

Australian Transport Council

**National Standard**  
**for**  
**Commercial Vessels**

**PART D**  
**CREW COMPETENCIES**

Edition 1

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## FOREWORD

This Part of the National Standard for Commercial Vessels was developed following a review of the Uniform Shipping Laws (USL) Code Section 2 “Qualifications and Manning – Trading Vessels” and Section 3 “Qualifications and Manning – Fishing Vessels”, and replaces those parts of the USL Code.

In reviewing the USL Code and preparing this Part consideration was given to a number of factors including:

- a) Technical and operational changes to the industry since the introduction of the USL Code.
- b) Industry requests to integrate the training requirements for Certificates of Competency in the trading and fishing industries.
- c) Australia's obligations under the STCW-95 convention.
- d) National training reforms and the requirement for competency based training and assessment in the marine sector.
- e) Requests for increased responsibility for crewing to be given to owners and operators of vessels.

This Part of the National Standard for Commercial Vessels is intended to be read in conjunction with Part A—Safety Obligations and Part B—General Requirements.

This Part was drafted by the NMSC Secretariat in conjunction with an industry reference group and a working group from State and Territory authorities and AMSA. The draft was twice released for public comment in June 1998 and August 1999, with a workshop being held in December 1999. The comments received were assessed by the reference group and the document was modified in the light of those comments. An industry and government workshop was held in December 2000 to finalise the document.

A Regulatory Impact Statement was submitted to the Office of Regulation Review, with their endorsement being given on 26 July 2000. The Australian Transport Council endorsed Part D on 25 May 2001.

This standard was first published in August 2002 on CD, and again in April 2005 on CD. There were no amendments between the first and second publication.

This document (third publication) contains some editorial changes, agreed by National Marine Safety Committee in August 2006, to address ambiguities.

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## CHAPTER 1 CREW QUALIFICATIONS

### 1.1 SCOPE

This Chapter, and Annexes B to E, specify levels of competence to be attained and other conditions to be satisfied in order to gain qualifications as a Master, Mate, Watchkeeper, Engineer, Marine Engine Driver or General Purpose Hand.

It shall be read in conjunction with the NSCV Part B—General Requirements. It should also be read with NSCV Part A—Safety Obligations.

### 1.2 APPLICATION

This Chapter, and Annexes B to E, applies to persons wishing to obtain a Certificate of Competency in accordance with this Standard.

### 1.3 OBJECTIVE

The objective of this Chapter and Annex B to E is to provide regulators, vessel owners, and Certificate of Competency applicants and holders, with details of the requirements to be met in order to obtain, renew or revalidate a Certificate of Competency.

In addition, this Chapter and Annex A and Annex B provide details of the operations permitted by holders of Certificates of Competency.

### 1.4 REFERENCED DOCUMENTS

The following documents are referred to in this Part.

Any document referenced in this Part shall be considered to be the latest revision of the document including amendments.

#### AUSTRALIAN TRANSPORT COUNCIL

*Uniform Shipping Laws Code (USL Code)*

*National Standard for Commercial Vessels (NSCV)*

#### AUSTRALIAN MARITIME SAFETY AUTHORITY

*A Guide for Obtaining an AMSA STCW-95 Endorsement for Holders of State Issued Master Class 3, 4 or 5 Certificates of Competency*

*Guide for the Issue of an STCW-95 Endorsement to an Australian State/Territory Certificate of Competence — Marine Engineer/Marine Engine Driver*

*Marine Orders Part 3—Seagoing Qualifications*

*Marine Orders Part 6—Marine Radio Qualifications*

*Marine Orders Part 9—Health – Medical Fitness*

*Marine Orders Part 19—Tonnage Measurement – 1969 Convention*

**INTERNATIONAL MARITIME ORGANIZATION**

*International Safety Management Code Resolution A.741(18)*

*International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended in 1995 (STCW-95 Convention)*

*Seafarer's Training, Certification and Watchkeeping Code (STCW-95 Code) including Resolution 2 of the 1995 Conference*

*International Convention For the Safety of Life At Sea 1974, as Amended (SOLAS)*

*International Regulations for Preventing Collisions at Sea, 1972, as amended*

**NATIONAL MARINE SAFETY COMMITTEE**

*The National Marine Guidance Manual*

Guidelines for Onboard Safety Training—Australian Domestic Vessels

**1.5 DEFINITIONS**

For the purposes of this Part of the NSCV—

- a) the definitions provided in Part B of the NSCV, in addition to those in this Clause shall apply; and
- b) where there is any duplication in the terms defined in this Clause and Part B, the definitions in this Clause shall apply.

**adequate crew—**

the crew required to satisfy the required outcome in Clause 2.6.

**approved training course or program—**

a training course or program approved by an Authority (see Clause 1.15.1).

**approved RTO—**

a RTO which meets the requirement of an Authority and operates under the Australian Quality Training Framework in accordance with the requirements of the State Training Authority.

**assessor—**

a person having the relevant vocational competencies and qualified in accordance with Australian National Training Authority (ANTA) Guidelines.

**authority—**

the statutory marine authority of the Commonwealth of Australia or of a State or Territory within the Commonwealth.

**Certificate of Competency—**

a document issued by an Authority recognising that the holder has met the requirements for the specified grade and permitting the holder to serve in a vessel as a crew member with deck or engineering responsibilities in accordance with Annex A and Annex B. Certificate of Competency

includes certificates of proficiency, recognition, service and validity and also a permit, authority or licence and any renewal or revalidation of a Certificate of Competency. It also includes restricted Certificates of Competency and temporary permits to serve. It does not include a certificate of medical fitness.

**certificate of medical fitness—**

or a *medical certificate*—a certificate issued in accordance with Annex C by a registered medical practitioner, or, in the case of an eyesight test, a registered medical practitioner, optometrist, or officer of an Authority.

**chief engineer—**

the person responsible for the vessel's machinery, while holding the appropriate Certificate of Competency.

**deck watchkeeper—**

the person in charge of the navigational watch, while holding the appropriate Certificate of Competency.

**declaration of medical fitness—**

a declaration made in accordance with Clause C2.2 of Annex C.

**endorsement—**

a record made by an Authority on a Certificate of Competency extending the duties and functions that the holder of the certificate may perform.

**engineer (or machinery) watchkeeper—**

the person in charge of the engineering watch, while holding the appropriate Certificate of Competency.

**first engineer—**

the person next in rank to the Chief Engineer and upon whom the responsibility for the vessel's machinery will fall in the event of the incapacity of the Chief Engineer.

**general purpose hand—**

any person carried as part of the minimum crew who is not required to hold a Certificate of Competency under Clause B1 to B12 of this National Standard. This may include, but is not restricted to persons referred to by industry as GPs, deckhands, seamen and greasers (see Clause B13).

**mate—**

the person next in rank to the master and upon whom the command of the vessel will fall in the event of the incapacity of the master. In large vessels this may also be referred to as the Chief Mate.

**minimum crew—**

the minimum number of qualified and unqualified deck and engineering crew required to enable a vessel to be navigated in a passage situation within the designated operational area in reasonable conditions (See Clause 2.5).

**near coastal voyages—**

in Australia, will be those voyages confined to operations that are within 200 n miles to seaward of the territorial baseline.

**operating conditions—**

in the context of the definition of sea service, operating conditions includes when the vessel is underway, as well as some periods of vessel preparation, maintenance or other work where persons utilise relevant professional skills.

**propulsion power—**

is defined in Table 1.

**Table 1 — Propulsion power**

Vessel characteristics	Propulsion power
Where the vessel possess all of the following characteristics: <ul style="list-style-type: none"> <li>a) Multi screw / multi propulsion.</li> <li>b) Less than 35 metres in length.</li> <li>c) Restricted to operations up to near coastal voyage limits.</li> <li>d) The engines are the same or similar and designed for a continuous rotation speed of more than 1200 revolutions per minute.</li> </ul>	The largest value of maximum continuous rate power in kilowatts of the machinery provided for the propulsion of the vessel by one screw.
In all other vessels.	The total maximum continuous rated power in kilowatts of the machinery provided for propulsion of the vessel.

NOTE: Owners of vessels should be aware that for vessels operating beyond near coastal limits or on an international voyage, the propulsion power means the total maximum continuous rated power in kilowatts of all the vessel's main propulsion machinery that appears on the vessel's Certificate of Registry, Certificate of Survey or other official document.

**recognition of current competencies (RCC)—**

the recognition by a Registered Training Organisation of current competencies as specified in relevant training package.

**registered training organisation (RTO)—**

an organisation which is accredited with the appropriate State or Territory vocational and education training authority to provide vocational education and training.

**restricted Certificate of Competency—**

a Certificate of Competency limited in its use by one or more restrictions specified by the issuing Authority. Such limitations may apply to the duties, operations, area, vessel, or class of vessel for which the certificate is normally valid.

**seagoing voyage—**

a voyage on a vessel other than a vessel that operates exclusively in inland waters or within sheltered waters.

**sea-service—**

performance of relevant deck or engineering duties in a vessel under operating conditions.

NOTE: Annex B provides details of qualifying sea-service for each Certificate of Competency.

**short courses—**

stand alone training modules delivered by an RTO which deliver specific competency requirements for Certificates of Competency.

**STCW endorsement—**

an endorsement made by AMSA that a Certificate of Competency complies with the requirements specified in the STCW-95.

**temporary permit to serve—**

a form of restricted Certificate of Competency (see Clause 1.9.2).

**tonnage—**

is the tonnage of the ship as measured in accordance with the International Tonnage Measurement Convention 1969 as laid down in Marine Orders Part 19.

**trading vessel—**

a Class 1 or Class 2 commercial vessel (see Part B).

**training course or program—**

a course or program of training for a qualification accredited under the Australian Qualifications and Training Framework (AQTF).

**watchkeeper—**

see deck watchkeeper or engineer watchkeeper.

**watchkeeping service—**

sea-service on a vessel in one of the following positions while holding a Certificate of Competency as required by this Part:

- a) In charge of a watch.
- b) As Master, Mate or Engineer.
- c) As understudy to a Master or an Engineer.
- d) In training by a Master or an Engineer.

**1.6 ABBREVIATIONS****ACMA—**

Australian Communications and Media Authority

**ACMW—**

Australian Coastal and Middle Water Operations (as defined in Part B)

**ANTA—**

Australian National Training Authority

**AQTF—**

Australian Quality Training Framework

**ARPA—**

automated radar plotting aid

**GMDSS—**

global maritime distress & safety system

**i/s—**

inshore operations (as defined in Part B)

**ISM—**

International Management Code for the Safe Operation of Ships and for Pollution Prevention [International Safety Management (ISM) Code]

**MARPOL—**

IMO International Convention for the Prevention of Pollution from Ships, 1973

**MED—**

marine engine driver

**MROCP—**

Marine Radio Operator's Certificate of Proficiency

**MROVCP—**

Marine Radio Operator's VHF Certificate of Proficiency

**o/s—**

offshore operations (as defined in Part B)

**RCC—**

recognition of current competency

**RROCP—**

Restricted Radio Operator's Certificate of Proficiency

**RTO—**

registered training organisation

**SOLAS—**

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

**STCW-95—**

the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1978 as amended by the Standards of Training, Certification and Watchkeeping Conference 1995, and as further amended.

**1.7 LENGTH-TONNAGE RELATIONSHIP**

For guidance in this Part of the Standard, the following length-tonnage relationships are used.

**Table 2 — Length-tonnage relationships**

Length (metres)	Equivalent gross tonnage
12	20
24	80
30	200
35	500
80	3,000
120	7000

NOTE: This table applies to trading vessels. The NSCV is length based. International conventions for trading vessels are tonnage based. Not all small vessels are aware of their tonnage which is a relatively complicated measurement based on the enclosed volume of the vessel. The length-tonnage relationships in this table allow for readers to understand where the length cut-offs relate to the international conventions such as STCW-95.

## 1.8 CERTIFICATION

### 1.8.1 Certificates of Competency issued under this Standard

An Authority, in accordance with this Standard, may issue the Certificates of Competency listed in Table 3.

**Table 3 — Certificates of Competency issued under this Standard**

	Trading certificates <sup>3</sup>	Fishing certificates <sup>3</sup>
Deck	Master Class 3	Skipper Grade 1
Deck	Master Class 4	Skipper Grade 2
Deck	Mate Class 4	—
Deck	Master Class 5/Skipper Grade 3 <sup>1</sup>	
Deck	Coxswain <sup>1</sup>	
Deck	General Purpose Hand <sup>1,2</sup>	
Engineering	Engineer Class 3 <sup>1</sup>	
Engineering	Marine Engine Driver Grade 1 <sup>1</sup>	
Engineering	Marine Engine Driver Grade 2 <sup>1</sup>	
Engineering	Marine Engine Driver Grade 3 <sup>1</sup>	
Engineering	Coxswain <sup>1</sup>	
Engineering	General Purpose Hand <sup>1,2</sup>	

#### LEGEND

1. These certificates are common certificates and allow service on both trading and fishing vessels.
2. There are no formal requirements for general purpose hand training under this Standard. Owners and masters are advised to consult the NMSC's National Marine Guidance Manual: Guidelines for Onboard Safety Training - Australian Domestic Vessels for guidance. Part A of this National Standard provides advice on the discharge of legal obligations under other acts such as duty of care under Occupational Health & Safety requirements.
3. Annex A provides information on the Certificates of Competency required for different classes of vessels. In general for command of vessels, fishing certificates are restricted for use in fishing vessels and trading certificates for use in trading vessels. Where common certificates are shown they may be used on either type of vessel.

NOTE: Certificates of Competency for the classes listed below are issued by AMSA in accordance with Marine Orders, Part 3:

- a) Master Class 1, 2 and 3.
- b) Chief Mate Class 1 and 2.
- c) Second Mate Class 1 and 2.
- d) Engineer Class 1, 2 and 3.
- e) Engineer Watchkeeper.

- f) Chief Integrated Rating.
- g) Integrated Rating.

### **1.8.2 Minimum Certificate of Competency required**

The minimum Certificate of Competency required for the performance of duties as a member of the minimum crew is specified in Annex A.

A person shall not serve on a vessel to which this Standard applies as part of the minimum-crew in the position of master, mate, deck watchkeeper, engineer, engineer watchkeeper or marine engine driver, unless the person holds the minimum Certificate of Competency required by this standard. Such a certificate shall be—

- a) current in accordance with Clause 1.8.4; and
- b) where appropriate recognised in accordance with Clause 1.13.

### **1.8.3 Eligibility for issue of a Certificate of Competency**

To be eligible for the issue of a Certificate of Competency, a person shall have:

- a) satisfactorily completed all the requirements specified in Annex B for the Certificate of Competency sought; and
- b) demonstrated to the issuing Authority that he/she possesses sufficient knowledge of the English language to be able to undertake safely all the duties and responsibilities permitted by the Certificate of Competency.

Candidates applying for additional or higher grades of Certificates of Competency are not required to repeat the short course prerequisites provided that the short course certificate does not have an expiry date. The first-aid certificate shall be current.

### **1.8.4 Currency of a Certificate of Competency**

A Certificate of Competency shall be current for a maximum period of 5 years from the date of issue.

#### **NOTES:**

An Authority may extend the period of currency of a Certificate of Competency by revalidating or renewing the certificate for a period of 5 years. The revalidation or renewal may be repeated as required provided all requirements for revalidation or renewal specified in this Part are met.

An Authority may specify a lesser period of currency when issuing, renewing or revalidating a Certificate of Competency where good cause can be demonstrated.

## **1.9 VARIATIONS TO CERTIFICATES OF COMPETENCY**

### **1.9.1 Restricted Certificates of Competency**

Where an Authority considers that it is unreasonable or impractical to fulfil all the requirements for the issue of a Certificate of Competency, a restricted Certificate of Competency shall be issued provided the safety of the vessel is not compromised.

A restricted Certificate of Competency shall have the nature and extent of the restriction clearly printed on the certificate, with the word “RESTRICTED” clearly visible in the title of the Certificate of Competency.

NOTES:

1. An Authority may exempt a person from fulfilling all the requirements necessary for the issue of a Certificate of Competency.
2. This provision applies, but is not limited to, Certificates of Competency for use in the operation of vessels in sheltered and inland waters or areas in and adjacent to ports.
3. A restricted Certificate of Competency is for use only within the jurisdiction of the issuing Authority and it may not be recognised by another Authority.

### **1.9.2 Temporary permit to serve**

An Authority may issue a temporary permit to serve in a designated capacity on a particular vessel in a particular operating area for a specified period of time.

Temporary permits to serve are for use within the jurisdiction of the issuing Authority.

A temporary permit to serve shall be clearly identified as such and shall have the nature and extent of the permitted duties clearly printed on the permit, as well as the specified period of time.

### **1.9.3 Endorsements**

Where a specific operation requires crew to have undertaken additional training and possess experience relating to that operation, specific endorsements shall be made by an Authority on the Certificate of Competency.

Where an Authority other than the issuing Authority makes an endorsement on a Certificate of Competency, a copy of the endorsement shall be sent to the Authority that issued the original Certificate of Competency.

Annex E contains requirements for specific endorsements required by STCW-95.

## **1.10 CANCELLATION OR SUSPENSION OF CERTIFICATES OF COMPETENCY**

### **1.10.1 Cancellation or suspension with due process**

An Authority may cancel or suspend a Certificate of Competency, or mutual recognition of that Certificate of Competency, in whole or in part where the Authority, having followed due process according to the laws of that jurisdiction, believes that the holder of a Certificate of Competency—

- a) is incompetent, negligent or has engaged in misconduct relating to the safe navigation, management or working of a vessel;
- b) is unable, for whatever reason, to fulfil properly the duties appropriate to the Certificate of Competency;

- c) has made a false or misleading representation in obtaining the Certificate of Competency; or
- d) has forged or altered the Certificate of Competency.

A cancellation or suspension shall be advised to all Australian and New Zealand marine authorities and any relevant overseas Marine Safety Authority. A cancellation or suspension has effect throughout Australia.

Normal administrative appeals procedures of the relevant jurisdiction apply with regard to such actions by an Authority.

#### **1.10.2 Immediate cancellation or suspension**

An Authority may immediately suspend, restrict, refuse to grant or to mutually recognise a Certificate of Competency of a crew member where it believes that the vessel, the environment, other water users, crew or members of the public could be put at serious risk.

NOTE: This is a temporary safety measure, which allows immediate action to be taken while due process is being considered. It is essential for continuing safe operation.

Normal administrative appeals procedures of the relevant jurisdiction apply with regard to such actions by an Authority.

### **1.11 REVALIDATION**

#### **1.11.1 Revalidation of a Certificate of Competency**

Revalidation shall apply to the following Certificates of Competency issued under this Standard:

- a) Mate Class 4.
- b) Master Class 4.
- c) Master Class 3.
- d) Skipper Grade 2.
- e) Skipper Grade 1.
- f) Marine Engine Driver Grade 1.
- g) Engineer Class 3.

An Authority may offer revalidation of Certificates of Competency other than those specified in this Clause, where the applicant can demonstrate a need for revalidation.

NOTE: This might apply, but is not limited to, a Certificate of Competency with an STCW-95 endorsement, or where the holder of a Certificate of Competency is intending to work overseas.

Certificates of Competency issued prior to the adoption of this Standard will continue to be subject to the period of revalidation specified for that certificate, provided that there is no request to vary the conditions, duties or service permitted by the certificate once this standard has been adopted.

### 1.11.2 Authority to revalidate

A Certificate of Competency, or an endorsement to a Certificate of Competency, shall only be revalidated by the Authority that issued the certificate or the endorsement.

Another Authority, in accordance with Clauses 1.13.1 and 1.13.2, may issue a replacement Certificate of Competency in lieu of revalidation.

### 1.11.3 Requirements for revalidation

To be eligible for revalidation of a certificate of competency, the applicant shall demonstrate that they meet the following conditions:

- a) Possess a current certificate of medical fitness in accordance with Annex C.
- b) Possess a current first-aid certificate in accordance with Annex D.
- c) Have satisfactorily completed one of the following:
  - i) One year of sea-service accumulated within the five-year period immediately preceding the date of application.
  - ii) In a seasonal fishery, continuous employment each fishing season in the five-year period immediately preceding the date of application.
  - iii) A revalidation course appropriate to the Certificate of Competency held, undertaken within the 12-month period preceding the date of application.
  - iv) An oral exam conducted by an Authority for the purposes of revalidation.
  - v) In the 6-month period immediately preceding the application for revalidation served for a period of at least 3 months as an understudy to a qualified person, while performing duties appropriate to the certificate held.

Where a person does not meet the requirement in Clause 1.11.3 c) a lower grade or restricted Certificate of Competency, appropriate to the experience of that person, may be issued.

#### NOTES:

1. A Certificate of Competency may be revalidated any time after it has expired, or any time in the 12 months prior to the expiry date.
2. The issue of a lower grade or non-command Certificate of Competency is to permit the person to gain the experience to allow for full revalidation of the person's original certificate.

### 1.11.4 Period of revalidation

A Certificate of Competency shall be revalidated for the period of time specified in 1.8.4.

## **1.12 RENEWAL**

### **1.12.1 Renewal of Certificates of Competency**

Renewal shall apply to the following Certificates of Competency issued under this Standard:

- a) Coxswain.
- b) Master Class 5/Skipper 3.
- c) Marine Engine Driver Grade 3.
- d) Marine Engine Driver Grade 2.

### **1.12.2 Authority to renew**

A Certificate of Competency, or an endorsement to a Certificate of Competency, shall only be renewed by the Authority that issued the certificate or the endorsement.

Another Authority, in accordance with Clauses 1.13.1 and 1.13.2, may issue a replacement Certificate of Competency in lieu of renewal.

### **1.12.3 Requirements for renewal**

A Certificate of Competency may be renewed any time after it has expired, or any time in the 12 months prior to the expiry date.

To be eligible for renewal the applicant must apply to an Authority and meet the following requirements:

- a) Provide a declaration of medical fitness as specified in Annex C.
- b) Pass an eyesight (vision) test to the standard specified in Annex C.

The issuing authority shall provide the applicant with an update of safety information relative to the Certificate of Competency.

### **1.12.4 Period of renewal**

A Certificate of Competency shall be renewed for the period of time specified in 1.8.4.

## **1.13 RECOGNITION OF COMPETENCY AND QUALIFICATIONS**

### **1.13.1 Mutual recognition of unrestricted Australian certificates**

An Authority shall recognise a current unrestricted Certificate of Competency that has been issued, in accordance with this Standard, by another Authority.

An Authority may withdraw recognition of an unrestricted Certificate of Competency in accordance with Clause 1.10.

An Authority shall issue a replacement Certificate of Competency for an unrestricted Certificate of Competency issued by another Authority that requires revalidation or renewal provided the requirements for revalidation or renewal have been met.

An Authority issuing a replacement Certificate of Competency shall advise the Authority that issued the original Certificate of Competency that it has done so.

#### **1.13.2 Mutual recognition of restricted Australian certificates**

An Authority may, on the basis of the merits of the restricted Certificate of Competency issued by another Authority, recognise the certificate as meeting the requirement for the issue of a similar restricted Certificate of Competency.

A Certificate of Competency issued by an Authority in recognition of a restricted certificate issued by another Authority shall state that the certificate was issued in recognition of the original restricted Certificate of Competency.

A Certificate of Competency issued in recognition of another restricted Certificate shall not be recognised by other Authorities without reference to the original restricted Certificate of Competency.

An Authority issuing a Certificate of Competency in recognition of another restricted certificate shall advise the Authority that issued the original Certificate of Competency that it has done so.

#### **1.13.3 Mutual recognition of training**

A statement of attainment, a pass in an examination, the completion of a short course or module of an approved training course, or completion of a unit of competence in an approved training program in accordance with this Part shall be recognised by any Authority.

#### **1.13.4 Local knowledge requirements**

An Authority may impose a local knowledge requirement on operators of certain classes of vessels operating in certain areas within its jurisdiction.

Local knowledge requirements shall be kept to the minimum required for the safe operation of vessels in such areas.

The local knowledge requirements shall be clearly defined and administered so that they do not become a barrier to mutual recognition of a Certificate of Competency.

#### **1.13.5 Recognition of foreign qualifications**

A current Certificate of Competency issued in a country other than Australia may be recognised as equivalent in whole or in part towards the issue of a Certificate of Competency in accordance with this Standard provided the following conditions are met:

- a) The Certificate of Competency shall be referred to AMSA for verification before being considered for recognition.
- b) The recognition of the Certificate of Competency shall include any conditions imposed by the original issuing agency.

- c) The period of validity of the recognition of the Certificate of Competency shall not exceed the period of validity of the foreign Certificate of Competency, or 5 years whichever is the lesser.
- d) The Authority confirms the competence of the holder through an oral examination.

A Certificate of Competency issued by an Authority in recognition of a foreign Certificate of Competency shall state that the Certificate of Competency was issued in recognition of the foreign Certificate of Competency. A Certificate of Competency issued in recognition of a foreign Certificate of Competency shall not be recognised by other Authorities without reference to the original foreign Certificate of Competency.

## **1.14 DEMONSTRATING EQUIVALENT COMPETENCY**

### **1.14.1 Demonstrating equivalence**

An Authority may issue a Certificate of Competency, where the applicant can demonstrate an equivalent level of competency to that required by this Standard, and meet all the other requirements specified in Annex B for that certificate.

This competency may have been gained by prior training, qualifications, or experience (or a combination thereof) gained outside of the provisions of this Standard, and demonstrated through the RCC process conducted by an approved RTO.

### **1.14.2 Changing from a fishing to a trading Certificate of Competency**

Should the holder of a fishing Certificate of Competency wish to obtain an equivalent or lower trading Certificate of Competency (see Table 3), the requirements in Annex B for the new Certificate of Competency shall be met.

The new certificate shall be subject to the requirements of this standard, including those pertaining to revalidation and renewal.

### **1.14.3 Changing from a trading to a fishing Certificate of Competency**

Should the holder of a trading Certificate of Competency wish to obtain an equivalent or lower fishing Certificate of Competency (see Table 3), the requirements in Annex B for the new Certificate of Competency shall be met.

The new certificate shall be subject to the requirements of this Standard, including those pertaining to revalidation and renewal.

## **1.15 TRAINING, ASSESSMENT AND EXAMINATIONS**

### **1.15.1 Approval of training programs and courses**

A training program or course shall be approved by an Authority as meeting the requirements for a Certificate of Competency or part of a Certificate of Competency as specified in Annex B.

An Authority shall only approve training programs and courses that have been accredited by the relevant State or Territory vocational education and training authority.

A training program or course shall be delivered by an approved RTO in accordance with Clause 1.15.2, and assessed by an approved assessor in accordance with Clause 1.15.3.

An Authority may withdraw or withhold approval.

#### **1.15.2 Approval of Registered Training Organisations (RTO)**

A RTO shall be approved by an Authority for the delivery of approved training programs or courses.

The RTO shall only be approved by an Authority if it is accredited by a State or Territory vocational education and training authority for the delivery of the approved training program or course.

An Authority may withdraw or withhold approval.

#### **1.15.3 Approval of assessors**

An assessor, for the purpose of assessing qualifications or competencies required by this Standard, shall be approved by an Authority to undertake assessments.

An assessor working under the control of an approved RTO delivering an approved training program or course shall, in the absence of a direction to the contrary, be deemed to be approved by the Authority.

An Authority may withdraw or withhold approval of an assessor.

#### **1.15.4 Inclusion of competencies that apply to lower grade Certificates of Competency**

Where a candidate is being assessed for their first deck or engineering Certificate of Competency, the competencies that applied to all relevant lower grade Certificates of Competency (see Table 3) shall be included in the assessment.

NOTE: There are many different entry levels into the system. For instance a Mate 4 or MED 1 may be the first Certificate of Competency sought. In which case the competencies that applied to all the lower Certificates of Competency will need to be demonstrated. Hence a candidate for a MED 1 as a first certificate will need to be able to demonstrate the competencies for MED 2 and MED 3.

#### **1.15.5 Oral examination by an Authority**

The oral examination by an Authority should be undertaken when all other requirements for the issue of a Certificate of Competency have been successfully completed.

#### **1.15.6 Remission of sea-service for completion of an approved training program or course**

Where training in an approved training course or program involves structured on-the-job training that enhances the quality of sea-service (including watchkeeping service) an Authority may agree that completion of

specified approved courses or programs could result in a remission of up to 33 per cent of the sea-service required for the Certificate of Competency as provided for in Annex B.

### **1.15.7 Remission of sea-service for completion of competency assessment**

Where training in an approved training course or program that is competency based has been assessed by an Authority as providing a level of competence equivalent to that gained by sea-service, an Authority may accept demonstration of these competencies in lieu of part or all of the sea-service requirements specified in Annex B for a Certificate of Competency.

NOTE: Apart from the concessions allowed in Clauses 1.15.6 and 1.15.7, ROPES book is another means of obtaining a concession in the amount of qualifying time required to be served by candidates for Coxswain, Master Class V/Skipper Grade 3, and MED II & III Certificate of Competency (Refer to Guidance for Candidates on the use of the ROPES Book). The total concession qualified from all sources should not exceed 50% of the sea service as mentioned in Annex B.

### **1.15.8 STCW-95 Endorsement**

Where a STCW-95 Endorsement is required for a trading Certificate of Competency, the holder of that Certificate of Competency may apply to AMSA for the issue of an appropriate endorsement.

Certificates of Competency issued in accordance with this Standard shall not be deemed to satisfy the provisions of STCW-95 unless the Certificate of Competency has been endorsed to that effect.

NOTES:

1. A Marine Authority of another country may require the holder of a Certificate of Competency issued under this Standard to hold an STCW-95 Endorsement before accepting that certificate for service in vessels or in waters under that Authority's jurisdiction.
2. When the holder of a Certificate of Competency applies to AMSA for an STCW-95 Endorsement, AMSA assesses the holder's level of experience and training against the requirements of STCW-95.
3. AMSA is unable to issue STCW-95 Endorsements on Fishing Certificates of Competency.
4. Candidates should refer to AMSA for guidance on requirements for STCW-95 Endorsements.

## **1.16 MEDICAL REQUIREMENTS**

### **1.16.1 Certificate of medical fitness**

A current certificate of medical fitness, in accordance with Annex C or Marine Orders Part 9, is required for any of the following:

- a) Issue of a Certificate of Competency under this Standard for Mate Class 4, Master Class 4, Master Class 3, Skipper Grade 2, Skipper Grade 1, Marine Engine Driver Grade 1, and Engineer Class 3.
- b) Revalidation of a Certificate of Competency.
- c) A Certificate of Competency with an STCW-95 Endorsement.

NOTE: Marine Orders require that a current certificate of medical fitness is mandatory for a certificate of competency with an STCW Endorsement.

- d) Service on vessels operating in unlimited domestic operations (i.e. more than 200 n miles to seaward of the coast).

**1.16.2 Currency of a certificate of medical fitness**

A certificate of medical fitness is current for a period of two years from the date of issue, or such lesser time as may be specified by the issuing medical practitioner.

**1.16.3 Declaration of medical fitness**

A declaration of medical fitness in accordance with Annex C is required for the issue or renewal of a Certificate of Competency under this Standard as a:

- a) Coxswain;
- b) Master Class 5/Skipper Grade 3;
- c) Marine Engine Driver Grade 3; or
- d) Marine Engine Driver Grade 2.

**1.16.4 Requirement to undergo a medical examination**

An Authority may, for good reason, require the holder of a Certificate of Competency, an applicant for a Certificate of Competency, or an applicant for the revalidation, renewal or recognition of a Certificate of Competency, to obtain further evidence as to their medical condition or medical fitness. In such cases the Authority may specify the medical practitioner/s from whom additional evidence of the person's medical condition shall be obtained.

After due consideration of the advice of the medical practitioner/s, an Authority may either decline to issue a Certificate of Competency or cancel a Certificate of Competency in accord with Clause 1.10, or may restrict the duties or areas of operation of a Certificate of Competency in accord with Clause 1.9.1 or 1.9.2.

Decisions of an Authority with regard to medical fitness shall be subject to the administrative appeal process of the particular State or Territory.

**1.16.5 Satisfactory level of medical fitness**

A holder of a Certificate of Competency shall ensure that whenever the certificate is being used, the holder has a medical fitness at a level that shall not in any way adversely affect the safe operation of the vessel or the performance of the holder's duties. The satisfactory level of medical fitness is specified in Annex C.

**1.17 TRANSITIONAL ARRANGEMENTS****1.17.1 Recognition of existing certificates**

A Certificate of Competency issued or recognised under the USL, or laws preceding the adoption of this Standard (pre-NSCV Certificate), shall, for the remainder of the period of currency of the certificate be recognised as a Certificate of Competency for the purposes of Clause 1.8.2.

Such a certificate may continue to be revalidated or renewed under the terms and conditions that applied at the time of issue or last revalidation or

renewal provided there is no extension to the duties and service permitted by that certificate beyond those specified at the time this Standard was adopted.

Arrangements made by an Authority for recognition of Certificates of Competency issued by that Authority under the USL or in accordance with laws preceding the adoption of this Standard by that Authority, shall be recognised by other Authorities in accordance with Clause 1.13.

#### **1.17.2 Replacement of pre-NSCV Certificates of Competency**

A Certificate of Competency issued under this Standard as a replacement for a lost pre-NSCV certificate, or in recognition of a pre-NSCV Certificate of Competency, shall reflect the period of currency marked on the original Certificate of Competency. These Certificates of Competency shall be restricted to the duties and service permitted by the original certificate.

Certificates issued in this way will be subject to the revalidation or renewal requirements under this Standard.

#### **1.17.3 Upgrade or extensions to pre-NSCV Certificates of Competency**

Where a holder of a pre-NSCV Certificate of Competency wishes to upgrade to a higher level Certificate of Competency, this Standard will apply.

Where a pre-NSCV Certificate of Competency wishes to extend the terms of duties and services permitted by the Certificate of Competency the certificate shall be subject to the revalidation or renewal requirements under this Standard.

NOTE: For example where the holder of a USL or pre-USL Master Class 5 (Fishing) or Skipper 3 Certificate of Competency wishes to command a trading vessel the Certificate of Competency will need to be subject to the renewal provisions within this Part.

#### **1.17.4 Training**

For a period of 12 months from the date of adoption of this Part of the NSCV any training programs conducted in accordance with the USL Code or laws preceding the adoption of this Standard shall be recognised as equivalent to the training courses specified in the NSCV.

## CHAPTER 2 CREWING OF VESSELS

### 2.1 SCOPE

This Chapter and Annex A specify the crew, in terms of number of crew and certification level, to be provided on a vessel. It shall be read in conjunction with NSCV Part B—General Requirements. It should also be read in conjunction with NSCV Part A—Safety Obligations.

### 2.2 APPLICATION

This Chapter applies to owners, operators and crew onboard vessels operating under this Standard.

### 2.3 OBJECTIVE

To provide Authorities, owners and masters with requirements for determining both the minimum crew (in terms of number and certification levels), and the adequate crew required onboard a vessel for the safe operation of that vessel.

### 2.4 KEY PARAMETERS

For vessels of less than 80 m in length not operating under the Navigation Act, the measured length and area of operation are the key parameters for the determination of minimum crew in terms of number (see Table 4), and certification level for deck crew (see Table A.1).

NOTE: length of vessel is used predominantly, rather than tonnage in this Part. For guidance on the relationship between length and tonnage see Clause 1.7.

The key parameter for the determination of certification for engineering crew (see Table A.2) is propulsion power as defined in Chapter 1 of this Part.

## REQUIRED OUTCOMES

### 2.5 MINIMUM CREW

A vessel must at all times when under way or operating carry sufficient competent and trained crew so that:

- a) The vessel can safely navigate, berth and unberth.
- b) The essential vessel systems can be operated and monitored safely.
- c) Immediate and appropriate emergency action can be taken when there is a failure of an essential system.
- d) Immediate and measured response can be provided in an emergency situation.
- e) The crew can safely abandon the vessel if required.

NOTE: The minimum crew is not tailored to the nature of trade or particular activities, functions, or business carried out on the vessel.

## **2.6 ADEQUATE CREW**

In addition to the minimum crew, a vessel must at all times when underway or operating, carry sufficient crew in terms of both number and competence to:

- a) Eliminate or control to acceptable levels risk associated with the nature of the activity conducted by the vessel.
- b) Provide a measured response to emergencies or risks that may threaten the vessel or persons onboard during normal or abnormal conditions when considering all facets of the vessel's operation.
- c) Facilitate the rapid and safe evacuation of all persons onboard the vessel.

## **SOLUTIONS**

### **2.7 MINIMUM CREW**

#### **2.7.1 Determination of minimum crew**

Minimum crew shall be determined by adopting either the deemed-to-satisfy solution specified in Clause 2.7.2 or a local equivalent solution as specified in Clause 2.7.3.

#### **2.7.2 Deemed-to-satisfy solution**

A vessel is deemed to meet the minimum crew requirements of this Standard if Table 4 and Annex A are met.

An Authority may specify that a local equivalent solution shall apply in place of the deemed-to-satisfy solution.

#### **2.7.3 Local equivalent solution for minimum-crew**

An Authority may determine a minimum-crew that is different from that specified in Table 4 and Annex A after considering local factors and the operation of the vessel.

In such cases, the Authority shall ensure the required outcome (see Clause 2.5) is met.

#### **2.7.4 Validity of local equivalent solution for minimum-crew**

A local equivalent solution is only valid—

- a) within the jurisdiction of the Authority making the determination; and
- b) for operations within the parameters that were used for the determination.

If a vessel for which a local equivalent solution for minimum crew has been determined operates in another jurisdiction, then the deemed-to-satisfy solution for minimum crew shall apply.

**Table 4 — Minimum-Crew**

Vessel size and area of operation	Number of Minimum crew (Includes certificated crew)	Additional minimum crew requirements for voyages of more than 12 hours
<b>80 m and over</b>	By determination	By determination
<b>35 m and over but less than 80 m</b>		
ACMW (600 n mile)	6	—
Offshore (200 n mile)	5	—
Offshore (30 n mile)	4	—
Sheltered waters	4	—
<b>24 m and over but less than 35 m</b>		
ACMW (600 n mile)	5	—
Offshore (200 n mile)	4	—
Offshore (30 n mile)	3	—
Sheltered waters	3	—
<b>12 m and over but less than 24 m</b>		
ACMW (600 n mile)	3	1
Offshore (200 n mile)	3	1
Offshore (100 n mile)	2	1
Offshore (30 n mile)	2	—
Sheltered waters	2	—
<b>Less than 12 m</b>		
Offshore (200 n mile)	2	1
Offshore (100 n mile)	1	1
Inshore (15 n mile)	1	—
Sheltered waters	1	—

NOTE: See also Appendix A, Table A.1 and Table A.2 for minimum certification levels.

## 2.8 DETERMINATION OF ADEQUATE CREW

In determining the adequate crew required, the risks to the vessel and to the persons onboard (crew and passengers) shall be evaluated.

The evaluation shall take into account, but is not necessarily limited to, the following factors:

- a) Task or employment (i.e. passenger carrying, fishing, etc.) of the vessel and any particular demands on the crew that the task imposes on the vessel in addition to its safe navigation.
- b) Number of persons carried on the vessel.
- c) Design characteristics of the vessel including its machinery and equipment.
- d) Expected conditions including weather, climate and water temperatures.
- e) Length of voyage.
- f) Fatigue.
- g) Foreseeable emergencies.
- h) State and repair of the vessel and its machinery and equipment.
- i) Safe and timely evacuation of all people from the vessel in an emergency.
- j) Risks to the environment, and other persons.
- k) Skills and experience of crew.
- l) Support available to the vessel and its crew.
- m) Any factors identified by an Authority as relevant to safe operation.
- n) Any other identified factors, operational practices or known risks.

### NOTES:

1. The adequate crew for a vessel may change from day to day depending on operating conditions and other circumstances. For example the number of passengers on a particular voyage.
2. Part E of this Standard specifies requirements for emergency preparedness and safety management systems that will need to be taken into account when determining adequate crewing.
3. Legislation may specify specific requirements for the determination of adequate crew.
4. Legislation may require an owner to identify the basis on which the adequate crew was determined. It may also require any owner to prove the effectiveness of the adequate crew and their training by conducting a drill simulating as closely as practicable to situations considered in the determination of the adequate crew.

## 2.9 DISPENSATIONS

Where the circumstances of the situation require, an Authority may issue an owner of a vessel with a dispensation from the vessel's prescribed minimum crew in regard to certification and/or number of crew.

The dispensation for certification may permit a specified adequately competent person, who does not hold the required Certificate of Competency, to serve in the vessel in that capacity for a specific period.

A dispensation shall—

1. be for the shortest possible period;
2. not exceed six months; and
3. not be renewed or reissued on an end to end or continuing basis

## **2.10 FIRST-AID REQUIREMENT**

A vessel operating under this standard shall carry a crew member with a current first-aid qualification that complies with Clause D2.

## **2.11 ADDITIONAL QUALIFICATIONS**

### **2.11.1 Radio operator qualifications**

Masters, Mates and Deck Watchkeepers required as certified minimum crew under this Standard shall hold the appropriate radio operator qualification as required by the Australian Communications and Media Authority for the radio installation fitted to the vessel.

### **2.11.2 Ship master's medical qualifications**

The Master of a vessel over 24 m proceeding beyond Near Coastal Waters (200 n miles) shall hold a Ship Master's Medical Qualification (see Annex D). This requirement applies to Certificate of Competency that might otherwise require only a current First Aid Certificate as specified in Annex B.

### **2.11.3 ARPA**

Masters and mates on vessels fitted with ARPA under the requirements of SOLAS or by AMSA or on vessels over 500 GT operating outside port limits shall hold one of the following:

- a certificate for ARPA issued under SOLAS; or
- a statement of attainment showing satisfactory completion of the ARPA training required under this Standard for a Master Class 4.

## **2.12 RESPONSIBILITIES OF OWNERS**

The owner shall ensure that a vessel underway carries the minimum or adequate crew.

Note: Generally speaking, adequate crew is going to be more than the minimum crew but under certain circumstances it may be same as the minimum crew.

Owners shall ensure all crew receive ship specific training to familiarise them with all procedures and equipment relating to their areas of responsibility. (Refer to The National Marine Guidance Manual: Guidelines for Onboard Safety Training – Australian Domestic Vessels).

NOTES:

1. By definition the term owner includes a person operating a vessel on behalf of an owner (see NSCV Part B).
2. Training may be achieved by implementation of industry training packages.

3. Owners and Masters should ensure that all crew are supervised relative to their skills, ability and experience on the vessel.

### **2.13 FITNESS FOR DUTY**

All crew should ensure that at all times while working onboard a vessel, they are not prevented from carrying out their duties or responsibilities safely due to illness, injury, fatigue or the effects of medicinal preparations.

No member of the crew shall be under the influence of alcohol or prohibited drugs while carrying out their duties.

## ANNEX A      QUALIFICATIONS FOR DECK AND ENGINEERING CREW

### A1      SCOPE

This Annex specifies the qualifications to be held by the crew serving on vessels complying with this Standard.

### A2      QUALIFIED CREW

To comply with the National Standard for Commercial Vessels, the minimum Certificate of Competency to be held by the minimum-crew and adequate crew shall be in accordance with Table A1 for deck crew and Table A2 for engineering crew.

### A3      ALTERNATIVE QUALIFICATIONS

Qualifications higher than those specified in Table A1 and Table A2 may be accepted under this Standard.

Alternative qualifications that are acceptable under this Standard are provided in Table A3 for deck duties, and Table A4 for engineering duties.

The use of a fishing Certificate of Competency on a trading vessel in a non-command role is limited to Certificates of Competency issued under this Standard and subject to revalidation or renewal in accordance with Clauses 1.11 and 1.12 respectively.

NOTE: Where an STCW-95 endorsement is required, any alternative certificates permitted by Tables A3 or A4 should have the appropriate STCW-95 endorsement to cover the intended operation.

### A4      DUAL ROLES IN DECK AND ENGINEERING

Unless otherwise stated by an Authority in the minimum or adequate crew determination for a vessel, a person holding both a deck and engineering Certificate of Competency may perform both deck and engineering functions onboard a vessel, provided the owner is satisfied that this meets the requirements for adequate crew.

**Table A.1 — Certification requirements — deck crew**

Vessel Size	Area of Operation	Master	Mate	Watchkeeper
<b>Vessels in excess of 80 m in length and 3000 GT; or more than 100 m and less than 3000 GT.</b>	All areas	To be determined on the basis of a risk assessment and with guidance from Marine Orders	To be determined on the basis of a risk assessment and with guidance from Marine Orders	To be determined on the basis of a risk assessment and with guidance from Marine Orders
<b>80 m but less than 100 m provided vessel does not exceed 3000 GT</b>	ACMW (600 n mile) - Trading Vessel	Master Class 3	Master Class 3	Second Mate Class 2
	ACMW (600 n mile) - Fishing Vessel	Skipper Grade 1	Skipper Grade 1	*** <i>Skipper Grade 2</i>
	o/s (200 n mile) - Trading Vessel	Master Class 3	Master Class 3	*** <i>Mate Class 4</i>
	o/s (200 n mile) - Fishing Vessel	Skipper Grade 1	Skipper Grade 1	*** <i>Skipper Grade 2</i>
<b>35 m and over but less than 80 m</b>	ACMW (600 n mile) - Trading Vessel	Master Class 3	Master Class 4	Mate Class 4
	ACMW (600 n mile) - Fishing Vessel	Skipper Grade 1	Skipper Grade 2	*** <i>Skipper Grade 2</i>
	o/s (200 n mile) - Trading Vessel	Master Class 3	Mate Class 4	*** <i>Mate Class 4</i>
	o/s (200 n mile) - Fishing Vessel	Skipper Grade 2	Master Class 5/ Skipper Grade 3	*** <i>Master Class 5/ Skipper Grade 3</i>
	i/s (15 n mile) - Trading Vessel	Master Class 4	Mate Class 4	
	i/s (15 n mile) - Fishing Vessel	Skipper Grade 2	Master Class 5/ Skipper Grade 3	
<b>24 m and over but less than 35 m</b>	Unlimited - Trading Vessel	Master Class 3	Master Class 4	Mate Class 4
	Unlimited - Fishing Vessel	Skipper Grade 2	Master Class 5/ Skipper Grade 3	*** <i>Master Class 5/ Skipper Grade 3</i>
	ACMW (600 n mile) - Trading Vessel	Master Class 4	Master Class 5/ Skipper Grade 3	
	ACMW (600 n mile) - Fishing Vessel	Skipper Grade 2	Master Class 5/ Skipper Grade 3	
	o/s (200 n mile) - Trading Vessel	Master Class 4	Master Class 5/ Skipper Grade 3	
	o/s (200 n mile) - Fishing Vessel	Skipper Grade 2	Master Class 5/ Skipper Grade 3	

(Continued)

**Table A1 — Certification requirements — deck crew (continued)**

Vessel Size	Area of Operation	Master	Mate	Watchkeeper
<b>12 m and over but less than 24 m</b>	i/s (15 n mile) - Trading Vessel	Master Class 4	Master Class 5/ Skipper Grade 3	<i>***Master Class 5/ Skipper Grade 3</i>
	i/s (15 n mile) - Fishing Vessel	Skipper Grade 2	<i>***Master Class 5/ Skipper Grade 3</i>	
	Sheltered waters - Trading Vessel	Master Class 4	<i>***Master Class 5/ Skipper Grade 3</i>	
	Sheltered waters - Fishing Vessel	Skipper Grade 2	<i>***Master Class 5/ Skipper Grade 3</i>	
	Unlimited - Trading Vessel	Master Class 3	Mate Class 4	
	Unlimited - Fishing Vessel	Skipper Grade 2	Master Class 5/ Skipper Grade 3	
	ACMW (600 n mile) - Trading Vessel	Master Class 4	Master Class 5/ Skipper Grade 3	
	ACMW (600 n mile) - Fishing Vessel	Skipper Grade 2	Master Class 5/ Skipper Grade 3	
<b>Less than 12 m</b>	o/s (200 n mile)	Master Class 5/ Skipper Grade 3	Master Class 5/ Skipper Grade 3	<i>***Master Class 5/ Skipper Grade 3</i>
	o/s (100 n mile)	Master Class 5/ Skipper Grade 3	<i>***Master Class 5/ Skipper Grade 3</i>	
	i/s (15 n mile)	Master Class 5/ Skipper Grade 3	<i>***Master Class 5/ Skipper Grade 3</i>	
	Sheltered waters	Master Class 5/ Skipper Grade 3	<i>***Master Class 5/ Skipper Grade 3</i>	
	Unlimited - Trading Vessel	Master Class 3	Master Class 5/ Skipper Grade 3	
	Unlimited - Fishing Vessel	Skipper Grade 2	Master Class 5/ Skipper Grade 3	
	ACMW (600 n mile) - Trading Vessel	Master Class 4	Master Class 5/ Skipper Grade 3	
	ACMW (600 n mile) - Fishing Vessel	Skipper Grade 2	Master Class 5/ Skipper Grade 3	
	o/s (200 n mile)	Master Class 5/ Skipper Grade 3	Coxswain	<i>***Coxswain</i>
	o/s (100 n mile)	Master Class 5/ Skipper Grade 3	<i>***Coxswain</i>	
	i/s (15 n mile)	Coxswain	<i>***Coxswain</i>	
	Sheltered waters	Coxswain	<i>***Coxswain</i>	

LEGEND

*\*\*\** *Italics* show the recommended level of certification should the position be required for adequate crewing, or required by an Authority.

NOTE: In sheltered waters an Authority may accept a restricted certificate in lieu of those indicated in this table (see Clause 1.9.1).

**Table A.2 — Certification requirements — engineering crew**

Engine power	Area of operation	Chief Engineer	First Engineer
<b>3000 kW and over</b>	All areas	To be determined on the basis of a risk assessment and with guidance from Marine Orders	
<b>1500 kW and over but less than 3000 kW</b>	o/s (200 n mile) and Sheltered Waters	Engineer Class 3	*** <i>Engineer Class 3</i>
<b>1000 kW and over but less than 1500 kW</b>	ACMW (600 n mile)	Engineer Class 3	*** <i>Marine Engine Driver Grade 1</i>
	o/s (30 n mile) and Sheltered Waters	Marine Engine Driver Grade 1	*** <i>Marine Engine Driver Grade 1</i>
<b>750 kW and over but less than 1000 kW</b>	ACMW (600 n mile)	Engineer Class 3	*** <i>Marine Engine Driver Grade 1</i>
	o/s (30 n mile) and Sheltered Waters	Marine Engine Driver Grade 1	*** <i>Marine Engine Driver Grade 2</i>
<b>500 kW and over but less than 750 kW</b>	Unlimited	Engineer Class 3	*** <i>Engineer Class 3</i>
	ACMW (600 n mile)	Marine Engine Driver Grade 1	*** <i>Marine Engine Driver Grade 1</i>
	o/s (200 n mile) and Sheltered Waters	Marine Engine Driver Grade 2	*** <i>Marine Engine Driver Grade 2</i>
<b>250 kW and over but less than 500 kW</b>	Unlimited	Engineer Class 3	*** <i>Marine Engine Driver Grade 1</i>
	ACMW (600 n mile)	Marine Engine Driver Grade 2	*** <i>Marine Engine Driver Grade 2</i>
	o/s (30 n mile) and Sheltered Waters	Marine Engine Driver Grade 3	*** <i>Marine Engine Driver Grade 3</i>
<b>Less than 250 kW</b>	Unlimited	Engineer Class 3	*** <i>Marine Engine Driver Grade 1</i>
	ACMW (600 n mile)	Marine Engine Driver Grade 2	*** <i>Marine Engine Driver Grade 2</i>
	o/s (200 n mile)	Marine Engine Driver Grade 3	*** <i>Marine Engine Driver Grade 3</i>
	i/s (15 n mile) (Vessels less than 12 m) and Sheltered Waters	Coxswain	

**LEGEND**

\*\*\* *Italic* shows recommended level of certification should the position be required for adequate crewing or by direction of an Authority.

**NOTES:**

1. For vessels operating outside of offshore limits (Near Coastal Waters) refer to Clause 1.5 for definition of "Propulsion Power".
2. An engineering qualification is not required on vessels that are powered by outboard motors provided those vessels do not have auxiliary machinery onboard.

Table A.3 — Alternative certification — deck crew

Minimum Qualification	Alternative qualification												
	Master Class 1	Master Class 2	Master Class 3	Master Class 4	Master Class 5	Chief Mate Class1	Chief Mate Class2	Second Mate Class 1	Second Mate Class 2	Mate Class 4	Skipper Grade 1	Skipper Grade 2	Skipper Grade 3
Master Class 3	✓	✓	✓										
Master Class 4 (Master's duties)	✓	✓	✓	✓									
Master Class 4 (Chief Mate's duties)	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	
Master Class 4 (Watchkeeping duties)	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	
Master Class 5/Skipper Grade 3 (Master's duties)	✓	✓	✓	✓	✓						✓	✓	✓
Master Class 5/Skipper Grade 3 (Chief Mate's duties)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Master Class 5/Skipper Grade 3 (Watchkeeping duties)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mate Class 4 (Chief Mate's duties)	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	
Coxswain <sup>1</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Skipper Grade 1											✓		
Skipper Grade 1 (Chief Mate's duties)	✓	✓	✓			✓	✓	✓	✓		✓		
Skipper Grade 2											✓	✓	
Skipper Grade 2 (Chief Mate's duties)	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	
Skipper Grade 3	✓	✓	✓	✓	✓						✓	✓	✓
Skipper Grade 3 (Chief Mate's duties)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

## LEGEND

<sup>1</sup> All equivalents for the coxswain certificate are required to also hold an engineering qualification, unless a separate engineer is carried on the vessel.

Table A.4 — Alternative certification — engineering crew

Minimum Qualification	Alternative qualification						
	Engineer Class 1	Engineer Class 2	Engineer Watchkeeper	Engineer Class 3	Marine Engine Driver Grade 1	Marine Engine Driver Grade 2	Marine Engine Driver Grade 3
Engineer Class 1	✓						
Engineer Class 2	✓	✓					
Engineer Watchkeeper	✓	✓	✓				
Engineer Class 3	✓	✓		✓			
Marine Engine Driver Grade 1	✓	✓	✓ ⊕	✓	✓		
Marine Engine Driver Grade 2	✓	✓	✓ ⊕	✓	✓	✓	
Marine Engine Driver Grade 3	✓	✓	✓	✓	✓	✓	✓
Coxswain (engineering duties)	✓	✓	✓	✓	✓	✓	✓

LEGEND

⊕ Not as Chief Engineer

## ANNEX B REQUIREMENTS FOR A CERTIFICATE OF COMPETENCY

### Scope

This Annex specifies the requirements to be met for the issue of a Certificate of Competency under this Standard.

### B1 COXSWAIN

#### B1.1 Eligibility

##### B1.1.1 Requirements

To be eligible for the issue of a Certificate of Competency as a Coxswain an applicant shall meet the following requirements:

- a) Have attained the age of 18 years.
- b) Have passed an eyesight (vision) test, and eyesight (colour-vision) test to the standards specified in Annex C.
- c) Have satisfactorily completed a declaration of medical fitness as specified in Annex C.
- d) Hold a certificate for elements of shipboard safety as specified in Annex D.
- e) Hold a current first-aid certificate as specified in Annex D.
- f) Have qualifying sea-service in accordance with Clause B1.1.2.
- g) Have satisfactorily completed an approved training program or course that satisfies the competencies set out in Tables B1.1 to B1.2 within the last 5 years; or otherwise satisfy the issuing Authority as to equivalent training in these competencies.
- h) Hold one of the following as specified in Annex D:
  - i) Marine Radio Operator's VHF Certificate of Proficiency.
  - ii) Marine Radio Operator's Certificate of Proficiency.
  - iii) Restricted Radio Operator's Certificate of Proficiency.
- i) Have satisfactorily completed an assessment by an Authority as specified in Clause B1.1.3.

##### B1.1.2 Qualifying sea-service

For the purposes of a Certificate of Competency as a Coxswain an applicant shall have 12 months qualifying sea-service. Qualifying sea-service may be in either commercial or recreational vessels.

NOTE: The issuing Authority may accept a lesser period of service where the quality of service has been enhanced by an approved, structured on-the-job training program (see Clauses 1.15.6 and 1.15.7).

Six months of the total service shall be within the last 5 years.

At least 50 per cent of sea-service shall be beyond the limits of sheltered waters. Where this condition is not met, a restricted Certificate of

Competency shall be issued that limits service as a master to sheltered waters.

The period of qualifying service shall not include more than 15 per cent of time spent in maintenance and refit.

NOTE: See also provisions of Clauses 1.15.6 and 1.15.7

**B1.1.3 Assessment by Authority**

An applicant for a Certificate of Competency as a Coxswain shall satisfy the issuing Authority of the applicant's operational proficiency in the competencies set out in Tables B1.1 and B1.2, by an oral examination—

- a) a practical assessment onboard or in a simulator; or
- b) any other appropriate method of assessment.

**B1.2 Guidance on the usage of this certificate**

The holder of an unrestricted Certificate of Competency as a Coxswain is qualified to act in the following positions:

- a) Master on a fishing or trading vessel less than 12 m in length for inshore operations (within 15 n miles).
- b) Engineer on a fishing or trading vessel less than 12 m in length with engines less than 250 kW for inshore operations (within 15 n miles).

**B1.3 Restrictions**

A restricted Certificate of Competency may be issued in accordance with the requirements of Clause 1.9.1 and 1.9.2.

**B1.4 STCW-95 endorsement from AMSA**

This certificate will not be endorsed for STCW-95.

**TABLE B1.1 — COMPETENCIES FOR A CERTIFICATE OF COMPETENCY  
AS A COXSWAIN**

**Function: Operational      Section 1: Nautical Knowledge—Coxswain**

<b>Outcome</b>	<b>Content</b>	<b>Standards for evaluating competence</b>
<b>Outcome B1.1 A</b> Manoeuvre a vessel	<p><b>Vessel Handling and Manoeuvring</b></p> <ul style="list-style-type: none"> <li>• Displacement and planing hulls</li> <li>• Outboard and inboard propulsion units</li> <li>• Effects of rudders and propellers</li> <li>• Manoeuvring characteristics</li> <li>• Berthing and unberthing in various wind and tidal conditions</li> <li>• Manoeuvres in adverse weather conditions</li> <li>• Manoeuvres to beach and cross coastal bars</li> <li>• Towing and being towed</li> <li>• Trim and Displacement</li> <li>• Anchoring</li> </ul>	<p>Explain the features of a vessel, which relate to its handling characteristics. Explanations are in compliance with current maritime publications or accepted procedures.</p> <p>Manoeuvre the vessel through:</p> <ul style="list-style-type: none"> <li>• Berthing and leaving a berth</li> <li>• Berth in a pen</li> <li>• Man overboard</li> <li>• Coming to and leaving a mooring</li> <li>• Steering astern through a “s” configuration</li> <li>• Turn short around</li> <li>• Towing and be towed</li> <li>• Beached and refloated safely</li> <li>• Turn a vessel across the tide across the wind</li> </ul> <p>This should be combined with the manoeuvring required in the outcome “Use navigational techniques to conduct a safe passage” in this table.</p> <p>Explain the techniques for crossing a coastal bar with and against the sea.</p>
<b>Outcome B1.1 B</b> Respond to emergency situations	<p><b>Emergency and Safety Procedures</b></p> <ul style="list-style-type: none"> <li>• Knowledge of the stability of a small vessel and stability terms</li> <li>• Disabled vessel</li> <li>• Collision, grounding</li> <li>• Man overboard</li> <li>• Heavy weather</li> <li>• Beaching</li> <li>• Cyclone activity in the area</li> </ul>	<p>Respond to emergencies in accordance with vessel procedures and maritime practices.</p> <p>Explanations are in compliance with current maritime publications and procedures and are relative to a 12m vessel.</p>
<b>Outcome B1.1 C</b> Collect and assess weather forecasts	<p><b>Meteorology</b></p> <ul style="list-style-type: none"> <li>• Basic meteorological terms</li> <li>• Sources of weather reports and warnings</li> <li>• Local weather</li> <li>• Cyclonic development</li> </ul>	<p>Obtain weather information applicable to an intended voyage.</p> <p>Apply weather information during voyage planning and explain expected weather patterns.</p> <p>Utilise information for navigation.</p> <p>Relate information in forecasts to conditions expected for small vessels.</p>

*(Continued...)*

**TABLE B1.1 — Function: Operational Section 1: Nautical Knowledge—Coxswain (cont.)**

Outcome	Content	Standards for evaluating competence
<p><b>Outcome B1.1 D</b> Apply seamanship skills and techniques.</p>	<p><b>Practical Seamanship</b></p> <ul style="list-style-type: none"> <li>• Rope types</li> <li>• Common knots, hitches, splices</li> <li>• Towing arrangements</li> <li>• Anchors</li> <li>• Anchoring methods</li> <li>• Use of sea anchors</li> </ul>	<p>Identify rope types and common areas of use.</p> <p>Identify, explain the use and tie the following knots: reef knot, bowline, sheet bend, clove hitch, round turn and 2 half hitches.</p> <p>Eye splice a fibre/synthetic rope end and join two ends complying with the rope manufacturer's recommendations.</p> <p>Whip an end.</p> <p>Rig a vessel for towing and to be towed according to established procedures for varying weather conditions.</p> <p>Prepare and anchor a vessel in varying weather conditions. Weigh anchor and proceed in those same conditions.</p> <p>Rig a sea anchor to control a specified rate and direction of drift and/or angle to sea.</p> <p>Use a sea anchor for emergency steering and to prevent broaching.</p>
<p><b>Outcome B1.1 E</b> Use navigational information and techniques to conduct a safe passage</p>	<p><b>Navigation and Local Knowledge</b></p> <ul style="list-style-type: none"> <li>• Chart information (symbols and abbreviations)</li> <li>• Coastal features</li> <li>• Dangers to navigation</li> <li>• Compass</li> <li>• Basic pilotage techniques</li> <li>• Speed, distance and time calculations</li> <li>• Use of local tide tables</li> <li>• Electronic aids and their limitations</li> </ul>	<p>The vessel is navigated through a pre-planned route with the requirement to:</p> <ol style="list-style-type: none"> <li>a) Specify fuel consumption and time at turning points.</li> <li>b) Identify courses to steer between turning points.</li> <li>c) Identify and comply with all navigational buoys, marks and beacons.</li> <li>d) Identify navigational hazards.</li> <li>e) Plot the position derived from GPS and explain dangers of reliance on use of GPS in coastal areas.</li> <li>f) Plot visual bearings on a chart to derive a position.</li> <li>g) Steer a pre-planned course.</li> <li>h) Apply the International Regulations for the Prevention of Collision at Sea (as amended).</li> <li>i) Identify the times and heights of high and low water from local tide tables.</li> <li>j) Explain the impact of tidal variation on chart depths.</li> </ol>

(Continued...)

**TABLE B1.1 — Function: Operational Section 1: Nautical Knowledge—Coxswain (cont.)**

<b>Outcome</b>	<b>Content</b>	<b>Standards for evaluating competence</b>
<b>Outcome B1.1 F</b> Apply regulations pertaining to the safe operation of a small vessel	<b>Regulations and Port Operations</b> <ul style="list-style-type: none"> <li>• International Regulations for the Prevention of Collision at Sea (as amended)</li> <li>• Lights, shapes and sounds</li> <li>• Distress signals</li> <li>• Large commercial traffic</li> <li>• IALA Buoyage System "A"</li> <li>• State and Territory legislation</li> <li>• Duties and responsibilities</li> <li>• Assisting in distress</li> <li>• Lifesaving and fire-fighting appliances</li> <li>• Pollution prevention</li> </ul>	Identify and implement current State /Territory regulations.  Apply the duties and responsibility of the Master as per national and international requirements.  Watchkeeping behaviour complies with national and international requirements.  Apply the International Regulations for the Prevention of Collision at Sea (as amended).
<b>Methods and conditions for demonstrating competence</b> (To be applied to all outcomes in this table)		
<p>Assessment by an approved assessor shall be conducted in a—</p> <ul style="list-style-type: none"> <li>• working vessel;</li> <li>• training vessel;</li> <li>• simulator; or</li> <li>• approved training facility.</li> </ul> <p>using a combination of practical demonstration or practical exercises and theoretical explanation as appropriate to the subject and it shall be supported by oral or written questions.</p> <p>This process can be a part of—</p> <ul style="list-style-type: none"> <li>• employment;</li> <li>• an approved training program; or</li> <li>• recognition of prior learning.</li> </ul> <p>Vessel manoeuvring should be assessed in varying tide/current and weather conditions.</p> <p>Throughout practical assessment, attention is paid to trim displacement, wind and tide, weather, and their impact on handling. Student is to explain practical implications of strong conditions on handling and how they would approach the situation under those conditions.</p>		

**TABLE B1.2 — COMPETENCIES FOR A CERTIFICATE OF COMPETENCY  
AS A COXSWAIN**

**Function: Operational      Section 2: Engineering—Coxswain**

<b>Outcome</b>	<b>Content</b>	<b>Standards for evaluating competence</b>
<b>Outcome B1.2 A</b> Identify and explain the structural components and material of a small vessel	<b>Structure of Vessels</b> <ul style="list-style-type: none"> <li>• Basic structural components</li> </ul>	Identify deteriorated hull and fittings and explain the reason for the deterioration.
<b>Outcome B1.2 B</b> Operate propulsion machinery and ancillary equipment	<b>Engineering</b> <ul style="list-style-type: none"> <li>• Basic operating principles of two- and four- stroke engines</li> <li>• Petrol, diesel and outboard engines</li> <li>• Drive train assembly</li> <li>• Steering gear</li> <li>• Ancillary equipment</li> <li>• Cooling, lubricating and fuel systems</li> <li>• Bilge and fire pumping arrangements</li> <li>• Monitoring machinery</li> <li>• Machinery malfunction</li> <li>• Electrical systems (12 V – 240 V)</li> <li>• LPG</li> <li>• Refuelling</li> <li>• Shore power connection – an awareness of hazards</li> </ul>	<p>The operating principles are described in accordance with manufacturers' manuals and the equipment is operated in accordance with makers' specification or predetermined vessel procedures.</p> <p>Operate machinery according to vessel or manufacturers' procedures.</p> <p>Operate pumping and auxiliary equipment according to vessel or manufacturers' procedures to ensure that the vessel is kept in a safe condition.</p> <p>Maintain equipment and pumps according to vessel and/or manufacturers' user level maintenance requirements.</p> <p>Safety precautions and pollution prevention measures during refuelling are applied according to legislative requirements, providers' requirements and vessel operating procedures.</p>
<p><b>Methods and conditions for demonstrating competence</b> (To be applied to all outcomes in this table)</p>		
<p>Assessment by an approved assessor shall be conducted in a—</p> <ul style="list-style-type: none"> <li>• working vessel;</li> <li>• training vessel;</li> <li>• simulator; or</li> <li>• approved training facility.</li> </ul> <p>using a combination of practical demonstration or practical exercises and theoretical explanation as appropriate to the subject and it shall be supported by oral or written questions.</p> <p>This process can be a part of—</p> <ul style="list-style-type: none"> <li>• employment;</li> <li>• an approved training program; or</li> <li>• recognition of prior learning.</li> </ul>		

**B2 MASTER CLASS 5/SKIPPER GRADE 3****B2.1 Eligibility****B2.1.1 Requirements**

To be eligible for the issue of a Certificate of Competency as a Master Class 5/Skipper Grade 3 an applicant shall meet the following requirements:

- a) Have attained the age of 18 years.
- b) Have passed an eyesight (vision) test, and eyesight (colour-vision) test to the standards specified in Annex C.
- c) Have satisfactorily completed a declaration of medical fitness as specified in Annex C.
- d) Hold a certificate for elements of shipboard safety as specified in Annex D.
- e) Hold a current first-aid certificate as specified in Annex D.
- f) Have qualifying sea-service in accordance with Clause B2.1.2.
- g) Have satisfactorily completed an approved training program that satisfies the competencies set out in Tables B2.1 to B2.5 within the last 5 years, or otherwise satisfy the issuing Authority as to equivalent training in these competencies.
- h) Hold one of the following as specified in Annex D:
  - i) Marine Radio Operator's Certificate of Proficiency.
  - ii) Restricted Radio Operator's Certificate of Proficiency.
- i) Have satisfactorily completed an assessment by an Authority as specified in B2.1.3.

**B2.1.2 Qualifying sea-service**

For the purposes of a Certificate of Competency as a Master Class 5/Skipper Grade 3, an applicant shall have 30 months qualifying sea-service.

NOTE: The issuing Authority may accept a lesser period of service, where the quality of service has been enhanced by an approved, structured on-the-job training program (see Clauses 1.15.6 and 1.15.7).

Qualifying sea-service shall include 15 months in a commercial vessel, 12 months of which shall be in vessels greater than 8 m in length. Service on vessels less than 5 m in length will not be accepted as qualifying sea-service.

Twelve months of the total service shall be within the last 5 years.

At least 50 per cent of sea-service shall be beyond the limits of sheltered waters. Where this condition is not met, a restricted Certificate of Competency shall be issued that limits service as a master to sheltered waters.

The period of qualifying service shall not include more than 15 per cent of time spent in maintenance and refit.

NOTE: See also provisions of Clause 1.15.6.

**B2.1.3 Assessment by Authority**

An applicant for a Certificate of Competency as a Master Class 5/Skipper Grade 3 shall satisfy the issuing Authority of the applicant's operational proficiency in the competencies set out in Tables B2.1 to B2.5, by an oral examination. The Authority may also require:

- a) a practical assessment onboard or in a simulator; or
- b) any other appropriate method of assessment.

**B2.2 Guidance on the usage of this certificate**

The holder of an unrestricted Master Class 5/Skipper Grade 3 Certificate of Competency is qualified to act in the following positions:

- a) Master on a fishing or trading vessel less than 24 m in length for offshore operations (within 200 n mile).
- b) Chief Mate on a trading vessel less than 35 m in length for ACMW operations (within 600 n mile).
- c) Chief Mate on a fishing vessel less than—
  - i) 80 m in length for offshore operations (within 200 n miles); or
  - ii) 35 m in length for unlimited domestic operations.
- d) Watchkeeper on a fishing vessel less than 80 m in length for offshore operations (within 200 n mile).
- e) Watchkeeper on a fishing or trading vessel less than 35 m in length for ACMW operations.

**B2.3 Restrictions**

A restricted Certificate of Competency may be issued In accordance with the requirements of Clause 1.9.1.

**B2.4 STCW-95 endorsement from AMSA**

The holder of a Certificate of Competency as a Master Class 5 may apply to AMSA for a Near Coastal STCW-95 Endorsement with a limitation to vessels less than 80 GT. The endorsement may be either a command or watchkeeping endorsement.

For further guidance on requirements consult AMSA's "A guide for obtaining an AMSA STCW-95 Endorsement for holders of state issued Master Class 3, 4 or 5 Certificates of Competency" and Marine Orders Part 3.

AMSA will not issue STCW-95 endorsements on certificates of recognition or restricted certificates of any kind.

**Table B2.1 — Competencies for a Certificate of Competency  
as Master Class 5/Skipper Grade 3**

**Function: Operational—Management**

**Section 1: Ship's Construction—Master Class 5/Skipper Grade 3**

<b>Outcome</b>	<b>Content</b>	<b>Standards for evaluating competence</b>
<p><b>Outcome B2.1 A</b> Identify and explain the functions of the principal structural components of a small vessel</p>	<p><b>Design and Construction</b></p> <ul style="list-style-type: none"> <li>• Principal parts of a vessel</li> <li>• Basic methods of design</li> <li>• Construction material (Steel, Aluminium, FRP and Wood)</li> <li>• Regulations governing structure</li> </ul>	<p>Identify structural components from ship's drawings and plans, locate on a vessel and ascertain the relevant regulation governing the structure.</p> <p>Explain the function of structural components in compliance with conventional maritime design.</p> <p>Identify samples of construction material.</p>
<p><b>Outcome B2.1 B</b> Maintain the watertight integrity of a vessel</p>	<p><b>Watertight Integrity</b></p> <ul style="list-style-type: none"> <li>• Watertight and weathertight integrity</li> <li>• Design characteristics preserving watertight integrity</li> <li>• Maintenance to sustain watertight integrity</li> <li>• Regulations affecting watertight integrity</li> </ul>	<p>Identify watertight features and structural components from ship's drawings and plans and be able to locate them on a vessel.</p> <p>Explain the function of watertight features and structural components in compliance with conventional maritime design.</p> <p>Identify deteriorated hull and fittings and explain the reason for the deterioration, in accordance with maritime engineering procedures.</p> <p>Examine a vessel and detail the maintenance procedures required to test and to ensure watertight integrity in compliance with maritime engineering and inspection procedures.</p> <p>List regulations affecting watertight integrity.</p> <p>Identify the dangers of working in confined spaces and list precautions and procedures for doing so in compliance with Australian Standards and OH&amp;S.</p>
<p><b>Outcome B2.1 C</b> Operate the fuel, fresh and ballast water, bilge and fire pumping systems installed in a vessel</p>	<p><b>Pumping Arrangements</b></p> <ul style="list-style-type: none"> <li>• Fuel, fresh and ballast water, bilge and fire pumping arrangements</li> <li>• Sounding and venting facilities</li> <li>• Safety features incorporated in systems</li> <li>• Maintenance requirements to ensure operational readiness</li> <li>• Regulated requirements</li> <li>• Refuelling</li> </ul>	<p>Identify pumping systems on vessel drawings and identify and trace them onboard the vessel.</p> <p>Operate pumping equipment to comply with manufacturer's specification. Identify procedures to avoid contamination of fuel or drinking water, keep bilges clean and dry and provide fire fighting whilst maintaining stability of the vessel and without environmental contamination.</p> <p>Maintain and test pumping equipment according to manufacturers', vessel, or regulatory specifications.</p> <p>Safety precautions and pollution prevention measures during refuelling are applied according to legislative requirements, provider's requirements and vessel operating procedures.</p>

*(Continued...)*

**Table B2.1 — Function: Operational—Management**  
**Section 1: Ship's Construction—Master Class 5/Skipper Grade 3 (cont.)**

Outcome	Content	Standards for evaluating competence
<p><b>Outcome B2.1 D</b> Use and maintain deck machinery installed on a vessel</p>	<p><b>Deck Machinery</b></p> <ul style="list-style-type: none"> <li>• Mechanical deck equipment</li> <li>• Safety features incorporated in systems</li> <li>• Maintenance requirements to ensure operational readiness</li> <li>• Precautions to be observed when using deck machinery</li> <li>• Regulated requirements</li> </ul>	<p>Operating procedures are in accordance with makers' specification and/or vessel operating procedures.</p> <p>Regulatory requirements are applied.</p> <p>Maintenance procedures comply with manufacturer's requirements.</p> <p>Safety procedures and precautions followed are in accordance with OH&amp;S and maritime safety regulations.</p>
<p><b>Outcome B2.1 E</b> Operate steering gear arrangements</p>	<p><b>Steering Systems</b></p> <ul style="list-style-type: none"> <li>• Steering gear arrangements</li> <li>• Safety features incorporated in systems</li> <li>• Maintenance requirements to ensure operational readiness</li> <li>• Regulated requirements</li> </ul>	<p>Operating procedures are in accordance with makers' specification and/or vessel operating procedures. Regulatory requirements are applied.</p> <p>Maintenance procedures comply with manufacturer's requirements.</p> <p>Faults are identified promptly and emergency procedures are implemented according to operating procedures.</p> <p>Safety procedures and precautions followed are in accordance with OH&amp;S and maritime safety regulations.</p>
<p><b>Outcome B2.1 F</b> Manage hull deterioration</p>	<p><b>Vessel Maintenance</b></p> <ul style="list-style-type: none"> <li>• Characteristics and causes of deterioration</li> <li>• Methods to minimise and remedy deterioration</li> <li>• Maintenance management</li> </ul>	<p>Deteriorated hull and fittings are identified in accordance with maritime engineering examination procedures.</p> <p>Regulatory requirements are applied.</p> <p>Maintenance procedures and safety precautions comply with manufacturer's recommendations and warnings.</p> <p>Maintenance schedule is (as minimum) as per maker's requirements.</p>
<p><b>Outcome B2.1 G</b> Describe the various methods of slipping a vessel</p>	<p><b>Slipping</b></p> <ul style="list-style-type: none"> <li>• Procedures for slipping a vessel. That an industry visit incorporates the witnessing of a vessel being slipped</li> <li>• Safety precautions (ship and personnel) onboard a vessel whilst out of the water</li> <li>• Maintenance to ensure operational readiness.</li> <li>• Working in confined spaces</li> <li>• Regulated requirements</li> </ul>	<p>Explain slipping procedures as per vessel and engineering practices.</p> <p>Deteriorated underwater fittings are identified.</p> <p>Workplace Health and Safety procedures are observed.</p> <p>Regulatory requirements are interpreted correctly.</p> <p>Maintenance procedures comply with manufacturer's requirements.</p> <p>Safety precautions and procedures described comply with vessel procedures.</p> <p>The precautions for putting a boat back in the water conform to marine safety regulations and engineering principles.</p>

(Continued...)

**Table B2.1 — Function: Operational—Management**  
**Section 1: Ship's Construction—Master Class 5/Skipper Grade 3 (cont.)**

**Methods and conditions for demonstrating competence**  
(To be applied to all outcomes in this table)

Assessment by an approved assessor shall be conducted in a—

- working vessel;
- training vessel;
- simulator; or
- approved training facility,

using a combination of practical demonstration or practical exercises and theoretical explanation as appropriate to the subject and it shall be supported by oral or written questions.

This process can be a part of—

- employment;
- an approved training program; or
- recognition of prior learning.

**TABLE B2.2 — COMPETENCIES FOR A CERTIFICATE OF COMPETENCY AS MASTER  
CLASS 5/SKIPPER GRADE 3**

**Function: Operational—Management**  
**Section 2: Stability—Master Class 5/Skipper Grade 3**

Outcome	Content	Standards for evaluating competence
<p><b>Outcome B2.2 A</b> Use simplified stability information to maintain the stability of a vessel</p>	<p><b>Stability</b></p> <ul style="list-style-type: none"> <li>• Principles of stability</li> <li>• Terms and definitions</li> <li>• Basic physics of stability</li> <li>• Equilibrium</li> <li>• Impact of design and hull shape on stability</li> </ul> <p>Note: Stability to be considered without calculation</p> <p><b>Operating Conditions</b></p> <ul style="list-style-type: none"> <li>• Adding and removing weights</li> <li>• Water on deck</li> <li>• Slack tanks</li> <li>• Roll period</li> <li>• Stiff and tender vessel</li> <li>• Additions and alterations to vessels</li> </ul>	<p>Information obtained from a vessel's simplified stability data book is applied to maintain the stability of a vessel.</p> <p>Explanations, including diagrams, of principles and content, comply with vessel simplified stability book.</p> <p>Explanations on how to improve stability for heavy weather considerations.</p>
<p><b>Methods and conditions for demonstrating competence</b> (To be applied to all outcomes in this table)</p>		
<p>Assessment by an approved assessor shall be carried out in a—</p> <ul style="list-style-type: none"> <li>• working vessel;</li> <li>• training vessel;</li> <li>• simulator; or</li> <li>• approved training facility,</li> </ul> <p>using a combination of practical demonstration or practical exercises and theoretical explanation as appropriate to the subject and it shall be supported by oral or written questions.</p> <p>This process can be a part of—</p> <ul style="list-style-type: none"> <li>• employment;</li> <li>• an approved training program; or</li> <li>• recognition of prior learning.</li> </ul>		

**TABLE B2.3 — COMPETENCIES FOR A CERTIFICATE OF COMPETENCY  
AS MASTER CLASS 5/SKIPPER GRADE 3**

**Function: Operational – Management**

**Section 3: Coastal Navigation — Master Class 5/Skipper Grade 3**

Outcome	Content	Standards for evaluating competence
<p><b>Outcome B2.3 A</b> Plan and conduct a safe passage and determine position</p>	<p><b>Chart and Features</b></p> <ul style="list-style-type: none"> <li>• Construction of a navigational chart</li> <li>• Latitude and longitude</li> <li>• Relationship between latitude and longitude</li> <li>• Variation and deviation</li> <li>• Chart scales</li> <li>• Information displayed on a chart or plan</li> <li>• Notice to Mariners</li> </ul>	<p>The information obtained from navigational charts is relevant and applied.</p> <p>That chart symbols and features are identified or selected.</p> <p>That chart corrections, as per Notice to Mariners, are correctly inserted, and deleted as necessary.</p>
	<p><b>Coastal Navigation Techniques</b></p> <ul style="list-style-type: none"> <li>• Relationships between true, magnetic, compass, gyro and relative</li> <li>• Variation and deviation</li> <li>• Deviation card</li> <li>• Compass error</li> <li>• Laying off a safe course</li> <li>• Position determination by visual, estimated and radar means</li> <li>• Position estimation by dead reckoning</li> <li>• Coastal features</li> <li>• Publications for safe navigation</li> <li>• Electronic fixing aids</li> <li>• Reporting systems</li> </ul>	<p>The information obtained from current navigational charts and publications is relevant and applied.</p> <p>All navigational hazards are identified.</p> <p>Estimated positions are calculated accurately on known data.</p> <p>The vessel position is fixed using visual, radar and a combination of visual and radar information. Vessel position must be accurate. Plot a GPS derived position.</p> <p>The positions obtained are within acceptable accuracy levels.</p> <p>The fixing interval is appropriate to the proximity of danger.</p> <p>Calculations and measurements from the chart are accurate.</p> <p>The charts selected are appropriate to the area of operation.</p>
	<p><b>Instrumentation and Navigation Aids</b></p> <p>Basic principles, errors and limitations of:</p> <ul style="list-style-type: none"> <li>• Compasses</li> <li>• Echo sounders</li> <li>• GPS</li> <li>• Automatic steering systems</li> <li>• Alarm systems</li> <li>• Plotters and electronic charts</li> </ul>	<p>Performance checks and tests on navigational equipment and systems are carried out adhering to manufacturer's recommendations and satisfactory navigational practices.</p> <p>Operating procedures used are in accordance with manufacturer's recommendations.</p> <p>Explanations are provided detailing performance limitations of equipment.</p>

(Continued...)

**TABLE B2.3—Function: Operational – Management**  
**Section 3: Coastal Navigation — Master Class 5/Skipper Grade 3 (cont.)**

Outcome	Content	Standards for evaluating competence
<b>Outcome B2.3 A</b> Plan and conduct a safe passage and determine position <i>(continued)</i>	<b>Tides</b> <ul style="list-style-type: none"> <li>• Basic tidal theory</li> <li>• Tidal prediction sources</li> <li>• Tide tables, Australian and local</li> </ul>	The information obtained from tide tables navigational charts, publications is relevant and applied.  The times and heights of high and low water from Australian or local tide tables for any port are accurate.  The relevance of chart datum to the height of tide is explained by practical example.  The publications used are current.
<b>Methods and conditions for demonstrating competence</b> (To be applied to all outcomes in this table)		
Assessment by an approved assessor shall be carried out in a— <ul style="list-style-type: none"> <li>• working vessel;</li> <li>• training vessel;</li> <li>• simulator; or</li> <li>• approved training facility,</li> </ul> using a combination of practical demonstration or practical exercises and theoretical explanation as appropriate to the subject and supported by oral or written questions.  This process can be a part of— <ul style="list-style-type: none"> <li>• employment;</li> <li>• an approved training program; or</li> <li>• recognition of prior learning.</li> </ul>		

**TABLE B2.4 — COMPETENCIES FOR A CERTIFICATE OF COMPETENCY  
AS MASTER CLASS 5/SKIPPER GRADE 3**

**Function: Operational Management**

**Section 4: Radar — Master Class 5/Skipper Grade 3**

Outcome	Content	Standards for evaluating competence
<p><b>Outcome B2.4 A</b> Use radar to maintain safety of navigation and for collision avoidance</p>	<p><b>Fundamental Principles</b></p> <ul style="list-style-type: none"> <li>• Fundamental principles and their effects on performance</li> <li>• Pulse transmission</li> <li>• Pulse length</li> <li>• Wave length and frequency</li> <li>• Range and bearing measurement</li> <li>• Major components and their siting</li> </ul>	<p>Components are identified as per manufacturer's specification.</p> <p>The effect of the fundamental principles and characteristics on performance of the radar is explained and compensated for during use.</p>
	<p><b>Characteristics and Performance</b></p> <ul style="list-style-type: none"> <li>• Factors affecting performance</li> <li>• Maximum and minimum range</li> <li>• Bearing and range accuracy</li> <li>• Vertical and horizontal beam width</li> <li>• Range and bearing discrimination</li> <li>• Radar horizon</li> </ul>	<p>The effect of the factors affecting performance are explained and recognised during use.</p>
	<p><b>Interpretation of Display</b></p> <ul style="list-style-type: none"> <li>• Effects of target aspects</li> <li>• Shore and topography targets</li> <li>• Atmospheric</li> <li>• Weather factors</li> <li>• Blind arcs and shadow areas</li> <li>• False echoes</li> <li>• Radar reflectors</li> <li>• Radar beacons and transponder beacons</li> <li>• Radar logs</li> </ul>	<p>Limitation and operating parameters of the radar are identified.</p> <p>Information obtained from radar is interpreted and analysed to assist in navigation and collision avoidance. Interpretation and analysis to be confirmed by alternative means.</p> <p>Detect misrepresented information.</p> <p>Limitations and accuracy of equipment and information derived in prevailing conditions are identified.</p>
	<p><b>Functions and Adjustment</b></p> <ul style="list-style-type: none"> <li>• Function of controls</li> <li>• Symbols for controls</li> <li>• Setting up and maintain display</li> <li>• Shutting down display</li> <li>• Maladjustments</li> <li>• Verification of range and bearing</li> </ul>	<p>The procedures adopted to operate a radar set comply with manufacturer's recommendations.</p> <p>That controls are identified and adjusted to provide maximum performance according to maker's specifications.</p>

(Continued...)

**TABLE B2.4 — Function: Operational Management**  
**Section 4: Radar — Master Class 5/Skipper Grade 3 (cont.)**

Outcome	Content	Standards for evaluating competence
Use radar to maintain safety of navigation and for collision avoidance <i>(continued)</i>	<b>Plotting and Collision Avoidance</b> <ul style="list-style-type: none"> <li>• Relative motion</li> <li>• Radar presentations</li> <li>• Radar plotting</li> <li>• Collision avoidance</li> <li>• International Regulations for the Prevention of Collision at Sea (as amended)</li> <li>• Reporting</li> <li>• Parallel indexing</li> </ul>	Action taken to avoid a close-quarters situation or collision with another vessel is in accordance with the International Regulations for the Prevention of Collision at Sea (as amended).  That plots to ascertain target's closest point of approach and time of closest point of approach are actioned to prevent "close quarter" situations developing.  Manoeuvring and restricted visibility signals are in accordance with the International Regulations for the Prevention of Collision at Sea (as amended) and used correctly.  Course and speed alterations prevent close-quarter situations, comply with International Regulations for Prevention of Collision at Sea (as amended) and avoid navigational hazards.
<b>Methods and conditions for demonstrating competence</b> (To be applied to all outcomes in this table)		
Assessment by an approved assessor shall be carried out in a— <ul style="list-style-type: none"> <li>• working vessel;</li> <li>• training vessel;</li> <li>• simulator; or</li> <li>• approved training facility,</li> </ul> using a combination of practical demonstration or practical exercises and theoretical explanation as appropriate to the subject and it shall be supported by oral or written questions.  This process can be a part of— <ul style="list-style-type: none"> <li>• employment;</li> <li>• an approved training program; or</li> <li>• recognition of prior learning.</li> </ul>		

**TABLE B2.5 — COMPETENCIES FOR A CERTIFICATE OF COMPETENCY  
AS MASTER CLASS 5/SKIPPER GRADE 3**

**Function: Operational—Management**

**Section 5: Nautical Knowledge—Master Class 5/Skipper Grade 3**

Outcome	Content	Standards for evaluating competence
<p><b>Outcome B2.5 A</b> Use Commonwealth, State &amp; Territory Acts, Legislation, Codes and other publications relevant to the safe operation of a vessel</p>	<p><b>Marine Legislation</b></p> <ul style="list-style-type: none"> <li>• Duties and responsibilities</li> <li>• Certificates onboard a small vessel</li> <li>• Procedures manuals onboard a small vessel</li> <li>• Operational areas and classification of vessels</li> <li>• NSCV Part C Section 7</li> <li>• Contents of Marine Notices, Annual Notices to Mariners</li> <li>• Log Book or Vessel Record Book</li> <li>• Workplace Health and Safety Legislation</li> <li>• Marine Pollution</li> <li>• State &amp; Territory Marine Legislation</li> <li>• Certificates to be carried onboard</li> </ul>	<p>Information obtained from Commonwealth, State and Territory Acts, Legislation, Codes and other publications relating to the safe navigation of a vessel is current, and applied.</p> <p>The duties and responsibilities of the Master are identified.</p>
<p><b>Outcome B2.5 B</b> Obtain and interpret meteorology information relevant to a voyage</p>	<p><b>Meteorology</b></p> <ul style="list-style-type: none"> <li>• Elements of meteorology</li> <li>• Terms and definitions</li> <li>• Weather systems</li> <li>• Pressure systems and circulation</li> <li>• Sources of weather forecasts and information</li> <li>• Synoptic charts</li> <li>• Instruments for onboard observations</li> <li>• Tropical revolving storms (TRS)</li> </ul>	<p>Weather information obtained is applicable to the intended voyage.</p> <p>Information obtained from observations, reports and instruments is analysed and included in the voyage planning.</p> <p>Actions taken by a small vessel to avoid severe weather are identified.</p>
<p><b>Outcome B2.5 C</b> Maintain a safe navigation watch</p>	<p><b>Watchkeeping</b></p> <ul style="list-style-type: none"> <li>• Content, application and intent of the International Regulations for the Prevention of Collision at Sea (as amended)</li> <li>• Watchkeeping standards and principles at sea, anchor and in port</li> <li>• Bridge communication</li> <li>• IALA buoyage system "A"</li> </ul>	<p>International Regulations for the Prevention of Collision at Sea (as amended) are interpreted and applied.</p> <p>Watchkeeping behaviour complies with accepted standards and procedures.</p> <p>Communication and reporting procedures adopted in the wheelhouse are defined.</p> <p>The vessel log/record book is maintained in accordance with the NSCV.</p>

(Continued...)

**TABLE B2.5 — Function: Operational—Management**  
**Section 5: Nautical Knowledge—Master Class 5/Skipper Grade 3 (cont.)**

Outcome	Content	Standards for evaluating competence
<p><b>Outcome B2.5 D</b> Respond to emergency situations</p>	<p><b>Emergency Procedures</b></p> <ul style="list-style-type: none"> <li>• Collision, grounding, damage to the vessel</li> <li>• Protection and safety of all persons onboard</li> <li>• Abandoning the vessel</li> <li>• Rescuing persons in distress</li> <li>• Assisting a vessel or aircraft in distress</li> <li>• Assisting a vessel or aircraft in SAR</li> <li>• Musters and Drills</li> <li>• Tropical Revolving Storms</li> </ul>	<p>The emergency situations are identified expeditiously.</p> <p>Procedures are appropriate and comply with NSCV Part E and current practices.</p>
<p><b>Outcome B2.5 E</b> Explain the various features of a vessel, which relate to its handling characteristics</p> <p>Manoeuvre a vessel</p>	<p><b>Vessel Handling and Manoeuvring</b></p> <ul style="list-style-type: none"> <li>• Effects of rudders and propellers</li> <li>• Berthing and unberthing in various conditions</li> <li>• Manoeuvres to approach an anchorage</li> <li>• Effects of narrow channels and shallow water on manoeuvring</li> <li>• Effects of interaction</li> <li>• Management of a vessel in heavy weather (may not be possible in training)</li> <li>• Crossing a bar (may not be possible in training)</li> <li>• Manoeuvres to launch boats or liferafts</li> </ul> <p>Manoeuvres and procedures for man overboard</p>	<p>Handling characteristics of a vessel are described and the significance of the characteristic relative to manoeuvring is explained in accordance with engineering and design principles.</p> <p>Vessel is manoeuvred as indicated in contents column within its performance parameters.</p> <p>Launch and retrieve liferaft/boat according to vessel procedures.</p> <p>Vessel is manoeuvred to pick up simulated man overboard using internationally recognised practices.</p> <p>Turn a vessel across the tide across the wind.</p> <p>Williamson turn, turning short around.</p>

(Continued...)

**TABLE B2.5 — Function: Operational—Management**  
**Section 5: Nautical Knowledge—Master Class 5/Skipper Grade 3 (cont.)**

Outcome	Content	Standards for evaluating competence
<p><b>Outcome B2.5 F</b>            Demonstrate seamanship skills and techniques.</p>	<p><b>Practical Seamanship</b></p> <ul style="list-style-type: none"> <li>• Knots, hitches and bends using fibre and synthetic rope</li> <li>• Eye splice and short splice in fibre and synthetic rope</li> <li>• Precautions when using rope, wire and chains</li> <li>• Breaking strain and safe working loads of ropes</li> <li>• Maintenance and care of rope, wire and chain</li> <li>• Rigging gear and maximum loads</li> <li>• Winches and windlasses</li> <li>• Safe handling of moorings and hawsers</li> <li>• Stowing and securing anchors for sea</li> <li>• Securing for rough weather and maintenance of watertight integrity</li> <li>• Lashing and securing equipment</li> <li>• Towing and being towed</li> </ul>	<p>Workplace health and safety procedures are observed.</p> <p>Identify rope types and common areas of use.</p> <p>Identify, explain the use and tie the following knots: reef knot, bowline, sheet bend, clove hitch, round turn and 2 half hitches.</p> <p>Eye Splice a fibre/synthetic rope end and join two ends complying with the rope manufacturer's recommendations.</p> <p>Whip an end.</p> <p>Techniques and skills used to perform tasks are in accordance with manufacturers specifications and industry standards.</p> <p>That maintenance procedures comply with authorised requirements.</p>
<p><b>Methods and conditions for demonstrating competence</b>            (To be applied to all outcomes in this table)</p>		
<p>Assessment by an approved assessor shall be carried out in a—</p> <ul style="list-style-type: none"> <li>• working vessel;</li> <li>• training vessel;</li> <li>• simulator; or</li> <li>• approved training facility,</li> </ul> <p>using a combination of practical demonstration or practical exercises and theoretical explanation as appropriate to the subject and it shall be supported by oral or written questions.</p> <p>This process can be a part of—</p> <ul style="list-style-type: none"> <li>• employment;</li> <li>• an approved training program; or</li> <li>• recognition of prior learning.</li> </ul>		

**B3 MATE CLASS 4****B3.1 Eligibility****B3.1.1 Requirements**

To be eligible for the issue of a Certificate of Competency as a Mate Class 4 an applicant shall meet the following requirements:

- a) Have attained the age of 18 years.
- b) Hold a current certificate of medical fitness as specified in Annex C.
- c) Hold a certificate for elements of shipboard safety as specified in Annex D.
- d) Hold a current first-aid certificate as specified in Annex D.
- e) Have qualifying sea-service in accordance with Clause B3.1.2.
- f) Have satisfactorily completed an approved training program that satisfies the competencies set out in Tables B4.1 to B4.5 within the last 5 years, or otherwise satisfy the issuing Authority as to equivalent training in these competencies.
- g) Hold one of the following as specified in Annex D:
  - i) Marine Radio Operator's Certificate of Proficiency.
  - ii) Restricted Radio Operator's Certificate of Proficiency.
- h) Have satisfactorily completed an assessment by an Authority in accordance with Clause B3.1.3.

There is no link between Master Class 5/Skipper Grade 3, and Mate Class 4. Candidates with a Master Class 5/Skipper Grade 3 will have to meet the requirements for Mate Class 4 in the same way as a person seeking a Mate Class 4 as a first qualification.

**B3.1.2 Qualifying sea-service**

For the purposes of a Certificate of Competency as a Mate Class 4, an applicant shall have 36 months qualifying sea-service on vessels of more than 15 m in length.

The issuing Authority may accept a lesser period of service, but not less than 24 months, where the quality of service has been enhanced by an approved, structured on-the-job training program (see Clause 1.15.6).

NOTES: The sea-service requirements for an STCW-95 endorsement are more rigorous with regard to areas of operation than for the NSCV. As a result, when applying to AMSA for an STCW-95 Endorsement, sea-service accepted towards the award of this certificate will be reviewed and may not be accepted. See Marine Orders Part 3 or AMSA's Guide to STCW-95 Endorsements for requirements.

Twelve months of the total qualifying sea-service shall be in the last 5 years, and at least 30 months shall be in a commercial vessel.

For an unrestricted Certificate of Competency at least 50 per cent of the service shall be beyond the limits of sheltered waters.

The period of qualifying sea-service shall not include more than 15 per cent of time spent in maintenance and refit.

NOTE: See also provisions of Clause 1.15.6.

### **B3.1.3 Assessment by Authority**

An applicant for a Certificate of Competency as a Mate Class 4 shall satisfy the issuing Authority of the applicant's operational proficiency in the competencies set out in Tables B4.1 to B4.5 by an oral examination. The Authority may also require—

- a) a practical assessment onboard or in a simulator; or
- b) any other appropriate method of assessment.

### **B3.2 Guidance on the usage of this certificate**

The holder of an unrestricted Certificate of Competency as a Mate Class 4 is qualified to act in the following positions:

- a) Chief Mate on a trading vessel less than 80 m in length for offshore operations (within 200 n mile).
- b) Watchkeeper on a fishing or trading vessel less than—
  - i) 35 m in length for unlimited domestic operations;
  - ii) 80 m in length for ACMW operations (within 600 n miles); or
  - iii) 100 m in length (less than 3000 GT) for offshore operations (within 200 n miles).

### **B3.3 Restrictions**

A restricted Certificate of Competency may be issued in accordance with the requirements of Clause 1.9.1.

Where a restricted certificate is held, the certificate will be limited for use in accordance with the restrictions recorded on the certificate.

### **B3.4 STCW-95 endorsement from AMSA**

The holder of a Certificate of Competency as a Mate Class 4 may apply to AMSA for a Near Coastal STCW-95 Endorsement with a limitation to vessels less than 500 GT.

For further guidance on requirements consult AMSA's "A guide for obtaining an AMSA STCW-95 Endorsement for holders of state issued Master Class 3, 4 or 5 Certificates of Competency" and Marine Orders Part 3.

AMSA will not issue STCW-95 endorsements on certificates of recognition or restricted certificates of any kind.

**B4 MASTER CLASS 4 OR SKIPPER GRADE 2****B4.1 Eligibility****B4.1.1 Requirements**

To be eligible for the issue of a Certificate of Competency as a Master Class 4 or Skipper Grade 2, an applicant shall meet the following requirements:

- a) Have attained the age of 18 years.
- b) Hold a current certificate of medical fitness as specified in Annex C.
- c) Hold a certificate for elements of shipboard safety as specified in Annex D.
- d) Hold a current first-aid certificate as specified in Annex D.
- e) Have qualifying watchkeeping service in accordance with Clause B4.1.2.
- f) Have satisfactorily completed an approved training program that satisfies the competencies set out in Tables B4.1 to B4.5 within the last 5 years, or otherwise satisfy the issuing Authority as to equivalent training in these competencies.
- g) Hold one of the following as specified in Annex D:
  - i) Marine Radio Operator's Certificate of Proficiency.
  - ii) Restricted Radio Operator's Certificate of Proficiency.
- h) Hold one of the following Certificates of Competency:
  - i) Master Class 5/Skipper 3.
  - ii) Master Class 5.
  - iii) Skipper 3.
  - iv) Mate Class 4.
  - v) Second Mate.
  - vi) Any other qualification deemed equivalent, by the Authority, to those above.
- i) Have satisfactorily completed an assessment by an Authority in accordance with Clause B4.1.3.

**B4.1.2 Qualifying watchkeeping service**

For the purposes of a Certificate of Competency as Master Class 4 or Skipper Grade 2, qualifying watchkeeping service shall consist of one or more of the following:

- a) For the holder of a Certificate of Competency as Master Class 5/Skipper Grade 3 applying for a Master Class 4 — 18 months watchkeeping service since obtaining that certificate is required.
- b) For the holder of a Certificate of Competency as Master Class 5/Skipper Grade 3 applying for a Skipper Grade 2 — 12 months watchkeeping service since obtaining that certificate is required.

- c) For the holder of a Certificate of Competency as Second Mate or Mate Class 4 — 12 months watchkeeping service since obtaining that certificate.
- d) For the holder of any other qualification deemed equivalent by the Authority — a period of service appropriate to the qualification being sought based upon the above requirements.

NOTE: The issuing Authority may accept a lesser period of service specified in Clause B4.1.2 a) to c) (reduced by no more than 33 per cent) where the quality of service has been enhanced by an approved, structured on-the-job training program (see Clause 1.15.6).

In assessing the watchkeeping service, the issuing Authority shall have regard to the following criteria:

- i) All watchkeeping service shall be on vessels of more than 15 m in length.
- ii) At least 12 months watchkeeping service within the previous 5 years shall be while acting in a position appropriate to the certificate held.
- iii) There shall be 6 months watchkeeping service on trading vessels for applicants for a Master Class 4, and 6 months watchkeeping service on fishing vessels for applicants for a Skipper Grade 2.
- iv) At least 50 per cent of watchkeeping service shall be beyond the limits of sheltered waters. Where this condition is not met, a restricted Certificate of Competency shall be issued that limits service as a master.
- v) At least 33 per cent of watchkeeping service shall be on seagoing voyages of 24 hours or more in duration. Where this condition is not met, a restricted Certificate of Competency shall be issued that limits service as a master or mate to offshore operations (within 200 n mile).

NOTES:

1. The sea-service requirements for an STCW-95 Endorsement are more rigorous with regard to areas of operation than for the NSCV. As a result, when applying to AMSA for an STCW-95 Endorsement, sea-service accepted towards the award of this certificate will be reviewed and may not be accepted. See Marine Orders Part 3 or AMSA's Guide to STWC-95 Endorsements for requirements.
2. See also provisions of Clause 1.15.6.

### **B4.1.3 Assessment by Authority**

An applicant for a Certificate of Competency as a Master Class 4 or Skipper Grade 2 shall satisfy the issuing Authority of the applicant's operational proficiency in the competencies set out in Tables B4.1 to B4.5 by an oral examination. The Authority may also require—

- a) a practical assessment onboard or in a simulator;
- b) or other appropriate method of assessment.

## **B4.2 Guidance on the use of this certificate**

### **B4.2.1 Master Class 4**

The holder of an unrestricted Certificate of Competency as a Master Class 4 is qualified to act in the following positions:

- a) Master on a trading vessel less than—

- i) 35 m in length for ACMW operations (within 600 n miles); or
  - ii) 80 m in length for inshore operations (within 15 n miles).
- b) Chief Mate on a fishing or trading vessel less than—
- i) 35 m in length for unlimited domestic operations; or
  - ii) 80 m in length for ACMW operations (within 600 n miles).

#### **B4.2.2 Skipper Grade 2**

The holder of an unrestricted Skipper Grade 2 Certificate of Competency is qualified to act in the following positions:

- a) Master on a fishing vessel less than—
- i) 35 m in length for unlimited domestic operations; or
  - ii) 80 m in length for offshore operations (within 200 n miles).
- b) Chief Mate on a fishing or trading vessel less than 80 m in length for ACMW operations (within 600 n miles).
- c) Watchkeeper on a fishing vessel less than 3000 GT and 100 m in length, for unlimited domestic operations.

#### **B4.3 Restrictions**

A restricted Certificate of Competency may be issued in accordance with the requirements of Clause 1.9.1.

#### **B4.4 STCW-95 endorsement from AMSA**

The holder of a Certificate of Competency as a Master Class 4 may apply to AMSA for—

- a) a Near Coastal STCW-95 Endorsement as Master, Mate or Watchkeeper limited to vessels under 500 GT; or
- b) an unlimited STCW-95 Endorsement in accordance with Marine Orders Part 3, Appendix 1. This allows watchkeeping duties on vessels up to 3000 GT in near coastal waters and on vessels less than 500 GT on unlimited voyages.

For further guidance on requirements consult AMSA's "A guide for obtaining an AMSA STCW-95 Endorsement for holders of state issued Master Class 3, 4 or 5 Certificates of Competency" and Marine Orders Part 3.

AMSA will not issue STCW-95 Endorsements on certificates of recognition or restricted certificates of any kind.

An STCW-95 Endorsement cannot be issued on a Certificate of Competency as a Skipper Grade 2.

**TABLE B4.1 — COMPETENCIES FOR A CERTIFICATE OF COMPETENCY  
AS A MATE CLASS 4, MASTER CLASS 4 OR SKIPPER GRADE 2**

**Function: Management and Operational Control**

**Section 1: Vessel Construction and Machinery — Mate Class 4, Master Class 4 or  
Skipper Grade 2**

Outcome	Content	Standards for evaluating competence
<p><b>Outcome B4.1 A</b> Identify and explain the principal structural components of a vessel of 80 m in length</p>	<p><b>Vessel Construction</b></p> <ul style="list-style-type: none"> <li>• Fundamental principles of vessel construction</li> <li>• Principal structural components</li> <li>• Load lines conditions of assignment</li> <li>• Structural arrangements to restrain fires</li> <li>• Design characteristics attributing to watertight integrity</li> <li>• Methods for testing tanks and watertight integrity</li> <li>• Regulatory requisites</li> </ul>	<p>Identify structural components from ship's drawings and plans and locate on a vessel.</p> <p>Explain the function of structural components in compliance with conventional maritime design.</p> <p>Identify samples of construction material.</p>
<p><b>Outcome B4.1 B</b> Manage a propulsion unit using the appropriate engineering systems and support services</p>	<p><b>Engineering Systems</b></p> <ul style="list-style-type: none"> <li>• Marine engineering terms</li> <li>• Management of marine power units</li> <li>• Ancillary equipment</li> <li>• Safety alarm systems</li> </ul>	<p>Operation of propulsion unit, ancillary power units and equipment is in accordance with technical specifications.</p> <p>Machinery is operated within the accepted safety parameters.</p> <p>Monitoring of safety and fire detection systems is in accordance with formulated emergency procedures.</p> <p>Operation of safety and fire-detection/suppression systems.</p> <p>Adopted safety precautions and procedures are appropriate.</p>
<p><b>Methods and conditions for demonstrating competence</b> (To be applied to all outcomes in this table)</p>		
<p>Assessment by an approved assessor shall be carried out in a—</p> <ul style="list-style-type: none"> <li>• working vessel;</li> <li>• training vessel;</li> <li>• simulator; or</li> <li>• approved training facility,</li> </ul> <p>using a combination of practical demonstration or practical exercises and theoretical explanation as appropriate to the subject and it shall be supported by oral or written questions.</p> <p>This process can be a part of—</p> <ul style="list-style-type: none"> <li>• employment;</li> <li>• an approved training program; or</li> <li>• recognition of prior learning.</li> </ul>		

**TABLE B4.2 — COMPETENCIES FOR A CERTIFICATE OF COMPETENCY  
AS A MATE CLASS 4, MASTER CLASS 4 OR SKIPPER GRADE 2**

**Function: Management and Operational Control**

**Section 2: Stability and Stress Conditions — Mate Class 4, Master Class 4 or Skipper Grade 2**

Outcome	Content	Standards for evaluating competence
<p><b>Outcome B4.2 A</b> Manage stress and dynamic factors affecting a vessel's stability</p>	<p><b>Stability</b></p> <ul style="list-style-type: none"> <li>• Terms and definitions</li> <li>• Forces and moments</li> <li>• Centroids and centre of gravity</li> <li>• Density and specific gravity</li> <li>• Dockwater allowance</li> <li>• Transverse and longitudinal dynamics</li> <li>• Effects of free surface of liquids</li> <li>• Loading and discharging weights</li> <li>• Final KG</li> <li>• Bilging and permeability</li> <li>• Change of draught and trim (MCT)</li> <li>• Tonnes per centimetre immersion (TPC)</li> <li>• Freshwater allowance</li> <li>• Virtual loss of GM</li> <li>• Stress conditions</li> <li>• Stability curves</li> </ul>	<p>Information obtained from a vessel's simplified stability data book is interpreted correctly.</p> <p>Calculations associated with basic stability management are accurate.</p> <p>Correlate and interpret calculated stability data.</p> <p>Stability and stress conditions are managed within safety parameters.</p> <p>The information communicated is relevant and correct.</p> <p>Illustrations are accurate.</p>
<p><b>Methods and conditions for demonstrating competence</b> (To be applied to all outcomes in this table)</p>		
<p>Assessment by an approved assessor shall be carried in a—</p> <ul style="list-style-type: none"> <li>• working vessel;</li> <li>• training vessel;</li> <li>• simulator; or</li> <li>• approved training facility,</li> </ul> <p>using a combination of practical demonstration or practical exercises and theoretical explanation as appropriate to the subject and it shall be supported by oral or written questions.</p> <p>This process can be a part of—</p> <ul style="list-style-type: none"> <li>• employment;</li> <li>• an approved training program; or</li> <li>• recognition of prior learning.</li> </ul>		

**TABLE B4.3—COMPETENCIES FOR A CERTIFICATE OF COMPETENCY  
AS A MATE CLASS 4, MASTER CLASS 4 OR SKIPPER GRADE 2**

**Function: Management and Operational Control**

**Section 3: Navigation Mate Class 4, Master Class 4 or Skipper Grade 2**

Outcome	Content	Standards for evaluating competence
<p><b>Outcome B4.3 A</b> Plan and conduct a safe passage</p>	<p><b>Voyage Planning</b></p> <ul style="list-style-type: none"> <li>• Chart catalogue</li> <li>• Plotting ocean tracks</li> <li>• Fuel consumption</li> <li>• Meteorological conditions and restrictions imposed by various authorities</li> <li>• Principles of ship's routing</li> <li>• Ship reporting systems</li> <li>• Admiralty publications</li> </ul>	<p>The information obtained from navigational charts is relevant and applied.</p> <p>Facts and statistical data are obtained from relevant sources and current publications.</p> <p>Determined position, courses, distances and time are accurate.</p> <p>All navigational hazards are identified.</p> <p>Planned passage and information is transferred to charts.</p> <p>During passage position information gained is applied and the plan adjusted.</p>
	<p><b>Tides</b></p> <ul style="list-style-type: none"> <li>• Tidal theory</li> <li>• Tide tables - Australian and Admiralty</li> </ul>	<p>The information obtained from tide tables, navigational charts and publications is relevant and applied.</p> <p>The calculated times for a height of tide at standard and secondary ports are accurate.</p> <p>The state of tide at any time is accurate for standard and secondary ports.</p> <p>The publications used are current.</p>
<p><b>Outcome B4.3 B</b> Use various fixing techniques to determine a vessel's position in any condition</p>	<p><b>Position Determination Techniques</b></p> <ul style="list-style-type: none"> <li>• Terrestrial observations</li> <li>• Azimuth and amplitude</li> <li>• Nautical publications</li> <li>• Radio or electronic aids to navigation</li> <li>• Gyro and magnetic compasses</li> <li>• Electronic navigation aids</li> </ul>	<p>The information obtained from current navigational charts and publications is relevant and applied.</p> <p>Techniques used to determine the vessel's position are justified relative to the prevailing conditions.</p> <p>Positions obtained from terrestrial bodies are within accepted limits.</p> <p>The accuracy of fixes is verified.</p> <p>Positions determined by electronic aids are within acceptable limits.</p> <p>Performance checks and tests on navigational equipment and systems are carried out adhering to manufacturer's recommendations and maritime navigational practices.</p>

(Continued...)

**TABLE B4.3 — Function: Management and Operational Control**  
**Section 3: Navigation      Mate Class 4, Master Class 4 or Skipper Grade 2 (cont.)**

<b>Methods and conditions for demonstrating competence</b> (To be applied to all outcomes in this table)
<p>Assessment by an approved assessor shall be carried out in a—</p> <ul style="list-style-type: none"><li>• working vessel;</li><li>• training vessel;</li><li>• simulator; or</li><li>• approved training facility,</li></ul> <p>using a combination of practical demonstration or practical exercises and theoretical explanation as appropriate to the subject and it shall be supported by oral or written questions.</p> <p>This process can be a part of—</p> <ul style="list-style-type: none"><li>• employment;</li><li>• an approved training program; or</li><li>• recognition of prior learning.</li></ul>

**TABLE B4.4 — COMPETENCIES FOR A CERTIFICATE OF COMPETENCY  
AS A MATE CLASS 4, MASTER CLASS 4 OR SKIPPER GRADE 2  
Function: Management and Operational Control  
Section 4: Radar Operator — Mate Class 4, Master Class 4 or Skipper Grade 2**

Outcome	Content	Standards for evaluating competence
<b>Outcome B4.4 A</b> Use radar and ARPA to maintain safety of navigation and collision avoidance	<b>Fundamental Principles</b> <ul style="list-style-type: none"> <li>• Fundamental principles</li> <li>• Pulse transmission</li> <li>• Pulse length</li> <li>• Wavelength and frequency</li> <li>• Range and bearing measurement</li> <li>• Major components and their siting</li> <li>• Radiation hazards</li> </ul>	Information obtained from manufacturer's specifications is applied.  That radar components are identified according to manufacturer's manuals.  Diagrams and explanations conform to maker's manuals.
	<b>Characteristics and Performance</b> <ul style="list-style-type: none"> <li>• Factors affecting performance</li> <li>• Maximum and minimum range</li> <li>• Bearing and range accuracy</li> <li>• Vertical and horizontal beam width</li> <li>• Range and bearing discrimination</li> <li>• Radar horizon</li> <li>• Marine radar performance standards</li> </ul>	Information obtained from manufacturer's specifications is interpreted correctly.  Performance standards are identified and applied.  Illustrations and explanations are clear and concise and conform to manufacturer's instruction manuals.
	<b>Functions and Adjustment</b> <ul style="list-style-type: none"> <li>• Function of controls</li> <li>• Symbols for controls</li> <li>• ARPA controls</li> <li>• ARPA setting-up procedure</li> <li>• Setting up and maintain display</li> <li>• Shutting down display</li> <li>• Maladjustments</li> <li>• Verification of range and bearing</li> </ul>	The procedures adopted to operate a radar set or ARPA comply with manufacturer's recommendations.  Controls are identified and adjusted as per the manufacturer's manual.  Demonstrate the ability to operate tuning and clutter controls in differing and atmospheric weather conditions.
	<b>Interpretation</b> <ul style="list-style-type: none"> <li>• Effects of target aspects</li> <li>• Shore and topography targets</li> <li>• Atmospheric</li> <li>• Weather factors</li> <li>• Blind arcs and shadow areas</li> <li>• False echoes</li> <li>• Radar for navigation</li> <li>• Radar frequency bands</li> <li>• Radar logs</li> </ul>	Information obtained from radar and ARPA is correctly interpreted and analysed, taking into account the limitations of the equipment and prevailing circumstances and conditions and actioned in accordance with International Regulations for the Prevention of Collision at Sea (as amended).  Detect misrepresented information.

(Continued...)

**TABLE B4.4 — Function: Management and Operational Control**  
**Section 4: Radar Operator — Mate Class 4, Master Class 4 or Skipper Grade 2 (cont.)**

Outcome	Content	Standards for evaluating competence
<p><b>Outcome B4.4 A</b></p> <p>Use of radar to maintain safety of navigation and collision avoidance <i>(continued)</i></p>	<p><b>Plotting and Collision Avoidance</b></p> <ul style="list-style-type: none"> <li>• Relative and true motion</li> <li>• Radar presentations</li> <li>• ARPA</li> <li>• Radar plotting</li> <li>• Blind pilotage techniques</li> <li>• Alterations by own ship</li> <li>• Alterations by target ship</li> <li>• Passing a given distance</li> <li>• Course and speed to close target</li> <li>• Collision avoidance</li> <li>• Collision Regulations</li> <li>• Communications VHF</li> <li>• Reporting</li> </ul>	<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 and actioned in accordance with International Regulations for the Prevention of Collision at Sea (as amended).</p> <p>Action taken to avoid a close-quarters situation or collision with another vessel is in accordance with the International Regulations for Prevention of Collision at Sea (as amended).</p> <p>Manoeuvring signals are made at the appropriate time and are in accordance with the International Regulations for the Prevention of Collision at Sea (as amended).</p> <p>Decisions to adjust course and/or speed are justified as timely and effective having regard for safe navigation.</p> <p>Communication is acknowledged and achieves the intended result.</p> <p>Radar plots are clear, concise and calculated correctly.</p>
<p><b>Methods and conditions for demonstrating competence</b>            (To be applied to all outcomes in this table)</p>		
<p>Assessment by an approved assessor shall be carried out in a—</p> <ul style="list-style-type: none"> <li>• working vessel;</li> <li>• training vessel;</li> <li>• simulator; or</li> <li>• approved training facility,</li> </ul> <p>using a combination of practical demonstration or practical exercises and theoretical explanation as appropriate to the subject and it shall be supported by oral or written questions.</p> <p>This process can be a part of—</p> <ul style="list-style-type: none"> <li>• employment;</li> <li>• an approved training program; or</li> <li>• recognition of prior learning.</li> </ul>		

**TABLE B4.5 — COMPETENCIES FOR A CERTIFICATE OF COMPETENCY  
AS A MATE CLASS 4, MASTER CLASS 4 OR SKIPPER GRADE 2**

**Function: Management and Operational Control**

**Section 5: Nautical Knowledge — Mate Class 4, Master Class 4 or Skipper Grade 2**

<b>Outcome</b>	<b>Content</b>	<b>Standards for evaluating competence</b>
<b>Outcome B4.5 A</b> Monitor and control compliance with legislative requirements	<b>Marine Legislation</b> <ul style="list-style-type: none"> <li>• Commonwealth, State and Territory Acts and subordinate legislation</li> <li>• NSCV</li> <li>• MERSAR</li> <li>• MARPOL 73/78</li> <li>• STCW 95 Code</li> <li>• SOLAS</li> </ul>	Information obtained from International, Commonwealth and State and Territory Acts, Legislation, Codes and other publications relating to the safe navigation and operation of a vessel is current and applied.  Procedures for monitoring ship's operations and maintenance comply with legislative requirements.  The responsibilities under international maritime law embodied in international agreements and conventions are clearly identified, interpreted and applied.  Procedures and communications used for co-ordinating SAR operations are in accordance with IMO requirements.
<b>Outcome B4.5 B</b> Predict meteorological and oceanographic conditions	<b>Meteorology and Oceanography</b> <ul style="list-style-type: none"> <li>• Vertical division of atmosphere</li> <li>• Heat exchange process</li> <li>• Cloud classification</li> <li>• Air masses and fronts</li> <li>• Synoptic chart analysis</li> <li>• Tropical meteorology</li> <li>• Instruments</li> <li>• Ocean currents</li> <li>• Sea state</li> </ul>	Weather forecasts for an intended voyage are made using all available data and the forecast is justified.  Information obtained from observations, reports and instruments is deciphered and applied to ensure safety of the vessel.
<b>Outcome B4.5 C</b> Execute appropriate watchkeeping arrangements and procedures	<b>Watchkeeping</b> <ul style="list-style-type: none"> <li>• Content, application and intent of the International Regulations for the Prevention of Collision at Sea (as amended).</li> <li>• Watchkeeping principles</li> <li>• Bridge teamwork procedures</li> </ul>	Watchkeeping arrangements and behaviour comply with STCW-95, Marine Orders and Regulations.  The International Regulations for the Prevention of Collision at Sea (as amended) are appropriately applied.  Communication and reporting procedures adopted on the bridge are clearly defined and accepted.  Adopted procedures enhance navigational safety, protection of the marine environment and the safety of all onboard.

(Continued...)

**TABLE B4.5 — Function: Management and Operational Control      Section 5: Nautical Knowledge — Mate Class 4, Master Class 4 or Skipper Grade 2 (cont.)**

Outcome	Content	Standards for evaluating competence
<p><b>Outcome B4.5 D</b> Manoeuvre a vessel in any prevailing conditions</p>	<p><b>Vessel Handling and Manoeuvring</b></p> <ul style="list-style-type: none"> <li>• Interaction</li> <li>• Propulsion and manoeuvring systems</li> <li>• Manoeuvring in restricted waters</li> <li>• Embarkation and disembarkation of pilots</li> <li>• Anchoring and manoeuvres to approach an anchorage</li> <li>• Management of vessel in heavy weather</li> <li>• Manoeuvres to launch boats or liferafts</li> <li>• Methods for retrieving survivors</li> <li>• Vessel's stopping distance and rate of turn</li> <li>• Berthing manoeuvres</li> <li>• Traffic separation schemes</li> <li>• Emergency heavy weather management procedures</li> </ul>	<p>Decisions made are justified with consideration to the vessel's manoeuvring and propulsion unit's characteristics in the prevailing conditions.</p> <p>In analysing the safe manoeuvring of a vessel, explanation is given to: interaction, tide, current, passing vessels and own vessel's bow and stern wave.</p> <p>Initial responses are concise and appropriate measures taken are adequate.</p> <p>Safe operating limits are not exceeded.</p> <p>Safety precautions followed are relevant.</p> <p>Turn a vessel across the tide across the wind.</p> <p>Williamson turn, turn short around.</p>
<p><b>Outcome B4.5 E</b> Respond to navigational emergencies</p>	<p><b>Emergency Procedures</b></p> <ul style="list-style-type: none"> <li>• Beaching a vessel</li> <li>• Grounding and refloating a vessel</li> <li>• Collision</li> <li>• Damage control</li> <li>• Emergency steering</li> <li>• Emergency towing arrangements and procedures</li> <li>• Salvage arrangements</li> <li>• Musters and drills</li> <li>• Cyclones and heavy weather</li> </ul>	<p>Contingency plans are formulated and adopted for emergency situations in content column.</p> <p>Initial actions and, if appropriate, manoeuvring of the ship are in accordance with contingency plans without risk to the vessel or crew safety. Follow-up actions are justified in accordance with marine safety procedures.</p> <p>Equipment utilised is appropriate and safe.</p> <p>That communication and reporting procedures adopted are clearly defined and accepted.</p> <p>Safety precautions followed are relevant.</p> <p>That OH&amp;S considerations are emphasised.</p>
<p><b>Outcome B4.5 F</b> Prepare a cargo plan to ensure safe cargo operations whilst loading, unloading and during a voyage</p>	<p><b>Cargo Operations</b></p> <ul style="list-style-type: none"> <li>• Purchases and tackle</li> <li>• Stresses and loads</li> <li>• Safe working loads</li> <li>• Cargo handling and securing equipment</li> <li>• IMDG Code</li> <li>• Bulk Cargo Code</li> <li>• Cargo stowage and securing</li> <li>• Loading and unloading</li> <li>• Ballasting</li> <li>• Documentation</li> <li>• Authorities requisites</li> </ul>	<p>Information, procedures and documentation relating to the handling of dangerous and harmful cargo are reliable and correctly identified in accordance with the International Maritime Dangerous Goods Code and with awareness of Marine Safety data sheets.</p> <p>Cargo operations and the distribution of cargo are planned using reliable information and in accordance with established guidelines.</p> <p>Emergency procedures for incidents involving dangerous and hazardous cargoes are appropriate.</p> <p>Cargo monitoring procedures are appropriate.</p> <p>Safety precautions and procedures described comply with maritime procedures and OH&amp;S requirements.</p>

(Continued...)

**TABLE B4.5 — Function: Management and Operational Control      Section 5: Nautical Knowledge — Mate Class 4, Master Class 4 or Skipper Grade 2 (cont.)**

Outcome	Content	Standards for evaluating competence
<b>Outcome B4.5 G</b> Establish and maintain a harmonious workplace environment	<b>Organisation and Management</b> <ul style="list-style-type: none"> <li>• Management and leadership</li> <li>• Leadership style</li> <li>• Group dynamics</li> <li>• Conflict resolution</li> <li>• Organisation skills</li> </ul>	Individual crew members are informed of the expected standards of work and behaviour and allocated appropriate duties.  Crew training objectives and activities are based on an assessment of current competence and operational requirements.  Initial indications and possible causes of conflict are promptly identified.  Propose appropriate strategies to deal with conflict within the workplace.  Communication skills used facilitate constructive response to conflict.
<b>Outcome B4.5 H</b> Organise and manage communications onboard to receive information and advice	<b>Communications</b> <ul style="list-style-type: none"> <li>• International code flags and usage of signal books</li> <li>• International Code of Signals</li> <li>• GMDSS system</li> <li>• Radio</li> <li>• MERSAR</li> </ul>	Information obtained from International Code of Signals and other publications relating to inter-ship communications is current and actioned.  Procedures for monitoring ship's communication systems comply with legislative requirements.  Communication procedures ensure that marine safety information and inter-ship safety messages are received and acknowledged.
<b>Methods and conditions for demonstrating competence</b> (To be applied to all outcomes in this table)		
Assessment by an approved assessor shall be carried out in a— <ul style="list-style-type: none"> <li>• working vessel;</li> <li>• training vessel;</li> <li>• simulator; or</li> <li>• approved training facility,</li> </ul> using a combination of practical demonstration or practical exercises and theoretical explanation as appropriate to the subject and it shall be supported by oral or written questions.  This process can be a part of— <ul style="list-style-type: none"> <li>• employment;</li> <li>• an approved training program; or</li> <li>• recognition of prior learning.</li> </ul>		

**B5 MASTER CLASS 3 AND SKIPPER GRADE 1****B5.1 Eligibility****B5.1.1 Requirements**

To be eligible for the issue of a Certificate of Competency as a Master Class 3 or a Skipper Grade 1 an applicant shall meet the following requirements:

- a) Hold a current certificate of medical fitness as specified in Annex C.
- b) Hold certificates for each of the following as specified in Annex D:
  - i) Certificate in Proficiency in Survival Craft.
  - ii) Advanced Fire Fighting.
  - iii) Ship Master's Medical.
  - iv) Command Navigation.
- c) Have watchkeeping service that complies with Clause B5.1.2.
- d) Have satisfactorily completed an approved training program that satisfies the competencies set out in Tables B5.1 to B5.3 within the last 5 years, or otherwise satisfy the issuing Authority as to equivalent training in these competencies.
- e) Hold one of the following as specified in Annex D:
  - i) Marine Radio Operator's Certificate of Proficiency.
  - ii) Restricted Radio Operator's Certificate of Proficiency .
- f) Hold one of the following Certificates of Competency:
  - i) Master Class 4.
  - ii) Skipper Grade 2.
  - iii) Mate Class 4.
  - iv) Second Mate.
  - v) Master Class 5/Skipper Grade 3 (for Skipper Grade 1 applicants only).
  - vi) Any other qualification deemed equivalent to those above.
- g) Have satisfactorily completed an assessment by an Authority as specified in Clause B5.1.3.

**B5.1.2 Qualifying watchkeeping service**

For the purposes of a Certificate of Competency as a Master Class 3 or Skipper Grade 1, qualifying watchkeeping service shall consist of one or more of the following:

- a) For the holder of a Certificate of Competency as Master Class 4 — 18 months watchkeeping service since obtaining that certificate.
- b) For the holder of a certificate as Mate Class 4 or Second Mate — 36 months watchkeeping service since obtaining that certificate.
- c) For the holder of a Certificate of Competency as Skipper Grade 2, applying for a Skipper Grade 1 (not acceptable for Master 3) —

36 months sea-service since obtaining a Master Class 5/Skipper Grade 3 of which 24 months must be watchkeeping service.

- d) For the holder of a Certificate of Competency as Master Class 5/Skipper Grade 3 applying for a Skipper Grade 1 (not acceptable for a Master Class 3) — 36 months sea-service since obtaining that certificate of which 24 months must be watchkeeping service.

NOTE: This watchkeeping service is not acceptable for Master Class 3. A Master Class 5/Skipper Grade 3 cannot directly qualify for a Master Class 3. An applicant for a Master Class 3 is required to go through the Second Mate, Mate 4, Skipper Grade 2, or Master Class 4 levels.

- e) For the holder of any other qualification deemed equivalent by the Authority — a period of watchkeeping service appropriate to the qualification based upon the above requirements.

NOTE: The issuing Authority may accept a lesser period of service than those specified in Clauses B5.1.2 a) to d) for a Master Class 3 and Skipper Grade 1 (reduced by no more than 33 per cent) where the quality of service has been enhanced by an approved, structured on-the-job training program (see Clause 1.15.6).

In assessing watchkeeping service, the issuing Authority shall have regard to the following criteria:

- i) For a Master Class 3:
- A) Twelve months of watchkeeping service shall be within the last 5 years.
  - B) Service shall be in vessels greater than 24 m in length.
  - C) Twelve months watchkeeping service shall be in trading vessels, nine months of which shall be on trading vessels greater than 30 m in length.
  - D) At least 50 per cent of total watchkeeping service shall be beyond the limits of sheltered waters. Where this condition is not met, a restricted Certificate of Competency shall be issued that limits service as a master.
  - E) At least 33 per cent of total watchkeeping service shall be on seagoing voyages of 24 hours or more in duration. Where this condition is not met, a restricted Certificate of Competency shall be issued that limits service as a master or mate to offshore operations (within 200 n miles).

NOTE: The sea-service requirements for an STCW-95 Endorsement are more rigorous with regard to areas of operation than for the NSCV. As a result, when applying to AMSA for an STCW-95 Endorsement, sea-service accepted towards the award of this certificate will be reviewed and may not be accepted. See Marine Orders Part 3 or AMSA's Guide to STWC-95 Endorsements for requirements.

- ii) For a Skipper Grade 1:
- A) Twelve months of watchkeeping service shall be within the last 5 years.
  - B) Twelve months of watchkeeping service shall be in fishing vessels greater than 24 m in length.
  - C) At least 50 per cent of total watchkeeping service shall be beyond the limits of sheltered waters. Where this condition is not met, a

restricted Certificate of Competency shall be issued that limits service as a master.

- D) At least 33 per cent of total watchkeeping service shall be on seagoing voyages of 24 hours or more in duration. Where this condition is not met, a restricted Certificate of Competency shall be issued that limits service as a master or mate to offshore operations (within 200 n mile).

NOTE: See also provisions of Clause 1.15.6.

### **B5.1.3 Assessment by Authority**

An applicant for a Certificate of Competency as a Master Class 3 or Skipper Grade 1 shall satisfy the issuing Authority of the applicant's operational proficiency in the competencies set out in Tables B5.1 and B5.3 by an oral examination. The Authority may require—

- a) a practical assessment onboard or in a simulator; or
- b) any other appropriate method of assessment.

## **B5.2 Guidance on the usage of these certificates**

### **B5.2.1 Master Class 3**

The holder of an unrestricted Certificate of Competency as a Master Class 3 is qualified to act in the following positions:

- a) Master on a trading vessel less than 35 m in length for unlimited domestic operations.
- b) Master on a trading vessel less than 80 m in length for ACMW operations (within 600 n miles).
- c) Master on a trading vessel that is both less than 3000 GT and less than 100 m in length, for ACMW operations (within 600 n miles).

### **B5.2.2 Skipper Grade 1**

The holder of an unrestricted Skipper Grade 1 Certificate of Competency is qualified to act in the following positions:

- a) Master on a fishing vessel less than 35 m in length for unlimited domestic operations.
- b) Master on a fishing vessel less than 80 m in length for ACMW operations (within 600 n miles).
- c) Master on a fishing vessel less than both 3000 GT and 100 m in length, for ACMW operations (within 600 n miles).

## **B5.3 Restrictions**

A restricted Certificate of Competency may be issued in accordance with the requirements of Clause 1.9.1.

## **B5.4 STCW-95 endorsement from AMSA**

The holder of a Certificate of Competency as a Master Class 3 may apply to AMSA for an STCW-95 endorsement as a Master, Mate or Watchkeeper either limited to vessels less than 3000 GT, or covering the use of the certificate in accordance with Marine Orders Part 3, Appendix 1.

For further guidance on requirements consult AMSA's "A guide for obtaining an AMSA STCW-95 Endorsement for holders of state issued Master Class 3, 4 or 5 Certificates of Competency" and Marine Orders Part 3.

AMSA will not issue STCW-95 Endorsements on certificates of recognition or restricted certificates of any kind.

An STCW-95 Endorsement cannot be issued on a Certificate of Competency as a Skipper Grade 1.

**TABLE B5.1 — COMPETENCIES FOR A CERTIFICATE OF COMPETENCY  
AS A MASTER CLASS 3 OR SKIPPER GRADE 1  
Function: Navigation at the Management Level**

Outcome	Content	Standards for evaluating competence
<b>Outcome B5.1 A</b> Plan and conduct a passage and determine position	<b>Celestial Navigation</b> <ul style="list-style-type: none"> <li>• Use of celestial bodies to determine the ship's position</li> </ul> <b>Terrestrial and Coastal Navigation</b> Determine the ship's position by use of: <ul style="list-style-type: none"> <li>• Landmarks</li> <li>• aids to navigation, including lighthouses, beacons and buoys</li> <li>• dead reckoning, taking into account winds, tides, currents and estimated speed</li> <li>• Use navigational charts and publications such as sailing directions, tide tables, notices to mariners, radio navigational warnings and ship's routing information</li> </ul> NOTE: ECDIS systems are considered to be included under the term "charts"	The information obtained from current navigational charts and publications is relevant and applied.  Techniques used to determine the vessel's position are justified relative to the prevailing conditions.  Positions obtained from terrestrial and celestial bodies are within accepted limits.  The accuracy of fixes is verified.  Positions determined by electronic aids are within acceptable limits.  Techniques used to check compass errors ensure accurate information.  The selection of route is justified for the prevailing weather, sea and traffic conditions and intended manoeuvres.
	<b>Electronic Systems of Position Fixing and Navigation</b> <ul style="list-style-type: none"> <li>• Ability to determine the ship's position by use of electronic navigation aids</li> <li>• Echo-sounders</li> <li>• Ability to operate the equipment and apply the information correctly</li> </ul>	Ability to state limitations and operational parameters of electronic systems.
	<b>Compass - Magnetic and Gyro</b> <ul style="list-style-type: none"> <li>• Principles of magnetic and gyro-compasses</li> <li>• Determine errors of the magnetic and gyro compass using celestial and terrestrial means, and to allow for such errors</li> </ul>	Ability to state limitations and operational parameters of systems.  Techniques used to check compass errors ensure accurate information.
	<b>Steering Control Systems</b> <ul style="list-style-type: none"> <li>• Operational procedures and change-over from manual to automatic control and vice-versa</li> <li>• Adjustment of controls for optimum performance</li> </ul>	Ability to state limitations and operational parameters of systems.  Ability to operate heavy weather settings on autopilot.

(Continued...)

**TABLE B5.1 — Function: Navigation at the Management Level  
Master Class 3 or Skipper Grade 1 (cont.)**

Outcome	Content	Standards for evaluating competence
Plan and conduct a passage and determine position <i>(Continued)</i>	<b>Meteorology</b> <ul style="list-style-type: none"> <li>• Use and interpretation of information obtained from shipborne meteorological instruments</li> <li>• The characteristics of the various weather systems, reporting procedures and recording systems</li> <li>• Application of the meteorological information available</li> </ul>	Meteorological data is correlated and applied to maintain or adjust plan.
<b>Outcome B5.1 B</b> Maintain a safe navigational watch	<b>Watchkeeping</b> <ul style="list-style-type: none"> <li>• The content, application and intent of the International Regulations for the Prevention of Collision at Sea (as amended)</li> <li>• Principles to be observed in keeping a navigational watch</li> <li>• Effective bridge teamwork procedures</li> <li>• The use of routing in accordance with the General Provisions on Ship's Routing</li> </ul>	Conduct, handover and relief of the watch in conformation with STCW-95.  Lookout is maintained at all times in conforming to Collision Regulations and STCW-95.  Lights, shapes and sound signals conform with the requirements of the International Regulations for the Prevention of Collision at Sea (as amended) and are correctly recognised.  The frequency and extent of monitoring of traffic, the ship and the environment conform to accepted principles and procedures.  A proper record is maintained of the movements and activities relating to the navigation of the ship.  Responsibility for the safety of navigation is clearly defined at all times, including periods when the master is on the bridge and while under pilotage.
<b>Outcome B5.1 C</b> Use of radar and ARPA to maintain safety of navigation	<b>Radar Navigation</b> <ul style="list-style-type: none"> <li>• The fundamentals of radar and the automatic radar plotting aids (ARPA)</li> <li>• Operate and interpret and analyse information obtained from radar including the following:  <u>Performance, including:</u> <ul style="list-style-type: none"> <li>• factors affecting performance and accuracy</li> <li>• setting up and maintaining displays</li> <li>• detection of misrepresentation of information, false echoes, sea return, etc., RACONs and SARTs</li> </ul> <u>Use, including:</u> <ul style="list-style-type: none"> <li>• range and bearing</li> <li>• course and speed of other ships</li> <li>• time and distance of closest approach of crossing, meeting overtaking ships</li> </ul> </li> </ul>	Information obtained from radar and ARPA is correctly interpreted and analysed, taking into account the limitations of the equipment and prevailing circumstances and conditions and actioned in accordance with International Regulations for the Prevention of Collision at Sea (as amended).  Action taken to avoid a close encounter or collision with other vessels is in accordance with the International Regulations for the Prevention of Collision at Sea (as amended).  Adjustments made to the ship's course and speed maintain safety of navigation and are in accordance with International Regulations for the Prevention of Collision at Sea (as amended).  Communication is acknowledged and achieves the intended result.  Manoeuvring signals are made at the appropriate time and are in accordance with the International Regulations for the Prevention of Collision at Sea (as amended).

(Continued...)

**TABLE B5.1 — Function: Navigation at the Management Level  
Master Class 3 or Skipper Grade 1 (cont.)**

Outcome	Content	Standards for evaluating competence
<p><b>Outcome B5.1 C</b> Use of radar and ARPA to maintain safety of navigation (continued)</p>	<ul style="list-style-type: none"> <li>• identification of critical echoes; detecting course and speed changes in other ships; effect of changes in own ship's course or speed or both</li> <li>• application of the International Regulations for the Prevention of Collision at Sea (as amended)</li> <li>• plotting techniques and relative and true motion concepts</li> <li>• parallel indexing</li> <li>• Principal types of ARPA, their display characteristics, performance standards and the danger of over-reliance on ARPA</li> <li>• Operate and interpret information obtained from ARPA, including:               <ul style="list-style-type: none"> <li>• system performance and accuracy, tracking capabilities and limitations and processing delays</li> <li>• use of operational warnings and system tests</li> <li>• methods of target acquisition and their limitations</li> <li>• true and relative vectors, graphic representation of target information and danger areas</li> <li>• deriving and analysing information, critical echoes, exclusion areas and trial manoeuvres</li> </ul> </li> </ul>	<p>(See previous page)</p>
<p><b>Outcome B5.1 D</b> Respond to Emergencies</p>	<p><b>Emergency Procedures</b></p> <ul style="list-style-type: none"> <li>• Precautions for the protection and safety of passengers in emergency situations</li> <li>• Initial action to be taken following a collision or a grounding; initial damage assessment and control</li> <li>• Preparations for abandoning a vessel</li> <li>• Procedures to be followed for rescuing persons from the sea, assisting a ship in distress, responding to emergencies which arise in port</li> <li>• Precautions for the protection of the environment following a marine incident</li> <li>• Responsibility to another vessel in the event of a collision</li> <li>• Preparations and procedures for towing or being towed</li> </ul>	<p>The type of emergency and scope is promptly identified.</p> <p>Initial actions and, if appropriate, manoeuvring of the ship is in accordance with contingency plans without risk to the vessel or crew safety.</p> <p>Follow-up actions are justified in accordance with Marine Safety procedures.</p>

(Continued...)

**TABLE B5.1 — Function: Navigation at the Management Level**  
**Master Class 3 or Skipper Grade 1 (cont.)**

Outcome	Content	Standards for evaluating competence
<b>Outcome B5.1 E</b> Respond to a distress signal at sea	<b>Search and Rescue</b> <ul style="list-style-type: none"> <li>• The contents of the IMO Merchant Ship Search and Rescue Manual (MERSAR) and national publications and arrangements</li> </ul>	The distress or emergency signal is immediately recognised.  Contingency plans and instructions in standing orders are implemented and complied with.
<b>Outcome B5.1 F</b> Use the IMO Standard Marine Communication Phrases in written and oral form	<b>English Language</b> The English language to enable the officer to: <ul style="list-style-type: none"> <li>• Use charts and other navigational publications</li> <li>• Understand meteorological information and messages concerning ship's safety and operation</li> <li>• Communicate with other ships and coast stations and to perform the officer's duties also with a multi-lingual crew, including the ability to use and understand the Standard Marine Navigational Vocabulary as replaced by the IMO Standard Marine Communication Phrases</li> </ul>	Send and receive written and oral communications in English and IMO Standard Marine Communication Phrases.  The communications are to achieve a specific response and deal with the following: <ul style="list-style-type: none"> <li>• Charts and other navigational publications.</li> <li>• Meteorological information.</li> <li>• Messages concerning ship's safety and operation.</li> <li>• Communications with other ships and coast stations.</li> <li>• The performance of the officer's duties.</li> </ul>
<b>Outcome B5.1 G</b> Transmit and receive information by visual signalling	<b>Visual signalling</b> <ul style="list-style-type: none"> <li>• Transmit and receive signals by Morse light</li> <li>• Use the International Code of Signals</li> </ul>	Communications by Morse Code and visual signalling are transmitted and received at a rate of 6 words per minute.
<b>Outcome B5.1 H</b> Manoeuvre the ship	<b>Ship Manoeuvring and Handling</b> <ul style="list-style-type: none"> <li>• The effects of deadweight, draught, trim, speed and under-keel clearance on turning circles and stopping distances</li> <li>• The effects of wind and current on ship handling</li> <li>• Manoeuvres and procedures for the rescue of person overboard</li> <li>• Squat, shallow water and similar effects</li> <li>• Anchoring and mooring</li> </ul>	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.  Recover a person from the water. Berth and unberth the vessel.  Anchor the vessel in accordance with ship's standing procedures.  Turn a vessel across the tide across the wind, Williamson turn, short turn round.

(Continued...)

**TABLE B5.1 — Function: Navigation at the Management Level  
Master Class 3 or Skipper Grade 1 (cont.)**

<b>Methods and conditions for demonstrating competence</b> (To be applied to all outcomes in this table)
<p>Assessment by an approved assessor shall be carried out in a—</p> <ul style="list-style-type: none"><li>• working vessel;</li><li>• training vessel;</li><li>• simulator; or</li><li>• approved training facility,</li></ul> <p>using a combination of practical demonstration or practical exercises and theoretical explanation as appropriate to the subject and it shall be supported by oral or written questions.</p> <p>This process can be a part of—</p> <ul style="list-style-type: none"><li>• employment;</li><li>• an approved training program; or</li><li>• recognition of prior learning.</li></ul>

**TABLE B5.2 — COMPETENCIES FOR A CERTIFICATE OF COMPETENCY  
AS A MASTER CLASS 3 OR SKIPPER GRADE 1**

**Function: Cargo Handling and Stowage at the Management Level**

Outcome	Content	Standards for evaluating competence
<p><b>Outcome B5.2 A</b> Monitor the loading, stowage, securing and unloading of cargoes and their care during the voyage</p>	<p><b>Cargo Handling, Stowage and Securing</b></p> <ul style="list-style-type: none"> <li>• Effects of cargo including heavy lifts on the seaworthiness and stability of the ship</li> <li>• 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</li> <li>• Safe use and maintenance of lifting appliances onboard the ship</li> </ul>	<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 (IMDG Code) and recognised standards and codes of safe practice.</p> <p>Lifting appliances are operated and maintained in accordance with recognised standards and codes of safe practice.</p>
<p><b>Methods and conditions for demonstrating competence</b> (To be applied to all outcomes in this table)</p>		
<p>Assessment by an approved assessor shall be carried out in a—</p> <ul style="list-style-type: none"> <li>• working vessel;</li> <li>• training vessel;</li> <li>• simulator; or</li> <li>• approved training facility,</li> </ul> <p>using a combination of practical demonstration or practical exercises and theoretical explanation as appropriate to the subject and it shall be supported by oral or written questions.</p> <p>This process can be a part of—</p> <ul style="list-style-type: none"> <li>• employment;</li> <li>• an approved training program; or</li> <li>• recognition of prior learning.</li> </ul>		

**TABLE B5.3 — COMPETENCIES FOR A CERTIFICATE OF COMPETENCY  
AS A MASTER CLASS 3 OR SKIPPER GRADE 1**  
**Function: Controlling the operation of the ship and care for persons onboard at the  
Management Level**

<b>Outcome</b>	<b>Content</b>	<b>Standards for evaluating competence</b>
<b>Outcome B5.3 A</b> Ensure compliance with pollution-prevention requirements.	<b>Prevention of Pollution of The Marine Environment and Anti-Pollution Procedures</b> <ul style="list-style-type: none"> <li>• The precautions to be taken to prevent pollution of the marine environment</li> <li>• Anti-pollution procedures and all associated equipment</li> </ul>	Procedures for monitoring shipboard operations and ensuring compliance with MARPOL and Australian requirements are fully observed.
<b>Outcome B5.3 B</b> Maintain the seaworthiness of the ship.	<b>Ship Stability</b> <ul style="list-style-type: none"> <li>• Application of stability trim and stress tables, diagrams and stress-calculating equipment</li> <li>• Fundamental actions to be taken in the event of partial loss of intact buoyancy.</li> <li>• The fundamentals of watertight integrity</li> </ul> <b>Ship Construction</b> <ul style="list-style-type: none"> <li>• The principal structural members of a ship and the proper names for the various parts</li> <li>• Methods of construction, ship design and sub-division requirements</li> </ul>	The stability conditions comply with the IMO intact stability criteria under all conditions of loading.  Actions to ensure and maintain the watertight integrity of the ship are in accordance with accepted practice.  Impact of damage to the ship is assessed and managed as appropriate.  Stress implications during loading/unloading or from weather are recognised and minimised by compliance with ship's procedures.
<b>Outcome B5.3 C</b> Manage the maintenance of the ship.	<b>Maintenance Procedures</b> <ul style="list-style-type: none"> <li>• Selection and use of equipment and materials</li> <li>• Administer a planned maintenance system</li> <li>• Inspection and maintenance procedures</li> <li>• Planning for docking and slipping</li> </ul>	Maintenance planning and implementation is in accordance with company/ship procedures and regulatory requirements.
<b>Outcome B5.3 D</b> Control safe access to and on the vessel.	<b>Access to the Vessel</b> Rigging personnel and pilot access ways including: <ul style="list-style-type: none"> <li>• Accommodation ladders</li> <li>• Gangways</li> <li>• Brows</li> <li>• Man baskets</li> <li>• Cargo ramps</li> <li>• Helicopter access</li> <li>• Pilot ladders</li> <li>• Pilot hoists</li> <li>• Safety of personnel aloft or over side</li> <li>• Access to confined spaces</li> </ul>	Requirements to ensure access arrangements are rigged and maintained to ship/company policies and regulatory requirements.  Procedures are in accordance with ship/company policy and regulatory requirements.

(Continued..).

**TABLE B5.3 — Function: Controlling the operation of the ship and care for persons onboard at the management level Master Class 3 or Skipper Grade 1 (cont.)**

Outcome	Content	Standards for evaluating competence
<p><b>Outcome B5.3 E</b> Monitor compliance with legislative requirements</p>	<p><b>Legislative Compliance and Administration</b></p> <ul style="list-style-type: none"> <li>• The relevant IMO conventions, Federal and State Acts and Regulations and Codes concerning safety of life at sea and protection of the marine environment</li> <li>• Maritime declarations of health and requirements of the international health regulations</li> <li>• Certificate and other documents required to be carried onboard vessels by international conventions, how they are obtained and period of validity</li> <li>• Registration of vessels; use of vessels register</li> <li>• Customs procedures including entry and clearance immigration requirements</li> <li>• Master's duties with respect to log books, musters and drills, marine casualties, employment of seamen, pilotage and vessel hygiene</li> <li>• Ballast water management procedures</li> </ul>	<p>Legislative requirements relating to safety of life at sea and protection of the environment are correctly identified and applied.</p> <p>Legislative and administrative requirements for the operation of a ship are correctly identified and applied.</p>
<p><b>Methods and conditions for demonstrating competence</b> (To be applied to all outcomes in this table)</p>		
<p>Assessment by an approved assessor shall be carried out in a—</p> <ul style="list-style-type: none"> <li>• working vessel;</li> <li>• training vessel;</li> <li>• simulator; or</li> <li>• approved training facility,</li> </ul> <p>using a combination of practical demonstration or practical exercises and theoretical explanation as appropriate to the subject and it shall be supported by oral or written questions.</p> <p>This process can be a part of—</p> <ul style="list-style-type: none"> <li>• employment;</li> <li>• an approved training program; or</li> <li>• recognition of prior learning.</li> </ul>		

**B6 MARINE ENGINE DRIVER (MOTOR) GRADE 3****B6.1 Eligibility****B6.1.1 Requirements**

To be eligible for the issue of a Certificate of Competency as a Marine Engine Driver (Motor) Grade 3 an applicant shall meet the following requirements:

- a) Have attained the age of 18 years.
- b) Have passed an eyesight (vision) test to the standards specified in Annex C.
- c) Have satisfactorily completed a declaration of medical fitness as specified in Annex C.
- d) Hold a current first-aid certificate as specified in Annex D.
- e) Hold a certificate for Elements of Shipboard Safety as specified in Annex D.
- f) Have qualifying sea-service in accordance with Clause B6.1.2.
- g) Have satisfactorily completed an approved training program that satisfies the competencies set out in Table B6.1 within the last 5 years, or otherwise satisfy the issuing Authority as to equivalent training in these competencies.
- h) Have satisfactorily completed an assessment by an Authority as specified in Clause B6.1.3.

**B6.1.2 Qualifying sea-service**

For the purposes of a Certificate of Competency as a Marine Engine Driver (Motor) Grade 3, qualifying sea-service shall consist of service on vessels of not less than 75 kW propulsion power for the following periods:

- a) For an applicant with no previous trade training — 6 months.  
NOTE: The issuing Authority may reduce the period of qualifying sea-service where the quality of service has been enhanced by an approved, structured on-the-job training program (see Clause 1.15.6 and 1.15.7).
- b) For an applicant qualified as a Marine Fitter, Diesel or Motor Mechanic — 3 months.

NOTE: The issuing Authority may consider a period of qualifying sea-service on a vessel of less than 75 kW propulsion power and calculate that period on an aggregated basis.

Not more than 50 per cent of the qualifying sea-service shall be in outboard powered vessels.

At least 50 per cent of the total service shall be within the last 5 years.

The period of qualifying service shall not include more than 33 per cent of time spent in maintenance and refit.

NOTE: See also provisions of Clause 1.15.6.

**B6.1.3 Assessment by Authority**

An applicant for a Certificate of Competency as a Marine Engine Driver (Motor) Grade 3, shall satisfy the issuing Authority as to the applicant's operational proficiency in the competencies set out in Table B6.1 by an oral examination. The Authority may also require—

- a) a practical assessment onboard or in a simulator; or
- b) any other appropriate method of assessment.

**B6.2 Guidance on the usage of this certificate**

The holder of an unrestricted Marine Engine Driver (Motor) Grade 3 Certificate of Competency is qualified to act as Chief Engineer on vessels with engine power less than:

- a) 500 kW — for restricted offshore operations (within 30 n miles).
- b) 250 kW — for offshore operations (within 200 n miles).

**B6.3 Restrictions**

A restricted Certificate of Competency may be issued in accordance with the requirements of Clause 1.9.1.

**B6.4 STCW-95 endorsement from AMSA**

This certificate does not meet the STCW-95 standards for officers in charge of an engineering watch and will not be endorsed for STCW-95.

**TABLE B6.1 — COMPETENCIES FOR A CERTIFICATE OF COMPETENCY  
AS A MARINE ENGINE DRIVER GRADE 3  
Function: Marine Engineering at the Operational Level**

Outcome	Content	Standards for evaluating competence
<b>Outcome B6.1 A</b> Explain the construction, operation and service of marine internal combustion engines	<b>Basic Cycles of Operation and Component Identification of:</b> <ul style="list-style-type: none"> <li>• Marine 2- and 4- stroke diesel engines</li> <li>• Marine 2- and 4- stroke petrol engines</li> <li>• Basic timing diagrams</li> <li>• Fuel systems including:               <ul style="list-style-type: none"> <li>▪ Petrol/diesel</li> <li>▪ Carburettors/fuel injectors</li> <li>▪ Fuel storage and management</li> <li>▪ Injection pumps</li> <li>▪ Basic governor operation</li> <li>▪ Fuel system maintenance</li> <li>▪ Fuel system fault finding and possible emergency operation</li> </ul> </li> <li>• Basic combustion process</li> <li>• Air filters</li> <li>• Turbo/Supercharging</li> </ul>	The major parts of marine internal combustion engines are identified.  The main differences between 2- and 4- stroke cycles of operation are identified.  Fuel systems are managed safely in accordance with regulations, manufacturer's instructions and vessel procedures and so as to prevent pollution of the marine environment.  Marine internal combustion engines are operated within the technical specifications.  Operation and surveillance of main propulsion plant and auxiliary systems is sufficient to maintain safe operating conditions.  Basic operational faults are recognised and repair or maintenance assistance is organised.
	<ul style="list-style-type: none"> <li>▪ Cooling systems including:               <ul style="list-style-type: none"> <li>▪ Keel cooling/heat exchangers</li> <li>▪ Circulating pumps</li> <li>▪ Ship's side valves</li> <li>▪ Coolant circulation and thermostats</li> <li>▪ Corrosion</li> <li>▪ Maintenance</li> <li>▪ Instrumentation</li> <li>▪ Emergency procedures</li> </ul> </li> </ul>	Cooling systems are operated in accordance with established procedures and so as to prevent pollution of the marine environment.
	<ul style="list-style-type: none"> <li>▪ Lubricating systems including:               <ul style="list-style-type: none"> <li>▪ Lube oil circulating systems</li> <li>▪ Lube oil system components</li> <li>▪ General lubrication and cooling effects</li> <li>▪ Lubrication system problems</li> <li>▪ Lube oil contamination</li> <li>▪ Lube oil system management and maintenance</li> </ul> </li> <li>• Lube oil system instrumentation</li> </ul>	Lubricating systems are operated in accordance with established procedures and so as to prevent pollution of the marine environment.

(Continued...)

**TABLE B6.1 — Function: Marine Engineering at the Operational Level**  
**Marine Engine Driver Grade 3 (cont.)**

Outcome	Content	Standards for evaluating competence
<p><b>Outcome B6.1 B</b> Outline the workings of marine propulsion systems</p> <p>Recognise and takes steps to rectify basic operational faults</p>	<p><b>Power Transmission</b> including:</p> <ul style="list-style-type: none"> <li>• Basic reverse/reduction gearbox operation</li> <li>• Types of gear trains</li> <li>• Lubrication and cooling of gearboxes including filters and strainers.</li> <li>• Fault identification</li> <li>• Emergency operation</li> <li>• Propeller and intermediate shafting alignment</li> <li>• Bearing types, materials, installation, lubrication</li> <li>• Shaft seals and glands, packings</li> <li>• Couplings types, fitting, keys and keyways</li> <li>• Propeller types, fitting, keys and keyways, securing nuts, locking</li> <li>• Controllable pitch propellers</li> <li>• Sterndrive and water jet drive units</li> <li>• Maintenance and inspection</li> <li>• Causes of vibration and undue wear</li> </ul>	<p>Marine propulsion systems components are identified and functions explained in simple terms.</p> <p>Describe the operation and servicing of propulsion system within the technical specifications.</p> <p>Basic operational faults are recognised and repair or maintenance assistance is organised.</p>
<p><b>Outcome B6.1 C</b> Prepare a vessel's machinery for sea</p>	<ul style="list-style-type: none"> <li>• Refuelling</li> <li>• Inspection and checks of main and auxiliary machinery and associated spaces.</li> <li>• Start-up procedures</li> <li>• Instrumentation</li> <li>• Running checks</li> <li>• Keeping of running and maintenance logs</li> <li>• Shut down procedures</li> </ul>	<p>Safety precautions and pollution prevention measures during refuelling are applied according to legislative requirements, provider's requirements and vessel operating procedures.</p> <p>The methods of preparing for start-up and of making available fuel, lubricants, cooling water and air comply with vessel operating procedures and manufacturer's recommendations.</p> <p>Checks of pressures, temperatures and revolutions during the start-up and warm-up periods are in accordance with the technical specifications.</p> <p>The methods of preparing the shut-down and supervising the cooling down of the engine are in accordance with vessel operating procedures and manufacturer's recommendations.</p>

(Continued...)

**TABLE B6.1 — Function: Marine Engineering at the Operational Level**  
**Marine Engine Driver Grade 3 (cont.)**

Outcome	Content	Standards for evaluating competence
<b>Outcome B6.1 D</b> Identify and operate components of auxiliary systems.	<b>Steering Systems</b> including: <ul style="list-style-type: none"> <li>▪ Rudder construction and rudder types</li> <li>▪ Rudder and stock support bearings</li> <li>▪ Glands, packing, seals</li> <li>▪ Tiller arm attachment</li> <li>▪ Steering operation of hydraulic, cable, rod and gear, etc.</li> <li>▪ Testing of steering and hydraulic systems</li> </ul>	The steering arrangements are operated in accordance with manufacturer's instructions, operational procedures and regulations.  Maintenance is arranged in accordance with the technical specifications.
	<b>Pumping Systems</b> including: <ul style="list-style-type: none"> <li>▪ Fire/bilge/tank circulating systems</li> <li>▪ Fault identification, maintenance, prevention of corrosion</li> <li>▪ Valve types – construction and routine servicing</li> <li>▪ Back-flooding prevention</li> <li>▪ Strainers, mudboxes, foot valves</li> <li>▪ Dual duty systems/cross connection. Use of flexible materials, hoses, etc.</li> <li>▪ Drive systems, belts, clutches, motors, etc.</li> <li>▪ Environmental responsibilities. Regulations and legislative requirements.</li> </ul>	Pumping systems are operated in accordance with manufacturer's instructions, operational procedures and regulations to ensure safety of operation and prevention of pollution of the marine environment.  Maintenance is arranged in accordance with the technical specifications.
	<b>Refrigeration systems</b> including: <ul style="list-style-type: none"> <li>▪ Hazards of refrigerant gases</li> <li>▪ Identification of components</li> <li>▪ Environmental responsibilities</li> </ul>	The refrigeration system is operated in accordance with manufacturer's recommendations, regulations and vessel operating procedures to ensure safety of operation and prevention of pollution of the environment.  <p style="text-align: center;"><b>WARNING: RELEVANT STATE/TERRITORY TRAINING AND QUALIFICATION REQUIREMENTS NEED TO BE FULFILLED BY ANY PERSONS CARRYING OUT INSTALLATION, MAINTENANCE AND/OR REPAIR OF REFRIGERATION EQUIPMENT ESPECIALLY WITH REGARD TO PREVENTING THE ESCAPE OF REFRIGERANTS INTO THE ATMOSPHERE AND TO ELECTRICAL WORK.</b></p> Maintenance is arranged in accordance with the technical specifications.

(Continued...)

**TABLE B6.1 — Function: Marine Engineering at the Operational Level**  
**Marine Engine Driver Grade 3 (cont.)**

Outcome	Content	Standards for evaluating competence
<b>Outcome B6.1 E</b> Operate electrical systems	<b>Direct Current Systems (d.c.)</b> (not exceeding 32 V d.c.) including: <ul style="list-style-type: none"> <li>▪ Batteries - types, care and maintenance, hazards</li> <li>▪ Basic care of electrical systems in general - fault recognition</li> <li>▪ Charging systems - regulators, alarms/indicators</li> <li>▪ Uses of fuses and circuit breakers - selection of correct capacity</li> <li>▪ Connecting batteries</li> <li>• Starter motors, alternators and associated equipment - operation maintenance</li> </ul>	d.c. systems are operated and operator preventative maintenance in accordance with manufacturer's recommendations, regulations and vessel operating procedures to ensure safe operation.  <b>WARNING: RELEVANT STATE/TERRITORY ELECTRICAL LICENSING REQUIREMENTS NEED TO BE FULFILLED BY ANY PERSONS CARRYING OUT INSTALLATION, MAINTENANCE AND/OR REPAIR OF ELECTRICAL CIRCUITS OR SYSTEMS THAT ARE 50 V A.C. OR ABOVE, OR 120 V D.C. OR ABOVE, ON A VESSEL.</b>
	<b>Electric Systems</b> (above 32 V d.c. and up to 415 V a.c.) including: <ul style="list-style-type: none"> <li>▪ Protective devices on switchboards</li> <li>▪ Personal safety</li> <li>▪ Shore power connection</li> <li>▪ Fault identification, location, and safety implications</li> </ul>	Electrical systems are operated in accordance with manufacturer's recommendations, regulations and vessel operating procedures to ensure safe operation.  Electrical systems are operated in accordance with vessel procedures.  Electrical system faults are recognised and where necessary steps are taken to make them immediately safe.  <b>WARNING: RELEVANT STATE/TERRITORY ELECTRICAL LICENSING REQUIREMENTS NEED TO BE FULFILLED BY ANY PERSONS CARRYING OUT INSTALLATION, MAINTENANCE AND/OR REPAIR OF ELECTRICAL CIRCUITS OR SYSTEMS THAT ARE 50 V A.C. OR ABOVE, OR 120 V D.C. OR ABOVE, ON A VESSEL.</b>
<b>Outcome B6.1 F</b> Use deck machinery	<ul style="list-style-type: none"> <li>• Lifting equipment</li> <li>• Winches, capstans</li> <li>• Safe working procedures</li> <li>• Basic hydraulic systems, their operation and user-maintenance</li> <li>• Legislation affecting lifting equipment</li> </ul>	Lifting equipment and deck machinery is operated and user-maintenance is carried out in accordance with manufacturer's recommendations, regulations and vessel operating procedures.
<b>Outcome B6.1 G</b> Describe the basic techniques of hull maintenance	<ul style="list-style-type: none"> <li>• Basic hull inspection and maintenance</li> <li>• Use of sacrificial anodes</li> </ul>	Maintenance procedures and techniques for hulls are explained in accordance with regulations and vessel operating procedures.

(Continued...)

**TABLE B6.1 — Function: Marine Engineering at the Operational Level**  
**Marine Engine Driver Grade 3 (cont.)**

Outcome	Content	Standards for evaluating competence
<p><b>Outcome B6.1 H</b>            Demonstrate the actions to be taken in the event of fire or explosion</p> <p>Describe actions for the operation and maintenance of fire-fighting equipment in the engine space</p>	<ul style="list-style-type: none"> <li>• Fire/explosion, corrosion</li> <li>• Fire triangle</li> <li>• Minimisation of hazards</li> <li>• Identification and maintenance of fire-fighting equipment</li> <li>• Use of fire-fighting equipment</li> <li>• Management/control of fires</li> <li>• Personnel safety</li> <li>• Emergency shut-offs and closures</li> <li>• Fire alarm systems - heat/smoke detectors</li> <li>• Alarm panels</li> <li>• Fixed fire-fighting installations</li> <li>• Control of passengers/crew</li> <li>• Communications, instructions, etc.</li> </ul>	<p>Fire control is implemented in accordance with maritime safety and vessel operating procedures whilst maintaining crew safety, vessel stability and operational capability.</p> <p>Actions taken to control fires are based on full and accurate assessment of the incident, using all available sources of information.</p> <p>The priority, timing and sequence of actions are appropriate to the overall requirements of the incident and to minimise damage and potential damage to the vessel, injuries to personnel and impairment of the operational effectiveness of the vessel.</p> <p>Maintenance of fire-fighting appliances is in accordance with manufacturer's specifications.</p> <p>Alarms are actioned, recorded and reported according to vessel procedures and marine safety requirements.</p>
<p><b>Outcome B6.1 I</b>            Explain the principles of the stowage and management of explosive and flammable materials</p>	<ul style="list-style-type: none"> <li>• Stowage and management of flammable/ explosive liquids, gases, solids and other materials normally carried onboard (spare fuel, lubricants, LPG cooking gas, flares)</li> <li>• Dangers inherent with the above materials</li> </ul>	<p>Explanations of the stowage of flammable/explosive materials and their management, is in accordance with established rules and procedures.</p>
<p><b>Outcome B6.1 J</b>            Maintain running log including fuel calculations and written reports</p>	<ul style="list-style-type: none"> <li>• Writing of simple reports</li> <li>• Keeping of running and maintenance logs</li> <li>• Working out simple calculations for fuel</li> <li>• capacity, consumption and voyage duration</li> </ul>	<p>Running and maintenance logs are completed according to vessel and maritime procedures including regular reports.</p> <p>Calculations for fuel capacity, consumption and voyage duration.</p>

(Continued...)

**TABLE B6.1 — Function: Marine Engineering at the Operational Level**  
**Marine Engine Driver Grade 3 (cont.)**

Outcome	Content	Standards for evaluating competence
<p><b>Methods and conditions for demonstrating competence</b>            (To be applied to all outcomes in this table)</p>		
<p>Assessment by an approved assessor shall be carried out in a—</p> <ul style="list-style-type: none"> <li>• working vessel;</li> <li>• training vessel;</li> <li>• simulator; or</li> <li>• approved training facility,</li> </ul> <p>using a combination of practical demonstration or practical exercises and theoretical explanation as appropriate to the subject and it shall be supported by oral or written questions.</p> <p>This process can be a part of—</p> <ul style="list-style-type: none"> <li>• employment;</li> <li>• an approved training program; or</li> <li>• recognition of prior learning.</li> </ul>		

**B7 MARINE ENGINE DRIVER (STEAM) GRADE 3****B7.1 Requirements**

For any applicant requiring a Certificate of Competency as a Marine Engine Driver (Steam) Grade 3, the issuing Authority shall determine and specify the appropriate competencies, qualifying sea-service and eligibility based on the requirements for Marine Engine Driver (Motor) Grade 3.

An applicant for the certificate shall satisfy the issuing Authority, by a formal oral and/or theory assessment, as to the applicant's operational proficiency in the specified competencies.

**B8 MARINE ENGINE DRIVER (MOTOR) GRADE 2****B8.1 Eligibility****B8.1.1 Requirements**

To be eligible for the issue of a Certificate of Competency as a Marine Engine Driver (Motor) Grade 2 an applicant shall meet the following requirements:

- a) Have attained the age of 18 years.
- b) Have passed an eyesight (vision) test to the standards specified in Annex C.
- c) Have completed a declaration of medical fitness as specified in Annex C.
- d) Hold a current first-aid certificate as specified in Annex D.
- e) Hold a certificate for elements of shipboard safety as specified in Annex D.
- f) Have qualifying sea-service in accordance with Clause B8.1.2.
- g) Have satisfactorily completed an approved training program that satisfies the competencies set out in Tables B6.1 and B8.1 within the last 5 years, or otherwise satisfy the issuing Authority as to equivalent training in these competencies.
- h) Have satisfactorily completed an assessment by an Authority in accordance with Clause B8.1.3.

**B8.1.2 Qualifying sea-service**

For the purposes of a Certificate of Competency as a Marine Engine Driver (Motor) Grade 2, qualifying sea-service shall consist of service on vessels with compression ignition engines of not less than 150 kW propulsion power for one of the following periods:

- a) For an applicant with no previous marine qualification — 12 months.  
NOTE: The issuing Authority may reduce the period of qualifying sea-service where the quality of service has been enhanced by an approved, structured on-the-job training program (refer to Clauses 1.15.6 and 1.15.7).
- b) For an applicant qualified as a Marine Fitter, Diesel or Motor Mechanic — 3 months.
- c) For the holder of a Certificate of Competency as a Marine Engine Driver Grade 3 (qualifying sea-service to be while holding the certificate) — 6 months.

At least 50 per cent of the total service shall be within the last 5 years.

The period of qualifying service shall not include more than 33 per cent of time spent in engineering maintenance and refit.

NOTE: See also provisions of Clause 1.15.6.

**B8.1.3 Assessment by Authority**

An applicant for a Certificate of Competency as a Marine Engine Driver (Motor) Grade 2 shall satisfy the issuing Authority as to the applicant's

operational proficiency in the competencies set out in Table B6.1 and B8.1 by an oral examination. The Authority may also require—

- a) a practical assessment onboard or in a simulator; or
- b) any other appropriate method of assessment.

### **B8.2 Guidance on the usage of this certificate**

The holder of an unrestricted Certificate of Competency as a Marine Engine Driver Grade 2 is qualified to act in the following positions:

- a) Chief Engineer on vessels with engine power less than—
  - i) 750 kW — for offshore operations (within 200 n miles); or
  - ii) 500 kW — for ACMW operations (within 600 n miles).
- b) First Engineer on vessels with engine power less than 1000 kW for offshore operations (within 200 n miles).

### **B8.3 Restrictions**

A restricted Certificate of Competency may be issued in accordance with the requirements of Clause 1.9.1.

### **B8.4 STCW-95 endorsement from AMSA**

This certificate does not meet the STCW-95 standards for officers in charge of an engineering watch and will not be endorsed for STCW-95 by AMSA.

**TABLE B8.1 — COMPETENCIES FOR A CERTIFICATE OF COMPETENCY  
AS A MARINE ENGINE DRIVER GRADE 2  
(ADDITIONAL TO THOSE REQUIRED FOR AN MARINE ENGINE DRIVER GRADE 3)  
Function: Marine engineering at the operational level**

Outcome	Content	Standards for evaluating competence
<b>Outcome B8.1 A</b> Operate and carry out basic user maintenance of marine internal combustion engines	<ul style="list-style-type: none"> <li>• Diesel engine construction</li> <li>• Diesel engine operation and routine maintenance</li> <li>• Turbo charging arrangements</li> <li>• Diesel engine fuel injection, timing and control equipment</li> <li>• Engine protection arrangements</li> <li>• Engine performance and reasons for lack of performance (fault-finding procedures)</li> <li>• Planned maintenance</li> <li>• Operational practice</li> </ul>	<p>Constructional parts of marine internal combustion engines are identified in accordance with manufacturers manuals.</p> <p>Two- and four -stroke cycles of operation are explained in compliance with manufacturer's specifications.</p> <p>Marine internal combustion engines are operated within the technical specifications.</p> <p>Surveillance and operation of main propulsion plant and auxiliary systems is within the operating limits specified by vessel procedures or manufacturer's recommendations.</p> <p>Operational faults are recognised and rectified in accordance with manufacturer's specifications and fault-finding procedures.</p>
<b>Outcome B8.1 B</b> Operate and carry out basic user maintenance of lubricating oil and cooling-water systems	<ul style="list-style-type: none"> <li>• Dry sump and wet sump lubrication systems</li> <li>• Correct pressure and flow conditions</li> <li>• Oil quality monitoring</li> <li>• Oil filter changing procedures</li> <li>• Heat exchanger, keel cooler, and raw water cooling systems</li> <li>• Construction and maintenance of heat exchangers</li> <li>• Corrosion prevention</li> </ul>	<p>Lubricating systems are managed in accordance with established Regulations, manufacturers' instructions and vessel operating procedures and so as to prevent pollution of the marine environment.</p> <p>Cooling systems are managed in accordance with manufacturer's recommendations and established procedures.</p>
<b>Outcome B8.1 C</b> Operate and carry out basic user maintenance of pumps, bilge and seawater systems	<ul style="list-style-type: none"> <li>• Types of pumps and safety devices required</li> <li>• Pump capabilities and requirements for priming</li> <li>• Bilge pumping arrangements for vessels with several compartments</li> <li>• Dangers associated with back-flooding and methods to prevent back-flooding</li> <li>• Seawater circulating systems</li> <li>• Cross connections between seawater systems and bilge systems</li> <li>• Cross connections between bilge/ballast/seawater systems and fire main</li> </ul>	<p>Pumping systems are managed in accordance with established rules and procedures to ensure safety of operation and prevention of pollution of the marine environment.</p>

(Continued...)

**TABLE B8.1 — Function: Marine engineering at the operational level — Marine Engine Driver Grade 2 (cont.)**

Outcome	Content	Standards for evaluating competence
<b>Outcome B8.1 D</b> Operate and carry out basic user maintenance of steering gear	<ul style="list-style-type: none"> <li>• Electro-hydraulic steering gear</li> <li>• Common faults in steering gear</li> <li>• Testing of steering gear</li> <li>• Routine maintenance on steering systems</li> <li>• Emergency steering</li> </ul>	The steering arrangements are operated and maintained in accordance with the technical specifications.
<b>Outcome B8.1 E</b> Operate and manage fuel and fuel oil systems	<ul style="list-style-type: none"> <li>• Arrangement of fuel oil systems and filters</li> <li>• Fuel oil tank components</li> <li>• Methods of fuel oil tank content measurement</li> <li>• Fuel tank filling</li> <li>• Condensation in fuel tanks</li> <li>• The effect of slack tanks on vessel stability</li> </ul>	Fuel systems are managed in accordance with established rules and procedures to ensure safety of operation and avoid pollution of the marine environment.
<b>Outcome B8.1 F</b> Explain the principles of oil and grease lubrication systems	<ul style="list-style-type: none"> <li>• Functions of lubricating oil</li> <li>• Functions of grease</li> </ul>	The basic principles of lubrication are described in accordance with engineering principles.
<b>Outcome B8.1 G</b> Safely operate and carry out simple maintenance of electrical systems	<ul style="list-style-type: none"> <li>• Main faults that can occur in electrical systems</li> <li>• Earth indicating devices</li> <li>• Maintenance and operation of batteries</li> <li>• Connecting batteries in series and parallel</li> <li>• Electrical distribution systems</li> <li>• Single and three phase a.c. power</li> <li>• Isolation of electrical circuits</li> <li>• Connection to shore power</li> <li>• Use of multi-meter to test voltage and continuity</li> <li>• Protection devices</li> </ul>	Electrical systems are operated and maintained in accordance with electrical regulations.  <b>WARNING: RELEVANT STATE/TERRITORY ELECTRICAL LICENSING REQUIREMENTS NEED TO BE FULFILLED BY ANY PERSONS CARRYING OUT INSTALLATION, MAINTENANCE AND/OR REPAIR OF ELECTRICAL CIRCUITS OR SYSTEMS THAT ARE 50 V A.C. OR ABOVE, OR 120 V D.C. OR ABOVE, ON A VESSEL.</b>

(Continued...)

**TABLE B8.1 — Function: Marine engineering at the operational level — Marine Engine Driver Grade 2 (cont.)**

Outcome	Content	Standards for evaluating competence
<p><b>Outcome B8.1 H</b> Explain the safe handling of LPG, liquid fuels and refrigerant gases</p>	<ul style="list-style-type: none"> <li>• Dangers associated with LPG and petrol vapour</li> <li>• Storage of LPG cylinders</li> <li>• Testing of LPG detectors</li> <li>• Safety procedures for vessel refuelling</li> <li>• Dangers of refrigerant gas leaks in confined spaces</li> </ul>	<p>Flammable/explosive materials are stowed and managed in accordance with regulations and established rules and procedures.</p> <p>Refrigerant gases are stowed and managed in accordance with regulations and Australian Standards.</p> <p><b>WARNING: RELEVANT STATE/TERRITORY TRAINING AND QUALIFICATION REQUIREMENTS NEED TO BE FULFILLED BY ANY PERSONS CARRYING OUT INSTALLATION, MAINTENANCE AND/OR REPAIR OF REFRIGERATION EQUIPMENT ESPECIALLY WITH REGARD TO PREVENTING THE ESCAPE OF REFRIGERANTS INTO THE ATMOSPHERE AND TO ELECTRICAL WORK.</b></p>
<p><b>Outcome B8.1 I</b> Explain the precautions against fire and explosion</p> <p>Demonstrate the methods of dealing with fires</p>	<ul style="list-style-type: none"> <li>• Major causes of fire and explosion onboard</li> <li>• Recognition and uses of different types of portable fire extinguishers</li> <li>• Fire pumps and fire main systems</li> <li>• Use of hoses and nozzles</li> <li>• Fixed installations, closing appliances and remote shut-offs</li> <li>• Safety precautions to be observed during a watch and immediate actions to be taken in the event of a fire or accident</li> </ul>	<p>Fire control is implemented in accordance with maritime safety and vessel operating procedures whilst maintaining crew safety, vessel stability and operational capability.</p> <p>Actions taken to control fires are based on full and accurate assessment of the incident, using all available sources of information.</p> <p>The order of priority, timing and sequence of actions is appropriate to the overall requirements of the incident and to minimise damage and potential damage to the vessel, injuries to personnel and impairment of the operational effectiveness of the vessel.</p> <p>Maintenance of fire-fighting appliances is in accordance with maker's specifications.</p> <p>Alarms are actioned, recorded and reported according to vessel procedures and marine safety requirements.</p>
<p><b>Outcome B8.1 J</b> Recognise and correct deteriorated fittings and machinery</p>	<ul style="list-style-type: none"> <li>• Corrosion and means of prevention</li> <li>• Pipework repairs</li> <li>• Recognition and measurement of tailshaft wear</li> <li>• Machinery log keeping</li> </ul>	<p>Maintenance activities are planned in accordance with technical, legislative, safety and procedural specifications.</p> <p>Maintenance is carried out in compliance with manufacturer's specifications.</p>
<p><b>Outcome B8.1 K</b> Prepare a vessel for sea and secure a vessel after a voyage</p>	<ul style="list-style-type: none"> <li>• Spares and stores required for proposed voyage</li> <li>• Preparations and checks necessary before sailing</li> <li>• Shutting down machinery</li> <li>• Securing vessel after voyage</li> </ul>	<p>Vessel and machinery are prepared for sea and secured after voyage in accordance with ship and manufacturer's procedures.</p>

(Continued...)

**TABLE B8.1 — Function: Marine engineering at the operational level — Marine Engine Driver Grade 2 (cont.)**

<b>Outcome</b>	<b>Content</b>	<b>Standards for evaluating competence</b>
<b>Outcome B8.1 L</b> Explain the methods of propulsion reversal	<ul style="list-style-type: none"> <li>• Construction and operation of:               <ul style="list-style-type: none"> <li>• reverse-reduction gearboxes; and</li> <li>• controllable pitch propellers</li> </ul> </li> </ul>	The method of propulsion reversal and the operation of marine gearboxes are explained in accordance with technical specifications.
<b>Outcome B8.1 M</b> Calculate consumption of fuel, speed and range of vessels	<ul style="list-style-type: none"> <li>• Calculation of volumes</li> <li>• Conversion of volumes to litres</li> <li>• Specific gravity</li> <li>• Specific fuel consumption</li> <li>• Calculations involving specific fuel consumption, speed and range</li> </ul>	Calculations dealing with bunkering capacity, consumption of fuel, speed and the range of a vessel are carried out and accurate to accepted working tolerances.
<b>Outcome B8.1 N</b> Ensure compliance with pollution prevention requirements	<ul style="list-style-type: none"> <li>• Prevention of pollution of the marine environment</li> <li>• Knowledge of the precautions to be taken to prevent pollution of the marine environment</li> <li>• Anti-pollution procedures and all associated equipment</li> </ul>	The systems and equipment are managed safely so as to avoid pollution of the marine environment.
<b>Methods and conditions for demonstrating competence</b> (To be applied to all outcomes in this table)		
<p>Assessment by an approved assessor shall be carried out in a—</p> <ul style="list-style-type: none"> <li>• working vessel;</li> <li>• training vessel;</li> <li>• simulator; or</li> <li>• approved training facility,</li> </ul> <p>using a combination of practical demonstration or practical exercises and theoretical explanation as appropriate to the subject and it shall be supported by oral or written questions.</p> <p>This process can be a part of—</p> <ul style="list-style-type: none"> <li>• employment;</li> <li>• an approved training program; or</li> <li>• recognition of prior learning.</li> </ul>		

**B9 MARINE ENGINE DRIVER (STEAM) GRADE 2**

**B9.1 Requirements**

For any applicant requiring a Certificate of Competency as a Marine Engine Driver (Steam) Grade 2, the issuing Authority shall determine and specify the appropriate competencies, qualifying sea-service and eligibility based on the requirements for Marine Engine Driver (Motor) Grade 2.

An applicant for the certificate shall satisfy the issuing Authority, by a formal oral and/or theory assessment, as to the applicant's operational proficiency in the specified competencies.

**B10 MARINE ENGINE DRIVER (MOTOR) GRADE 1****B10.1 Eligibility****B10.1.1 Requirements**

To be eligible for the issue of a Certificate of Competency as a Marine Engine Driver (Motor) Grade 1 an applicant shall meet the following requirements:

- a) Have attained the age of 18 years.
- b) Hold a current certificate of medical fitness as specified in Annex C..
- c) Hold a certificate for elements of shipboard safety as specified in Annex D.
- d) Hold current first-aid certificate as specified in Annex D.
- e) Have qualifying sea-service in accordance with Clause B10.1.2.
- f) Have satisfactorily completed an approved training program that satisfies the competencies set out in Tables B6.1, B8.1, B10.1 and B10.2 within the last 5 years, or otherwise satisfy the issuing Authority as to equivalent training in these competencies.
- g) Have satisfactorily completed an assessment by an Authority as specified in Clause B10.1.3.

**B10.1.2 Qualifying sea-service**

For the purposes of a Certificate of Competency as a Marine Engine Driver (Motor) Grade 1, qualifying sea-service shall consist of service on vessels with compression ignition engines of 200 kW or more propulsion power for one of the following periods:

- a) For an applicant with no previous Certificate of Competency as a Marine Engine Driver — 24 months of duties that include assisting the Engineer in charge.  
NOTE: The issuing Authority may consider a reduction in qualifying sea-service where the quality of service has been enhanced by an approved, structured, on-the-job training program (refer to Clauses 1.15.6 and 1.15.7).
- b) For an applicant qualified as a Marine Fitter, Diesel or Motor Mechanic — 6 months on duties assisting the Engineer in charge.
- c) For the holder of a Certificate of Competency as a Marine Engine Driver (Motor) Grade 3 — 15 months while holding the certificate as Engineer in charge or on duties assisting the Engineer in charge.
- d) For the holder of a Certificate of Competency as a Marine Engine Driver (Motor) Grade 2 — 9 months while holding the certificate as Engineer in charge or on duties assisting the Engineer in charge.

At least 50 per cent of the total service shall be within the last 5 years.

The period of qualifying service shall not include more than 33 per cent of time spent in engineering maintenance and refit.

NOTE: See also provisions of Clause 1.15.6

**B10.1.3 Assessment by Authority**

An applicant for a Certificate of Competency as a Marine Engine Driver (Motor) Grade 1 shall satisfy the issuing Authority as to the applicant's operational proficiency in the competencies set out in Tables B6.1, B8.1, B10.1 and B10.2. by an oral examination. The Authority may also require—

- a) a practical assessment onboard or in a simulator; or
- b) any other appropriate method of assessment.

**B10.2 Guidance on the usage of this certificate**

The holder of an unrestricted Certificate of Competency as a Marine Engine Driver Grade 1 is qualified to act in the following positions:

- a) Chief Engineer on vessels with engine power less than—
  - i) 1500 kW — for restricted offshore operations (within 30 n miles);
  - ii) 750 kW — for ACMW operations (within 600 n miles).
- b) First Engineer on vessels with engine power less than 1500 kW for ACMW operations (within 600 n miles).

**B10.3 Restrictions**

A restricted Certificate of Competency may be issued in accordance with the requirements of Clause 1.9.1.

**B10.4 STCW-95 endorsement from AMSA**

The holder of a Certificate of Competency as a Marine Engine Driver Grade 1 may apply to AMSA for an STCW-95 endorsement as a—

- a) Chief Engineer on a ship of less than 3000 kW propulsion power for voyages up to 15 n miles offshore; or
- b) Second Engineer on a ship of less than 3000 kW propulsion power for voyages up to 200 n miles offshore.

For further guidance on requirements consult AMSA's "Guide for the issue of an STCW-95 Endorsement to an Australian State/Territory Certificate of Competence—Marine Engineer/Marine Engine Driver", and Marine Orders Part 3.

AMSA will not issue STCW-95 Endorsements on certificates of recognition or restricted certificates of any kind.

**TABLE B10.1 — COMPETENCIES FOR A CERTIFICATE OF COMPETENCY  
AS A MARINE ENGINE DRIVER GRADE 1  
(ADDITIONAL TO THOSE REQUIRED FOR MARINE ENGINE DRIVER GRADE 2)  
Function: Marine engineering at the operational level  
Section 1: Practical Mathematics—Marine Engine Driver Grade 1**

Outcome	Content	Standards for evaluating competence
<b>Outcome B10.1 A</b> Calculate fuel consumption and storage	<ul style="list-style-type: none"> <li>• Consumption of fuel and lubricating oil for a particular voyage, using quantity in litres and mass in tonnes and specified regular shaped tanks</li> <li>• Hourly fuel consumption</li> <li>• Remaining steaming times</li> <li>• Requirements for replenishing lubricating oil in oil tanks</li> <li>• The area and circumference of a circle</li> <li>• The volumes of regular shaped tanks</li> <li>• Tank capacities and pumping capacities for tank filling and emptying</li> <li>• Relationship between theoretical vessel speed, propeller pitch and R.P.M. Calculations involving specific fuel consumption, power, speed and range</li> <li>• Calibration tables</li> </ul>	Calculations as per the “content statement” are carried out and conform to accepted engineering tolerances.
<b>Outcome B10.1 B</b> Carry out engineering calculations	<ul style="list-style-type: none"> <li>• Common SI units such as: kilogram, tonne, Newton, Newton metre, Pascal, joule, watt, and metre</li> <li>• Conversion of units to multiples of base units. Convert fractions to decimals. Calculations to determine the area and circumference of a circle</li> <li>• Calculations involving the volume and capacity of regular shaped tanks. Use calibration tables to measure quantities in tanks</li> <li>• Use of relative density/specific gravity to convert quantity in litres and volume to mass. Calculations involving pumping capacities for tank filling and emptying</li> <li>• Calculations involving the consumption of fuel and lubricating oil, hourly fuel consumption, theoretical steaming times and distances covered</li> <li>• Calculations involving the relationship between theoretical vessel speed, propeller pitch and engine speed</li> <li>• Calculations involving specific fuel consumption, power, speed and range</li> </ul>	Calculations as per the “content statement” are carried out and conform to accepted engineering tolerances.

*(Continued...)*

**TABLE B10.1 — Function: Marine engineering at the operational level**  
**Section 1: Practical Mathematics—Marine Engine Driver Grade 1 (cont.)**

Outcome	Content	Standards for evaluating competence
Carry out engineering calculations <i>(Continued)</i>	<ul style="list-style-type: none"> <li>• Terminology of simple levers</li> <li>• Calculations involving mechanical advantage, load, effort, moments</li> <li>• Understanding of terminology of material technology</li> <li>• Calculations involving stress, strain and safe working load</li> </ul>	(see previous page)
<p><b>Methods and conditions for demonstrating competence</b>            (To be applied to all outcomes in this table)</p>		
<p>Assessment by an approved assessor shall be carried out in a—</p> <ul style="list-style-type: none"> <li>• working vessel;</li> <li>• training vessel;</li> <li>• simulator; or</li> <li>• approved training facility,</li> </ul> <p>using a combination of practical demonstration or practical exercises and theoretical explanation as appropriate to the subject and it shall be supported by oral or written questions.</p> <p>This process can be a part of—</p> <ul style="list-style-type: none"> <li>• employment;</li> <li>• an approved training program; or</li> <li>• recognition of prior learning.</li> </ul>		

**TABLE B10.2 — COMPETENCIES FOR A CERTIFICATE OF COMPETENCY  
AS A MARINE ENGINE DRIVER GRADE 1  
(ADDITIONAL TO THOSE REQUIRED FOR MARINE ENGINE DRIVER GRADE 2)  
Function: Marine engineering at the operational level  
Section 2: Engineering — Marine Engine Driver Grade 1**

Outcome	Content	Standards for evaluating competence
<b>Outcome B10.2 A</b> Operate and maintain marine internal combustion engines and propulsion transmission systems	<ul style="list-style-type: none"> <li>• Simple constructional details</li> <li>• Cycles and timing diagrams for two- and four- stroke diesel engines</li> <li>• Care and management of two- and four- stroke diesel engines</li> <li>• Safety devices fitted to propulsion engines</li> <li>• Engine fuel systems</li> <li>• Engine and gearbox lubricating systems</li> <li>• Engine and gearbox cooling systems</li> <li>• Transmission systems from engine output shaft to propeller</li> <li>• Engine malfunctions and corrective action</li> </ul>	<p>Marine internal combustion engines and transmission systems are operated and maintained within technical specifications and in accordance with accepted practices and procedures.</p> <p>The causes of machinery malfunctions are identified (fault finding) and any resultant restrictions applied to operations are justified and conveyed to the vessel Master. Actions are to ensure the overall safety of the ship and plant having due regard to the prevailing circumstances and conditions.</p>
<b>Outcome B10.2 B</b> Operate and maintain auxiliary machinery systems, including steering gear and refrigeration systems	<ul style="list-style-type: none"> <li>• Pumps and pumping systems for bilge, fuel oil, freshwater and seawater systems</li> <li>• Types of pumps and associated safety devices</li> <li>• Hydraulic systems including steering gear</li> <li>• Electro-hydraulic steering gear</li> <li>• Emergency operation in the event of electrical or hydraulic failure</li> <li>• Simple hydraulic circuits</li> <li>• Maintenance of hydraulic systems</li> <li>• Refrigeration plant and its operation</li> <li>• Identification of refrigeration system components</li> <li>• The refrigeration cycle</li> <li>• Types of refrigerant</li> <li>• Identification of faults in refrigeration systems</li> </ul>	<p>Auxiliary machinery systems are operated and maintained within technical specifications, in accordance with accepted practices and vessel procedures to ensure safety of operation and avoid pollution of the marine environment.</p> <p>Hydraulic systems and steering gear are operated and maintained in accordance with technical specifications to ensure safety of operation and avoid pollution of the marine environment.</p> <p>Refrigeration systems are operated in accordance with technical specifications to ensure safety of operation and avoid pollution.</p> <p><b>WARNING: RELEVANT STATE/TERRITORY TRAINING AND QUALIFICATION REQUIREMENTS NEED TO BE FULFILLED BY ANY PERSONS CARRYING OUT INSTALLATION, MAINTENANCE AND/OR REPAIR OF REFRIGERATION EQUIPMENT ESPECIALLY WITH REGARD TO PREVENTING THE ESCAPE OF REFRIGERANTS INTO THE ATMOSPHERE AND TO ELECTRICAL WORK.</b></p>

(Continued...)

**TABLE B10.2 — Function: Marine engineering at the operational level**  
**Section 2: Engineering — Marine Engine Driver Grade 1 (cont.)**

Outcome	Content	Standards for evaluating competence
<p><b>Outcome B10.2 C</b> Operate, test and maintain electrical and control equipment</p>	<ul style="list-style-type: none"> <li>• d.c. equipment</li> <li>• Electrical principles and circuits</li> <li>• Operate and manage in a safe manner, the a.c generation, protective devices and shore power arrangements</li> </ul>	<p>Electrical and control equipment is operated and maintained within technical specifications, in accordance with regulations, accepted practices and procedures and with regard to safety.</p> <p><b>WARNING: RELEVANT STATE/TERRITORY ELECTRICAL LICENSING REQUIREMENTS NEED TO BE FULFILLED BY ANY PERSONS CARRYING OUT INSTALLATION, MAINTENANCE AND/OR REPAIR OF ELECTRICAL CIRCUITS OR SYSTEMS THAT ARE 50 V A.C. OR ABOVE, OR 120 V D.C. OR ABOVE, ON A VESSEL.</b></p>
<p><b>Outcome B10.2 D</b> Maintain deck equipment and machinery</p>	<ul style="list-style-type: none"> <li>• Operation and maintenance of deck machinery</li> <li>• Winches and windlass</li> <li>• Safeguards/protective devices for winches</li> <li>• Causes and rectification of problems</li> <li>• Safe operating practices</li> </ul>	<p>Deck equipment and machinery are maintained in accordance with technical specifications and with regard to safety.</p> <p>The causes of machinery malfunctions are identified (fault finding) and any resultant restrictions applied to operations are justified and conveyed to the vessel Master. Actions are to ensure the overall safety of the ship and plant having due regard to the prevailing circumstances and conditions.</p>
<p><b>Outcome B10.2 E</b> Organise maintenance and repairs</p>	<ul style="list-style-type: none"> <li>• Identification and use of manufacturer's manuals</li> <li>• Planning and preparation for maintenance including systematic isolation, dismantling and reassembly of plant</li> <li>• Inspections undertaken on a vessel's hull during slipping or dry-docking</li> </ul>	<p>Maintenance and repair procedures are organised within technical specifications, accepted practices and vessel procedures.</p> <p>The organisation and preparation of operations is suited to the design parameters of the power installation and to the requirements of the voyage.</p>

(Continued...)

**TABLE B10.2 — Function: Marine engineering at the operational level**  
**Section 2: Engineering — Marine Engine Driver Grade 1 (cont.)**

Outcome	Content	Standards for evaluating competence
<p><b>Outcome B10.2 F</b>            Explain methods of fire protection, detection and extinction</p>	<ul style="list-style-type: none"> <li>• Operation and maintenance of fire protection, detection and extinguishing equipment</li> <li>• Operation of machinery in such a way as to minimise fire risk</li> <li>• Causes of fire onboard a vessel</li> <li>• Fire hazards aboard a vessel during operation and maintenance periods</li> <li>• Causes and methods of prevention of fires/explosion associated with LPG</li> <li>• Classes of fires</li> <li>• Types of fire extinguishers for marine use, including portable, non-portable and fixed fire-fighting installations</li> <li>• Requirements for particular types of portable extinguishers for different classes of fire</li> <li>• Fire detection and alarms</li> <li>• Closing devices and remote shut-offs, gas/foam flooding systems</li> <li>• Control and extinguishment of large compartment fires</li> <li>• Hazards associated with the use of gas flooding systems</li> </ul>	<p>Operational effectiveness of all fire detection and extinguishing systems is maintained at all times in accordance with performance specifications and legislative requirements.</p> <p>Fire control is implemented in accordance with maritime safety and vessel operating procedures whilst maintaining crew safety, vessel stability and operational capability.</p> <p>Actions taken to control fires are based on full and accurate assessment of the incident, using all available sources of information.</p> <p>The order of priority, timing and sequence of actions are appropriate to the overall requirements of the incident and to minimise damage and potential damage to the vessel, injuries to personnel and impairment of the operational effectiveness of the vessel.</p> <p>Alarms are actioned, recorded and reported according to vessel procedures and marine safety requirements.</p>
<p><b>Outcome B10.2 G</b>            Apply regulations to be observed regarding operational or accidental pollution of the marine environment and methods to prevent such pollution</p>	<ul style="list-style-type: none"> <li>• Marine pollution regulations</li> <li>• Operation of equipment in such a way as to minimise environmental pollution</li> <li>• Causes of pollution particularly relating to discharges from engine compartments and vessel operation</li> <li>• Statutory requirements regarding the discharge of oil, galley waste, garbage and plastics overboard</li> <li>• Methods of prevention of pollution</li> <li>• Requirements for reporting incidents</li> <li>• Procedures for dealing with an oil spill</li> </ul>	<p>Legislative requirements relating to protection of the marine environment are correctly identified.</p> <p>Procedures for monitoring shipboard operations and ensuring compliance with legislative requirements relating to protection of the marine environment are observed.</p>
<p><b>Outcome B10.2 H</b>            Identify the life-saving appliances required and explain their maintenance and use life-saving appliances.</p>	<ul style="list-style-type: none"> <li>• Life-saving appliances</li> <li>• Launching arrangements for inflatable liferafts including hydrostatic releases</li> <li>• Maintenance and checks necessary to keep life-saving appliances in correct operating condition</li> </ul>	<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> <p>Maintenance procedures for life-saving appliances meet legislative requirements.</p>

(Continued...)

**TABLE B10.2 — Function: Marine engineering at the operational level**  
**Section 2: Engineering — Marine Engine Driver Grade 1 (cont.)**

Outcome	Content	Standards for evaluating competence
<b>Outcome B10.2 I</b> Employ Damage Control techniques for hull damage	<ul style="list-style-type: none"> <li>• Practice of correct damage control procedures following hull damage</li> <li>• Methods of damage control with specific reference to action to be taken in the event of flooding</li> </ul>	Emergency procedures are in accordance with the established plans for emergency situations.
<b>Outcome B10.2 J</b> Maintain a safe working environment	<ul style="list-style-type: none"> <li>• Causes of accidents with marine mechanical equipment</li> <li>• Methods of prevention</li> <li>• Operating procedures for use of winches and other rotating/moving machinery</li> <li>• Hazards associated with and the procedures for safe entry into confined spaces</li> <li>• Hazards associated with and the procedures for the safe operation of lifting devices</li> <li>• Hazards associated with radio and radar transmitters</li> </ul>	Working practices are in accordance with legislative requirements, codes of practice, permits to work and environmental concerns.
<b>Methods and conditions for demonstrating competence</b> (To be applied to all outcomes in this table)		
<p>Assessment by an approved assessor shall be carried out in a—</p> <ul style="list-style-type: none"> <li>• working vessel;</li> <li>• training vessel;</li> <li>• simulator; or</li> <li>• approved training facility,</li> </ul> <p>using a combination of practical demonstration or practical exercises and theoretical explanation as appropriate to the subject and it shall be supported by oral or written questions.</p> <p>This process can be a part of—</p> <ul style="list-style-type: none"> <li>• employment;</li> <li>• an approved training program; or</li> <li>• recognition of prior learning.</li> </ul>		

**B11 MARINE ENGINE DRIVER (STEAM) GRADE 1**

**B11.1 Requirements**

For any applicant requiring a Certificate of Competency as a Marine Engine Driver (Steam) Grade 1, the issuing Authority shall determine and specify the appropriate competencies, qualifying sea-service and eligibility based on the requirements for Marine Engine Driver (Motor) Grade 1.

An applicant for the certificate shall satisfy the issuing Authority, by a formal oral and/or theory assessment, as to the applicant's operational proficiency in the specified competencies.

**B12 ENGINEER CLASS 3****B12.1 Eligibility****B12.1.1 Requirements**

To be eligible for the issue of a Certificate of Competency as an Engineer Class 3 (which is endorsed for motor and/or steam) an applicant shall meet the following requirements:

- a) Have attained the age of 18 years.
- b) Hold a current certificate of medical fitness as specified in Annex C.
- c) Hold a current first-aid certificate as specified in Annex D.
- d) Hold the following certificates as specified in Annex D:
  - i) Advanced Fire Fighting.
  - ii) Proficiency in Survival Craft.
- e) Have qualifying sea-service in accordance with Clause B12.1.2.
- f) Have satisfactorily completed an approved training program that satisfies the competencies set out in Tables B12.1 to B12.5 within the last 5 years, or otherwise satisfy the issuing Authority as to equivalent training in these competencies.
- g) Have satisfactorily completed an assessment by an Authority in accordance with Clause B12.1.3.

The holder of a Certificate of Competency as an Engineer Class 3 seeking an additional endorsement to the certificate (either for motor or steam), shall only be required to demonstrate the additional competencies appropriate to the endorsement sought.

The holder of a Certificate of Competency as an Engineer Watchkeeper shall be deemed to have met the requirements of Clause B12.1.1f).

A Restricted Certificate of Competency may be issued without a certificate of Advanced Fire Fighting provided an Elements of Shipboard Safety certificate is held. A Certificate of Competency restricted in this way shall be clearly marked "RESTRICTED TO VESSELS OF LESS THAN 1500 kW". The restriction may be removed when the applicant is awarded a certificate for Advanced Fire Fighting.

**B12.1.2 Qualifying sea-service**

For the purposes of a Certificate of Competency as an Engineer Class 3, qualifying sea-service shall consist of service on vessels with not less than 400 kW propulsion power for one of the following periods:

- a) For an applicant qualified as a Marine Fitter, Diesel or Motor Mechanic — 12 months on duties assisting the Engineer in charge.
- b) For the holder of a Certificate of Competency as a Marine Engine Driver (Motor) Grade 1 (qualifying sea-service to be while holding the certificate) — 18 months as Engineer in charge or on duties assisting the Engineer in charge.

- c) For the holder of a Certificate of Competency as Engineer Watchkeeper — 9 months of engineering watchkeeping.

At least 6 months qualifying sea-service shall be performed on vessels propelled by machinery of the type (motor or steam as appropriate) for which the certificate is to be endorsed.

Any periods of sea-service gained in vessels engaged either in inshore operations or harbour operations, shall be reduced by the following amounts, for the purpose of calculating qualifying sea-service:

- i) On vessels engaged in inshore operations — 33 per cent.
- ii) On vessels engaged in harbour operations — 50 per cent.

NOTE: See also provisions of Clauses 1.15.6 1.15.7.

### **B12.1.3 Assessment by Authority**

An applicant for a Certificate of Competency as an Engineer Class 3 shall satisfy the issuing Authority as to the applicant's operational proficiency in the competencies set out in Tables B12.1 to B12.6 by an oral examination. The Authority may also require—

- a) a practical assessment onboard or in a simulator; or
- b) any other appropriate method of assessment.

### **B12.2 Guidance on the usage of this certificate**

In general terms, the holder of an unrestricted Certificate of Competency as an Engineer Class 3 is qualified to act as Chief Engineer on vessels with engine power less than:

- a) 3000 kW — for offshore operations (within 200 n miles).
- b) 1500 kW — for ACMW operations (within 600 n miles).

### **B12.3 Restrictions**

A restricted Certificate of Competency may be issued in accordance with the requirements of Clause 1.9.1.

### **B12.4 STCW-95 endorsement from AMSA**

The holder of a Certificate of Competency as an Engineer Class 3 may apply to AMSA for an STCW-95 Endorsement as a Chief Engineer on a ship of less than 3000 kW propulsion power for voyages up to 200 n miles offshore.

For further guidance on requirements consult AMSA's "Guide for the issue of an STCW-95 Endorsement to an Australian State/Territory Certificate of Competence—Marine Engineer/Marine Engine Driver", and Marine Orders Part 3.

AMSA will not issue STCW-95 Endorsements on certificates or recognition or restricted certificates of any kind.

**TABLE B12.1 — COMPETENCIES FOR A CERTIFICATE OF COMPETENCY  
AS AN ENGINEER CLASS 3**

**Function: Marine Engineering at the operational level**

**Section: Practical mathematics — Engineer Class 3**

Outcome	Content	Standards for evaluating competence
<p><b>Outcome B12.1 A</b> Use mathematical techniques to solve engineering problems</p>	<ul style="list-style-type: none"> <li>• Areas of geometric figures</li> <li>• Volumes of geometric solids</li> <li>• Relationship between relative density/specific gravity and volumes</li> <li>• Representation of a force as a vector. Resolution of vectors to a resultant thrust obtained from tangential forces in simple structures and lifting apparatus</li> <li>• Basic laws of friction</li> <li>• Force to overcome friction</li> <li>• Friction losses in simple slides</li> <li>• Simple lifting machines</li> <li>• First moments as applied to levers</li> <li>• Velocity ratio</li> <li>• mechanical advantage</li> <li>• efficiency of simple machines</li> <li>• levers, rope blocks, screw and hydraulic jacks</li> </ul>	<p>Calculations from content column are carried out with results in accordance with makers' or design specifications, product data sheet.</p>
<p><b>Outcome B12.1 B</b> Carry out mathematical calculations relative to:</p> <ul style="list-style-type: none"> <li>• Vessel stress and stability</li> <li>• Heat value of fuel</li> <li>• Heat transference and expansion rates</li> <li>• Fluid pressures</li> </ul>	<ul style="list-style-type: none"> <li>• Stress, strain and elastic limit</li> <li>• Working stress and safe working load</li> <li>• Relationship between circumferential and longitudinal stress in thin cylinders and spherical shells</li> <li>• Equilibrium of floating bodies</li> <li>• Linear expansion due to heating</li> <li>• Units of heat</li> <li>• Specific heat</li> <li>• Sensible heat (enthalpy)</li> <li>• Latent heat (enthalpy)</li> <li>• Higher and lower calorific values of fuel</li> <li>• Relationship between power and mean effective pressure</li> <li>• Turning moment applied to a shaft</li> <li>• Calorific value</li> <li>• Specific fuel consumption</li> <li>• Variation in fuel consumption with vessel speed</li> </ul>	<p>Calculation results conform to engineering practices and/or case study results.</p>

*(Continued...)*

**TABLE B12.1 — Function: Marine Engineering at the operational level**  
**Section: Practical mathematics — Engineer Class 3 (cont.)**

<b>Methods and conditions for demonstrating competence</b> (To be applied to all outcomes in this table)
<p>Assessment by an approved assessor shall be carried out in a—</p> <ul style="list-style-type: none"><li>• working vessel;</li><li>• training vessel;</li><li>• simulator; or</li><li>• approved training facility,</li></ul> <p>using a combination of practical demonstration or practical exercises and theoretical explanation as appropriate to the subject and it shall be supported by oral or written questions.</p> <p>The process can be a part of—</p> <ul style="list-style-type: none"><li>• employment;</li><li>• an approved training program; or</li><li>• recognition of prior learning.</li></ul>

**TABLE B12.2 — COMPETENCIES FOR A CERTIFICATE OF COMPETENCY  
AS AN ENGINEER CLASS 3**

**Function: Marine Engineering at the operational level**

**Section: Engineering — Engineer Class 3**

Outcome	Content	Standards for evaluating competence
<p><b>Outcome B12.2 A</b> Identify properties of common marine engineering materials and methods of joining</p> <p>Manufacture simple components</p> <p>Apply simple heat treatment</p>	<ul style="list-style-type: none"> <li>• Characteristics and limitations of materials used in construction and repair of ships and equipment</li> <li>• Characteristics and limitations of processes used for fabrication and repair</li> <li>• Properties and parameters considered in the fabrication and repair of systems and components</li> </ul>	<p>Identification of important parameters for fabrication of typical ship-related components are appropriate.</p> <p>Selection of material conforms to vessel design.</p> <p>Use of equipment and machine tools are according to engineering workshop practices.</p> <p>Identify common marine engineering materials.</p> <p>List the properties as per material specifications.</p> <p>Fabricate the following:</p> <ul style="list-style-type: none"> <li>• Fit male and female finger joint.</li> <li>• Machine and make threads to demonstrate use of lathe.</li> </ul> <p>Join two sections of—</p> <ol style="list-style-type: none"> <li>a) the same material; and</li> <li>b) different material,</li> </ol> <p>in conformance with welding and mechanical techniques, to engineering tolerances.</p>
<p><b>Outcome B12.2 B</b> Explain the properties of liquids and gases commonly used aboard vessels</p>	<ul style="list-style-type: none"> <li>• Properties of liquids and gases commonly used onboard ship</li> </ul>	<p>Monitor and control vessel fluids and gases to ensure compliance with legislative requirements and measures to ensure safety of life at sea and protection of the marine environment.</p>
<p><b>Outcome B12.2 C</b> Explain precautions against fire or explosion</p>	<ul style="list-style-type: none"> <li>• Principles of fire</li> <li>• Methods of fire prevention</li> <li>• Detection and alarm systems</li> <li>• Common causes</li> <li>• Advantages of cleanliness and good housekeeping practices</li> <li>• Oil mist detectors</li> <li>• Storage and use of LPG and petrol</li> <li>• Bunkering and transfer of fuel</li> <li>• Safety devices to prevent fire or explosion</li> <li>• Dangers of accumulation of oil or gas in enclosed spaces</li> </ul>	<p>Identify and explain the causes of fires and explosions and the means of prevention in accordance with maritime safety regulations and vessel procedures.</p> <p>Procedures for monitoring fire detection and safety systems ensure that all alarms are detected promptly and acted upon in accordance with established ship procedures.</p>

*(Continued...)*

**TABLE B12.2 — Function: Marine Engineering at the operational level**  
**Section: Engineering — Engineer Class 3 (cont.)**

Outcome	Content	Standards for evaluating competence
<p><b>Outcome B12.2 D</b> Operate and maintain fire protection, detection and extinguishing equipment and operate machinery in such a way as to minimise fire risk</p>	<ul style="list-style-type: none"> <li>• Methods of dealing with fire onboard vessels</li> <li>• Construction, testing and use of various portable and fixed fire extinguishers</li> <li>• Remote shut-offs and closing appliances</li> </ul>	<p>The type and potential risk of the fire is identified, explained and initial actions conform to emergency procedures and contingency plans.</p>
<p><b>Outcome B12.2 E</b> Implement safety precautions before entering tanks or confined spaces</p>	<ul style="list-style-type: none"> <li>• Dangers encountered in tanks and confined spaces</li> <li>• Precautions before entering tanks or confined spaces</li> </ul>	<p>Maintenance activities are planned and carried out in accordance with technical, legislative, safety, and procedural specifications.</p>
<p><b>Outcome B12.2 F</b> Explain the construction features of a ship that impact on its watertight integrity and stability</p>	<ul style="list-style-type: none"> <li>• Common terms associated with vessel construction</li> <li>• Interpret plans</li> <li>• Rudder details</li> <li>• Oil and water lubricated stern tube details</li> <li>• Propeller types and fitting</li> <li>• Underwater fittings</li> <li>• Free surface effect</li> <li>• Management of tanks to maintain trim and stability</li> </ul>	<p>Structural components of a vessel are identified and information from vessel technical drawings is interpreted in accordance with design.</p> <p>Explain how the procedures ensure and maintain the watertight integrity and stability of the ship are in accordance with accepted practice.</p>
<p><b>Outcome B12.2 G</b> Explain elementary principles, care and management of auxiliary power sources (steam and motor), including boilers and their fittings  Operate auxiliary power sources</p>	<ul style="list-style-type: none"> <li>• Waste heat boilers and economisers and their fittings</li> <li>• Auxiliary oil-fired boilers and their fittings</li> <li>• Boiler water treatment and testing</li> <li>• Correct use of gauge glasses</li> <li>• Danger of water hammer</li> <li>• Maintenance of boiler water density</li> <li>• Diesel generators</li> <li>• Shaft generators</li> </ul>	<p>Auxiliary power sources are maintained and operated within maker's specifications and vessel maintenance schedules.</p> <p>Assessment of boiler condition is based on relevant information available from local and remote indicators and physical inspection and is in compliance with manufacturer's operating instructions and procedures.</p> <p>Malfunctions and deviations from the operating specifications are identified and rectification procedures comply with vessel procedures and manufacturer's recommendations.</p> <p>Incidents are reported to the vessel Master detailing the operational restrictions necessary.</p>

(Continued...)

**TABLE B12.2 — Function: Marine Engineering at the operational level**  
**Section: Engineering — Engineer Class 3 (cont.)**

Outcome	Content	Standards for evaluating competence
<p><b>Outcome B12.2 H</b>            Explain elementary principles and care and management of the various types of auxiliary pumps and pumping, piping systems, and other shipboard auxiliaries</p>	<ul style="list-style-type: none"> <li>• Types of pumps and principles of operation</li> <li>• Pumping systems for fuel oil, freshwater, seawater, lubricating oil, and bilge-water</li> <li>• Centrifugal separators</li> <li>• Oily water separators</li> <li>• Sewage systems</li> </ul>	<p>Operation of auxiliary equipment is planned and carried out in accordance with established rules and procedures to ensure safety of operations and avoid pollution of the marine environment.</p> <p>Auxiliary equipment is maintained and operated within maker's specifications and vessel maintenance schedules.</p> <p>Malfunctions and deviations from the specifications are identified and rectification procedures comply with vessel procedures and manufacturer's recommendations. Incidents are reported to the vessel Master detailing any operational restrictions necessary.</p>
<p><b>Outcome B12.2 I</b>            Describe the alignment of machinery and machinery parts</p> <p>Dismantle, inspect, repair and reassemble vessel machinery</p>	<ul style="list-style-type: none"> <li>• The importance of correct alignment</li> <li>• The effects of incorrect alignment</li> <li>• Achieving correct alignment</li> </ul>	<p>Dismantling, inspecting, repairing and reassembling equipment is in accordance with manuals and good practice.</p>
<p><b>Outcome B12.2 J</b>            Use gauges and meters to monitor and measure</p>	<ul style="list-style-type: none"> <li>• Construction and use of the various gauges and meters</li> </ul>	<p>The electrical, pressure and measuring gauges and meters are used in accordance with the technical specifications and parameter</p>
<p><b>Outcome B12.2 K</b>            Maintain engineering records including oil pollution</p>	<ul style="list-style-type: none"> <li>• Maintenance of records and machinery logs</li> <li>• Organisation of planned maintenance</li> <li>• Maintenance of spare parts and consumable stores</li> <li>• Knowledge of statutory and survey requirements</li> <li>• Knowledge of pollution legislation</li> </ul>	<p>A record is maintained of the movements and activities relating to the ship's engineering systems in accordance with vessel procedures and maritime engineering and safety procedures.</p> <p>Maintenance activities are planned and carried out in accordance with technical, legislative, safety, and procedural specifications.</p> <p>Plans, specifications, materials, spare parts and equipment are available according to vessel contingency plans for maintenance and repair.</p> <p>Procedures for monitoring operations and maintenance comply with legislative requirements.</p> <p>Potential non-compliance is promptly identified and action taken to prevent actual occurrence.</p> <p>Requirements for renewal and extension of certificates ensure continued validity of survey items and equipment.</p>
<i>(Continued...)</i>		
<p><b>Outcome B12.2 L</b>            Demonstrate use of life-saving appliances</p> <p>Abandon ship</p>	<ul style="list-style-type: none"> <li>• The operation of survival craft and rescue boats</li> <li>• Survival craft launching appliances and arrangements and their equipment, including EPIRBs</li> </ul>	<p>Actions in responding to abandon ship and survival situations are appropriate to the prevailing circumstances and comply with accepted safety practices and standards.</p>

**TABLE B12.2 — Function: Marine Engineering at the operational level**  
**Section: Engineering — Engineer Class 3 (cont.)**

Outcome	Content	Standards for evaluating competence
<p><b>Outcome B12.2 M</b> Operate and maintain refrigeration systems</p>	<ul style="list-style-type: none"> <li>• Principles of refrigeration</li> <li>• Properties of common refrigerants</li> <li>• Operating temperature and pressures</li> <li>• Methods of temperature control</li> <li>• Care and management of refrigeration equipment, recognition of defects</li> </ul>	<p>Explain the operating principles of a refrigeration system in accordance with maker's specifications.</p> <p>Refrigeration and air-conditioning systems are operated and maintained within technical specifications and in accordance with accepted practices and procedures to ensure safety of operation and avoid pollution of the marine environment.</p> <p><b>WARNING: RELEVANT STATE/TERRITORY TRAINING AND QUALIFICATION REQUIREMENTS NEED TO BE FULFILLED BY ANY PERSONS CARRYING OUT INSTALLATION, MAINTENANCE AND/OR REPAIR OF REFRIGERATION EQUIPMENT ESPECIALLY WITH REGARD TO PREVENTING THE ESCAPE OF REFRIGERANTS INTO THE ATMOSPHERE AND TO ELECTRICAL WORK.</b></p>
<p><b>Methods and conditions for demonstrating competence</b>            (To be applied to all outcomes in this table)</p>		
<p>Assessment by an approved assessor shall be carried out in a—</p> <ul style="list-style-type: none"> <li>• working vessel;</li> <li>• training vessel;</li> <li>• simulator; or</li> <li>• approved training facility,</li> </ul> <p>using a combination of practical demonstration or practical exercises and theoretical explanation as appropriate to the subject and it shall be supported by oral or written questions.</p> <p>This process can be a part of—</p> <ul style="list-style-type: none"> <li>• employment;</li> <li>• an approved training program; or</li> <li>• recognition of prior learning.</li> </ul>		

**TABLE B12.3 — COMPETENCIES FOR A CERTIFICATE OF COMPETENCY  
AS AN ENGINEER CLASS 3**

**Function: Marine Engineering at the operational level**

**Section: Engineering — Engineer Class 3 Motor candidates only**

**(These competencies are required for an Engineer Class 3 Steam to obtain an endorsement  
for service in a motor vessel)**

Outcome	Content	Standards for evaluating competence
<p><b>Outcome B12.3 A</b> Operate and maintain two- and four- stroke machinery  Operate and maintain compressed ignition engines</p>	<ul style="list-style-type: none"> <li>• Simple constructional details</li> <li>• Care and management of two- stroke and four- stroke main propulsion internal combustion engines</li> <li>• Care and management of compressed ignition internal combustion engines</li> <li>• Two- and four- stroke cycles and timing</li> <li>• Scavenging and supercharging</li> <li>• Engine cooling and lubrication</li> <li>• Tuning</li> <li>• Overloading</li> <li>• Safety devices</li> <li>• Engine governors and trips</li> <li>• Starting, reversing and operational procedures</li> <li>• Engine bearings</li> <li>• Detection of defects</li> <li>• Crankcase explosions</li> </ul>	<p>Identify and explain the function of internal combustion engine components.</p> <p>The methods of preparing for start-up and making available fuels, lubricants, cooling water and air are in accordance with vessel procedures or maker's specification.</p> <p>Checks of pressures, temperatures and revolutions during the start-up and warm-up period are in accordance with the technical specifications.</p> <p>Watchkeeping (or bridge monitoring) schedules ensure the main propulsion plant is operated within maker's specifications.</p> <p>Malfunctions and deviations from the operating specifications are identified promptly and accurately and rectification procedures comply with the vessel procedures and manufacturer's recommendations and are reported to the vessel Master detailing any operational restrictions necessary.</p> <p>Arrangements for ensuring the safe and efficient operation and condition of the machinery installation are in compliance with vessel operating procedures.</p>
<p><b>Outcome B12.3 B</b> Explain the principles of engine cooling, fuel and lubricating systems</p>	<ul style="list-style-type: none"> <li>• Cooling systems for diesel engines</li> <li>• Relationship between temperature and efficiency</li> <li>• Cooling water testing</li> <li>• Fuel systems for diesel engines</li> <li>• Safety devices</li> <li>• Centrifugal separators</li> <li>• Fuel filters</li> <li>• Lubricating systems for diesel engines</li> <li>• Boundary and full fluid film</li> <li>• Viscosity</li> <li>• Additives and total base numbers</li> <li>• Onboard tests of lubricating oil</li> </ul>	<p>Engine cooling, fuel and lubricating systems are operated and maintained in accordance with technical specifications to ensure safety of operation and avoid pollution of the marine environment.</p>

*(Continued...)*

**TABLE B12.3 — Function: Marine Engineering at the operational level**  
**Section: Engineering — Engineer Class 3 Motor candidates only (cont.)**

Outcome	Content	Standards for evaluating competence
<b>Outcome B12.3 C</b> Outline the principles of air compressors, their care and maintenance	<ul style="list-style-type: none"> <li>• Reciprocating air compressors</li> <li>• Cooling and intercooling</li> <li>• Compressor defects</li> <li>• Relief valves</li> <li>• Air receivers and their mountings</li> <li>• Oil contamination of air start systems</li> </ul>	Air compressors and ancillary equipment are operated and maintained in accordance with technical specifications and accepted procedures to ensure safety of operation.
<b>Methods and conditions for demonstrating competence</b> (To be applied to all outcomes in this table)		
<p>Assessment by an approved assessor shall be carried out in a—</p> <ul style="list-style-type: none"> <li>• working vessel;</li> <li>• training vessel;</li> <li>• simulator; or</li> <li>• approved training facility,</li> </ul> <p>using a combination of practical demonstration or practical exercises and theoretical explanation as appropriate to the subject and it shall be supported by oral or written questions.</p> <p>This process can be a part of—</p> <ul style="list-style-type: none"> <li>• employment;</li> <li>• an approved training program; or</li> <li>• recognition of prior learning.</li> </ul>		

**TABLE B12.4 — COMPETENCIES FOR A CERTIFICATE OF COMPETENCY AS AN ENGINEER CLASS 3****Function: Marine Engineering at the operational level****Section: Engineering — Engineer Class 3 Steam candidates only****(These competencies are required for an Engineer Class 3 Motor to obtain an endorsement for service in a steam vessel)**

Outcome	Content	Standards for evaluating competence
<p><b>Outcome B12.4 A</b> Explain the operation and safety of boilers, steam and feed systems, steam engines and turbines</p>	<ul style="list-style-type: none"> <li>• Simple constructional details and the care and management of main propulsion steam engines and boilers, their fittings and mountings, with particular reference to safety devices</li> <li>• Preparing for sea</li> <li>• Detection of defects</li> </ul>	<p>The methods of preparing the start-up of boilers, steam engines and turbines are in accordance with vessel and manufacturer's operating procedures.</p> <p>Assessment of boiler condition is based on relevant information available from local and remote indicators and physical inspection and is in accordance with manufacturer's operating instructions and procedures.</p> <p>Checks of pressures, temperatures and revolutions during the start-up and warm-up period are in accordance with the technical specifications.</p> <p>Watchkeeping is sufficient to ensure the main propulsion plant is maintained within safe operating specifications. Performance levels are in accordance with the technical specifications.</p> <p>Malfunctions and deviations from the operating specifications are identified promptly and accurately and rectification procedures comply with vessel procedures and manufacturer's recommendations. Incidents are reported to the vessel Master detailing any operational restrictions necessary.</p> <p>The methods of measuring the load capacity of the engines are in accordance with the technical specifications and performance is checked against bridge orders.</p> <p>Arrangements for ensuring the safe and efficient operation and condition of the machinery installation are in accordance with vessel operating procedures.</p>
<p><b>Outcome B12.4 B</b> Conduct boiler water tests and water treatment</p>	<ul style="list-style-type: none"> <li>• Causes and effects of boiler water contamination</li> <li>• Methods of detection of boiler water contamination</li> <li>• Boiler water treatment</li> <li>• Explain preventative and remedial actions</li> </ul>	<p>Boiler fuel, air and feed systems are operated and maintained in accordance with technical specifications to ensure safety of operation, optimum efficiency and to avoid pollution of the marine environment.</p>

*(Continued...)*

**TABLE B12.4 — Function: Marine Engineering at the operational level**  
**Section: Engineering — Engineer Class 3 Steam candidates only (cont.)**

Outcome	Content	Standards for evaluating competence
<p><b>Outcome B12.4 C</b>            Manage boiler fuel, air and feed systems</p>	<ul style="list-style-type: none"> <li>• Principles of operation of common types of fuel oil burners</li> <li>• “Turn down ratio”</li> <li>• Application of flue gas analysis to good combustion</li> <li>• Importance of excess air</li> <li>• Importance of correct air register maintenance</li> <li>• Typical closed feed system with associated fittings</li> <li>• Function and operation of condensers, air ejectors, extraction pumps, feed controller and feed heaters</li> </ul>	Boiler water tests are carried out and water treatment undertaken in accordance with technical specifications to ensure safety of operation and optimum efficiency.
<p><b>Methods and conditions for demonstrating competence</b>            (To be applied to all outcomes in this table)</p>		
<p>Assessment by an approved assessor in a—</p> <ul style="list-style-type: none"> <li>• working vessel;</li> <li>• training vessel;</li> <li>• simulator; or</li> <li>• approved training facility.</li> </ul> <p>Using a combination of practical demonstration or practical exercises and theoretical explanation as appropriate to the subject and supported by oral or written questions.</p> <p>The process can be a part of—</p> <ul style="list-style-type: none"> <li>• employment;</li> <li>• an approved training program; or</li> <li>• recognition of prior learning.</li> </ul>		

**TABLE B12.5 — COMPETENCIES FOR A CERTIFICATE OF  
COMPETENCY AS AN ENGINEER CLASS 3**  
Function: Marine Engineering at the operational level  
Section: Electrical — Engineer Class 3 All candidates

Outcome	Content	Standards for evaluating competence
<b>Outcome B12.5 A</b> Define electrical terms and solve basic electrical problems using mathematics	<ul style="list-style-type: none"> <li>• S.I. Units, Amperes, Volts, Ohms</li> <li>• Ohms law</li> <li>• Resistance in series and parallel</li> <li>• Batteries in series and parallel</li> <li>• Heating effect of electric current</li> <li>• Calculation of electrical power given a network of resistance and applied voltage</li> </ul>	Terms are defined in accordance with electrical trade handbooks and calculations conform to principles of electricity.
<b>Outcome B12.5 B</b> Demonstrate electrical safety during repair and inspection of electrical circuitry and equipment	<ul style="list-style-type: none"> <li>• Procedures for safe isolation of electrical and other types of plant and equipment</li> <li>• Supervision and management of electrical work</li> <li>• Safe working procedures on electrical plant and equipment</li> </ul>	Isolation, dismantling and reassembly of plant and equipment is in accordance with electrical trade practices and procedures.  <b>WARNING: RELEVANT STATE/TERRITORY ELECTRICAL LICENSING REQUIREMENTS NEED TO BE FULFILLED BY ANY PERSONS CARRYING OUT INSTALLATION, MAINTENANCE AND/OR REPAIR OF ELECTRICAL CIRCUITS OR SYSTEMS THAT ARE 50 V A.C. OR ABOVE, OR 120 V D.C. OR ABOVE, ON A VESSEL.</b>
<b>Outcome B12.5 C</b> Explain and use the colour coding system for electric conductors	<ul style="list-style-type: none"> <li>• Colour coding system</li> </ul>	Earth active and neutral conductors are defined and wiring is connected in accordance with design diagrams and electrical trade practices and procedures.
<b>Outcome B12.5 D</b> Operate and maintain electric starter motors	<ul style="list-style-type: none"> <li>• Types of a.c. and d.c. motor starters</li> <li>• Circuit protection devices for over and under loading</li> </ul>	Operation and maintenance requirements are explained in accordance with vessel procedures and manufacturer's manuals.  a.c. and d.c. motors, starters and protection devices are operated and maintained in accordance with technical specifications and established procedures to ensure safety of operation.  <b>WARNING: RELEVANT STATE/TERRITORY ELECTRICAL LICENSING REQUIREMENTS NEED TO BE FULFILLED BY ANY PERSONS CARRYING OUT INSTALLATION, MAINTENANCE AND/OR REPAIR OF ELECTRICAL CIRCUITS OR SYSTEMS THAT ARE 50 V A.C. OR ABOVE, OR 120 V D.C. OR ABOVE, ON A VESSEL.</b>

(Continued...)

**TABLE B12.5 — Function: Marine Engineering at the operational level**  
**Section: Electrical — Engineer Class 3 All candidates (cont.)**

Outcome	Content	Standards for evaluating competence
<p><b>Outcome B12.5 E</b>            Explain the principles of operation and operating procedures for a.c. and d.c. generators</p>	<ul style="list-style-type: none"> <li>• Preparing, starting, coupling and changing over alternators or generators</li> <li>• Management of load sharing</li> <li>• Location of common faults and action to prevent damage</li> </ul>	<p>The operation of a.c. and d.c. generators is explained in accordance with manufacturer's manuals and operating procedures comply with manufacturer's instructions and vessel procedures.</p>
<p><b>Outcome B12.5 F</b>            Manage and maintain batteries and accumulators</p>	<ul style="list-style-type: none"> <li>• Types of accumulators and storage batteries</li> <li>• Accumulators and storage battery construction</li> <li>• Accumulator and storage battery charging</li> <li>• Accumulator and storage battery maintenance and safety</li> </ul>	<p>Accumulators and storage batteries are managed and maintained within technical specifications and in accordance with established procedures to ensure safety of operation.</p> <p><b>WARNING: RELEVANT STATE/TERRITORY ELECTRICAL LICENSING REQUIREMENTS NEED TO BE FULFILLED BY ANY PERSONS CARRYING OUT INSTALLATION, MAINTENANCE AND/OR REPAIR OF ELECTRICAL CIRCUITS OR SYSTEMS THAT ARE 50 V A.C. OR ABOVE, OR 120 V D.C. OR ABOVE, ON A VESSEL.</b></p>
<p><b>Outcome B12.5 G</b>            Repair, maintain and manage power distribution of single and three phase electrical power</p>	<ul style="list-style-type: none"> <li>• Single phase distribution systems</li> <li>• Three phase distribution systems</li> <li>• Circuit protection</li> <li>• Earth fault detection and rectification</li> <li>• Electrical safety procedures</li> </ul>	<p>Distribution systems are managed and operated within technical specifications and in accordance with established rules of the electrical trade.</p> <p><b>WARNING: RELEVANT STATE/TERRITORY ELECTRICAL LICENSING REQUIREMENTS NEED TO BE FULFILLED BY ANY PERSONS CARRYING OUT INSTALLATION, MAINTENANCE AND REPAIR OF ELECTRICAL CIRCUITS OR SYSTEMS THAT ARE 50 V A.C. OR ABOVE, OR 120 V D.C. OR ABOVE, ON A VESSEL.</b></p>

**TABLE B12.5 — Function: Marine Engineering at the operational level**  
**Section: Electrical — Engineer Class 3 All candidates (cont.)**

Outcome	Content	Standards for evaluating competence
<p><b>Methods and conditions for demonstrating competence</b>            (To be applied to all outcomes in this table)</p>		
<p>Assessment by an approved assessor shall be carried out in a—</p> <ul style="list-style-type: none"> <li>• working vessel;</li> <li>• training vessel;</li> <li>• simulator; or</li> <li>• approved training facility,</li> </ul> <p>using a combination of practical demonstration or practical exercises and theoretical explanation as appropriate to the subject and it shall be supported by oral or written questions.</p> <p>This process can be a part of—</p> <ul style="list-style-type: none"> <li>• employment;</li> <li>• an approved training program; or</li> <li>• recognition of prior learning.</li> </ul>		

**B13 GENERAL PURPOSE HAND****B13.1 Eligibility****B13.1.1 Guidance on Requirements**

A National Certificate of Competency as a General Purpose Hand may not be issued under this standard at present. An Authority, however, may require local certification as a General Purpose Hand for specific sectors of the industry for which they are responsible, and may specify requirements this purpose.

For specific requirements contact the local Authority.

The following guidance is provided for those seeking employment as a General Purpose Hand and for owners seeking to employ persons in this role. In general terms a General Purpose Hand should meet the following requirements:

- a) Have attained the age of 16 years.
- b) Be fit for the employment (see Annex C for guidance).
- c) Have completed the onboard safety training program for the vessel (see the NMSC "Guidelines for Onboard Safety Training - Australian Domestic Vessels").
- d) Be given training, instruction and supervision on tasks required to be performed (see Part A, Part E and appropriate NMSC Marine Guidance Manuals).

NOTE: Part A of this Standard provides advice on the discharge of legal obligations under other Acts such as duty of care under Occupational Health & Safety requirements.

**B13.1.2 Qualifying sea-service**

There is no requirement for qualifying sea-service.

**B13.1.3 Competencies**

There are no national competencies specified for a General Purpose Hand. An Authority may specify competencies to meet local requirements.

**B13.2 Guidance on the usage of this certificate**

Not applicable.

**B13.3 Restrictions**

Not Applicable.

**B13.4 STCW endorsement from AMSA**

Not Applicable.

## ANNEX C MEDICAL FITNESS

### C1 SCOPE

This Annex prescribes the level of medical fitness required by holders of Certificates of Competency issued under this Standard.

### C2 GENERAL

#### C2.1 Certificate of medical fitness

Where a certificate of medical fitness is required, the following requirements specified in this Annex shall be met:

- a) Eyesight (vision) as specified in Clause C4.
- b) Eyesight (colour-vision) as specified in Clause C5.
- c) Medical as specified in Clause C6.

A person is deemed to hold a certificate of medical fitness if they can demonstrate that they have satisfactorily met these requirements.

#### C2.2 Declaration of medical fitness

Where a declaration of medical fitness is required, the requirements specified in Clause C6 (medical requirements) of this Annex shall be met.

An Authority shall determine the form and manner in which the declaration will be made.

Where the declaration shows that the applicant suffers from a condition in Clauses C6.3 to C6.10, an Authority may require a medical examination in accordance with Clause 1.16.4.

#### C2.3 Satisfactory level of medical fitness

Where a satisfactory level of medical fitness is required, the following requirements specified in this Annex should be met:

- a) Eyesight (vision) as specified in Clause C4.
- b) Medical as specified in Clause C6.

Where a holder of a Certificate of Competency's level of medical fitness alters so that it no longer meets these requirements, the person shall advise the Authority of the change prior to operating under this Certificate.

### C3 DEFINITIONS

In this Annex the following definition applies:

#### **Aids to vision—**

glasses or contact lenses which have been prescribed by a qualified optometrist or eye specialist to correct refractive error of a persons eye.

**C4 EYESIGHT (VISION)****C4.1 Vision tests**

Vision tests shall be conducted by a suitably qualified optometrist, eye specialist, medical practitioner, or an officer of an Authority, who will provide the applicant with documentation (eg. Medical Certificate) to testify to the result.

**C4.2 Use of aids to vision**

Aids to vision are the only optical aids which may be used in a vision test.

A person whose certificate of medical fitness indicates that an aid to vision was used for the purpose of being found medically fit shall, at all times when on duty on a vessel, use such aid when appropriate, and keep a spare aid to vision available.

**C4.3 Deck crew**

Deck crew are required to demonstrate that their vision meets the standard specified in Table C1.

Persons with only one eye, or poor vision in one eye (i.e. monocular vision) may be issued with a Certificate of Competency.

NOTE: Persons with monocular vision and those employing or supervising persons with monocular vision need to be aware of the dangers of operating cranes and other similar lifting appliances where monocular vision may limit depth perception and impact safety.

**Table C1 — Eyesight (Vision) tests — Deck Crew**

<b>With or without aids to vision</b>	<b>Without aids to vision</b>
Snellen Principle 6/6 (0.0 LogMar) in the better eye.	Snellen Principle 6/60 (1.0 LogMar) in each eye.
Snellen Principle 6/9 (0.2 LogMar) in the other eye.	
Read N5 chart at 300 mm-500 mm.	

NOTE: Candidates should achieve the standards provided in both columns.

**C4.4 Engine crew**

Engine crew are required to demonstrate that their vision meets the standard specified in Table C2.

Persons with only one eye, or poor vision in one eye (i.e. monocular vision) may be issued with a Certificate of Competency.

NOTE: Persons with monocular vision and those employing or supervising persons with monocular vision need to be aware of the dangers of operating cranes and other similar lifting appliances where monocular vision may limit depth perception and impact safety.

**Table C2 — Eyesight (Vision) tests — Engine Crew**

<b>With or without aids to vision</b>	<b>Without aids to vision</b>
Snellen Principle 6/9 (0.2 LogMar) in one eye. Snellen Principle 6/9 (0.2 LogMar) in the other eye. Read N5 chart at 300 mm-500 mm.	Snellen Principle 6/60 (1.0 LogMar) in each eye.

NOTE: Candidates should achieve the standards provided in both columns.

## **C5 EYESIGHT (COLOUR-VISION)**

### **C5.1 Colour-vision tests**

Colour-vision tests shall be conducted by a suitably qualified optometrist, eye specialist, medical practitioner, or an officer of an Authority, who will provide the applicant with documentation (e.g. Medical Certificate) to testify to the result.

Colour-vision testing is not required for revalidation or renewal of Certificates of Competency.

For the purposes of upgrading to a higher level Certificate of Competency, an additional colour-vision test shall only be required where an Ishihara or Holmes-Wright lantern test Type "B" was not conducted for the original certificate, and where such a test is a requirement for the new certificate being sought.

### **C5.2 Use of aids to vision**

Aids to vision, provided they are not coloured or tinted, are the only optical aids that may be used in a colour-vision test.

Colour correction devices shall not be worn for colour testing.

### **C5.3 Deck crew**

Deck crew are required to demonstrate that they have passed one of the following:

- a) The Ishihara Test.
- b) Holmes-Wright Lantern Test type "B".

In the case of applicants for Master Class 5, Skipper Grade 3, Coxswain or General Purpose Hand Certificate of Competency, an Authority may, in lieu of the above requirement, accept a statement from a suitably qualified optometrist, eye specialist or medical practitioner, that after having examined the applicant, the applicant suffers no greater abnormality in colour-vision than could be tested by the Ishihara Test.

NOTE: This provision is not evidence of meeting the colour-vision requirements for Master Class 4 or Skipper Grade 2 or higher certificates.

**C5.4 Engine crew**

Applicants for a Marine Engine Driver Grade 3 or Marine Engine Driver Grade 2 are not required to undertake a colour-vision test.

Applicants for Marine Engine Driver Grade 1 and Engineer Class 3 are required to pass one of the following tests:

- a) The Ishihara Test.
- b) Holmes-Wright Lantern Test type "B".
- c) A colour-matching test in accordance with Marine Orders Part 9, Appendix 2, Annex 2.

If an applicant fails to meet the requirement for colour-vision, an Authority may accept a letter from an employer (not necessarily in shipping), to say that the person has satisfactorily performed similar engineering duties, over a 2-year period, as a deemed-to-satisfy solution for the colour-vision requirement.

**C5.5 Conduct of Ishihara test**

The Ishihara test shall be conducted according to instructions for the test. In order to pass, a candidate shall correctly identify at least 13 of the first 15 plates in the 24-plate version.

Where an applicant wishes to appeal the failure of an Ishihara colour-vision test, the applicant may be re-examined. A Holmes-Wright lantern test type "B" may be used in lieu of the Ishihara.

**C6 MEDICAL****C6.1 Examinations**

For the purpose of gaining a certificate of medical fitness, medical examinations shall be conducted by a suitably qualified medical practitioner, who will provide the applicant with documentation (e.g. Medical Certificate) to testify to the result.

**C6.2 Requirements**

Medical fitness should be based on normal criteria.

In determining whether or not an applicant meets the medical fitness requirements in this Standard, due account should be taken by the medical practitioner in the case of an examination for a certificate of medical fitness, or the applicant in the case of a declaration of medical fitness, of the following:

- a) The nature of employment for which certification is intended.
- b) The medical and employment history of the person.
- c) The requirements specified in Clauses C6.3 to C6.10.

These standards are applicable to candidates for all levels of a certificate, and shall be met before a Certificate of Competency can be issued, renewed or revalidated except where otherwise stated.

## NOTES:

1. These requirements are to ensure the person can perform the relevant duties without creating an unacceptable risk to him/herself, other members of the crew or the safe operation of a vessel.
2. Marine Orders Part 9 may be used to provide further information on standards and their reasoning.

Where there is difficulty meeting the requirements in Clauses C6.3 to C6.10 an Authority may review the case and, considering the circumstances and level of risk involved, may issue a restricted Certificate of Competency in accordance with Clause 1.9.1, or a Temporary Permit to Serve in accordance with Clause 1.9.2, or impose any other special conditions on the use of the certificate.

NOTE: This will provide alternative methods of managing the risks associated with safe operation of the vessel.

**C6.3 Hernia**

No condition of hernia, unless satisfactorily corrected by a curative operation with the exception of—

- a) a small inguinal hernia where there is no risk of strangulation and where there is surgical opinion to state that there is no clinical indication for surgery and the applicant may be accepted as fit for lifting tasks; and
- b) a diaphragmatic hernia without disabling reflux oesophagitis or other symptoms.

**C6.4 Speech**

An applicant's speech should be clear and without hesitation such that orders can be communicated effectively to other crew during times of emergency and messages can be transmitted and understood on a radio.

**C6.5 Hearing**

The whispered voice, a watch, or other proven tests should test hearing ability. However, where there is doubt as to the fitness of a person, testing should be conducted by means of an audiogram.

When an audiogram is used the hearing requirements are:

- a) Hearing loss in the better ear shall not be greater than 40 decibels (AMA standard) for the frequencies of 500 Hz, 1000 Hz and 2000 Hz.
- b) Where hearing level is less than the above standards, hearing aids may be accepted, providing the above levels can be reached when using the aid.

Persons with hearing below the required standard in one ear may be issued with a Certificate of Competency provided the standard can be achieved with the other ear.

**C6.6 Artificial limbs**

Artificial limbs shall not interfere with the normal duties the holder of the certificate would be expected to perform and each case will be considered by an Authority on its merit.

**C6.7 Cardiac pacemaker**

A person with a cardiac pacemaker shall not serve on a vessel unless a medical practitioner, taking into account the nature of the disease and the reliability of the pacemaker, provides a statement that the person can undertake the normal duties the holder of the certificate would be expected to perform, and that the safe operation of the vessel will not be affected.

**C6.8 Epilepsy**

A person with confirmed, current epilepsy, irrespective of control medication's shall not serve on a vessel.

A person with a past history of epilepsy, including febrile convulsions as a child, a single seizure or cluster of seizures due to exceptional and non-repeatable circumstances, who has demonstrated a seizure-free period of two years while not on any anticonvulsant medication, is fit for service in a vessel.

**C6.9 Diabetes**

A person suffering from insulin-dependent diabetes may be approved to serve on a vessel providing a medical practitioner provides a statement that the person is managing the diabetes effectively.

**C6.10 Tuberculosis**

A person who has been affected by pulmonary tuberculosis shall not serve on a vessel unless the disease is controlled or has been inactive in that person for at least the previous six months.

**C7 PERIOD OF CURRENCY**

A medical practitioner issuing a certificate of medical fitness should specify the date the examination was undertaken, and the period for which the certificate of medical fitness is current.

The period of validity for certificates of medical fitness should not exceed two years.

## ANNEX D PREREQUISITES FOR CERTIFICATES OF COMPETENCY

### D1 SCOPE

This Annex prescribes the requirements for certain certificates, licences and qualifications that are specified in Annex B of this Part as prerequisites for Certificates of Competency. The requirements include training to be successfully completed (often referred to as “short courses”) and may include equivalent qualifications.

### D2 FIRST-AID QUALIFICATIONS

#### D2.1 Requirements

To satisfy this Standard a first-aid certificate shall—

- a) meet the requirements specified in National Module Code AAA 854 titled “First Aid Competency Standards”; and
- b) be obtained from a RTO conducting accredited courses.

NOTE: Examples of RTOs providing first-aid training include the Australian Red Cross, St John Ambulance and Royal Life Saving Society.

#### D2.2 Training

Qualifications or training programs that conform to the requirements of the National Module Code AAA 854 include, but are not limited to:

- a) A National Senior Level First Aid Certificate.
- b) Workplace Standard Level 2 (or higher) First Aid qualification.
- c) The FPPAID2A unit from the Seafood Industry Training Package.
- d) The TDM MF10 01A unit from the Maritime Training Package.

An Authority may approve other qualifications or training programs where they can be demonstrated as being equivalent to those above.

#### D2.3 Responsibility

The onus for maintaining proficiency is on the holder of the first-aid certificate. A first-aid certificate must be current to be acceptable towards the award of a qualification.

### D3 MARINE RADIO OPERATOR’S QUALIFICATIONS

#### D3.1 Requirements

The requirements for a Marine Radio Operator’s Certificate of Proficiency (MROCP) and the Marine Radio Operator’s VHF Certificate of Proficiency (MROVCP) are specified and administered by the Australian Communications Authority (ACA).

#### D3.2 Training

Full details of how to obtain these qualifications can be obtained from the ACA.

**D3.3 Existing qualifications**

Holders of a Restricted Radio Operator's Certificate of Proficiency in Radiotelephony (RROCP) will be deemed to hold a qualification equivalent to the MROCP and MROVCP. The ROCPR qualification is no longer issued.

**D3.4 Additional communication qualifications**

Where a vessel is fitted with communication systems that require ACA qualifications other than those specified in Clauses D3.1 and D3.3, an appropriate ACMA qualification shall be held by persons operating those systems.

NOTE: This may include, but is not limited to the AMSA qualification of a Marine Satellite Communications Certificate of Endorsement to the MROCP, or the GMDSS General Operator's Certificate.

**D4 ELEMENTS OF SHIPBOARD SAFETY****D4.1 Requirements**

To satisfy this Standard a Certificate of Elements of Shipboard Safety is required.

**D4.2 Training**

IA person who has successfully completed, at a pass grade or higher, one of the following approved training programs or courses, shall be deemed to hold a Certificate of Elements of Shipboard Safety:

- a) The Seafood Industry Training Package units SFICORE104A (Meet workplace health and safety requirements) and SFISHIP212A (Take emergency action onboard a vessel).
- b) The National Module Code ABF 511 titled "Occupational Health and Safety at Sea".
- c) Training certified under STCW-95 comprising all of the following:
  - i) Table A-VI/1-1 (Specification of minimum standard of competence in personal survival techniques).
  - ii) Table A-VI/1-2 (Specification of minimum standard of competence in fire prevention and fire fighting).
  - iii) Table A-VI/1-4 (Specification of minimum standard of competence in personal safety and social responsibilities).
- d) The Maritime Training Package units comprising all of the following"
  - i) TDM MF7 01A (Observe safe working practices).
  - ii) TDM MF8 01A (Comply with emergency procedures).
  - iii) TDM MF9 01A (Fight and extinguish fires).
  - iv) TDM MF10 01A (Provide first-aid).
  - v) TDM MF11 01A (Serve at sea in the event of vessel abandonment).
  - vi) TDM MF12 01A (Minimise risk of fire and maintain a state of readiness to respond to emergency situations involving fire).

- e) Any other program approved by an Authority as being equivalent to those above.

NOTES:

1. Where an STCW-95 Endorsement may be sought it is recommended that the training specified in Clause D4.2 c) be undertaken.
2. Where a vessel carries breathing apparatus all crew should be trained in its use and meet the standards required in STCW-95 Table A-V1/1-2.

#### **D4.3 Existing qualifications**

A Certificate for Elements of Shipboard Safety, which was issued under the USL or under legislation preceding this Standard, will be accepted as a Certificate for Elements of Shipboard Safety under this Standard.

Where a person with a Certificate for Elements of Shipboard Safety issued under the USL or under legislation preceding this Standard is upgrading or revalidating their Certificate of Competency, a current first-aid certificate in accordance with this Standard shall be required.

NOTES:

1. The Basic Life Support Systems (1 day) first-aid course, which was part of the Elements of Shipboard Safety under the USL Code, is not deemed to be equivalent to a first-aid certificate under this standard.
2. Where a vessel carries breathing apparatus all crew should be trained in its use and meet the standards required in STCW-95 Table A-V1/1-2.

### **D5 CERTIFICATE OF PROFICIENCY IN SURVIVAL CRAFT**

#### **D5.1 Requirements**

To satisfy this Standard a Certificate of Proficiency in Survival Craft is required. The requirements for this certificate are specified in Marine Orders Part 3 Section 7.7.

#### **D5.2 Training**

Refer to AMSA for further information on approved training providers.

### **D6 COMMAND NAVIGATION**

#### **D6.1 Requirements**

To satisfy this Standard successful completion of the Command Navigation Module of the Diploma of Applied Science (Master 3) is required.

#### **D6.2 Training**

The Command Navigation Module of the Diploma of Applied Science (Master 3) includes the practical aspects of the following learning outcomes:

- a) Practical Bridge Watchkeeping
- b) Response to emergencies
- c) Passage planning
- d) Practical navigation
- e) Collision Regulations
- f) Collision avoidance

- g) Search and rescue
- h) Bridge Resource Management

NOTE: Refer to AMSA for further information on approved training providers.

## **D7 ADVANCED FIRE FIGHTING**

### **D7.1 Requirements**

To satisfy this standard a Certificate of Advanced Fire Fighting is required. The requirements for this certificate are specified in STCW-95 Section A-VI/3.

### **D7.2 Training**

Refer to AMSA for further information on approved training providers.

NOTE: For the purposes of gaining an STCW-95 endorsement to Master Class 4 or Master Class 3, a Certificate for Elements of Shipboard Safety issued under this Part, and the completion of at least 10 months sea-service since completion of that certificate will be accepted as qualifying the holder for entry to "Advanced Fire Fighting" in lieu of the pre-requisite course "Basic Fire Fighting".

## **D8 SHIP MASTER'S MEDICAL**

### **D8.1 Requirements**

To satisfy this standard Certificate of Proficiency for Persons in charge of Medical Care on board ships are required. The requirements for these certificate are specified in STCW-95 Tables A-VI/4-1 and 2.

### **D8.2 Training**

Refer to AMSA for further information on approved training providers.

## **D9 GMDSS GENERAL OPERATOR'S CERTIFICATE**

### **D9.1 Requirements**

To satisfy this Standard a GMDSS General Operator's Certificate is required. The requirements for this certificate are specified in Marine Orders Part 6.

### **D9.2 Training**

Refer to AMSA for further information on approved training providers.

