台時和正在被引領時</p>

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
應急反應	<p>應急程序，包括：</p> <p>.1 在緊急情況下的旅客保護和安全預防措施</p> <p>.2 初始損害評估和損害控制</p> <p>.3 碰撞後應採取的行動</p> <p>.4 擱淺後應採取的行動</p> <p>此外，對船長證書的申請人，還應包括下列內容：</p> <p>.1 應急操舵</p> <p>.2 拖帶和被拖帶的佈置</p> <p>.3 從海中救助人員</p> <p>.4 援助遇險中的船舶</p> <p>.5 懂得在港內發生緊急情況下應採取的行動</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓，如適合</p> <p>.4 實際訓練</p>	<p>迅速確定緊急情況的類型和範圍</p> <p>初始行動和操縱（如適合）符合應急計劃並適合於局面的緊迫性和緊急情況的性質</p>
對海上遇險信號的反應	<p>搜尋和救助</p> <p>《國際空中和海上搜尋救助手冊》（IAMSAR）中內容的知識</p>	<p>考試並評估從實際訓練或經認可的模擬器培訓（如適合）中獲取的證據</p>	<p>立即認明遇險或緊急信號</p> <p>實施並遵守應急計劃和常規命令中的指令</p>
操縱船舶和操 作小船動力裝 置	<p>船舶操縱和操作</p> <p>對影響安全操縱和操作的因素的知識</p> <p>小船動力裝置和輔機的操作</p> <p>錨泊和繫泊的正確程序</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓，如適合</p>	<p>在正常的操縱中，船舶推進、操舵和動力系統不超出安全操作的限度</p> <p>調整船舶航向和航速，保持航行安全</p> <p>按照技術規程並始終在安全操作的限度內，操作動力裝置、輔機和設備</p>

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
<p>Plan and conduct a coastal passage and determine position</p> <p>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</p>	<p><i>Navigation</i></p> <p>Ability to determine the ship's position by the use of:</p> <p>.1 landmarks</p> <p>.2 aids to navigation, including lighthouses, beacons and buoys</p> <p>.3 dead reckoning, taking into account winds, tides, currents and estimated speed</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training, where appropriate</p> <p>.4 approved laboratory equipment training</p>	<p>Information obtained from nautical charts and publications is relevant, interpreted correctly and properly applied</p> <p>The primary method of fixing the ship's position is the most appropriate to the prevailing circumstances and conditions</p> <p>The position is determined within the limits of acceptable instrument/system errors</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>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' routing information</p> <p>Reporting in accordance with General Principles for Ship Reporting Systems and with VTS procedures</p> <p><i>Note:</i> This item is only required for certification as master</p> <p>Voyage planning and navigation for all conditions by acceptable methods of plotting coastal tracks, taking into account, e.g.:</p> <ul style="list-style-type: none"> <li>.1 restricted waters</li> <li>.2 meteorological conditions</li> <li>.3 ice</li> <li>.4 restricted visibility</li> <li>.5 traffic separation schemes</li> <li>.6 vessel traffic service (VTS) areas</li> <li>.7 areas of extensive tidal effects</li> </ul> <p><i>Note:</i> This item is only required for certification as master</p> <p>Thorough knowledge of and ability to use ECDIS</p> <p><i>Navigational aids and equipment</i></p> <p>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</p>	<p>using: chart catalogues, charts, nautical publications, radio navigational warnings, sextant, azimuth mirror, electronic navigation equipment, echo-sounding equipment, compass</p> <p>Examination and assessment of evidence obtained from one or more of the following:</p> <ul style="list-style-type: none"> <li>.1 approved training ship experience</li> <li>.2 approved ECDIS simulator training</li> </ul> <p>Assessment of evidence obtained from approved radar simulator</p>	<p>The reliability of the information obtained from the primary method of position fixing is checked at appropriate intervals</p> <p>Calculations and measurements of navigational information are accurate</p> <p>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</p> <p>Performance checks and tests of navigation systems comply with manufacturer's recommendations, good navigational practice and IMO resolutions on performance standards for navigational equipment</p>



Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p><i>Compasses</i></p> <p>Knowledge of the errors and corrections of magnetic compasses</p> <p>Ability to determine errors of the compass, using terrestrial means, and to allow for such errors</p> <p><i>Automatic pilot</i></p> <p>Knowledge of automatic pilot systems and procedures; change-over from manual to automatic control and vice versa; adjustment of controls for optimum performance</p> <p><i>Meteorology</i></p> <p>Ability to use and interpret information obtained from shipborne meteorological instruments</p> <p>Knowledge of the characteristics of the various weather systems, reporting procedures and recording systems</p> <p>Ability to apply the meteorological information available</p>		<p>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</p> <p>Errors in magnetic compasses are determined and applied correctly to courses and bearings</p> <p>Selection of the mode of steering is the most suitable for prevailing weather, sea and traffic conditions and intended manoeuvres</p> <p>Measurements and observations of weather conditions are accurate and appropriate to the passage</p> <p>Meteorological information is evaluated and applied to maintain the safe passage of the vessel</p>
<p>Maintain a safe navigational watch</p>	<p><i>Watchkeeping</i></p> <p>Thorough knowledge of content, application and intent of the International Regulations for Preventing Collisions at Sea, 1972, as amended</p> <p>Knowledge of content of the Principles to be observed in keeping a navigational watch</p> <p>Use of routing in accordance with the General Provisions on Ships' Routing</p> <p>Use of reporting in accordance with the General Principles for Ship Reporting Systems and with VTS procedures</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training, where appropriate</p> <p>.4 approved laboratory equipment training</p>	<p>The conduct, handover and relief of the watch conforms with accepted principles and procedures</p> <p>A proper look-out is maintained at all times and in conformity with accepted principles and procedures</p> <p>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</p> <p>The frequency and extent of monitoring of traffic, the ship and the environment conform with accepted principles and procedures</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
			<p>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</p> <p>Decisions to adjust course and/or speed are both timely and in accordance with accepted navigation procedures</p> <p>A proper record is maintained of movements and activities relating to the navigation of the ship</p> <p>Responsibility for safe navigation is clearly defined at all times, including periods when the master is on the bridge and when under pilotage</p>
Respond to emergencies	<p>Emergency procedures, including:</p> <ul style="list-style-type: none"> <li>.1 precautions for the protection and safety of passengers in emergency situations</li> <li>.2 initial assessment of damage and damage control</li> <li>.3 action to be taken following a collision</li> <li>.4 action to be taken following a grounding</li> </ul> <p>In addition, the following material should be included for certification as master:</p> <ul style="list-style-type: none"> <li>.1 emergency steering</li> <li>.2 arrangements for towing and for being taken in tow</li> <li>.3 rescuing persons from the sea</li> <li>.4 assisting a vessel in distress</li> <li>.5 appreciation of the action to be taken when emergencies arise in port</li> </ul>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <ul style="list-style-type: none"> <li>.1 approved in-service experience</li> <li>.2 approved training ship experience</li> <li>.3 approved simulator training, where appropriate</li> <li>.4 practical instruction</li> </ul>	<p>The type and scale of the emergency is promptly identified</p> <p>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</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Respond to a distress signal at sea	<i>Search and rescue</i> 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
Manoeuvre the ship and operate small ship power plants	<i>Ship manoeuvring and handling</i> 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

職能：貨物裝卸和積載（操作級）

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
監控裝貨、積載、繫固和卸貨，以及航行中的貨物監管	<i>貨物裝卸、積載和繫固</i> 貨物安全裝卸、積載和繫固的知識，包括危險和有害貨物及其對人命和船舶安全的影響的知識  《國際海運危險貨物規則》（IMDG）的使用	考試並評估從下列一項或數項獲取的證據： .1 經認可的工作經歷 .2 經認可的培訓船經歷 .3 經認可的模擬器培訓，如適合	按照配載圖或其他文件、所制定的安全規則、設備操作規程和船舶積載限制進行貨物作業  危險和有害貨物的操作符合國際規則和公認的安全操作標準和規則

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	<i>Cargo handling, stowage and securing</i> 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

## 職能：控制船舶操作和關照船上人員（操作級）

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
保證遵守防污染要求	防止海洋環境污染和防止污染的程序 為防止海洋環境污染而採取的預防措施的知識 防污染程序和所有相關設備	考試並評估從下列一項或數項獲取的證據： .1 經認可的工作經歷 .2 經認可的培訓船經歷	全面遵守關於監控船上操作和保證符合《防污公約》要求的程序
保持船舶的適航性	船舶穩性 穩性、吃水差、應力圖表和應力計算儀器的實用知識和應用 懂得一旦喪失部分完整浮力時應採取的基本行動 懂得水密完整性的基本知識 船舶構造 船舶主要構件的一般知識和各種部件的正確名稱	考試並評估從下列一項或數項獲取的證據： .1 經認可的工作經歷 .2 經認可的培訓船經歷 .3 經認可的模擬器培訓，如適合 .4 經認可的實驗室設備培訓	在各種裝載條件下，穩性狀況符合海事組織關於完整穩性的標準 按照公認的做法採取保證和維持水密完整性的行動
船上防火、控制火災和滅火	防火和滅火設備 組織消防演習的能力 火的種類及其化學性質的知識 滅火系統的知識 懂得一旦失火時，包括油類系統着火時應採取的行動	評估從第A—VI/3節規定的經認可的消防培訓和經歷中獲取的證據	迅速確定問題的種類和範圍，初始行動符合船舶的應急程序和應急計劃 撤離、緊急關閉和隔離程序與緊急情況的性質相適應，並迅速實施 作出報告並通知船上人員的優先順序、等級和時間範圍與緊急情況的性質相適應，並反映出問題的緊急程度
操作救生設備	救生 組織棄船演習的能力和操作救生艇筏和救助艇、其釋放裝置和佈置及艇筏的設備（包括無線電救生設備、衛星應急無線電示位標、搜救應答器、救生服和保溫用具）的知識	評估從第A—VI/2節第1至4款規定的經認可的培訓和經歷中獲取的證據	棄船和救生情況下的應急行動適合於當時環境和條件，並符合公認的安全做法和標準
在船上應用醫療急救	醫護 醫療指南和無線電諮詢的實際應用，包括根據這種知識對船上可能發生的事故和疾病採取有效行動的能力	評估從第A—VI/4節第1至3款規定的經認可的培訓中獲取的證據	迅速確認傷病可能的原因、性質和程度或狀況，採取治療以減少對生命的緊急威脅
監督遵守法定要求	涉及海上人命安全和保護海洋環境的海事組織有關公約的基本實用知識	評估從考試或經認可的培訓中獲取的證據	正確確認有關海上人命安全和保護海洋環境的法定要求
致力於人員和船舶的安全	個人求生技能的知識 防火的知識以及撲滅火災的能力 基本的急救知識 人員安全和社會責任的知識	評估從第A—VI/1節第2款所列的經歷以及經認可的培訓中獲取的證據	正確使用了合適的安全和防護設備 始終遵守為保護人員和船舶而制定的程序和安全工作做法 始終遵守為保護環境而制定的程序 緊急情況下的初始和後續行動符合已建立的應急反應程序

**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	<p><i>Prevention of pollution of the marine environment and anti-pollution procedures</i></p> <p>Knowledge of the precautions to be taken to prevent pollution of the marine environment</p> <p>Anti-pollution procedures and all associated equipment</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p>	<p>Procedures for monitoring shipboard operations and ensuring compliance with MARPOL requirements are fully observed</p>
Maintain seaworthiness of the ship	<p><i>Ship stability</i></p> <p>Working knowledge and application of stability, trim and stress tables, diagrams and stress-calculating equipment</p> <p>Understanding of fundamental actions to be taken in the event of partial loss of intact buoyancy</p> <p>Understanding of the fundamentals of watertight integrity</p> <p><i>Ship construction</i></p> <p>General knowledge of the principal structural members of a ship and the proper names for the various parts</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training, where appropriate</p> <p>.4 approved laboratory equipment training</p>	<p>The stability conditions comply with the IMO intact stability criteria under all conditions of loading</p> <p>Actions to ensure and maintain the watertight integrity of the ship are in accordance with accepted practice</p>
Prevent, control and fight fires on board	<p><i>Fire prevention and fire-fighting appliances</i></p> <p>Ability to organize fire drills</p> <p>Knowledge of classes and chemistry of fire</p> <p>Knowledge of fire-fighting systems</p> <p>Understanding of action to be taken in the event of fire, including fires involving oil systems</p>	<p>Assessment of evidence obtained from approved fire-fighting training and experience as set out in section A-VI/3</p>	<p>The type and scale of the problem is promptly identified and initial actions conform with the emergency procedure and contingency plans for the ship</p> <p>Evacuation, emergency shutdown and isolation procedures are appropriate to the nature of the emergency and are implemented promptly</p> <p>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</p>

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	<i>Life-saving</i> 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	<i>Medical aid</i> 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, security and protection of the marine environment	Assessment of evidence obtained from examination or approved training	Legislative requirements relating to safety of life at sea, security 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

**第A—II/4節**

對參加航行值班的普通海員發證的強制性最低要求

**適任標準**

1 每位在500總噸或以上的海船上參加航行值班的普通海員須表明履行表A—II/4第1欄規定的支持級航行職能的適任能力。

2 對在500總噸或以上的海船上參加航行值班的普通海員所要求的最低知識、理解和熟練列於表A—II/4第2欄中。

**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 每位證書申請人須按照表A—II/4第3欄和第4欄所列的表明適任的方法和評價適任的標準，提供已達到所要求的適任標準的證明。第3欄中提及的“實際測驗”可包括對學員做實際測試的經認可的岸基培訓。

4 對於未在適任表中列出的某些支持級職能，主管機關有責任對被指定履行那些支持級職能的人員確定適當的培訓、評估和發證要求。

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 trainees 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.

表 A — II/4  
參加航行值班的普通海員的最低適任標準

職能：航行（支持級）

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
按照英語舵令操舵	使用磁羅經和陀螺羅經 舵令 自動舵與人工操舵的互換	評估從下列項目中獲取的證據： .1 實際測驗，或 .2 經認可的工作經歷，或 .3 經認可的培訓船經歷	在公認的限度內穩定地操舵以保持航向，注意航行區域和當時海況。平穩地控制航向的改變  在任何時候語言交流清楚簡明，並以海員的方式確認有關指令
用視覺和聽覺保持正規的瞭望	瞭望人員的職責，包括用度或羅經點報告聲號、燈號或其他目標的大致方位	評估從下列項目中獲取的證據： .1 實際測驗，或 .2 經認可的工作經歷，或 .3 經認可的培訓船經歷	迅速地探測到聲號、燈號和其他目標，並以度數或羅經點數向值班高級海員報告其大致方位
致力於監測和控制安全值班	船上術語和定義 使用相應的船上內部通信和報警系統 懂得舵令並能就有關值班職責的事宜與值班高級海員進行語言交流 接班、值班和交接班程序 保持安全值班所需的信息 基本的環境保護程序	評估從經認可的工作經歷或經認可的培訓船經歷中獲取的證據	語言交流清楚簡明，在未明確理解值班信息或指示時，向值班高級海員尋求建議和（或）說明  值班、交班和接班符合公認的原則和程序
操作應急設備，應用應急程序	應急職責和報警信號的知識 煙火遇險信號、衛星應急無線電示位標和搜救應答器的知識 防止虛假報警和一旦誤報警時採取的行動	評估從演示和經認可的工作經歷或經認可的培訓船經歷中獲取的證據	在得知緊急或異常情況後採取的初步行動符合所確定的做法和程序  在任何時候語言交流清楚簡明，以海員的方式確認有關指令  始終保持緊急和遇險報警系統的完整性

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 approximate bearing, in degrees or points, is reported to the officer of the watch
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 on 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
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



**第A—II/5節**

對作為高級值班水手的普通海員發證的強制性最低要求

**適任標準**

- 1 每位在500總噸或以上的海船上服務的高級值班水手須表明履行表A—II/5第1欄規定的支持級職能的適任能力。
- 2 對在500總噸或以上的海船上服務的高級值班水手所要求的最低知識、理解和熟練列於表A—II/5第2欄中。
- 3 每位證書申請人須按照表A—II/5第3欄和第4欄所列的表明適任的方法和評價適任的標準，提供已達到所要求的適任標準的證據。

**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.

**表 A — II/5**

**擔任高級值班水手的普通海員的最低適任標準規範**

**職能：航行（支持級）**

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
致力於安全的航行值班	懂得舵令並就有關值班職責的事宜與值班高級海員進行交流的能力 接班、值班和交接班程序 保持安全值班所需的信息	評估從工作經歷或實際測驗中獲取的證據	語言交流是清楚簡明的 值班、交接班和接班符合公認的做法和程序
致力於靠泊、錨泊和其他繫泊操作	繫泊系統和相關程序的實際知識，包括： .1 繫纜和拖纜的功能以及每根纜繩作為整體系統一部分的功能 .2 繫泊設備的承載能力、安全工作負荷和破斷強度，包括繫泊鋼絲纜、合成纖維纜、絞車、錨機、絞盤、纜柱、導纜鉗和纜樁 .3 繫住和解掉繫纜和拖輪纜和鋼絲的程序和指令，包括拖纜 .4 各種操作中用錨的程序和指令 有關繫泊單浮筒或多浮筒的程序和指令的實際知識	評估從下列一項或數項獲取的證據： .1 經認可的工作經歷 .2 實際培訓 .3 考試 .4 經認可的培訓船經歷 .5 經認可的模擬器培訓，如適合	按照已建立的安全做法和設備操作規程進行操作

*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 on matters relevant to watchkeeping duties	Assessment of evidence obtained from in-service experience or practical test	Communications are clear and concise

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>Procedures for the relief, maintenance and handover of a watch</p> <p>Information required to maintain a safe watch</p>		Maintenance, handover and relief of the watch is in conformity with acceptable practices and procedures
Contribute to berthing, anchoring and other mooring operations	<p>Working knowledge of the mooring system and related procedures, including:</p> <p>.1 the function of mooring and tug lines and how each line functions as part of an overall system</p> <p>.2 the capacities, safe working loads, and breaking strengths of mooring equipment, including mooring wires, synthetic and fibre lines, winches, anchor windlasses, capstans, bits, chocks and bollards</p> <p>.3 the procedures and order of events for making fast and letting go mooring and tug lines and wires, including towing lines</p> <p>.4 the procedures and order of events for the use of anchors in various operations</p> <p>Working knowledge of the procedures and order of events associated with mooring to a buoy or buoys</p>	<p>Assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 practical training</p> <p>.3 examination</p> <p>.4 approved training ship experience</p> <p>.5 approved simulator training, where appropriate</p>	Operations are carried out in accordance with established safety practices and equipment operating instructions

職能：貨物裝卸和積載（支持級）

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
致力於貨物和物料的裝卸	<p>關於安全裝卸、積載和繫固貨物和物料的程序的知识，包括危險、有害固體和液體</p> <p>與特定種類貨物和識別《國際危規》標籤有關的基本知識和要遵循的預防措施</p>	<p>評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 實際培訓</p> <p>.3 考試</p> <p>.4 經認可的培訓船經歷</p> <p>.5 經認可的模擬器培訓，如適合</p>	<p>按照已建立的安全程序和設備操作規程進行貨物和物料操作</p> <p>危險和有害貨物或物料的裝卸符合已建立的安全做法</p>

**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	<p>Knowledge of procedures for safe handling, stowage and securing of cargoes and stores, including dangerous, hazardous and harmful substances and liquids</p> <p>Basic knowledge of and precautions to observe in connection with particular types of cargo and identification of IMDG labelling</p>	<p>Assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 practical training</p> <p>.3 examination</p> <p>.4 approved training ship experience</p> <p>.5 approved simulator training, where appropriate</p>	<p>Cargo and stores operations are carried out in accordance with established safety procedures and equipment operating instructions</p> <p>The handling of dangerous, hazardous and harmful cargoes or stores complies with established safety practices</p>

**職能：控制船舶操作和關照船上人員（支持級）**

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
致力於甲板設備和機械的安全操作	<p>甲板設備的知識，包括：</p> <p>.1 閘和泵、升降機、起重機、吊臂和相關設備的功能和使用</p> <p>.2 絞車、錨機、絞盤和相關設備的功能和使用</p> <p>.3 艙口、水密門、開口和相關設備</p> <p>.4 纖維和鋼絲繩、繩索和鏈索，包括其構造、使用、標記、保養和正確堆存</p> <p>.5 使用和理解操作設備的基本信號的能力，包括絞車、錨機、起重機和升降機</p> <p>.6 在各種情況下操作錨設備的能力，例如錨泊、起錨、出海固定以及緊急情況</p> <p>下列程序和能力的知識：</p> <p>.1 安裝和拆卸坐板和架板</p> <p>.2 安裝和拆卸引航員軟梯、升降機、鼠檔和舷梯</p> <p>.3 使用擴索錐的水手技能，包括適當使用繩結、插接和制纜索</p> <p>使用和操作甲板和貨物裝卸裝置和設備：</p> <p>.1 登船裝置、艙口和艙口蓋、跳板、舷側/船首/船尾門或升降梯</p> <p>.2 管系—污水和壓載水、吸入口和污水井</p> <p>.3 起重機、吊杆、絞車</p> <p>升旗和行旗禮以及主要單旗信號的知識 (A·B·G·H·O·P·Q)</p>	<p>評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 實際培訓</p> <p>.3 考試</p> <p>.4 經認可的培訓船經歷</p> <p>評估從實際演示中獲取的證據</p> <p>評估從實際演示中獲取的證據</p> <p>評估從實際演示中獲取的證據</p>	<p>按照已建立的安全做法和設備操作規程進行操作</p> <p>在操作者責任範圍內的語言交流是順利的</p> <p>設備操作是按照已建立的程序安全地進行</p> <p>表明安裝和拆卸的適當方法符合安全的行業做法</p> <p>表明繩結、插接、制纜索、繩頭纏紮、卷纏的製作和使用以及帆布的操作是適當的</p> <p>表明滑車和絞轆的使用是適當的</p> <p>表明操作纜繩、鋼絲繩、繩索和鏈索的方法是適當的</p>

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
採取職業健康和 安全預防措施	安全工作做法和人員在船安全的實用知識，包括： .1 高空作業 .2 舷外作業 .3 封閉場所作業 .4 許可證制度 .5 纜索操作 .6 升舉技巧和防止背傷的方法 .7 電氣安全 .8 機械安全 .9 化學品和生物危害的安全 .10 個人安全設備	評估從下列一項或數項獲取的證據： .1 經認可的工作經歷 .2 實際培訓 .3 考試 .4 經認可的培訓船經歷	始終遵守為保護人員和船舶而制定的程序  始終遵守安全工作做法並正確使用適合的防護設備
採取預防措施和 致力於防止海洋 環境污染	採取措施防止海洋環境污染的知識 防污染設備的使用和操作的知識 處置海洋污染物的經認可方法的知識	評估從下列一項或數項獲取的證據： .1 經認可的工作經歷 .2 實際培訓 .3 考試 .4 經認可的培訓船經歷	始終遵循保護海洋環境的程序
操作救生艇筏和 救助艇	操作救生艇筏和救助艇及其釋放裝置和佈置以及艇筏的設備的知識  海上求生技術的知識	評估從第A—VI/2節第1至第4款規定的經認可的培訓和經歷中獲取的證據	棄船和求生情況下的應急行動適合於當時環境和條件，並符合公認的安全做法和標準

**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  .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	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

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>.6 ability to operate anchoring equipment under various conditions, such as anchoring, weighing anchor, securing for sea, and in emergencies</p> <p>Knowledge of the following procedures and ability to:</p> <p>.1 rig and unrig bosun’s chairs and staging</p> <p>.2 rig and unrig pilot ladders, hoists, rat-guards and gangways</p> <p>.3 use marlin spike seamanship skills, including the proper use of knots, splices and stoppers</p> <p>Use and handling of deck and cargo-handling gear and equipment:</p> <p>.1 access arrangements, hatches and hatch covers, ramps, side/ /bow/stern doors or elevators</p> <p>.2 pipeline systems – bilge and ballast suction and wells</p> <p>.3 cranes, derricks, winches</p> <p>Knowledge of hoisting and dipping flags and the main single-flag signals. (A, B, G, H, O, P, Q)</p>	<p>Assessment of evidence obtained from practical demonstration</p> <p>Assessment of evidence obtained from practical demonstration</p>	<p>Equipment operation is safely carried out in accordance with established procedures</p> <p>Demonstrate the proper methods for rigging and unrigging in accordance with safe industry practice</p> <p>Demonstrate the proper creation and use of knots, splices, stoppers, whippings, servings as well as proper canvas handling</p> <p>Demonstrate the proper use of blocks and tackle</p> <p>Demonstrate the proper methods for handling lines, wires, cables and chains</p>
<p>Apply occupational health and safety precautions</p>	<p>Working knowledge of safe working practices and personal shipboard safety including:</p> <p>.1 working aloft</p> <p>.2 working over the side</p> <p>.3 working in enclosed spaces</p> <p>.4 permit to work systems</p> <p>.5 line handling</p> <p>.6 lifting techniques and methods of preventing back injury</p> <p>.7 electrical safety</p> <p>.8 mechanical safety</p> <p>.9 chemical and biohazard safety</p> <p>.10 personal safety equipment</p>	<p>Assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 practical training</p> <p>.3 examination</p> <p>.4 approved training ship experience</p>	<p>Procedures designed to safeguard personnel and the ship are observed at all times</p> <p>Safe working practices are observed and appropriate safety and protective equipment is correctly used at all times</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Apply precautions and contribute to the prevention of pollution of the marine environment	<p>Knowledge of the precautions to be taken to prevent pollution of the marine environment</p> <p>Knowledge of the use and operation of anti-pollution equipment</p> <p>Knowledge of the approved methods for disposal of marine pollutants</p>	<p>Assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 practical training</p> <p>.3 examination</p> <p>.4 approved training ship experience</p>	Procedures designed to safeguard the marine environment are observed at all times
Operate survival craft and rescue boats	<p>Knowledge of the operation of survival craft and rescue boats, their launching appliances and arrangements, and their equipment</p> <p>Knowledge of survival at sea techniques</p>	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

## 職能：維護和修理（支持級）

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
致力於船上維護和修理	<p>使用油漆、潤滑和清潔材料和設備的能力</p> <p>理解和執行常規維護和修理程序的能力</p> <p>表面處理技術的知識</p> <p>懂得製造商的安全導則和船上規程</p> <p>安全處置廢料的知識</p> <p>應用、維護和使用手動和電動工具的知識</p>	<p>評估從實際演示中獲取的證據</p> <p>評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 實際培訓</p> <p>.3 考試</p> <p>.4 經認可的培訓船經歷</p>	按照技術、安全和程序規範進行維護和修理活動

## 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	<p>Ability to use painting, lubrication and cleaning materials and equipment</p> <p>Ability to understand and execute routine maintenance and repair procedures</p>	Assessment of evidence obtained from practical demonstration	Maintenance and repair activities are carried out in accordance with technical, safety and procedural specifications

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>Knowledge of surface preparation techniques</p> <p>Understanding manufacturer's safety guidelines and shipboard instructions</p> <p>Knowledge of safe disposal of waste materials</p> <p>Knowledge of the application, maintenance and use of hand and power tools</p>	<p>Assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 practical training</p> <p>.3 examination</p> <p>.4 approved training ship experience</p>	

**第 III 章**  
**關於輪機部的標準**

**CHAPTER III**

**Standards regarding engine department**

**第A—III/1節**

**Section A-III/1**

對有人值班機艙負責輪機值班的高級海員或周期性無人值班機艙指定值班的輪機員發證的強制性最低要求

*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*

**培訓**

**Training**

1 規則第III/1條第2.4款要求的教育和培訓，須包括有關輪機部高級海員職責的機械和電氣車間技能的培訓。

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.

**船上培訓**

**Onboard training**

2 每位申請在主推進裝置為750千瓦或以上海船上有人值班機艙負責輪機值班的高級海員或週期性無人值班機艙指定值班的輪機員的證書申請人，其海上服務按照第III/1條第2.2款構成經認可的、作為滿足本節要求的培訓計劃一部分的，須參加經認可的船上培訓計劃，該培訓計劃：

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 確保證書申請人在要求的海上服務期間，受到關於負責機艙值班高級海員的任務、職責和責任方面的系統的實際培訓並獲得經驗，同時考慮到本規則第B—III/1節給予的指導；

.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 在執行經認可的海上服務中得到船上合格並持證的輪機員的密切監督和指導；並且

.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 在培訓記錄簿中予以充分載明。

### 適任標準

3 每位在主推進裝置推進功率為750千瓦或以上海船上有人值班機艙負責輪機值班的高級海員或周期性無人值班機艙指定值班的輪機員的證書申請人，須表明承擔表A—III/1第1欄所列操作級任務、職責和責任的適任能力。

4 發證要求的最低知識、理解和熟練程度列於表A—III/1第2欄中。

5 表A—III/1第2欄所列內容的知識水平，須足以能使輪機部高級海員履行其值班職責。

6 為獲取所需的理論知識、理解和熟練的培訓和經驗，須以第A—VIII/2節第4—2部分—輪機值班時應遵守的基本原則為依據，並須考慮到本規則本部分的有關要求和B部分給予的指導。

7 對在蒸汽鍋爐不作為主機部分的船上服務的證書申請人，可刪除表A—III/1中的有關要求。據此所簽發的證書不得對蒸汽鍋爐作為主機部分的船舶上的服務有效，直至該輪機部高級海員達到從表A—III/1中刪除的項目的適任標準。任何這種限制須在證書上和簽註上予以載明。

8 主管機關可刪除那些對發證有效的機械裝置以外的其他類型的推進裝置的知識要求。據此所發的證書不得對該證書上刪除的任何種類的機械裝置有效，直至該輪機部高級海員證明能符合這些知識的要求。任何這種限制須在證書上和簽註上載明。

9 每位證書申請人須按照表A—III/1第3和第4欄所列的表明適任的方法和評價適任的標準，提供已達到所要求的適任標準的證據。

### 近岸航行

10 規則第III/1條第2.2至2.5款中與表A—III/1第2欄所列各小段規定的知識、理解和熟練程度有關的要求，如認為必要，可對主推進裝置推進功率為未滿3000千瓦從事近岸航行的船舶的輪機部高級海員有所變動，但要切記對可能同一水域航行的所有船舶安全的影響，任何這種限制須在證書上和簽註上載明。

.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.

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.



表 A – III/1

在有人值班機艙負責輪機值班的高級海員或  
周期性無人值班機艙指定值班的輪機員的  
最低適任標準規範

職能：輪機工程（操作級）

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
保持安全的輪機值班	<p>輪機值班應遵守的基本原則的全面知識，包括：</p> <ol style="list-style-type: none"> <li>.1 與接班和同意值班有關的職責</li> <li>.2 值班期間履行的日常職責</li> <li>.3 輪機日誌的填寫和所填讀數的意義</li> <li>.4 與交班有關的職責</li> </ol> <p>安全和應急程序；將所有系統遙控/自動轉換為現場控制</p> <p>值班時須遵守的安全預防措施以及一旦發生火災或事故特別是油類系統火災或事故時應採取的緊急措施</p> <p><i>機艙資源管理</i></p> <p>機艙資源管理原則的知識，包括：</p> <ol style="list-style-type: none"> <li>.1 資源的分配、分派和優先排序</li> <li>.2 有效的交流</li> <li>.3 決斷力和領導力</li> <li>.4 領悟並保持情景意識</li> <li>.5 考慮團隊經驗</li> </ol>	<p>評估從下列一項或數項獲取的證據：</p> <ol style="list-style-type: none"> <li>.1 經認可的工作經歷</li> <li>.2 經認可的培訓船經歷</li> <li>.3 經認可的模擬器培訓，如適合</li> <li>.4 經認可的實驗室設備培訓</li> </ol> <p>評估從下列一項或數項獲取的證據：</p> <ol style="list-style-type: none"> <li>.1 經認可的培訓</li> <li>.2 經認可的工作經歷</li> <li>.3 經認可的模擬器培訓</li> </ol>	<p>值班、交班和接班符合公認的原則和程序</p> <p>輪機設備和系統的檢測頻度和範圍符合廠家的建議、公認的原則和程序，包括輪機值班中應遵守的基本原則</p> <p>對有關船舶輪機系統的動態和活動保持正規的記錄</p> <p>根據需要按正確的優先順序分配和分派資源，以執行必要的任務</p> <p>語言交流清楚和無歧義</p> <p>對有疑問的決定和（或）行動適當詢問和回覆</p> <p>確認有效的領導行為</p> <p>團隊成員分享對當前和預測的機艙和相關系統的狀態及外部環境的準確理解</p>
以書面和口語形式使用英語	使輪機部高級海員能夠使用輪機出版物並能履行輪機職責的足夠的英語知識	考試並評估從實際訓練中獲取的證據	<p>正確解讀與輪機職責有關的英語出版物</p> <p>語言交流清楚、明白</p>
使用內部通信系統	船上所有的內部通信系統的操作	<p>考試並評估從下列一項或數項獲取的證據：</p> <ol style="list-style-type: none"> <li>.1 經認可的工作經歷</li> <li>.2 經認可的培訓船經歷</li> <li>.3 經認可的模擬器培訓，如適合</li> <li>.4 經認可的實驗室設備培訓</li> </ol>	<p>信息的發送和接收一直是成功的</p> <p>通信記錄完整、準確且符合法定要求</p>
操作主機和輔機以及附屬的控制系統	<p>機械系統的基本結構和工作原理，包括：</p> <ol style="list-style-type: none"> <li>.1 船用柴油機</li> <li>.2 船用蒸汽輪機</li> <li>.3 船用燃氣輪機</li> <li>.4 船用鍋爐</li> <li>.5 軸系，包括螺旋槳</li> </ol>	<p>考試並評估從下列一項或數項獲取的證據：</p> <ol style="list-style-type: none"> <li>.1 認可的工作經歷</li> <li>.2 認可的培訓船經歷</li> <li>.3 認可的實驗室設備培訓</li> </ol>	通過圖紙/說明書理解和解釋結構和工作機理

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
	<p>.6 其他輔助機械，包括各種泵、空壓機、分油機、造水機、熱交換器、製冷裝置、空調及通風系統</p> <p>.7 舵機</p> <p>.8 自動控制系統</p> <p>.9 潤滑油系統、燃油系統和冷卻系統的流體流動和特性</p> <p>.10 甲板機械</p> <p>推進裝置機械（包括控制系統）的安全和應急操作程序</p> <p>下列機械設備和控制系統的準備、操作、故障檢測及防止損壞的必要措施</p> <p>.1 主機及相關輔助設備</p> <p>.2 蒸汽鍋爐和相關輔助設備及蒸汽系統</p> <p>.3 輔助原動機及相關系統</p> <p>.4 其他輔助機械，包括製冷裝置、空調和通風系統</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓，如適合</p> <p>.4 經認可的實驗室設備培訓</p>	<p>操作是有計劃的，並按照為保證操作安全和防止海洋污染而制定的操作手冊、規則和程序進行</p> <p>迅速識別偏差</p> <p>推進裝置和輪機系統的輸出功率持續滿足要求，包括與變速和變向有關的駕駛台命令。</p> <p>迅速識別機械故障的原因，採取的措施旨在確保船舶和動力裝置的總體安全，並考慮到當前的環境和條件</p>
<p>燃油系統、潤滑油系統、壓載水系統和其他泵系以及相關控制系統的操作</p>	<p>泵和管系的工作特性，包括控制系統</p> <p>泵系操作：</p> <p>.1 日常泵送操作</p> <p>.2 艙底水系統、壓載水系統和貨物泵送系統的操作</p> <p>油水分離器（或類似設備）的要求和操作</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓，如適合</p> <p>.4 經認可的實驗室設備培訓</p>	<p>操作是有計劃的，並按照為保證操作安全和防止海洋污染而制定的操作手冊、規則和程序進行</p> <p>迅速識別偏差，並採取適當行動</p>

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	<p>Thorough knowledge of Principles to be observed in keeping an engineering watch, including:</p> <p>.1 duties associated with taking over and accepting a watch</p> <p>.2 routine duties undertaken during a watch</p>	<p>Assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p>	<p>The conduct, handover and relief of the watch conforms with accepted principles and procedures</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>.3 maintenance of the machinery space logs and the significance of the readings taken</p> <p>4 duties associated with handing over a watch</p> <p>Safety and emergency procedures; change-over of remote/automatic to local control of all systems</p> <p>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</p> <p><i>Engine-room resource management</i></p> <p>Knowledge of engine-room resource management principles, including:</p> <p>.1 allocation, assignment, and prioritization of resources</p> <p>.2 effective communication</p> <p>.3 assertiveness and leadership</p> <p>.4 obtaining and maintaining situational awareness</p> <p>.5 consideration of team experience</p>	<p>.3 approved simulator training, where appropriate</p> <p>.4 approved laboratory equipment training</p> <p>Assessment of evidence obtained from one or more of the following:</p> <p>.1 approved training</p> <p>.2 approved in-service experience</p> <p>.3 approved simulator training</p>	<p>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</p> <p>A proper record is maintained of the movements and activities relating to the ship's engineering systems</p> <p>Resources are allocated and assigned as needed in correct priority to perform necessary tasks</p> <p>Communication is clearly and unambiguously given and received</p> <p>Questionable decisions and/or actions result in appropriate challenge and response</p> <p>Effective leadership behaviours are identified</p> <p>Team member(s) share accurate understanding of current and predicted engine-room and associated systems state, and of external environment</p>
<p>Use English in written and oral form</p>	<p>Adequate knowledge of the English language to enable the officer to use engineering publications and to perform engineering duties</p>	<p>Examination and assessment of evidence obtained from practical instruction</p>	<p>English language publications relevant to engineering duties are correctly interpreted</p> <p>Communications are clear and understood</p>
<p>Use internal communication systems</p>	<p>Operation of all internal communication systems on board</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p>	<p>Transmission and reception of messages are consistently successful</p> <p>Communication records are complete, accurate and comply with statutory requirements</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
		<p>.3 approved simulator training, where appropriate</p> <p>.4 approved laboratory equipment training</p>	
Operate main and auxiliary machinery and associated control systems	<p>Basic construction and operation principles of machinery systems, including:</p> <p>.1 marine diesel engine</p> <p>.2 marine steam turbine</p> <p>.3 marine gas turbine</p> <p>.4 marine boiler</p> <p>.5 shafting installations, including propeller</p> <p>.6 other auxiliaries, including various pumps, air compressor, purifier, fresh water generator, heat exchanger, refrigeration, air-conditioning and ventilation systems</p> <p>.7 steering gear</p> <p>.8 automatic control systems</p> <p>.9 fluid flow and characteristics of lubricating oil, fuel oil and cooling systems</p> <p>.10 deck machinery</p> <p>Safety and emergency procedures for operation of propulsion plant machinery, including control systems</p> <p>Preparation, operation, fault detection and necessary measures to prevent damage for the following machinery items and control systems:</p> <p>.1 main engine and associated auxiliaries</p> <p>.2 steam boiler and associated auxiliaries and steam systems</p> <p>.3 auxiliary prime movers and associated systems</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved laboratory equipment training</p> <p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training, where appropriate</p>	<p>Construction and operating mechanisms can be understood and explained with drawings/instructions</p> <p>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</p> <p>Deviations from the norm are promptly identified</p> <p>The output of plant and engineering systems consistently meets requirements, including bridge orders relating to changes in speed and direction</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	.4 other auxiliaries, including refrigeration, air-conditioning and ventilation systems	.4 approved laboratory equipment training	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
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

職能：電氣、電子和控制工程（操作級）

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
操作電氣、電子和控制系統	下列電氣、電子和控制設備的基本構造和工作原理： .1 電氣設備： .a 發電機和配電系統 .b 備車、啟動、併車和發電機的切換 .c 電動馬達，包括啟動方法 .d 高壓裝置 .e 相序控制回路和相關系統設備 .2 電子設備： .a 基本電路元件的特性 .b 自動和控制系統的流程圖 .c 機械設備控制系統的功能、特性和特點，包括主推進裝置操作控制和蒸汽鍋爐自動控制 .3 控制系統： .a 各種自動控制方法和特性 .b 比例—積分—微分（PID）的控制特性和用於程序控制的相關系統設備	考試並評估從下列一項或數項獲取的證據： .1 經認可的工作經歷 .2 經認可的培訓船經歷 .3 經認可的模擬器培訓，如適合 .4 經認可的實驗室設備培訓	操作是有計劃的，並按照為保證操作安全和防止海洋污染而制定的操作手冊、規則和程序進行  通過圖紙/說明書理解和解釋電氣、電子和控制系統
電氣和電子設備的維護和修理	船上電氣系統的工作安全要求，包括在允許人員檢修該設備之前所要求的電器設備的安全絕緣  電氣系統設備、開關板、電動機、發電機和直流電氣系統及設備的維護和修理	考試並評估從下列一項或數項獲取的證據： .1 經認可的車間技能培訓 .2 經認可的實際經驗和測試 .3 經認可的工作經歷 .4 經認可的培訓船經歷	工作安全措施是適當的  手動工具、測量儀錶、檢測設備是適當的，且對結果的解釋是準確的  設備的拆卸、檢查、修理和裝復符合操作手冊和良好的做法

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
	電氣故障的檢測、故障位置的確定及防止損壞的措施  電氣測試和測量設備的結構和操作  以下設備及其組成部分的功能和性能測試： .1 監控系統 .2 自動控制設備 .3 保護設備 電氣和簡單電子圖的識讀		裝復和性能測試符合操作手冊和良好的做法

**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	<p>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</p> <p>Maintenance and repair of electrical system equipment, switchboards, electric motors, generator and DC electrical systems and equipment</p> <p>Detection of electric malfunction, location of faults and measures to prevent damage</p> <p>Construction and operation of electrical testing and measuring equipment</p> <p>Function and performance tests of the following equipment and their configuration:</p> <p>.1 monitoring systems</p> <p>.2 automatic control devices</p> <p>.3 protective devices</p> <p>The interpretation of electrical and simple electronic diagrams</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved workshop skills training</p> <p>.2 approved practical experience and tests</p> <p>.3 approved in-service experience</p> <p>.4 approved training ship experience</p>	<p>Safety measures for working are appropriate</p> <p>Selection and use of hand tools, measuring instruments, and testing equipment are appropriate and interpretation of results is accurate</p> <p>Dismantling, inspecting, repairing and reassembling equipment are in accordance with manuals and good practice</p> <p>Reassembling and performance testing is in accordance with manuals and good practice</p>

職能：維護和修理（操作級）

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
適當使用用於船上組裝和修理的手動和機械工具及測量儀錶	<p>船舶和設備建造和修理中使用的材料的特性和限制</p> <p>組裝和修理的程序的特點和限制</p> <p>在系統和元器件的組裝和修理中考慮的性質和參數</p> <p>進行安全應急/臨時修理的方法</p> <p>為確保安全的工作環境和使用手動和機械工具及測量儀錶而採取的安全措施</p> <p>使用手動和機械工具及測量儀錶</p> <p>使用各種類型的密封材料和填料</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的車間技能培訓</p> <p>.2 經認可的實際經驗和測試</p> <p>.3 經認可的工作經歷</p> <p>.4 經認可的培訓船經歷</p>	<p>用於典型船用元器件組裝的重要參數的識別是適當的</p> <p>材料的選擇是適當的</p> <p>組裝滿足指定的公差</p> <p>設備、手動和機械工具及測量儀錶的使用是適當和安全的</p>

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
船上機械和設備的維護與修理	<p>為修理和維護採取的安全措施，包括在允許人員進行船上機械和設備檢修之前的安全隔離</p> <p>適當的基礎機械知識和技能</p> <p>機械和設備的維護與修理，如拆卸、調整和裝復</p> <p>合適的專用工具及測量儀錶的使用</p> <p>設備製造中設計特點和材料選擇</p> <p>機械圖紙和手冊的識讀</p> <p>管路、液壓及氣動圖紙的識讀</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的車間技能培訓</p> <p>.2 經認可的實際經驗和測試</p> <p>.3 經認可的工作經歷</p> <p>.4 經認可的培訓船經歷</p>	<p>遵循的安全程序是適當的</p> <p>所選擇的工具和備件是適當的</p> <p>設備的拆卸、檢測、修理和裝復符合使用手冊和良好的做法</p> <p>重新調試和性能測試符合使用手冊和良好的做法</p> <p>材料和部件的選擇是適當的</p>

### 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	<p>Characteristics and limitations of materials used in construction and repair of ships and equipment</p> <p>Characteristics and limitations of processes used for fabrication and repair</p> <p>Properties and parameters considered in the fabrication and repair of systems and components</p> <p>Methods for carrying out safe emergency/temporary repairs</p> <p>Safety measures to be taken to ensure a safe working environment and for using hand tools, machine tools and measuring instruments</p> <p>Use of hand tools, machine tools and measuring instruments</p> <p>Use of various types of sealants and packings</p>	<p>Assessment of evidence obtained from one or more of the following:</p> <p>.1 approved workshop skills training</p> <p>.2 approved practical experience and tests</p> <p>.3 approved in-service experience</p> <p>.4 approved training ship experience</p>	<p>Identification of important parameters for fabrication of typical ship-related components is appropriate</p> <p>Selection of materials is appropriate</p> <p>Fabrication is to designated tolerances</p> <p>Use of equipment and hand tools, machine tools and measuring instruments is appropriate and safe</p>
Maintenance and repair of shipboard machinery and equipment	<p>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</p> <p>Appropriate basic mechanical knowledge and skills</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved workshop skills training</p> <p>.2 approved practical experience and tests</p> <p>.3 approved in-service experience</p>	<p>Safety procedures followed are appropriate</p> <p>Selection of tools and spare gear is appropriate</p>



Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>Maintenance and repair, such as dismantling, adjustment and reassembling of machinery and equipment</p> <p>The use of appropriate specialized tools and measuring instruments</p> <p>Design characteristics and selection of materials in construction of equipment</p> <p>Interpretation of machinery drawings and handbooks</p> <p>The interpretation of piping, hydraulic and pneumatic diagrams</p>	.4 approved training ship experience	<p>Dismantling, inspecting, repairing and reassembling equipment is in accordance with manuals and good practice</p> <p>Re-commissioning and performance testing is in accordance with manuals and good practice</p> <p>Selection of materials and parts is appropriate</p>

職能：控制船舶操作和關照船上人員（操作級）

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
保證遵守防止污染要求	<p>防止海洋環境污染</p> <p>防止海洋環境污染應採取的預防措施的知識</p> <p>防止污染程序和所有相關設備</p> <p>採取積極措施保護海洋環境的重要性</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的培訓</p>	<p>監督船上操作和保證遵守《防污公約》要求的程序得到全面遵守</p> <p>採取行動旨在確保保持良好的環保聲譽</p>
保持船舶的適航性	<p>船舶穩性</p> <p>穩性、吃水差、應力圖表和應力計算設備的實用知識和應用</p> <p>理解水密完整性的基本知識</p> <p>理解一旦完整浮力部分喪失時應採取的基本行動</p> <p>船舶構造</p> <p>船舶主要構件的一般知識和各部件的正確名稱</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓，如適合</p> <p>.4 經認可實驗室設備培訓</p>	<p>各種裝載條件下的穩性狀況符合海事組織完整穩性標準</p> <p>為保證和保持船舶水密完整性而採取的行動符合公認的做法</p>
船上防火、控制火災和滅火	<p>防火和滅火設備</p> <p>組織消防演習的能力</p> <p>火的種類和化學性質的知識</p> <p>滅火系統的知識</p> <p>一旦失火，包括涉及油類系統的火災，應採取的行動</p>	<p>評估從第A—VI/3節第1至3款規定的經認可的消防培訓和經歷中獲得的證據</p>	<p>迅速確定問題的類型和範圍，初始行動符合應急程序和意外事故應急計劃</p> <p>撤離、應急關閉和分隔程序適合緊急情況的性質，並迅速實施</p> <p>作出報告和通知船上人員的優先順序、等級和時間範圍與緊急情況的性質相適應並反映問題的緊急程度</p>

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
操作救生設備	<p>救生</p> <p>組織棄船演習的能力和操作救生艇筏和救助艇、其釋放裝置和佈置，及艇筏的設備（包括無線電救生設備、衛星應急無線電示位標、搜救雷達應答器、救生服和保溫用具）的知識</p>	<p>評估從第A—VI/2節第1至4款規定的經認可的培訓和經歷中獲取的證據</p>	<p>在棄船求生情況下採取的行動適合於當時的環境和條件，並符合公認的安全做法和標準</p>
在船上應用醫療急救	<p>醫護</p> <p>實際應用醫療指南和無線電諮詢，包括根據這種知識對船上可能發生的事故和疾病採取有效行動的能力</p>	<p>評估從第A—VI/4節第1至3款規定的經認可的培訓中獲取的證據</p>	<p>迅速確認傷病的可能原因、性質和程度，加以治療以儘快減小對生命的直接威脅</p>
監督遵守法定的要求	<p>涉及海上人命安全和保護海洋環境的海事組織有關公約的基本實用知識</p>	<p>評估從考試或經認可的培訓中獲取的證據</p>	<p>正確地確認有關海上人命安全和保護海洋環境的法定要求</p>
領導才能和團隊工作技能的運用	<p>船上人員管理和培訓的實用知識</p> <p>有關國際海事公約和建議案以及國內立法的知識</p> <p>運用任務和工作量管理的能力，包括：</p> <ol style="list-style-type: none"> <li>.1 計劃和協調</li> <li>.2 人員分派</li> <li>.3 時間和資源的制約</li> <li>.4 優先排序</li> </ol> <p>運用有效資源管理的知識和能力：</p> <ol style="list-style-type: none"> <li>.1 資源的分配、分派和優先排序</li> <li>.2 船上和岸上的有效交流</li> <li>.3 決策反映出團隊的經驗</li> <li>.4 決斷力和領導力，包括激勵</li> <li>.5 領悟並保持情景意識</li> </ol> <p>運用決策技能的知識和能力：</p> <ol style="list-style-type: none"> <li>.1 局面和風險評估</li> <li>.2 確定並考慮選擇項</li> <li>.3 選擇行動方式</li> <li>.4 評價結果的有效性</li> </ol>	<p>評估從下列一項或數項獲取的證據：</p> <ol style="list-style-type: none"> <li>.1 經認可的培訓</li> <li>.2 經認可的工作經歷</li> <li>.3 實際演示</li> </ol>	<p>以適合有關個人的方式分配海員工作，並告知所期待的工作和行為標準</p> <p>培訓目標和培訓活動以對目前適任性和能力的評估和操作要求為依據</p> <p>表明操作符合適用的規則</p> <p>操作是有計劃的並根據需要按正確的優先順序分配和分派資源，以執行必要的任務</p> <p>語言交流清楚和無歧義</p> <p>表明有效的領導行為</p> <p>必要的團隊成員分享對當前和預測的船舶和操作的狀態及外部環境的準確理解</p> <p>決策對於局面是最有效的</p>
致力於人員和船舶的安全	<p>人員求生技術的知識</p> <p>防火知識和滅火能力</p> <p>基本急救的知識</p> <p>人員安全和社會責任的知識</p>	<p>評估從第A—VI/1節第2款規定的經認可的培訓中獲取的證據</p>	<p>正確使用適當的安全和防護設備</p> <p>始終遵循設計用於保護人員和船舶的程序和安全工作做法</p> <p>始終遵循設計用於保護環境的程序</p> <p>發生緊急情況時的初始和後續行動符合已建立的應急反應程序</p>

**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	<p><i>Prevention of pollution of the marine environment</i></p> <p>Knowledge of the precautions to be taken to prevent pollution of the marine environment</p> <p>Anti-pollution procedures and all associated equipment</p> <p>Importance of proactive measures to protect the marine environment</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved training</p>	<p>Procedures for monitoring shipboard operations and ensuring compliance with MARPOL requirements are fully observed</p> <p>Actions to ensure that a positive environmental reputation is maintained</p>
Maintain seaworthiness of the ship	<p><i>Ship stability</i></p> <p>Working knowledge and application of stability, trim and stress tables, diagrams and stress-calculating equipment</p> <p>Understanding of the fundamentals of watertight integrity</p> <p>Understanding of fundamental actions to be taken in the event of partial loss of intact buoyancy</p> <p><i>Ship construction</i></p> <p>General knowledge of the principal structural members of a ship and the proper names for the various parts</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training, where appropriate</p> <p>.4 approved laboratory equipment training</p>	<p>The stability conditions comply with the IMO intact stability criteria under all conditions of loading</p> <p>Actions to ensure and maintain the watertight integrity of the ship are in accordance with accepted practice</p>
Prevent, control and fight fires on board	<p><i>Fire prevention and fire-fighting appliances</i></p> <p>Ability to organize fire drills</p> <p>Knowledge of classes and chemistry of fire</p> <p>Knowledge of fire-fighting systems</p> <p>Action to be taken in the event of fire, including fires involving oil systems</p>	<p>Assessment of evidence obtained from approved fire-fighting training and experience as set out in section A-VI/3, paragraphs 1 to 3</p>	<p>The type and scale of the problem is promptly identified and initial actions conform with the emergency procedure and contingency plans for the ship</p> <p>Evacuation, emergency shut-down and isolation procedures are appropriate to the nature of the emergency and are implemented promptly</p> <p>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</p>

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	<p><i>Life-saving</i></p> <p>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</p>	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	<p>Medical aid</p> <p>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</p>	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, security and protection of the marine environment	Assessment of evidence obtained from examination or approved training	Legislative requirements relating to safety of life at sea, security and protection of the marine environment are correctly identified
Application of leadership and teamworking skills	<p>Working knowledge of ship-board personnel management and training</p> <p>A knowledge of related international maritime conventions and recommendations, and national legislation</p> <p>Ability to apply task and workload management, including:</p> <p>.1 planning and co-ordination</p> <p>.2 personnel assignment</p> <p>.3 time and resource constraints</p> <p>.4 prioritization</p> <p>Knowledge and ability to apply effective resource management:</p> <p>.1 allocation, assignment, and prioritization of resources</p> <p>.2 effective communication on board and ashore</p> <p>.3 decisions reflect consideration of team experiences</p>	<p>Assessment of evidence obtained from one or more of the following:</p> <p>.1 approved training</p> <p>.2 approved in-service experience</p> <p>.3 practical demonstration</p>	<p>The crew are allocated duties and informed of expected standards of work and behaviour in a manner appropriate to the individuals concerned</p> <p>Training objectives and activities are based on assessment of current competence and capabilities and operational requirements.</p> <p>Operations are demonstrated to be in accordance with applicable rules</p> <p>Operations are planned and resources are allocated as needed in correct priority to perform necessary tasks</p> <p>Communication is clearly and unambiguously given and received</p> <p>Effective leadership behaviours are demonstrated</p>

Column 1	Column 2	Column 3	Column 4
<b>Competence</b>	<b>Knowledge, understanding and proficiency</b>	<b>Methods for demonstrating competence</b>	<b>Criteria for evaluating competence</b>
	.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		Necessary team member(s) share accurate understanding of current and predicted vessel state 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

**第A—III/2節**

對主推進裝置推進功率為3000千瓦或以上船舶的輪機長和大管輪發證的強制性最低要求

**適任標準**

1 每位申請主推進裝置推進功率為3000千瓦或以上船舶的輪機長和大管輪的證書申請人，須表明承擔表A—III/2第1欄所列的管理級任務、職責和責任的適任能力。

2 發證所要求的最低知識、理解和熟練列於表A—III/2第2欄中，其內容包括並擴大和加深了表A—III/1第2欄所列的對負責輪機值班的高級海員要求的科目。

**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 鑑及大管輪隨時可能承擔輪機長的責任，對這些科目的評估須旨在考查證書申請人從影響船舶機械安全操作和保護海洋環境的所有可利用資料中吸收知識的能力。

4 表A—III/2第2欄所列各科目的知識水平，須足以能使證書申請人在輪機長或大管輪職位上服務。

5 為獲取所需水平的理論知識，理解和熟練的培訓和經驗，須考慮到本規則部分的有關要求和B部分給予的指導。

6 主管機關可刪除那些對所發證書有效的機械裝置以外的其他類型推進裝置的知識要求。據此所發的證書不得對證書上刪除的任何種類的機械裝置有效，直至該輪機部高級海員證明能符合這些知識的要求。任何這種限制須在證書上和簽註上載明。

7 每位證書申請人須按照表A—III/2第3欄和第4欄所列的表明適任的方法和評價適任的標準，提供已達到所要求的適任標準的證據。

#### 近岸航行

8 表A—III/2第2欄不同部分對知識、理解和熟練程度的要求，如認為必要，可對推進功率受限制且從事近岸航行的船舶的輪機部高級海員有所變動，但要切記對可能同一水域航行的所有船舶安全的影響。任何這種限制須在證書上和簽註上載明。

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.

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.

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.

表 A—III/2

#### 主推進裝置推進功率為 3000 千瓦或以上船舶的 輪機長和大管輪的最低適任標準規範

##### 職能：輪機工程（管理級）

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
推進裝置機械的操作管理	下列機械和相關輔助設備的設計特點和工作機理： .1 船用柴油機 .2 船用蒸汽輪機 .3 船用燃氣輪機 .4 船用蒸汽鍋爐	考試並評估從下列一項或數項獲取的證據： .1 經認可的工作經歷 .2 經認可的培訓船經歷 .3 經認可的實驗室設備培訓 .4 經認可的模擬器培訓，如適合	對設計特點和工作機理的解釋和理解是適當的
計劃和安排工作	理論知識 熱力學和熱傳導 力學和流體力學	考試並評估從下列一項或數項獲取的證據： .1 經認可的工作經歷	操作計劃和準備適於動力裝置的設計參數和航次的要求

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
	<p>柴油機、蒸汽輪機和燃氣輪機的推進特性，包括速度、輸出功率和燃油消耗</p> <p>下列設備的熱力循環、熱效率和熱平衡：</p> <p>.1 船用柴油機</p> <p>.2 船用蒸汽輪機</p> <p>.3 船用燃氣輪機</p> <p>.4 船用蒸汽鍋爐</p> <p>製冷裝置和製冷循環</p> <p>燃油和潤滑油的物理和化學特性</p> <p>材料技術</p> <p>造船學和船舶構造，包括損壞控制</p>	<p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓，如適合</p> <p>.4 經認可的實驗室設備培訓</p>	
操作、監測和性能評估以及保持主推進裝置和輔助機械的安全	<p><i>實際知識</i></p> <p>啟動和關閉主推進裝置和輔助機械，包括附屬系統</p> <p>推進裝置的操作限制</p> <p>有效操作、監測和性能評估以及保持主推進裝置和輔助機械的安全</p> <p>主機自動控制的功能和機理</p> <p>輔助機械自動控制的功能和機理，輔助機械包括但不限於：</p> <p>.1 發電機配電系統</p> <p>.2 蒸汽鍋爐</p> <p>.3 分油機</p> <p>.4 製冷系統</p> <p>.5 泵和管系</p> <p>.6 操舵系統</p> <p>.7 貨物作業設備和甲板機械</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓，如適合</p> <p>.4 經認可的實驗室設備培訓</p>	<p>啟動準備方法，及燃油、潤滑油、冷卻水和壓縮空氣的備妥方式是最合適的</p> <p>對啟動和暖機期間的壓力、溫度和轉速的檢查是符合技術規程和預定工作計劃的</p> <p>對主推進裝置和輔助機械的監視足以保持安全工作狀態</p> <p>準備停機和監管機器冷卻的方法是最合適的</p> <p>測定主機的負載能力的方法符合技術規範</p> <p>按照駕駛台命令核查機器性能</p> <p>機器性能等級符合技術規範</p>
燃油、潤滑油和壓載水的操作管理	機器的操作和保養，包括泵和管系	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓，如適合</p>	燃油和壓載水操作滿足操作要求，並能防止海洋環境污染

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	<p>Design features, and operative mechanism of the following machinery and associated auxiliaries:</p> <p>.1 marine diesel engine</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p>	Explanation and understanding of design features and operating mechanisms are appropriate

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	.2 marine steam turbine .3 marine gas turbine .4 marine steam boiler	.2 approved training ship experience .3 approved simulator training, where appropriate .4 approved laboratory equipment training	
Plan and schedule operations	<i>Theoretical knowledge</i>  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  Refrigerators and refrigeration cycle  Physical and chemical properties of fuels and lubricants  Technology of materials  Naval architecture and ship construction, including damage 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	The planning and preparation of operations is suited to the design parameters of the power installation and to the requirements of the voyage
Operation, surveillance, performance assessment and maintaining safety of propulsion plant and auxiliary machinery	<i>Practical knowledge</i>  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	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 warm-up 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



Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>Functions and mechanism of automatic control for auxiliary machinery including but not limited to:</p> <ol style="list-style-type: none"> <li>.1 generator distribution systems</li> <li>.2 steam boilers</li> <li>.3 oil purifier</li> <li>.4 refrigeration system</li> <li>.5 pumping and piping systems</li> <li>.6 steering gear system</li> <li>.7 cargo-handling equipment and deck machinery</li> </ol>		<p>The methods of preparing the shutdown, and of supervising the cooling down of the engine are the most appropriate</p> <p>The methods of measuring the load capacity of the engines are in accordance with technical specifications</p> <p>Performance is checked against bridge orders</p> <p>Performance levels are in accordance with technical specifications</p>
Manage fuel, lubrication and ballast operations	Operation and maintenance of machinery, including pumps and piping systems	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <ol style="list-style-type: none"> <li>.1 approved in-service experience</li> <li>.2 approved training ship experience</li> <li>.3 approved simulator training, where appropriate</li> </ol>	Fuel and ballast operations meet operational requirements and are carried out so as to prevent pollution of the marine environment

職能：電氣、電子和控制工程（管理級）

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
電氣、電子控制設備的操作管理	<p>理論知識</p> <p>船舶電子技術、電子學和電力電子學、自動控制工程和安全設備</p> <p>以下裝置的自動控制設備和安全保護裝置的設計特點和系統配置：</p> <ol style="list-style-type: none"> <li>.1 主機</li> <li>.2 發電機和配電系統</li> <li>.3 蒸汽鍋爐</li> </ol> <p>電動機操作控制設備的設計特點和系統配置</p> <p>高壓設備的設計特點</p> <p>液壓和氣動控制設備的特點</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <ol style="list-style-type: none"> <li>.1 經認可的工作經歷</li> <li>.2 經認可的培訓船經歷</li> <li>.3 經認可的模擬器培訓，如適合</li> <li>.4 經認可的實驗室設備培訓</li> </ol>	<p>設備與系統的操作符合操作手冊的要求</p> <p>設備性能等級符合技術規範</p>

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
電氣電子控制設備的故障排除和恢復工況的管理	<p><i>實際知識</i></p> <p>電氣和電子控制設備的故障排除</p> <p>電氣和電子控制設備及安全設備的功能測試</p> <p>監測系統的故障排除</p> <p>軟體版本控制</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓，如適合</p> <p>.4 經認可的實驗室設備培訓</p>	<p>維護活動是按照技術的、法定的、安全的和程序化的規範正確計劃的</p> <p>檢查、測試和故障排除是適當的</p>

**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	<p><i>Theoretical knowledge</i></p> <p>Marine electrotechnology, electronics, power electronics, automatic control engineering and safety devices</p> <p>Design features and system configurations of automatic control equipment and safety devices for the following:</p> <p>.1 main engine</p> <p>.2 generator and distribution system</p> <p>.3 steam boiler</p> <p>Design features and system configurations of operational control equipment for electrical motors</p> <p>Design features of high-voltage installations</p> <p>Features of hydraulic and pneumatic control equipment</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training, where appropriate</p> <p>.4 approved laboratory equipment training</p>	<p>Operation of equipment and system is in accordance with operating manuals</p> <p>Performance levels are in accordance with technical specifications</p>
Manage trouble-shooting, restoration of electrical and electronic control equipment to operating condition	<p><i>Practical knowledge</i></p> <p>Troubleshooting of electrical and electronic control equipment</p> <p>Function test of electrical, electronic control equipment and safety devices</p> <p>Troubleshooting of monitoring systems</p> <p>Software version control</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training, where appropriate</p> <p>.4 approved laboratory equipment training</p>	<p>Maintenance activities are correctly planned in accordance with technical, legislative, safety and procedural specifications</p> <p>Inspection, testing and troubleshooting of equipment are appropriate</p>

職能：維護和修理（管理級）

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
安全有效的維護和修理程序的管理	<p><i>理論知識</i></p> <p>輪機工程實踐</p> <p><i>實際知識</i></p> <p>管理安全有效的維護和修理程序</p> <p>做維護計劃，包括法定檢驗和入級檢驗</p> <p>做修理計劃</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的車間培訓</p>	<p>維護活動是按照技術的、法定的、安全的和程序化的規範正確計劃和進行的</p> <p>保養和修理具有適當的計劃、技術規範、材料和設備</p> <p>採取最恰當的措施恢復裝置功能</p>
探測和鑒別機器故障原因並消除故障	<p><i>實際知識</i></p> <p>探測機器故障，確定故障部位並採取防止損壞的措施</p> <p>檢查和調整設備</p> <p>無損檢驗</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓，如適合</p> <p>.4 經認可的實驗室設備培訓</p>	<p>對實際工作狀態的比較方法符合推薦做法和程序</p> <p>按照推薦的操作規範和限制採取行動並作出決策</p>
保證安全工作實踐	<p><i>實際知識</i></p> <p>安全工作實踐</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的實驗室設備培訓</p>	<p>工作實踐符合法定要求、操作規程、工作許可和環境關切</p>

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	<p><i>Theoretical knowledge</i></p> <p>Marine engineering practice</p> <p><i>Practical knowledge</i></p> <p>Manage safe and effective maintenance and repair procedures</p> <p>Planning maintenance, including statutory and class verifications</p> <p>Planning repairs</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved workshop training</p>	<p>Maintenance activities are correctly planned and carried out in accordance with technical, legislative, safety and procedural specifications</p> <p>Appropriate plans, specifications, materials and equipment are available for maintenance and repair</p> <p>Action taken leads to the restoration of plant by the most suitable method</p>
Detect and identify the cause of machinery malfunctions and correct faults	<p><i>Practical knowledge</i></p> <p>Detection of machinery malfunction, location of faults and action to prevent damage</p> <p>Inspection and adjustment of equipment</p> <p>Non-destructive examination</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training, where appropriate</p> <p>.4 approved laboratory equipment training</p>	<p>The methods of comparing actual operating conditions are in accordance with recommended practices and procedures</p> <p>Actions and decisions are in accordance with recommended operating specifications and limitations</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Ensure safe working practices	<p><i>Practical knowledge</i></p> <p>Safe working practices</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved laboratory equipment training</p>	<p>Working practices are in accordance with legislative requirements, codes of practice, permits to work and environmental concerns</p>

職能：控制船舶操作和關照船上人員（管理級）

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
控制吃水差、穩性和應力	<p>理解船舶構造和理論的基本原理，影響吃水差和穩性的因素以及保持吃水差和穩性的必要措施</p> <p>因艙室受損和進水而影響吃水差和穩性的知識以及應採取的措施的知識</p> <p>有關船舶穩性的海事組織建議的知識</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓，如適合</p>	<p>穩性和應力狀況始終保持在安全限度以內</p>
監督和控制對法定要求的遵守及保證海上人命安全與保護海洋環境的措施	<p>國際協定和公約中體現的相關國際海事法律的知識</p> <p>應特別注意下列各項：</p> <p>.1 國際公約要求隨船攜帶的證書和其他文件，如何獲得這些證書和文件及其法定有效期限</p> <p>.2 經修正的《1966年國際載重線公約》有關要求規定的職責</p> <p>.3 經修正的《1974年國際海上人命安全公約》有關要求規定的職責</p> <p>.4 經修正的《國際防止船舶造成污染公約》有關要求規定的職責</p> <p>.5 海員健康證明和《國際衛生條例》的要求</p> <p>.6 影響船舶、旅客、海員或貨物安全的國際文件規定的職責</p> <p>.7 防止船舶污染環境的方法和設備</p> <p>.8 為實施國際協定和公約的國內立法的知識</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓，如適合</p>	<p>監督操作和保養的程序符合法定要求</p> <p>迅速和全面確認潛在的不符合項</p> <p>對證書換新和展期的要求，能保證檢驗項目和設備的繼續有效</p>
保持船舶、海員和旅客的安全和保安及救生、消防和其他安全系統的工作狀態	<p>救生設備有關規則（《國際海上人命安全公約》）的全面知識</p> <p>組織滅火和棄船演習</p> <p>保持救生、消防和其他安全系統的工作狀態</p> <p>在緊急情況下為保護所有船上人員安全而採取的行動</p> <p>在失火、爆炸、碰撞或擱淺時為限制損害與救助本船的行動</p>	<p>考試並評估從實際訓練和經認可的在職培訓和實踐中獲取的證據</p>	<p>監測探火和安全系統的程序，保證迅速探測到所有報警，並按照所制定的應急程序採取行動</p>

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
制定應急和損害控制計劃和處理緊急情況	船舶構造，包括損害控制 防火、探火和滅火的方法和設備 救生設備的功能和使用	考試並評估從經認可的在職培訓和實踐中獲取的證據	應急程序符合為緊急情況制定的計劃
領導才能和管理技能的運用	船上人員管理和培訓的知識 有關國際海事公約和建議以及國內立法的知識 運用任務和工作量管理的能力，包括： .1 計劃和協調 .2 人員分派 .3 時間和資源的制約 .4 優先排序 運用有效資源管理的知識和能力： .1 資源的分配、分派和優先排序 .2 船上和岸上的有效交流 .3 決策反映出團隊的經驗 .4 決斷力和領導才能，包括激勵 .5 領悟並保持情景意識 運用決策技能的知識和能力： .1 局面和風險評估 .2 確定並形成選擇項 .3 選擇行動方式 .4 評價結果的有效性 制訂、實施和監督標準操作程序	評估從下列一項或數項獲取的證據： .1 經認可的培訓 .2 經認可的工作經歷 .3 經認可的模擬器培訓	以適合有關個人的方式分配海員工作，並告知所期待的工作和行為標準 培訓目標和培訓活動以對目前適任性和能力的評估和操作要求為依據 表明操作符合適用的規則 操作是有計劃的並根據需要按正確的優先順序分配和分派資源，以執行必要的任務 語言交流清楚和無歧義 表明有效的領導行為 必要的團隊小組成員分享對當前和預測的船舶和操作狀態以及外部環境的準確理解 決策對於狀態是最有效的 表明操作是有效的並符合適用的規則

**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

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
<p>Monitor and control compliance with legislative requirements and measures to ensure safety of life at sea, security and protection of the marine environment</p>	<p>Knowledge of relevant international maritime law embodied in international agreements and conventions</p> <p>Regard shall be paid especially to the following subjects:</p> <p>.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</p> <p>.2 responsibilities under the relevant requirements of the International Convention on Load Lines, 1966, as amended</p> <p>.3 responsibilities under the relevant requirements of the International Convention for the Safety of Life at Sea, 1974, as amended</p> <p>.4 responsibilities under the International Convention for the Prevention of Pollution from Ships, as amended</p> <p>.5 maritime declarations of health and the requirements of the International Health Regulations</p> <p>.6 responsibilities under international instruments affecting the safety of the ships, passengers, crew or cargo</p> <p>.7 methods and aids to prevent pollution of the environment by ships</p> <p>.8 knowledge of national legislation for implementing international agreements and conventions</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training, where appropriate</p>	<p>Procedures for monitoring operations and maintenance comply with legislative requirements</p> <p>Potential non-compliance is promptly and fully identified</p> <p>Requirements for renewal and extension of certificates ensure continued validity of survey items and equipment</p>
<p>Maintain safety and security of the vessel, crew and passengers and the operational condition of life-saving, fire-fighting and other safety systems</p>	<p>A thorough knowledge of life-saving appliance regulations (International Convention for the Safety of Life at Sea)</p> <p>Organization of fire and abandon ship drills</p>	<p>Examination and assessment of evidence obtained from practical instruction and approved in-service training and experience</p>	<p>Procedures for monitoring fire-detection and safety systems ensure that all alarms are detected promptly and acted upon in accordance with established emergency procedures</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>Maintenance of operational condition of life-saving, fire-fighting and other safety systems</p> <p>Actions to be taken to protect and safeguard all persons on board in emergencies</p> <p>Actions to limit damage and save the ship following fire, explosion, collision or grounding</p>		
<p>Develop emergency and damage control plans and handle emergency situations</p>	<p>Ship construction, including damage control</p> <p>Methods and aids for fire prevention, detection and extinction</p> <p>Functions and use of life-saving appliances</p>	<p>Examination and assessment of evidence obtained from approved in-service training and experience</p>	<p>Emergency procedures are in accordance with the established plans for emergency situations</p>
<p>Use leadership and managerial skills</p>	<p>Knowledge of shipboard personnel management and training</p> <p>A knowledge of international maritime conventions and recommendations, and related national legislation</p> <p>Ability to apply task and workload management, including:</p> <ul style="list-style-type: none"> <li>.1 planning and coordination</li> <li>.2 personnel assignment</li> <li>.3 time and resource constraints</li> <li>.4 prioritization</li> </ul> <p>Knowledge and ability to apply effective resource management:</p> <ul style="list-style-type: none"> <li>.1 allocation, assignment, and prioritization of resources</li> <li>.2 effective communication on board and ashore</li> <li>.3 decisions reflect consideration of team experience</li> <li>.4 assertiveness and leadership, including motivation</li> </ul>	<p>Assessment of evidence obtained from one or more of the following:</p> <ul style="list-style-type: none"> <li>.1 approved training</li> <li>.2 approved in-service experience</li> <li>.3 approved simulator training</li> </ul>	<p>The crew are allocated duties and informed of expected standards of work and behaviour in a manner appropriate to the individuals concerned</p> <p>Training objectives and activities are based on assessment of current competence and capabilities and operational requirements</p> <p>Operations are demonstrated to be in accordance with applicable rules</p> <p>Operations are planned and resources are allocated as needed in correct priority to perform necessary tasks</p> <p>Communication is clearly and unambiguously given and received</p> <p>Effective leadership behaviours are demonstrated</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	.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		Necessary team member(s) share accurate understanding of current and predicted vessel state 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

#### 第A—III/3節

對主推進裝置推進功率為750至3000千瓦船舶的輪機長和大管輪發證的強制性最低要求

#### 適任標準

1 每位申請主推進裝置推進功率為750至3000千瓦船舶的輪機長和大管輪證書申請人，須表明承擔表A—III/2第1欄所列的管理級任務、職責和責任的能力。

2 發證所要求的最低知識、理解和熟練列於表A—III/2第2欄中，其內容包括、擴大和加深了表A—III/1第2欄列出的對在有人值班機艙負責輪機值班的高級海員或周期性無人值班機艙指定值班的輪機員的科目。

3 鑑及大管輪隨時可能承擔輪機長的責任，對這些科目的評估須旨在考查證書申請人從影響船舶機械安全操作和保護海洋環境的所有可利用資料中吸收知識的能力。

4 表A—III/2第2欄所列科目的知識水平可以降低，但須足以能使證書申請人在本節規定的推進功率範圍的輪機長或大管輪的職位上服務。

#### 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 為獲取所需水平的理論知識、理解和熟練的培訓和經驗，須考慮到本規則部分的有關要求和B部分給予的指導。

6 主管機關可刪除那些對所發證書有效的機械裝置以外的其他類型推進裝置的知識要求。據此所發的證書不得對已被刪除的任何種類的機械裝置有效，直至該輪機部高級海員證明能符合這些知識的要求。任何這種限制須在證書上和簽註上載明。

7 每位證書申請人須按照表A—III/2第3欄和第4欄所列的標明適任的方法和評價適任的標準，提供已達到所要求的適任標準的證明。

### 近岸航行

8 表A—III/2第2欄不同部分對知識、理解和熟練程度的要求，以及規則第III/3條第2.1.1和2.1.2款的有關要求，如認為必要，對主推進裝置推進功率低於3000千瓦且從事近岸航行的船舶輪機部高級海員可有所變動，但要切記對可能同一水域航行的所有船舶安全的影響，任何這種限制須在證書上和簽註上載明。

### 第A—III/4節

對參加有人值班機艙值班或被指定在周期性無人值班機艙值班的普通海員發證的強制性最低要求

### 適任標準

1 每位參加海船上機艙值班的普通海員，須表明執行表A—III/4第1欄所規定的支持級輪機工程職能的適任能力。

2 對參加機艙值班的普通海員要求的最低知識、理解和熟練列於表A—III/4第2欄。

3 每位證書申請人須按照表A—III/4第3欄和第4欄所列的表明適任的方法和評價適任的標準，提供已達到所要求的適任標準的證據。第3欄所提及的“實際測試”可包括對學員進行實際測試的經認可的岸上培訓。

4 對於未用適任表列出的某些支持級職能，主管機關有責任對指定執行那些承擔支持級職能的人員確定適當的培訓、評估和發證要求。

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.

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.

表 A — III/4

## 參加機艙值班的普通海員的最低適任標準規範

## 職能：輪機工程（支持級）

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
執行適合於參加機艙值班的普通海員職責的日常值班任務  理解指令並能向其他人表述與值班職責有關的事宜	機器處所使用的術語及機器和設備名稱  機艙值班程序  有關機艙操作的安全工作做法  基本的環境保護程序  相應的船上內部通信系統的使用  機艙報警系統和識別各種報警特別是關於滅火氣體報警的能力	評估從下列一項或數項獲取的證據： .1 經認可的工作經歷； .2 經認可的培訓船經歷；或 .3 實際測試	語言交流清楚簡明，在未能清楚地理解值班信息或指示時，能從高級值班海員處獲得建議或澄清  值班、交班和接班符合公認的原則和程序
值鍋爐班： 保持正確的水位和蒸汽壓力	鍋爐的安全操作	評估從下列一項或數項獲取的證據： .1 經認可的工作經歷； .2 經認可的培訓船經歷；或 .3 實際測試；或 .4 經認可的模擬器培訓，如適合	對鍋爐狀況的評估是準確的，並基於從現場和遙測指示器以及實體檢查獲得的有關信息  調整的順序和定時能保持安全和最佳實效
操作應急設備和應用應急程序	應急職責的知識  從機器處所逃生的路線  熟悉機器處所的滅火設備的位置及其使用	評估從演示和經認可的工作經歷或經認可的培訓船經歷獲取的證據	得知緊急或異常情況後採取的初始行動符合確定的程序  語言交流始終清楚簡明並以海員的方式確認指令

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

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

**第A—III/5節**

對有人值班機艙或周期性無人值班機艙指定履行職責的高級值班機工發證的強制性最低要求

**適任標準**

1 每位在主推進裝置推進功率為750千瓦或以上的海船上服務的高級值班機工須表明其履行表A—III/5第1欄中指定的支持級職能的適任能力；

2 對在主推進裝置推進功率為750千瓦或以上的海船上服務的高級值班機工所要求的最低知識、理解和熟練列於表A—III/5第2欄；

3 每位證書申請人須提供已達到表A—III/5第3和4欄中指定的表明適任的方法和評價適任的標準的證據。

**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.

表A—III/5

**有人值班機艙或週期性無人值班機艙指定履行職責的高級值班機工的最低適任標準規範**

**職能：輪機工程（支持級）**

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
致力於安全的輪機值班	理解值班指令以及與值班輪機員就值班職責相關事宜進行交流的能力  接班、值班和交班的程序  保持安全值班所需的信息	評估從工作經歷或實際測試中獲取的證據	語言交流清楚簡明  值班、交班和接班符合公認的做法和程序

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
致力於機艙值班監控	<p>主推進裝置和輔助機械的功能和操作的基本知識</p> <p>基本理解主推進裝置和輔助機械的控制壓力、溫度和等級</p>	<p>評估從下列內容中獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 實際測試</p>	<p>對主推進裝置和輔助機械的監控頻度和程度符合公認的原則和程序</p> <p>識別偏差</p> <p>在工作繼續進行之前能夠立即察覺不安全狀況或潛在危險，報告並糾正</p>
致力於加燃油和駁油作業	<p>燃油系統的功能和操作以及駁油作業的知識，包括：</p> <p>.1 加燃油和駁油作業的準備</p> <p>.2 燃油管和駁油管的連接和拆開程序</p> <p>.3 與在加燃油和駁油作業過程中可能出現的故障相關的程序</p> <p>.4 安全進行加燃油和駁油作業</p> <p>.5 正確測量和報告油艙液位的能力</p>	<p>評估從下列一項或數項中獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 實際培訓</p> <p>.3 考試</p> <p>.4 經認可的培訓船經歷</p> <p>評估從實際展示中獲取的證據</p>	<p>駁油作業符合已建立的安全做法和設備操作說明</p> <p>危險、有毒和有害液體的處理符合已建立的安全做法</p> <p>在操作人員的職責範圍內進行順利的語言交流</p>
致力於艙底水和壓載水作業	<p>艙底水和壓載水系統的安全功能、操作和維護的知識，包括：</p> <p>.1 報告駁水過程中的事故</p> <p>.2 正確測量和報告液艙水位的能力</p>	<p>評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 實際培訓</p> <p>.3 考試</p> <p>.4 經認可的培訓船經歷</p> <p>評估從實際演示中獲取的證據</p>	<p>操作和維護符合已建立的安全做法和設備操作說明，並防止海洋環境污染</p> <p>在操作人員的職責範圍內進行順利的語言交流</p>
致力於設備和機械的操作	<p>安全操作各種設備，包括：</p> <p>.1 閘和泵</p> <p>.2 吊裝設備</p> <p>.3 艙蓋、水密門、駁門和相關設備</p> <p>使用和理解迴轉式起貨機、絞車和起吊的基本信號的能力</p>	<p>評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 實際培訓</p> <p>.3 考試</p> <p>.4 經認可的培訓船經歷</p> <p>評估從實際演示中獲取的證據</p>	<p>操作和維護符合已建立的安全做法和設備操作說明</p> <p>在操作人員的職責範圍內進行順利的語言交流</p>

Table A-III/5

**Specification of minimum standard 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	<p>Ability to understand orders and to communicate with the officer of the watch in matters relevant to watchkeeping duties</p> <p>Procedures for the relief, maintenance and handover of a watch</p> <p>Information required to maintain a safe watch</p>	Assessment of evidence obtained from in-service experience or practical test	<p>Communications are clear and concise</p> <p>Maintenance, handover and relief of the watch is in conformity with acceptable practices and procedures</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Contribute to the monitoring and controlling of an engine-room watch	<p>Basic knowledge of the function and operation of main propulsion and auxiliary machinery</p> <p>Basic understanding of main propulsion and auxiliary machinery control pressures, temperatures and levels</p>	<p>Assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience;</p> <p>.2 approved training ship experience; or</p> <p>.3 practical test</p>	<p>The frequency and extent of monitoring of main propulsion and auxiliary machinery conforms with accepted principles and procedures</p> <p>Deviations from the norm are identified</p> <p>Unsafe conditions or potential hazards are promptly recognized, reported and rectified before work continues</p>
Contribute to fuelling and oil transfer operations	<p>Knowledge of the function and operation of fuel system and oil transfer operations, including:</p> <p>.1 preparations for fuelling and transfer operations</p> <p>.2 procedures for connecting and disconnecting fuelling and transfer hoses</p> <p>.3 procedures relating to incidents that may arise during fuelling or transferring operation</p> <p>.4 securing from fuelling and transfer operations</p> <p>.5 ability to correctly measure and report tank levels</p>	<p>Assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 practical training</p> <p>.3 examination</p> <p>.4 approved training ship experience</p> <p>Assessment of evidence obtained from practical demonstration</p>	<p>Transfer operations are carried out in accordance with established safety practices and equipment operating instructions</p> <p>The handling of dangerous, hazardous and harmful liquids complies with established safety practices</p> <p>Communications within the operator's area of responsibility are consistently successful</p>
Contribute to bilge and ballast operations	<p>Knowledge of the safe function, operation and maintenance of the bilge and ballast systems, including:</p> <p>.1 reporting incidents associated with transfer operations</p> <p>.2 ability to correctly measure and report tank levels</p>	<p>Assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 practical training</p> <p>.3 examination</p> <p>.4 approved training ship experience</p> <p>Assessment of evidence obtained from practical demonstration</p>	<p>Operations and maintenance are carried out in accordance with established safety practices and equipment operating instructions and pollution of the marine environment is avoided</p> <p>Communications within the operator's area of responsibility are consistently successful</p>
Contribute to the operation of equipment and machinery	<p>Safe operation of equipment, including:</p> <p>.1 valves and pumps</p> <p>.2 hoists and lifting equipment</p>	<p>Assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p>	<p>Operations are carried out in accordance with established safety practices and equipment operating instructions</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	.3 hatches, watertight doors, ports and related equipment  Ability to use and understand basic crane, winch and hoist signals	.2 practical training .3 examination .4 approved training ship experience  Assessment of evidence obtained from practical demonstration	Communications within the operator's area of responsibility are consistently successful

## 職能：電氣、電子和控制工程（支持級）

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
電氣設備的安全使用	電氣設備的安全使用和操作，包括： .1 開始工作或修理前的安全預防措施 .2 隔離程序 .3 應急程序 .4 船上各種電壓  觸電的原因和為防止觸電應採取的預防措施的基本知識	評估從下列一項或數項獲取的證據： .1 經認可的工作經歷 .2 實際培訓 .3 考試 .4 經認可的培訓船經歷	識別並報告電氣危險和不安全設備  理解手持設備的安全電壓  理解與高壓設備和船上工作有關的危險

## 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

## 職能：維護和修理（支持級）

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
致力於船上的維護和修理	使用油漆、潤滑和清潔材料與設備的能力  理解並執行日常維護和修理事務的能力  表面處理技術的知識	評估從下列實際演示中獲取的證據  評估從下列一項或數項獲取的證據： .1 經認可的工作經歷	維護行為符合技術、安全和程序的規範  正確地選擇和使用設備和工具

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
	安全處置廢料的知識 理解製造商的安全導則和船上須知 手持和電動工具、測量儀器和機械工具的應用、維護和使用的知識 金工工藝的知識	.2 實際培訓 .3 考試 .4 經認可的培訓船經歷	

**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 Knowledge of the application, maintenance and use of hand and power tools and measuring instruments and machine tools Knowledge of metalwork	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

**職能：控制船舶操作和關照船上人員 (支持級)**

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
致力於物料管理	物料的安全裝卸、存放和繫固程序的知識	評估從下列一項或數項獲取的證據： .1 經認可的工作經歷 .2 實際培訓 .3 考試 .4 經認可的培訓船經歷	物料操作符合已建立的安全做法和設備操作說明 危險、有毒和有害物料的處理符合已建立的安全做法 在操作人員的職責範圍內進行順利的語言交流

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
採取預防措施和致力於防止海洋環境污染	採取措施防止海洋環境污染的知識 防污染設備的使用和操作的知識 處置海洋污染物的經認可方法的知識	評估從下列一項或數項獲取的證據： .1 經認可的工作經歷 .2 實際培訓 .3 考試 .4 經認可的培訓船經歷	始終遵循保護海洋環境的程序
應用職業健康和安全管理程序	安全工作做法和船上人身安全的實用知識，包括： .1 電氣安全 .2 鎖定/掛牌 .3 機械安全 .4 許可證制度 .5 高空作業 .6 在封閉場所中作業 .7 升舉技巧和防止背傷的方法 .8 化學品和生物危害的安全 .9 人員安全設備	評估從下列一項或數項獲取的證據： .1 經認可的工作經歷 .2 實際培訓 .3 考試 .4 經認可的培訓船經歷	始終遵循保護人員和船舶的程序 遵循安全工作做法，始終正確使用合適的安全和保護設備

**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: <ol style="list-style-type: none"> <li>.1 electrical safety</li> <li>.2 lockout/tag-out</li> <li>.3 mechanical safety</li> <li>.4 permit to work systems</li> <li>.5 working aloft</li> <li>.6 working in enclosed spaces</li> <li>.7 lifting techniques and methods of preventing back injury</li> <li>.8 chemical and biohazard safety</li> <li>.9 personal safety equipment</li> </ol>	Assessment of evidence obtained from one or more of the following: <ol style="list-style-type: none"> <li>.1 approved in-service experience</li> <li>.2 practical training</li> <li>.3 examination</li> <li>.4 approved training ship experience</li> </ol>	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

**第A—III/6節**

對電子員發證的強制性最低要求

**培訓：**

1 規則第III/6條第2.3款要求的教育和培訓須包括針對電子員職責的電子和電氣車間技能的培訓。

**船上培訓**

2 每位電子員證書申請人須完成經認可的船上培訓項目，該培訓項目：

- .1 確保申請人在規定的海上服務期間，受到關於電子員的任務、職責和責任方面的系統的實際訓練並獲得經驗；
- .2 在經認可的海上服務中，受到船上合格的並持有適任證書的高級海員的嚴格監督和指導；且
- .3 在培訓記錄簿上予以充分載明。

**適任標準**

3 每位電子員證書申請人須按要求表明其有能力承擔表A—III/6第1欄所列的任務、職責和責任。

**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 發證所要求的最低知識、理解和熟練列於表A—III/6第2欄中，並須考慮到本規則B部分給予的指導。

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 每位證書申請人須提供已達到表A—III/6第3、4欄中所列的適任標準的證據。

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.

表 A—III/6

電子員最低適任標準規範

職能：電氣、電子和控制工程（操作級）

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
對電氣、電子和控制系統的監控	<p>基本理解機械工程系統的運行，包括：</p> <p>.1 原動機，包括主推進裝置</p> <p>.2 機艙輔助機械</p> <p>.3 操舵系統</p> <p>.4 裝卸貨系統</p> <p>.5 甲板機械</p> <p>.6 生活系統</p> <p>有關傳熱、力學和流體力學的基本知識</p> <p>下列知識：</p> <p>電子技術和電氣機械理論</p> <p>電子學和電力電子學基礎</p> <p>配電板和電氣設備</p> <p>自動化、自動控制系統及技術的基礎</p> <p>儀錶、警報和監測系統</p> <p>電力驅動</p> <p>電氣材料技術</p> <p>電子—液壓和電子—氣動控制系統</p> <p>理解對電壓超過1千伏特供電系統操作的危險和所需的預防措施</p>	<p>考試並評估從下列一項或數項中獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓，如適合</p> <p>.4 經認可的實驗室設備培訓</p>	<p>設備和系統的操作與操作手冊一致</p> <p>性能等級與技術規範一致</p>
監控推進裝置和輔助機械自動控制系統的運行	<p>推進裝置和輔助機械控制系統的運行準備</p>	<p>考試並評估從下列一項或數項中獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓，如適合</p> <p>.4 經認可的實驗室設備培訓</p>	<p>對主推進裝置和輔助機械系統的監控足以保持安全運行狀態</p>
發電機和配電系統的操作	<p>發電機併車、負載分配和切換</p> <p>開關板和配電盤之間的連接與斷開</p>	<p>考試並評估從下列一項或數項中獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓，如適合</p> <p>.4 經認可的實驗室設備培訓</p>	<p>按照操作手冊、已建立的規定和程序計劃執行操作，以確保操作安全</p> <p>通過圖紙/說明書理解和解釋配電系統</p>

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
電壓超過1千伏特供電系統的操作	<p><i>理論知識</i></p> <p>高壓電技術</p> <p>安全防備措施和程序</p> <p>電力推進船舶、主電動機及控制系統</p> <p><i>實際知識</i></p> <p>高壓電系統的安全操作和管理，包括了解特殊技術類型的高壓電系統和操作電壓超過1千伏特高壓電系統引起的危險</p>	<p>考試並評估從下列一項或數項中獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓，如適合</p> <p>.4 經認可的實驗室設備培訓</p>	<p>按照操作手冊、已建立的規定和程序計劃執行操作，以確保操作安全</p>
操作船上計算機及其網路系統	<p>理解：</p> <p>.1 數據處理的主要特點</p> <p>.2 船上計算機網路的構造和使用</p> <p>.3 駕駛台、機艙和商務計算機的使用</p>	<p>考試並評估從下列一項或數項中獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓，如適合</p> <p>.4 經認可的實驗室設備培訓</p>	<p>正確檢查和處理計算機網路和計算機</p>
使用英語進行書面和口頭表達	<p>足夠的英語知識以確保電子員能正確使用工程出版物並履行其職責</p>	<p>考試並評估從實際表達中獲取的證據</p>	<p>正確解讀與電子員職責相關的英語出版物</p> <p>語言交流清楚易懂</p>
使用內部通信系統	<p>船上所有的內部通信系統的操作</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓，如適合</p> <p>.4 經認可的實驗室設備培訓</p>	<p>信息的發送和接收一直是成功的</p> <p>通信記錄完整、準確且符合法定要求</p>

Table A-III/6

**Specification of minimum standard 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	<p>Basic understanding of the operation of mechanical engineering systems, including:</p> <p>.1 prime movers, including main propulsion plant</p> <p>.2 engine-room auxiliary machinery</p> <p>.3 steering systems</p> <p>.4 cargo handling systems</p> <p>.5 deck machinery</p> <p>.6 hotel systems</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training, where appropriate</p> <p>.4 approved laboratory equipment training</p>	<p>Operation of equipment and system is in accordance with operating manuals</p> <p>Performance levels are in accordance with technical specifications</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>Basic knowledge of heat transmission, mechanics and hydro-mechanics</p> <p><i>Knowledge of:</i></p> <p>Electro-technology and electrical machines theory</p> <p>Fundamentals of electronics and power electronics</p> <p>Electrical power distribution boards and electrical equipment</p> <p>Fundamentals of automation, automatic control systems and technology</p> <p>Instrumentation, alarm and monitoring systems</p> <p>Electrical drives</p> <p>Technology of electrical materials</p> <p>Electro-hydraulic and electro-pneumatic control systems</p> <p>Appreciation of the hazards and precautions required for the operation of power systems above 1,000 volts</p>		
<p>Monitor the operation of automatic control systems of propulsion and auxiliary machinery</p>	<p>Preparation of control systems of propulsion and auxiliary machinery for operation</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training, where appropriate</p> <p>.4 approved laboratory equipment training</p>	<p>Surveillance of main propulsion plant and auxiliary systems is sufficient to maintain safe operation condition</p>
<p>Operate generators and distribution systems</p>	<p>Coupling, load sharing and changing over generators</p> <p>Coupling and breaking connection between switchboards and distribution panels</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p>	<p>Operations are planned and carried out in accordance with operating manuals, established rules and procedures to ensure safety of operations</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
		.2 approved training ship experience  .3 approved simulator training, where appropriate  .4 approved laboratory equipment training	Electrical distribution systems can be understood and explained with drawings/instructions
Operate and maintain power systems in excess of 1,000 volts	<p><i>Theoretical knowledge</i></p> High-voltage 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	Operations are planned and carried out in accordance with operating manuals, established rules and procedures to ensure safety of operations
Operate computers and computer networks on ships	<p>Understanding of:</p> .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

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

職能：維護和修理（操作級）

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
電氣和電子設備的維護和修理	船上電氣系統的工作安全要求，包括在允許人員檢修該設備之前所要求的電器設備的安全絕緣  電氣系統設備、開關板、電動機、發電機和直流電氣系統及設備的維護和修理  電氣故障的檢測、故障位置的確定及防止損壞的措施  電氣測試和測量設備的結構和操作  以下設備及其組成部分的功能和性能測試： .1 監控系統 .2 自動控制設備 .3 保護設備 電氣和電子圖的識讀	考試並評估從下列一項或數項獲取的證據： .1 經認可的車間技能培訓 .2 經認可的實際經驗和測試 .3 經認可的工作經歷 .4 經認可的培訓船經歷	工作安全措施是適當的  手動工具、測量儀錶、檢測設備是適當的，且結果的解釋是準確的  設備的拆卸、檢查、修理和裝復符合操作手冊和良好的做法  裝復和性能測試符合操作手冊和良好的做法
維護和修理主推進裝置和輔助機械的自動和控制系統	適當的電氣和機械知識和技能 <i>安全和應急程序</i>  允許人員維護和修理裝置或設備前，安全隔離設備和相關系統  設備檢測、維護、故障檢查和修理的實際知識  電氣和電子控制設備的檢測、故障檢查、維護和恢復運行狀態	考試並評估從下列一項或數項中獲取的證據： .1 經認可的工作經歷 .2 經認可的培訓船經歷 .3 經認可的模擬器培訓，如適合 .4 經認可的實驗室設備培訓	準確識別相關機械和系統的故障的影響，正確解讀船舶的技術圖紙，正確使用測量和校準儀錶並採取正確的行動  裝置和設備的隔離、拆卸和裝復符合製造商的安全導則、船上須知、法規和安全規範。根據適合當時的環境和狀況採取最合適的和恰當的行動使自動和控制系統恢復原狀

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
維護和修理駕駛台航行設備和船舶通信系統	<p>航行設備和內外部通信系統的原理和維護程序的知識</p> <p><i>理論知識：</i> 易燃區域電氣和電子系統的運行</p> <p><i>實際知識：</i> 執行安全維護和修理的程序</p> <p>探查機械故障、確認故障點和防止機械損壞的措施</p>		<p>準確識別相關機械和系統故障的影響，正確解讀船舶的技術圖紙，正確使用測量和校準儀錶並採取正確的行動</p> <p>裝置和設備的隔離、拆卸和裝復符合製造商的安全導則、船上須知、法規和安全規範。根據適合當時的環境和狀況採取最合適的和恰當的行動使駕駛台航行設備和船舶通信系統恢復原狀。</p>
維護和修理甲板機械和裝卸貨設備的電氣、電子和控制系統	<p>適當的電氣和機械知識和技能</p> <p><i>安全和應急程序</i></p> <p>在允許人員維護和修理裝置或設備前，安全隔離設備和相關系統</p> <p>設備檢測、維護、故障檢查和修理的實際知識</p> <p>電氣和電子控制設備的檢測、故障檢查、維護和恢復運行狀態</p> <p><i>理論知識：</i> 易燃區域電氣和電子系統的運行</p> <p><i>實際知識：</i> 執行安全維護和修理的程序</p> <p>探查機械故障、確認故障點和防止機械損壞的措施</p>	<p>考試並評估從下列一項或數項中獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓，如適合</p> <p>.4 經認可的實驗室設備培訓</p>	<p>準確識別相關機械和系統故障的影響，正確解讀船舶的技術圖紙，正確使用測量和校準儀錶並採取正確的行動</p> <p>裝置和設備的隔離、拆卸和裝復符合製造商的安全導則、船上須知、法規和安全規範。根據適合當時的環境和狀況採取最合適的和恰當的行動使甲板機械和裝卸貨設備恢復原狀</p>
維護和修理生活設備的控制和安全系統	<p><i>理論知識：</i> 易燃區域電氣和電子系統的運行</p> <p><i>實際知識：</i> 執行安全維護和修理的程序</p> <p>探查機械故障、確認故障點和防止機械損壞的措施</p>		<p>準確識別相關機械和系統故障的影響，正確解讀船舶的技術圖紙，正確使用測量和校準儀錶並採取正確的行動</p> <p>裝置和設備的隔離、拆卸和裝復符合製造商的安全導則、船上須知、法規和安全規範。根據適合當時的環境和狀況採取最合適的和恰當的行動使生活設備的控制和安全系統恢復原狀</p>

**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	<p>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</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved workshop skills training</p>	<p>Safety measures for working are appropriate</p> <p>Selection and use of hand tools, measuring instruments, and testing equipment are appropriate and interpretation of results is accurate</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>Maintenance and repair of electrical system equipment, switchboards, electric motors, generators and DC electrical systems and equipment</p> <p>Detection of electric malfunction, location of faults and measures to prevent damage</p> <p>Construction and operation of electrical testing and measuring equipment</p> <p>Function and performance tests of the following equipment and their configuration:</p> <p>.1 monitoring systems</p> <p>.2 automatic control devices</p> <p>.3 protective devices</p> <p>The interpretation of electrical and electronic diagrams</p>	<p>.2 approved practical experience and tests</p> <p>.3 approved in-service experience</p> <p>.4 approved training ship experience</p>	<p>Dismantling, inspecting, repairing and reassembling equipment are in accordance with manuals and good practice</p> <p>Reassembling and performance testing is in accordance with manuals and good practice</p>
Maintenance and repair of automation and control systems of main propulsion and auxiliary machinery	<p>Appropriate electrical and mechanical knowledge and skills</p> <p><i>Safety and emergency procedures</i></p> <p>Safe isolation of equipment and associated systems required before personnel are permitted to work on such plant or equipment</p> <p>Practical knowledge for the testing, maintenance, fault finding and repair</p> <p>Test, detect faults and maintain and restore electrical and electronic control equipment to operating condition</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training, where appropriate</p> <p>.4 approved laboratory equipment training</p>	<p>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</p> <p>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</p>
Maintenance and repair of bridge navigation equipment and ship communication systems	<p>Knowledge of the principles and maintenance procedures of navigation equipment, internal and external communication systems</p>		<p>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</p>



Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p><i>Theoretical knowledge:</i></p> <p>Electrical and electronic systems operating in flammable areas</p> <p><i>Practical knowledge:</i></p> <p>Carrying out safe maintenance and repair procedures</p> <p>Detection of machinery malfunction, location of faults and action to prevent damage</p>		<p>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</p>
<p>Maintenance and repair of electrical, electronic and control systems of deck machinery and cargo-handling equipment</p>	<p>Appropriate electrical and mechanical knowledge and skills</p> <p><i>Safety and emergency procedures</i></p> <p>Safe isolation of equipment and associated systems required before personnel are permitted to work on such plant or equipment</p> <p>Practical knowledge for the testing, maintenance, fault finding and repair</p> <p>Test, detect faults and maintain and restore electrical and electronic control equipment to operating condition</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training, where appropriate</p> <p>.4 approved laboratory equipment training</p>	<p>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</p> <p>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</p>
<p>Maintenance and repair of control and safety systems of hotel equipment</p>	<p><i>Theoretical knowledge:</i></p> <p>Electrical and electronic systems operating in flammable areas</p> <p><i>Practical knowledge:</i></p> <p>Carrying out safe maintenance and repair procedures</p> <p>Detection of machinery malfunction, location of faults and action to prevent damage</p>		<p>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</p> <p>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</p>

## 職能：控制船舶操作和關照船上人員（操作級）

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
保證遵守防止污染要求	<p>防止海洋環境污染</p> <p>防止海洋環境污染應採取的預防措施的知識</p> <p>防止污染程序和所有相關設備</p> <p>防止海洋污染的積極主動措施的重要性</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的培訓</p>	<p>監督船上操作和保證遵守防污要求的程序得到全面遵守</p> <p>採取行動以保證積極的環保聲譽得以保持</p>
船上防火、控制火災和滅火	<p>防火和滅火設備</p> <p>組織消防演習的能力</p> <p>火的種類及其化學性質的知識</p> <p>滅火系統的知識</p> <p>一旦失火時，包括涉及油類系統着火時應採取的行動</p>	<p>評估從第A—VI/3節第1至3款規定的經認可的消防培訓中獲得的證據</p>	<p>迅速確定問題的類型和範圍，初始行動符合應急程序和船舶意外事故應急計劃</p> <p>撤離、應急關閉和分隔程序適合緊急情況的性質，並迅速實施</p> <p>作出報告和通知船上人員的優先順序、等級和時間範圍與緊急情況的性質相適應並反映問題的緊急程度</p>
操作救生設備	<p>救生</p> <p>組織棄船演習的能力和操作救生艇筏和救助艇、其釋放裝置和佈置，以及艇筏設備（包括無線電救生設備、衛星應急無線電示位標、搜救雷達應答器、救生服和保溫用具）的知識</p>	<p>評估從第A—VI/2節第1至4款規定的經認可的培訓和實際經驗中獲取的證據</p>	<p>在棄船求生情況下採取的行動適合於當時的環境和條件，並符合公認的安全做法和標準</p>
在船上應用醫療急救	<p>醫療急救</p> <p>實際應用醫療指南和無線電諮詢，包括根據這種知識對船上可能發生的事故和疾病採取有效行動的能力</p>	<p>評估從第A—VI/4節第1至3款規定的經認可的培訓中獲取的證據</p>	<p>迅速確認傷病的可能原因、性質或程度，加以治療以儘快減小對生命的直接威脅</p>
領導才能和管理技能的運用	<p>船上人員管理和培訓的實用知識</p> <p>應用任務和工作量管理的能力，包括：</p> <p>.1 計劃和協調</p> <p>.2 人員分派</p> <p>.3 時間和資源的制約</p> <p>.4 優先排序</p> <p>應用有效的資源管理的知識和能力：</p> <p>.1 資源的分配、分派和優先排序</p> <p>.2 船上和岸上的有效交流</p> <p>.3 決策反映出對團隊經驗的考慮</p> <p>.4 決斷力和領導才能，包括激勵</p> <p>.5 領悟並保持情景意識</p> <p>運用決策技能的知識和能力：</p> <p>.1 局面和風險評估</p> <p>.2 確定並形成選擇項</p> <p>.3 選擇行動方式</p> <p>.4 評價結果的有效性</p>	<p>考試並評估從下列一項或數項獲取的證據：</p> <p>.1 經認可的培訓</p> <p>.2 經認可的工作經歷</p> <p>.3 實際演示</p>	<p>以適合有關個人的方式分配海員工作，並告知所期待的工作和行為標準</p> <p>培訓目標和培訓活動以對目前適任性和能力的評估和操作要求為依據</p> <p>操作是有計劃的並根據需要按正確的優先順序分配和分派資源，以執行必要的任務</p> <p>語言交流清楚和無歧義</p> <p>表明有效的領導行為</p> <p>必要的團隊小組成員分享對當前和預測的船舶和操作狀態以及外部環境的準確理解</p> <p>決策對於局面是最有效的</p>

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
致力於人員和船舶的安全	<p>人員求生技能的知識</p> <p>防火知識和滅火能力</p> <p>基本急救的知識</p> <p>人員安全和社會責任的知識</p>	<p>評估從第A—VI/1節第2款規定的經認可的培訓中獲取的證據</p>	<p>正確使用適當的安全和防護設備</p> <p>始終遵守為保護人員和船舶而設計的程序和安全工作做法</p> <p>始終遵守為保護環境而設計的程序</p> <p>碰到緊急情況的初始和後續行動符合已建立的應急反應程序</p>

**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	<p><i>Prevention of pollution of the marine environment</i></p> <p>Knowledge of the precautions to be taken to prevent pollution of the marine environment</p> <p>Anti-pollution procedures and all associated equipment</p> <p>Importance of proactive measures to protect the marine environment</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved training</p>	<p>Procedures for monitoring shipboard operations and ensuring compliance with pollution-prevention requirements are fully observed</p> <p>Actions to ensure that a positive environmental reputation is maintained</p>
Prevent, control and fight fire on board	<p><i>Fire prevention and fire-fighting appliances</i></p> <p>Ability to organize fire drills</p> <p>Knowledge of classes and chemistry of fire</p> <p>Knowledge of fire-fighting systems</p> <p>Action to be taken in the event of fire, including fires involving oil systems</p>	<p>Assessment of evidence obtained from approved fire-fighting training and experience as set out in section A-VI/3, paragraphs 1 to 3</p>	<p>The type and scale of the problem is promptly identified and initial actions conform with the emergency procedure and contingency plans for the ship</p> <p>Evacuation, emergency shutdown and isolation procedures are appropriate to the nature of the emergency and are implemented promptly</p> <p>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</p>
Operate life-saving appliances	<p><i>Life-saving</i></p> <p>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</p>	<p>Assessment of evidence obtained from approved training and experience as set out in section A-VI/2, paragraphs 1 to 4</p>	<p>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</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Apply medical first aid on board ship	<p><i>Medical aid</i></p> <p>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</p>	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	<p>Working knowledge of shipboard personnel management and training</p> <p>Ability to apply task and workload management, including:</p> <p>.1 planning and co-ordination .2 personnel assignment .3 time and resource constraints .4 prioritization</p> <p>Knowledge and ability to apply effective resource management:</p> <p>.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</p> <p>Knowledge and ability to apply decision-making techniques:</p> <p>.1 Situation and risk assessment .2 Identify and consider generated options .3 Selecting course of action .4 Evaluation of outcome effectiveness</p>	<p>Assessment of evidence obtained from one or more of the following:</p> <p>.1 approved training .2 approved in-service experience .3 practical demonstration</p>	<p>The crew are allocated duties and informed of expected standards of work and behaviour in a manner appropriate to the individuals concerned</p> <p>Training objectives and activities are based on assessment of current competence and capabilities and operational requirements</p> <p>Operations are planned and resources are allocated as needed in correct priority to perform necessary tasks</p> <p>Communication is clearly and unambiguously given and received</p> <p>Effective leadership behaviours are demonstrated</p> <p>Necessary team member(s) share accurate understanding of current and predicted vessel state and operational status and external environment</p> <p>Decisions are most effective for the situation</p>
Contribute to the safety of personnel and ship	<p>Knowledge of personal survival techniques</p> <p>Knowledge of fire prevention and ability to fight and extinguish fires</p> <p>Knowledge of elementary first aid</p> <p>Knowledge of personal safety and social responsibilities</p>	Assessment of evidence obtained from approved training and experience as set out in section A-VI/1, paragraph 2	<p>Appropriate safety and protective equipment is correctly used</p> <p>Procedures and safe working practices designed to safeguard personnel and the ship are observed at all times</p> <p>Procedures designed to safeguard the environment are observed at all times</p> <p>Initial and follow-up actions on becoming aware of an emergency conform with established emergency response procedures</p>

**第A—III/7節**

對電子技工發證的強制性最低要求

**適任標準**

1 每位在主推進裝置推進功率為750千瓦或以上的海船上服務的電子技工須按照表A—III/7第1欄的要求表明其承擔支持級職能的適任能力。

2 對每位在主推進裝置為750千瓦或以上的海船上服務的電子技工所要求的最低知識、理解和熟練列於表A—III/7第2欄中。

3 每位證書申請人須按照表A—III/7第3欄和第4欄所指定的表明適任的方法和評價適任的標準，提供已達到適任標準的證據。

**Section A-III/7**

*Mandatory minimum requirements for certification of electro-technical rating*

**Standard of Competence**

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.

**表 A — III/7**

**電子技工的最低適任標準規範**

**職能：電氣、電子和控制工程（支持級）**

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
電氣設備的安全使用	電氣設備的安全使用和操作，包括： .1 開始工作或修理前的安全預防措施 .2 隔離程序 .3 應急程序 .4 船上各種電壓  觸電的原因和為防止觸電而採取的預防措施的知識	評估從下列一項或數項中獲取的證據： .1 經認可的工作經歷 .2 實際培訓 .3 考試 .4 經認可的培訓船經歷	理解並遵循電氣設備和機械的安全規定  識別並報告電氣危險和不安全設備  理解手持設備的安全電壓  理解與高壓設備和船上工作有關的危險
致力於電氣系統和機械操作的監控	機械工程系統操作的基本知識，包括： .1 原動機，包括主推進裝置 .2 機艙輔助機械 .3 操舵系統 .4 裝卸貨系統 .5 甲板機械 .6 生活系統  基本知識： .1 電子技術和電氣機械理論 .2 配電板和電氣設備 .3 自動化、自動控制系統和技術的基本原理 .4 儀錶、警報和監測系統 .5 電力驅動 .6 電子—液壓和電子—氣動控制系統 .7 發電機併車、負載分配和切換	評估從下列一項或數項中獲取的證據： .1 經認可的工作經歷 .2 實際培訓 .3 考試 .4 經認可的培訓船經歷	確保以下兩項的知識： .1 設備和系統的操作符合操作手冊 .2 性能等級符合技術規範的要求

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
使用手動工具、電氣和電子測量設備進行故障檢查、維護和修理作業	<p>船上電氣系統操作的安全要求</p> <p>安全工作做法的應用</p> <p>基本知識：</p> <p>.1 船上交流電和直流電系統和設備的構造和操作特性</p> <p>.2 測量儀錶、機械工具和手動與電動工具的使用</p>	<p>評估從下列一項或數項中獲取的證據：</p> <p>.1 經認可的車間技能培訓</p> <p>.2 經認可的實際經歷和測試</p>	<p>安全程序的執行是令人滿意的</p> <p>正確地選擇和使用測試設備，準確地解讀其結果</p> <p>對維護和修理工作程序的選擇與手冊和良好的做法相一致</p>

Table A-III/7

### Specification of minimum standard 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	<p>Safe use and operation of electrical equipment, including:</p> <p>.1 safety precautions before commencing work or repair</p> <p>.2 isolation procedures</p> <p>.3 emergency procedures</p> <p>.4 different voltages on board</p> <p>Knowledge of the causes of electric shock and precautions to be observed to prevent shock</p>	<p>Assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 practical training</p> <p>.3 examination</p> <p>.4 approved training ship experience</p>	<p>Understands and follows safety instructions of electrical equipment and machinery</p> <p>Recognizes and reports electrical hazards and unsafe equipment</p> <p>Understands safe voltages for hand-held equipment</p> <p>Understands risks associated with high-voltage equipment and on-board work</p>
Contribute to monitoring the operation of electrical systems and machinery	<p>Basic knowledge of the operation of mechanical engineering systems, including:</p> <p>.1 prime movers, including main propulsion plant</p> <p>.2 engine-room auxiliary machineries</p> <p>.3 steering systems</p> <p>.4 cargo-handling systems</p> <p>.5 deck machineries</p> <p>.6 hotel systems</p>	<p>Assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 practical training</p> <p>.3 examination</p> <p>.4 approved training ship experience</p>	<p>Knowledge that ensures:</p> <p>.1 operation of equipment and system is in accordance with operating manuals</p> <p>.2 performance levels are in accordance with technical specifications</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p><i>Basic knowledge of:</i></p> <p>.1 electro-technology and electrical machines theory</p> <p>.2 electrical power distribution boards and electrical equipment</p> <p>.3 fundamentals of automation, automatic control systems and technology</p> <p>.4 instrumentation, alarm and monitoring systems</p> <p>.5 electrical drives</p> <p>.6 electro-hydraulic and electro-pneumatic control systems</p> <p>.7 coupling, load sharing and changes in electrical configuration</p>		
Use hand tools, electrical and electronic measurement equipment for fault finding, maintenance and repair operations	<p>Safety requirements for working on shipboard electrical systems</p> <p>Application of safe working practices</p> <p><i>Basic knowledge of:</i></p> <p>.1 construction and operational characteristics of shipboard AC and DC systems and equipment</p> <p>.2 use of measuring instruments, machine tools, and hand and power tools</p>	<p>Assessment of evidence obtained from one or more of the following:</p> <p>.1 approved workshop skills training</p> <p>.2 approved practical experience and tests</p>	<p>Implementation of safety procedures is satisfactory</p> <p>Selection and use of test equipment is appropriate and interpretation of results is accurate</p> <p>Selection of procedures for the conduct of repair and maintenance is in accordance with manuals and good practice</p>

**職能：維護和修理（支持級）**

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
致力於船上維護和修理	<p>使用潤滑、清潔材料和設備的能力</p> <p>安全處置廢料的知識</p> <p>理解和執行日常維護和修理程序的能力</p> <p>理解製造商的安全導則和船上須知</p>	<p>評估從下列一項或數項中獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 實際培訓</p> <p>.3 考試</p> <p>.4 經認可的培訓船經歷</p>	<p>維護工作符合技術、安全和程序的規範</p> <p>正確地選擇和使用設備和工具</p>
致力於船上電氣系統和機械的維護和修理	<p><i>安全和應急程序</i></p> <p>電氣技術圖紙，以及在允許人員維護和修理前，安全隔離設備和相關系統的基本知識</p> <p>測試、故障檢測和維護並使電氣控制設備和機械恢復到正常運行狀態</p>	<p>考試並評估從下列一項或數項中獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓，如適合</p> <p>.4 經認可的實驗室設備培訓</p>	<p>準確識別相關機械和系統的故障的影響，正確解讀船舶的技術圖紙，正確使用測量和校準儀錶並採取正確的方法</p> <p>裝置和設備的隔離、拆卸和裝復符合製造商的安全導則和船上須知。</p>

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
	<p>在易燃區域進行電氣和電子設備的操作</p> <p>船上探火系統基礎知識</p> <p>執行安全維護和修理的程序</p> <p>檢測機械故障、確認故障點和防止機械損壞的措施</p> <p>維護和修理固定照明設備和供電系統</p>		

**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 ship-board maintenance and repair	<p>Ability to use lubrication and cleaning materials and equipment</p> <p>Knowledge of safe disposal of waste materials</p> <p>Ability to understand and execute routine maintenance and repair procedures</p> <p>Understanding manufacturer's safety guidelines and shipboard instructions</p>	<p>Assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 practical training</p> <p>.3 examination</p> <p>.4 approved training ship experience</p>	<p>Maintenance activities are carried out in accordance with technical, safety and procedural specifications</p> <p>Selection and use of equipment and tools is appropriate</p>
Contribute to the maintenance and repair of electrical systems and machinery on board	<p><i>Safety and emergency procedures</i></p> <p>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</p> <p>Test, detect faults and maintain and restore electrical control equipment and machinery to operating condition</p> <p>Electrical and electronic equipment operating in flammable areas</p> <p>Basics of ship's fire-detection system</p> <p>Carrying out safe maintenance and repair procedures</p> <p>Detection of machinery malfunction, location of faults and action to prevent damage</p> <p>Maintenance and repair of lighting fixtures and supply systems</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training, where appropriate</p> <p>.4 approved laboratory equipment training</p>	<p>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</p> <p>Isolation, dismantling and reassembly of plant and equipment is in accordance with manufacturer's safety guidelines and shipboard instructions</p>



**職能：控制船舶操作和關照船上人員（支持級）**

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
致力於物料裝卸	物料的安全裝卸、存放和繫固程序的知識	評估從下列一項或數項獲取的證據： .1 經認可的工作經歷 .2 實際培訓 .3 考試 .4 經認可的培訓船經歷	物料貯藏符合已建立的安全做法和設備操作須知  危險和有害物料的裝卸符合已建立的安全做法  在操作人員的職責範圍進行順利的語言交流
採取預防措施和致力於防止海洋環境污染	採取預防措施防止海洋環境污染的知識  防污染設備/化學藥劑的使用和操作的知識  處置海洋污染物的經認可方法的知識	評估從下列一項或數項獲取的證據： .1 經認可的工作經歷 .2 實際培訓 .3 考試 .4 經認可的培訓船經歷	始終遵循保護海洋環境的程序
應用職業健康和程序	安全工作做法和船上人身安全的實用知識，包括： .1 電氣安全 .2 鎖定/掛牌 .3 機械安全 .4 許可證制度 .5 高空作業 .6 封閉場所作業 .7 升舉技巧和防止背傷的方法 .8 化學品和生物危害的安全 .9 人員安全設備	評估從下列一項或數項獲取的證據： .1 經認可的工作經歷 .2 實際培訓 .3 考試 .4 經認可的培訓船經歷	始終遵循人員和船舶安全保護的程序  遵循安全工作做法，始終正確使用合適的安全和保護設備

**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	Assessment of evidence obtained from one or more of the following: .1 approved in-service 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
	Knowledge of approved methods for disposal of marine pollutants	.2 practical training .3 examination .4 approved training ship experience	
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

## 第 IV 章

## 關於無線電操作員的標準

## 第A—IV/1節

## 適用範圍

(無條文)

## 第A—IV/2節

對全球海上遇險與安全系統 (GMDSS) 無線電操作員發證的強制性最低要求

## 適任標準

1 對全球海上遇險與安全系統無線電操作員發證所要求的最低知識、理解和熟練程度，須足以能使無線電操作員履行其無線電職責。獲取《無線電規則》所規定的各類證書的知識要求須符合該規則的規定。此外，每位證書申請人須表明承擔表A—IV/2第1欄列出的任務、職責和責任的能力。

## 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 根據本公約對按《無線電規則》規定簽發的證書進行簽註時，所要求的知識、理解和熟練程度列於表A—IV/2第2欄中。

3 表A—IV/2第2欄所列科目的知識水平，須足以能使證書申請人履行其職責。

4 每位證書申請人須通過下列各項提供已達到所要求的適任標準的證明：

.1 按照表A—IV/2第3欄和第4欄所列的表明適任的方法和評價適任的標準，表明承擔該表第1欄所列的任務、職責和責任的適任能力；

.2 考試或連續的評估，作為基於表A—IV/2第2欄所列內容的經認可的培訓課程的組成部分。

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.

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.

表A—IV/2

全球海上遇險與安全系統無線電操作員的最低適任標準規範

職能：無線電通信（操作級）

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
使用全球海上遇險與安全系統的子系統和設備發出和接收信息，並滿足全球海上遇險與安全系統的功能要求	除《無線電規則》的要求外，具有下列知識： .1 搜救無線電通信，包括《國際航空和海上搜救手冊》中的程序 .2 防止發射錯誤遇險報警的措施和減少此種報警影響的程序 .3 船舶報告制度 .4 無線電醫療服務 .5 使用《國際信號規則》和《海事組織標準海事通信用語》 .6 交流有關海上人命安全的信息所用的英語書面語和口語  註：如係限用無線電操作員證書，可以降低這項要求	考試並評估從使用下列各項設備進行操作程序的實際演示中所獲得的證據： .1 經認可的設備 .2 全球海上遇險與安全系統通信模擬器，如適合 .3 無線電通信實驗室設備	收發通信符合國際規則和程序，並且得以充分和有效地進行  正確處理有關船舶和船上人員安全以及保護海洋環境的英文電文
在緊急情況下提供無線電服務	在如下緊急情況下提供無線電服務： .1 棄船 .2 船上失火 .3 無線電裝置部分或全部損壞  與無線電設備危害（包括電氣的非電離輻射）相關的船舶和人員安全保護措施	考試並評估從使用下列各項設備進行操作程序的實際演示中所獲得的證據： .1 經認可的設備 .2 全球海上遇險與安全系統通信模擬器，如適合 .3 無線電通信實驗室設備	充分有效地作出反應

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	<p>In addition to the requirements of the Radio Regulations, a knowledge of:</p> <p>.1 search and rescue radiocommunications, including procedures in the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual</p> <p>.2 the means to prevent the transmission of false distress alerts and the procedures to mitigate the effects of such alerts</p> <p>.3 ship reporting systems</p> <p>.4 radio medical services</p> <p>.5 use of the International Code of Signals and the IMO Standard Marine Communication Phrases</p> <p>.6 the English language, both written and spoken, for the communication of information relevant to safety of life at sea</p> <p><i>Note:</i> This requirement may be reduced in the case of the Restricted Radio Operator's Certificate</p>	<p>Examination and assessment of evidence obtained from practical demonstration of operational procedures, using:</p> <p>.1 approved equipment</p> <p>.2 GMDSS communication simulator, where appropriate</p> <p>.3 radiocommunication laboratory equipment</p>	<p>Transmission and reception of communications comply with international regulations and procedures and are carried out efficiently and effectively</p> <p>English language messages relevant to the safety of the ship, security and persons on board and protection of the marine environment are correctly handled</p>
Provide radio services in emergencies	<p>The provision of radio services in emergencies such as:</p> <p>.1 abandon ship</p> <p>.2 fire on board ship</p> <p>.3 partial or full breakdown of radio installations</p> <p>Preventive measures for the safety of ship and personnel in connection with hazards related to radio equipment, including electrical and non-ionizing radiation hazards</p>	<p>Examination and assessment of evidence obtained from practical demonstration of operational procedures, using:</p> <p>.1 approved equipment</p> <p>.2 GMDSS communication simulator, where appropriate</p> <p>.3 radiocommunication laboratory equipment</p>	<p>Response is carried out efficiently and effectively</p>

## 第 V 章

## 關於特定類型船舶海員的特殊培訓要求

## 第A—V/1—1節

對油船和化學品船船長、高級海員和普通海員的培訓和資格的強制性最低要求

## 適任標準

1 油船和化學品船貨物作業基本培訓證書的申請人須：

.1 表明其承擔表A—V/1—1—1第1欄中的任務、職責和責任的能力；以及

.2 提供其已經獲得或達到以下兩項的證據：

.2.1 列於表A—V/1—1—1中第2欄的最低要求的知識、理解和熟練的內容，以及

.2.2 列於表A—V/1—1—1中第3和4欄的表明適任的方法和評估適任的標準中所要求的能力標準。

2 油船貨物作業高級培訓證書的申請人須按要求：

.1 表明其承擔表A—V/1—1—2第1欄中的任務、職責和責任的能力；以及

.2 提供其已經獲得或達到以下兩項的證據：

.2.1 列於表A—V/1—1—2中第2欄的最低要求的知識、理解和熟練的內容；以及

.2.2 列於表A—V/1—1—2中第3和4欄的表明適任的方法和評估適任的標準中所要求的能力標準。

3 化學品船貨物作業高級培訓證書的申請人須：

.1 表明其承擔表A—V/1—1—3第1欄中的任務、職責和責任的能力；以及

.2 提供其已經獲得或達到以下兩項的證據：

.2.1 列於表A—V/1—1—3中第2欄的最低要求的知識、理解和熟練的內容；以及

.2.2 列於表A—V/1—1—3中第3和4欄的表明適任的方法和評估適任的標準中所要求的能力標準。

## 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.

表A—V/1—1—1

## 油船和化學品船貨物作業基礎培訓的最低適任標準規範

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
致力於進行油船和化學品船的安全貨物作業	<p>液貨船的基本知識：</p> <ol style="list-style-type: none"> <li>1. 油船和化學品船的類型</li> <li>2. 總體佈置和結構</li> </ol> <p>貨物作業的基本知識：</p> <ol style="list-style-type: none"> <li>1. 管系和閥門</li> <li>2. 貨泵</li> <li>3. 裝貨和卸貨</li> <li>4. 洗艙、淨化、除氣和惰化</li> </ol> <p>油品和化學品物理性質的基本知識：</p> <ol style="list-style-type: none"> <li>1. 壓力和溫度，包括蒸汽壓力和溫度的關係</li> <li>2. 靜電電荷發生類型</li> <li>3. 化學符號</li> </ol> <p>液貨船安全文化和安全管理的知識和理解</p>	<p>考試並評估從下列一項或多項中獲取的證據：</p> <ol style="list-style-type: none"> <li>1. 經認可的工作經歷</li> <li>2. 經認可的培訓船經歷</li> <li>3. 經認可的模擬器培訓</li> <li>4. 經認可的培訓計劃</li> </ol>	<p>責任範圍內的溝通是清晰和有效的</p> <p>貨物作業符合公認的原理和程序，以確保操作的安全性</p>
採取預防措施防止危害	<p>有關液貨船操作危害的基本知識，包括：</p> <ol style="list-style-type: none"> <li>1. 健康危害</li> <li>2. 環境危害</li> <li>3. 反應性危害</li> <li>4. 腐蝕性危害</li> <li>5. 爆炸性和易燃性危害</li> <li>6. 着火源，包括靜電危害</li> <li>7. 毒性危害</li> <li>8. 蒸汽洩漏和蒸發汽團</li> </ol> <p>危害控制的基本知識：</p> <ol style="list-style-type: none"> <li>1. 惰化、水隔離、乾燥劑和監測技術</li> <li>2. 抗靜電措施</li> <li>3. 通風</li> <li>4. 隔離</li> <li>5. 貨物抑制</li> <li>6. 貨物兼容性的重要性</li> <li>7. 空氣控制</li> <li>8. 氣體檢測</li> </ol> <p>物質安全數據表 (MSDS) 信息的理解</p>	<p>考試並評估從下列一項或多項中獲取的證據：</p> <ol style="list-style-type: none"> <li>1. 經認可的工作經歷</li> <li>2. 經認可的培訓船經歷</li> <li>3. 經認可的模擬器培訓</li> <li>4. 經認可的培訓計劃</li> </ol>	<p>正確識別物質安全數據表 (MSDS) 上與船舶和人員有關的貨物危害，並採取符合已建立的程序的適當行動</p> <p>識別並對意識到即將來臨的危害局面採取的行動符合已建立的程序以及與最佳做法相一致</p>
應用職業健康與安全預防措施	<p>氣體測量儀和類似儀錶的功能和正確使用</p> <p>安全設備和防護裝置的正確使用，包括：</p> <ol style="list-style-type: none"> <li>1. 呼吸器具和貨艙撤離設備</li> <li>2. 防護服和防護設備</li> <li>3. 復蘇器</li> <li>4. 救助和逃生設備</li> </ol>	<p>考試並評估從下列一項或多項中獲取的證據：</p> <ol style="list-style-type: none"> <li>1. 經認可的工作經歷</li> <li>2. 經認可的培訓船經歷</li> <li>3. 經認可的模擬器培訓</li> <li>4. 經認可的培訓計劃</li> </ol>	<p>遵循進入封閉處所的程序</p> <p>始終遵循用於保護人員和船舶的程序和安全做法</p> <p>正確使用適當的安全和保護設備</p>

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
	<p>對符合法律及行業導則的安全做法和程序及與油船和化學品船相關的船上人員安全的基本知識：</p> <p>.1 在進入封閉處所時採取的預防措施</p> <p>.2 在進行維修和保養工作之前和期間採取的預防措施</p> <p>.3 熱工和冷作業的安全措施</p> <p>.4 電氣安全</p> <p>.5 船/岸安全檢查表</p> <p>參照物質安全數據表 (MSDS) 進行急救的基本知識</p>		熟悉急救規則
執行消防操作	<p>液貨船火災反應的組織和行動</p> <p>貨物作業以及散裝有毒有害液體貨物裝卸引起的火災危害</p> <p>適用於油品和化學品火災的滅火劑</p> <p>固定式泡沫滅火系統的操作</p> <p>便攜式泡沫滅火器的操作</p> <p>固定乾粉滅火器的操作</p> <p>與消防操作有關的溢漏抑制</p>	實際演練和在經認可的真實培訓條件下 (如模擬船上條件) 的訓練，並在可能和可行的情況下進行夜間訓練	<p>當意識到即將來臨的船上火災時採取的最初行動和接下來的行動符合已建立的做法和程序</p> <p>在識別出集合信號時採取的行動符合所示的緊急情況並與已建立的程序相一致</p> <p>防護服和設備與消防操作的性質一致</p> <p>每項行動的時機和順序符合當時的環境和條件</p> <p>採用合適的程序、手段和滅火劑完成滅火</p>
應急反應	包括緊急關斷的應急程序的基本知識	<p>考試並評估從下列一項或多項中獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓</p> <p>.4 經認可的培訓計劃</p>	迅速識別出緊急情況的類型和影響並採取符合應急程序和應急計劃的行動
採取預防措施防止油品或化學品洩漏對環境造成污染	<p>油類和化學品污染對人類和海洋生物影響的基本知識</p> <p>船上防污染程序的基本知識</p> <p>對洩漏事件採取行動的基本知識，包括：</p> <p>.1 向責任人報告相關信息</p> <p>.2 協助執行船上溢漏抑制程序</p>	<p>考試並評估從下列一項或多項中獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓</p> <p>.4 經認可的培訓計劃</p>	始終遵循用於保護環境的程序

Table A-V/I-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	<p>Basic knowledge of tankers:</p> <p>.1 types of oil and chemical tankers</p> <p>.2 general arrangement and construction</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p>	<p>Communications within the area of responsibility are clear and effective</p> <p>Cargo operations are carried out in accordance with accepted principles and procedures to ensure safety of operations</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>Basic knowledge of cargo operations:</p> <ul style="list-style-type: none"> <li>.1 piping systems and valves</li> <li>.2 cargo pumps</li> <li>.3 loading and unloading</li> <li>.4 tank cleaning, purging, gas-freeing and inerting</li> </ul> <p>Basic knowledge of the physical properties of oil and chemicals:</p> <ul style="list-style-type: none"> <li>.1 pressure and temperature, including vapour pressure/temperature relationship</li> <li>.2 types of electrostatic charge generation</li> <li>.3 chemical symbols</li> </ul> <p>Knowledge and understanding of tanker safety culture and safety management</p>	<ul style="list-style-type: none"> <li>.2 approved training ship experience</li> <li>.3 approved simulator training</li> <li>.4 approved training programme</li> </ul>	
Take precautions to prevent hazards	<p>Basic knowledge of the hazards associated with tanker operations, including:</p> <ul style="list-style-type: none"> <li>.1 health hazards</li> <li>.2 environmental hazards</li> <li>.3 reactivity hazards</li> <li>.4 corrosion hazards</li> <li>.5 explosion and flammability hazards</li> <li>.6 sources of ignition, including electrostatic hazards</li> <li>.7 toxicity hazards</li> <li>.8 vapour leaks and clouds</li> </ul> <p>Basic knowledge of hazard controls:</p> <ul style="list-style-type: none"> <li>.1 inerting, water padding, drying agents and monitoring techniques</li> <li>.2 anti-static measures</li> <li>.3 ventilation</li> <li>.4 segregation</li> <li>.5 cargo inhibition</li> </ul>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <ul style="list-style-type: none"> <li>.1 approved in-service experience</li> <li>.2 approved training ship experience</li> <li>.3 approved simulator training</li> <li>.4 approved training programme</li> </ul>	<p>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</p> <p>Identification and actions on becoming aware of a hazardous situation conform to established procedures in line with best practice</p>



Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>.6 importance of cargo compatibility</p> <p>.7 atmospheric control</p> <p>.8 gas testing</p> <p>Understanding of information on a Material Safety Data Sheet (MSDS)</p>		
Apply occupational health and safety precautions and measures	<p>Function and proper use of gas-measuring instruments and similar equipment</p> <p>Proper use of safety equipment and protective devices, including:</p> <p>.1 breathing apparatus and tank-evacuating equipment</p> <p>.2 protective clothing and equipment</p> <p>.3 resuscitators</p> <p>.4 rescue and escape equipment</p> <p>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:</p> <p>.1 precautions to be taken when entering enclosed spaces</p> <p>.2 precautions to be taken before and during repair and maintenance work</p> <p>.3 safety measures for hot and cold work</p> <p>.4 electrical safety</p> <p>.5 ship/shore safety checklist</p> <p>Basic knowledge of first aid with reference to a Material Safety Data Sheet (MSDS)</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training</p> <p>.4 approved training programme</p>	<p>Procedures for entry into enclosed spaces are observed.</p> <p>Procedures and safe working practices designed to safeguard personnel and the ship are observed at all times</p> <p>Appropriate safety and protective equipment is correctly used</p> <p>First aid do's and don'ts</p>
Carry out fire-fighting operations	<p>Tanker fire response organization and action to be taken</p> <p>Fire hazards associated with cargo handling and transportation of hazardous and noxious liquids in bulk</p> <p>Fire-fighting agents used to extinguish oil and chemical fires</p>	<p>Practical exercises and instruction conducted under approved and truly realistic training conditions (e.g., simulated shipboard conditions) and, whenever possible and practicable, in darkness</p>	<p>Initial actions and follow-up actions on becoming aware of fire on board conform with established practices and procedures</p> <p>Action taken on identifying muster signal is appropriate to the indicated emergency and complies with established procedures</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	Fixed fire-fighting foam system operations Portable fire-fighting foam operations Fixed dry chemical system operations Spill containment in relation to fire-fighting operations		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
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

表 A — V/1 — 1 — 2

## 油船貨物作業高級培訓的最低適任標準規範

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
安全作業和監管所有貨物作業的能力	油船的設計和特點 油船設計、系統和設備的知識，包括： .1 總體佈局和構造 .2 泵系佈置和設備 .3 油艙佈置、管系和油艙通風的佈置 .4 測量系統和報警裝置 .5 貨物加熱系統	考試並評估從下列一項或多項中獲取的證據： .1 經認可的工作經歷 .2 經認可的培訓船經歷 .3 經認可的模擬器培訓 .4 經認可的培訓計劃	溝通是清晰、易懂和成功的 貨物作業在考慮到油船的設計、系統和設備的同時以安全方式進行 貨物作業是有計劃的、有風險管理的，並按照公認的原理和程序進行，以確保操作的安全性和避免對海洋環境造成污染

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
	<p>.6 洗艙、除氣和惰化系統</p> <p>.7 壓載系統</p> <p>.8 貨艙區域透氣和起居艙室通風</p> <p>.9 污水櫃佈置</p> <p>.10 油氣回收系統</p> <p>.11 貨物相關電氣和電子控制系統</p> <p>.12 環境保護裝置，包括排油監控裝置 (ODME)</p> <p>.13 油艙塗層</p> <p>.14 油艙溫度和壓力控制系統</p> <p>.15 消防系統</p> <p>泵的理論和特性知識，包括貨油泵的類型以及其安全操作</p> <p>熟悉油船安全文化和安全管理體系的實施</p> <p>包括緊急關斷在內的監控和安全系統的知識和理解</p> <p><i>貨油裝卸、照管和處理</i></p> <p>貨物測量和計算的能力</p> <p>散裝液體貨物對船舶縱傾、穩性和結構完整性影響的知識</p> <p>貨油相關操作的知識和理解，包括：</p> <p>.1 裝卸計劃</p> <p>.2 壓載和卸壓載</p> <p>.3 洗艙作業</p> <p>.4 惰化</p> <p>.5 除氣</p> <p>.6 過駁作業</p> <p>.7 頂裝法</p> <p>.8 原油洗艙</p> <p>貨物相關操作計劃、程序和檢查表的制定和應用</p> <p>校正及使用氣體探測和監控系統、儀器和設備的能力</p> <p>管理和指導負有貨物相關責任的人員的能力</p>		<p>識別並糾正潛在的不符合貨物作業相關程序的事項</p> <p>恰當地裝貨、配載和卸貨，從而確保船舶穩性和應力狀況始終保持在安全限定的範圍內</p> <p>正確運用採取的行動和遵循的程序，恰當地使用船上與貨物相關的設備</p> <p>監控裝置和氣體探測設備的測定及使用符合操作做法和程序</p> <p>監控和安全系統的程序確保迅速探測到所有報警，並按照已建立的應急程序採取行動</p> <p>以適合有關個人的方式和按照安全操作的做法分配海員工作，並告知要遵循的工作程序和標準</p>
<p>熟悉油船貨物的物理和化學特性</p>	<p>油船貨物的物理和化學特性的知識和理解</p> <p>理解物質安全數據表 (MSDS) 中包含的信息</p>	<p>考試並評估從下列一項或多項中獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓</p> <p>.4 經認可的培訓計劃</p>	<p>有效利用信息資源，以識別油船貨物和相關氣體的特性和特點，及其對安全、環境和船舶運營的影響</p>

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
採取防止危害的預防措施	與油船貨物作業相關的各類危害和控制的知識和理解，包括： 1. 毒性 2. 易燃性和易爆性 3. 健康危害 4. 惰性氣體成分 5. 靜電危害  對不遵守相關法規/規則要求的危險的知識和理解	考試並評估從下列一項或多項中獲取的證據： 1. 經認可的工作經歷 2. 經認可的培訓船經歷 3. 經認可的模擬器培訓 4. 經認可的培訓計劃	正確識別與油船貨物作業相關的、由貨物引起的、對船舶和人員造成的危害，並採取適當的控制措施
應用職業健康和安​​全預防措施	安全做法、包括與油船相關的風險評估和船上人員安全的知識和理解： 1. 在進入封閉處所時採取的預防措施，包括不同呼吸器具的正確使用 2. 在進行維修和保養工作之前和期間採取的預防措施 3. 熱工和冷作業的預防措施 4. 電氣安全預防措施 5. 使用合適的個人防護設備（PPE）	考試並評估從下列一項或多項中獲取的證據： 1. 經認可的工作經歷 2. 經認可的培訓船經歷 3. 經認可的模擬器培訓 4. 經認可的培訓計劃	始終遵循保護人員和船舶的程序  遵循安全做法，正確使用合適的安全和防護設備  工作做法符合法律要求、實用規則、工作許可，以及對環境的關切  正確使用呼吸器具  遵循進入封閉處所的程序
應急反應	油船應急程序的知識和理解，包括： 1. 船舶應急反應計劃 2. 貨物作業的緊急關斷 3. 在貨物有關的重要系統或服務（設施）失效時所採取的行動 4. 油船消防 5. 封閉處所救助 6. 物質安全數據表（MSDS）的使用  在碰撞、擱淺或溢油的情況下採取的行動  了解油船船上急救醫療程序	考試並評估從下列一項或多項中獲取的證據： 1. 經認可的工作經歷 2. 經認可的培訓船經歷 3. 經認可的模擬器培訓 4. 經認可的培訓計劃	迅速識別緊急情況的類型和影響，應急行動符合應急程序和應急計劃  作出報告及通知船上人員的優先順序、級別和時間要求適合應急事件的性質，並能反映問題的緊迫程度  撤離、緊急關斷和隔離程序適合緊急事件的性質並立即實施  醫療急救的情況識別及採取的做法符合經認可的急救做法和國際導則
採取預防措施防止環境污染	理解防止大氣和環境污染的程序	考試並評估從下列一項或多項中獲取的證據： 1. 經認可的工作經歷 2. 經認可的培訓船經歷 3. 經認可的模擬器培訓 4. 經認可的培訓計劃	按照所接受的原則和程序進行操作，防止環境污染
監督和控制對立法要求的遵守	經修訂的《國際防止船舶造成污染公約》（MARPOL）以及其他普遍採用的相關的國際海事組織文書、行業規定和港口法規的知識和理解	考試並評估從下列一項或多項中獲取的證據： 1. 經認可的工作經歷 2. 經認可的培訓船經歷 3. 經認可的模擬器培訓 4. 經認可的培訓計劃	貨物作業符合相關的國際海事組織（IMO）的文書、已建立的行業標準和安全做法

Table A-V/I-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
<p>Ability to safely perform and monitor all cargo operations</p>	<p><i>Design and characteristics of an oil tanker</i></p> <p>Knowledge of oil tanker design, systems and equipment, including:</p> <ul style="list-style-type: none"> <li>.1 general arrangement and construction</li> <li>.2 pumping arrangement and equipment</li> <li>.3 tank arrangement, pipeline system and tank venting arrangement</li> <li>.4 gauging systems and alarms</li> <li>.5 cargo heating systems</li> <li>.6 tank cleaning, gas-freeing and inerting systems</li> <li>.7 ballast system</li> <li>.8 cargo area venting and accommodation ventilation</li> <li>.9 slop arrangements</li> <li>.10 vapour recovery systems</li> <li>.11 cargo-related electrical and electronic control system</li> <li>.12 environmental protection equipment, including Oil Discharge Monitoring Equipment (ODME)</li> <li>.13 tank coating</li> <li>.14 tank temperature and pressure control systems</li> <li>.15 fire-fighting systems</li> </ul> <p>Knowledge of pump theory and characteristics, including types of cargo pumps and their safe operation</p> <p>Proficiency in tanker safety culture and implementation of safety-management system</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <ul style="list-style-type: none"> <li>.1 approved in-service experience</li> <li>.2 approved training ship experience</li> <li>.3 approved simulator training</li> <li>.4 approved training programme</li> </ul>	<p>Communications are clear, understood and successful</p> <p>Cargo operations are carried out in a safe manner, taking into account oil tanker designs, systems and equipment</p> <p>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</p> <p>Potential non-compliance with cargo-operation-related procedures is promptly identified and rectified</p> <p>Proper loading, stowage and unloading of cargoes ensures that stability and stress conditions remain within safe limits at all times</p> <p>Actions taken and procedures followed are correctly applied and the appropriate shipboard cargo-related equipment is properly used</p> <p>Calibration and use of monitoring and gas-detection equipment comply with operational practices and procedures</p> <p>Procedures for monitoring and safety systems ensure that all alarms are detected promptly and acted upon in accordance with established emergency procedures</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>Knowledge and understanding of monitoring and safety systems, including the emergency shut-down</p> <p><i>Loading, unloading, care and handling of cargo</i></p> <p>Ability to perform cargo measurements and calculations</p> <p>Knowledge of the effect of bulk liquid cargoes on trim, stability and structural integrity</p> <p>Knowledge and understanding of oil cargo-related operations, including:</p> <ol style="list-style-type: none"> <li>.1 loading and unloading plans</li> <li>.2 ballasting and deballasting</li> <li>.3 tank cleaning operations</li> <li>.4 inerting</li> <li>.5 gas-freeing</li> <li>.6 ship-to-ship transfers</li> <li>.7 load on top</li> <li>.8 crude oil washing</li> </ol> <p>Development and application of cargo-related operation plans, procedures and checklists</p> <p>Ability to calibrate and use monitoring and gas-detection systems, instruments and equipment</p> <p>Ability to manage and supervise personnel with cargo-related responsibilities</p>		<p>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</p>
<p>Familiarity with physical and chemical properties of oil cargoes</p>	<p>Knowledge and understanding of the physical and chemical properties of oil cargoes</p> <p>Understanding the information contained in a Material Safety Data Sheet (MSDS)</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <ol style="list-style-type: none"> <li>.1 approved in-service experience</li> </ol>	<p>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</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
		.2 approved training ship experience  .3 approved simulator training  .4 approved training programme	
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
Respond to emergencies	Knowledge and understanding of oil tanker emergency procedures, including:  .1 ship emergency response plans	Examination and assessment of evidence obtained from one or more of the following:  .1 approved in-service experience	The type and impact of the emergency is promptly identified and the response actions conform with established 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
	<p>.2 cargo operations emergency shutdown</p> <p>.3 actions to be taken in the event of failure of systems or services essential to cargo</p> <p>.4 fire-fighting on oil tankers</p> <p>.5 enclosed space rescue</p> <p>.6 use of a Material Safety Data Sheet (MSDS)</p> <p>Actions to be taken following collision, grounding, or spillage</p> <p>Knowledge of medical first aid procedures on board oil tankers</p>	<p>.2 approved training ship experience</p> <p>.3 approved simulator training</p> <p>.4 approved training programme</p>	<p>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</p> <p>Evacuation, emergency shutdown and isolation procedures are appropriate to the nature of the emergency and are implemented promptly</p> <p>The identification of and actions taken in a medical emergency conform to current recognized first aid practice and international guidelines</p>
Take precautions to prevent pollution of the environment	Understanding of procedures to prevent pollution of the atmosphere and the environment	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training</p> <p>.4 approved training programme</p>	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), as amended, and other relevant IMO instruments, industry guidelines and port regulations as commonly applied	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training</p> <p>.4 approved training programme</p>	The handling of cargoes complies with relevant IMO instruments and established industrial standards and codes of safe working practice



表 A – V/1 – 1 – 3

化學品船貨物作業高級培訓的最低適任標準規範

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
<p>安全執行和監管所有貨物作業的能力</p>	<p><i>化學品船的設計和特點</i></p> <p>化學品船設計、系統和設備的知識：</p> <ol style="list-style-type: none"> <li>.1 總體佈置和構造</li> <li>.2 泵系佈置和設備</li> <li>.3 貨艙內構造和佈置</li> <li>.4 管道和排水系統</li> <li>.5 貨艙和貨物的管道壓力和溫度控制系統以及報警裝置</li> <li>.6 測量控制系統和報警裝置</li> <li>.7 氣體探測系統</li> <li>.8 貨物加熱和冷卻系統</li> <li>.9 洗艙系統</li> <li>.10 貨艙環境控制系統</li> <li>.11 壓載系統</li> <li>.12 貨艙區域透氣和生活區通風</li> <li>.13 氣體回收系統</li> <li>.14 消防系統</li> <li>.15 貨艙、管道、屬具的材料和塗層</li> <li>.16 污水管理</li> </ol> <p>對泵的理論和特點的知識，包括貨泵的類型以及其安全操作</p> <p>熟悉化學品船安全文化和安全管理體系的實施</p> <p>監控和安全系統，包括緊急關斷的知識和理解</p> <p><i>化學品的裝卸、照管和處理</i></p> <p>執行貨物測量和計算的能力</p> <p>散裝液體貨物對船舶縱傾、穩性和結構完整性影響的知識</p> <p>化學品貨物相關作業的知識和理解，包括：</p> <ol style="list-style-type: none"> <li>.1 裝卸計劃</li> <li>.2 壓載和卸壓載</li> <li>.3 洗艙作業</li> <li>.4 貨艙空氣控制</li> <li>.5 惰化</li> <li>.6 除氣</li> <li>.7 過駁作業</li> <li>.8 抑制及穩定要求</li> <li>.9 加熱、冷卻要求以及對鄰近貨物的影響</li> <li>.10 貨物的相容性與分隔</li> <li>.11 高黏度貨物</li> </ol>	<p>考試並評估從下列一項或多項中獲取的證據：</p> <ol style="list-style-type: none"> <li>.1 經認可的工作經歷</li> <li>.2 經認可的培訓船經歷</li> <li>.3 經認可的模擬器培訓</li> <li>.4 經認可的培訓計劃</li> </ol>	<p>溝通是清楚、易懂和成功的</p> <p>貨物作業在考慮到化學品船的設計、系統和設備的情況下安全進行</p> <p>貨物作業是有計劃的、有風險管理的，並符合所接受的原則和程序，以確保作業的安全性，避免對海洋環境造成污染</p> <p>監控和安全系統的程序確保迅速探測到所有警報，並按照已建立的應急程序採取行動</p> <p>恰當地裝貨、配載和卸貨，從而確保穩性和應力條件總是保持在安全限定的範圍內</p> <p>識別並糾正潛在的不符合要求的貨物作業相關程序</p> <p>正確識別所採取的行動和遵循的程序，恰當地使用船上與貨物相關的合適設備</p>

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
	<p>.12 貨物殘渣處理</p> <p>.13 因作業進入貨艙</p> <p>貨物相關操作計劃、程序和檢查表的制定和應用</p> <p>監控裝置和氣體探測系統、儀器和設備的校正及使用能力</p> <p>管理和指導負有貨物相關責任的人員的能力</p>		<p>監控裝置和氣體探測設備的校正及使用符合安全操作實踐和程序</p> <p>以適合有關個人特點的方式和按照安全作業做法分配人員職責，並告知應遵循的工作程序和標準</p>
熟悉化學品船貨物的物理和化學性質	<p>有害液體物質的物理和化學性質的知識和理解，包括：</p> <p>.1 化學品貨物類型（腐蝕性、毒性、易燃性和易爆性）</p> <p>.2 化學品分類和工業用途</p> <p>.3 貨物的反應性</p> <p>理解物質安全數據表（MSDS）中包含的信息</p>	<p>考試並評估從下列一項或多項中獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓</p> <p>.4 經認可的培訓計劃</p>	<p>有效使用信息資源，以識別有毒液體物質和相關氣體的屬性和特性，及其對安全、環境保護和船舶運行的影響</p>
採取防止危害的預防措施	<p>與化學品船貨物作業相關的各類危害和控制措施的知識和理解，包括：</p> <p>.1 易燃性和爆炸</p> <p>.2 毒性</p> <p>.3 健康危害</p> <p>.4 惰性氣體成分</p> <p>.5 靜電危害</p> <p>.6 反應性</p> <p>.7 腐蝕性</p> <p>.8 低沸點貨物</p> <p>.9 高密度貨物</p> <p>.10 易固化貨物</p> <p>.11 易聚合貨物</p> <p>對不符合相關法律/法規要求帶來的危害性的知識和理解</p>	<p>考試並評估從下列一項或多項中獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓</p> <p>.4 經認可的培訓計劃</p>	<p>正確識別與化學品船貨物作業相關的對船舶和人員造成的有關貨物性危害，並採取適當的控制措施</p>
應用職業健康和安​​全預防措施	<p>安全工作做法（包括與化學品船相關的風險評估和船上人員安全）的知識和理解：</p> <p>.1 在進入封閉處所時採取的預防措施，包括正確使用各種呼吸器具</p> <p>.2 在進行維修和保養工作之前和期間採取的預防措施</p> <p>.3 熱工和冷作業的預防措施</p> <p>.4 電氣安全預防措施</p> <p>.5 使用合適的個人防護設備（PPE）</p>	<p>考試並評估從下列一項或多項中獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓</p> <p>.4 經認可的培訓計劃</p>	<p>始終遵循保護人員和船舶的程序</p> <p>遵循安全工作做法，正確使用合適的安全和防護裝置</p> <p>工作做法符合法律要求、實用規則、工作許可和對環境的關切</p> <p>正確使用呼吸器具</p> <p>遵循進入封閉處所的程序</p>

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
應急反應	<p>化學品船應急程序的知識和理解，包括：</p> <ol style="list-style-type: none"> <li>.1 船舶應急反應計劃</li> <li>.2 貨物作業緊急關斷</li> <li>.3 對系統或貨物重要服務（設施）失效所採取的行動</li> <li>.4 化學品船的消防</li> <li>.5 封閉處所救助</li> <li>.6 貨物反應性</li> <li>.7 拋棄貨物</li> <li>.8 物質安全數據表（MSDS）的使用</li> </ol> <p>在發生碰撞、擱淺或溢漏的情況下採取的行動</p> <p>了解化學品船上的急救醫療程序，參考《危險貨物事故醫療急救指南》（MFAG）</p>	<p>考試並評估從下列一項或多項中獲取的證據：</p> <ol style="list-style-type: none"> <li>.1 經認可的工作經歷</li> <li>.2 經認可的培訓船經歷</li> <li>.3 經認可的模擬器培訓</li> <li>.4 經認可的培訓計劃</li> </ol>	<p>迅速識別緊急情況的類型和影響而且採取的行動符合應急程序和應急計劃</p> <p>作出報告及通知船上人員的優先順序、級別、時間要求適合緊急事件的性質，且反應問題的緊迫程度</p> <p>撤離、緊急關斷和隔離程序適合緊急情況的性質，並立即實施</p> <p>醫療急救的情況識別及採取的做法符合經認可的急救做法和國際導則</p>
採取預防措施防止環境污染	<p>理解防止大氣和環境污染的程序</p>	<p>考試並評估從下列一項或多項中獲取的證據：</p> <ol style="list-style-type: none"> <li>.1 經認可的工作經歷</li> <li>.2 經認可的培訓船經歷</li> <li>.3 經認可的模擬器培訓</li> <li>.4 經認可的培訓計劃</li> </ol>	<p>按照所接受的原則和程序進行操作，以防止環境污染</p>
監視和控制對立法要求的遵守	<p>《國際防止船舶造成污染公約》（MARPOL），以及其他普遍適用的、相關的國際海事組織文書、行業導則和港口規則的知識和理解</p> <p>熟練使用《國際散化規則》和相關的文件</p>	<p>考試並評估從下列一項或多項中獲取的證據：</p> <ol style="list-style-type: none"> <li>.1 經認可的工作經歷</li> <li>.2 經認可的培訓船經歷</li> <li>.3 經認可的模擬器培訓</li> <li>.4 經認可的培訓計劃</li> </ol>	<p>貨物作業符合相關國際海事組織（IMO）發佈的文件，以及安全工作實踐中建立的行業標準和規定</p>

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	<p><i>Design and characteristics of a chemical tanker</i></p> <p>Knowledge of chemical tanker designs, systems, and equipment, including:</p> <ol style="list-style-type: none"> <li>.1 general arrangement and construction</li> <li>.2 pumping arrangement and equipment</li> <li>.3 tank construction and arrangement</li> </ol>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <ol style="list-style-type: none"> <li>.1 approved in-service experience</li> <li>.2 approved training ship experience</li> <li>.3 approved simulator training</li> <li>.4 approved training programme</li> </ol>	<p>Communications are clear, understood and successful</p> <p>Cargo operations are carried out in a safe manner, taking into account chemical tanker designs, systems and equipment</p> <p>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</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>.4 pipeline and drainage systems</p> <p>.5 tank and cargo pipeline pressure and temperature control systems and alarms</p> <p>.6 gauging control systems and alarms</p> <p>.7 gas-detecting systems</p> <p>.8 cargo heating and cooling systems</p> <p>.9 tank cleaning systems</p> <p>.10 cargo tank environmental control systems</p> <p>.11 ballast systems</p> <p>.12 cargo area venting and accommodation ventilation</p> <p>.13 vapour return/recovery systems</p> <p>.14 fire-fighting systems</p> <p>.15 tank, pipeline and fittings' material and coatings</p> <p>.16 slop management</p> <p>Knowledge of pump theory and characteristics, including types of cargo pumps and their safe operation</p> <p>Proficiency in tanker safety culture and implementation of safety management system</p> <p>Knowledge and understanding of monitoring and safety systems, including the emergency shut-down system</p> <p><i>Loading, unloading, care and handling of cargo</i></p> <p>Ability to perform cargo measurements and calculations</p> <p>Knowledge of the effect of bulk liquid cargoes on trim and stability and structural integrity</p>		<p>Procedures for monitoring and safety systems ensure that all alarms are detected promptly and acted upon in accordance with established procedures</p> <p>Proper loading, stowage and unloading of cargoes ensures that stability and stress conditions remain within safe limits at all times</p> <p>Potential non-compliance with cargo-related procedures is promptly identified and rectified</p>



Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>.2 chemical groups and industrial usage</p> <p>.3 reactivity of cargoes</p> <p>Understanding the information contained in a Material Safety Data Sheet (MSDS)</p>	<p>.2 approved training ship experience</p> <p>.3 approved simulator training</p> <p>.4 approved training programme</p>	
Take precautions to prevent hazards	<p>Knowledge and understanding of the hazards and control measures associated with chemical tanker cargo operations, including:</p> <p>.1 flammability and explosion</p> <p>.2 toxicity</p> <p>.3 health hazards</p> <p>.4 inert gas composition</p> <p>.5 electrostatic hazards</p> <p>.6 reactivity</p> <p>.7 corrosivity</p> <p>.8 low-boiling-point cargoes</p> <p>.9 high-density cargoes</p> <p>.10 solidifying cargoes</p> <p>.11 polymerizing cargoes</p> <p>Knowledge and understanding of dangers of non-compliance with relevant rules/regulations</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training</p> <p>.4 approved training programme</p>	<p>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</p>
Apply occupational health and safety precautions	<p>Knowledge and understanding of safe working practices, including risk assessment and personal shipboard safety relevant to chemical tankers:</p> <p>.1 precautions to be taken when entering enclosed spaces, including correct use of different types of breathing apparatus</p> <p>.2 precautions to be taken before and during repair and maintenance work</p> <p>.3 precautions for hot and cold work</p> <p>.4 precautions for electrical safety</p> <p>.5 use of appropriate Personal Protective Equipment (PPE)</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training</p> <p>.4 approved training programme</p>	<p>Procedures designed to safeguard personnel and the ship are observed at all times</p> <p>Safe working practices are observed and appropriate safety and protective equipment is correctly used</p> <p>Working practices are in accordance with legislative requirements, codes of practice, permits to work and environmental concerns</p> <p>Correct use of breathing apparatus</p> <p>Procedures for entry into enclosed spaces are observed</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Respond to emergencies	<p>Knowledge and understanding of chemical tanker emergency procedures, including:</p> <ul style="list-style-type: none"> <li>.1 ship emergency response plans</li> <li>.2 cargo operations emergency shutdown</li> <li>.3 actions to be taken in the event of failure of systems or services essential to cargo</li> <li>.4 fire fighting on chemical tankers</li> <li>.5 enclosed space rescue</li> <li>.6 cargo reactivity</li> <li>.7 jettisoning cargo</li> <li>.8 use of a Material Safety Data Sheet (MSDS)</li> </ul> <p>Actions to be taken following collision, grounding, or spillage</p> <p>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)</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <ul style="list-style-type: none"> <li>.1 approved in-service experience</li> <li>.2 approved training ship experience</li> <li>.3 approved simulator training</li> <li>.4 approved training programme</li> </ul>	<p>The type and impact of the emergency is promptly identified and the response actions conform with established emergency procedures and contingency plans</p> <p>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</p> <p>Evacuation, emergency shutdown and isolation procedures are appropriate to the nature of the emergency and are implemented promptly</p> <p>The identification of and actions taken in a medical emergency conform to current recognized first aid practice and international guidelines</p>
Take precautions to prevent pollution of the environment	<p>Understanding of procedures to prevent pollution of the atmosphere and the environment</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <ul style="list-style-type: none"> <li>.1 approved in-service experience</li> <li>.2 approved training ship experience</li> <li>.3 approved simulator training</li> <li>.4 approved training programme</li> </ul>	<p>Operations are conducted in accordance with accepted principles and procedures to prevent pollution of the environment</p>
Monitor and control compliance with legislative requirements	<p>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</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <ul style="list-style-type: none"> <li>.1 approved in-service experience</li> <li>.2 approved training ship experience</li> </ul>	<p>The handling of cargoes complies with relevant IMO instruments and established industrial standards and codes of safe working practice</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	Proficiency in the use of the IBC Code and related documents	.3 approved simulator training .4 approved training programme	

#### 第A—V/1—2節

對液化氣體船船長、高級海員和普通海員的培訓和資格的強制性最低要求

#### 適任標準

1 每位液化氣體船貨物作業基本培訓證書的申請人須：

.1 表明具有承擔表A—V/1—2—1第1欄中所列任務、職責和責任的適任能力；以及

.2 提供其已經獲得或達到以下兩項的證據：

.2.1 列於表A—V/1—2—1中第2欄的最低要求的知識、理解和熟練的內容；以及

.2.2 列於表A—V/1—2—1中第3和4欄的表明適任的方法和評價適任的標準中所要求的能力標準。

2 每位液化氣體船貨物作業高級培訓證書的申請人須：

.1 表明具有承擔表A—V/1—2—2第1欄中所列任務、職責和責任的適任能力；以及

.2 提供其已經獲得或達到以下兩項的證據：

.2.1 列於表A—V/1—2—2中第2欄的最低要求的知識、理解和熟練的內容；以及

.2.2 列於表A—V/1—2—2中第3和4欄的表明適任的方法和評估適任的標準中所要求的能力標準。

#### 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.

表A—V/1—2—1

#### 液化氣體船貨物作業基礎培訓的最低適任標準規範

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
致力於液化氣體船的安全貨物作業	<p>液化氣體船的設計和操作特點：</p> <p>液化氣體船的基本知識：</p> <p>.1 液化氣體船的類型</p> <p>.2 總體佈置和構造</p> <p>貨物作業的基本知識：</p> <p>.1 管系和閥門</p>	<p>考試並評估從下列一項或多項中獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓</p> <p>.4 經認可的培訓計劃</p>	<p>責任範圍內的溝通是清楚和有效的</p> <p>按照所接受的原則和程序進行貨物作業，以確保作業安全</p>



第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
	<p>.2 貨物作業設備 .3 裝貨、卸貨和運輸中貨物照管 .4 緊急關斷系統 (ESD) .5 洗艙、淨化、除氣和惰化</p> <p>關於液化氣物理性質的基本知識，包括： .1 屬性和特性 .2 壓力和溫度，包括蒸汽壓力和溫度的關係 .3 靜電電荷產生的類型 .4 化學符號</p> <p>對液化氣體船安全文化和安全管理的知識和理解</p>		
<p>採取預防措施，防止危害</p>	<p>有關液化氣體船操作中危險事項的基本知識，包括： .1 健康危害 .2 環境危害 .3 反應性危害 .4 腐蝕危害 .5 爆炸及易燃性危害 .6 着火源 .7 靜電危害 .8 毒性危害 .9 蒸汽洩漏以及蒸發汽團 .10 極低的溫度 .11 壓力的危害</p> <p>有關控制危害的基本知識： .1 惰化、乾燥和監測技術 .2 抗靜電措施 .3 通風 .4 隔離 .5 貨物抑制 .6 貨物兼容性的重要性 .7 空氣控制 .8 氣體檢測</p> <p>理解物質安全數據表 (MSDS) 中的信息</p>	<p>考試並評估從以下一項或多項中獲取的證據： .1 經認可的工作經歷 .2 經認可的培訓船經歷 .3 經認可的模擬器培訓 .4 經認可的培訓計劃</p>	<p>根據物質安全數據表準確識別由貨物引起的、對船舶和人員的有關危害，並且按照已建立程序採取適當行動。</p> <p>對危險情況的識別和意識到危險情況後的行動符合與最佳做法相一致的已建立程序。</p>
<p>實行職業健康與安全預防措施和措施</p>	<p>掌握氣體測量儀器及類似設備的功能及正確的使用方式</p> <p>正確使用安全設施和保護裝置，包括： .1 呼吸器具與液化氣體船撤離裝置 .2 防護服及裝備 .3 復蘇器 .4 救援及逃生設備</p> <p>與液化氣體船相關的符合立法和行業導則的安全做法和程序以及船上人員安全的基本知識，包括： .1 在進入封閉處所時採取的預防措施</p>	<p>考試並評估從以下一項或多項中獲取的證據： .1 經認可的工作經歷 .2 經認可的培訓船經歷 .3 經認可的模擬器培訓 .4 經認可的培訓計劃</p>	<p>遵守進入封閉處所的程序</p>

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
	.2 在進行維修和保養工作之前和期間採取的預防措施 .3 熱工和冷作業的安全措施 .4 電氣安全 .5 船/岸安全檢查表 參考物質安全數據表 (MSDS) 的急救基本知識		始終遵守旨在保護人員和船舶安全的程序和安全工作做法。 正確使用合適的安全和保護設備 熟悉急救規則
開展滅火行動	液化氣體船的消防組織及應採取的行動 散裝液化氣體在處理和運輸中會引起的特殊危害 撲滅氣體火災的滅火劑 固定式泡沫滅火系統的操作 便攜式泡沫滅火器的操作 固定式乾粉化學滅火系統的操作 與消防操作有關的溢漏抑制	實際演練和在經認可的真實培訓條件下(如模擬船上條件)的訓練,並在可能和可行的情況下進行夜間訓練	在發現緊急情況時採取的初步行動和後續行動符合已建立的做法和程序。 識別集合信號後採取的行動適合顯示出的緊急情況並與已建立的程序一致 防護服和設備適合消防操作的性質 每項行動的時機和順序適合當時的環境和條件 採用合適的程序、手段、滅火劑完成滅火
應對突發事件	應急程序的基本知識,包括緊急關斷	考試並評估從以下一項或多項中獲取的證據: .1 經認可的工作經歷 .2 經認可的培訓船經歷 .3 經認可的模擬器培訓 .4 經認可的培訓計劃	及時識別緊急情況的類型和可能產生的後果,應急行動符合應急程序和應急計劃
採取措施預防因液化氣洩漏造成環境污染	污染對人類和海洋生物的影響的基本知識 船舶的防污染程序的基本知識 掌握應對洩漏的基本措施,包括需要: .1 向有關負責人員報告相關信息 .2 協助執行船舶溢漏抑制程序 .3 防止脆性斷裂	考試並評估從以下一項或多項中獲取的證據: .1 經認可的工作經歷 .2 經認可的培訓船經歷 .3 經認可的模擬器培訓 .4 經認可的培訓計劃	始終遵守安全和環境保護的已建立程序

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	<i>Design and operational characteristics of liquefied gas tankers</i> Basic knowledge of liquefied gas tankers .1 types of liquefied gas tankers .2 general arrangement and construction	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience	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
	<p>Basic knowledge of cargo operations:</p> <ul style="list-style-type: none"> <li>.1 piping systems and valves</li> <li>.2 cargo handling equipment</li> <li>.3 loading, unloading and care in transit</li> <li>.4 emergency shutdown (ESD) system</li> <li>.5 tank cleaning, purging, gas-freeing and inerting</li> </ul> <p>Basic knowledge of the physical properties of liquefied gases, including:</p> <ul style="list-style-type: none"> <li>.1 properties and characteristics</li> <li>.2 pressure and temperature, including vapour pressure/temperature relationship</li> <li>.3 types of electrostatic charge generation</li> <li>.4 chemical symbols</li> </ul> <p>Knowledge and understanding of tanker safety culture and safety management</p>	<ul style="list-style-type: none"> <li>.3 approved simulator training</li> <li>.4 approved training programme</li> </ul>	
<p>Take precautions to prevent hazards</p>	<p>Basic knowledge of the hazards associated with tanker operations, including:</p> <ul style="list-style-type: none"> <li>.1 health hazards</li> <li>.2 environmental hazards</li> <li>.3 reactivity hazards</li> <li>.4 corrosion hazards</li> <li>.5 explosion and flammability hazards</li> <li>.6 sources of ignition</li> <li>.7 electrostatic hazards</li> <li>.8 toxicity hazards</li> <li>.9 vapour leaks and clouds</li> </ul>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <ul style="list-style-type: none"> <li>.1 approved in-service experience</li> <li>.2 approved training ship experience</li> <li>.3 approved simulator training</li> <li>.4 approved training programme</li> </ul>	<p>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</p> <p>Identification and actions on becoming aware of a hazardous situation conform to established procedures in line with best practice</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>.10 extremely low temperatures</p> <p>.11 pressure hazards</p> <p>Basic knowledge of hazard controls:</p> <p>.1 inerting, drying and monitoring techniques</p> <p>.2 anti-static measures</p> <p>.3 ventilation</p> <p>.4 segregation</p> <p>.5 cargo inhibition</p> <p>.6 importance of cargo compatibility</p> <p>.7 atmospheric control</p> <p>.8 gas testing</p> <p>Understanding of information on a Material Safety Data Sheet (MSDS)</p>		
<p>Apply occupational health and safety precautions and measures</p>	<p>Function and proper use of gas-measuring instruments and similar equipment</p> <p>Proper use of safety equipment and protective devices, including:</p> <p>.1 breathing apparatus and tank evacuating equipment</p> <p>.2 protective clothing and equipment</p> <p>.3 resuscitators</p> <p>.4 rescue and escape equipment</p> <p>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:</p> <p>.1 precautions to be taken when entering enclosed spaces</p> <p>.2 precautions to be taken before and during repair and maintenance work</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training</p> <p>.4 approved training programme</p>	<p>Procedures for entry into enclosed spaces are observed</p> <p>Procedures and safe working practices designed to safeguard personnel and the ship are observed at all times</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>.3 safety measures for hot and cold work</p> <p>.4 electrical safety</p> <p>.5 ship/shore safety checklist</p> <p>Basic knowledge of first aid with reference to a Material Safety Data Sheet (MSDS)</p>		<p>Appropriate safety and protective equipment is correctly used</p> <p>First aid do's and don'ts</p>
Carry out fire-fighting operations	<p>Tanker fire organization and action to be taken</p> <p>Special hazards associated with cargo handling and transportation of liquefied gases in bulk</p> <p>Fire-fighting agents used to extinguish gas fires</p> <p>Fixed fire-fighting foam system operations</p> <p>Portable fire-fighting foam operations</p> <p>Fixed dry chemical system operations</p> <p>Basic knowledge of spill containment in relation to fire-fighting operations</p>	<p>Practical exercises and instruction conducted under approved and truly realistic training conditions (e.g. simulated shipboard conditions) and, whenever possible and practicable, in darkness</p>	<p>Initial actions and follow-up actions on becoming aware of an emergency conform with established practices and procedures</p> <p>Action taken on identifying muster signals is appropriate to the indicated emergency and complies with established procedures</p> <p>Clothing and equipment are appropriate to the nature of the fire-fighting operations</p> <p>The timing and sequence of individual actions are appropriate to the prevailing circumstances and conditions</p> <p>Extinguishment of fire is achieved using appropriate procedures, techniques and fire-fighting agents</p>
Respond to emergencies	<p>Basic knowledge of emergency procedures, including emergency shutdown</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training</p> <p>.4 approved training programme</p>	<p>The type and impact of the emergency is promptly identified and the response actions conform to the emergency procedures and contingency plans</p>
Take precautions to prevent pollution of the environment from the release of liquefied gases	<p>Basic knowledge of the effects of pollution on human and marine life</p> <p>Basic knowledge of shipboard procedures to prevent pollution</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p>	<p>Procedures designed to safeguard the environment are observed at all times</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>Basic knowledge of measures to be taken in the event of spillage, including the need to:</p> <p>.1 report relevant information to the responsible persons</p> <p>.2 assist in implementing ship-board spill-containment procedures</p> <p>.3 prevent brittle fracture</p>	<p>.2 approved training ship experience</p> <p>.3 approved simulator training</p> <p>.4 approved training programme</p>	

表 A — V/1 — 2 — 2

## 液化氣體船貨物作業高級培訓的最低適任標準規範

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
安全實施和監管所有貨物操作的能力	<p>液化氣體船的設計和特點</p> <p>液化氣體船的設計、系統和設備的知識，包括：</p> <p>.1 液化氣體船的種類和液貨艙的結構</p> <p>.2 總體佈局和構造</p> <p>.3 貨物圍護系統，包括構造和隔熱材料</p> <p>.4 貨物作業設備和儀器，包括：</p> <p>.1 貨泵和泵系佈置</p> <p>.2 貨物管系和閥門</p> <p>.3 膨脹裝置</p> <p>.4 火星防護網</p> <p>.5 溫度監控系統</p> <p>.6 貨艙液位計系統</p> <p>.7 貨艙壓力監測和控制系統</p> <p>.5 貨物溫度保持系統</p> <p>.6 貨艙空氣控制系統（惰性氣體，氮），包括：儲存，產生和分配系統</p> <p>.7 隔離艙加熱系統</p> <p>.8 氣體探測系統</p> <p>.9 壓載系統</p> <p>.10 蒸發系統</p> <p>.11 再液化系統</p> <p>.12 貨物緊急關斷系統（ESD）</p> <p>.13 監護駁運系統</p> <p>關於泵的理論和特點，包括有關貨泵的種類和安全操作的知識</p> <p>貨物裝卸、照管和處理</p> <p>有關散裝液體貨對船舶縱傾、穩性和結構完整性影響的知識</p>	<p>考試並評估從以下一項或多項中獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓</p> <p>.4 經認可的培訓計劃</p>	<p>溝通明確，易懂，順利</p> <p>根據液化氣體船的設計、系統和設備，安全開展貨物的作業</p> <p>按照所接受的原則和程序以及貨物的種類進行泵浦操作</p> <p>貨物裝卸有計劃和風險管理，按照所接受的原則和程序進行操作，以確保操作安全並避免污染海洋環境</p> <p>正確地裝卸、配載液化氣體，確保船舶的穩性和應力始終都維持在安全極限之內。</p>

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
	<p>精通液化氣體船安全文化和落實安全管理的要求</p> <p>在所有下列貨物作業中熟練運用安全準備措施、程序和檢查表，包括：</p> <p>.1 靠泊後及裝載時：</p> <p>.1 貨艙檢查</p> <p>.2 惰化 (降低氧氣量、露點)</p> <p>.3 加氣</p> <p>.4 冷卻</p> <p>.5 裝載</p> <p>.6 卸壓載</p> <p>.7 取樣，包括閉環取樣</p> <p>.2 航行中：</p> <p>.1 冷卻</p> <p>.2 壓力維持</p> <p>.3 蒸發損耗</p> <p>.4 抑制</p> <p>.3 卸載：</p> <p>.1 卸載</p> <p>.2 壓載</p> <p>.3 掃艙和清洗系統</p> <p>.4 貨艙乾燥系統</p> <p>.4 船舶靠碼頭前的準備工作：</p> <p>.1 暖艙</p> <p>.2 惰化</p> <p>.3 除氣</p> <p>.5 船到船過駁</p> <p>熟練進行有關貨物測量和計算，包括：</p> <p>.1 液相</p> <p>.2 氣相</p> <p>.3 船上載有量</p> <p>.4 船上餘量</p> <p>.5 蒸發損耗貨物的計算</p> <p>熟練掌握對貨物相關責任人員的管理和監督</p>		<p>能及時發現並糾正潛在的不符合貨物相關程序的操作。</p> <p>採取的行動和遵循的程序正確識別和充分利用合適的船上設備</p> <p>對監測和氣體探測設備的校正和使用，符合安全操作做法和程序</p> <p>監控和安全系統的程序確保迅速探測到所有警報，並按照已建立的應急程序採取行動</p> <p>以適合有關個人的方式和按照安全操作的做法分配海員工作，並告知要遵循的工作程序和標準</p>
<p>熟悉液化氣體貨物的物理和化學屬性</p>	<p>船舶安全運輸散裝液化氣體的基本化學和物理學以及相關定義的知識和理解，包括</p> <p>.1 氣體的化學結構</p> <p>.2 液化氣體（包括二氧化碳）及其蒸汽的屬性和特性，包括：</p> <p>.1 簡單氣體定律</p> <p>.2 物質狀態</p> <p>.3 液體和蒸汽密度</p> <p>.4 氣體的擴散和混合</p> <p>.5 氣體壓縮</p>	<p>考試並評估從以下一項或多項中獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓</p> <p>.4 經認可的培訓計劃</p>	<p>有效利用信息資源，以判斷液化氣體的屬性以及它們對安全、環境保護和船舶運行的影響</p>

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
	<p>.6 氣體再液化和製冷</p> <p>.7 氣體的臨界溫度和壓力</p> <p>.8 閃點、爆炸上限和下限、自燃溫度</p> <p>.9 氣體的兼容性、反應性和正隔離</p> <p>.10 聚合</p> <p>.11 飽和蒸汽壓力/參考溫度</p> <p>.12 露點和沸點</p> <p>.13 壓縮機的潤滑</p> <p>.14 水合物的形成</p> <p>.3 單一液體的性質</p> <p>.4 溶液的性質和特點</p> <p>.5 熱力單位</p> <p>.6 熱力學基本定律和圖表</p> <p>.7 材料特性</p> <p>.8 低溫的影響—脆性斷裂</p> <p>理解物質安全數據表 (MSDS) 中的信息</p>		
採取防止危害的預防措施	<p>液化氣體船貨物作業中可能產生的危險及其控制措施的知識和理解，包括：</p> <p>.1 易燃性</p> <p>.2 爆炸</p> <p>.3 毒性</p> <p>.4 反應性</p> <p>.5 腐蝕性</p> <p>.6 健康危害</p> <p>.7 惰性氣體組成</p> <p>.8 靜電危害</p> <p>.9 聚合貨物</p> <p>熟練校正和使用監測及氣體探測系統、儀器和設備</p> <p>對不遵守相關法規造成的危險性的知識和理解</p>	<p>考試並評估從以下一項或多項中獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓</p> <p>.4 經認可的培訓計劃</p>	<p>正確識別在液化氣體船貨物作業中因液化氣體引起的對船隻和人員的危害，並採取適當的控制措施</p> <p>按照手冊和良好的做法使用氣體檢測設備</p>
應用職業健康和安安全預防措施	<p>安全工作做法（包括與液化氣體船相關的風險管理和船上人員安全）的知識和理解：</p> <p>.1 在進入封閉處所（如壓縮機房）時採取的預防措施，包括正確使用各種呼吸器具</p> <p>.2 在進行維修和保養工作之前和期間採取的預防措施</p> <p>.3 熱工和冷作業的預防措施</p> <p>.4 電氣安全預防措施</p> <p>.5 使用合適的個人防護設備 (PPE)</p> <p>.6 防止凍傷及冰凍的預防措施</p> <p>.7 正確使用個人毒氣監測裝置</p>	<p>考試並評估從以下一項或多項中獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓</p> <p>.4 經認可的培訓計劃</p>	<p>始終遵循保護人員和船舶的程序</p> <p>遵循安全工作做法，正確使用合適的安全和防護裝置</p> <p>工作做法須符合法律要求、實用規則和工作許可，並考慮環境的影響</p> <p>正確使用呼吸器具</p>



第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
應急反應	<p>液化氣體船應急程序的知識和理解，包括：</p> <p>.1 船舶應急反應計劃</p> <p>.2 貨物作業緊急關斷程序</p> <p>.3 貨物閥的應急操作</p> <p>.4 對系統或貨物重要服務（設施）失效所採取行動</p> <p>.5 液化氣體船消防</p> <p>.6 拋棄貨物</p> <p>.7 封閉處所救助</p> <p>在發生碰撞、擱淺、溢油及船舶被毒氣或可燃性氣體包圍的情況下採取的行動</p> <p>參考《危險貨物事故醫療急救指南》（MFAG），理解液化氣體船上的急救醫療程序和解毒劑</p>	<p>考試並評估從以下一項或多項中獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓</p> <p>.4 經認可的培訓計劃</p>	<p>迅速識別緊急情況的類型和影響，採取的行動符合應急程序和應急計劃</p> <p>作出報告及通知船上人員的優先順序、級別、時間要求適合於應急事件的性質，且反映問題的緊迫程度</p> <p>撤離、緊急關斷和隔離程序適合應急性質並立即實施</p> <p>醫療急救的情況識別及採取的做法符合經認可的急救做法和國際導則</p>
採取預防措施防止環境污染	<p>理解防止環境污染的程序</p>	<p>考試並評估從以下一項或多項中獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓</p> <p>.4 經認可的培訓計劃</p>	<p>按照所接受的原則和程序進行操作，以防止環境污染</p>
監督和控制對立法要求的遵守	<p>《國際防止船舶造成污染公約》（MARPOL）以及其他普遍應用的相關的國際海事組織文書、行業導則和港口規則的知識和理解</p> <p>熟練使用《國際散化規則》和《國際氣體規則》和相關文件</p>	<p>考試並評估從以下一項或多項中獲取的證據：</p> <p>.1 經認可的工作經歷</p> <p>.2 經認可的培訓船經歷</p> <p>.3 經認可的模擬器培訓</p> <p>.4 經認可的培訓計劃</p>	<p>液化氣體貨物作業符合相關的國際海事組織文書以及已建立的行業標準和安全工作實用規則</p>

Table A-V/I-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	<p><i>Design and characteristics of a liquefied gas tanker</i></p> <p>Knowledge of liquefied gas tanker design, systems, and equipment, including:</p> <p>.1 types of liquefied gas tankers and cargo tanks construction</p> <p>.2 general arrangement and construction</p> <p>.3 cargo containment systems, including materials of construction and insulation</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training</p> <p>.4 approved training programme</p>	<p>Communications are clear, understood and successful</p> <p>Cargo operations are carried out in a safe manner, taking into account liquefied gas tanker designs, systems and equipment</p> <p>Pumping operations are carried out in accordance with accepted principles and procedures and are relevant to the type of cargo</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>.4 cargo-handling equipment and instrumentation, including:</p> <p>.1 cargo pumps and pumping arrangements</p> <p>.2 cargo pipelines and valves</p> <p>.3 expansion devices</p> <p>.4 flame screens</p> <p>.5 temperature monitoring systems</p> <p>.6 cargo tank level-gauging systems</p> <p>.7 tank pressure monitoring and control systems</p> <p>.5 cargo temperature maintenance system</p> <p>.6 tank atmosphere control systems (inert gas, nitrogen), including storage, generation and distribution systems</p> <p>.7 cofferdam heating systems</p> <p>.8 gas-detecting systems</p> <p>.9 ballast system</p> <p>.10 boil-off systems</p> <p>.11 reliquefaction systems</p> <p>.12 cargo Emergency Shut Down system (ESD)</p> <p>.13 custody transfer system</p> <p>Knowledge of pump theory and characteristics, including types of cargo pumps and their safe operation</p> <p><i>Loading, unloading, care and handling of cargo</i></p> <p>Knowledge of the effect of bulk liquid cargoes on trim and stability and structural integrity</p> <p>Proficiency in tanker safety culture and implementation of safety management requirements</p>		<p>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</p> <p>Proper loading, stowage and unloading of liquefied gas cargoes ensures that stability and stress conditions remain within safe limits at all times</p> <p>Potential non-compliance with cargo-related procedures is promptly identified and rectified</p> <p>Actions taken and procedures followed correctly identify and make full use of appropriate shipboard equipment</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>Proficiency to apply safe preparations, procedures and checklists for all cargo operations, including:</p> <ul style="list-style-type: none"> <li>.1 post docking and loading:                             <ul style="list-style-type: none"> <li>.1 tank inspection</li> <li>.2 inerting (Oxygen reduction, dewpoint reduction)</li> <li>.3 gassing-up</li> <li>.4 cooling down</li> <li>.5 loading</li> <li>.6 deballasting</li> <li>.7 sampling, including closed-loop sampling</li> </ul> </li> <li>.2 sea passage:                             <ul style="list-style-type: none"> <li>.1 cooling down</li> <li>.2 pressure maintenance</li> <li>.3 boil-off</li> <li>.4 inhibiting</li> </ul> </li> <li>.3 unloading:                             <ul style="list-style-type: none"> <li>.1 unloading</li> <li>.2 ballasting</li> <li>.3 stripping and cleaning systems</li> <li>.4 systems to make the tank liquid-free</li> </ul> </li> <li>.4 pre-docking preparation:                             <ul style="list-style-type: none"> <li>.1 warm-up</li> <li>.2 inerting</li> <li>.3 gas-freeing</li> </ul> </li> <li>.5 ship-to-ship transfer</li> </ul> <p>Proficiency to perform cargo measurements and calculations, including:</p> <ul style="list-style-type: none"> <li>.1 liquid phase</li> <li>.2 gas phase</li> <li>.3 On Board Quantity (OBQ)</li> <li>.4 Remain On Board (ROB)</li> <li>.5 boil-off cargo calculations</li> </ul> <p>Proficiency to manage and supervise personnel with cargo-related responsibilities</p>		<p>Calibration and use of monitoring and gas-detection equipment is consistent with safe operational practices and procedures</p> <p>Procedures for monitoring and safety systems ensure that all alarms are detected promptly and acted upon in accordance with established procedures</p> <p>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</p>

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	<p>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:</p> <ul style="list-style-type: none"> <li>.1 the chemical structure of gases</li> <li>.2 the properties and characteristics of liquefied gases (including CO<sub>2</sub>) and their vapours, including:               <ul style="list-style-type: none"> <li>.1 simple gas laws</li> <li>.2 states of matter</li> <li>.3 liquid and vapour densities</li> <li>.4 diffusion and mixing of gases</li> <li>.5 compression of gases</li> <li>.6 reliquefaction and refrigeration of gases</li> <li>.7 critical temperature of gases and pressure</li> <li>.8 flashpoint, upper and lower explosive limits, auto-ignition temperature</li> <li>.9 compatibility, reactivity and positive segregation of gases</li> <li>.10 polymerization</li> <li>.11 saturated vapour pressure/reference temperature</li> <li>.12 dewpoint and bubble point</li> <li>.13 lubrication of compressors</li> <li>.14 hydrate formation</li> </ul> </li> <li>.3 the properties of single liquids</li> <li>.4 the nature and properties of solutions</li> <li>.5 thermodynamic units</li> <li>.6 basic thermodynamic laws and diagrams</li> <li>.7 properties of materials</li> <li>.8 effect of low temperature – brittle fracture</li> </ul> <p>Understanding the information contained in a Material Safety Data Sheet (MSDS)</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <ul style="list-style-type: none"> <li>.1 approved in-service experience</li> <li>.2 approved training ship experience</li> <li>.3 approved simulator training</li> <li>.4 approved training programme</li> </ul>	<p>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</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
<p>Take precautions to prevent hazards</p>	<p>Knowledge and understanding of the hazards and control measures associated with liquefied gas tanker cargo operations, including:</p> <ul style="list-style-type: none"> <li>.1 flammability</li> <li>.2 explosion</li> <li>.3 toxicity</li> <li>.4 reactivity</li> <li>.5 corrosivity</li> <li>.6 health hazards</li> <li>.7 inert gas composition</li> <li>.8 electrostatic hazards</li> <li>.9 polymerizing cargoes</li> </ul> <p>Proficiency to calibrate and use monitoring and gas-detection systems, instruments and equipment</p> <p>Knowledge and understanding of dangers of non-compliance with relevant rules/regulations</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <ul style="list-style-type: none"> <li>.1 approved in-service experience</li> <li>.2 approved training ship experience</li> <li>.3 approved simulator training</li> <li>.4 approved training programme</li> </ul>	<p>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</p> <p>Use of gas-detection devices is in accordance with manuals and good practice</p>
<p>Apply occupational health and safety precautions</p>	<p>Knowledge and understanding of safe working practices, including risk assessment and personal ship-board safety relevant to liquefied gas tankers, including:</p> <ul style="list-style-type: none"> <li>.1 precautions to be taken when entering enclosed spaces (such as compressor rooms), including the correct use of different types of breathing apparatus</li> <li>.2 precautions to be taken before and during repair and maintenance work, including work affecting pumping, piping, electrical and control systems</li> <li>.3 precautions for hot and cold work</li> <li>.4 precautions for electrical safety</li> </ul>	<p>Assessment of evidence obtained from one or more of the following:</p> <ul style="list-style-type: none"> <li>.1 approved in-service experience</li> <li>.2 approved training ship experience</li> <li>.3 approved simulator training</li> <li>.4 approved training programme</li> </ul>	<p>Procedures designed to safeguard personnel and the ship are observed at all times</p> <p>Safe working practices are observed and appropriate safety and protective equipment is correctly used</p> <p>Working practices are in accordance with legislative requirements, codes of practice, permits to work and environmental concerns</p> <p>Correct use of breathing apparatus</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>.5 use of appropriate Personal Protective Equipment (PPE)</p> <p>.6 precautions for cold burn and frostbite</p> <p>.7 proper use of personal toxicity monitoring equipment</p>		
Respond to emergencies	<p>Knowledge and understanding of liquefied gas tanker emergency procedures, including:</p> <p>.1 ship emergency response plans</p> <p>.2 cargo operations emergency shutdown procedure</p> <p>.3 emergency cargo valve operations</p> <p>.4 actions to be taken in the event of failure of systems or services essential to cargo operations</p> <p>.5 fire-fighting on liquefied gas tankers</p> <p>.6 jettisoning of cargo</p> <p>.7 enclosed space rescue</p> <p>Actions to be taken following collision, grounding or spillage and envelopment of the ship in toxic or flammable vapour</p> <p>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)</p>	<p>Assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training</p> <p>.4 approved training programme</p>	<p>The type and impact of emergency is promptly identified and the response actions conform with established emergency procedures and contingency plans</p> <p>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</p> <p>Evacuation, emergency shutdown and isolation are appropriate to the nature of the emergency and implemented promptly</p> <p>The identification of and actions taken in a medical emergency conform to current recognized first aid practice and international guidelines</p>
Take precautions to prevent pollution of the environment	Understanding of procedures to prevent pollution of the environment	<p>Assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training</p> <p>.4 approved training programme</p>	Operations are conducted in accordance with accepted principles and procedures to prevent pollution of the environment

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	<p>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</p> <p>Proficiency in the use of the IBC and IGC Codes and related documents</p>	<p>Assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training ship experience</p> <p>.3 approved simulator training</p> <p>.4 approved training programme</p>	<p>The handling of liquefied gas cargoes complies with relevant IMO instruments and established industrial standards and codes of safe working practices</p>

**第A—V/2節**

對客船船長、高級海員、普通海員及其他人員的培訓和資格認證的強制性最低要求

**密集人群管理**

1 規則第V/2條第4款中對於應急部署表上指定的在緊急情況下協助旅客的人員的密集人群管理培訓，須包括，但不一定限於：

- .1 了解救生設備和控制計劃，包括
  - .1.1 應急部署表和應急須知的知識；
  - .1.2 緊急出口的了解；和
  - .1.3 使用電梯的限制；
- .2 協助旅客集合並將其帶到登乘地點的能力，包括：
  - .2.1 能夠下達明確的安撫指令；
  - .2.2 控制走廊、樓梯和通道裡的旅客；
  - .2.3 保持撤離通道暢通；
  - .2.4 幫助殘障人員或其他需要特殊幫助的人員的撤退方法；和
  - .2.5 檢查起居艙室；
- .3 集合的程序，包括：
  - .3.1 保持秩序的重要性；
  - .3.2 運用程序來減少或避免恐慌的能力；

**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 合適的時候，使用旅客清單進行撤離人數統計的能力；和

.3.4 確保旅客適當着裝並正確穿戴救生衣的能力。

#### 在旅客艙室直接為旅客服務的人員的安全培訓

2 規則第V/2條第5款規定的附加安全培訓，須至少能保證人員能獲得以下幾項能力：

##### 溝通

.1 能在緊急情況下和旅客進行溝通，並考慮到以下幾點：

.1.1 使用的一種或多種語言適合特定航線上主要國籍的旅客；

.1.2 不管旅客和海員是否使用同一種語言，使用基本英語詞彙對需要協助的旅客進行說明和指示的能力的可能性；

.1.3 當口頭溝通無法進行時，可能需要在緊急情況下通過其他方式進行溝通，例如通過示範、手勢、或提醒旅客注意指示牌、集合點、救生設備、疏散通道的位置；

.1.4 儘可能用旅客的母語或其他語言向其傳達安全指令；和

.1.5 在緊急情況或是演習中通過廣播向旅客傳達重要指令和便利海員幫助旅客時所使用的語言。

##### 救生設備

.2 能夠向旅客示範個人救生設備的使用方式。

##### 登船程序

.3 安排旅客上下船，並特別注意殘障人員和需要協助的旅客。

#### 危機管理和行為訓練

3 船長、輪機長、大副、大管輪及其他任何在緊急情況中對旅客安全負有責任的人員，須：

.1 根據表A—V/2中所要求的能力、職責和責任，已完成規則第V/2條第6款中規定的經認可的危機管理和行為訓練；和

.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 life-jackets 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 按要求提供表明已經達到符合表A—V/2中第3和4欄規定的技能評定方法和標準的能力水平的證明。

### 旅客安全、貨物安全和船體完整性的培訓

4 規則第V/2條第7款規定的船長、大副、輪機長、大管輪以及直接負責旅客上船和下船、滾裝客船的貨物裝卸或繫固或關閉船體開口裝置的人員，其旅客安全、貨物安全和船體完整性方面的培訓須至少能夠保證獲得適合其職責和責任的如下能力：

#### 裝載和登船程序

.1 能夠合理運用以下為船舶建立的程序：

.1.1 裝載和卸載車輛、軌道車輛和其他貨物運輸單元，包括相關的通信；

.1.2 下降和升起跳板；

.1.3 放出和收回可收放的車輛甲板；和

.1.4 安排旅客上下船，特別注意那些殘障人員和需要協助的人員。

#### 危險品運輸

.2 當滾裝客船上裝有危險物品時，能夠應用所有的特別安全措施、程序和要求。

#### 貨物繫固

.3 能夠：

.3.1 針對車輛、軌道車輛以及其他貨物運輸單元，正確適用《貨物積載和繫固安全實用規則》的規定；和

.3.2 正確使用貨物繫固裝備和其他所提供的材料，同時考慮到其局限性。

#### 穩性、吃水差、應力計算

.4 能夠：

.4.1 合理利用所提供的穩性和應力信息；

.4.2 運用所提供的穩性計算儀或計算機程序對不同裝載條件下的穩性和吃水差進行計算；

.4.3 計算甲板負載因數；和

.4.4 計算壓載和燃油轉駁對穩性、吃水差和應力的影響。

.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:

.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.

## 打開、關閉和緊固船體開口

.5 能夠：

.5.1 正確使用已建立程序打開、關閉、緊固船首門、船尾門、側門和跳板和正確操作相關系統；和

.5.2 對密封處進行檢查。

## 滾裝甲板艙內空氣

.6 能夠：

.6.1 如有攜帶，使用設備檢測滾裝甲板貨艙的空氣；和

.6.2 在航行中和緊急情況下進行裝載和卸載車輛時，正確使用已建立程序對滾裝甲板貨艙進行通風。

## 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.

表 A — V/2

## 危機管理和人的因素的最低適任標準規範

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
組織船上應急程序	<p>以下知識：</p> <p>.1 船舶的總設計和佈置</p> <p>.2 安全規章</p> <p>.3 緊急計劃和程序</p> <p>專門為船舶制定應急程序的原則的重要性，包括：</p> <p>.1 船舶應急程序的預計劃和演習的必要性</p> <p>.2 所有人員在緊急情況下必須知道並嚴格遵守應急程序的必要性</p>	評估從一個或多個經認可的預定的應急計劃培訓和演習以及實際示範中獲取的證據	船上的應急程序能確保應對緊急情況的戒備狀態
優化資源利用	<p>優化資源利用的能力，考慮到以下幾種情況：</p> <p>.1 在緊急情況下，資源的利用可能受到限制</p> <p>.2 充分利用可立即使用的人員和設備的重要性，必要時，可臨時準備</p> <p>能夠組織符合實際的演習，以保持戒備狀態，應考慮到過去的客船事故的經驗教訓；演習後進行總結</p>	評估從經認可的培訓、實際示範，以及在船培訓和應急程序演習中獲取的證據	<p>擁有優化現有資源利用的應急計劃</p> <p>根據已知的個人能力分配任務和責任</p> <p>明確團隊和個人的任務和責任</p>
應急反應控制	<p>能夠作出初步評估，根據已建立程序進行有效的應急反應</p> <p>領導技能</p> <p>能在緊急情況下領導和指揮他人，包括以下必要性：</p> <p>.1 在緊急情況中樹立榜樣</p>	評估從經認可的培訓、實際示範以及在船培訓和應急程序演習中獲取的證據	<p>船上危機管理的程序和採取的行動符合已建立的原則和計劃</p> <p>所制定的目標和採取的對策適合緊急情況的特點，考慮到突發性因素，充分利用可利用資源。</p>

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
	<p>.2 鑒於在緊急情況下要求迅速採取行動，集中思想做出決定</p> <p>.3 能激發、鼓勵、穩定旅客和其他人員</p> <p><i>應對壓力</i></p> <p>能夠識別個人以及應急小組內其他成員出現過度壓力的癥兆</p> <p>理解緊急情況所帶來的壓力會影響到個人的表現，及其按照指示和程序行動的能力</p>		<p>海員的行動有助於維持秩序和控制現場</p>
<p>緊急情況中對旅客和其他人員的控制</p>	<p><i>人的行為和反應</i></p> <p>能在緊急情況中對旅客和其他人員進行控制，包括：</p> <p>.1 了解旅客和其他人員在緊急情況中產生的一般反應模式，包括以下可能性：</p> <p>.1.1 通常人們需要一段時間才能接受已發生緊急情況的事實</p> <p>.1.2 有些人會感到恐慌並不能做出正常的理性行為，導致他們的理解能力減弱並且不能像在正常情況下對指令做出響應</p> <p>.2 了解旅客和其他人員可能會出現的情況，包括如下：</p> <p>.2.1 在問題出現時，他們的第一反應就是開始尋找自己的親人，朋友或是個人物品</p> <p>.2.2 在其船艙或他們認為能逃脫危險的船上其他地方尋求安全</p> <p>.2.3 當船發生傾斜時，人們都想往船的上側移動</p> <p>.3 理解由於家庭分離所帶來的可能的恐慌問題</p>	<p>評估從經認可的培訓、實際示範以及在船培訓和應急程序演習中獲取的證據</p>	<p>海員的行動有助於維持秩序和控制現場</p>
<p>建立並保持有效的溝通</p>	<p>能夠建立並保持有效的溝通，包括：</p> <p>.1 清晰和簡明的說明和報告的重要性</p> <p>.2 鼓勵與旅客和其他人員進行信息溝通，並從他們那裏得到反饋信息</p> <p>在緊急情況中能向旅客和其他人員提供相關信息，讓其了解總體情況，並向其傳達其所要配合的行動，考慮到以下幾點：</p> <p>.1 使用的一種或多種語言適用於特定航線上主要國籍的旅客</p> <p>.2 當口頭溝通無法進行時，可能需要在緊急情況下通過其他方式進行溝通，例如通過示範、手勢、或提醒旅客注意指示牌、集合點、救生設備、疏散通道的位置</p> <p>.3 在緊急情況或是演習中通過廣播向旅客傳達重要指令並便利海員幫助旅客時所使用的語言</p>	<p>評估從經認可的培訓、演習和實際示範中獲取的證據</p>	<p>儘快獲取、評價和證實來自一切可利用渠道的信息並在整個緊急事件中加以審核</p> <p>傳達給個人、應急小組以及旅客的信息應準確、相關和及時</p> <p>根據緊急情況的性質，隨時向旅客提供相關信息以及需要旅客採取的行動</p>

Table A-V/2

## Specification of minimum standard of competence in crisis management and human behaviour

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	<p>Knowledge of:</p> <p>.1 the general design and layout of the ship</p> <p>.2 safety regulations</p> <p>.3 emergency plans and procedures</p> <p>The importance of the principles for the development of ship-specific emergency procedures, including:</p> <p>.1 the need for pre-planning and drills of shipboard emergency procedures</p> <p>.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</p>	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	<p>Ability to optimize the use of resources, taking into account:</p> <p>.1 the possibility that resources available in an emergency may be limited</p> <p>.2 the need to make full use of personnel and equipment immediately available and, if necessary, to improvise</p> <p>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</p>	Assessment of evidence obtained from approved training, practical demonstration and shipboard training and drills of emergency procedures	<p>Contingency plans optimize the use of available resources</p> <p>Allocation of tasks and responsibilities reflects the known competence of individuals</p> <p>Roles and responsibilities of teams and individuals are clearly defined</p>
Control response to emergencies	<p>Ability to make an initial assessment and provide an effective response to emergency situations in accordance with established emergency procedures</p> <p><i>Leadership skills</i></p> <p>Ability to lead and direct others in emergency situations, including the need:</p> <p>.1 to set an example during emergency situations</p>	Assessment of evidence obtained from approved training, practical demonstration and shipboard training and drills of emergency procedures	<p>Procedures and actions are in accordance with established principles and plans for crisis management on board</p> <p>Objectives and strategy are appropriate to the nature of the emergency, take account of contingencies and make optimum use of available resources</p> <p>Actions of crew members contribute to maintaining order and control</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>.2 to focus decision making, given the need to act quickly in an emergency</p> <p>.3 to motivate, encourage and reassure passengers and other personnel</p> <p><i>Stress handling</i></p> <p>Ability to identify the development of symptoms of excessive personal stress and those of other members of the ship's emergency team</p> <p>Understanding that stress generated by emergency situations can affect the performance of individuals and their ability to act on instructions and follow procedures</p>		
<p>Control passengers and other personnel during emergency situations</p>	<p><i>Human behaviour and responses</i></p> <p>Ability to control passengers and other personnel in emergency situations, including:</p> <p>.1 awareness of the general reaction patterns of passengers and other personnel in emergency situations, including the possibility that:</p> <p>.1.1 generally it takes some time before people accept the fact that there is an emergency situation</p> <p>.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</p> <p>.2 awareness that passengers and other personnel may, <i>inter alia</i>:</p> <p>.2.1 start looking for relatives, friends and/or their belongings as a first reaction when something goes wrong</p> <p>.2.2 seek safety in their cabins or in other places on board where they think that they can escape danger</p> <p>.2.3 tend to move to the upper side when the ship is listing</p> <p>.3 appreciation of the possible problem of panic resulting from separating families</p>	<p>Assessment of evidence obtained from approved training, practical demonstration and shipboard training and drills of emergency procedures</p>	<p>Actions of crew members contribute to maintaining order and control</p>

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	<p>Ability to establish and maintain effective communications, including:</p> <p>.1 the importance of clear and concise instructions and reports</p> <p>.2 the need to encourage an exchange of information with, and feedback from, passengers and other personnel</p> <p>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:</p> <p>.1 the language or languages appropriate to the principal nationalities of passengers and other personnel carried on the particular route</p> <p>.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</p> <p>.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</p>	Assessment of evidence obtained from approved training, exercises and practical demonstration	<p>Information from all available sources is obtained, evaluated and confirmed as quickly as possible and reviewed throughout the emergency</p> <p>Information given to individuals, emergency response teams and passengers is accurate, relevant and timely</p> <p>Information keeps passengers informed as to the nature of the emergency and the actions required of them</p>

## 第 VI 章

### 關於應急、職業安全、保安、醫護和救生職能的標準

#### 第A—VI/1節

對所有海員的安全熟悉和基本培訓及訓練的強制性最低要求

#### 安全熟悉培訓

1 除旅客外，所有受僱於海船上或從事海船工作的人員，在被指派船上職責之前，應接受經認可的有關個人求生技能的熟

## 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 seafarer*

#### 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 sur-

悉培訓或得到足夠的資料和訓練，並考慮到B部分給予的指導，以能夠：

- .1 就基本的安全事宜與船上其他人員交流，並理解安全信息的符號、標記和報警信號；
- .2 了解在發生下列情況時應如何行事：
  - .2.1 人員落水；
  - .2.2 發現火情或煙霧，或
  - .2.3 響起火情警報或棄船警報；
- .3 明確集合地點和登艇地點及緊急逃生路線；
- .4 找到並穿戴救生衣；
- .5 啟動報警裝置並具有使用手提式滅火器的基本知識；
- .6 在遇到事故或其他醫療緊急情況時，在尋求船上進一步醫療救助前採取應急行動；以及
- .7 關閉和開啟特定船上裝配的除船體開口以外的防火、風雨密和水密門。

### 基本培訓

2 作為船舶在編人員並被指派在船舶操作中負有安全或防止污染職責而受僱於船上或從事船上工作的任何職務的海員，在其任職之前，須：

- .1 接受如下適當並經認可的基本培訓或訓練：
  - .1.1 表A—VI/1—1所列的個人求生技能；
  - .1.2 表A—VI/1—2所列的防火和滅火；
  - .1.3 表A—VI/1—3所列的簡單急救；以及
  - .1.4 表A—VI/1—4所列的人員安全和社會責任；
- .2 通過下列方法，提供已達到按表A—VI/1—1、A—VI/1—2、A—VI/1—3和A—VI/1—4第1欄列出的所承擔的任務、職責和責任所要求的適任標準的證據：
  - .2.1 按照上述各表第3欄和第4欄所列的評價適任的方法和標準，表明適任能力；以及
  - .2.2 考試或連續的評估，作為上述各表第2欄所列科目的經認可的培訓計劃的組成部分。

vival 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

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,
  - .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 按照基本培訓第2款具有資格的海員須按要求每5年提供證明以表明保持了承擔表A—VI/1—1和表A—VI/1—2第一欄所列任務、職責和責任的適任能力。

4 在以下方面，締約國可以接受在船培訓和資歷為等同於保持所要求的適任標準：

.1 表A—VI/1—1中設定的個人求生技能：

- .1.1 穿戴救生衣；
- .1.2 當穿着救生衣時，從船上登上救生艇筏；
- .1.3 登艇時採取初步行動以增加獲救機會；
- .1.4 拋放救生艇浮錨或海錨；
- .1.5 操作救生艇筏設備；和
- .1.6 操作定位儀器，包括無線電設備；

.2 表格A—VI/1—2中設定的防火和滅火：

- .2.1 使用自給式呼吸器；和
- .2.2 佩戴呼吸器，使用經認可的船上煙霧發生裝置，在充滿煙霧的處所中施救。

### 免除

5 對於除液貨船和500總噸以上從事國際航行的客船以外的船舶，主管機關如果認為某一船舶的船舶尺度和航次長短或性質會使執行本節的全部要求為不盡合理或不可行時，可在充分考慮到船上人員、船舶和財產安全及保護海洋環境的情況下，對該船或該類船舶上的海員免除部分要求。

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 standard 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.

表 A—VI/1—1

### 個人求生技能的最低適任標準規範

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
棄船時的海上逃生	可能發生的緊急情況的類型，如碰撞、失火、擱淺 船舶通常攜帶的救生設備的類型 救生艇筏內的設備 個人救生設備的位置 逃生原則，包括： .1 培訓和演習的價值 .2 個人保護服裝和設備 .3 準備應付緊急情況的必要性	評估從從經認可的訓練或在經認可的課程的學習期間或經認可的在職經驗和考核中取得的證據，包括實際示範下列適任能力： .1 穿戴救生衣 .2 穿戴和使用保暖救生服 .3 從某一高度上安全跳入水中 .4 穿戴救生衣扶正翻轉的救生筏 .5 穿戴救生衣游泳 .6 在沒穿救生衣的情況下保持浮起狀態	在識別集合信號時所採取的行動適合於指明的緊急情況並符合規定的程序 各項行動的時機和順序適合於當時的情況和狀況並最大程度地減少了對逃生的潛在危險和威脅 登上救生艇筏的方法是適當的，避免了對其他倖存者的危險



第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
	.4 被召喚到救生艇筏站時應採取的行動 .5 需棄船時應採取的行動 .6 在水中時應採取的行動 .7 在救生艇筏中應採取的行動 .8 對倖存者的主要危險	.7 穿戴救生衣從船上和水中登上救生艇筏 .8 登上救生艇筏時採取初步行動，以提高逃生機會 .9 放浮錨或海錨 .10 操作救生艇筏設備 .11 操作定位裝置，包括無線電設備	離船後的初步行動和在水中的程序和行動最大程度地減少了對逃生的威脅

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

表 A—VI/1—2  
防火和滅火的最低適任標準規範

第1欄 適任	第2欄 知識、理解和熟練	第3欄 表明適任的方法	第4欄 評估適任的標準
最大程度地減少失火風險並保持應付火災緊急情況的準備狀態	<p>船上消防的組織</p> <p>消防設備的位置和緊急脫險路線</p> <p>火災和爆炸的基本要素(火災三角形)</p> <p>着火類型和着火源</p> <p>易燃材料、火災危害和火的蔓延</p> <p>保持警惕的必要性</p> <p>船上應採取的行動</p> <p>火和煙的探測和自動警報系統</p> <p>火的分類和適用的滅火劑</p>	<p>評估從經認可的教學或經認可課程的學習中取得的證據</p>	<p>意識到發生緊急情況時的初步行動符合公認的做法和程序</p> <p>識別集合信號時採取的行動適合於指明的緊急情況並符合規定的程序</p>
消防和滅火	<p>消防設備及其在船上的位置</p> <p>下述方面的指導：</p> <p>.1 固定式裝置</p> <p>.2 消防員裝備</p> <p>.3 個人裝備</p> <p>.4 消防裝置和設備</p> <p>.5 消防方法</p> <p>.6 滅火劑</p> <p>.7 消防程序</p> <p>.8 佩戴呼吸裝置滅火和施救</p>	<p>評估從經認可的訓練或經認可課程的學習期間取得的證據，包括在具有真實培訓狀況(如模擬的船上狀況)的處所中，及在可能和可行時，在黑暗中實際證實下述能力：</p> <p>.1 使用各種便攜式滅火器</p> <p>.2 使用獨立的呼吸裝置</p> <p>.3 熄滅小火，如：電氣火、油火、丙烷火</p> <p>.4 使用水槍和噴淋式噴嘴熄滅大火</p> <p>.5 使用泡沫、粉末或任何其他適當化學劑滅火</p> <p>.6 帶着救生索但不帶呼吸裝置進入和通過噴有高倍膨脹泡沫的艙室</p> <p>.7 佩戴自給式呼吸裝置在有煙氣的圍蔽處所內滅火</p> <p>.8 使用水霧或其他任何適用滅火劑在起火和冒出濃煙的住艙或模擬的機艙中滅火</p> <p>.9 使用噴霧器和噴淋式噴咀、化學乾粉或泡沫裝置撲滅油火</p> <p>.10 佩戴呼吸裝置在有煙氣的處所中實施救助</p>	<p>服裝和設備適用於消防作業的性質</p> <p>每一行動的時機和順序適合於主要的情況和狀況</p> <p>使用適當程序、技術和滅火劑熄滅火災</p> <p>呼吸裝置的程序和技術符合所接受的做法和程序</p>

Table A-VI/1-2

**Specification of minimum standard of competence in fire prevention and fire fighting**

Column 1 Competence	Column 2 Knowledge, understanding and proficiency	Column 3 Methods for demonstrating competence	Column 4 Criteria for evaluating competence
Minimize the risk of fire and maintain a state of readiness to respond to emergency situations involving fire	<p>Shipboard fire-fighting organization</p> <p>Location of fire-fighting appliances and emergency escape routes</p>	<p>Assessment of evidence obtained from approved instruction or attendance at an approved course</p>	<p>Initial actions on becoming aware of an emergency conform with accepted practices and procedures</p> <p>Action taken on identifying muster signals is appropriate to the indicated emergency and complies with established procedures</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>The elements of fire and explosion (the fire triangle)</p> <p>Types and sources of ignition</p> <p>Flammable materials, fire hazards and spread of fire</p> <p>The need for constant vigilance</p> <p>Actions to be taken on board ship</p> <p>Fire and smoke detection and automatic alarm systems</p> <p>Classification of fire and applicable extinguishing agents</p>		
<p>Fight and extinguish fires</p>	<p>Fire-fighting equipment and its location on board</p> <p>Instruction in:</p> <ol style="list-style-type: none"> <li>.1 fixed installations</li> <li>.2 fire-fighter’s outfits</li> <li>.3 personal equipment</li> <li>.4 fire-fighting appliances and equipment</li> <li>.5 fire-fighting methods</li> <li>.6 fire-fighting agents</li> <li>.7 fire-fighting procedures</li> <li>.8 use of breathing apparatus for fighting fires and effecting rescues</li> </ol>	<p>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:</p> <ol style="list-style-type: none"> <li>.1 use various types of portable fire extinguishers</li> <li>.2 use self-contained breathing apparatus</li> <li>.3 extinguish smaller fires, e.g., electrical fires, oil fires, propane fires</li> <li>.4 extinguish extensive fires with water, using jet and spray nozzles</li> <li>.5 extinguish fires with foam, powder or any other suitable chemical agent</li> <li>.6 enter and pass through, with lifeline but without breathing apparatus, a compartment into which high-expansion foam has been injected</li> <li>.7 fight fire in smoke-filled enclosed spaces wearing self-contained breathing apparatus</li> </ol>	<p>Clothing and equipment are appropriate to the nature of the fire-fighting operations</p> <p>The timing and sequence of individual actions are appropriate to the prevailing circumstances and conditions</p> <p>Extinguishment of fire is achieved using appropriate procedures, techniques and fire-fighting agents</p> <p>Breathing apparatus procedures and techniques comply with accepted practices and procedures</p>

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

表 A — VI/1 — 3

## 簡單急救的最低適任標準規範

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
遇到事故或其它急救情況時立即採取行動	對傷員的需要和自身安全面臨的威脅的評估 對人體結構和功能的了解 對緊急情況下應立即採取的措施的理解，包括下述能力： .1 確定傷員的位置 .2 應用復蘇技術 .3 止血 .4 應用適當的基本休克處理措施 .5 應用適當措施處理燒傷和燙傷，包括電流造成的事故 .6 救助和轉移傷員 .7 臨時紮上繃帶和使用急救箱中的器材	評估從經認可的訓練或經認可的課程的學習期間中取得的證據	發出警報的方式和時機適合於事故或急救的情況  對受傷的可能原因、性質和程度的識別是迅速和完整的，行動的優先和順序與生命面臨的任何潛在威脅相稱  始終將對自己和傷員的進一步損害的風險降至最低程度

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	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

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

表 A – VI/1 – 4

個人安全和社會責任的最低適任標準規範

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
遵守應急程序	可能發生的緊急情況的種類、如碰撞、失火、擱淺 對應付緊急情況的船上應急計劃的知識 緊急信號和集合部署表中為海員指定的具體職責；集合站；正確使用個人安全設備 在發現潛在緊急情況（包括失火、碰撞、擱淺和船舶進水）時應採取的行動 聽到緊急報警信號時應採取的行動 培訓和演習的價值 對脫險路線、內部通信和警報系統的知識	評估從經認可的訓練或經認可的課程的學習期間取得的證據	意識到發生緊急情況時的初步行動符合已建立的應急程序 啟動警報時提供的資料是迅速、準確、完整和清楚的
採取防止海洋環境污染的預防措施	航運對海洋環境的影響以及操作性或事故性污染對海洋環境危害的基本知識 環境保護的基本程序 海洋多樣性和複雜性的基本知識	評估從經認可的訓練或經認可的課程的學習期間取得的證據	始終遵守保護海洋環境的組織程序
遵守安全工作做法	始終遵守安全工作做法的重要性 為防備船上潛在危害而提供的安全和保護裝置 進入圍蔽處所前的注意事項 通曉有關防止事故和職業健康的預防措施	評估從經認可的訓練或經認可的課程的學習期間取得的證據	安全工作做法始終得到遵守，適當的安全和保護設備始終得到正確使用

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
致力於船上有效的溝通	對船上個體或團隊之間有效溝通的原則和障礙的理解  建立和保持有效溝通的能力	評估從經認可的訓練或經認可的課程的學習期間取得的證據	通信始終是清楚和有效的
致力於船上有效的人際關係	保持船上良好的人際和工作關係的重要性  團隊工作的基本原則和做法，包括衝突的解決  社會責任；僱用條件；個人權利和義務；濫用毒品和酒精的危險	評估從經認可的訓練或經認可的課程的學習期間取得的證據	始終遵守要求達到的工作和行為標準
理解並採取必要的措施控制疲勞	得到必要休息的重要性  睡眠、作息時間與生理節奏對疲勞的影響  身體緊張性刺激對海員的影響  船舶內外環境的緊張性刺激對海員的影響及其危害  作息時間的改變對海員疲勞的影響	評估從經認可的訓練或從參加的經認可的課程中獲取的證據	始終遵循疲勞管理的做法及採取適當的措施

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

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 marine environment	<p>Basic knowledge of the impact of shipping on the marine environment and the effects of operational or accidental pollution on it</p> <p>Basic environmental protection procedures</p> <p>Basic knowledge of complexity and diversity of the marine environment</p>	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
Observe safe working practices	<p>Importance of adhering to safe working practices at all times</p> <p>Safety and protective devices available to protect against potential hazards aboard ship</p> <p>Precautions to be taken prior to entering enclosed spaces</p> <p>Familiarization with international measures concerning accident prevention and occupational health</p>	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	<p>Understand the principles of, and barriers to, effective communication between individuals and teams within the ship</p> <p>Ability to establish and maintain effective communications</p>	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	<p>Importance of maintaining good human and working relationships aboard ship</p> <p>Basic teamworking principles and practice, including conflict resolution</p> <p>Social responsibilities; employment conditions; individual rights and obligations; dangers of drug and alcohol abuse</p>	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
Understand and take necessary actions to control fatigue	<p>Importance of obtaining the necessary rest</p> <p>Effects of sleep, schedules, and the circadian rhythm on fatigue</p> <p>Effects of physical stressors on seafarers</p> <p>Effects of environmental stressors in and outside the ship and their impact on seafarers</p> <p>Effects of schedule changes on seafarer fatigue</p>	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

**第A—VI/2節**

對簽發救生艇筏、救助艇和快速救助艇熟練操作證書的強制性最低要求

**熟練操作救生艇筏和除快速救助艇以外的救助艇****適任標準**

1 每位救生艇筏和除快速救助艇外的救助艇熟練操作證書的申請人須表明承擔表A—VI/2—1第1欄所列的任務、職責和責任的適任能力。

2 表A—VI/2—1第2欄所列科目的知識水平，須足以能使證書申請人在各種緊急情況下釋放並負責救生艇筏或救助艇。

3 為達到所需理論知識、理解和熟練水平的培訓和經驗，須考慮到本規則B部分給予的指導。

4 每位證書申請人須通過下列方法提供其業已達到所要求的適任標準的證據：

.1 按表A—VI/2—1第3欄和第4欄所列的表明適任的方法和評估適任的標準，表明承擔表A—VI/2—1第1欄中所列的任務、職責和責任的適任能力；以及

.2 考試或連續的評估，作為涵蓋表A—VI/2—1第2欄所列材料的經認可的培訓計劃的組成部分。

5 按照第4款具有熟練操作救生艇筏和除快速救助艇外的救助艇資格的海員，須按要求每5年提供證據，表明保持了承擔表A—VI/2—1第1欄所列的任務、職責和責任的適任能力。

6 就下列科目，締約國可以接受船上培訓和經驗記錄，作為保持表A—VI/2—1所要求的適任標準的證據：

.1 負責釋放時及釋放後的救生艇筏：

.1.1 解釋救生艇筏上用於表明乘載人員數目的標誌；

.1.2 正確指揮救生艇筏的釋放和登艇，駛離船舶，操縱及人員下艇（筏）；

.1.3 救生艇筏釋放準備和安全下水，迅速駛離船舶；和

.1.4 安全地回收救生艇筏和救助艇；

.2 棄船後對倖存者和救生艇筏的管理：

.2.1 划槳和駕艇以及運用羅經駕艇；

**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.

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:

.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 使用救生艇筏各項設備，煙火除外；和

.2.3 安裝設備以幫助定位；

.3 使用定位設備，包括通信和信號設備：

.3.1 使用救生艇筏的便攜式無線電設備；和

.4 對倖存者進行急救。

### 熟練操作快速救助艇

#### 適任標準

7 每位快速救助艇熟練操作證書的申請人須表明其承擔表A—VI/2—2第1欄所列的任務、職責和責任的適任能力。

8 表A—VI/2—2第2欄所列材料的知識水平，須足以能使證書申請人在各種緊急情況下釋放並負責快速救助艇。

9 為達到所需理論知識、理解和熟練水平的培訓和經驗，須考慮到本規則B部分給予的指導。

10 每位證書申請人須通過下列方法提供其業已達到所要求的適任標準的證據：

.1 按表A—VI/2—2第3欄和第4欄中所列的表明適任的方法和評價適任的標準，表明承擔表A—VI/2—2第1欄所列的任務、職責和責任的適任能力；和

.2 考試或連續的評估，作為涵蓋表A—VI/2—2第2欄所列材料的經認可的培訓計劃的組成部分。

11 按照第10段具有熟練操作快速救助艇資格的海員，須按每5年提供證據，表明保持了承擔表A—VI/2—2第一欄所列的任務、職責和責任的適任能力。

12 就下列科目，締約國可以接受船上培訓和經驗記錄，作為保持表A—VI/2—2所要求的適任標準的證據：

.1 負責釋放時和釋放後的快速救助艇：

.1.1 控制快速救助艇的安全釋放和回收；

.1.2 在當時的天氣和海況下操縱快速救助艇；

.1.3 使用在快速救助艇與直升飛機和船舶之間進行聯繫的通信和信號設備；

.1.4 使用所攜帶的應急設備；和

.1.5 結合環境因素實施搜救模式。

.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.

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.

表 A—VI/2—1

## 救生艇筏和除快速救助艇外的救助艇的最低適任標準規範

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
在釋放過程中 和釋放後負責 救生艇筏或救 助艇	救生艇筏和救助艇的構造和裝備及其各 項設備 救生艇筏和救助艇的特點和設施 用於釋放救生艇筏和救助艇的各種裝置 在惡劣海況下釋放救生艇筏的方法 回收救生艇筏的方法 棄船後應採取的行動 在惡劣海況下釋放和回收救生艇筏和救 助艇的方法 與使用承載釋放裝置有關的危險 有關維護保養程序的知識	評估從下列表明能力的實際演示中 取得的證據： .1 穿戴救生衣扶正翻轉的救生筏 .2 解釋救生艇筏上有關救助艇筏 額定乘員數目的標誌 .3 發出降放和登上救助艇筏、駛離 船舶、操作救生艇筏和讓人員離開 救生艇筏的正確指令 .4 準備並安全降放救生艇筏並迅 速駛離船舷以及操作卸載和承載 釋放裝置 .5 安全回收救生艇筏和救助艇，包 括對卸載和承載釋放裝置的正確 重新設置  使用：裝有舷內發動機的氣脹式救 生筏和開敞或封閉式救生艇或經 認可的模擬器培訓，如適合	救生艇筏的準備、登乘和降放在設 備的限度內並使救生艇筏能安全 駛離船舶 棄船時的初步行動最大程度地減 少了對逃生的威脅 救生艇筏和救助艇的回收在設備 的限度內 根據製造商關於釋放和重置的說 明書進行操作
操作救生艇筏 發動機	啟動和操作救生艇筏發動機及其輔助 裝置的方法以及所載滅火機的使用	評估從啟動和操作開敞或封閉式 救生艇發動機的表明能力的實際 演示中取得的證據	根據操縱的需要提供並保持推進
在棄船後對倖 存者和救生艇 筏進行管理	在惡劣天氣操作救生艇筏 繫艇索、海錨和所有其它設備的使用 救生艇筏內食物和水的配給 為儘量增大救生艇筏被探測到和被找到 的可能性而採取的行動 直升飛機救助的方法 低溫的影響及其預防；保護被服的使用，包括保暖救生服和保溫器具 使用救助艇和機動救生艇集結救生筏 和救助海上倖存者和人員 救生艇筏的搶灘	評估從下列表明能力的實際演示中 取得的證據： .1 划艇和駕駛艇和使用羅經駕駛 .2 使用救生艇筏的各項設備 .3 安裝設備以幫助定位	逃生管理適合於當時的情況和狀 況
使用定位裝置， 包括通信和信 號裝置和煙火 信號	救生艇筏中攜帶的無線電救生設備，包 括衛星無線電應急示位標和搜救應答器 煙火遇險信號	評估從下列表明能力的實際演示中 取得的證據： .1 使用便攜式救生艇筏無線電設 備 .2 使用信號設備，包括煙火信號	對通信和信號裝置的使用和選擇 適合當時的情況和狀況
對倖存者實施 急救	急救箱和復蘇技術的使用 傷員管理，包括控制出血和休克	評估使用急救箱和復蘇技術的、表 明在棄船期間和之後處理傷員的能 力的實際演示中取得的證據	對傷情或病情的可能原因、性質和 程度的識別是迅速和準確的 治療的優先性和順序最大程度地 減少對生命的任何威脅

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
<p>Take charge of a survival craft or rescue boat during and after launch</p>	<p>Construction and outfit of survival craft and rescue boats and individual items of their equipment</p> <p>Particular characteristics and facilities of survival craft and rescue boats</p> <p>Various types of device used for launching survival craft and rescue boats</p> <p>Methods of launching survival craft into a rough sea</p> <p>Methods of recovering survival craft</p> <p>Action to be taken after leaving the ship</p> <p>Methods of launching and recovering rescue boats in a rough sea</p> <p>Dangers associated with use of on-load release devices</p> <p>Knowledge of maintenance procedures</p>	<p>Assessment of evidence obtained from practical demonstration of ability to:</p> <p>.1 right an inverted liferaft while wearing a lifejacket</p> <p>.2 interpret the markings on survival craft as to the number of persons they are intended to carry</p> <p>.3 give correct commands for launching and boarding survival craft, clearing the ship and handling and disembarking persons from survival craft</p> <p>.4 prepare and safely launch survival craft and clear the ship's side quickly and operate off-load and on-load release devices</p> <p>.5 safely recover survival craft and rescue boats, including the proper resetting of both off-load and on-load release devices</p> <p>using: inflatable liferaft and open or enclosed lifeboat with inboard engine or approved simulator training, where appropriate</p>	<p>Preparation, boarding and launching of survival craft are within equipment limitations and enable survival craft to clear the ship safely</p> <p>Initial actions on leaving the ship minimize threat to survival</p> <p>Recovery of survival craft and rescue boats is within equipment limitations</p> <p>Equipment is operated in accordance with manufacturers' instructions for release and resetting</p>
<p>Operate a survival craft engine</p>	<p>Methods of starting and operating a survival craft engine and its accessories together with the use of the fire extinguisher provided</p>	<p>Assessment of evidence obtained from practical demonstration of ability to start and operate an inboard engine fitted in an open or enclosed lifeboat</p>	<p>Propulsion is available and maintained as required for manoeuvring</p>
<p>Manage survivors and survival craft after abandoning ship</p>	<p>Handling survival craft in rough weather</p> <p>Use of painter, sea-anchor and all other equipment</p> <p>Apportionment of food and water in survival craft</p> <p>Action taken to maximize detectability and location of survival craft</p>	<p>Assessment of evidence obtained from practical demonstration of ability to:</p> <p>.1 row and steer a boat and steer by compass</p> <p>.2 use individual items of equipment of survival craft</p> <p>.3 rig devices to aid location</p>	<p>Survival management is appropriate to prevailing circumstances and conditions</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>Method of helicopter rescue</p> <p>Effects of hypothermia and its prevention; use of protective covers and garments, including immersion suits and thermal protective aids</p> <p>Use of rescue boats and motor lifeboats for marshaling liferafts and rescue of survivors and persons in the sea</p> <p>Beaching survival craft</p>		
Use locating devices, including communication and signalling apparatus and pyrotechnics	<p>Radio life-saving appliances carried in survival craft, including satellite EPIRBs and SARTs</p> <p>Pyrotechnic distress signals</p>	<p>Assessment of evidence obtained from practical demonstration of ability to:</p> <p>.1 use portable radio equipment for survival craft</p> <p>.2 use signalling equipment, including pyrotechnics</p>	Use and choice of communication and signalling apparatus is appropriate to prevailing circumstances and conditions
Apply first aid to survivors	<p>Use of the first-aid kit and resuscitation techniques</p> <p>Management of injured persons, including control of bleeding and shock</p>	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 techniques	<p>Identification of the probable cause, nature and extent of injuries or condition is prompt and accurate</p> <p>Priority and sequence of treatment minimizes any threat to life</p>

表 A — VI/2 — 2

## 快速救助艇的最低適任標準規範

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
懂得快速救助艇的構造、保養、維修和裝備	<p>快速救助艇的構造和裝備及其各項設備</p> <p>快速救助艇的保養、應急維修和氣脹式快速救助艇氣室的正常充氣和放氣知識</p>	評估從實際教學中獲得的證據	<p>進行日常保養和應急維修的方法</p> <p>識別高速救助艇的組件及所需的設備</p>
在降放和回收過程中負責通常配置的放艇設備和裝置	<p>為立即降放和操作快速救助艇而對降放設備和降放裝置的準備情況進行評估</p> <p>懂得絞車、剎車、車索、艙纜、運動補償和其他常配設備的操作和限制降放和回收快速救助艇過程中的安全注意事項</p> <p>在當時和不利天氣和海況中降放和回收快速救助艇</p>	評估從表明安全降放和回收快速救助艇（連同安裝的設備）的控制能力的實際演示中獲得的證據	在降放和回收高速救助艇過程中準備和負責降放設備和裝置的能力

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
在降放和回收過程中負責通常配置的快速救助艇	為立即降放和操作而對快速救助艇及其相關設備的準備情況進行評估  降放和回收快速救助艇過程中的安全注意事項  在當時和不利天氣和海況中降放和回收快速救助艇	評估從表明安全降放和回收快速救助艇（連同安裝的設備）的控制能力的實際演示中獲得的證據	在降放和回收過程中負責快速救助艇的能力
負責降放後的快速救助艇	快速救助艇的具體特點、設施和限制  扶正翻轉的快速救助艇的程序  如何在當時和不利天氣和海況中操作快速救助艇  在快速救助艇中可使用的導航和安全設備  搜尋方式和影響其實施的環境因素	評估從下列實際能力演示中獲得的證據： .1 扶正翻轉的快速救助艇 .2 在當時天氣和海況中操作快速救助艇 .3 佩戴特殊設備游泳 .4 使用在快速救助艇與直升飛機和船舶之間進行聯繫的通信和信號設備 .5 使用所載的應急設備 .6 從水中營救傷員及把傷員送上救助直升飛機、船舶或安全地點 .7 根據環境因素實施搜尋模式	在當時天氣狀況中在設備極限內操作快速救助艇的演示
操作快速救助艇的發動機	啟動和操作快速救助艇的發動機及其附屬裝置的方法	評估從啟動和操作快速救助艇發動機的實際能力演示中獲得的證據	按操縱要求啟動和操作機器

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	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

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>Safety precautions during launching and recovery of a fast rescue boat</p> <p>Launching and recovery of a fast rescue boat in prevailing and adverse weather and sea conditions</p>		
Take charge of a fast rescue boat as commonly fitted, during launching and recovery	<p>Assessment of the readiness of fast rescue boats and related equipment for immediate launching and operation</p> <p>Safety precautions during launching and recovery of a fast rescue boat</p> <p>Launching and recovery of a fast rescue boat in prevailing and adverse weather and sea conditions</p>	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
Take charge of a fast rescue boat after launching	<p>Particular characteristics, facilities and limitations of fast rescue boats</p> <p>Procedures for the righting of a capsized fast rescue boat</p> <p>How to handle a fast rescue boat in prevailing and adverse weather and sea conditions</p> <p>Navigational and safety equipment available in a fast rescue boat</p> <p>Search patterns and environmental factors affecting their execution</p>	<p>Assessment of evidence obtained from practical demonstration of ability to:</p> <p>.1 right a capsized fast rescue boat</p> <p>.2 handle a fast rescue boat in prevailing weather and sea conditions</p> <p>.3 swim in special equipment</p> <p>.4 use communications and signalling equipment between the fast rescue boat and a helicopter and a ship</p> <p>.5 use the emergency equipment carried</p> <p>.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</p> <p>.7 carry out search patterns, taking account of environmental factors</p>	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

**第A—VI/3節**

高級消防培訓的強制性最低要求

**適任標準**

1 被指定控制消防作業的海員須圓滿完成着重於消防組織、策略和指揮方面的消防技術的高級培訓，並須表明承擔表A—VI/3第1欄所列的任務、職責和責任的適任能力。

2 表A—VI/3第2欄所列科目的知識和理解水平，須足以有效地控制船上的消防作業。

3 為達到所需理論知識、理解和熟練水平的培訓和經驗，須考慮到本規則B部分給予的指導。

4 每位證書申請人，須按表A—VI/3第3欄和第4欄中所列的表明適任的方法和評價適任的標準，提供業已達到所要求的適任標準的證據。

5 按照第4段具備高級消防資格的海員，須按要求每5年提供證據，表明保持了承擔表A—VI/3第一欄所列的任務、職責和責任的適任能力。

6 就下列科目，締約國可以接受船上培訓和經驗記錄，作為保持表A—VI/3所要求的適任標準的證據：

.1 控制船上消防作業；

.1.1 以消防組織、策略和指揮為重點的海上和港內船舶消防程序；

.1.2 消防作業中的通信和協調；

.1.3 通風控制，包括排煙；

.1.4 燃油和電氣系統的控制；

.1.5 滅火過程中的危險（乾餾、化學反應、鍋爐上氣道、火）；

.1.6 與儲存和處置物料有關的火災預防措施和危害；

.1.7 對傷員的管理和控制；和

.1.8 與岸基消防隊員協調的程序。

**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.

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, fires);

.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.

表 A — VI/3  
高級消防的最低適任標準規範

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
管理船上消防作業	海上和港口中的消防程序，重點是組織、策略和指揮 使用水進行滅火、對船舶穩性的影響、注意事項和矯正程序 消防作業期間的通信和協調 透風控制，包括排煙 燃料和電氣系統的控制 消防過程的危害（乾餾、化學反應、鍋爐上氣道、火等等） 涉及危險貨物的消防 消防注意事項和材料（油漆等等）的積載和搬運有關的危害 傷員的管理和控制 與岸上消防人員進行協調的程序	實際演習和在經認可的真實培訓條件（如模擬的船上條件）下的訓練，在可能和可行時，在黑暗中進行	為控制火災採取的行動以對事故的準確評估為依據，並使用所有可利用的資料源  行動的優先順序、時機和次序適合事故的總需求並盡量減少船舶的損壞或潛在損壞、對人的損傷和對船舶操作有效性的影響  資料的傳輸是迅速、準確、完整和清楚的  在火災控制活動過程中，人身安全始終得到保護
組織和培訓消防隊	應急計劃的制定 消防隊人員的構成和分配 控制船舶各部分的火災的戰略和策略	實際演習和在經認可的真實培訓條件（如模擬的船上條件）下進行的訓練	消防隊的構成和組織確保應急計劃和程序的迅速和有效實施
檢查和檢修探火和滅系統和設備	探火系統；固定式滅火系統；便攜式和移動式滅火設備，包括裝置、泵和救助、救撈、生命保障、個人保護和通訊設備  法定和入級檢驗的要求	在現實的培訓環境中使用經認可的設備和系統的實際演習	所有探火和滅火系統和設備的操作有效性始終按性能規範和法規要求得到保持
調查和編輯火災事故報告	評估火災事故原因	在現實培訓環境中的實際演習	失火原因被查明，防禦措施的有效性得到評估

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 coordination during 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	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



Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	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		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
Inspect and service fire-detection and fire-extinguishing 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

**第A—VI/4節**

急救和醫護的強制性最低要求

被指定在船上提供急救的海員的適任標準

1 每位被指定在船上提供急救的海員須表明承擔表A—VI/4—1第1欄所列的任務、職責和責任的適任能力。

**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 表A—VI/4—1第2欄所列科目的知識水平，須足以能使被指定的海員在船上一旦發生可能的事故或疾病時立即採取有效的行動。

3 規則第VI/4條第1款規定的每位證書申請人須按照表A—VI/4—1第3欄和第4欄所列的表明適任的方法和評價適任的標準，提供已達到所要求適任標準的證據。

#### 被指定在船上負責醫護的海員的適任標準

4 每位被指定在船上負責醫護的海員須表明承擔表A—VI/4—2第1欄所列的任務、職責和責任的適任能力。

5 表A—VI/4—2第2欄所列科目的知識水平，須足以能使被指定的海員在船上一旦發生意外事故或疾病時立即採取有效的行動。

6 規則第VI/4條第2款規定的每位證書申請人須按照表A—VI/4—2第3欄和第4欄所列的表明適任的方法和評價適任的標準，提供已達到適任標準的證據。

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.

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.

#### 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\*.

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.

表 A — VI/4 — 1

#### 急救的最低適任標準規範

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
在船上發生事故或疾病時立即實施急救	急救箱 身體的構造和功能 船上的毒性危害，包括使用《危險品事故醫療急救指南》（《急救指南》）或其國家等效規定 對傷病員的檢查 脊椎損傷 燒傷、燙傷和冷、熱影響 骨折、脫臼和肌肉損傷 獲救人員的醫護 無線電醫務諮詢 藥理學 消毒 心臟停跳、溺水和窒息	評估從實際教學中取得的證據	對受傷的可能原因、性質和程度的識別是迅速、完整的，並符合現行的急救做法 始終將對自身和他人的損害風險降到最低程度 對傷病員狀況的治療是適當的，並符合公認的急救做法和國際導則

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

表 A – VI/4 – 2

**醫護最低適任標準規範**

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
向船上的傷病員提供治療	下列損傷的治療： .1 頭和脊椎損傷 .2 耳、鼻、喉、眼的損傷 .3 外部和內部出血 .4 燒傷、燙傷和凍傷 .5 骨折、脫臼和肌肉損傷 .6 傷口、傷口癒合和感染 .7 止痛 .8 縫合和上夾板技術 .9 急性腹痛處理 .10 小的外科治療 .11 包紮和上繃帶 護理： .1 一般原則 .2 護理	評估從實際訓練和演示中取得的證據 可行時，在醫院或類似機構的經認可的經驗	對症狀的識別係根據臨牀檢查和病史的概念 預防感染和傳染的工作是完整和有效的 個人態度平靜、自信和使人放心 對損傷和病情的治療是適當的，並符合所接受的醫務做法及有關的國家和國際醫療指南 藥的劑量和使用及藥物治療符合廠家的建議和所接受的醫療做法 迅速認識到病員病情變化的重要性

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
	疾病，包括： <ol style="list-style-type: none"> <li>.1 病情和緊急情況</li> <li>.2 性病</li> <li>.3 熱帶病和傳染病</li> </ol> 酒精和毒品濫用 牙病治療 婦科病、懷孕和分娩 對獲救人員的治療 海上死亡 衛生 疾病預防，包括： <ol style="list-style-type: none"> <li>.1 消毒、殺蟲、滅鼠</li> <li>.2 接種</li> </ol> 記錄和適用規章副本的保管： <ol style="list-style-type: none"> <li>.1 進行醫療記錄</li> <li>.2 國際和國家的海上醫務規章</li> </ol>		
參加經協調的船舶醫療援助方案	外部援助，包括： <ol style="list-style-type: none"> <li>.1 無線電醫務諮詢</li> <li>.2 傷病員的運輸，包括使用直升機撤離傷病員</li> <li>.3 在港口衛生當局或港口門診部合作下對患病海員的治療</li> </ol>		臨牀檢查程序是完整的，並符合收到的指示 撤離傷病員的方法和準備工作符合經認可的程序，並旨在最大程度地增加病人的康樂 無線電醫務諮詢的程序符合已建立的做法和建議

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	Care of casualty involving: <ol style="list-style-type: none"> <li>.1 head and spinal injuries</li> <li>.2 injuries of ear, nose, throat and eyes</li> <li>.3 external and internal bleeding</li> <li>.4 burns, scalds and frostbite</li> <li>.5 fractures, dislocations and muscular injuries</li> </ol>	Assessment of evidence obtained from practical instruction and demonstration Where practicable, approved practical experience at a hospital or similar establishment	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 Treatment of injury or condition is appropriate and conforms to accepted medical practice and relevant national and international medical guides

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>.6 wounds, wound healing and infection</p> <p>.7 pain relief</p> <p>.8 techniques of sewing and clamping</p> <p>.9 management of acute abdominal conditions</p> <p>.10 minor surgical treatment</p> <p>.11 dressing and bandaging</p> <p>Aspects of nursing:</p> <p>.1 general principles</p> <p>.2 nursing care</p> <p>Diseases, including:</p> <p>.1 medical conditions and emergencies</p> <p>.2 sexually transmitted diseases</p> <p>.3 tropical and infectious diseases</p> <p>Alcohol and drug abuse</p> <p>Dental care</p> <p>Gynaecology, pregnancy and childbirth</p> <p>Medical care of rescued persons</p> <p>Death at sea</p> <p>Hygiene</p> <p>Disease prevention, including:</p> <p>.1 disinfection, disinfestation, de-ratting</p> <p>.2 vaccinations</p> <p>Keeping records and copies of applicable regulations:</p> <p>.1 keeping medical records</p> <p>.2 international and national maritime medical regulations</p>		<p>The dosage and application of drugs and medication complies with manufacturers' recommendations and accepted medical practice</p> <p>The significance of changes in patient's condition is promptly recognized</p>

Column 1	Column 2	Column 3	Column 4
<b>Competence</b>	<b>Knowledge, understanding and proficiency</b>	<b>Methods for demonstrating competence</b>	<b>Criteria for evaluating competence</b>
Participate in coordinated 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 outpatient 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

**第A—VI/5節**

簽發船舶保安員熟練證書的強制性最低要求

**適任標準**

1 每位船舶保安員熟練證書的申請人，須表明承擔表A—VI/5第1欄所列的任務、職責和責任的適任能力。

2 表A—VI/5第2欄所列科目的知識水平須足以能使申請人擔任被指定的船舶保安員。

3 為達到所需理論知識、理解和熟練水平的培訓和經驗，須考慮到本規則第B—VI/5節的指導。

4 每位證書申請人須依照表A—VI/5第3欄和第4欄所列的表明適任的方法和評價適任的標準，提供已達到所要求的適任標準的證據。

**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.

表 A — VI/5

**船舶保安員最低適任標準規範**

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
保持和監督船舶保安計劃的實施	國際海上保安政策和政府、公司及被指定人員的責任的知識，包括與海盜及武裝搶劫有關的要素  船舶保安計劃、相關程序及保持記錄的目的和要素的知識，包括那些與海盜及武裝搶劫有關的內容  實施船舶保安計劃和報告保安事故的程序知識  海上保安等級和船上及港口設施環境中的相應保安措施和程序的知識	評估從經認可的培訓中獲得的證據或考試	程序和行動符合《國際船舶和港口設施保安規則》和經修正的《1974年國際海上人命安全公約》確定的原則  正確認定與保安有關的法規要求  對海上保安等級的變化實現即時應對狀態的程序  船舶保安員責任區內的通信清楚明瞭

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
	<p>進行船舶保安計劃規定的內部審核、現場檢查、監督和監控保安活動的要求和程序的知識</p> <p>關於向公司保安員報告內部審核、定期審核和保安檢查期間發現的任何缺陷和不符合項的要求和程序的知識</p> <p>修改船舶保安計劃所用的方法和程序的知識</p> <p>與保安有關的應急計劃和應對保安威脅或保安違規（包括維持船/港界面關鍵性作業的規定）的反應程序的知識，還包括與海盜及武裝搶劫有關的要素</p> <p>對海上保安術語和定義的使用知識，包括與海盜及武裝搶劫有關的部分</p>		
<p>評估保安風險、威脅和弱點</p>	<p>風險評估和評估工具的知識</p> <p>保安聲明在內的保安評估文件的知識</p> <p>用以規避保安措施的技術的知識，包括海盜及武裝搶劫分子使用的技術</p> <p>在非歧視的基礎上識別可能對保安有潛在風險的人員的知識</p> <p>識別武器、危險物質和裝置及其能導致的損害的知識</p> <p>密集人群管理和控制技術的知識，如適用</p> <p>處理敏感的保安信息和保安通信的知識</p> <p>實施和協調搜查的知識</p> <p>搜身和使用非侵入性檢查方法的知識</p>	<p>評估從經認可的培訓中獲得的證據，或經認可的經歷和考試，包括展示以下方面的能力的實際演示：</p> <p>.1 進行搜身</p> <p>.2 進行非侵入性檢查</p>	<p>程序和行動符合《國際船舶和港口設施保安規則》和經修正的《1974年國際海上人命安全公約》確定的原則</p> <p>對海上保安等級的變化實現即時應對狀態的程序</p> <p>船舶保安員責任區內的通信清楚明瞭</p>
<p>對船舶進行例行檢查，以確保適當的保安措施得到實施和保持</p>	<p>指定和監測限制區域的要求的知識</p> <p>控制船舶和船上限制區域的進出通道的知識</p> <p>對甲板區和船舶周圍區域進行有效監控的方法的知識</p> <p>與船上其他人員和有關港口設施保安員處理貨物和船舶物料有關的保安方面的知識</p> <p>人員及其物品上下船和在船上的進出口通道的控制方法的知識</p>	<p>評估從經認可的培訓中取得的證據或考試</p>	<p>程序和行動符合《國際船舶和港口設施保安規則》和經修正的《1974年國際海上人命安全公約》確定的原則</p> <p>對海上保安等級的變化實現即時應對狀態的程序</p> <p>船舶保安員責任區內的通信清楚明瞭</p>

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
確保適當地操作、測試和校準保安設備和系統 (如有)	各種保安設備和系統及其局限性的知識, 包括那些在發生海盜及武裝搶劫事件時可以使用的設備和系統  使用船舶保安報警系統的程序、說明和指南的知識  測試、校準和維護保安系統和設備的方法 (尤其是在海上) 的知識	評估從經認可的培訓中取得的證據或考試	程序和行動符合《國際船舶和港口設施保安規則》和經修正的《1974年國際海上人命安全公約》確定的原則
鼓勵保安意識和警惕性	相關公約、規則及海事組織通函中有關防海盜及武裝搶劫的培訓、演練和演習要求的知識  加強船上保安意識和警惕性的方法的知識  評估演練和演習效果的方法的知識	評估從經認可的培訓中取得的證據或考試	程序和行動符合《國際船舶和港口設施保安規則》和經修正的《1974年國際海上人命安全公約》確定的原則  船舶保安員責任區內的通信清楚明瞭

Table A-VI/5

## Specifications of minimum standard 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	<p>Knowledge of international maritime security policy and responsibilities of Governments, companies and designated persons, including elements that may relate to piracy and armed robbery</p> <p>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</p> <p>Knowledge of procedures to be employed in implementing a ship security plan and reporting of security incidents</p> <p>Knowledge of maritime security levels and the consequential security measures and procedures aboard ship and in the port facility environment</p> <p>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</p>	Assessment of evidence obtained from approved training or examination	<p>Procedures and actions are in accordance with the principles established by the ISPS Code and the SOLAS, 1974, as amended</p> <p>Legislative requirements relating to security are correctly identified</p> <p>Procedures achieve a state of readiness to respond to changes in maritime security levels</p> <p>Communications within the ship security officer's area of responsibility are clear and understood</p>



Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>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</p> <p>Knowledge of the methods and procedures used to modify the ship security plan</p> <p>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</p> <p>Working knowledge of maritime security terms and definitions, including elements that may relate to piracy and armed robbery</p>		
<p>Assess security risk, threat, and vulnerability</p>	<p>Knowledge of risk assessment and assessment tools</p> <p>Knowledge of security assessment documentation, including the Declaration of Security</p> <p>Knowledge of techniques used to circumvent security measures, including those used by pirates and armed robbers</p> <p>Knowledge enabling recognition, on a non-discriminatory basis, of persons posing potential security risks</p> <p>Knowledge enabling recognition of weapons, dangerous substances and devices and awareness of the damage they can cause</p> <p>Knowledge of crowd management and control techniques, where appropriate</p> <p>Knowledge in handling sensitive security-related information and security-related communications</p>	<p>Assessment of evidence obtained from approved training, or approved experience and examination, including practical demonstration of competence to:</p> <p>.1 conduct physical searches</p> <p>.2 conduct non-intrusive inspections</p>	<p>Procedures and actions are in accordance with the principles established by the ISPS Code and the SOLAS, 1974, as amended</p> <p>Procedures achieve a state of readiness to respond to changes in the maritime security levels</p> <p>Communications within the ship security officer's area of responsibility are clear and understood</p>

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>Knowledge of implementing and co-ordinating searches</p> <p>Knowledge of the methods for physical searches and non-intrusive inspections</p>		
Undertake regular inspections of the ship to ensure that appropriate security measures are implemented and maintained	<p>Knowledge of the requirements for designating and monitoring restricted areas</p> <p>Knowledge of controlling access to the ship and to restricted areas on board ship</p> <p>Knowledge of methods for effective monitoring of deck areas and areas surrounding the ship</p> <p>Knowledge of security aspects relating to the handling of cargo and ship's stores with other ship-board personnel and relevant port facility security officers</p> <p>Knowledge of methods for controlling the embarkation, disembarkation and access while on board of persons and their effects</p>	Assessment of evidence obtained from approved training or examination	<p>Procedures and actions are in accordance with the principles established by the ISPS Code and the SOLAS, 1974, as amended</p> <p>Procedures achieve a state of readiness to respond to changes in the maritime security levels</p> <p>Communications within the ship security officer's area of responsibility are clear and understood</p>
Ensure that security equipment and systems, if any, are properly operated, tested and calibrated	<p>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</p> <p>Knowledge of the procedures, instructions and guidance on the use of ship security alert systems</p> <p>Knowledge of the methods for testing, calibrating, and maintaining security systems and equipment, particularly whilst at sea</p>	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
Encourage security awareness and vigilance	<p>Knowledge of training, drill and exercise requirements under relevant conventions, codes and IMO circulars, including those relevant to anti-piracy and anti-armed robbery</p> <p>Knowledge of the methods for enhancing security awareness and vigilance on board</p> <p>Knowledge of the methods for assessing the effectiveness of drills and exercises</p>	Assessment of evidence obtained from approved training or examination	<p>Procedures and actions are in accordance with the principles established by the ISPS Code and the SOLAS, 1974, as amended</p> <p>Communications within the ship security officer's area of responsibility are clear and understood</p>

**第A—VI/6節**

對所有海員與保安有關的培訓和指導的強制性最低要求

**與保安有關的熟悉培訓的適任標準**

1 在按要求需遵守《國際船舶和港口設施保安規則》的海船上受僱或工作的所有非旅客人員，在被指派船上職責之前，須接受經認可的與保安有關的熟悉培訓，並考慮到B部分給予的指導，以便能夠：

- .1 報告保安事件，包括海盜或武裝搶劫的威脅或襲擊；
- .2 知道在確認存在保安威脅時要遵循的程序；和
- .3 參加與保安有關的應急和緊急程序。

2 在海船上工作或受僱的、承擔指定保安職責的海員，在被指派該職責之前，須接受與其職責和責任相關的保安方面的熟悉培訓，並考慮到B部分給予的指導。

3 與保安有關的熟悉培訓須由船舶保安員或具有同等資格的人員實施。

**保安意識培訓的適任標準**

4 在按要求需遵守《國際船舶和港口設施保安規則》與其業務有關的規定的海船上受僱或工作的、作為船舶在編人員但不承擔指定保安職責的海員，在被指派船上職責之前，須：

- .1 接受表A—VI/6—1列出的保安意識方面的、經認可的適當培訓或訓練；
- .2 按要求通過以下方式提供證據，證明已經達到所要求的適任標準，以承擔表A—VI/6—1第1欄所列的任務、職責和責任：
  - .2.1 按照表A—VI/6—1第3欄和第4欄所列的評價適任的方法和標準，表明適任能力；以及
  - .2.2 考試或連續評估，作為表A—VI/6—1第2欄所列科目的經認可的培訓計劃的組成部分。

**過渡性規定**

5 在2014年1月1日之前，在本節生效前已經開始經認可的海上服務的海員，須能夠通過下列各項確定他們滿足第4款的要求：

**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 在前三年內至少共有6個月的時間以船上人員的身份從事經認可的海上服務；或
- .2 履行過被認為等效於第5.1項所要求的海上服務的保安職能；或
- .3 通過經認可的測試；或
- .4 成功地完成經認可的培訓。

#### 承擔指定保安職責的海員的適任標準

6 每位被指定承擔包括防海盜和防武裝搶劫相關活動的保安職責的海員須表明承擔表A—VI/6—2第1欄所列的任務、職責和責任的適任能力。

7 表A—VI/6—2第2欄所列科目的知識水平須足以使每位證書申請人能夠執行船上指定的保安責任，包括防海盜和防武裝搶劫相關的活動。

8 每位證書申請人須依據下列各項提供已經達到所要求的適任標準的證據：

- .1 按表A—VI/6—2第3欄和第4欄所列的表明適任的方法和評估適任的標準，提供具有執行表A—VI/6—2第1欄列出的任務、職責和責任的適任能力；並且
- .2 考試或連續的評估，作為涵蓋表A—VI/6—2第2欄所列材料的經認可的培訓計劃的組成部分。

#### 過渡性規定

9 在2014年1月1日之前，在本節生效前已經開始經認可的海上服務的、承擔指定保安職責的海員，須能夠通過下列各項表明承擔表A—VI/6—2第1欄所列的任務、職責和責任的適任能力：

- .1 在前三年內至少共有6個月的時間以船上人員的身份從事經認可的海上服務；或
- .2 履行過被認為等效於第9.1項所要求的海上服務的保安職能；或
- .3 通過經認可的測試；或
- .4 成功地完成經認可的培訓。

- .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:

- .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.

表 A – VI/6 – 1  
保安意識的最低適任標準規範

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評估適任的標準
通過增強意識來加強海上保安	海上保安術語和定義的基本使用知識，包括可能與海盜和武裝搶劫有關的海上保安術語和定義的基本使用知識  國際海上保安政策和政府、公司及個人責任的基本知識  海上保安等級和它們對在海上和港口設施採取海上保安措施和程序的影響的基本知識  保安報告程序的基本知識  與保安相關的應急計劃的基本知識	評估從經認可的培訓或經認可的課程測試中獲取的證據	正確地確定有關增強海上保安的要求
識別保安威脅	規避保安措施的技術的基本知識  能夠確認包括海盜和武裝搶劫有關的事項在內的潛在保安威脅的基本知識  能夠幫助識別武器、危險物質和設備的基本知識，並清楚它們能夠造成的損壞  處理保安相關信息和保安相關通信的基本知識	評估從經認可的訓練或經認可課程的學習期間獲取的證據	正確地確定海上保安威脅
理解保持保安意識和警惕性的必要性和方法	有關的公約、規則和海事組織通函中關於培訓、演練和演習要求的基本知識，包括與防海盜和防武裝搶劫有關的知識	評估從經認可的訓練或經認可課程的學習期間獲取的證據	正確地確定與增強海上保安有關的要求

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 heightened 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	Assessment of evidence obtained from approved instruction or during attendance at an approved course	Requirements relating to enhanced maritime security are correctly identified

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
	<p>Basic knowledge of security reporting procedures</p> <p>Basic knowledge of security-related contingency plans</p>		
Recognition of security threats	<p>Basic knowledge of techniques used to circumvent security measures</p> <p>Basic knowledge enabling recognition of potential security threats, including elements that may relate to piracy and armed robbery</p> <p>Basic knowledge enabling recognition of weapons, dangerous substances and devices and awareness of the damage they can cause</p> <p>Basic knowledge in handling security-related information and security-related communications</p>	Assessment of evidence obtained from approved instruction or during attendance at an approved course	Maritime security threats are correctly identified
Understanding of the need for and methods of maintaining 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 approved course	Requirements relating to enhanced maritime security are correctly identified

## A — VI/6 — 2

## 負有指定保安職責的海員的最低適任標準規範

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
保持船舶保安計劃所設定的狀態	<p>海上保安術語和定義的使用知識，包括可能與海盜和武裝搶劫有關的術語的使用知識</p> <p>國際海上保安政策和政府、公司及個人的職責的知識，包括可能與海盜和武裝搶劫有關的部分的使用知識</p> <p>海上保安的級別和因此而對船上以及港口設施中保安措施和程序造成的影響的知識</p> <p>保安報告程序的知識</p> <p>有關公約、規則和海事組織通函規定的演練和演習的程序和要求的知識，包括與防海盜和防武裝搶劫等有關的使用知識執行檢查和檢驗、控制並監控船舶保安計劃列明的保安活動的程序的知識</p>	評估從經認可的訓練或經認可課程的學習期間獲取的證據	<p>程序和措施符合《國際船舶和港口設施保安規則》和經修正的《1974年國際海上人命安全公約》的要求</p> <p>正確確定與保安相關的法規要求</p> <p>職責範圍內的交流清楚明瞭</p>

第1欄	第2欄	第3欄	第4欄
適任	知識、理解和熟練	表明適任的方法	評價適任的標準
	保安相關的應急計劃和應對保安威脅或保安違規(包括保持船/岸界面關鍵操作的規定)的程序的知識,也包括那些可能與海盜和武裝搶劫有關的使用知識		
識別安全風險和威脅	保安文件的知識,包括保安聲明 規避保安措施的技術的知識,包括海盜和武裝搶劫分子使用的技術的知識 識別潛在保安危險的知識 識別武器、危險物質和裝置的知識,並清楚它們能夠造成的損壞 密集人群管理和控制技巧的知識(如適用) 處理與保安相關的信息和保安通信的知識 搜身和使用非侵入性檢查方法的知識	評估從經認可的訓練或經認可課程的學習期間獲取的證據	程序和措施符合《國際船舶和港口設施保安規則》和經修正的《1974年國際海上人命安全公約》的要求
對船舶進行定期的保安檢查	監控限制區域的技術的知識 控制上船通道和船上限制區域的知識 有效監控甲板區域和船舶周圍環境的方法的知識 與貨物和船舶物料相關的檢查方法的知識 人員及其物品上下船和在船上的進出口通道的控制方法的知識	評估從經認可的訓練或經認可課程的學習期間獲取的證據	程序和措施符合《國際船舶和港口設施保安規則》和經修正的《國際海上人命安全公約》的要求
正確使用保安設備和系統(如有)	包括發生海盜和武裝劫匪攻擊時可能使用的各種保安設備和系統及其局限性的一般知識 測試、校準和維護保安系統和設備的必要性的知識,特別是在海上的情況下	評估從經認可的訓練或經認可課程的學習期間獲取的證據	按照已建立的設備操作規程操作設備和系統並考慮到其局限性 程序和措施符合《國際船舶和港口設施保安規則》和經修正的《1974年海上人命安全公約》的要求

Table A-VI/6-2

**Specifications of minimum standard 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 out 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	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
	<p>Knowledge of maritime security levels and their impact on security measures and procedures aboard ship and in the port facilities</p> <p>Knowledge of security reporting procedures</p> <p>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</p> <p>Knowledge of the procedures for conducting inspections and surveys and for the control and monitoring of security activities specified in a ship security plan</p> <p>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</p>		
Recognition of security risks and threats	<p>Knowledge of security documentation, including the Declaration of Security</p> <p>Knowledge of techniques used to circumvent security measures, including those used by pirates and armed robbers</p> <p>Knowledge enabling recognition of potential security threats</p> <p>Knowledge enabling recognition of weapons, dangerous substances and devices and awareness of the damage they can cause</p> <p>Knowledge of crowd management and control techniques, where appropriate</p> <p>Knowledge in handling security-related information and security-related communications</p> <p>Knowledge of the methods for physical searches and non-intrusive inspections</p>	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



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	<p>Knowledge of the techniques for monitoring restricted areas</p> <p>Knowledge of controlling access to the ship and to restricted areas on board ship</p> <p>Knowledge of methods for effective monitoring of deck areas and areas surrounding the ship</p> <p>Knowledge of inspection methods relating to the cargo and ship's stores</p> <p>Knowledge of methods for controlling the embarkation, disembarkation and access while on board of persons and their effects</p>	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	<p>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</p> <p>Knowledge of the need for testing, calibrating, and maintaining security systems and equipment, particularly whilst at sea</p>	Assessment of evidence obtained from approved instruction or during attendance at an approved course	<p>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</p> <p>Procedures and actions are in accordance with the principles established by the ISPS Code and the SOLAS, 1974, as amended</p>

第 VII 章

關於可供選擇的發證標準

第A—VII/1節

可供選擇的證書的簽發

1 每位本公約附則第VII章規定的操作級證書的申請人，須按要求完成相應的教育和培訓，並達到表A—II/1或表A—III/1中規定的所有職能的適任標準。只要申請人相應地完成有關的附加教育和培訓，並達到表中所規定的有關職能的適任標準，可以增加表A—II/1或表A—III/1分別規定的職能。

2 每位負責指揮500總噸或以上船舶，或一旦指揮者不能履行職責時將代其指揮船舶的管理級證書的申請人，除須符合表A—II/1規定的適任標準外，須完成相應的教育和培訓，並達到表A—II/2規定的所有職能的適任標準。只要證書申請人完成相

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 standard of competence for all of the functions prescribed in table A-II/2.

關的附加教育和培訓並達到本部分第III章各表中規定的有關職能的適任標準，可以增加各表中所規定的職能。

3 每位負責主推進裝置為750千瓦或以上的船舶推進機器的管理級證書的申請人，或一旦負責推進機器的人不能履行職責時將代其履行此職責的管理級證書的申請人，除須符合表A—III/1規定的適任標準外，須完成有關的教育和培訓，並相應地達到表A—III/2規定的所有職能的適任標準。只要證書申請人完成相關的附加教育和培訓，並達到本部分第II章各表中規定的有關職能的適任標準，可以增加各表中所規定的職能。

4 每位支持級證書的申請人：

.1 航行或輪機工程支持級證書的申請人須完成相應的培訓，並達到表A—II/4或表A—III/4分別述及的職能適任標準。如申請人完成適當和相關的附加培訓，並達到表A—III/4或A—II/4所述的相關職能適任標準，可增加相應表中所規定的職能。

.2 申請高級值班水手，除須符合表A—II/4規定的適任標準外，還須完成相關培訓，並達到表A—II/5述及的所有職能的適任標準。如申請人完成適當和相關的附加培訓，並達到表A—III/4或A—III/5規定的相關職能的適任標準，可增加相應表中所規定的職能。

.3 申請高級值班機工，除符合表A—III/4規定的適任標準外，還須完成相關培訓，並符合表A—III/5述及的所有職能的適任標準。如申請人完成適當和相關的附加培訓，並達到表A—II/4或A—II/5規定的職能適任標準，可增加相應表中所規定的職能。

## 第A—VII/2節

### 對海員的發證

1 根據規則第VII/1條第1.3款的要求，每位按照第VII章規定申請表A—II/1和表A—III/1所列職能的操作級證書的申請人須：

.1 具有不少於12個月的經認可的海上服務資歷，該資歷須包括在合格的輪機部高級海員監督下至少6個月的機艙值班，如

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 standard 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 standards 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 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 standards 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 the 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

果要求航行職能，則須包括在合格的駕駛台值班高級海員監督下至少6個月的駕駛台值班資歷；並且

.2 在此服務期間，完成了經認可的、滿足第A—II/1和A—III/1節有關要求的船上培訓計劃，並在經認可的培訓記錄簿中記載。

2 每位按照第VII章規定申請表A—II/2和表A—III/2所列的組合職能的管理級證書的申請人，須具有下述與證書簽註上載明的職能有關的經認可的海上服務資歷：

.1 對於指揮船舶或負責船舶機械推進以外的人員—履行與規則第III/2條或規則第III/3條有關的操作級職責12個月；如要求有管理級的航行職能，則要有至少12個月履行操作級的駕駛台值班職責；

.2 對於指揮船舶和負責船舶機械推進的人員—作為持證高級海員，履行包括本節第2.1項的規定在內的與證書簽註上載明的職能有關的職責不少於48個月；其中24個月須履行表A—III/1所列的職能，24個月須履行表A—III/1和A—III/2所列的職能。

3 根據規則第VII/1條第1.3款要求，每位按照第VII章規定申請表A—II/4和表A—III/4中所列職能的支持級證書申請人須具有：

.1 不少於12個月的經認可的海上服務資歷，其中包括：

.1.1 不少於6個月的航行值班資歷，和

.1.2 不少於6個月的機艙值班資歷；或

.2 在上船前或在船上完成特殊培訓，並具有不少於4個月的經認可的海上服務資歷，其中包括：

.2.1 不少於2個月的航行值班資歷，和

.2.2 不少於2個月的機艙值班資歷；

.3 第3.1款或3.2款要求的海上服務、培訓、資歷須在具有相應資質的高級海員或普通海員的直接監督下進行。

4 根據規則第VII/1條第1.3款要求，每位根據第VII章規定申請表A—II/5和表A—III/5中所列職能的支持級證書申請人，

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 the support level in functions specified

在具有資格作為普通海員參與航行值班或機艙值班的同時，還須達到《培訓規則》第A—II/5和第A—III/5節規定的適任標準，並具有：

- 1 不少於30個月的經認可的海上服務資歷，其中包括：
  - 1.1 不少於18個月的高級值班水手資歷，和
  - 1.2 不少於12個月的高級值班機工資歷；或
- 2 完成經認可的培訓計劃，並具有不少於18個月的經認可的海上服務資歷，其中包括：
  - 2.1 不少於12個月的高級值班水手資歷；和
  - 2.2 不少於6個月的高級值班機工資歷；或
- 3 完成經認可的甲板和機艙綜合特殊培訓計劃，包括在甲板機艙綜合部門不少於12個月的經認可的海上服務資歷，其中包括：
  - 3.1 不少於6個月的高級值班水手資歷；和
  - 3.2 不少於6個月的高級值班機工資歷。

#### 第A—VII/3節

*關於簽發可供選擇的證書的原則*

(無條文)

### 第 VIII 章 關於值班的標準

#### 第A—VIII/1節

*適於值班*

- 1 主管機關須考慮到海員，特別是涉及船舶安全和保安操作職責的海員，由於疲勞所引發的危險。
- 2 為所有負責值班的高級海員或參與值班的普通海員以及涉及指定的安全、防污染和保安職責的人員提供的休息時間須不少於：
  - 2.1 任何24小時內最少10小時；以及
  - 2.2 任何7天內77小時。
- 3 休息時間可以分為至多不超過2個時間段，其中一個時間段須至少為6小時，連續休息時間段之間的時間不得超過14小時。

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
- 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 在緊急或在其他超常工作情況下不必保持第2款和第3款規定的關於休息時間的要求。緊急集合演練、消防和救生演練，以及國家法律法規和國際規則規定的演練，須以對休息時間的干擾最小並不導致海員疲勞的形式進行。

5 主管機關須要求將值班安排表張貼在易於查看處。該值班安排表須按照標準格式使用船舶工作語言和英語制定。

6 當海員處於待命狀態時，如機艙無人值守時，如果該海員的正常休息時間被臨時工作所干擾，則須對其休息時間予以適當的補償。

7 主管機關須要求使用船舶工作語言和英語按照標準格式保持對海員每天休息時間的記錄，以監督和核實是否符合本節的規定。海員須得到一份由船長或船長授權的人員以及海員自己所簽註的與其有關的記錄。

8 本節任何規定並不妨礙船長有權在本船舶、船上人員或貨物出現緊迫安全情況下，或對遇險的他船或人員提供協助的情況下，要求海員進行任何必要時間長度的工作。因此，船長可以中止海員休息時間的安排並要求其進行任何必要時間長度的工作，直至恢復正常狀態。一旦正常狀態恢復後，如可行，船長須儘快確保為在計劃休息時間內工作的海員提供足夠的休息時間。

9 締約國可允許上述第2.2項和第3款要求的休息時間的例外安排，但在任何情況下均不得少於任何7天內70小時休息時間。

第2.2項規定的每周休息時間的例外安排不許持續兩周以上。船上兩個例外時間段的間隔不得短於例外安排時間段的兩倍。

第2.1項規定的休息小時數可分為最多不超過三段，其中之一至少長達6小時，另外兩段的任何一段不得少於1小時。連續休息時間段的間隔不得短於14小時。在任何7天時間裏，例外安排不得超過兩個24小時的時間段。

例外安排須儘可能考慮到第B—VIII/1節有關防止疲勞的指導。

10 為防止酗酒，各主管機關須制定對正在履行安全、保安和海洋環境職責的船長、高級海員和其他海員的血液酒精濃度（BAC）不高於0.05%，或呼吸中酒精濃度不高於0.25mg/l，或與該酒精濃度相當的酒精量的限制。

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, 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.

**第A—VIII/2節***值班安排和應遵循的原則***第1部分—發證**

1 負責航行或甲板值班的高級海員的資格須完全符合第II章或第VII章有關航行或甲板值班職責的相應規定。

2 負責輪機值班的高級海員的資格須完全符合第III章或第VII章有關輪機值班職責的相應規定。

**第2部分—航次計劃****一般要求**

3 對預定的航次，須在研究所有相關資料後事先作出計劃，並須在航次開始前對設定的任何航線進行核實。

4 輪機長須與船長協商，預先確定計劃航次的需要，並考慮到對燃料、淡水、潤滑油、化學品、消耗品和其他備件、工具、供應品的需要以及任何其他需要。

**每一航次前的計劃**

5 每一航次前，各船船長須保證充分並恰當地運用本航次所必需的海圖和其他航海出版物，對自出發港至第一停靠港的預定航線作出計劃，所述海圖和航海出版物須包含永久性的或可預見的以及涉及船舶航行安全的航行限制和危險的準確、完整和最新的資料。

**計劃航線的核實和標繪**

6 在考慮了一切有關信息並核實了航線設計後，計劃航線應清晰地標繪在相應的海圖上，並在航行期間供值班高級海員隨時使用，但他應在使用之前核實將選擇的每一航向。

**偏離計劃航線**

7 如果在航行期間決定改變計劃航線的下一停靠港，或者因其他原因船舶需要大幅度地偏離計劃航線，那麼，應在大幅度地偏離原計劃航線之前計劃出經修改的航線。

**第3部分—值班的一般原則**

8 值班須基於下列駕駛台和機艙資源管理原則：

- .1 須確保根據情況合理地安排值班人員；
- .2 在安排值班人員時須考慮到當班人員的資格或體能的局限性；

**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.

**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 須確定值班人員對其個人角色、責任和團隊角色的理解；

.4 船長、輪機長和負責值班的高級海員須保持適當的值班，並最有效地使用可利用資源，如信息、裝置/設備和其他人員等；

.5 值班人員須熟悉裝置/設備的功能和操作，並熟練使用之；

.6 值班人員須理解信息及如何回應來自每一工作站/裝置/設備的信息；

.7 來自工作站/裝置/設備的信息須由所有值班人員適當共享；

.8 值班人員在任何情況下均應保持適當溝通方式的交流，以及

.9 對為安全而採取的行動產生任何懷疑時，值班人員應毫不猶豫地通知船長、輪機長和負責值班的高級海員。

#### 第4部分—海上值班

##### 適用於值班的一般原則

9 締約國須提請公司、船長、輪機長和值班人員注意遵守下列原則，以確保能始終保持安全值班。

10 各船船長有義務確保值班的安排足以保持安全航行值班或貨物值班。在船長的統一指揮下，負責航行值班的高級海員在他們值班期間負責船舶的安全航行，他們在這期間要特別關心避免碰撞和擱淺。

11 各船輪機長有義務與船長協商，確保值班的安排足以保持安全的輪機值班。

##### 保護海洋環境

12 船長、高級海員和普通海員須了解操作性或事故性的海洋環境污染的嚴重後果，並須採取一切可能的預防措施防止這類污染，特別是有關國際規則和港口規章範圍內的措施。

##### 第4—1部分—航行值班中應遵循的原則

13 負責航行值班的高級海員是船長的代表，並在任何時候，主要負責船舶的安全航行和遵守《1972年國際海上避碰規則》。

.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.

**瞭望**

14 須遵照經修正的《1972年國際海上避碰規則》第5條的規定隨時保持正規的瞭望，並須達到下列目的：

- .1 針對操作環境中發生的重大變化，利用視覺和聽覺以及所有其他可利用的手段保持連續戒備狀態；
- .2 全面判斷局面和碰撞危險、擱淺和其他航行危險；以及
- .3 探明遇險的船舶和飛機、船舶遇難人員、沉船、殘骸和其他礙航物。

15 瞭望人員必須全神貫注地保持正規瞭望，不得從事或分派給會影響瞭望的其他工作。

16 瞭望人員和舵工的職責是分開的，舵工在操舵時不應被視為瞭望人員，除非在某些小船上，操舵位置具有四周無遮擋的視野並且沒有夜視障礙或其他保持正規瞭望的妨礙。在下列情況下，負責航行值班的高級海員在白天可以是唯一的瞭望人員：

- .1 對局面作了充分估計，確信無疑這樣做是安全的；
- .2 充分考慮了包括但不限於下列一切相關因素：
  - 天氣情況；
  - 能見度；
  - 通航密度；
  - 鄰近的航行危險物；和
  - 航行在分道通航制內或附近時必要的注意力；以及
- .3 當局面發生任何變化而需要時，能立即召喚人員到駕駛台協助。

17 在判斷航行值班的組成是否足以保證能連續保持正規瞭望時，船長須考慮到所有相關因素，其中包括本規則本節所述的因素和以下因素：

- .1 能見度，天氣狀況和海況；
- .2 通航密度和發生在船舶航行區域內的其他活動；
- .3 當航行在分道通航制內或附近或其他定線制水域內時必要的注意力；

**Lookout**

14 A proper lookout shall be maintained at all times in compliance with rule 5 of the International Regulations 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 routing measures;



- .4 由船舶功能的性質、即時操縱要求和預期操縱所引起的額外工作量；
- .5 應召並被指定為值班人員的任何海員適於值班的情況；
- .6 船舶高級海員和普通海員的專業適任知識和自信心；
- .7 每位負責航行值班的高級海員的經驗和對船舶設備、規程和操縱能力的熟悉程度；
- .8 任何特定時刻船上發生的活動，包括無線電通信活動，和必要時召喚人員立即到駕駛台給予協助的可能性；
- .9 駕駛台的儀器和控制台（包括報警系統）的工作狀況；
- .10 舵和推進器的控制以及船舶操縱特性；
- .11 船舶尺度和指揮位置的視野；
- .12 駕駛台的結構，這種結構可能對值班人員利用視覺或聽覺探測外部情況所造成的妨礙程度；以及
- .13 本組織通過的涉及值班安排和適於值班的任何其他有關標準、程序和指南。

#### 值班安排

18 在決定可能包括合格的普通海員在內的駕駛台值班組成時，須特別考慮下列因素：

- .1 在任何時候，駕駛台不許無人值守；
- .2 天氣情況、能見度以及是白天或是黑夜；
- .3 接近航行危險物，可能需要負責航行值班的高級海員履行額外的航行職責；
- .4 助航儀器，如電子海圖顯示與信息系統（ECDIS）、雷達或電子定位儀以及任何其他影響船舶安全航行的設備的使用和工作狀態；
- .5 船上是否裝有自動操舵裝置；
- .6 是否要履行無線電職責；
- .7 裝備在駕駛台上的無人機艙（UMS）控制裝置、警報和指示器及其使用程序和局限性；以及
- .8 特殊的操作環境可能導致對航行值班的出乎尋常的任何要求。

- .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.

**交接班**

19 負責航行值班的高級海員，如果有理由相信來接班的高級海員不能有效地履行其職責，則不應向其交班，在這種情況下須通知船長。

20 接班的高級海員須確保本班人員完全能履行他們的職責，特別是他們對夜視的適應。接班的高級海員在其視力未完全調節到適應光線條件以前，不得接班。

21 接班的高級海員在接班前，須徹底搞清本船的推算船位或真船位，並核實本船的計劃航線、航向和航速以及無人機艙控制裝置（如有），還應注意在他們值班期間預計可能遇到的任何航行危險。

22 接班的高級海員須親自弄清以下有關情況：

- .1 船長對船舶航行有關的常規命令和其他特別指示；
- .2 船位、航向、航速和船舶吃水；
- .3 當時和預報的潮汐、潮流、氣象和能見度以及這些因素對航向和航速的影響；
- .4 當主機在駕駛台控制時操縱主機的程序；以及
- .5 航行局面，包括但不限於：
  - .5.1 正在使用或在值班期間有可能使用的所有航行和安全設備的工作狀況；
  - .5.2 電羅經和磁羅經的誤差；
  - .5.3 看到或知道附近船舶的位置及動態；
  - .5.4 在值班期間可能會遇到的有關情況和危險；以及
  - .5.5 船舶橫傾、縱傾、水的密度及船體下坐可能對龍骨下富裕水深的影響。

23 負責航行值班的高級海員換班時如果正在進行船舶操縱或其他避免危險的行動，則該高級海員的交班應推遲到這種操縱完成之後再進行。

**履行航行值班**

24 負責航行值班的高級海員須：

- .1 在駕駛台保持值班；
- .2 在正式交班之前，任何情況下均不得離開駕駛台；和
- .3 即使船長在駕駛台，繼續對船舶安全航行負責，直至被明確告知，船長已承擔此責任並且雙方都已相互理解為止。

**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 在值班期間，應使用任何可利用的、必要的助航儀器，以足夠頻繁的時間間隔對所航行的航向、船位和航速進行核對，以確保本船沿着計劃航線航行。

26 負責航行值班的高級海員須充分了解船上所有安全和航行設備的放置地點和操作方法，並須知道和考慮到這些設備在操作上的局限性。

27 負責航行值班的高級海員，不得被分派或擔負任何妨礙船舶安全航行的職責。

28 在使用雷達時，負責航行值班的高級海員須切記，在任何時候均須遵守適用的《1972年國際海上避碰規則》中的有關使用雷達的規定。

29 在需要時，負責航行值班的高級海員須毫不猶豫地使用舵、主機和音響信號裝置，但如有可能，須及時通知擬進行主機變速，或者按照適用的程序有效地使用裝配在駕駛台的無人機艙主機控制器。

30 航行值班的高級海員須知曉包括衝程在內的本船操縱性能，並須意識到其他船舶可能具有不同的操縱性能。

31 值班期間須保持對與航行有關的動態和活動的正規記錄。

32 特別重要的是負責航行值班的高級海員要確保隨時保持正規瞭望。在具有單獨海圖室的船上，必要時，為了履行必需的航行職責，該負責航行值班的高級海員可以短時間進入海圖室。但是，他須首先確信這樣做是安全的，並保持正規瞭望。

33 在條件允許和可行的情況下，特別是在危險狀況預計影響航行之前，須對船上的航行設備在海上進行頻繁的操作測試。適當時須對這些測試做好記錄。這種測試還須在到港前和出港前進行。

34 負責航行值班的高級海員須作定期檢查，以確保：

- .1 舵工或自動舵正操作在正確的航向上；
- .2 標準羅經的誤差每班至少測定一次，如可能，在任何大幅度改向後也應測定；標準羅經和陀螺羅經應經常進行核對，羅經復示儀應與主羅經同步；
- .3 自動舵應至少每班手動測試一次；
- .4 航行燈和信號燈及其他航行設備正常工作；

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;
- .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 無線電設備按照本節第86款規定正常工作；以及

.6 無人機艙（UMS）控制裝置、報警和指示器工作正常。

35 負責航行值班的高級海員須切記始終遵守《1974年國際海上人命安全公約》中適用規定的必要性。航行值班的高級海員須考慮到：

.1 使舵工就位並及時改為手動操舵以使潛在的危險局面轉危為安的必要性；以及

.2 使用自動舵的船舶，如讓局面發展到使負責航行值班的高級海員得不到幫助以致不得不中斷瞭望而採取緊急措施，那是非常危險的。

36 航行值班的高級海員須完全熟悉所裝備的所有電子助航儀器的使用方法，其中包括其性能及局限性。適當時，須使用每一種助航儀器並須切記回聲測深儀是一種很有價值的助航儀器。

37 遇到或預料到能見度不良時，以及在擁擠水域的全部時間裏，負責航行值班的高級海員須使用雷達，並注意其局限性。

38 負責航行值班的高級海員須確保所使用的量程以足夠頻繁的時間間隔進行轉換，以便能及早地發現回波，須切記小的或微弱的回波有可能探測不到。

39 每當使用雷達時，負責航行值班的高級海員須選擇適當的量程，仔細觀察顯示器，並須確保有充分的時間進行標繪或進行系統的分析。

40 在下列情況下，負責航行值班的高級海員須立即通知船長：

.1 遇到或預料到能見度不良時；

.2 對通航狀況或他船的動態發生疑慮時；

.3 對保持航向感到困難時；

.4 到預定時間未能看到陸地、航標或測不到水深時；

.5 意外地看到陸地、航標或水深突然發生變化時；

.6 主機、推進機械的遙控裝置、舵機或者任何重要的航行設備、報警或指示儀發生故障時；

.7 無線電設備發生故障時；

.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. 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 在惡劣天氣中，懷疑可能有天氣損害時；
- .9 船舶遇到任何航行危險時，諸如冰或海上棄船；以及
- .10 其他緊急情況或感到懷疑時。

41 儘管在上述情況下要求立即通知船長，但在情況需要時，負責航行值班的高級海員為了船舶安全，須毫不猶豫地採取果斷行動。

42 負責航行值班的高級海員須給予全體值班人員一切適當的指示和信息，以確保包括正規瞭望在內的安全值班得以保持。

#### 在不同條件下和不同水域內的值班

##### 良好天氣

43 負責航行值班的高級海員須頻繁地測定駛近船舶精確的羅經方位，以此作為及早發現碰撞危險的方法，並須切記有時方位變化明顯但碰撞危險依然存在，特別是在駛近大型船舶或拖帶船隊時或是在近距離接近他船時。負責航行值班的高級海員還須按適用的《1972年國際海上避碰規則》及早採取積極的行動，隨後還須檢查此種避碰行動是否取得預期的效果。

44 天氣良好時，只要有可能，負責航行值班的高級海員須進行雷達操作。

##### 能見度不良

45 遇到或預料到能見度不良時，負責航行值班的高級海員的首要職責是遵守《1972年國際海上避碰規則》的相應條款，特別是有關鳴放霧號，以安全航速航行，並使主機處於立即可操作的準備狀態的條款。此外，負責航行值班的高級海員還須：

- .1 通知船長；
- .2 佈置正規的瞭望；
- .3 顯示航行燈；並且
- .4 操作和使用雷達。

##### 黑夜期間

46 船長和負責航行值班的高級海員在安排瞭望時須充分考慮到駕駛台設備和可供使用的助航儀器及其局限性、程序和所實施的安全措施。

##### 沿海和擁擠水域

47 須使用船上適合於該地區並依據最新資料改正過的最大比例尺海圖，須以頻繁的時間間隔測定船位，環境許可時須採取

- .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 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,

多種方法定位。使用電子海圖顯示與信息系統 (ECDIS) 時，須適當使用代碼 (比例尺) 的電子海圖，並以適當的時間間隔通過獨立的定位方法對船位進行核查。

48 負責航行值班的高級海員須確切地辨認所有相關的航行標誌。

#### *有引航員在船時的航行*

49 儘管引航員有其職責和義務，但他們在船上引航時並不解除船長或負責航行值班的高級海員對船舶安全所負的職責和義務。船長和引航員須交換有關航行程序、當地情況和船舶性能等信息。船長和負責航行值班的高級海員須與引航員密切配合，並保持對船舶的位置和動態進行準確的核對。

50 如果負責航行值班的高級海員對引航員的行動或意圖有所懷疑，他須要求引航員予以澄清，如仍有懷疑，須立即報告船長，並在船長到達之前採取必要的行動。

#### *船舶在錨泊中*

51 如果船長認為必要，船舶在錨泊情況下也須保持連續的航行值班。船在錨泊時，負責航行值班的高級海員須：

- .1 儘快地測定船位並標繪在相應的海圖上；
- .2 條件允許時，以足夠頻繁的時間間隔，利用固定航標或岸上容易辨認的物標測定方位，以校核船舶是否安全地保持在錨位上；
- .3 確保保持正規的瞭望；
- .4 確保定時巡視船舶；
- .5 觀察氣象和潮汐情況以及海況；
- .6 倘若船舶走錨，通知船長並採取一切必要措施；
- .7 確保主機和其它機器按照船長指示處於準備狀態；
- .8 如果能見度惡化，通知船長；
- .9 確保船舶按照適用的規定顯示相應的號燈、號型並鳴放相應的聲號；並且
- .10 採取措施防止船舶污染環境，並遵守適用的防止污染規則。

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.

**第4—2部分—輪機值班中須遵循的原則**

52 本節中第4—2、5—2和5—4部分所使用的“輪機值班”一詞，係指一個人或組成值班的一組人，或一位高級海員的一個責任時間段，在此時間段內，可以要求也可以不要求該高級海員親臨機艙。

53 負責輪機值班的高級海員是輪機長的代表，在任何時候，主要負責對影響船舶安全的機械設備進行安全有效的操作和保養，並按要求負責輪機值班責任範圍內的一切機械和設備的檢查、操作和測試。

**值班安排**

54 在任何時候，輪機值班的組成須足以確保影響船舶運行的所有機器，無論是自動還是手動方式均能安全運轉，並適合於當時的環境和條件。

55 在決定包括合格的普通海員在內的輪機值班的組成時，下列準則須特別予以考慮：

- .1 船舶類型以及機器類型和狀況；
- .2 始終對影響船舶安全運行的機器予以有效的監管；
- .3 由於天氣、冰、被污染水域、淺水、各種緊急情況、控損或減少污染等情況而採用的任何特殊操作方式；
- .4 輪機值班人員的資格和經驗；
- .5 人命、船舶、貨物和港口的安全以及環境保護；
- .6 遵守國際、國家和當地的規章；以及
- .7 保持船舶的正常營運。

**交接班**

56 負責輪機值班的高級海員，如有理由認為接班的高級海員顯然不能有效地履行其值班職責，不得向其交班。在這種情況下須通知輪機長。

57 輪機值班接班的高級海員須保證本班人員顯然完全能有效地履行其職責。

58 輪機值班接班的高級海員在接班之前，須至少徹底搞清以下各項：

- .1 輪機長對船舶有關系統和機器操作的常規命令和特別指示；

**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;
- .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 對機器和各系統進行的一切工作的性質和參與人員以及潛在的危險；

.3 污水艙、壓載艙、污油艙、備用艙、淡水櫃、糞便櫃的水或渣的液面高度和可能情況，以及對其中貯存物的使用和處理的特殊要求；

.4 備用艙、沉澱櫃、日用櫃和其他燃油貯存設施中的燃油液面高度和狀況；

.5 有關衛生系統處理的特殊要求；

.6 各種主、輔機系統（包括配電系統）的狀況和操作模式；

.7 如果適用，監視和控制台設備及其手動操作設備的狀況；

.8 如果適用，自動鍋爐控制裝置諸如火焰安全控制系統、限位控制系統、燃燒控制系統、燃油供給控制系統和其他與蒸汽鍋爐操作有關設備的狀況和操作模式；

.9 由於惡劣天氣、冰、被污染的水或淺水引起的任何潛在不利條件；

.10 由於設備故障或不利的船舶條件而採取的特殊操作模式；

.11 機艙普通海員涉及其所指定職責的報告；

.12 消防設備的可用性；以及

.13 輪機日誌的填寫情況。

#### 履行輪機值班

59 負責輪機值班的高級海員須保證保持確定的值班安排，並須確保參加機艙值班的普通海員根據指示在推進機械和輔助設備安全和有效操作方面給予協助。

60 儘管輪機長在機艙，負責輪機值班的高級海員仍須繼續對機艙工作負責，直至被明確告知，輪機長已承擔此責任並且雙方都已相互理解為止。

61 輪機值班的所有成員都須熟悉所指派的值班職責。此外，每位成員對其服務的船舶須具有下列知識：

.1 內部通信系統的使用；

.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 從機器處所逃生的路線；

.3 機艙報警系統和辨別各種報警裝置的能力，特別是滅火介質警報；以及

.4 機艙的消防設備和損害控制裝置的數量、位置和種類，以及它們的使用方法和須遵守的各種安全預防措施。

62 對任何運轉失常、預料將發生故障或需特殊維護的機器，連同已經採取的措施須做好記錄。如果需要，須對進一步採取的措施作出計劃。

63 對於有人值守機艙，負責輪機值班的高級海員須隨時能立即操作推進設備以應對變向和變速的需要。

64 對於週期性無人值守機艙，被指定負責輪機值班的高級海員在被召喚時須立即到達機艙。

65 駕駛台的所有命令須迅速執行。對主推進裝置的變向或變速須做好記錄，除非主管機關認為由於特定船舶的尺度或特性使這種記錄行不通。主推進裝置的控制在手動操作時，負責輪機值班的高級海員須確保不間斷地處於準備或操作狀態。

66 對所有機器的日常保養和維護須給予足夠的注意，其中包括機械、電氣、電子、液壓和空氣系統，它們的控制裝置和相關的安全設備、所有居住的艙室服務系統設備以及物料和備用品的使用情況記錄。

67 輪機長須保證將值班時擬進行的預防性保養、損害控制或修理工作等通知負責輪機值班的高級海員。對於擬處理的並屬於值班責任內的所有機器，負責輪機值班的高級海員須負責其隔離、旁通和調整，並將已進行的所有工作做好記錄。

68 當機艙處於準備狀態時，負責輪機值班的高級海員須保證使所有在操作時可能用到的機器和設備處於隨時可用狀態，並使電力有充足的富餘量，以用於舵機和其他需要。

69 負責輪機值班的高級海員不得被指派或承擔任何可能妨礙他們監管主推進系統及附屬設備職責的其他任務。他們須使主推進裝置和輔助系統處於不間斷的監管之下，直至正式交班為止，並須定時檢查其負責的機器。他們還須確保在機艙和舵

.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 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.

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

機間進行足夠的巡視，以便觀察和報告設備的故障和損壞，履行或指導日常調整、要求的保養和其他必要的工作。

70 負責輪機值班的高級海員須指導任何其他的輪機值班人員，告知他們有關對機器會造成不利影響或危及人命或船舶安全的潛在危險情況。

71 負責輪機值班的高級海員須確保機器處所的值班處於監管之下，一旦值班人員喪失值班能力，須安排替代人員。輪機值班不能使機器處所無人監管，否則將妨礙機艙裝置或操縱閘的手動操作。

72 負責輪機值班的高級海員須採取必要措施，以遏制由於設備損壞、失火、進水、破裂、碰撞、擱淺和其他原因所引起損害的影響。

73 在下班前，負責輪機值班的高級海員須保證發生在本輪機值班期間的有關主機和輔機的事件都有適當的記錄。

74 在進行所有預防性保養、損害控制或維修工作時，負責輪機值班的高級海員須與負責維修工作的高級海員配合。這種配合須包括但不限於如下內容：

- .1 對要進行處理的機器加以隔離和旁通；
- .2 在維修期間，將未維修的設備調節至充分和安全地發揮功能的狀態；
- .3 為了便於接班的高級海員工作和做好記錄，在輪機日誌或其他適當的文件上載明維修保養的設備、參加人員以及何人採取何種安全措施；以及
- .4 必要時對修理過的機器或設備進行測試，並將其投入使用。

75 負責輪機值班的高級海員須確保，一旦自動設備失靈時，在機艙從事維修的普通海員，可協助對機器進行手動操作。

76 負責輪機值班的高級海員須切記，由於機器故障引起的速度變化，或任何操舵失效，可能會危及船舶和海上人命安全。萬一機艙發生火災，採取緊急行動，可能導致船速下降，舵機瞬間失靈，船舶推進系統停止運轉，或發電機發生任何變化或類似威脅安全的情況，須立即通知駕駛台。這種通知，如有可能，須在發生變化之前完成，以便使駕駛台有最充分的時間採取一切可能的行動以避免潛在的海上事故。

77 在下述情況下，負責輪機值班的高級海員須立即通知輪機長：

- .1 當機器發生故障或損壞，可能會危及船舶的安全營運時；

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 cooperate 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 發生任何故障時，而這些故障確認可能會導致推進機械、輔機或監控和調節系統的損壞或破壞；以及

.3 發生緊急情況或對於採取何種措施或決定無把握時。

78 除在上述情況下需要報告輪機長以外，為了船舶、機器和海員的安全，負責輪機值班的高級海員須視情況需要，立即毫不猶豫地採取措施。

79 負責輪機值班的高級海員須將保證安全值班的一切適當的指示和信息告知值班人員。作為保持安全值班一部分的附帶任務來完成的機器日常保養工作須納入值班的日常工作之內。詳細的維修工作，包括對全船的電氣、機械、液壓、氣動或適用的電子設備的修理，須在負責輪機值班的高級海員和輪機長知道的情況下進行，對這些修理須做好記錄。

#### 在不同條件下和不同水域內的輪機值班

##### 能見度不良

80 負責輪機值班的高級海員須確保提供鳴放聲號所使用的穩定的空氣或蒸汽壓力，並隨時執行駕駛台的有關改變船速或改變航向的任何命令。此外，還須保證操縱用的輔機隨時可用。

##### 沿海和擁擠水域

81 負責輪機值班的高級海員，當得知船舶位於擁擠水域時，須確保所有涉及船舶操縱的機器能即刻置於手動操作模式。負責輪機值班的高級海員還須保證有足夠的備用電力用於操舵和滿足其他操縱要求。應急操舵和其他輔助設備須處於隨時可用狀態。

##### 船在錨泊中

82 在開敞錨地，輪機長須與船長協商是否仍保持與在航時同樣的輪機值班。

83 當船舶在開敞的港外錨地或任何其他的實際上是“在海面”錨泊的情況下，負責輪機值班的高級海員須保證：

- .1 保持有效的輪機值班；
- .2 定時檢查所有正在運行和處於準備狀態的機器；
- .3 按駕駛台命令使主機和輔機保持準備狀態；

.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.

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 採取措施，防止本船污染環境並遵守適用的防止污染規則；以及

.5 所有損害控制和消防系統均處於準備狀態。

#### 第4—3部分—無線電值班中須遵循的原則

##### 總則

84 主管機關須提請公司、船長和無線電值班人員注意遵守下列規定，以保證船舶在海上時，保持足夠的無線電安全值班。在執行本規則時，須考慮到《無線電規則》。

##### 值班安排

85 在決定無線電值班安排時，各海船船長須：

.1 保證按照《無線電規則》和《國際海上人命安全公約》的有關規定來保持無線電值班；

.2 保證無線電值班的首要職責不會受到與船舶安全移動和安全航行無關的無線電通信的嚴重影響；並且

.3 考慮到船上安裝的無線電設備及其工作狀態。

##### 履行無線電值班

86 履行無線電值班職責的無線電操作員須：

.1 保證在《無線電規則》和《國際海上人命安全公約》指定的頻率上保持值班；並且

.2 在值班時，定時檢查無線電設備及其電源的工作狀況，並且在發現設備故障時報告船長。

87 須遵守《無線電規則》及《國際海上人命安全公約》有關無線電報或無線電日誌的要求。

88 在發生遇險事件時，按照《無線電規則》和《國際海上人命安全公約》保持無線電記錄是指定擔負無線電通信首要職責的無線電操作員的責任。下列事項及其發生時間須予以記錄：

.1 遇險、緊急和安全無線電通信概要；

.2 與無線電服務有關的重要事件；

.3 視情況，每天至少一次船位；以及

.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 無線電裝置包括電源狀況的概要。

89 無線電記錄須保留在遇險通信工作地點，並須使其用於：

.1 船長檢查；和

.2 主管機關任何經授權官員和根據本公約第X條款實施監督的任何經正式授權官員的檢查。

## 第5部分—港內值班

### 所有值班須遵循的原則

#### 總則

90 在正常情況下，在港內安全繫泊或錨泊的任何船上，為了安全目的，船長須安排保持適當而有效的值班。對於具有特種型式推進系統或輔助設備的船舶以及對於載有有害、危險、有毒或高度易燃物質或其他特種貨物的船舶，可能有必要做出特殊要求。

#### 值班安排

91 船舶在港內時，保持甲板值班的安排須始終足以：

.1 確保人命、船舶、港口和環境的安全以及所有與貨物作業有關的機械的安全操作；

.2 遵守國際的、國家的及當地的規章；以及

.3 保持船上秩序和日常工作。

92 船長須根據繫泊情況、船舶種類和值班特點決定值班人員的組成和值班的持續時間。

93 如船長認為必要，須安排一名合格的高級海員負責甲板值班。

94 為了有效的值班，須安排必要的設備。

95 輪機長經與船長協商，須保證輪機值班的安排足以保持安全的在港輪機值班。在決定輪機值班人員的組成（可能包括相應的機艙普通海員在內）時，須考慮到下列各項：

.1 在所有推進功率為3000kW及以上的船舶上，須始終有一名負責輪機值班的高級海員；

.2 在推進功率為未滿3000kW的船舶上，船長酌情考慮並與輪機長協商後，可不安排高級海員負責輪機值班；以及

.3 高級海員在負責輪機值班期間不得被指派或承擔任何會妨礙其監控船上機械系統職責的其他任務或職責。

.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.

## 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.

**交接班**

96 負責甲板或輪機值班的高級海員如有任何理由認為接班的高級海員顯然不能有效地履行其職責，則不得交班。在這種情況下須根據情況通知船長或輪機長。接班的高級海員須確保本班人員完全能有效地履行他們的職責。

97 在辦理甲板或輪機值班的交接班時，如正在進行重要操作，除船長或輪機長另有指令外，該操作須由交班的高級海員完成。

**第5—1部分—甲板值班的交接班**

98 在交班前，負責甲板值班的高級海員須告知接班的高級海員下列事項：

.1 泊位水深、船舶吃水、高潮和低潮的水位和時間、繫纜情況、拋錨和拋出的錨鏈情況以及對船舶安全至關重要的其他繫泊情況；主機情況和應急使用的可行性；

.2 船上擬進行的所有工作；已裝貨物或餘留貨物以及卸船後殘存物的性質、數量及其處理狀況；

.3 污水櫃和壓載艙的水位高度；

.4 正在顯示或鳴放的信號或燈號；

.5 要求在船的海員人數和其他人員的在船情況；

.6 消防設備的情況；

.7 任何特殊的港口規定；

.8 船長的常規命令和特殊命令；

.9 在發生緊急情況或需要援助時，船舶與岸上人員包括與港口當局之間可供使用的通信線路；

.10 有關船舶、海員、貨物安全或防止環境污染的任何其重要情況；以及

.11 向有關當局報告由於船舶行為造成環境污染的程序。

99 接班的高級海員在承擔甲板值班任務前須核實：

.1 繫泊纜繩或錨鏈是恰當的；

**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 顯示或鳴放的信號或燈號是正確的；

.3 安全措施和防火規定是維持着的；

.4 他們已知道正在裝卸的任何有害或危險貨物的性質，和在發生溢漏或火災時須採取的相應措施；以及

.5 外界情況或環境沒有危及本船，本船也不危及其他船舶。

#### 第5—2部分—輪機值班的交接班

100 在交接班前，負責輪機值班的高級海員須告知接班的高級海員下列事項：

.1 當日的常規命令，任何有關船舶操作、功能維護以及船舶機械或控制設備的修理的特殊命令；

.2 對船舶機械和有關係統進行的所有修理工作的性質，參與人員和潛在的危險；

.3 污水櫃、壓載艙、污油艙、糞便櫃、備用櫃內的水位和殘渣的液面高度及狀態，以及對內存物的使用或處理的特殊要求；

.4 有關衛生系統處理的任何特殊要求；

.5 移動式滅火裝置和固定式滅火裝置以及火情探測系統的狀況和準備狀態；

.6 獲准在船上從事機器修理的人員，其工作地點和修理項目，以及其他獲准的船上人員和所需要的海員；

.7 任何港口有關船舶排出物、消防要求以及船舶防備的規章，特別是出現潛在的惡劣天氣期間；

.8 在發生緊急情況或需要援助時，船上與岸上人員包括與港口當局之間可供使用的通信線路；

.9 有關船舶、海員、貨物的安全或防止環境污染的任何其他重要情況；以及

.10 向有關當局報告由於輪機部的活動造成環境污染的程序。

101 接班的高級海員在承擔輪機值班的任務前，須徹底弄清交班高級海員充分告知的上述事項，同時還須：

.2 the appropriate signals or lights are properly exhibited or sounded;

.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 熟悉現有的和可利用的電、熱和照明來源及其分配情況；
- .2 了解船上的燃油、潤滑油及所有淡水供給的可用性和有關情況；並且
- .3 儘可能將船舶和機器準備妥當，以便在需要時備車或應付緊急狀況。

#### 第5—3部分—履行甲板值班

102 負責甲板值班的高級海員須：

- .1 以適當的時間間隔巡查全船；
- .2 特別要注意：
  - .2.1 舷梯、錨鏈或繫泊纜繩的狀況和固定情況，特別是在轉潮時和在有較大潮差的泊位上，必要時須採取措施以確保它們處於正常工作狀態；
  - .2.2 船舶吃水、龍骨下富裕水深和船舶的一般狀態，在裝卸貨或壓載時防止發生危險的橫傾和縱傾；
  - .2.3 天氣情況和海況；
  - .2.4 遵守所有有關安全和防火方面的規定；
  - .2.5 污水櫃和水櫃中水位的高度；
  - .2.6 所有在船人員及其所在地點，特別是那些在遠處或封閉處所內的人員；以及
  - .2.7 視情況顯示或鳴放的燈號和信號；
- .3 在壞天氣或收到風暴警報時，採取必要措施以保護船舶、船上人員和貨物；
- .4 採取各種預防措施以防止船舶對環境的污染；
- .5 在危及船舶安全的緊急情況下，鳴放警報，通知船長，採取一切可能的措施以防止對船舶、貨物和船上人員造成損害。如有必要，要求岸上當局或附近船舶給予援助；
- .6 掌握船舶的穩性情況，以便在失火時能建議岸上消防當局向船上噴水的大致水量而不致危及船舶；
- .7 向遇險的船舶或人員提供援助；
- .8 當擬轉動推進器時，採取必要的預防措施以防止發生事故或損壞；並且

- .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 將對船舶有影響的重要事項記入相應的日誌。

#### 第5—4部分—履行輪機值班

103 負責輪機值班的高級海員須特別注意：

- .1 遵守在他值班範圍內的一切命令、特殊操作程序和關於各種危險情況及其防範措施的規定；
- .2 儀錶和控制系統，對運行中的所有電力供應、部件和有關係統的監測；
- .3 為防止違反地方當局有關防污染規定而採用的技術、方法和程序；以及
- .4 污水的情況。

104 負責輪機值班的高級海員：

- .1 在緊急情況下，當他認為情況需要時，鳴放警報並採取一切可能的措施以防止對船舶、船上人員和貨物造成損害；
- .2 了解甲板部高級海員在裝卸貨物時對必要設備的需求情況，以及對壓載和其他船舶穩性控制系統的附加要求；
- .3 經常巡查以判定可能發生的設備故障或損壞，並立即採取補救措施以確保船舶、貨物作業、港口和周圍環境的安全；
- .4 保證在其職責範圍內採取必要的預防措施，以避免發生事故或對船上的各種電氣、電子、液壓、氣動和機械系統造成損壞；以及
- .5 保證對影響船上機械運轉、調節或修理的所有重要事項做好完整的記錄。

#### 第5—5部分—載運危險貨物船舶的在港值班

##### 總則

105 載運危險貨物船舶的船長，不論貨物是易爆的、易燃的、有毒的、危害健康的、或是污染環境的，均須確保保持安全值班安排。對載運散裝危險貨物的船舶，這種值班須由已在船上的一名或幾名合格的高級海員及合適的普通海員隨時待命，即使當船舶安全地在港繫泊或錨泊也是如此。

106 對於載運非散裝危險貨物的船舶，船長須充分注意這些危險貨物的性質、數量、包裝和積載以及船上、水上和岸上的任何特殊情況。

.9 enter, in the appropriate log-book, all important events affecting the ship.

#### 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.

**第5—6部分—貨物值班**

107 負責貨物作業計劃和實施的高級海員須保證，通過對特定風險的控制，確保該作業的安全實施，包括涉及非船舶人員的作業。”

2 《海員培訓、發證和值班規則》B部分由以下文字替代：

**“B 部分****關於《培訓公約》及其附則條款的建議性指導****引言**

1 《培訓規則》本部分所含的建議性指導，旨在協助《培訓公約》締約國和涉及實施、應用或採取其措施的各方以統一的方式充分和徹底實施本公約。

2 所建議的措施是非強制性的，所舉出的例證僅為說明如何滿足本公約的某些要求。不過，這些建議總體上代表了針對有關問題的解決方法，這些方法已在國際海事組織內部通過討論進行了統一，並視情況與國際勞工組織、國際電信聯盟和世界衛生組織進行過協商。

3 遵守本部分的建議將有助於本組織實現其所有船旗國的船舶和所有國籍的海員保持實際可行的最高適任標準的目標。

4 除了對本公約附則的某些規則提供指導以外，本部分對其某些正文條款提供指導。因此，本部分各章節的編號同該公約的條款和規則的編號是相對應的，如同A部分那樣，每節內容可分為若干帶編號的部分和段落，但這些編號僅用於該文本。

**關於《培訓公約》條款的指導****第B—I節***關於公約的一般義務的指導*

(無條文)

**第B—II節***關於定義和說明的指導*

1 本公約第II條中的定義以及其附則第I/1條中的定義和說明同樣適用於本規則A部分和B部分所使用的術語。僅適用於本規則條款的補充定義列於第A—I/1節中。

2 第II條(c)款中所出現的“證書”的定義規定了三種可能性：

.1 主管機關可簽發證書；

**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.”

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.

2 The definition of *certificate* appearing in article II (c) provides for three possibilities:

.1 the Administration may issue the certificate;

.2 主管機關可授權簽發證書；或

.3 主管機關可按規則第I/10條承認另一締約國所簽發的證書。

### 第B—III節

#### 關於本公約適用範圍的指導

1 雖然按照第II條第(h)款中關於“漁船”的定義，本公約不適用於從事捕撈魚、鯨、海豹、海象或其他海洋生物資源的船舶，但不從事捕撈活動的船舶不能享受這一免除。

2 本公約不適用於一切構造簡單的木船，包括木帆船。

### 第B—IV節

#### 關於資料交流的指導

1 第IV條第(1)(b)款中的“如適用”一詞旨在包括：

.1 承認另一締約國所簽發的證書；或

.2 如可行，在承認另一締約國所簽發的證書的基礎上，簽發主管機關自己的證書。

### 第B—V節

#### 關於其他條約和解釋的指導

第V條第(1)款中“協定”一詞旨在包括國家間以前簽訂的有關相互承認證書的規定。

### 第B—VI節

#### 關於證書的指導

參閱第B—I/2節和B—II節中給出的指導。

應公佈一份政策聲明和一份應遵循的程序概要，以告知懸掛主管機關國旗的船舶的經營公司。

### 第B—VII節

#### 關於過渡性條款的指導

針對擔任一種職務所簽發的證書，如一締約國目前承認其具有擔任另一職務的任職資格，例如，大副證書被認可擔任船長職務，對此情況，應按照第VII條規定繼續承認這種任職資格有效。這種承認也適用於按照第VII條第2款規定所簽發的證書。

### 第B—VIII節

#### 關於特免證書的指導

應公佈一份政策聲明和一份應遵循的程序概要，以告知懸掛主管機關國旗的船舶的經營公司。應對主管機關授權簽發免

.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

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

除證書的官員提供指導。關於採取措施的信息，應按第A—I/7節的要求，概要地包括在提交給秘書長的最初報告中。

### 第B—IX節

#### 關於等效的指導

在滿足本公約要求的條件下，海軍證書可繼續予以承認，服務證書可繼續簽發給海軍官員，作為第IX條所規定的等效證書。

### 第B—X節

#### 關於監督的指導

(無條文 — 參閱第B—I/4節)

### 第B—XI節

#### 關於促進技術合作的指導

1 各政府應與國際海事組織合作，向在滿足公約要求方面有困難並請求幫助的國家提供或安排提供此種幫助。

2 應強調對油船、化學品船、液化氣體船和滾裝客船上任職的船長和其他人員進行足夠培訓的重要性，並且認識到在某些情況下，尤其是在發展中國家，獲得所要求的經驗和提供特殊培訓計劃的設施可能有限。

### 考試數據庫

3 鼓勵擁有為多個國家提供服務的海事培訓院校或考試中心、並願建立考試試題和答案數據庫的締約國，在雙邊合作的基礎上與已經建立此類數據庫的一個或多個國家開展合作。

### 可利用的海事培訓模擬器

4 國際海事組織秘書處保存有一份海事培訓模擬器清單，作為向締約國和其他各方，特別是本國可能不具備這類培訓設施的國家，提供關於可利用的各類海員培訓模擬器的信息源。

5 籲請各締約國向國際海事組織秘書處提供有關其國家海事培訓模擬器的資料，並且在改變和增加模擬器設施時予以更新。

### 關於技術合作的資料

6 有關技術諮詢服務和利用隸屬於國際海事組織的國際培訓機構的資料，以及有關可由國際海事組織提供或通過其提供的獎學金和技術合作的資料，可向秘書長聯繫索取，地址為：4 Albert Embankment, London SE1 7SR, United Kingdom。

(對第XII至XVII條無指導。)

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 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.)

## 關於《培訓公約》附則條款的指導

**第 I 章**  
**關於總則的指導**

**第B—I/1節***關於定義和說明的指導*

1 本公約第II條所含的定義和附則第I/1條所含的定義和說明，同樣適用於本規則A部分和B部分所使用的術語。僅適用於本規則條款的補充定義，列於第A—I/1節中。

2 具備第VII章規定的能力的高級海員，按照適用的安全配員要求中所採用的術語，可命名為“多能高級海員”、“兩用高級海員”或經主管機關認可的其他名稱。

3 有資格擔任第VII章規定的職務的普通海員，按照適用的安全配員要求中所採用的術語，可命名為“多能普通海員”或經主管機關認可的其他名稱。

**第B—I/2節***關於證書和簽註的指導*

1 如按第A—I/2節第1款規定將簽註整合在證書格式中，則除了省略編號為.2的空格外，有關信息應按以下說明的方法填入證書中。否則，在製作證明簽發證書的簽註時，本款下文後的表格中編號為.1至.17的空格應按下述說明填寫：

.1 填入簽發國名稱。

.2 填入主管機關對證書所分配的編號。

.3 填入被簽發證書的海員的全名，姓名應與海員護照、海員身份證件及主管機關簽發的其他官方文書上的姓名一致。

.4 應填入確認海員具備資格所依據的《培訓公約》的某一條或數條規定的編號，例如：

.4.1 如果該海員被確認為有資格擔任負責航行值班的高級海員職務，填入“第II/1條”；

.4.2 如果該海員被確認為有資格擔任有人值班機艙負責輪機值班的高級海員或周期性無人值班機艙指定值班的輪機部高級海員職務，填入“第III/1條”；

**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 如果該海員被確認為有資格擔任無線電操作員職務，填入“第IV/2條”；

.4.4 如果證書為職能證書，並且該海員被確認為有資格履行本規則A部分所規定的職能，如管理級輪機工程師職能，填入“第VII/1條”；以及

.4.5 如果該海員被確認為有資格擔任液貨船的有人值班機艙負責輪機值班的高級海員或周期性無人值班機艙指定值班的輪機部高級海員職務填入“第III/1條和第V/1條”。（見下面第.8款和.10款的限制）。

.5 填入簽註的失效日期。此日期不應超過加以簽註的證書的失效日期（如有的話），也不應超過自簽註日期計起的5年時間。

.6 在本欄中應填入該海員有資格履行的本規則A部分規定的各項職能。各項職能及與其相關的責任級別已在本規則A部分第II章、第III章和第IV章的適任表中列明。為便於參照，也列於A部分的引言中。如按照上述第.4段已填寫第II章、第III章或第IV章的規則，則不必列出具體的職能。

.7 本欄中應填入該海員有資格履行的、第.6欄所註明的每項職能的責任級別。這些責任級別已在本規則A部分第II章、第III章和第IV章的適任表中列明。為便於參照，也列於A部分的引言中。

.8 在限制條件欄上部的明顯處應填入一般性的限制條件，例如履行職責時應佩戴矯正眼鏡的要求。在與有關職能對應的適當行中，應填入適用於第.6欄所列職能的限制條件，例如：

.8.1 如果不符合第V章規定的資格，填入“在液貨船上服務無效”；

.8.2 如果按照第V章規定僅有資格在油船上服務，填入“在非油船的液貨船上服務無效”；

.8.3 如果已按照《培訓規則》的規定省略了有關的知識，填入“在蒸汽鍋爐為船舶機器構成部分的船上服務無效”；以及

.8.4 如果已按照《培訓規則》的規定省略了有關知識，填入“僅對近岸航行有效”。

.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.

註：如果在證書的標題和第.9欄所填的職務中已註明對噸位和功率的限制，則此處不必再寫明。

.9 如果證書是依據第II章或第III章簽發的，第.9欄所填入的一種或幾種職務應酌情為有關的某一條或多條《培訓規則》條款的標題中列明的職務，或是主管機關簽發的安全配員要求中所列明的職務。

.10 在限制條件欄上部的明顯處還應填入一般性的限制條件，例如履行職責時應配戴矯正眼鏡的要求。第.10欄內填入的對每個職務的限制條件應與第.8欄內所填入的對履行功能的限制相一致。

.11 本空格內填入的編號應為證書的編號，以便證書和簽註都具有同一專用編號供參考，及供在證書和（或）簽註等等的登記簿中查詢。

.12 此處應填入最初簽註的日期；根據具體情況，此日期可與簽發證書的日期相同，或不同。

.13 此處應在官員簽字的下方以印刷體字填入被授權簽發簽註的官員的姓名。

.14 所填的出生日期應為經主管機關記錄所確認的或以其他方法核實的日期。

.15 簽註應在一名官員在場時由海員本人簽字，或可由正式填寫並經核實的海員申請表併入。

.16 照片應是顯示頭部和肩部的黑白或彩色的護照規格標準照片，由海員提供，一式兩張，其中一張存入或附於證書登記簿。

.17 如果再有效的空格為簽註格式的一部分（見第A-I/2節第1款），主管機關可在海員已表明規則第I/11條所要求的持續熟練水平後填寫該空格，使簽註再有效。

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.

.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.

( 公章 )

( 國家名稱 )

證明根據經修正的《1978年海員培訓、發證和值班標準國際公約》  
的規定簽發證書的簽註

..... 1 .....政府證明：編號為..... 2 .....的證書已  
簽發給..... 3 .....，該持證人按照經修正的上述公約的規則  
第..... 4 .....條的規定完全合格，有資格履行所規定級別的下  
列職能，但受所列明的任何限制的制約，有效期至..... 5 .....  
或至可能在背面載明的此簽註有效期的任何展期屆滿之日止：

.6 職能	.7 級別	.8 適用的限制（如有）

本簽註的合法持有人可擔任主管機關在相應的安全配員要求中規  
定的下列一種或幾種職務：

.9 職務	.10 適用的限制（如有）

簽註編號..... 11 .....簽發日期..... 12 .....

( 公章 )

.....

經正式授權的官員簽字

..... 13 .....

經正式授權官員的姓名

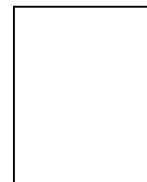


當持有人在船上服務時，本簽註原件必須按照本公約第I/2條第11款規定保存，隨時可以出示。

持證人出生日期 ..... 14 .....

持證人簽字 ..... 15 .....

持證人照片



本簽註的有效期特此延至 .....

( 公章 )

經正式授權的官員簽字

再有效日期 ..... 17

經正式授權的官員姓名

本簽註的有效期特此延至 .....

( 公章 )

經正式授權的官員簽字

再有效日期 ..... 17

經正式授權的官員姓名

(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 ..... .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*

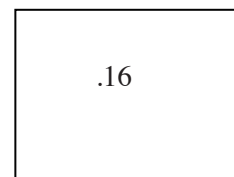
..... .13 .....  
*Name of duly authorized official*

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



The validity of this endorsement is hereby extended until .....	
(Official Seal)	..... <i>Signature of duly authorized official</i>
Date of revalidation ..... .17	..... <i>Name of duly authorized official</i>

The validity of this endorsement is hereby extended until .....	
(Official Seal)	..... <i>Signature of the authorized official</i>
Date of revalidation ..... .17	..... <i>Name of duly authorized official</i>

2 證明承認證書的簽註可以附於證書之後並成為所簽註的證書的一部分，也可以作為一份單獨的文件簽發（參閱《培訓公約》規則第I/2條第8款）。表格中所有條目均要求使用羅馬字母和阿拉伯數字填寫（參閱《培訓公約》規則第I/2條第10款）。下文後的表格中編號為.1至.17的空格可按上述第1款的說明填寫，但下列空格除外：

- .2 此處應填入簽發被認可證書的締約國分配給該證書的編號；
- .3 此處所填的姓名應與被認可的證書上的姓名相同；
- .4 此處應填入簽發被認可證書的締約國的名稱；
- .9 此處所填入的一項或多項職務應從認可該證書的主管機關的安全配員要求規定的職務中酌情選擇；
- .11 此處填入的編號應為用於參考和在簽註登記簿中查詢的唯一編號；以及
- .12 此處應填入最初簽註日期。

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.

( 公章 )

( 國家名稱 )

證明根據經修正的《1978年海員培訓、發證和值班標準國際公約》  
的規定承認證書的簽註

..... .1 .....政府證明，由或者代表..... .4 .....政  
府簽發給..... .3 .....的證書，編號為..... .2 .....，已  
按照經修正的上述本公約規則第I/10條的規定正式獲得承認，並且其  
合法持有人業經准許履行所規定級別的下列職能，但受所列明的任何  
限制的制約，有效期至..... .5 .....或至可能在背面載明的此簽  
註有效期的任何展期屆滿之日止：

.6 職能	.7 級別	.8 適用的限制（如有）

本簽註的合法持有人可擔任主管機關在相應的安全配員要求中規定  
的下列一種或幾種職務：

.9 職務	.10 適用的限制（如有）

簽註編號..... .11 .....簽發日期..... .12 .....

( 公章 )

.....

經正式授權的官員簽字

..... .13 .....

經正式授權官員的姓名

當持有人在船上服務時，本簽註原件必須按照本公約第I/2條第11款規定保存，隨時可以出示。

持證人出生日期 ..... 14 .....

持證人簽字 ..... 15.....

持證人照片



本簽註的有效期特此延至 .....

( 公章 )

.....  
經正式授權的官員簽字

再有效日期 ..... 17

.....  
經正式授權的官員姓名

本簽註的有效期特此延至 .....

( 公章 )

.....  
經正式授權的官員簽字

再有效日期 ..... 17

.....  
經正式授權的官員姓名

(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*

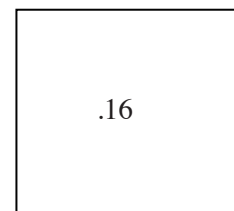
..... 13 .....  
*Name of duly authorized official*

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



The validity of this endorsement is hereby extended until .....	
(Official Seal)	..... <i>Signature of duly authorized official</i>
Date of revalidation ..... 17	..... <i>Name of duly authorized official</i>

The validity of this endorsement is hereby extended until	
(Official Seal)	..... <i>Signature of the authorized official</i>
Date of revalidation ..... 17	..... <i>Name of duly authorized official</i>

3 更換丟失或損壞的證書或簽註時，締約國應以一個新的編號簽發更換的證書，以防止與被更換的證書相混淆。

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 如果在簽註到期前六個月內申請再有效，規則第I/2條第5、6和7款中提及的簽註可再有效至：

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 簽註有效期或者展期到期日的第五個周年日；或
- .2 所簽註的證書失效的日期，以較早者為準。

- .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 簽發的專業培訓合格證書應至少包括如下信息：

5 Where a Certificate of Proficiency is issued, it should contain at least the following information:

- .1 發證締約國和當局的名稱；
- .2 發證當局分配給該證書的編號；
- .3 持證海員的全名和出生日期。此姓名和出生日期應與該海員的護照或身份證明文件上的姓名和出生日期一致；

- .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 birth-date should be the same as that appearing in the seafarer's passport or seafarer's identification document;

.4 證書名稱。例如，如果就規則第VI/3條第2款簽發證書，所用證書名稱應為“高級消防”，如果就規則第VI/5條第1款簽發證書，所用名稱應為“船舶保安員”；

.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 證明海員合格所依據的公約條款或《培訓規則》章節的編號；

.5 number, or numbers, of the Convention regulation(s) or of the STCW Code section under which the seafarer has been found qualified;

.6 證書簽發日期和失效日期。如果證書的有效期是無限的，為清楚起見，應將術語“無限制”填寫在失效日期之前；

.7 如適用，應填入限制，一般限制（例如要求戴矯正眼鏡），船舶類型限制（如“只對總噸位小於500的船舶操作有效”）或，航程限制（如“只在近岸航區有效”）；

.8 經授權簽發證書者的姓名和簽字；

.9 海員的照片。此照片應是顯示頭部和肩部的黑白或彩色護照類型的標準照片；

.10 如果證書需要再有效，應填入再有效生效日期、有效期的展期，經授權者的姓名和簽字；以及

.11 簽發當局的詳細聯繫方式。

.6 dates of issue and expiry of the certificate. If the 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.

表B—I/2

《培訓公約》所要求的證書或文件證明一覽表

下表列明了本公約中規定的、允許持證人在船舶上履行特定職能的所有證書或書面證明。這些證書應符合規則I/2條中關於語言和出示證書原件的要求。

下表也引證了簽註、登記和再有效的相關規則和要求。

Table B-I/2

List of certificates or documentary evidence required under the STCW Convention

The list below identifies all certificates or documentary evidence described 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.

規則	證書類型和簡單描述	證明承認證書的簽註 <sup>1</sup>	要求登記 <sup>2</sup>	證書再有效 <sup>3</sup>
II/1、II/2、II/3、III/1、III/2、III/3、III/6、IV/2、VII/2	適任證書—船長、高級海員和全球遇險與安全系統無線電操作員	是	是	是
II/4、III/4、VII/2	培訓合格證書—經正式發證的、參加航行和機艙值班的普通海員	否	是	否
II/5、III/5、III/7、VII/2	培訓合格證書—經正式發證的、擔任高級值班水手、高級值班機工或值班電子技工的普通海員	否	是	否
V/1—1、V/1—2	培訓合格證書或適任證書簽註—油船、化學品船或液化氣體船的船長和高級海員	是	是	是
V/1—1、V/1—2	培訓合格證書—油船、化學品船或液化氣體船的普通海員	否	是	否
V/2	書面證明—對客船的船長、高級海員、普通海員和其他服務人員的培訓	否	否	否 <sup>4</sup>
VI/1	培訓合格證書 <sup>5</sup> —基本培訓	否	是	是 <sup>6</sup>
VI/2	培訓合格證書 <sup>5</sup> —救生筏、救助艇和快速救助艇	否	是	是 <sup>6</sup>
VI/3	培訓合格證書 <sup>5</sup> —高級消防	否	是	是 <sup>6</sup>
VI/4	培訓合格證書 <sup>5</sup> —醫療急救和醫護	否	是	否
VI/5	培訓合格證書—船舶保安員	否	是	否
VI—6	培訓合格證書 <sup>7</sup> —承擔指定保安職責的海員的保安意識培訓或保安培訓	否	是	否



Regulations	Type of certificate and brief description	Endorsement attesting recognition of a certificate <sup>1</sup>	Registration required <sup>2</sup>	Revalidation of certificate <sup>3</sup>
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 operators	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 or electro-technical rating	No	Yes	No
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	No <sup>4</sup>
VI/1	Certificate of Proficiency <sup>5</sup> – Basic training	No	Yes	Yes <sup>6</sup>
VI/2	Certificate of Proficiency <sup>5</sup> – Survival craft, rescue boats and fast rescue boats	No	Yes	Yes <sup>6</sup>
VI/3	Certificate of Proficiency <sup>5</sup> – Advanced fire fighting	No	Yes	Yes <sup>6</sup>
VI/4	Certificate of Proficiency <sup>5</sup> – Medical first aid and medical care	No	Yes	No
VI/5	Certificate of Proficiency – Ship security officer	No	Yes	No
VI/6	Certificate of Proficiency <sup>7</sup> – Security awareness training or security training for seafarers with designated security duties	No	Yes	No

**註：**

<sup>1</sup> 證明承認證書的簽註係指以第I/2條第7款為依據的簽註。

<sup>2</sup> 要求註冊係指依據第I/2條第14款成為註冊的一部分。

<sup>3</sup> 證書的再有效係指酌情按照第I/11條確定連續專業適任或按照第A—VI/1至A—VI/3條，保持所要求的適任標準。

<sup>4</sup> 如第V/2條第3款所要求，已完成“人群管理”、“危機管理和人的行為”或“乘客安全、貨物安全和船體完整性”培訓的海員須每間隔不超過5年，接受適當的更新知識培訓或需要提供在最近5年內已達到規定的適任標準的證據。

<sup>5</sup> 按照第II/1、II/2、II/3、III/1、III/2、III/3、III/6和VII/2條簽發的適任證書包括“基本培訓”、“救生艇筏和除高速救助艇外的救助艇”、“高級消防”和“醫療急救”的熟練要求，因此所述適任證書的持有者無需就第VI章的能力持有熟練證書。

**Notes:**

<sup>1</sup> *Endorsement attesting recognition of a certificate* means endorsement in accordance with regulation I/2, paragraph 7.

<sup>2</sup> *Registration required* means as part of register or registers in accordance with regulation I/2, paragraph 14.

<sup>3</sup> *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.

<sup>4</sup> 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.

<sup>5</sup> 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.

<sup>6</sup> 按照第A—VI/1、A—VI/2和A—VI/3節，海員須每五年提供已保持所要求能力標準的證據。

<sup>7</sup> 如保安意識培訓或指定保安職責培訓未包括在所簽發的證書資格內。

### 第B—I/3節

#### 關於近岸航行的指導

沿海國可通過雙邊或多邊安排採取區域性“近岸航行限制”。這種安排的細節應報告給秘書長，秘書長應將此規定告知所有締約國。

### 第B—I/4節

#### 關於監督程序的指導

#### 引言

1 規則第I/4條監督程序的目的是使港口國正式授權的官員能夠確保船上的海員充分適任，足以保證船舶的操作安全、保安、無污染。

2 此項規定在原則上與對船舶結構和設備所要求的檢查並無差別。實際上，通過這些檢查對船上安全、保安和防止污染的整個體系進行評估。

#### 評估

3 通過如第A—I/4節所示對評估加以限制，可將各種監督程序中不可避免的主觀性儘量降低，不會比其他種類的監督檢查中的主觀性更加明顯。

4 規則第I/4條第1.3款所述的明顯理由通常足以使檢查官員注意到具體適任範圍，繼而可索取關於有疑問的技能培訓的證據。如果證據不充分，或不可信，經授權的官員可以要求觀看有關技能的演示。

5 無論是發生了規則第I/4條所述的事件之後，還是在日常的檢查中，船舶的操作方式是否會對人身、財產或環境構成危險，將由登船的檢查官員作出專業判斷。

### 第B—I/5節

#### 關於國家規定的指導

(無條款)

### 第B—I/6節

#### 關於培訓和評估的指導

#### 教員和評估人員的資格

1 各締約國應按照本節的指導，保證教員和評估人員按照公約的要求具備適當的資格和經驗，勝任特定種類和等級的培訓或海員適任評估。

6 In accordance with sections A-VI/1, A-VI/2 and A-VI/3, seafarers shall 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 procedure

#### 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, secure 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, security 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 .

### 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.

**在職培訓和評估**

2 對欲按照本公約要求取得發證資格的海員進行在職培訓的任何船上或岸上人員，都應接受過相應的教學技術指導。

3 對欲按照本公約要求取得發證資格的海員的在職培訓負指導責任的任何人員，均應具備教學技術、培訓方法和培訓實踐方面的適當知識。

4 對欲按照本公約要求取得發證資格的海員進行在職適任評估的任何船上或岸上人員，都應：

.1 接受過有關評估方法和實踐方面的適當指導；以及

.2 在有經驗的評估人員監督下獲得了實際評估經驗並令其滿意。

5 對欲按照本公約要求取得發證資格的海員的在職培訓負監督責任的任何人員，都應對評估制度、評估方法和實踐有全面的了解。

**利用遠程教學和電化教學**

6 締約國可允許依據第A—I/6節和如下指導中規定的培訓和評估標準，採用遠程教學和電化教學方式對海員進行培訓。

**對以遠程教學和電化教學進行培訓的指導**

7 各締約國應保證任何遠程教學和電化教學計劃：

.1 是由締約國認可的機構提供的；

.2 適用於選定的目標和訓練任務，以達到所涵蓋科目的適任水平；

.3 對學員有清晰無誤的指導，使學員理解計劃如何執行；

.4 產生的學習結果滿足旨在提供該科目基本知識和熟練程度的所有要求；

.5 指導方式是通過學員自我評估和教員批改作業並用，使學員系統地了解所學的知識；以及

.6 通過電話、傳真或電子郵件等通訊方式提供專業輔導的支持。

8 公司應保證提供安全的學習環境並且使學員有充足的學習時間。

**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 .

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; 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 .

**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 out 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 當提供電化教學時，應使用公共信息格式，如XML（可擴展標識語言），這是一種在萬維網和內聯網及其他地方分享格式和數據的靈活方式。

10 應保證電化教學系統不被破壞和非法侵入。

#### 對接受遠程教學和電化教學的學員的學業進展和成績進行評估的指導

11 各締約國應保證對任何遠程教學和電化教學課程都提供經認可的評估程序，包括：

- .1 向學員提供進行測驗和考試以及通報結果的方式的明確信息；
- .2 全面且能充分評估學員能力並且適合於考試級別的試題；
- .3 確保試題保持更新的既定程序；
- .4 可進行考試的條件和監考程序；
- .5 防止作弊的考試系統保安程序；以及
- .6 記錄考試結果的安全的認證程序，以方便締約國。

#### 經認可的培訓機構、課程和程序的登記

12 各締約國應保證對經認可的培訓機構、課程和計劃作登記保存，並且在公司和其他締約國請求時予以提供。

#### 第B—I/7節

##### 關於資料交流的指導

##### 關於遇到的困難的報告

1 鼓勵締約國在根據本公約第IV條和規則第I/7條交流資料時包括專門指明所要求資料的位置的索引如下：

#### 按照《培訓公約》第IV條和規則第I/7條 提交的資料的索引

《培訓公約》第IV條	位置
1 法律、法令、命令、規則和其他文件的文本 (第IV條第(1)款(a)項)	
2 學習課程的細節 (第IV條第(1)款(b)項)	
3 國家考試及其他要求 (第IV條第(1)款(b)項)	

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 trainees 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;
- .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; and
- .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.

#### 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 證書樣本 (第IV條第(1)款(c)項)		4 Specimen certificates (article IV(1)(c))	
<b>《培訓規則》第A—/7節第1部分</b>	<b>位置</b>	<b>Section A-I/7 part 1 of the STCW Code</b>	<b>Location</b>
5 政府組織機構的資料 (第A—I/7節第2.1款)		5 Information on Governmental organization (section A-I/7, paragraph 2.1)	
6 法律和行政管理措施的解釋 (第A—I/7節第2.2款)		6 Explanation of legal and administrative measures (section A-I/7, paragraph 2.2)	
7 教育、培訓、考試、評估和發證政策的陳述 (第A—I/7節第2.3款)		7 Statement of the education, training, examination, assessment and certification policies (section A-I/7, paragraph 2.3)	
8 按證書對課程、培訓計劃、考試和評估的概述 (第A—I/7節第2.4款)		8 Summary of the courses, training programmes, examinations and assessments by certificate (section A-I/7, paragraph 2.4)	
9 對授權、認可和核准程序和條件的概述 (第A—I/7節第2.5款)		9 Outline of the procedures and conditions for authorizations, accreditations and approvals (section A-I/7, paragraph 2.5)	
10 所給予的授權、認可和批准的清單 (第A—I/7節第2.5款)		10 List of authorizations, accreditations and approvals granted (section A-I/7, paragraph 2.5)	
11 對特免證書程序的概述 (第A—I/7節第2.6款)		11 Summary of procedures for dispensations (section A-I/7, paragraph 2.6)	
12 按照規則第I/11條所做的比較 (第A—I/7節第2.7款)		12 Comparison carried out pursuant to regulation I/11 (section A-I/7, paragraph 2.7)	
13 對強制性更新知識培訓的概述 (第A—I/7節第2.7款)		13 Outline of refresher and upgrading training mandated (section A-I/7, paragraph 2.7)	
<b>《培訓規則》第A—I/7節第2部分第3款</b>	<b>位置</b>	<b>Section A-I/7, part 2, paragraph 3 of the STCW Code</b>	<b>Location</b>
14 對根據本公約第IX條所採取的等效安排的說明 (第A—I/7節第3.1款)		14 Description of equivalency arrangements adopted pursuant to article IX (section A-I/7, paragraph 3.1)	
15 對確保遵守規則第I/10條所採取的措施的概述 (第A—I/7節第3.2款)		15 Summary of measures taken to ensure compliance with regulation I/10 (section A-I/7, paragraph 3.2)	
16 為僱用根據規則第VII/1條持有可供選擇證書的海員的船舶簽發的安全配員證書的樣本 (第A—I/7節第3.3款)		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)	
<b>《培訓規則》第A—I/7節第2部分第4款</b>	<b>位置</b>	<b>Section A-I/7, part 2, paragraph 4 of the STCW Code</b>	<b>Location</b>
17 根據第I/8條進行獨立評估的結果報告，涵蓋： .1 獨立評估評估人的職責範圍		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 評估人的資格與經驗          | .2 Qualifications and experience of evaluators                                 |
| .3 評估的時間與範圍           | .3 Date and scope of evaluation  |
| .4 所發現的不符合項           | .4 Non-conformities found  |
| .5 所建議的糾正措施           | .5 Corrective measures recommended   |
| .6 所採取的糾正措施           | .6 Corrective measures carried out   |
| .7 獨立評估所包括的培訓機構(中心)清單 | .7 List of training institutions/centres covered by the independent evaluation |

**《培訓規則》第A—I/7節，第2部分第6款**

**位置**

**Section A-I/7, part 2, paragraph 6 of the STCW Code**      **Location**

- |  |   |
|--|---|
| 18 對法律和行政管理措施的解釋<br>(第A—I/7節，第6.1款)        | 18 Explanation of legal and administrative measures<br>(section A-I/7, paragraph 6.1)   |
| 19 對教育、培訓、考試、評估和發證政策的陳述<br>(第A—I/7節，第6.2款) | 19 Statement of the education, training, examination, assessment and certification policies<br>(section A-I/7, paragraph 6.2) |
| 20 按證書對課程、培訓計劃、考試和評估的概述<br>(第A—I/7節，第6.3款) | 20 Summary of the courses, training programmes, examinations and assessments by certificate<br>(section A-I/7, paragraph 6.3) |
| 21 所批准的知識更新和升級培訓的概要<br>(第A—I/7節，第6.4款)     | 21 Outline of refresher and upgrading training mandated<br>(section A-I/7, paragraph 6.4)                                     |
| 22 依據第I/11條進行的比較<br>(第A—I/7節，第6.5款)        | 22 Comparison carried out pursuant to regulation I/11<br>(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*

**第B—I/8節**

*關於質量標準的指導*

1 為了將規則第I/8條和第A—I/8節規定的質量標準適用於其發證體系的管理中，各締約國應考慮到現有的國家和國際模式，並將下列關鍵要素包括在內：

- .1 明確的質量方針及實施這一方針的方法；
- .2 質量體系，包括為實施質量管理所必需的組織結構、責任、程序、過程和資源；
- .3 保證質量控制的操作技術和活動；
- .4 為確保達到所有既定目標的系統化監控安排，包括內部質量保證評估在內；以及
- .5 以下段落所述的定期外部質量評估安排。

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;
- .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 在為國家發證體系的管理確立質量標準時，主管機關應力求保證所採取的安排：

- .1 具有足夠的靈活性，以使發證體系能夠考慮到行業的不同需要並且便於和鼓勵新技術的應用；
- .2 涵蓋實施本公約各條款、特別是實施規則第I/2條至第I/15條以及使主管機關能夠簽發服務證書和特免證書及撤銷、註銷、扣留證書的其他規定的所有行政管理事項；
- .3 包含主管機關認可各級別培訓和評估的責任，從大學課程和適任證書更新課程到短期職業培訓課程；以及
- .4 包含按照第1.4款的要求進行內部質量保證評審的安排，它涉及在各級別上對管理程序的全面自查，以便檢測既定目標是否達到，並為第A—I/8節第3款所要求的獨立的外部評價奠定基礎。

#### 知識、理解、技能和適任評估質量標準模式

3 知識、理解、技能和適任評估質量標準模式應將本節的建議納入下述任一總體框架內：

- .1 國家教育和培訓認證機制和質量標準機制；或
- .2 本組織可接受的可供選擇的質量標準模式。

4 上述質量標準模式應包含：

- .1 質量方針，包括培訓機構或單位達到其既定目的和目標，以及最後獲得有關認證或質量標準當局的承認所做的承諾；
- .2 確定和執行質量方針的質量管理功能，它涉及與所提供的服務質量緊密相關的工作的諸方面，包括有關確定課程或計劃進度的規定；
- .3 質量體系涵蓋範圍，酌情涵蓋教學和管理的組織結構、責任、程序、過程以及人員和設備資源；
- .4 應用於各級別的教學、培訓、考試和評估活動及其組織和實施的質量管理功能，以保證適合其目的並達到既定目標；

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 內部質量保證過程和評審，它用於監督教育機構或單位達到其提出的計劃目標以及對其所採用的質量管理程序進行有效的監控的程度；以及

.6 為規則第I/8條第2款要求的和下列各款所述的外部定期質量評價所作的安排，此項安排以質量保證評審的結果為基礎和起點。

5 在確立教育、培訓和評估計劃的質量標準時，負責實施這些計劃的組織機構應考慮到以下幾點：

.1 如既定國家認證、或教育質量標準已有現成規定，這種規定應用於納入本公約知識和理解要求的課程中。質量標準應用於管理和操作兩個級別的活動中，並且應考慮到如何對其進行管理、組織、實施和評估，以保證達到既定目標。

.2 如果主要目的是獲得某一特定技能或完成某一指定的任務，則質量標準應考慮到是否為此目的使用真實設備或模擬設備，並應考慮評估人員的資格和經驗是否合適，以保證達到既定標準。

.3 內部質量保證評價應包括對各級計劃的綜合性自查，以通過應用質量標準來跟蹤達到既定目標的進展。這些質量保證評審應針對各計劃的策劃、設計、提出和評估，以及教導、學習和交流活動。其結果將作為第A—I/8節第3款所要求的獨立評價的依據。

### 獨立評價

6 各獨立評價應包括對所有質量活動的系統而獨立的檢查，但毋需對既定目標的有效性進行評價。評價組應：

.1 按文件規定的程序進行評價；

.2 保證每次評價的結果均形成文件並提請被評價方面的負責人注意；以及

.3 核實已及時採取措施糾正任何缺陷。

7 評估的目的是為了對各級質量標準安排的有效性進行獨立的評價。對於教育或培訓機構，應利用經認可的學術認證或質量標準機構或政府機構。應向評價小組提供足夠的先期資料，

.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 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 in-



使其對所承擔的任務有概括性了解。對於一個大型培訓機構或計劃，應提供如下所示的各項資料：

- .1 培訓機構的任務陳述；
- .2 所用教學和培訓策略的細節；
- .3 組織結構圖以及各委員會和諮詢機構成分的資料；
- .4 教職員和學員的資料；
- .5 對培訓設施和設備的說明；以及
- .6 關於下述各項的政策和程序的概要：
  - .6.1 招生；
  - .6.2 新課程的制定和對現有課程的評審；
  - .6.3 考試制度，包括上訴和重考；
  - .6.4 教職員的招聘、培訓、發展、評定和晉升；
  - .6.5 學員和業界的反饋；以及
  - .6.6 教職員在研究和開發方面的參與。

## 報告

8 評價小組在提交最終報告前，應先向管理部門遞交一份中期報告以徵求其對其結論的看法。評價人員應在收到他們的意見後提交最終報告。該報告應：

- .1 包括該機構或培訓計劃的簡要背景資料；
- .2 完整、公平和準確；
- .3 重點說明該機構的強項和弱項；
- .4 說明所遵循的評價程序；
- .5 涵蓋第4款中列明的各項要素；
- .6 指出符合或不符合公約要求的程度，以及質量標準在保證達到既定目的和目標方面的有效性；以及
- .7 清楚地指出發現缺陷的領域，提出改進建議，並提供評價人員認為相關的任何其他意見。

## 第B—I/9節

### 關於健康標準的指導

#### 健康檢查和發證

1 締約國在制定海員健康標準和規定時，應考慮到表B—I/9中所列的最低體能和本節提供的指導，並切記海員的不同職責。

formation 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 締約國在制定海員健康標準和規定時，應遵從國際勞工組織/國際衛生組織出版物《海員上船前和定期健康檢查導則》的指導，包括任何後續版本和國際勞工組織、國際海事組織或世界衛生組織出版的任何其他適用國際導則。

3 對海員進行健康檢查的醫生，其適當資格和經驗可包括職業健康或海上健康檢查資歷，作為船醫或航運公司醫生的工作經驗或在具有上述資歷和經驗的人員監督下工作的經歷。

4 進行健康檢查的場所應具備海員健康檢查的必要設施和設備。

5 主管機關應保證經認可的從業醫生在執行健康檢查程序中做出醫學判斷時享有完全的專業獨立性。

6 申請健康證明的海員應向經認可的從業醫生出示適當的身份證明文件以表明其身份，並應交出先前的健康證明。

7 各主管機關，根據對醫學評價的評估和關於某個人對條件的適應力和令人滿意地履行船上指定職能的被證實能力的任何其他相關信息，有權批准對以下表B—I/9所列任何標準作出改變或免除。

8 健康標準應考慮到在船上可利用的醫療設施和醫學專業知識的情況，儘可能地界定與海上服務的健康相關的客觀標準。特別是，其中應明確在何種條件下，罹患由藥物控制的、可能有生命威脅的疾病的海員，可獲准繼續在海上服務。

9 醫療標準也應列明特定的、會使海員不能擔任特定職位的疾病，如色盲。

10 在職視力最低標準為每隻眼睛的非矯正視力應至少為0.1。

11 需要戴眼鏡或隱形眼鏡履行職責者，應在船上方便可取處按照需要備有一副或多副備用眼鏡。任何需要借助矯正手段達到所要求標準的情況，均應記錄在所簽發的健康證書中。

12 辨色力測試應以國際照明委員會公佈的關於運輸辨色力要求的國際建議（CIE143—2001，包括任何後來版本）或等效測試方法為依據。

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.

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.

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'Éclairage (CIE 143-2001 including any subsequent versions) or equivalent test methods.

表 B – I/9

海員最低準入水平及服務中體能評價<sup>3</sup>

船上任務、職能、事件或狀況 <sup>3</sup>	相關體能	申請人的下列各項應令健康檢查人員感到滿意 <sup>4</sup>
船上日常活動： - 行駛中在甲板上 - 各層之間 - 各艙室之間  註 <sup>1</sup> 對本欄適用	保持平衡並移動敏捷  爬上和爬下垂直豎梯和樓梯  跨過艙口圍欄（如，《載重線公約》要求艙口圍欄的高度為600毫米）  開、關水密門	沒有平衡感障礙  沒有妨礙有關移動和體力活動的任何損傷或疾病  不用協助 <sup>5</sup> ，能夠： - 攀爬垂直豎梯和樓梯 - 跨越高門檻 - 操縱關門系統
船上日常工作： - 使用工具 - 移動船舶物料 - 高架作業 - 閘門作業 - 站崗四小時 - 在狹窄空間中工作 - 對警報、警告和指令做出反應 - 話語通信  註 <sup>1</sup> 對本欄適用	操作機械裝置的力量、靈活性和耐力 提、拉和攜帶負載（如，18千克）  伸手向上  站立、行走和長時間保持警覺  在狹窄空間中工作和穿過受限開口（如，《安全公約》要求貨物處所和應急逃生通道的最小開口的大小尺寸為600毫米x600毫米-《安全公約》第3.6.5.1條）  用眼睛辨別物件、形狀和信號  聽到警告和指令  清楚的口頭描述	沒有特定損傷或確診疾病會降低履行日常船舶安全操作的關鍵職責的能力  有能力： - 抬臂工作 - 長時間站立和行走 - 進入狹窄空間 - 滿足視力標準表（A-I/9） - 滿足主管當局規定的或考慮到國際導則的聽覺標準 - 進行正常對話
船上應急職責 <sup>6</sup> ： - 逃生 - 消防 - 撤離  註 <sup>2</sup> 對本欄適用	穿著救生衣或浸沒服從充滿煙霧處所中逃生  承擔滅火職責，包括使用呼吸器  參加船舶撤離過程	沒有特定損傷或確診疾病會降低履行日常船舶安全操作的關鍵職責的能力  有能力： - 穿著救生衣或浸沒服 - 爬行 - 感覺到溫度差異 - 操作消防設備 - 佩戴呼吸器（職責所需時）

Table B-I/9

Assessment of minimum entry level and in-service physical abilities for seafarers<sup>3</sup>

Shipboard task, function, event or condition <sup>3</sup>	Related physical ability	A medical examiner should be satisfied that the candidate <sup>4</sup>
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 assistance <sup>5</sup> , able to: - climb vertical ladders and stairways - step over high sills - manipulate door closing systems

Shipboard task, function, event or condition <sup>3</sup>	Related physical ability	A medical examiner should be satisfied that the candidate <sup>4</sup>
Routine tasks on board: <ul style="list-style-type: none"> <li>- Use of hand tools</li> <li>- Movement of ship's stores</li> <li>- Overhead work</li> <li>- Valve operation</li> <li>- Standing a four-hour watch</li> <li>- Working in confined spaces</li> <li>- Responding to alarms, warnings and instructions</li> <li>- Verbal communication</li> </ul> <i>Note 1 applies to this row</i>	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: <ul style="list-style-type: none"> <li>- work with arms raised</li> <li>- stand and walk for an extended period</li> <li>- enter confined space</li> <li>- fulfil eyesight standards (table A-I/9)</li> <li>- fulfil hearing standards set by competent authority or take account of international guidelines</li> <li>- hold normal conversation</li> </ul>
Emergency duties <sup>6</sup> on board: <ul style="list-style-type: none"> <li>- Escape</li> <li>- Fire-fighting</li> <li>- Evacuation</li> </ul> <i>Note 2 applies to this row</i>	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: <ul style="list-style-type: none"> <li>- don lifejacket or immersion suit</li> <li>- crawl</li> <li>- feel for differences in temperature</li> <li>- handle fire-fighting equipment</li> <li>- wear breathing apparatus (where required as part of duties)</li> </ul>

**註：**

<sup>1</sup> 上表第1和第2排描述了(甲)船上日常工作、職能、事件和狀況，(乙)可被視為海員、其他海員和船舶的安全所需的相應體能，及(丙)供進行健康檢查的醫生使用的高水平標準，並考慮到海員的不同職責及其受僱用的船舶上的工作性質。

<sup>2</sup> 上表第3排描述了(甲)日常船上工作、職能、事件和狀況，(乙)應被視為海員、其他海員和船舶的安全所需的相應體能，及(丙)供進行健康檢查的醫生使用的高水平標準，並考慮到海員的不同職責及其受僱用的船舶上的工作性質。

**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.

<sup>3</sup> 本表無意針對所有可能的船上狀況或潛在的不合格健康狀況。締約國應定出適用於各類海員（例如“甲板部高級海員”和“輪機部普通海員”）的體能規定。對具體海員的特殊情況和有專門或有限職責者，應給予充分考慮。

<sup>4</sup> 如有疑問，在有適當測試辦法時，醫生應通過客觀測試對任何相關損傷的程度或嚴重性加以量化，或送申請人作進一步檢查。

<sup>5</sup> “協助”一詞係指利用他人完成工作。

<sup>6</sup> “應急職責”用以涵蓋全部常規應急局面，如棄船或滅火以及在確保個人生存時各海員要遵循的程序。

## 第B—I/10節

### 關於承認證書的指導

1 根據《培訓公約》進行的無需簽發適任證書的培訓，若海上安全委員會發現締約國提交的有關該培訓的資料表明它按照規則第I/7條第2款充分和完全實施本公約，則可被本公約其他締約國接受為已滿足本公約的相關培訓要求。

2 接到聯繫的主管機關應簽發規則第I/10條第5款提及的為期三個月的證明文件，使港口國機構能接受該證明文件以替代對另一締約國所簽發證書的簽註，該證明文件載明以下信息：

- .1 海員姓名
- .2 出生日期
- .3 原適任證書號碼
- .4 職務
- .5 限制
- .6 主管機關聯繫方式
- .7 簽發日和過期日。

3 上述證明文件可以通過電子方式提供。

## 第B—I/11節

### 關於證書再有效的指導

1 規則第I/11條要求的課程應包括涉及海上人命安全、保安和海洋環境保護的海事立法、技術和建議的有關變化。

2 測驗可以採用書面或口頭考試、使用模擬器或其他適當手段的方式。

3 第A—I/11條第1款所述的經認可海上服務資歷可通過擔任適當低於所持證書職位的高級海員職務而獲得。

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 a certificate of competency 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 the 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 that stated in the certificate held.

4 如規則第I/11款第1款所述證書在到期日前六個月內申請再有效，則該證書可再有效至有效期或展期到期日的第五周年。

### 第B—I/12節

#### 關於使用模擬器的指導

1 如果使用模擬器進行培訓或適任評估，在進行這種培訓或評估時，應考慮到以下指導。

#### 雷達觀測和標繪的培訓和評估

2 雷達觀測和標繪的培訓和評估應：

- .1 結合雷達模擬設備的使用；和
- .2 符合不低於以下第3至17款所述的標準。

3 在適當時，雷達觀測的演示和練習應在真實運轉的船用雷達設備上進行，包括使用模擬器。最好進行實時標繪練習，以使學員更加意識到不正確使用雷達數據所產生的危險，並且提高他們的標繪技術，達到相當於海上航行實際條件下安全執行避碰操作所必需的雷達標繪標準。

#### 總則

#### 影響性能和精度的因素

4 應基本了解雷達的原理和下述全面的實踐知識：

- .1 距離和方位的測量，決定雷達顯示質量的雷達特性、雷達天線、極座標圖、主波束以外各方向輻射功率的影響、雷達系統的非技術性說明，包括不同類型雷達所具備的不同特點、性能監視器以及影響最大和最小探測距離和信息準確性的設備因素；
- .2 本組織所通過的現行船用雷達性能規範；
- .3 雷達天線位置的影響、陰影扇形區和靈敏度降低弧、假回波、天線高度對於探測距離的影響、雷達裝置安裝位置的影響以及將備件存放在磁羅經附近的影響，包括磁性安全距離；以及
- .4 在天線和開敞波導附近的輻射危害和應採取的防範措施。

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

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.

#### 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;
- .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 antennae and open waveguides.

**探測包括假回波和海浪回波在內的信息誤顯示**

5 為使觀測人員能估計探測不到目標的危險，了解目標探測的局限性是至關重要的。應強調下述因素：

- .1 設備的性能標準；
- .2 亮度、增益和視頻處理器控制的調定；
- .3 雷達作用距離；
- .4 目標的尺寸、形狀、外貌和構成；
- .5 船舶在海上運動的影響；
- .6 電波傳播條件；
- .7 氣象條件；海上雜波和雨雜波；
- .8 抗雜波控制調定；
- .9 陰影扇形區；以及
- .10 雷達與雷達間的干擾。

6 應了解有可能導致錯誤分析的種種因素，其中包括假回波、附近鐵塔和高大構架的影響，跨河跨灣電纜的影響，在第二次和其後掃描中來自遠方目標的回波。

7 應了解有助於分析的裝置，包括角反射器和雷達信標；陸地目標的探測和辨認；地貌特點的影響；脈衝長度和射束寬度的影響；顯著和不顯著的雷達目標；影響目標回波強度的因素。

**練習****顯示的調定和保持**

8 應知曉以下內容：

.1 各種類型的雷達顯示模式；不穩定的船首線向上相對運動；船首線向上、航向向上及真北向上的穩定相對運動和真運動；

.2 誤差對所顯示信息精度的影響；羅經傳送誤差對穩定真運動顯示的影響；計程儀傳送誤差對真運動的影響；以及不準確的人工速度調定對真運動顯示的影響；

.3 真運動控鈕上不準確速度調定的探測方法；接收機噪聲限制能力對弱反射回波顯示的影響，以及接收機噪聲飽和的影響等；操作控鈕的調整；指示最佳調整點的標準；正確的調整順序的重要性，以及控鈕誤調的影響；檢測下列誤調和校正：

- .3.1 影響探測距離的控鈕；和

**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 影響精度的控鈕；

.4 使用裝有調節不當的控鈕的雷達設備的危險；以及

.5 經常地定期進行雷達性能檢查的必要性，雷達性能指示器與量程性能的關係。

### 距離和方位

9 應知曉以下內容：

.1 測量距離的方法；固定量程標尺及可變量程標尺；

.2 每種方法的精度及不同方法的相對精度；

.3 量程數據的顯示方法；標尺間隔的量程、數字計數器以及比例尺；

.4 測量方位的方法；顯示器透明盤上的可轉動游標、電子方位游標及其他方法；

.5 方位精度和由於視差、船首標誌位移、中心失調造成的誤差；

.6 方位數據的顯示方法；比例尺和數字計數器；以及

.7 定時檢查距離和方位精度的必要性，檢查誤差並糾正或修正誤差的方法。

### 標繪技術和相對運動概念

10 應提供人工標繪技術的練習，包括使用反射標繪儀，其目的是透徹地理解本船和他船間的相對運動，包括避碰操作的作用。在此培訓的最初階段，應設計一些簡單的標繪練習，以確立對標繪幾何學和相對運動概念的正確認識。應在培訓課程的進行中不斷加深練習的複雜程度，直至學員完全掌握這一科目的各個方面。通過使用模擬器或其他有效手段讓學員進行實時練習，可最佳地增強其適任能力。

### 關鍵回波的識別

11 應透徹地理解：

.1 利用岸上目標或海上標識進行雷達定位；

.2 用距離和用方位定位的精度；

.3 對照其他助航設備對雷達精度進行相互核對的重要性；以及

.4 在使用雷達作為避碰設備時，頻繁和定時記錄距離和方位的價值。

.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;

.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.



**他船的航向和航速**

12 應透徹地理解：

.1 從所記錄的距離和方位求得他船航向和航速的不同方法，包括：

.1.1 不穩定的相對運動標繪；

.1.2 穩定的相對運動標繪；和

.1.3 真運動標繪；以及

.2 目測和雷達觀測的關係，包括估計他船航向和航速的細節和精度，以及對他船運動變化的探測。

**船舶交遇、會遇或追越時到最近交遇點的時間和距離**

13 應透徹地理解：

.1 用所記錄的數據求得：

.1.1 到達最近交遇點的距離和方位的測算；

.1.2 到達最近交遇點的時間；以及

.2 頻繁和定時觀測的重要性。

**探測他船航向和航速變化**

14 應透徹地理解：

.1 他船航向和（或）航速的變化對其在顯示器上的航跡的影響；

.2 航向或航速變化與察覺這一變化的時間延遲；以及

.3 航向或航速的微小變化與明顯變化相比，在探測率和探測精度上的危險性。

**本船航向或航速的變化或兩者都變化的影響**

15 應透徹理解本船運動和他船運動對相對運動顯示的影響，以及相對運動顯示中羅經穩定的好處。

16 對於真運動顯示，應透徹地理解：

.1 下述誤差的影響：

.1.1 航速和航向的調定；和

.1.2 驅動穩定的相對運動顯示的羅經穩定數據；

.2 本船航向和航速的變化對他船在顯示器上的航跡的影響；以及

.3 航速與觀測頻率的關係。

**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.

### 經修正的《1972年國際海上避碰規則》的適用

17 應透徹理解經修正的《1972年國際海上避碰規則》與使用雷達的關係，包括：

- .1 避碰行動，依賴不充分的信息做出判斷的危險性以及航向和航速微小變化的危險性；
- .2 使用雷達避碰時，安全航速的好處；
- .3 航速與最接近交遇點的距離和時間以及與不同類型船舶操縱特性的關係；
- .4 明確規定雷達觀測報告和雷達報告程序的重要性；
- .5 在天氣晴朗時使用雷達以了解其性能和局限性，比較雷達觀測和目測並對信息的相對準確性予以評估；
- .6 在天氣晴朗的夜間和有跡象表明能見度會下降時及早使用雷達的必要性；
- .7 比較雷達顯示的岸形和海圖上的岸形；以及
- .8 比較各量程標尺的不同影響。

### 自動雷達標繪儀（阿帕）操作使用的培訓和評估

18 自動雷達標繪儀（阿帕）操作使用的培訓和評估應：

- .1 要求先完成雷達觀測和標繪的培訓，或將該培訓與以下第19至35款所述的培訓結合起來；
- .2 包含使用自動雷達標繪儀模擬設備；和
- .3 符合不低於以下第19至35款給出的標準。

19 當自動雷達標繪儀培訓作為《1978年培訓公約》一般培訓的一部分時，船長、大副和負責航行值班的高級海員應了解根據自動雷達標繪儀所提供的信息連同其他航行數據的輸入而做出決策所涉及的各種因素，對於操縱方面和包括電子海圖顯示與信息系統（ECDIS）在內的現代電子航行系統的系統誤差應有同樣的認識。此種培訓應是漸進性質的，並與個人責任和根據《1978年培訓公約》由締約國簽發的證書相稱。

### 理論和演示

#### 過分依賴自動雷達標繪儀可能產生的危險

20 認識到自動雷達標繪儀僅是一種助航設備，以及：

### 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;
- .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;
- .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 自動雷達標繪儀的局限性，包括其傳感器的局限性，使得過分依賴“自動雷達標繪儀”是危險的，特別是用於瞭望值班時；和

.2 在任何時候都遵守航行值班中應遵循的基本原則和航行值班的指導的必要性。

#### 自動雷達標繪儀系統的主要類型及其顯示特點

21 了解現用的自動雷達標繪儀系統的主要類型；其各種顯示特點並了解何時使用對地或對海穩定模式以及真北向上、航向向上或船首向上顯示。

#### 國際海事組織的自動雷達標繪儀性能標準

22 懂得國際海事組織自動雷達標繪儀性能標準，特別是關於精度的標準。

#### 影響系統性能和精度的因素

23 了解自動雷達標繪儀傳感器輸入性能參數—雷達、羅經和航速輸入以及傳感器故障對自動雷達標繪儀數據精度的影響。

24 了解：

.1 雷達的距離和方位分辨力和精度的局限性以及羅經和航速輸入精度的局限性對自動雷達標繪儀數據精度的影響；以及

.2 影響矢量精度的因素。

#### 跟蹤能力和局限性

25 了解：

.1 用自動捕捉方式選擇目標的標準；

.2 導致採用手動捕捉方式正確選擇目標的因素；

.3 對跟蹤“丟失的”目標和正在消失的目標的影響；以及

.4 造成“目標互換”的情形及其對所顯示數據的影響。

#### 處理延遲

26 了解在顯示經處理的自動雷達標繪儀信息時所固有的延遲，特別是在捕捉和再捕捉時，或被跟蹤目標處於操縱狀態時。

#### 操作性警告，其好處和局限性

27 懂得自動雷達標繪輔助儀操作性警告的使用、好處和局限性及其正確調定（如適合）以防止虛假報警的干擾。

#### 系統的操作性測試

28 了解：

.1 自動雷達標繪儀系統故障測試方法，包括功能自測；以及

.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.

#### 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 故障出現後應採取的防範措施。

### 手動和自動捕捉目標及其各自的局限性

29 了解在多目標情況下，兩種捕捉方式的局限性以及對捕捉正在消失的目標和目標交換的影響。

### 真運動矢量和相對運動矢量以及目標信息和危險區域的典型圖示

30 透徹了解真運動矢量和相對運動矢量；目標真航向和航速的推導，包括：

- .1 威脅評估，根據矢量外推對預計最近交遇點和到達最近交遇點的時間進行推導，危險區域圖示的應用；
- .2 本船和（或）他船航向和（或）航速的改變對預計最近交遇點和到達最近交遇點的時間及危險區域的影響；
- .3 不正確矢量和危險區域的影響；以及
- .4 真運動矢量和相對運動矢量間進行轉換的好處。

### 被跟蹤目標過去位置的信息

31 了解對被跟蹤目標過去位置的推導，認識到歷史數據是表明目標的當前操縱狀態的手段和核查“自動雷達標繪儀”跟蹤的有效性的方法。

### 練習

#### 調定和保持顯示

32 做以下演示的能力：

- .1 為獲得最佳自動雷達標繪儀信息顯示的正確啟動程序；
  - .2 選擇顯示方式，穩定的相對運動顯示和真運動顯示；
  - .3 為獲得最佳的數據顯示，正確調整雷達各可調顯示控鈕；
  - .4 視情選擇自動雷達標繪儀所需的航速輸入；
  - .5 選擇自動雷達標繪儀標繪控鈕，手動/自動捕捉，數據的矢量/圖形顯示；
  - .6 選擇矢量/圖形的時段；
  - .7 當自動雷達標繪儀使用自動捕捉時，排除區域的運用；
- 以及
- .8 雷達、羅經、航速輸入傳感器和自動雷達標繪儀的性能檢測。

#### 系統的操作測試

33 通過對照基本雷達標繪進行核查，進行系統檢測和確定自動雷達標繪儀數據精度的能力，包括試操船技能。

- .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.

### 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.

### 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.

### 從自動雷達標繪儀顯示中獲得信息

34 展示從相對運動和真運動顯示模式中獲得信息的能力，包括：

- .1 對關鍵回波的識別；
- .2 目標相對運動的速度和方向；
- .3 到達目標最近交遇點的時間和預測距離；
- .4 目標的航向和航速；
- .5 發現目標航向和航速變化以及這種信息的局限性；
- .6 本船航向或航速變化或兩者都變化的影響；以及
- .7 試操船技能。

### 經修正的《1972年國際海上避碰規則》的適用

35 用顯示的信息分析潛在碰撞形勢，按照現行經修正的《1972年國際海上避碰規則》決定和執行避免緊迫局面的行動。

### 電子海圖顯示和信息系統 (ECDIS) 操作使用的培訓和評估

#### 前言

36 在使用模擬器進行電子海圖顯示和信息系統操作使用的培訓和評估時，應考慮到下列暫行指導。

37 電子海圖顯示和信息系統操作使用的培訓和評估，應：

- .1 包括使用電子海圖顯示和信息系統模擬器設備；和
- .2 符合不低於下列第38至65款中給出的標準。

38 電子海圖顯示和信息系統模擬設備，除達到經修正的《培訓規則》第A—I/12節規定的所有適用性能標準外，應能夠模擬達到本組織通過的所有適用性能標準的航行設備和駕駛台操作按鈕，包括產生聲響信號的設施，以及：

- .1 創造實時操作環境，包括適合於完成航行和值班任務和評估操縱技能的航行控制和通信儀器設備；以及
- .2 真實模擬“本船”在開闊水域中的特性，以及天氣、潮流和水流的影響。

### 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 STCW Code, 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 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 在適當時，應通過使用模擬器進行電子海圖顯示和信息系統使用的演示和實操。培訓練習最好採取實時模式，以增強學員對不正確使用電子海圖顯示和信息系統的危險的認識，加速時段僅可用於演示。

### 通則

#### 電子海圖顯示和信息系統培訓項目的目標

40 電子海圖顯示和信息系統的學員應能：

- .1 操作電子海圖顯示和信息系統的設備，使用電子海圖顯示和信息系統的航行功能，選擇和評估所有相關信息並在發生故障時採取正確措施；
- .2 說明顯示數據的潛在誤差和常見解讀誤差；以及
- .3 解釋電子海圖顯示和信息系統不能賴以作為唯一可靠助航手段的原因。

#### 理論和演示

41 鑑於安全使用電子海圖顯示和信息系統需掌握和了解關於電子海圖顯示和信息系統數據的基本原理及其顯示規則以及所顯示數據的可能誤差和電子海圖顯示和信息系統的相關局限和潛在危險，應開設多門講座，以解釋理論知識。此類課程應儘可能在熟悉的環境下進行實例教學。課程知識應在模擬器練習過程中予以強化。

42 為安全操作電子海圖顯示和信息系統設備及利用相關信息（使用電子海圖顯示和信息系統的航行功能，選擇和評估所有相關信息，熟悉其人機交互），該門課程主要內容應是電子海圖顯示和信息系統模擬器實操和訓練。

43 為界定培訓目標，應確定一個活動框架，對框架中的每個主題，均應詳細規定出學習目標。

#### 模擬器練習

44 練習應在單獨的電子海圖顯示和信息系統模擬器或在包括電子海圖顯示和信息系統功能在內的全功能航海模擬器上進行，以使學員獲得必要的實操技能。建議使用航海模擬器進行複雜航海情況的實時航海練習。練習應提供使用不同比例尺、航行模式和可利用的顯示模式的訓練，以使學員適應在相關特殊情況下使用航海設備。

45 練習和場景選擇受可利用模擬器設備的制約。如能提供一個或多個電子海圖顯示和信息系統工作站和一個全功能模擬器，工作站可主要用於電子海圖顯示和信息系統的基礎練習和航線設計練習；而全功能模擬器可主要用於與實時航行監控功能

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,

相關的練習，並儘可能與航行值班整個工作負荷相一致。在整個訓練計劃中，練習難度應遞增，直至學員掌握所學科目的全部知識。

46 練習應最大可能地體現真實感。為此，場景應該設定為某個假想海區。可以將發生於不同海區的、為不同學習目標的各種情景、功能和行動整合在一項練習中，並以實時的方式體驗。

47 模擬器練習的主要目的是確保學員了解在所有安全相關方面操作使用電子海圖顯示和信息系統的責任並且完全熟悉所使用的系統和設備。

#### 電子海圖顯示和信息系統主要類型和顯示性能

48 學員應掌握現用電子海圖顯示和信息系統的主要類型、顯示特性和數據結構，並理解：

- .1 矢量海圖和光柵海圖的區別；
- .2 電子海圖顯示和信息系統與電子海圖系統的區別；
- .3 電子海圖顯示和信息系統與光柵海圖顯示系統的區別；
- .4 電子海圖顯示和信息系統的特性及不同操作方式；以及
- .5 特殊用途系統的特性（異常情況/緊急情況）。

#### 過度依賴電子海圖顯示和信息系統的風險

49 在電子海圖顯示和信息系統操作使用培訓中，應談述：

- .1 電子海圖顯示和信息系統作為航行手段的局限性；
- .2 系統非正常運行的潛在危險；
- .3 系統（包括傳感器在內）的局限性；
- .4 水文數據不準確；矢量和光柵電子海圖（電子海圖顯示和信息系統相對於光柵海圖顯示系統和電子航行圖相對於光柵航行圖）的局限性；以及
- .5 人為失誤的潛在風險。

應強調保持正規瞭望和進行定期核查的必要性，特別是以獨立於“電子海圖顯示和信息系統”的方法核查船位的必要性。

#### 察覺錯誤顯示的信息

50 了解設備的局限性和察覺錯誤顯示的信息對安全使用電子海圖顯示和信息系統至關重要，在培訓中應強調下列因素：

- .1 設備的性能標準；
- .2 在電子海圖上顯示雷達數據，消除雷達圖像和電子海圖之間的差異；

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;
- .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.

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;

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| <p>.3 電子海圖和紙製海圖可能出現的投影差異；</p> <p>.4 電子海圖顯示和原比例尺之間的可能差異（比例過大或過小）；</p> <p>.5 使用不同參照系對定位的影響；</p> <p>.6 使用不同水平和垂直基準面的影響；</p> <p>.7 船舶在海上運動的影響；</p> <p>.8 電子海圖顯示和信息系統在光柵海圖顯示模式中的局限性；</p> <p>.9 顯示下列信息時的潛在誤差：</p> <p>.9.1 本船位置；</p> <p>.9.2 雷達數據和自動雷達標繪儀以及自動識別系統的信息；</p> <p>.9.3 不同大地座標系；以及</p> <p>.10 驗證手動或自動數據修正的結果：</p> <p>.10.1 比較海圖數據和雷達圖像；以及</p> <p>.10.2 使用其他獨立定位系統核查本船位置。</p> <p>51 應對錯誤解讀數據和避免此類錯誤解讀應該採取的正確措施作出解釋。應強調以下各項的影響：</p> <p>.1 忽視顯示的比例尺過大；</p> <p>.2 對本船位置不加鑑別地接收；</p> <p>.3 顯示模式混淆；</p> <p>.4 海圖比例尺混淆；</p> <p>.5 參照系混淆；</p> <p>.6 顯示模式不同；</p> <p>.7 矢量穩定模式不同；</p> <p>.8 真北和陀螺北（雷達）的區別；</p> <p>.9 使用相同的數據參照系；</p> <p>.10 使用合適的海圖比例尺；</p> <p>.11 使用最適合指定情況和環境的傳感器；</p> <p>.12 輸入安全數據的正確值：</p> <p>.12.1 本船的安全等深線，</p> <p>.12.2 安全水深（安全水域），及</p> <p>.12.3 事件；以及</p> | <p>.3 possible projection discrepancies between an electronic and paper charts;</p> <p>.4 possible scale discrepancies (overscaling and underscaling) in displaying an electronic chart and its original scale;</p> <p>.5 effects of using different reference systems for positioning;</p> <p>.6 effects of using different horizontal and vertical datums;</p> <p>.7 effects of the motion of the ship in a seaway;</p> <p>.8 ECDIS limitations in raster chart display mode;</p> <p>.9 potential errors in the display of:.</p> <p>.9.1 the own ship's position;</p> <p>.9.2 radar data and ARPA and AIS information;</p> <p>.9.3 different geodetic coordinate systems; and</p> <p>.10 verification of the results of manual or automatic data correction:</p> <p>.10.1 comparison of chart data and radar picture; and</p> <p>.10.2 checking the own ship's position by using the other independent position-fixing systems.</p> <p>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:</p> <p>.1 ignoring overscaling of the display;</p> <p>.2 uncritical acceptance of the own ship's position;</p> <p>.3 confusion of display mode;</p> <p>.4 confusion of chart scale;</p> <p>.5 confusion of reference systems;</p> <p>.6 different modes of presentation;</p> <p>.7 different modes of vector stabilization;</p> <p>.8 differences between true north and gyro north (radar);</p> <p>.9 using the same data reference system;</p> <p>.10 using the appropriate chart scale;</p> <p>.11 using the best-suited sensor to the given situation and circumstances;</p> <p>.12 entering the correct values of safety data:</p> <p>.12.1 the own ship's safety contour,</p> <p>.12.2 safety depth (safe water), and</p> <p>.12.3 events; and</p> |
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.13 正確使用一切可利用數據。

52 懂得光柵海圖顯示系統僅僅是一種助航設備，當使用光柵海圖顯示系統模式時，電子海圖與顯示系統設備應與相應的最新紙質海圖一起使用：

.1 懂得光柵海圖顯示系統操作模式的差別，如第SN.1/Cir.207/Rev.1號通函“光柵海圖顯示系統與電子海圖顯示和信息系統的差別”所述；及

.2 在培訓中，無論電子海圖顯示和信息系統處於何種模式，均應與相應的最新海圖並用。

#### 影響系統性能和精確性的因素

53 應基本理解電子海圖顯示和信息系統的原理，並對下列各項具備全面的實用知識：

.1 啟動並設定電子海圖顯示和信息系統；連接數據傳感器：衛星和無線電導航系統接收機、雷達、陀螺羅經、計程儀、回聲測深儀；這些傳感器的精度和局限性，包括測量誤差和船位精度的影響、操縱對航向指示器精度的影響、羅經誤差對航向指示精度的影響、淺水對計程儀精度的影響、計程儀校正對速度計算精度的影響、干擾（海況）對回聲測深儀精度的影響；以及

.2 本組織所通過的現行電子海圖顯示和信息系統性能標準。

#### 練習

##### 設定並保持顯示

54 應掌握下列各項的知識和技能：

.1 獲得最佳電子海圖顯示和信息系統信息顯示的正確啟動程序；

.2 顯示（標準顯示、顯示背景、所有其他按要求的單獨顯示的信息）方式的選擇

.3 為獲得最佳數據顯示，正確調定各種雷達/自動雷達標繪儀的顯示控鈕；

.4 選擇便利的配置；

.5 酌情選擇電子海圖顯示和信息系統所需的速度輸入；

.6 選擇矢量的時間段；以及

.7 船位、雷達/自動雷達標繪儀、羅經、速度輸入傳感器和電子海圖顯示和信息系統的性能檢測。

##### 電子海圖的實際使用

55 應掌握下列各項的知識和技能：

.1 電子海圖顯示和信息系統信息顯示的主要特性和正確選擇航行任務信息；

.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

#### 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;

.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 監測船舶安全所需的自動功能，諸如船位、船首向/陀螺航向、速度、安全值和時間的顯示；
- .3 手動功能（使用光標、電子方位線、距離圈）；
- .4 選擇和調整電子海圖內容；
- .5 比例尺（包括比例過小或過大）；
- .6 變焦；
- .7 設定本船安全數據；
- .8 使用白天和夜間顯示模式；
- .9 讀取所有海圖符號和縮寫；
- .10 使用各種光標和電子標識獲取航行數據；
- .11 從不同方向觀察某一區域並返回本船位置；
- .12 使用地理座標尋找目標水域；
- .13 顯示與航行狀況有關的必不可少的數據層；
- .14 選擇適當和明瞭的數據（位置、航向、航速等）；
- .15 輸入航行記錄；
- .16 使用北向上顯示模式和其他方向顯示模式；及
- .17 使用真運動和相對運動模式。

### 航線設計

56 應掌握下列各項的知識和技能：

- .1 將船舶特性數據輸入電子海圖顯示和信息系統；
- .2 選擇航線設計的海區：
  - .2.1 檢查海上航路所需水域，及
  - .2.2 變更海圖比例尺；
- .3 核查是否有相應的最新海圖；
- .4 在電子海圖顯示和信息系統顯示器上使用圖形編輯器進行航線設計，並考慮恒向線和大圓航線：
  - .4.1 使用電子海圖顯示和信息系統數據庫獲取航海、水文氣象和其他數據；
  - .4.2 考慮到按海圖比例表示的旋回半徑和施舵點/線；
  - .4.3 標示危險深度和海區及警戒等深線；
  - .4.4 標出帶有交遇等深線和交叉航跡偏差臨界值的轉向點，以及添加、取代、清除轉向點；

- .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, hydro-meteorological 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;

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| .4.5 考慮到安全航速;            | .4.5 taking into consideration safe speed;   |
| .4.6 為安全航行檢查預定航線;以及      | .4.6 checking pre-planned route for navigational safety; and                                   |
| .4.7 設定警報和警告;            | .4.7 generating alarms and warnings.   |
| .5 航線設計計算採用表格形式, 包括:     | .5 route planning with calculation in the table format, including:                             |
| .5.1 選擇轉向點;              | .5.1 waypoints selection;  |
| .5.2 再現轉向點列表;            | .5.2 recalling the waypoints list;   |
| .5.3 說明航線設計;             | .5.3 planning notes;   |
| .5.4 調整預定航線;             | .5.4 adjustment of a planned route;  |
| .5.5 為安全航行檢查預定航線;        | .5.5 checking a pre-planned route for navigational safety;                                     |
| .5.6 備選航線設計;             | .5.6 alternative route planning;   |
| .5.7 存儲預定航線, 下載、卸載或刪除航線; | .5.7 saving planned routes, loading and unloading or deleting routes;                          |
| .5.8 監測器屏幕圖形備份及打印航線;     | .5.8 making a graphic copy of the monitor screen and printing a route;                         |
| .5.9 編輯和修改預定航線;          | .5.9 editing and modification of the planned route;  |
| .5.10 根據船舶尺度和操縱參數設定安全值;  | .5.10 setting of safety values according to the size and manoeuvring parameters of the vessel; |
| .5.11 返回航線設計;及           | .5.11 back-route planning; and   |
| .5.12 多航線連接。             | .5.12 connecting several routes.   |

#### 航線監測

57 應掌握下列各項的知識和技能:

- .1 使用獨立數據控制船位或使用電子海圖顯示和信息系統內的備選系統;
- .2 使用預測功能:
  - .2.1 更換海圖及其比例尺;
  - .2.2 審查海圖;
  - .2.3 設定矢量時間;
  - .2.4 以一定時間間隔預測船位;
  - .2.5 改變預定航線 (航線修正);
  - .2.6 輸入獨立數據以計算風流壓差;
  - .2.7 正確響應報警;
  - .2.8 輸入大地基準面偏差校正;
  - .2.9 在船舶航線上顯示時間標識;
  - .2.10 手動輸入船位;及

#### 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 在海圖上測量座標、航向、方位和距離。

.2.11 measuring coordinates, course, bearings and distances on a chart.

### 報警處理

58 應具有在下列情形裏解釋和正確響應各種系統的知識和技能，這些系統如航行傳感器、指示器、數據和海圖警報和指示器報警，包括開關聲光報警信號系統：

- .1 電子海圖顯示和信息系統數據庫中下一張海圖缺失；
- .2 穿越安全等深線；
- .3 超出交叉航跡邊界；
- .4 偏離預定航線；
- .5 接近轉向點；
- .6 接近臨界點；
- .7 抵達轉向點的計算時間與實際時間的差異；
- .8 比例尺過小或過大的信息；
- .9 接近孤立航行危險物或危險區；
- .10 穿越特定海區；
- .11 選擇不同大地基準面；
- .12 接近他船；
- .13 值班結束；
- .14 開關定時器；
- .15 系統測試故障；
- .16 電子海圖顯示和信息系統定位系統故障；
- .17 推算船位失敗；及
- .18 無法使用導航系統確定船位。

### 手動校正船位和運動參數

59 應掌握手動校正下列各項的知識和技能：

- .1 在衛星和無線電導航接收機關閉時的推算船位；
- .2 在自動獲得的座標不準確時的船位；及
- .3 航向和航速數值。

### 船舶日誌的記錄

60 應掌握下列各項的知識和技能：

- .1 自動航次記錄；

### 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 重現過去航跡，並考慮到：
  - .2.1 記錄手段；
  - .2.2 記錄間隔；
  - .2.3 驗證在用數據庫；
- .3 審查電子船舶日誌記錄；
- .4 電子船舶日誌即時記錄；
- .5 變更船舶時間；
- .6 輸入附加數據；
- .7 列印電子船舶日誌內容；
- .8 設定自動記錄時間間隔；
- .9 編製航次數據和報告；以及
- .10 航次數據記錄儀的接口。

#### 海圖更新

61 應掌握下列各項的知識和技能：

- .1 手動更新電子海圖。特別注意參考橢圓體的一致性以及海圖上和更正文本裏所用的計量單位的一致性；
- .2 使用電子海圖格式的從電子媒介上獲得的數據實現電子海圖半自動更新；及
- .3 使用通過電子數據通信網獲得的更新文件實現電子海圖的自動更新。

在使用未更新的海圖數據建立一個緊要場景時，應要求學員進行專門海圖更新。

#### 連接雷達或自動雷達標繪儀時電子海圖顯示和信息系統的操作使用

62 應掌握下列各項的知識和技能：

- .1 連接自動雷達標繪儀和電子海圖顯示和信息系統；
- .2 顯示目標的速度矢量；
- .3 顯示目標的航跡；
- .4 保存目標的航跡；
- .5 察看目標的表格；
- .6 檢查海圖所示地理特徵與雷達圖像疊加的一致性；
- .7 模擬一次或多次操縱；

- .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.

#### 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 採用自動雷達標繪儀捕獲的參照點修正本船船位；以及
- .9 使用自動雷達標繪儀光標和電子光標進行修正。

另見第B—I/12節，關於使用模擬器（有關雷達和自動雷達標繪儀）的指導，特別是第17至19和36至38款。

#### 在連接自動識別系統時操作使用電子海圖顯示和信息系統

63 應掌握下列各項的知識和技能：

- .1 連接自動識別系統；
- .2 解釋自動識別系統數據；
- .3 顯示目標的速度矢量；
- .4 顯示目標的航跡；和
- .5 保存目標的航跡。

#### 操作性警告，其好處和局限性

64 學員應理解電子海圖顯示和信息系統操作性警告的用途、好處及其局限性，以及其在適用時為避免虛假干擾的正確設置。

#### 系統操作測試

65 應掌握下列各項的知識和技能：

- .1 電子海圖顯示和信息系統故障測試方法，包括功能自檢；
- .2 故障出現後要採取的預防措施；以及
- .3 足夠的備份安排（切換並使用備份系統航行）。

#### 練習總結

66 教員應分析和列印出全部學員完成的所有練習的結果。總結用時應佔模擬器練習用時的10%到15%。

#### 非強制性模擬類型的建議性能標準

67 用於培訓和（或）適任評估或技能演示的非強制性模擬設備的性能標準如下所列。此種模擬的形式包括但不限於以下類型：

- .1 航行與值班；
- .2 船舶操作和操縱；
- .3 貨物裝卸和積載；
- .4 報告和無線電通信；以及
- .5 主機和輔機操作。

- .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 analyze 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.

**航行與值班模擬**

68 航行和值班模擬設備，除滿足第A—I/12節規定的所有適用性能標準外，應能夠模擬符合本組織所通過的所有適用性能標準的航行設備和駕駛台操作性控制裝置，並裝有聲響發生裝置，及：

- .1 創造一個實時操作環境，包括與所執行的航行和值班任務和所評估的操縱技能相適應的航行控制、通信儀器和設備；
- .2 提供一個真實的白天或夜間視景，包括各種能見度，或僅在夜間從駕駛台觀察的視景，提供給受培訓者的最小水平視野應適於航行和值班任務和目的；
- .3 真實地模擬“本船”在開闊水域條件下的動態特性，包括天氣、潮流、海流的影響和與他船的相互作用；和
- .4 真實地模擬船岸之間船舶交通服務通信程序。

**船舶操作和操縱模擬**

69 除滿足第37款所列明的性能標準外，船舶操作模擬設備應：

- .1 提供各種能見度的白天和夜間從駕駛台看到的真實視景，提供給受培訓者的最小水平視野應適於操作和操縱培訓任務和目的；和
- .2 真實地模擬“本船”在受限水域中的動態特性，包括淺水效應和岸壁效應。

70 當使用人工操縱船模進行船舶操作和操縱模擬時，除滿足第68.3款和第69.2款所述性能標準外，該設備應：

- .1 包含比例因素，以精確地顯示出真實船舶的尺度、面積、體積和排水量、速度、時間和旋回率；和
- .2 包含與正確時段相應的舵和機器控制。

**貨物裝卸和積載模擬**

71 貨物裝卸模擬設備應能夠模擬符合本組織通過的所有適用性能標準的貨物裝卸和控制設備，並包含有關設施，以：

- .1 創造一個有效的操作環境，包括具備適於所模擬的特定類型貨物系統儀器的貨物控制站；

**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, 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; and
- .2 realistically simulate “own ship” dynamics in restricted waterways, including shallow-water and bank effects.

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 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 模仿與所執行的貨物裝卸任務和所評估的技能相適應的裝卸功能和穩性及應力數據；和

.3 模擬裝貨、卸貨、壓載和排放壓載操作，以及相應的與穩性、縱傾、橫傾、縱向強度、扭應力和破艙穩性有關的計算。

#### **全球海上遇險與安全系統通信模擬**

72 全球海上遇險與安全系統通信模擬設備應能夠模擬符合本組織通過的所有適用性能標準的全球海上遇險與安全系統通信設備，並包含有關設施，以：

.1 模擬限用操作員證書（ROC）要求的VHF、VHF-DSC、NAVTEX、EPIRB和值班接收機設備的操作；

.2 模擬通用操作員證書（GOC）要求的INMARSAT-A、B和C船舶地球站、MF/HF、NBDP、MF/HF-DSC、VHF、VHF-DSC、NAVTEX、EPIRB和值班接收機設備的操作；

.3 提供帶有背景噪聲的通話；

.4 提供文件打印通信設施；以及

.5 創造由一個完整系統組成的實時操作環境，其中包括至少一個教員/評估員站和至少兩個全球海上遇險與安全系統船站或岸站。

#### **主機和輔機的操作模擬**

73 機艙模擬設備應能夠模擬主機和輔機系統，並且包含有關設施，以：

.1 創造一個海上航行和港口操作的實時環境，具有通信裝置，模擬相應的主、輔推進機器裝置和控制台；

.2 模擬有關的子系統，子系統應包括但不限於鍋爐、舵機、發電和配電系統，其中包括應急電源和燃料、冷卻水、製冷、艙底水和壓載系統；

.3 監控和評價機器性能和遙感系統；

.4 模擬機器故障；

.5 考慮到為影響所模擬的操作而改變的不同的外部條件：天氣、船舶吃水、海水和空氣溫度；

.6 考慮到由教員控制的、要改變的外部條件：甲板蒸氣、居住處所蒸氣、甲板空氣、冰況、甲板克令吊、重載起重機、船首推進和船舶負荷；

.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.

#### **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 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 考慮到由教員控制的、要改變的模擬器動態特點：應急操作、過程反應、船舶反應；和

.8 提供一個裝置以分開某些過程，如速度、電氣系統、輕油系統、潤滑油系統、重油系統、海水系統、蒸氣系統、廢氣鍋爐和透平發電機，以執行特定培訓任務。

### 第B—I/13節

#### 關於實施試驗的指導

(無條文)

### 第B—I/14節

#### 關於公司責任以及船長和海員建議責任的指導

#### 公司

1 公司應針對具體船舶提供旨在幫助新僱用的海員熟悉其責任範圍內的所有程序和設備的介紹性培訓計劃。公司還應確保：

.1 在配備自由降落式救生艇的船舶上，所有海員均應接受該種救生艇登乘和釋放程序的熟悉培訓；

.2 被指定操作自由降落式救生艇的海員，在上船前應接受過登乘、釋放和回收該種救生艇的適當培訓，包括至少參加過一次自由降落釋放；而且

.3 可能按要求操作全球海上遇險與安全系統設備的人員在上船時及上船後的適當時間間隔內接受全球海上遇險與安全系統的熟悉培訓。

2 第A—I/14節第3款所要求的熟悉培訓應至少保證達到與所擔任的職務和所承擔的職責和責任相應的能力如下：

#### 設計和操作性限制

.1 適當理解和遵守任何對船舶的操作性限制，理解和應用性能限制，包括惡劣天氣中旨在保護人命、船舶和貨物安全的速度限制的能力。

#### 船體開口的開啟、關閉和緊固程序

.2 正確適用為船舶制定的船首、船尾和船舷門及跳板的開啟、關閉和緊固程序及正確操作相應系統的能力。

.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.

### 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;

.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.

*有關客滾船的法規、規則和協議*

.3 理解並適用與本船舶和待履行職責有關的國際和國內客滾船要求的能力。

*穩性和應力的要求和限制*

.4 適當考慮諸如船首門和其他保持水密完整性的關閉裝置等船舶敏感部位的應力限制以及影響客滾船安全的特殊穩性問題的能力。

*維持客滾船特殊設備的程序*

.5 正確應用諸如船首、船尾和船舷門及跳板、排水孔和相關系統等客滾船特有船上設備的維護程序的能力。

*裝載和貨物繫固手冊及計算器*

.6 在適用時正確使用有關各類車輛和軌道車輛的裝貨和繫固手冊以及計算和應用車輛甲板應力限制的能力。

*危險品貨區*

.7 確保嚴格遵守適用於指定的危險品貨區的特別注意事項和限制的能力。

*應急程序*

.8 確保為以下目的正確應用任何特殊程序的能力：

- .8.1 防止或減少車輛甲板進水；
- .8.2 排除車輛甲板積水；和
- .8.3 儘量減少車輛甲板積水的影響。

**船長**

3 船長應採取一切必要步驟執行公司按照第A—I/14節發出的任何指示。此種步驟應包括：

- .1 在分派任何職責以前，認清所有新僱用上船的海員；
- .2 為所有新來的海員提供下述機會：
  - .2.1 參觀其將要履行主要職責的處所；
  - .2.2 熟悉其將要操作或使用的設備的位置、控鈕和顯示特點；
  - .2.3 在可能時，啟動設備並使用設備的控鈕執行職能；和

*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 觀察已熟悉設備、程序和其他安排並能夠以該海員明白的語言進行信息交流的人並向他提問；以及

.3 在對新僱用的海員是否已熟悉正確履行其職責所需的設備、操作程序和其他安排有任何疑問時，提供適當時間段的指導。

## 海員

4 新分配到船上工作的海員應充分利用所提供的一切機會熟悉船上的設備、操作程序和正當履行其職責所需的其他安排。第一次登船的每位海員均有責任熟悉船上的工作環境，特別是熟識新的或不熟悉的設備、程序和安排。

5 未及時達到正確履行職責所需的熟悉水平的海員，有責任將此事實報告其指導人，或按第A—I/14節第2.2款指定的海員，並應說明仍不熟悉的設備、程序或安排。

### 第B—I/15節

#### 關於過渡性條款的指導

(無條文)

## 第 II 章

### 關於船長和甲板部的指導

#### 第B—II/1節

對500總噸或以上船舶的負責航行值班的高級海員發證的指導

#### 培訓

1 每位負責航行值班的高級海員的證書申請人，應完成旨在協助未來甲板部高級海員按照表A—II/1達到適任標準的經規劃和組織的培訓計劃。

2 該培訓計劃的構成應在培訓規劃中規定，該培訓規劃要向所涉及的各方清楚地表達船上和岸上培訓的每一階段的目標。重要的是，未來的甲板部高級海員、教員、船上的全體員工和公司人員明白在培訓結束時要達到的適任標準，以及如何通過船上和岸上的教育、培訓和實際經歷結合達到適任標準。

3 強制性要求的海上服務資歷，對於學會擔負船舶甲板部高級海員的工作和達到所要求的全部適任標準，最為重要。經過

.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 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. Prop-

適當規劃和組織，海上服務資歷能使未來的甲板部高級海員獲取並鍛煉其技能，以及為展示和評估所達到的適任能力提供機會。

4 當海上服務資歷構成經認可的培訓計劃的一部分時，應遵循以下原則：

- .1 在船培訓計劃應成為整個培訓規劃的一個組成部分。
- .2 在船培訓計劃應由管理船舶的公司負責管理和協調，因海上服務正是在該船上完成。
- .3 應向未來的甲板部高級海員提供培訓記錄簿，以便對海上實際培訓和資歷保持全面記錄。記錄簿的編排應使它能提供所承擔任務和職責以及完成任務和職責的進度的具體信息。在正式填妥後，該記錄簿將提供完成有組織的在船培訓計劃的唯一證據，在為簽發證書而進行的適任評價過程中可加以考慮。
- .4 在任何時候，未來的甲板部高級海員都應知曉有兩名可辨認的人員直接對在船培訓計劃的管理負責。其一是被稱作“船上培訓官員”的一名合格的海船高級海員，他應在船長的授權之下組織和指導每一航次的培訓計劃。其二是由公司提名的被稱作“公司培訓官員”的一名人員，他應對培訓計劃以及與院校和培訓機構的協調負完全責任。
- .5 公司應保證，在船上的正常工作要求之內安排出適當時間來完成在船培訓計劃。

#### 作用和責任

5 下列各節概括了組織和實施船上培訓的有關人員的作用和責任：

- .1 公司培訓官員應負責：
  - .1.1 培訓計劃的全面管理；
  - .1.2 跟蹤未來甲板部高級海員的整個進程；以及
  - .1.3 按要求給予指導，並保證與培訓計劃有關的各個方面發揮其作用。

erly 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 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 船上培訓官員應負責：

.2.1 組織海上實際培訓計劃；

.2.2 以指導人的身份保證培訓記錄簿記錄得當並滿足所有其他要求；以及

.2.3 儘實際可能確保未來甲板部高級海員在海上度過的時間儘量有利於培訓和實踐，並符合培訓計劃的目標、培訓進度和船舶的操作限制。

.3 船長的責任應為：

.3.1 在船上培訓官員和岸上的公司培訓官員之間進行聯絡；

.3.2 如船上培訓官員在航行中交班，發揮連續性作用；以及

.3.3 保證各有關方面有效地實施在船培訓計劃。

.4 未來甲板部高級海員的責任應為：

.4.1 努力完成規定的培訓計劃；

.4.2 不管工作時間之內或之外，充分利用所提供的機會；以及

.4.3 不斷更新培訓記錄簿的記錄，並保證隨時出示供檢查。

**引導**

6 在培訓計劃開始時以及在不同船上的每個航次開始時，應向未來的甲板部高級海員提供關於對他們有何期望和培訓計劃如何組織的全部信息和指導。這種引導提供一個機會向未來的甲板部高級海員簡要介紹他們將執行任務的重要方面，並特別着重於安全工作規程和海洋環境保護。

**在船培訓計劃**

7 除其他者外，培訓記錄簿應包含一些應作為經認可的在船培訓計劃一部分而承擔的培訓任務或職責。這些任務和職責應至少與以下各方面有關：

.1 操舵系統；

.2 通用船藝；

.3 繫泊、錨泊和港口作業；

.4 救生和消防設備；

.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.

.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 系統和設備；
- .6 貨物作業；
- .7 駕駛台工作和值班；以及
- .8 熟悉機艙。

8 極其重要的是，應給予未來的甲板部高級海員足夠的、有人指導的駕駛台值班的機會，特別是在在船培訓計劃的後階段。

9 未來的甲板部高級海員履行培訓記錄簿中所列的每一任務和職責的表現，應由合格的甲板部高級海員在他認為未來的甲板部高級海員已達到令人滿意的業務能力標準時予以簽字確認。重要的是要認識到，未來的甲板部高級海員可能需要在幾個場合中表明其能力，合格的高級海員才確信他已達到令人滿意的標準。

#### 跟蹤和審查

10 對保證未來的甲板部高級海員全面了解他們取得的進步，並使他們能夠就其未來的計劃參與決策，指導和審查是關鍵。為取得效果，審查應聯繫從培訓記錄簿和其他合適來源獲得的信息。培訓記錄簿應由船長和船上培訓官員在每一航次的開始、中間和結束時仔細檢查並正式簽註。培訓記錄簿亦應由公司培訓官員在兩個航次之間檢查並簽註。

#### 評估航行值班的能力和技能

11 按要求應接受關於航行值班能力和技能的特殊培訓和評估的證書申請人，應按要求通過模擬器演示或作為經認可的在船培訓計劃一部分的船上演示，證明至少在下列各方面已具有作為負責航行值班的高級海員的技能和能力：

- .1 準備和指揮航行，包括：
  - .1.1 解讀和應用從海圖上獲得的信息；
  - .1.2 在沿海水域中定位；
  - .1.3 應用從潮汐表與其他航海出版物中獲得的基本信息；
  - .1.4 核查和操作駕駛台設備；
  - .1.5 核查磁羅經和陀螺羅經；
  - .1.6 評估可利用的氣象信息；
  - .1.7 利用天體定位；
  - .1.8 通過天文和地文方法測定羅經差；和

- .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 為長達24小時的航行進行計算；
- .2 操作並應用從電子導航系統中獲得的信息；
- .3 操作雷達、自動雷達標繪儀和電子海圖顯示和信息系統，並將雷達信息應用於航行和避碰；
- .4 操作推進和操舵系統以控制船首向和航速；
- .5 執行航行值班日常工作和程序；
- .6 實施救助落水人員所需的操縱；
- .7 啟動萬一出現緊急情況（如失火、碰撞、擱淺）時要採取的行動和在緊急情況出現之後要立即採取的行動；
- .8 啟動萬一設備和裝置（如舵機、動力裝置、導航系統）的主要部件失靈或停機時要採取的行動；
- .9 在正常和緊急情況下進行無線電通信以及視覺和聲響信號通信；以及
- .10 監測和操作安全報警系統，包括船舶內部通信。

12 對航行值班能力和技能的評估應：

- .1 按照表A—II/1規定的評價航行職能的適任標準進行；
- .2 保證申請人按照安全航行值班中應遵循的基本原則（第A—VIII/2節，第4—1部分）與關於保持航行值班的指導（第B—VIII/2節，第4—1部分）履行航行值班職責。

**適任評價**

13 負責航行值班的高級海員的發證應達到的適任標準見表A—II/1。該標準規定了所要求的知識和技能以及按照船上要求的工作標準運用那些知識和技能。

14 知識的範圍隱含在適任能力的概念中。因此，對適任能力的評估不僅應包括對工作、技能和所執行的任務的直接技術要求，還應反映出能滿足勝任船舶高級海員工作能力的全面要求的更廣泛內容。這包括相關的知識、理論、原則和認知能力，它們在不同程度上是所有級別適任能力的根基。這也包括業務能力，即做什麼，怎麼做，什麼時候做和為什麼要做。如果能正確應用，這將有助於確保申請人能：

- .1 在不同的船上和不同的環境中勝任工作；

- .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;
- .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 watch-keeping 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).

**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 預測、防備和處理意外情況；和
- .3 適應新的和不斷變化的要求。

15 評價適任的標準（表A—II/1第4欄）主要按結果列明適任能力的主要方面。採用這種表達方式是為了對照這些標準評估申請人的表現，並在培訓記錄簿中做出適當記錄。

16 評價適任是一個包括下列內容的過程：

- .1 搜集有關申請人為完成表A—II/1第1欄所列任務、職責和責任的知識、理解和熟練程度的有效和可靠的足夠證據；以及
- .2 對照適任標準中規定的標準判斷證據。

17 設計評價適任的安排，應考慮到可能對申請人的適任能力提供不同類型的證據的不同評估方法，例如：

- .1 對工作活動（包括海上服務資歷）的直接觀察；
- .2 技能/熟練程度/適任測試；
- .3 項目和任務；
- .4 取自以往經歷的證據；以及
- .5 書面的、口頭的和基於計算機的提問技巧。

18 除為證明知識和理解提供證據的有關提問技巧以外，應一律採用上述前四種方法中的一種或多種提供能力證據。

#### 天文航海培訓

19 以下方面概括了所推薦的天文航海培訓：

- .1 正確校準六分儀的可校正誤差；
- .2 確定六分儀天體高度的修正讀數；
- .3 使用優選的方法進行準確測天計算；
- .4 計算太陽中天高度的時間；
- .5 利用北極星或太陽中天高度計算緯度；
- .6 準確標繪位置線和定位；
- .7 使用優選的方法確定可見日出/日落的時間；
- .8 在曙暮光中辨認和選擇最適合的天體；

- .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\*.

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 使用優選的方法通過天體方位角或出沒方位角測定羅經差；

.10 支持上述第19.1至19.9款要求的適任能力所需的航海天文學。

20 天文航海培訓可以包含電子航海天文曆和天文航海計算軟件的應用。

#### 第B—II/2節

對500總噸或以上船舶的船長和大副發證的指導

(見第B—II/1節的指導)

#### 第B—II/3節

對未滿500總噸船舶的船長和負責航行值班的高級海員發證的指導

(見第B—II/1節的指導)

#### 第B—II/4節

對參加航行值班的普通海員培訓和發證的指導

1 除本規則表A—II/4規定的要求以外，鼓勵締約國為安全起見在對參加航行值班的普通海員的培訓中包括下列項目：

- .1 對經修正的《1972年國際海上避碰規則》的基本知識；
- .2 架設引航員梯；
- .3 理解引航員用英語發出的舵令；
- .4 救生艇筏和救助艇熟練操作培訓；
- .5 靠、離泊和拖帶作業中的輔助性工作；
- .6 拋錨的基本知識；
- .7 危險貨物的基本知識；
- .8 積載程序和安排物料上船的基本知識；以及
- .9 保養甲板和甲板上所用工具的基本知識。

#### 第B—II/5節

對擔任高級值班水手的普通海員發證的指導

在船培訓應記錄在經認可的培訓記錄簿中。

.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.

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.

### 第 III 章 關於輪機部的指導

#### 第B—III/1節

對在有人值班機艙負責輪機值班的高級海員或周期性無人值班機艙指定值班的輪機員發證的指導

1 表A—III/1中提及的工具，應酌情包括手動工具、普通測量設備、普通車床、鑽床、焊接設備以及磨床。

2 岸上車間技能培訓可以在培訓機構或經認可的車間中進行。

3 在船培訓應由合格的評估人員在培訓記錄簿中做好適當記錄。

#### 第B—III/2節

對主推進裝置推進功率為3000千瓦或以上船舶的輪機長和大管輪發證的指導

(無條文)

對1000伏以上發電機的運行和安全負管理責任的機艙人員培訓的指導

1 對1000伏以上發電機的運行和安全負管理責任的機艙人員的培訓應至少包括：

- .1 船用高壓系統的功能、運行和安全要求；
- .2 指定適當合格的人員進行各類高壓開關的維護和修理；
- .3 高壓系統故障期間採取必要的補救行動；
- .4 提出隔離高壓系統部件的轉換策略；
- .5 選擇隔離和測試高壓設備的適當器材；
- .6 執行帶有安全紀錄文件的船用高壓系統轉換和隔離程序；和
- .7 進行高壓設備絕緣阻抗和極化指數測試。

#### 第B—III/3節

對主推進裝置推進功率為750至3000千瓦船舶上的輪機長和大管輪發證的指導

(無條文)

### 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 of 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 switch-gear 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)

**第B—III/4節**

對參加有人值班機艙輪機值班或周期性無人值班機艙指定履行職責的普通海員培訓和發證的指導

1 除本規則第A—III/4節規定的要求以外，鼓勵締約國為安全起見在對參加輪機值班的普通海員的培訓中包括下列項目：

- .1 諸如污水、壓載水和液貨泵系統的日常泵操作的基本知識；
- .2 電氣裝置及相關危險性的基本知識；
- .3 保養和修理機器和機艙中所用工具的基本知識；以及
- .4 積載和安排物料上船的基本知識。

**第B—III/5節**

對擔任高級值班機工和普通海員發證的指導

在船培訓應記入經認可的培訓記錄簿。

**第B—III/6節**

對電子員培訓和發證的指導

除本規則表A—III/6規定的要求以外，鼓勵締約國在其培訓計劃中考慮到關於全球海上遇險與安全系統的無線電保養導則的第A.702(17)號決議。

**第B—III/7節**

對電子技工培訓和發證的指導。

(無條文)

**第 IV 章**

**關於無線電通信和無線電操作員的指導**

**第B—IV/1節**

關於第IV章適用範圍的指導

(無條文)

**第B—IV/2節**

關於全球海上遇險與安全系統無線電操作員培訓和發證的指導

關於一級無線電電子證書的培訓

總則

1 申請人應符合健康要求，特別是聽力、視力和語言能力方面的要求，才能開始培訓。

**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*

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 (GMDSS) 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 培訓應根據《培訓公約》的規定、《國際電信公約》附則中的《無線電規則》的規定和現行的《國際海上人命安全公約》（《安全公約》）的規定進行，並要特別注重全球海上遇險與安全系統（GMDSS）的規定。在制定培訓要求時，應至少考慮到以下第3至14款所述的知識和培訓。

### 理論

3 對安全和有效地使用全球海上遇險與安全系統所要求的全部子系統和設備所必需的、足以支持以下第13款實際培訓規定的一般原理和基本因素的知識。

4 全球海上遇險與安全系統子系統的使用、操作和服務區域的知識，包括衛星系統特性、航行和氣象警告系統以及選擇適當通信電路的知識。

5 足以符合以下第6至10款規定的電學原理和無線電和電子學理論的知識。

6 全球海上遇險與安全系統無線電通信設備的理論知識，包括窄帶直接印字電報和無線電話發射機和接收機、數字選擇性呼叫設備、船舶地球站、無線電應急示位標（EPIRBs）、船舶天線系統、救生艇筏無線電設備及其包括電源的所有輔助設備，以及通常用於無線電導航的其他設備原理的一般知識，特別是關於保養使用中的設備的知識。

7 影響系統可靠性、可用性的因素、保養程序和正確使用測試設備的知識。

8 有關微處理機和使用微處理機判斷系統故障的知識。

9 有關全球海上遇險與安全系統無線電設備控制系統的知識，包括測試和分析。

10 有關使用全球海上遇險與安全系統無線電設備的計算機軟件的知識和排除由於設備軟件控制喪失所造成故障的方法。

### 規則和文件

11 以下方面的知識：

.1 《安全公約》和《無線電規則》，重點是：

.1.1 遇險、緊急和安全無線電通信；

.1.2 避免有害干擾，特別是對遇險和安全通信的干擾；

和

.1.3 防止擅自發射；

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 radio-navigation, 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;

.2 有關遇險、安全和公共通信業務的操作和通信程序的其他文件，包括海上移動業務和海上移動衛星業務的收費、航行警告和天氣預報；以及

.3 使用《國際信號規則》和《海事組織標準海事通信用語》。

### 值班和程序

12 以下方面的知識和培訓：

.1 在全球海上遇險與安全系統子系統中防止有害干擾的通信程序和紀律；

.2 使用傳播預報信息確定最佳通信頻率的程序；

.3 有關所有全球海上遇險與安全系統子系統的無線電通信值班，無線電通信的交換，特別是關於遇險、緊急和安全程序及無線電記錄；

.4 使用國際音標字母；

.5 在另外至少一個頻率上監聽或工作的同時監聽遇險頻率；

.6 船舶報告制度和程序；

.7 《國際空中和海上搜尋和救助手冊》（《空海搜救手冊》）的無線電通信程序；

.8 無線電醫療系統和程序；以及

.9 假遇險報警的原因及其防範手段。

### 實踐

13 應在下述方面，在適當實驗室工作的支持下，進行實際培訓：

.1 在正常傳播條件下和在典型干擾條件下，正確和有效地操作所有全球海上遇險與安全系統子系統和設備；

.2 安全操作所有全球海上遇險與安全系統通信設備和輔助裝置，包括安全預防措施；

.3 進行良好的信息交換所需的足夠和準確的鍵盤輸入技能；

.4 下列操作技術：

.4.1 接收機和發射機的調節以獲得適當的工作模式，包括數字選擇性呼叫和直接印字電報，

.4.2 酌情調整和重新校準天線，

.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.

### 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 使用無線電救生設備；和
- .4.4 使用無線電應急示位標 (EPIRBs)；
- .5 酌情對天線進行安裝、修理和保養；
- .6 解讀和理解示意圖、邏輯圖和電路圖；
- .7 使用和保養海上電子維修所需的工具和測試儀器；
- .8 手工焊接和去焊技術，包括對半導體裝置和新型電路的焊接和去焊以及分辨電路是否適合於手工焊接和去焊的能力；
- .9 如可行，查找和修理元件故障，以及在其他情況下，查找和修理電路板和模塊故障；
- .10 認清和消除引發故障的條件；
- .11 所有全球海上遇險與安全系統通信設備和無線電導航設備的預防性和消除性保養程序；以及
- .12 減輕電氣和電磁干擾的方法，如屏蔽接地、屏蔽和旁路。

#### 其他

#### 14 以下方面的知識和(或)培訓：

- .1 英語，在書面和口語上均能令人滿意地進行有關海上人命安全信息的交流；
- .2 世界地理，特別是主要航線，救助協調中心 (RCCs) 的服務和有關通信線路；
- .3 海上求生、救生艇、救助艇、救生筏、浮力器具及其設備，特別是無線電救生設備的操作；
- .4 防火和滅火，特別是無線電設備的防火和滅火；
- .5 與包括電氣、放射性、化學和機械危害的有關無線電設備危害的船舶和人員安全預防措施；
- .6 急救，包括心肺復甦技術；以及
- .7 世界協調時 (UTC)，全球時區和國際日期變更線。

#### 關於二級無線電電子證書的培訓

#### 總則

15 申請人應符合健康要求，特別是聽力、視力和語言能力方面的要求，才能開始培訓。

- .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.

#### 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 培訓應根據《培訓公約》的規定、現行《安全公約》的規定進行，並要特別注重全球海上遇險與安全系統（GMDSS）的規定。在制定培訓要求時，應至少考慮到以下第17至28款所述的知識和培訓。

### 理論

17 安全和有效地使用全球海上遇險與安全系統中所要求的全部子系統和設備所必需的、足以支持以下第27款的實際培訓規定的關於一般原理和基本因素的知識。

18 全球海上遇險與安全系統子系統的使用、操作和服務區域的知識，包括衛星系統特性、航行和氣象警告系統以及選擇適當的通信電路的知識。

19 足以符合以下第20至24款規定的電學原理和無線電和電子學理論的知識。

20 全球海上遇險與安全系統無線電通信設備的一般理論知識，包括窄帶直接印字電報和無線電話發射機和接收機、數字選擇性呼叫設備、船舶地球站、無線電應急示位標（EPIRBs）、船舶天線系統、救生艇筏無線電設備及包括電源的所有輔助設備，以及通常用於無線電導航的其他設備原理的知識，特別是關於保養使用中的設備的知識。

21 影響系統可靠性、可用性、保養程序和正確使用測試設備的因素的一般知識。

22 有關微處理機和使用微處理機判斷系統故障的一般知識。

23 有關全球海上遇險與安全系統無線電設備控制系統的一般知識，包括測試和分析。

24 有關使用全球海上遇險與安全系統無線電設備的計算機軟件的知識和排除因設備軟件控制喪失所造成故障的方法。

### 規則和文件

25 以下方面的知識：

.1 《安全公約》和《無線電規則》，重點是：

.1.1 遇險、緊急和安全無線電通信；

.1.2 避免有害干擾，特別是對遇險和安全通信的干擾；和

.1.3 防止擅自發射；

.2 有關遇險、安全和公共通信業務的操作和通信程序的其他文件，包括海上移動業務和海上移動衛星業務的收費、航行警告和天氣預報；以及

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 .

### 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 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 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 使用《國際信號規則》和《海事組織標準海事通信用語》。

### 值班和程序

26 應提供下述方面的培訓：

- .1 在全球海上遇險與安全系統子系統中防止有害干擾的通信程序和紀律；
- .2 使用傳播預報信息確定最佳通信頻率的程序；
- .3 有關所有全球海上遇險與安全系統子系統的無線電通信值班、無線電通信的交換，特別是關於遇險、緊急和安全程序及無線電記錄；
- .4 使用國際音標字母；
- .5 在另外至少一個頻率上監聽或工作的同時監聽遇險頻率；
- .6 船舶報告制度和程序；
- .7 《國際空中和海上搜尋和救助手冊》（《空海搜救手冊》）的無線電通信程序；
- .8 無線電醫療系統和程序；以及
- .9 假遇險報警的原因及其防範手段。

### 實踐

27 應在下述方面，在適當實驗室工作支持下，進行實際培訓：

- .1 在正常傳播條件下和在典型干擾條件下，正確和有效操作所有全球海上遇險與安全系統子系統和設備；
- .2 安全操作所有全球海上遇險與安全系統通信設備和輔助裝置，包括安全預防措施；
- .3 進行良好的信息交換所需的足夠和準確的鍵盤輸入技能；
- .4 下列操作技術：
  - .4.1 對接收機和發射機進行調節以獲得適當的工作模式，包括數字選擇性呼叫和直接印字電報；
  - .4.2 酌情對天線進行調整和重新校準；
  - .4.3 使用無線電救生設備；和
  - .4.4 使用無線電應急示位標（EPIRBs）；
- .5 酌情對天線進行安裝、修理和保養；

.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.

### 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;
- .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 解讀和理解示意圖、邏輯圖和電路圖；
- .7 使用和保養海上電子維修所需的工具和測試儀器；
- .8 基本手工焊接和去焊技術及其局限性；
- .9 查找和修理電路板和模塊的故障；
- .10 認清和消除引發故障的條件；
- .11 所有全球海上遇險與安全系統通信設備和無線電導航設備的基本預防和消除性保養程序；以及
- .12 減輕電氣和電磁干擾的方法，如屏蔽接地、屏蔽和旁路。

#### 其他

28 以下方面的知識和(或)培訓：

- .1 英語，在書面和口語上均能令人滿意地進行有關海上人命安全信息的交流；
- .2 世界地理，特別是主要航線，救助協調中心(RCCs)的服務和有關通信線路；
- .3 海上求生、救生艇、救助艇、救生筏、浮力器具及其設備，特別是無線電救生設備的操作；
- .4 防火和滅火，特別是對無線電設備的防火和滅火；
- .5 與包括電氣、放射性、化學和機械危害的無線電設備危害有關的船舶和人員安全預防措施；
- .6 急救，包括心肺復甦技術；以及
- .7 世界協調時(UTC)，全球時區和國際日期變更線。

#### 關於通用操作員證書的培訓

##### 總則

29 申請人應符合健康要求，特別是聽力、視力和語言能力方面的要求，才能開始培訓。

30 培訓應根據《培訓公約》的規定、現行的《無線電規則》和《安全公約》的規定進行，並要特別注重全球海上遇險與安全系統(GMDSS)的規定。在制定培訓要求時，應至少考慮到以下第31至36款所述的知識和培訓。

- .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.

## 理論

31 安全和有效地使用全球海上遇險與安全系統中所要求的全部子系統和設備所必需的、足以支持以下第35款實際培訓規定的一般原理和基本因素的知識。

32 全球海上遇險與安全系統子系統的使用、操作和服務區域的知識，包括衛星系統特性、航行和氣象警告系統以及選擇適當通信電路的知識。

## 規則和文件

33 以下方面的知識：

.1 《安全公約》和《無線電規則》，重點是：

.1.1 遇險、緊急和安全無線電通信；

.1.2 避免有害干擾，特別是對遇險和安全通信的干擾；和

.1.3 防止擅自發射；

.2 有關遇險、安全和公共通信業務的操作和通信程序的其他文件，包括海上移動業務和海上移動衛星業務的收費、航行警告和天氣預報；以及

.3 使用《國際信號規則》和《海事組織標準海事通信用語》。

## 值班和程序

34 應提供以下方面的培訓：

.1 在全球海上遇險與安全系統子系統中防止有害干擾的通信程序和紀律；

.2 使用傳播預報信息來確定最佳通信頻率的程序；

.3 有關所有全球海上遇險與安全系統子系統的無線電通信值班、無線電通信的交換，特別是關於遇險、緊急和安全程序及無線電記錄；

.4 使用國際音標字母；

.5 在至少另外一個頻率上監聽或工作的同時監聽遇險頻率；

.6 船舶報告制度和程序；

.7 《國際空中和海上搜尋和救助手冊》（《空海搜救手冊》）的無線電通信程序；

.8 無線電醫療系統和程序；以及

.9 假遇險報警的原因及其防範手段。

## 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;

.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.

**實踐**

35 應提供以下方面的實際培訓：

- .1 在正常傳播條件下和在典型干擾條件下，正確和有效操作所有全球海上遇險與安全系統子系統和設備；
- .2 安全操作所有全球海上遇險與安全系統通信設備和輔助裝置，包括安全預防措施；
- .3 進行良好的信息交換所需的足夠和準確的鍵盤輸入技能；以及
- .4 下列操作技術：
  - .4.1 對接收機和發射機進行調節以獲得適當的工作模式，包括數字選擇性呼叫和直接印字電報；
  - .4.2 酌情對天線進行調整和重新校準；
  - .4.3 使用無線電救生設備；和
  - .4.4 使用無線電應急示位標 (EPIRBs)；

**其他**

36 以下方面的知識和(或)培訓：

- .1 英語，在書面和口語上均能令人滿意地進行有關海上人命安全信息的交流；
- .2 世界地理，特別是主要航線，救助協調中心 (RCCs) 的服務和有關通信線路；
- .3 海上求生、救生艇、救助艇、救生筏、浮力器具及其設備，特別是無線電救生設備的操作；
- .4 防火和滅火，特別是無線電設備的防火和滅火；
- .5 與包括電氣、放射性、化學和機械危害的無線電設備危害有關的船舶和人員安全預防措施；
- .6 急救，包括心肺復甦技術；以及
- .7 世界協調時 (UTC)，全球時區和國際日期變更線。

**關於限用操作員證書的培訓**

**總則**

37 申請人應符合健康要求，特別是聽力、視力和語言能力方面的要求，才能開始培訓。

**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 培訓應根據培訓公約的規定、現行的《無線電規則》和《安全公約》的規定進行，並要特別注重全球海上遇險與安全系統 (GMDSS) 的規定。在制定培訓要求時，應至少考慮到以下第39至44款所述的知識和培訓。

### 理論

39 安全有效地使用全球海上遇險與安全系統A1海區所要求的全部子系統和設備所必需的、足以支持以下第43款所述培訓規定的關於一般原理和基本因素的知識，包括甚高頻 (VHF) 距離限制和天線高度的效果。

40 全球海上遇險與安全系統A1海區的子系統的使用、操作和服務區域的知識，例如航行和氣象警告系統以及選擇適當的通信電路。

### 規則和文件

41 以下方面的知識：

.1 《安全公約》和《無線電規則》有關A1海區的部分，具體重點是：

- .1.1 遇險、緊急和安全無線電通信；
- .1.2 避免有害干擾，特別是對遇險和安全通信的干擾；和
- .1.3 防止擅自發射；

.2 有關遇險、安全和公共通信業務的操作和通信程序的其他文件，包括A1海區海上移動業務的收費、航行警告和天氣預報；和

.3 使用《國際信號規則》和《海事組織標準海事通信用語》。

### 值班和程序

42 應提供以下方面的培訓：

.1 A1海區使用的全球海上遇險與安全系統子系統中防止有害干擾的通信程序和紀律；

.2 對下述的甚高頻 (VHF) 通信程序：

.2.1 無線電通信值班，無線電通信的交換，特別是關於遇險、緊急和安全程序及無線電記錄；

.2.2 在至少另外一個頻率上監聽或工作的同時監聽遇險頻率；和

.2.3 數字選擇呼叫系統；

.3 使用國際音標字母；

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.

### 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;

.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 船舶報告制度和程序;
- .5 《國際空中和海上搜尋和救助手冊》的甚高頻無線電通信程序;
- .6 無線電醫療系統和程序;以及
- .7 假遇險報警的原因及其防止手段。

#### 實踐

43 應提供以下方面的實際培訓:

- .1 在正常傳播條件下和在典型干擾條件下,正確和有效操作為在A1海區營運的船舶規定的全球海上遇險與安全系統子系統和設備;
- .2 安全操作有關全球海上遇險與安全系統通信設備和輔助裝置,包括安全預防措施;以及
- .3 使用下述設施的操作技術:
  - .3.1 甚高頻,酌情包括頻道、噪聲抑制和模式調整,
  - .3.2 無線電救生設備;
  - .3.3 無線電應急示位標 (EPIRBs);和
  - .3.4 航行電傳 (NAVTEX) 接收機。

#### 其他

44 以下方面的知識和(或)培訓:

- .1 英語,在書面和口語上均能令人滿意地進行有關海上人命安全信息的交流;
- .2 救助協調中心 (RCCs) 的服務和有關通信線路;
- .3 海上求生,救生艇、救助艇、救生筏、浮力器具及其設備,特別是無線電救生設備的操作;
- .4 防火和滅火,特別是無線電設備的防火和滅火;
- .5 與包括電氣、放射性、化學和機械危害的無線電設備危害有關的船舶和人員安全預防措施;和
- .6 急救,包括心肺復甦技術。

**關於船上全球海上遇險與安全系統 (GMDSS) 設備維修的培訓**

#### 總則

45 參閱《安全公約》第IV/15條的有關維修要求和關於A3和A4海區全球海上遇險與安全系統無線電維修導則的海事組織第A.702 (17) 號決議,其附件含有下述規定:

- .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.

#### 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.

#### 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 指定履行海上電子維修職能的人員，應按要求持有《無線電規則》規定的適當證書，或具備主管機關參照本組織關於此類人員培訓的建議核准的等效海上電子維修資格。”

46 下述關於等效電子維修資格的指導供主管機關酌情使用。

47 以下建議的培訓並不能使未持有適當無線電操作員證書的任何人員有資格擔任全球海上遇險與安全系統無線電設備操作員。

#### 與一級無線電電子證書等效的維修培訓

48 在確定與一級無線電電子證書所列部分等效的培訓時：

- .1 理論內容應至少涵蓋第3至10款所列的科目；
- .2 實踐內容應至少涵蓋第13款所列的科目；以及
- .3 所包括的其他知識應至少涵蓋第14款所列的科目。

#### 與二級無線電電子證書等效的維修培訓

49 在確定與二級無線電電子證書的維修部分等效的培訓時：

- .1 理論內容應至少涵蓋第17至24款所列的科目；
- .2 實踐內容應至少涵蓋第27款所列的科目；以及
- .3 所包括的其他知識應至少涵蓋第28款所列的科目。

## 第V章

### 對特定類型船舶人員特殊培訓要求的指導

#### 第B—V/1節

##### 關於液貨船人員培訓和資格的指南

#### 具有貨管職責的人員

1 規則第V/1—1條第3和第5款及規則第V/1—2條第3款中所用“具有貨管職責的人員”一詞係指在裝貨、卸貨、運輸中貨物照料、貨物作業、貨艙清洗或其他有關貨物的操作中，具有決策職責的人員。

#### 所有液貨船人員的熟悉培訓

2 在上船任職之前，所有液貨船人員應在船上及，在適當時，在岸上接受熟悉培訓。該培訓應酌情由對油類、化學品或液

“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 Radio-electronic 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.

#### 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

化氣體貨物的裝卸操作和特性、以及有關安全程序具有經驗的合格人員提供。該培訓應至少包括以下第3至8款所列的事項。

#### 規則

3 關於在港口和海上時液貨船人員安全的船舶規則和規章的知識。

#### 健康危害和應採取的預防措施

4 皮膚接觸的危害；吸入或意外吞入貨物；所運載貨物的危害性、人員事故和有關的急救；該做和不該做事項的清單。

#### 防火和滅火

5 吸煙管制和炊事限制；着火源；防火和防爆；滅火方法；便攜式滅火器和固定式滅火裝置。

#### 防止污染

6 在溢漏事故中為防止空氣和水污染而採取的程序和措施。

#### 安全設備及其使用

7 正確使用防護服和設備、復甦器、逃生和救助設備。

#### 應急程序

8 熟悉應急計劃程序。

#### 資格證明

9 每一油船、化學品船和液化氣體船的船長應確保主要負責貨物作業的高級海員或人員持有酌情根據規則第V/1—1條第3款或規則第V/1—1條第5款或規則第V/1—2條第3款簽發或簽註或有效的適當證書，並具有適當類型液貨船上的實際經歷，令該高級海員或人員能夠安全履行指定的職責。

#### 關於經認可的在船培訓的指導

##### 總則

10 限定船上服務資歷的目的是為特定液貨船貨物的安全運輸提供培訓和知識。

11 為滿足規則第V/1—1條第4.2.2款、第V/1—1條第6.2.2款和第V/1—2條第4.2.2款提及的、適合海員所服務的液貨船上的職責的經歷，在船培訓應：

.1 注重實際“實操經歷”並與海員工作相關，即甲板部和輪機部的培訓可以有所不同；

.2 由對船舶所運貨物的操作、特性和安全程序具備資格和經驗的人員負責指導；

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 ONBOARD 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 related 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 在與所申請的液貨船培訓合格證書或簽註相關的產品運輸船上開展，並且應啟動專用設備，但這期間的某一段時間可處於不裝貨的壓載航行中；

.4 至少參加3次裝卸作業操作；和

.5 至少涵蓋第19款中“在船培訓標準”所列的項目。

12 在船培訓計劃不得影響安全航行或船舶適航性。

#### 在船培訓計劃

13 學員應為編外人員（即學員除執行培訓計劃和應急任務外沒有其他任務）。

14 在船培訓計劃應由管理船舶的公司負責管理和協調，因海上服務正是在該船舶上完成，而且它由公司指定為培訓船。

15 在任何時候，學員都應知曉有兩名可辨認的人員直接對在船培訓計劃的管理負責。其一是被稱作“船上培訓官員”的一名合格的海船高級海員，他應在船長的授權之下組織和指導培訓計劃。其二是由公司提名的被稱作“公司培訓官員”的一名人員，他應對培訓計劃以及與院校和培訓機構的協調負完全責任。

16 應向學員提供培訓記錄簿，以便對海上實際培訓和經歷保持全面記錄。經認可的培訓記錄簿的編排，應使它能提供所承擔任務和職責及完成任務和職責的進度的詳細信息。在正式填妥和由船長會簽後，經認可的記錄簿將作為已完成有組織的在船培訓計劃的唯一證據，作為簽發“液貨船貨物操作高級培訓證書”的依據。

17 在經認可的在船培訓計劃實施期間，應指導學員進行裝貨、卸貨、運輸中貨物照料、貨物操作、洗艙或其他與貨物相關的作業，以確保所獲得的經驗至少與通過3個月的正常服務所獲得者相同。

18 如果在一個月內船培訓期間不能達到3次裝貨和3次卸貨標準，則在船培訓期應延長至達到此標準為止。

#### 在船培訓標準

19 培訓應至少提供與適用的液貨船類型相關的知識和經驗如下：

##### .1 安全

.1.1 所有液貨船類型

.1 船舶安全管理體系

.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

.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).

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.\*

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 “ship-board 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 與貨物相關的消防設備和程序
- .3 與貨物相關的急救程序，包括涉及危險貨物事故時的船舶醫療急救指南 (MFAG)
- .4 與船舶/貨物有關的危害，包括吸煙、空氣缺氧、貨物碳氫麻醉和毒性
- .5 風險評估體系
- .6 工作許可，包括熱工和封閉處所進入程序
- .7 個人防護設備的使用
- .1.2 液化氣體船的附加要求
  - .1 與低溫貨物操作及儲存相關的危險與防護
- .2 結構、貨物、貨艙和管系**
  - .2.1 所有液貨船類型
    - .1 船體/液艙的結構和局限性
    - .2 貨物連接管
    - .3 與所運貨物類型相關的性質和危害，包括使用物質安全數據表
    - .4 貨物操作（如淨化/除氣/洗艙）可能對起居艙室通風系統造成的風險，以及降低這些風險的措施
    - .5 貨物和壓載系統的分佈
    - .6 泵及相關設備
    - .7 與貨物操作相關的專用設備
    - .8 液貨船結構規範以及其對貨物操作的影響
  - .2.2 液化氣體船的附加要求
    - .1 使用隔離、分隔和氣鎖來維持氣體安全區域
    - .2 貨艙、艙內分隔裝置、隔離區和管道卸壓閥和蒸汽排氣系統
    - .3 貨物蒸汽壓縮機及相關設備
- .3 吃水差和穩性**
  - .3.1 所有液貨船類型
    - .1 液貨船穩性資料和計算設備
- .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 systems
- .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 air-locks 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 將應力水平維持在可接受限度內的重要性

.3 自由液面效應和“晃蕩”效應的危險

#### .4 貨物操作

##### .4.1 所有液貨船類型

.1 裝貨的預計劃/運輸中貨物照料、卸貨/壓載操作

.2 保持紀錄

.3 啟動/停止程序，包括緊急關斷

.4 在貨物操作期間停泊安排需要注意的事項

.5 淨化和惰化要求及相關危害

.6 裝載貨物包括裝滿結束操作

.7 卸貨，包括排空和刮艙操作

.8 貨物裝載/卸載操作監控，包括適用時，抽取樣品

.9 貨艙計量和報警系統

.10 靜電危害及其預防措施

.11 壓載和卸壓載操作

.12 維護要求，包括防護塗層檢查

##### .4.2 化學品船的附加要求

.1 聚合、貨物兼容性、貨艙塗層兼容性和其他反應

.2 抑制劑和催化劑的功能

.3 蒸汽/氣體驅散

##### .4.3 液化氣體船的附加要求

.1 聚合、貨物兼容性、貨艙塗層兼容性和其他反應

.2 抑制劑和催化劑的功能

.3 反向壓力原因和壓力劇增效應

.4 使用蒸發氣體作為燃料

.5 蒸汽/氣體驅散

.6 淨化和冷卻操作

.7 再液化設備的操作和維修

.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

.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 deballasting 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 監護駁運系統的理解和使用
- .4.4 油船的附加要求
- .1 原油洗艙系統
- .5 洗艙/清洗**
- .5.1 所有液貨船類型
- .1 液貨船上安裝的洗艙系統和設備
- .2 洗艙/清洗操作的預先計劃
- .3 洗艙程序，包括淨化和惰化
- .4 污水/廢品控制
- .5 靜電危害
- .6 清潔要求
- .7 維護要求
- .5.2 化學品船的附加要求
- .1 去除抑制劑和殘留物
- .2 使用吸收劑、清潔劑和洗滌劑
- .5.3 液化氣體船的附加要求
- .1 加熱/蒸發液體殘留物和重新氣化過程
- .6 惰氣系統**
- .6.1 所有液貨船類型
- .1 液貨船上安裝的惰氣系統和設備
- .2 與處所惰化相關的危害，特別注意貨艙的安全進入
- .3 淨化，保持惰化環境和除氣作業
- .4 維護要求
- .7 預防與控制污染**
- .7.1 所有液貨船類型
- .1 國際的、船旗國的和船公司的規則、文件和計劃
- .2 液貨船防污染系統和設備的操作，包括排放監控
- .3 液貨船污染控制設備的操作
- .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 of 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 氣體探測設備和儀器****.8.1 所有液貨船類型**

.1 個人、便攜式和固定式氣體分析儀的使用和校準，特別是氧氣和碳氫氣體監測設備

.2 貨艙液位測量、液位報警器和溫度測量系統的操作、維護和局限性

**.8.2 液化氣體船的附加要求**

.1 船體溫度測量的操作和維護

**.9 出版物****.9.1 所有液貨船類型**

.1 與液貨船運作有關的國際、船旗國和公司出版物，包括《安全公約》、《防污公約》和適用的指導手冊

.2 船上設備專用的操作和維護手冊

.3 已確立的行業標準和安全作業實用規則（例如，國際船級社協會、石油公司國際海事論壇、國際氣體運輸船和碼頭經營人協會）

**第B—V/1—1節**

*關於油船和化學品船船長、高級海員和普通海員培訓和資格的指導*

**油船培訓**

20 規則第V/1—1條第2.2和4.3款要求的油船培訓應為參與培訓的各方列出一個清楚地表述培訓目的的培訓計劃。培訓可在船上、或適當時在岸上進行。此種培訓應由船上、或在適當時由岸上適用設施中的現場實際教學予以補充。所有培訓和教學均應由具有適當資格和適當經驗的人員提供。

21 應儘可能利用船上的操作和設備手冊、影片和適當的影像輔助設備；並應提供機會討論船上安全組織應發揮的作用和安全員和安全委員會的作用。

**化學品船培訓**

22 規則第V/1—1條的第2.2和6.3款要求的化學品船培訓應為參與培訓的各方列出一個清楚地表述培訓目的的培訓計劃。培訓可在船上、或適當時在岸上進行。此種培訓應由船上、或適當時由岸上適用設施中的現場實際教學予以補充。所有培訓和教學均應由具有適當資格和適當經驗的人員提供。

**.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)

**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\*.

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 shore-based installation. All training and instruction should be given by properly qualified and suitably experienced personnel\*.

23 應儘可能利用船上的操作和設備手冊、影片和適當的影像輔助設備；並應提供機會討論船上安全組織應發揮的作用和安全員和安全委員會的作用。

#### 第B—V/1—2節

*關於液化氣體船船長、高級海員和普通海員培訓和資格的指導*

24 規則第V/1—2條第2.2和4.3款要求的液化氣體船培訓應為參與培訓的各方列出一個清楚地表述培訓目的的培訓計劃。培訓可在船上、或適當時在岸上進行。此種培訓應由船上、或適當時由岸上適用設施中的現場實際教學予以補充。所有培訓和教學均應由具有適當資格和適當經驗的人員提供。

25 應儘可能利用船上的操作和設備手冊、影片和適當的影像輔助設備；並應提供機會討論船上安全組織應發揮的作用和安全員和安全委員會的作用。

#### 第B—V/2節

*關於客船海員培訓的指導*

##### 強化消防培訓

1 對於客船上的高級海員和普通海員，應提供強調消防困難的附加培訓，包括進入受限區域、防止火災蔓延到相鄰艙室。

##### 破損控制

2 在按第A—II/1、A—II/2和A—III/2節的規定為達到所需破損控制和水密完整性的理論知識、理解和熟悉水平制訂適任標準時，公司和培訓機構應考慮到下述關於破損控制和水密完整性的最低知識、理解和熟悉要求：

##### 適任

儘量降低進水風險，並對涉及船舶完整性損害的緊急情況保持戒備狀態。

##### 知識、理解和熟悉

船上破損控制計劃和組織。

破損控制系統、設備（鎖閉裝置）和應急逃生路線

保持穩性和水密完整性的關鍵要素

緊固浸水邊界和維持水密邊界的重要性

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.

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.

#### 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.

*船上發生爆炸、擱淺、碰撞和火災時採取的行動*

適用於包括艙底污水系統和泵在內的船上設備的破損控制技術

**第B—V/a節**

*關於大型船舶和具有特殊操縱特點的船舶的船長和大副附加培訓的指導*

1 重要的是，船長和大副應具備有關經驗和經過有關培訓，才能在明顯不同於他們原先所服務船舶的大型船舶或有非常見操縱和操作特點的船舶上承擔船長或大副職責。載重量大、長度大或設計特殊或高航速的船舶通常具有上述特點。

2 在此類船舶上任職前，船長和大副應：

.1 得到公司提供的有關船舶操作特點的資料，特別是表 A—II/2—“500總噸或以上船舶的船長和大副最低適任標準規範”第2欄中在船舶操縱和操作項下所列的知識、理解和熟練；和

.2 完全熟悉有關船舶上安裝的所有航行和操縱輔助裝置的使用，包括其能力和局限性。

3 在初次承接上述船舶之一的指揮權之前，未來的船長應具有作為船長或大副的足夠和適當的一般經歷，並且：

.1 具有在有關指導下操作同一船舶的足夠和適當的經歷，或操縱具有類似操縱特點的船舶的足夠和適當的經歷；或

.2 學習過在能夠模擬此類船舶操縱特點的裝置上進行的經認可的船舶操作模擬器課程。

4 動力支撐和高速船艇的船長和大副的附加要求和資格，應視情況符合《海事組織動力支撐船艇安全規則》和《海事組織高速船安全規則》的有關導則（《1994年高速船規則》和《2000年高速船規則》）。

**第B—V/b節**

*關於在載運散裝固體危險和有害物質的船舶上負責貨物作業的高級海員和普通海員培訓的指導*

1 培訓應分為兩個部分，一個是關於所涉原則的一般部分，另一個是關於將這些原則應用於船舶操作的部分。所有培訓和教學均應由具有適當資格和適當經驗的人員提供並至少包括下述第2至14款中所載項目。

*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**

*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 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.

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**

*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.

**原則**

**特性和性質**

2 了解危險和有害物質的重要物理特性和化學性質，足以對其固有危害和有關危險有基本的理解。

**具有化學危害的物質的分類**

3 國際海事組織危險貨物第4–9類和與各類貨物相關的危害；及《國際海運固體散裝貨物規則》(IMSBC)中所列的僅在散裝時有危險的物質。

**健康危害**

4 皮膚接觸、吸入、吞咽和放射性導致的危險。

**公約、規則及建議**

5 基本熟悉經修正的《1974年安全公約》中第II—2章和第VII章的有關要求。

6 對《國際海運固體散裝貨物規則》(IMSBC)的一般使用和熟悉，特別是對於：

- .1 人員的安全，包括安全設備，計量儀器及其使用和對測量結果的實際應用和解釋；
- .2 具有移動傾向的貨物的危害；和
- .3 具有化學危害性的物質。

**船上應用**

**第4.1類—易燃固體**

**第4.2類—易自燃物質**

**第4.3類—與水接觸時發出易燃氣體的物質**

7 載運、積載和控制溫度以防止分解和可能的爆炸；積載類別；包括適用於自行反應和相關物質在內的一般積載預防措施；防止發熱和着火、有毒或易燃氣體的散發以及爆炸混合物的形成的隔離要求。

**第5.1類—氧化物**

8 載運、積載和溫度控制以防止分解和可能的爆炸；積載類別；為防止着火以及爆炸和形成毒性氣體而確保與可燃物質、酸類和熱源隔離的一般積載預防措施和隔離要求。

**第6.1類—有毒物質**

9 對食品、工作區域和居住區域的污染及通風。

**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.

**第7類—放射性物質**

10 運輸指數；礦和精礦的種類；積載和與人員、未沖洗的膠卷和膠片及食品的隔離；積載類別；一般積載要求；特殊積載要求；隔離要求和分隔距離；與其他危險貨物的隔離。

**第8類—腐蝕性物質**

11 受潮物質的危險。

**第9類—其他危險物質和物品**

12 實例和相關危害；僅在散裝狀況下有危險的物質的危險（《國際海運固體散裝貨物規則》）；一般和特定的積載注意事項；工作和運輸的注意事項；隔離要求。

**安全注意事項和應急程序**

13 貨艙內的電氣安全；進入可能含有氧氣被耗盡、有毒或易燃氣體的封閉處所時的注意事項；船舶載運各類物質失火可能引起的後果；《國際海事組織危險品運輸船應急反應程序》的使用；在發生涉及危險和有害物質的事故時要遵循的應急計劃和程序，以及在此方面對《國際海運固體散裝貨物規則》各個條目的酌情適用。

**醫療急救**

14 《國際海事組織危險貨物事故醫療急救指南》及其結合其他指南和無線電醫療諮詢的使用。

**第B—V/c節**

*關於在載運包裝危險和有害物質的船舶上負責貨物作業的高級海員和普通海員培訓的指導*

1 培訓應分為兩個部分，一個是關於所涉原則的一般部分，另一個是關於將這些原則應用於船舶操作的部分。所有培訓和教學均應由具有適當資格和適當經驗的人員提供並至少包括下述第2至19款中所載項目。

**原則****特性和性質**

2 了解危險和有害物質的重要物理特性和化學性質；足以對其固有危害和有關危險有基本的理解。

**危險和有害物質和具有化學危害性的物質的分類**

3 國際海事組織危險貨物第1至9類和每一類的相關危險。

**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.

**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**

*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.



**健康危害**

4 皮膚接觸、吸入、吞咽和放射性導致的危險。

**公約、規則和建議**

5 基本熟悉《1974年安全公約》第II—2章和VII章以及《73/78年防污公約》附則III的有關要求，包括其通過《國際危規》的實施。

**對《國際海運危險貨物規則》（《國際危規》）的使用和熟悉**

6 《國際危規》有關申報、單證、包裝、標籤和標牌要求的一般知識；貨物集裝箱和車輛裝填；可移動罐櫃、罐櫃集裝箱、公路罐車以及用於危險物質運輸的其他組件。

7 關於《國際危規》提及的不同類型船舶上的積載、繫固、分隔和隔離所需的識別、標記和標籤的知識。

8 人員安全，包括安全設備、測量儀器及其使用和實際應用以及對結果的解釋。

**船上的應用****第1類—爆炸品**

9 六種危險類別和13種兼容組別；載運爆炸品用的包裝和彈藥箱；貨物集裝箱和貨車的結構適用性；包括艙面和艙內積載特殊佈置在內的積載規定；與第1類內其他類別危險貨物以及與非危險貨物的隔離；在客船上運輸和積載；裝貨處所的適用性；保安注意事項；在裝卸期間應採取的預防措施。

**第2類—氣體（壓縮、液化或壓力下溶解的）、易燃、非易燃、無毒和有毒**

10 壓力容器和活動罐櫃的類型，包括所用的減壓和關閉裝置；積載類別；一般積載注意事項，包括易燃氣體、有毒氣體和海洋污染氣體的積載注意事項。

**第3類—易燃液體**

11 包裝、罐櫃集裝箱、可移動罐櫃和公路罐車；積載類別，包括對塑料容器的特殊要求；包括海洋污染物積載措施在內的一般積載措施；隔離要求；在高溫下載運易燃液體時應採取的預防措施。

**第4.1類—易燃固體****第4.2類—易自燃物質****第4.3類—與水接觸時釋放易燃氣體的物質**

12 包裝類型；為防止分解和可能的爆炸而在受控溫度中運輸和積載；積載類別；一般的積載注意事項，包括適用於自反應

**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

和有關物質、退敏爆炸物和海洋污染物的積載注意事項；防止發熱和着火、有毒和易燃氣體的散發和爆炸性混合物的形成的隔離要求。

#### 第5.1類—氧化物質

#### 第5.2類—有機過氧化物

13 包裝類型；為防止分解和可能的爆炸而在受控溫度中運輸和積載；積載類別；一般積載注意事項，包括適用於海洋污染物的積載注意事項；為防止着火、爆炸和形成有毒氣體而確保與可燃物質、酸類和熱源隔離的分隔要求；儘力減少可引起分解的摩擦和撞擊的預防措施。

#### 第6.1類—有毒物質

#### 第6.2類—傳染性物質

14 包裝類型；積載類別；一般積載注意事項，包括適用於有毒、易燃液體和海洋污染物的積載注意事項；隔離的要求，特別考慮到這些物質的共同特點是能造成死亡或對人的健康造成嚴重傷害；發生溢漏時的消毒措施。

#### 第7類—放射性物質

15 包裝類型；積載和隔離的運輸指數；積載和與人員、未沖洗的膠卷和膠片及食品的隔離；積載類別；一般積載要求；隔離要求和分隔距離；與其他危險貨物的隔離。

#### 第8類—腐蝕性物質

16 包裝類型；積載類別；一般積載注意事項，包括適用於腐蝕性、易燃液體和海洋污染物的積載注意事項；隔離要求，特別考慮到這些物質的共同特點是能對活組織造成嚴重損害。

#### 第9類—其他危險物質和物品

17 危險的範例，包括海洋污染。

#### 安全注意事項和應急程序

18 貨艙內的電氣安全；進入可能含有氧氣被耗盡、有毒或易燃氣體的封閉處所的注意事项；各類物質船運過程中的洩漏或失火的可能後果；對甲板上或甲板下透氣的考慮；《國際海事組織危險品運輸船舶應急反應程序》的使用；發生涉及危險物質的事故時應遵循的應急計劃和程序。

#### 醫療急救

19 《國際海事組織危險貨物事故醫療急救指南》及其結合其他指南和無線電醫療諮詢的利用。

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 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.

**第B—V/d節***《培訓公約》規定適用於海上移動平台(MOUs)的指導*

- 1 《培訓公約》的規定適用於航行期間的自推進式海上移動平台上的海運人員。
- 2 《培訓公約》的規定不適用於非自推進式海上移動平台或就位後的海上移動平台。
- 3 當考慮海上移動平台就位後的培訓和發證的適當標準時，登記國應考慮到海事組織的相關建議。特別是，在自推進式海上移動平台上，或必要時在其他平台上工作的所有海員應滿足經修正的《培訓公約》的要求。
- 4 自推進式海上移動平台在從事國際航行時要求備有安全配員證書。
- 5 在沿海國專屬經濟區作業的就位後的海上移動平台，則應遵守該沿海國的法律。此沿海國亦應考慮到海事組織的相關建議，並且對在其他國家登記的海上移動平台規定的標準不得高於對在其本國登記的海上移動平台適用的標準。
- 6 在海上移動平台(無論是否自推進式)上就業的所有專業人員應接受符合海事組織相關建議中的熟悉和基本安全培訓。

**第B—V/e節***關於近海供應船的船長和負責航行值班的高級海員培訓和資格的指導*

- 1 重要的是，參與近海供應操作的船長和高級海員應具有相關的經歷或經過相關培訓，才能在近海供應船上承擔其職責。重點應放在實船操作經歷，或操作經歷與模擬器培訓的結合。
- 2 船長和高級海員應理解近海供應船常見的獨特操縱性和操作特點。
- 3 執行近海供應作業前，船長和高級海員應：
  - .1 知道近海工業和各種作業所使用的術語；
  - .2 理解在近海處/設施工作時始終保持安全工作距離的重要性；
  - .3 具備船舶操縱性和在各種天氣條件下保持就位的知識；
  - .4 理解船舶的具體設計參數；和
  - .5 理解無障礙地監視工作區域的必要性。

**Section B-V/d***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 training in accordance with relevant IMO recommendations.

**Section B-V/e***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 在近海供應船上時，船長及高級海員應：

- .1 了解配備各種推進裝置的船舶的操作特點及性能；和
- .2 能夠在緊靠近海設施和其他船舶之處操縱近海供應船。

5 船長應理解船上參與執行近海供應作業的其他人員熟悉其職責的必要性。

#### 近海供應船的操錨作業

6 重要的是，參與有關操錨作業的供應船上的船長和負責航行值班的高級海員應具有相關的經歷和經過相關培訓。

7 在執行操錨作業之前，船長和負責航行值班的高級海員應：

- .1 充分知曉船舶有關操錨的操作特點，包括但不限於：
  - .1.1 航行和船位保持；
  - .1.2 船舶操作；
  - .1.3 充分了解近海供應船的穩性，特別是同時出現低  $GZ_{max}$  值、低開敞甲板和大大外力時。使用裝載計算儀，以及“剛性、硬性”船舶與甲板上良好的工作環境間的矛盾。使用減搖裝置造成的潛在的穩性降低；和

.1.4 在危險的油田中作業，包括在可能使用錨或其他繫泊設備的區域中確定海床上任何管道或其他結構的位置；以及

.2 完全熟悉船上安裝的有關操錨作業的各種儀器和系統的使用，包括其能力和局限性，包括但不限於：

- 2.1 各種側推器、傳統的或Z形推進器的使用；
- 2.2 近海鑽井平台、駁船和設施的人員接送、操作、起重、拖帶、操錨和佈錨；
- 2.3 鑽井平台、駁船和其他船舶的拖帶；
- 2.4 拉力至600公噸的吊裝和牽引絞車的操作；
- 2.5 對拖帶和操錨絞車作業基礎，特別是負荷限制設備和釋放系統以及拖帶銷和制動器等相關設備的功能，應具備詳細、全面的知識；和

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.

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 offshore 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  $GZ_{max}$ , 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 bollard 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 牽引鉤和絞車緊急釋放的重大區別。

8 船長和負責航行值班的高級海員，在負責操錨時，應已在主管機關認為合適的平台移動過程中受過指導而獲得足夠的有關培訓和經歷。培訓可由適當的模擬器培訓作為補充。

**第B—V/f節***動力定位系統操作人員培訓和經歷的指導*

1 動力定位係指通過自推進船舶的自身推進裝置自動控制其位置和船首向的系統。

2 從事動力定位 (DP) 系統操作的人員應獲得相關培訓和經驗。該培訓的理論部分應使動力定位操作員 (DPOs) 理解動力定位系統及其組成部分的操作。所獲得的知識、理解和經驗應使人員使能夠在動力定位時安全操作船舶，並充分考慮到海上人命安全和海洋環境保護。

3 培訓的內容和經驗應涵蓋動力定位系統的下列組成部分：

- .1 動力定位控制站；
- .2 發電和管理；
- .3 推進裝置；
- .4 船位參照系統；
- .5 船首向參照系統；
- .6 環境參照系統；和
- .7 外力參照系統，例如錨鏈張力計。

4 培訓和經驗應涵蓋動力定位的常規操作，以及對動力定位故障、失效、事故和緊急情況的處理，以確保操作能夠繼續運行或安全終止。培訓對象不應僅限於動力定位操作員和動力定位船長；船上的其他人員，例如電子員和輪機部高級海員，可能需要附加培訓和經驗以確保他們能在動力定位船舶上履行其職責。應考慮將適當的動力定位演習作為船上培訓和經驗的一部分。動力定位操作員應了解與動力定位操作相關的文件（例如操作手冊、故障模式和後果分析和控位能力圖）的種類和目的。

5 所有的培訓都應由具有適當資格和適當經驗的人員提供。

6 在以動力定位模式運營的船舶上任職時，船長、動力定位操作員和其他接受過動力定位培訓的人員應熟悉船載特殊設備及該船的特性。應特別考慮該船工作的性質和動力定位系統對該工作的重要性。

## .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***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.

**第B—V/g節***在極地水域運營的船舶的船長和高級海員培訓指導*

1 重要的是，在極地水域運營的船舶的船長、負責航行值班的高級海員和負責輪機值班的高級海員應獲得相關經驗和培訓如下：

.1 在該類船舶上任職前：

.1.1 對於船長和負責航行值班的高級海員，培訓應至少提供第2至11款所述科目的基本知識；以及

.1.2 對於負責輪機值班的高級海員，培訓應至少提供第3、6、10款和第11款所述科目的基本知識。

.2 船長和輪機長應具有足夠和適當的在極地水域操作船舶的知識。

**冰的特性—冰區**

2 解讀各種冰況圖並意識到氣象學和海洋學數據的局限性，冰物理學、冰的形成、增長、老化和融化階段；冰的類型和冰集量；冰壓力；積雪覆蓋冰的摩擦；飛沫結冰和積冰的影響、防積冰措施和減輕其後果；不同地區和不同季節的冰情機制，包括北極和南極的區別；識別冰情和天氣條件快速變化的後果；冰山和漂流冰的運動。

**冰凍和嚴寒天氣中的船舶性能**

3 船舶特性；船舶類型，船體設計；冰強化要求；不同船級社的抗冰等級—極地船級和地方規定；冰區船級的限制；船舶的過冬防寒準備；低溫系統性能。

**船舶在冰區的航次和航路計劃**

4 制訂安全的航次和航路計劃以在可能時避開冰情，包括解讀不同形式的冰像和數據以協助制訂航行策略計劃；從開闊水域進入冰區以避開冰山和危險冰況；航行，並決定何時可以安全進入存在浮冰或冰山的區域或由於夜間、湧浪、霧或冰壓而不能安全進入。

**在冰區操作和操縱船舶**

5 駛近浮冰大量出現的水域前的準備和風險評估；船舶在不同冰級和不同冰型下無協助的操作；在浮冰和冰山出現時的安全速度；與破冰船及其他船舶的通信聯絡；在各種冰況下的航行；意識到運動能量的增加；利用冰山作掩護通過積冰。

**Section B-V/g***Guidance regarding training of masters and officers for ships operating in polar waters*

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 regions 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 of 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**

4 Development of safe routing 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 使用不同類型的推進系統和舵，包括意識到系統強度和能力的局限性；使用橫傾和縱傾系統，機器負荷和冷卻問題。

#### 規則和建議

7 進入不同地區的當地要求，包括《南極條約》、國際規則和建議。

#### 設備限制

8 在極地水域利用陸上助航設備及其相關風險；高緯度羅經差；在冰雜波中分辨雷達目標和浮冰特徵；電子定位系統在高緯度的局限性；海圖和引航指南的局限性；通信系統的局限性。

#### 安全措施和應急程序

9 具備足以安全航行的水文數據；在海圖不充分的水域中航行的注意事項；搜救準備和責任的局限性，包括全球海上遇險與安全系統A4海區及其搜救通信設施的局限性；對應急計劃的意識；對拖帶程序的知識；與其他船舶和當地搜救組織聯絡的價值；對海員暴露在低溫下的危險的認識；棄船及冰上求生程序和技術；噪音和振動造成的海員疲勞；運載額外資源，諸如燃料、食物和額外衣着；對極地水域事故後果更大嚴重性的意識。

10 制定安全工作程序；對最常見的船體和設備損壞以及如何預防的意識；滅火系統的局限性。

#### 環境考慮

11 排放方面的敏感海域；禁航和避航區域；《防污公約》規定的特殊區域；溢油設備的局限性；應對垃圾、艙底水、污泥和污水等數量增加的計劃；嚴寒氣候下的污染後果。

## 第 VI 章

### 對應急、職業安全、保安、醫護和救生職能的指導

#### 第B—VI/1節

對所有海員的安全熟悉和基本培訓以及訓練的強制性要求的指導

#### 防火和滅火

1 第A—VI/1節中所要求的防火和滅火培訓應至少包括以下第2至4款所列的理論和實踐內容。

#### 理論培訓

2 理論培訓應包括：

- .1 燃燒和爆炸三要素（燃燒三角形）：燃料；火源；氧氣；

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 damages 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*

#### 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.

#### 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 着火源：化學的；生物的；物理的；
- .3 易燃物質：可燃性；燃點；燃燒溫度；燃燒速度；熱值；  
易燃性下限（LFL）；易燃性上限（UFL）；可燃範圍；惰化；靜電；閃點；自燃；
- .4 火災的危害和由輻射、對流和傳導引起的火勢蔓延；
- .5 反應性；
- .6 火災分類和適用的滅火劑；
- .7 船上火災的主要原因：機艙漏油；香煙；（軸承）過熱；  
廚房設備（爐灶、煙道、炒鍋、熱平底鍋等）；自燃（貨物、廢棉紗等）；熱工作業（焊接、切割等）；電氣設備（短路、非專業性修理）；反應、自熱和自燃；縱火；靜電；
- .8 防火
- .9 煙、火探測系統；自動失火報警裝置；
- .10 滅火設備包括：
- .10.1 船上固定設備及其位置；消防總管，消火栓；國際通岸接頭；窒息滅火裝置，二氧化碳，泡沫；特種處所內的壓力噴水系統等等；自動噴淋裝置；應急消防泵；應急發電機；化學乾粉裝置；要求配置的和可用的移動設備概要；高壓水霧裝置；高倍膨脹泡沫；新發展與新設備；
- .10.2 消防員裝備，個人設備；呼吸器；復甦設備；防煙面具或頭盔；防火救生索及索具；及其船上放置地點；以及
- .10.3 通用設備，包括消防水龍帶；水槍；接頭；消防斧；  
便攜式滅火器；滅火毯；
- .11 結構和佈置，包括逃生路線；艙室除氣方法；A、B、C 類分隔；惰性氣體系統；
- .12 船舶消防組織，包括一般警報；防火控制圖，人員集合地點及各自的職責；通信，包括在港時的船對岸通信；人員安全程序；定期船上演習；巡邏制度；
- .13 復甦搶救方法的實踐知識；
- .14 滅火方法，包括鳴放警報；確定位置和隔離；棄貨；抑制法；冷卻法；窒息法；滅火；防再燃值守；排煙；以及
- .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 (CO<sub>2</sub>), 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 滅火劑，包括水、固體噴射物、噴水、水霧、水淹、泡沫（高、中、低倍膨脹）；二氧化碳（CO<sub>2</sub>）；水膜形成泡沫（AFFF）；化學乾粉；新發展和新設備。

### 實踐培訓

3 下列各項實踐培訓應在能提供真實培訓狀況（如模擬的船上狀況）的場所進行，在可行時還應進行夜間、白天訓練，使受培訓者能掌握以下技能：

- .1 使用各種手提式滅火器；
- .2 使用自給式呼吸裝置；
- .3 撲滅小火，如電火、油火和丙烷火；
- .4 用水撲滅大火（水槍和水霧噴頭）；
- .5 使用泡沫、乾粉或其他合適的化學滅火劑滅火；
- .6 使用救生索但不戴呼吸器進入或通過已噴注高倍膨脹泡沫的艙室；
- .7 佩戴自給式呼吸器在充滿煙霧的封閉處所滅火；
- .8 使用水霧或其他合適的滅火劑在有濃煙火的居艙或模擬機艙內滅火；
- .9 使用水槍或水霧噴頭和散射水槍、化學乾粉或泡沫噴頭撲滅油火；
- .10 佩戴呼吸器在充滿煙霧的處所內進行救生。

### 一般要求

- 4 還應使受訓者認識到在船期間保持戒備狀態的必要性。

### 簡單急救

5 在職業培訓的早期，最好在出海前培訓期間，作為基本培訓的一部分，應對海員進行附則第VI/1條所要求的簡單急救培訓，使海員能在面臨事故或其他醫療緊急情況下，在具有急救技能的人員或船上負責醫護的人員到達之前，採取急救行動。

### 人員安全及社會責任

6 主管機關應切記信息交流和語言技能在維護海上人命與財產安全和防止海上污染方面的重要性。由於航運業的國際化特點，船對船、船對岸通信中對口語通信的依賴，多國海員同船現象增多，以及對海員在緊急情況下應能夠與旅客溝通的關切，

.15 fire-fighting agents, including water, solid jet, spray, fog, flooding; high-, medium- and low-expansion foam; carbon dioxide (CO<sub>2</sub>); 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.

### ELEMENTARY FIRST AID

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

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

所以海事通信採用一種通用語言將通過減少重要信息交流中的人為錯誤而促進安全操作。

7 英語，雖非全球性語言，但正在迅速地在實踐中成為海上安全通信的標準語言，在一定程度上是使用《海事組織標準海事通信用語》的結果。

8 主管機關應考慮確保海員至少具有運用以航海術語和情景為重點的基礎英語辭彙能力的好處。

#### 第B—VI/2節

*關於簽發救生艇筏、救助艇和快速救助艇培訓合格證書的指導*

1 證書申請人應符合健康要求，特別是有關視力和聽力的要求，才能開始培訓。

2 培訓應符合經修正的《國際海上人命安全公約》（《安全公約》）的有關規定。

3 對於保持表A—VI/2—1節中要求的適任標準，締約國亦可接受第A—VI/2節第6.1.2、6.1.3、6.1.4、6.2.1和12.1.5款中列明的在船培訓和經歷（例如參加演習）。主管機關應切記這些在船培訓項目僅在良好天氣條件下及港口規則允許時方可進行。

#### 第B—VI/3節

*關於高級消防培訓的指導*

（無條文）

#### 第B—VI/4節

*關於急救和醫護要求的指導*

對於經指定承擔表A—VI/4—1第1欄中所列的、提供船上急救的任務、職責和責任的海員，其培訓計劃應酌情考慮到經修訂的《國際船舶醫療指南》。

#### 第B—VI/5節

*關於船舶保安員培訓和發證的指導*

1 培訓應符合《船港保安規則》和經修正的《安全公約》的規定。

2 在完成培訓後，船舶保安員應具備足夠的英語知識以正確解讀和交流與船舶或港口設施保安有關的消息。

3 在有特別必要時，如暫時沒有可用的持有船舶保安員熟練證書的海員，主管機關可允許具有專門保安職責和責任且理解

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.

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

船舶保安計劃的海員，在抵達下一停靠港前或不超過30天內（以時間較長者為準），擔任船舶保安員並行使船舶保安員的所有職責和責任。公司應儘快將所做安排通知下一停靠港的主管當局。

#### 第B—VI/6節

對所有海員與保安培訓和訓練有關的強制性最低要求的指導

##### 熟悉和保安意識

1 海員和船上人員不是保安專家，本公約或本規則規定的目的不是使其成為保安專家。

2 海員和船上人員應接受足夠與保安有關的培訓或訓練和熟悉培訓，以獲得履行其指定職責所需的知識並共同為加強海上保安做出貢獻。

3 無指定保安職責的海員，在其職業生涯中應至少完成第A—VI/6節列明的保安意識培訓或訓練一次。如果有關海員或船上人員滿足規則第VI/6條規定的與保安有關的熟悉要求，並參加《船港保安規則》要求的演練和演習，則沒有必要進行此項培訓的更新或再有效。

##### 負有指定保安責任的海員

4 第A—VI/6節中的“負有指定保安職責”一語係指依據船上保安計劃負有明確保安職責和責任者。

5 負有指定保安職責的海員，在其職業生涯中，應至少完成第A—VI/6中列明的培訓一次。如果有關海員或船上人員滿足規則第VI/6條與保安有關的熟悉要求並參加《船港保安規則》要求的演練和演習，則沒有必要進行此項培訓的更新或再有效。

6 按照第A—VI/6節提供“與保安有關的熟悉培訓”的人員無需滿足規則第I/6條或第A—I/6節的要求。

7 在有特別必要時，當需要一名有資格履行保安職責的人員承擔船上與保安有關的職責但暫時沒有這樣的人員時，主管機關可允許沒負有指定保安職責、但了解船舶保安計劃的海員，在抵達下一停靠港前或不超過30天內（以間較長者為準），履行這一職責。

## 第VII章

### 關於可供選擇的發證標準

#### 第B—VII/1節

關於簽發可供選擇的證書的指導

（無條文）

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.

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)

**第B—VII/2節***關於甲板機艙綜合特殊培訓計劃的指導*

1 各締約國應確保任何甲板機艙綜合特殊培訓計劃：

- .1 以經認可的培訓計劃的方式提供；
- .2 在岸上海員培訓機構內和（或）經認可的培訓船上進行；和
- .3 記錄在經認可的培訓記錄簿中。

**第B—VII/3節***關於簽發可供選擇證書的原則的指導*

（無條文）

## 第 VIII 章 關於值班的指導

**第B—VIII/1節***關於適於值班的指導***防止疲勞**

1 在遵守休息時間的要求時，“壓倒一切的運行狀態”應解釋為係指僅因安全、保安或環境原因而不能延誤的、或在航次開始時不能合理預料到的、至關重要的船上工作。

2 雖然對於疲勞尚沒有普遍接受的技術性定義，但每一位參與船舶操作的人均應警惕會導致疲勞的因素，其中包括但不限於本組織已明確的因素，並應在決定船舶作業時加以考慮。

3 在適用規則第VIII/1條時，應考慮到以下各項：

- .1 所制定的防止疲勞的規定應保證整個工作時間不會過長或不合理，特別是第A—VIII/1節規定的最少休息時間不應被解釋為意指所有其他時間均可用於值班或履行其他職責；
- .2 休息時段的次數和長短以及准予補休是在一段時間內防止疲勞增加的重要因素；以及
- .3 對從事短途海上航行的船舶，只要作出安全方面的特殊安排，可以有不同的規定。

4 第A—VIII/1節第9款規定的例外應解釋為係指國際勞工組織《1996年海員工作時間和船舶配員公約》（第180號）或

**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, security 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, 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 Man-

《2006海事勞工公約》(在其生效時)規定的例外。適用該例外規定的情況應由締約國確定。

5 主管機關應以海上事故調查所獲得的信息為基礎，不斷審核其防止疲勞的規定。

### 防止吸毒(濫用藥物)和酗酒

6 吸毒和酗酒直接影響到海員履行值班職責或有關指定的安全、防污染和保安職責的體能和能力。當發現海員受到毒品(藥物)或酒精的影響時，不應允許其履行值班職責或與安全、防污染和保安有關的職責，直至他們履行這些職責的能力不再受到影響為止。

7 主管機關應確保採取適當措施以防止酒精和毒品影響值班人員或履行指定安全、防污染和保安職責人員的能力，並應根據需要制定甄別計劃：

- .1 鑑別吸毒和酗酒；
- .2 尊重有關個人的尊嚴、隱私、保密和基本合法權利；以及
- .3 考慮到相關國際導則。

8 公司應實施明文規定的防止吸毒和酗酒的政策，包括以通過納入公司質量管理體系或向海員提供足夠的信息和教育的方法，禁止值班人員在值班前4小時內飲酒。

9 參與制定防止吸毒和酗酒方案的人員應考慮到國際勞工組織出版的可能經修正的《海運業防止吸毒和酗酒方案》(計劃人員手冊)中的指導。

### 第B—VIII/2節

#### 關於值班安排和應遵循的原則的指導

1 公司、船長和值班高級海員應考慮到以下操作性指導。

#### 第1部分—關於發證的指導

(無條文)

#### 第2部分—關於航次計劃的指導

(無條文)

#### 第3部分—關於值班的一般原則

(無條文)

ning 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;
- .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)*, as may be amended.

### Section B-VIII/2

#### *Guidance regarding watchkeeping arrangements and principles to be observed*

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)

## 第4部分—關於海上值班的指導

### 第4-1部分—關於保持航行值班的指導

#### 引言

2 對特殊類型的船舶以及載運有害、危險、有毒或高度易燃貨物的船舶，可能需要特別指導。船長應根據情況提供操作指導。

3 重要的是，負責航行值班的高級海員要認識到，有效地履行其職責對海上人命和財產安全以及防止海上環境污染的必要性。

#### 錨泊值班

4 在開敞錨地、開敞的港外錨地或任何其他實際“在海上”錨泊情況下，依據《培訓規則》第VIII章第A—III/2節第4-1部分第51款的規定，每一船舶的船長應確保為在所有錨泊時間保持安全值守做出充分的值班安排。任何時間均應有一名船舶駕駛員負責錨泊安全值班。

5 在確定與維持船舶安全、保安和海洋環境保護相稱的值班安排時，船長應考慮到所有相關的環境和狀態，如：

1. 通過視覺、聽覺以及其他所有可用手段保持連續的警戒狀態；
2. 船與船和船與岸的通信要求；
3. 當時的天氣、海況、冰和海流的狀況；
4. 連續監控船舶位置的需要；
5. 錨地的性質、大小和特徵；
6. 通航狀況；
7. 可能影響船舶保安的情況；
8. 裝卸作業；
9. 指派待命海員；以及
10. 向船長報警和保持主機備車的程序。

### 第4-2部分—關於保持輪機值班的指導

6 對特殊類型的推進系統或輔助設備以及載運有害、危險、有毒或高度易燃貨物或其他特種貨物的船舶，可能需要特別指導。輪機長應根據情況提供操作指導。

7 重要的是，負責輪機值班的高級海員要認識到，有效地履行其職責對海上人命和財產安全以及防止海上環境污染的必要性。

## 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, security 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 接班的高級海員，在承擔輪機值班職責前，應：

.1 熟悉為在危險或有毒環境中的人命安全而提供的設備的位置和使用方法；

.2 確認緊急醫療急救用品，特別是處理燒傷、燙傷的用品備妥可用；和

.3 當在港內安全錨泊或繫泊時，了解：

.3.1 貨物作業活動、維修狀況及所有其他影響到值班的作業；以及

.3.2 正在用於旅客或海員艙室服務、貨物作業、操作性供水和排氣系統的輔機。

#### 第4-3部分—關於保持無線電值班的指導

##### 一般要求

9 除其他規定外，《無線電規則》要求各船舶電台要具有執照，其最終決定權在船長或其他船舶負責人手裏，並只能在完全合格的人員的控制下操作。《無線電規則》還要求，遇險警報須只能在船長或船舶其他負責人批准後發出。

10 船長應切記，所有經指定負責發出遇險警報的人員必須按照規則第I/14條第1.5款的要求接受過訓練，了解並能正確操作所有船上無線電設備。這應記錄在甲板日誌或無線電日誌中。

##### 值班

11 除關於無線電值班的的要求外，每艘海船船長還應保證：

.1 為交換一般通信，特別是公共通信，船舶無線電台應適當配員，並考慮到被批准操作船舶無線電台人員的職責所帶來的限制；和

.2 船上配備的無線電設備以及備用電源（如有的話）要保持有效工作狀態。

12 在應急部署表中指定在遇險事件中負有無線電通信主要職責者，應定期向所有有關海員提供關於無線電設備的使用和遇險與安全程序方面的必要指導和信息。這應記入無線電日誌中。

13 不受《1974年安全公約》約束的每艘船舶的船長應考慮到《無線電規則》，要求按主管機關的決定充分保持無線電值班。

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.

#### 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, 1974 should require that radio watchkeeping is adequately maintained as determined by the Administration, taking into account the Radio Regulations.

**操作要求**

14 在開航前，經指定在遇險事件中負有無線電通信主要職責的無線電操作員應保證：

.1 所有遇險與安全方面的無線電設備和備用電源處於有效工作狀態而且這記入無線電日誌；

.2 國際協定要求的所有文書、船舶電台通告以及主管機關要求的其他附加文書均已備妥，並已根據最新的增補做出修正，而且已向船長報告任何不符項；

.3 無線電時鐘已按標準時間信號正確設定；

.4 天線已正確就位，無損壞並已連接妥當；和

.5 船舶將要航行的區域以及船長要求的其他區域的常規氣象報告和航行警告信息已儘實際可行地得到更新，並已遞交船長。

15 在啟航並開啟電台後，值班無線電操作員應：

.1 在適當的遇險頻率上守聽任何可能存在的遇險情況；和

.2 向當地海岸電台和任何其他適當的、預料會進行一般通信的海岸電台發送通訊報告（船名、位置和目的地等）。

16 當電台開通時，值班的無線電操作員應：

.1 按標準時間信號校對無線電時鐘，至少每天一次；

.2 在進入和離開某一預期會進行一般通信的海岸電台的服務區域時，向該海岸電台發送通訊報告；和

.3 按照船長指示向船舶報告系統發送報告。

17 在海上時，經指定在遇險事件中負有無線電通信主要職責的無線電操作員應保證下述設備正常工作：

.1 數字選擇性呼叫（DSC）遇險與安全無線電設備，辦法是每週至少一次試呼叫；以及

.2 遇險和安全無線電設備，辦法是每天至少測試一次，但不發射任何信號。

測試結果應記入無線電日誌。

18 經指定處理一般通信的無線電操作員應考慮到本船船位與那些可能要進行通信的海岸電台和海岸地球站的相對位置，

**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



保證在可能交換通信的頻率上保持有效值班。在進行通信時，無線電操作員應遵守國際電信聯盟（ITU）的有關建議。

19 在抵達港口而關閉電台時，值班無線電操作員應將抵港並關閉電台一事通知當地海岸電台和其他保持過聯繫的海岸電台。

20 在關閉電台時，經指定在遇險事件中負有無線電通信主要職責的無線電操作員應：

- .1 保證發射天線接地；和
- .2 檢查備用電源是否已經充滿。

#### 遇險報警和程序

21 遇險報警或遇險呼叫絕對優先於一切其他發射。《無線電規則》要求所有收到這種信號的電台應立即停止可能影響遇險通信的一切發射。

22 如果是本船遇險，經指定在遇險事件中負有無線電通信主要職責的無線電操作員應立即按照《無線電規則》的程序和有關的國際電信聯盟—無線電（ITU-R）建議承擔起責任。

23 在收到遇險報警時：

- .1 當班的無線電操作員應立即向船長和（在適當時）向經指定在遇險事件中負有無線電通信主要職責的無線電操作員報警；和
- .2 經指定在遇險事件中負有無線電通信主要職責的無線電操作員應評價局勢，並立即按照《無線電規則》的程序和有關的國際電信聯盟—無線電（ITU-R）建議承擔起責任。

#### 緊急文電

24 一旦本船發生緊急事件，經指定在遇險事件中負有無線電通信主要職責的無線電操作員應立即按照《無線電規則》的程序和有關的國際電信聯盟—無線電（ITU-R）建議承擔起責任。

25 在進行有關醫療諮詢的通信時，經指定在遇險事件中負有無線電通信主要職責的無線電操作員應遵循《無線電規則》的程序並遵守有關國際文件（見第14.2段）公佈的或衛星業務提供人規定的條件。

26 在進行有關1949年8月12日關於保護國際武裝衝突受害者的《日內瓦公約》補充議定書（議定書I）界定的醫療運輸通信時，經指定在遇險事件中負有無線電通信主要職責的無線電操作員應遵循《無線電規則》的程序。

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 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 在收到緊急文電時，當班的無線電操作員應向船長和（在適當時），向經指定在遇險事件中負有無線電通信主要職責的無線電操作員報警。

#### 安全文電

28 當發送安全文電時，船長和當班的無線電操作員應遵循《無線電規則》的程序。

29 在收到安全文電時，當班無線電操作員應記錄其內容並按船長指示行事。

30 駕駛台與駕駛台之間的通信應在甚高頻第13頻道上進行。駕駛台與駕駛台之間的通信在《無線電規則》中稱之為“船舶間航行安全通信”。

#### 無線電記錄

31 應按照第10、12、14、17和33款在無線電日誌中記入附加記錄。

32 未經許可的發射和有害干擾事件應在可能的情況下加以辨認、記入無線電日誌，並按照《無線電規則》，連同一份相應的無線電日誌摘抄報請主管機關注意。

#### 蓄電池保養

33 為無線電裝置的任何部分（包括帶有不間斷電源的部分）提供電源的蓄電池應由經指定在遇險事件中負有無線電通信主要職責的無線電操作員負責，蓄電池應：

- 1 每天進行帶負荷和不帶負荷的測試，並且在必要時使之處於充滿的狀態；
- 2 如可行，每周用液體比重計測試一次，如不能使用比重計，可用適當負載試驗測試一次；和
- 3 每月檢查一次每個蓄電池及其接點的可靠性以及蓄電池的狀態及電池盒。

測試結果應記入無線電日誌。

#### 第5部分—關於在港值班的指導

（無條文）”

二零一三年十月十日於行政長官辦公室

辦公室主任 譚俊榮

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)”

Gabinete do Chefe do Executivo, aos 10 de Outubro de 2013.  
— O Chefe do Gabinete, *Alexis, Tam Chon Weng.*



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