

FAIR WORK COMMISSION

Fair Work Act 2009

**APPLICATION FOR VARIATION OF PORTS, HARBOURS AND ENCLOSED
WATER VESSELS AWARD 2010, SEAGOING INDUSTRY AWARD 2010, and
MARINE TOWAGE AWARD 2010 (s.156) – AM2016/5**

FURTHER AFFIDAVIT OF STEPHEN BRADLEY AINSCOUGH

I, Stephen Bradley Ainscough, of [REDACTED]
make oath and say:

Introduction

1. I am a Director of MER Solutions Australia Pty Ltd, a multi-disciplinary maritime consultancy and specialist maritime law firm. I have more than 20 years' experience in the maritime industry and hold a Chief Engineer Class 1 Certificate of Competency issued by the Australian Maritime Safety Authority (AMSA) for both steam and motor ships. The Certificate of Competency has also endorsements for Petroleum and Gas.
2. In addition to my seagoing qualifications I am a Chartered Engineer issued from the Engineering Council of Great Britain. I hold a Bachelor of Technology (Marine Engineering) from the Australian Maritime College, Master of Science (Marine Engineering) from Newcastle University (UK) and a Master of Business Administration from Queensland University of Technology Graduate School of Business.
3. My early career was with BP Shipping and Golar LNG, where I served on board FPSO's, LNG, LPG, Product and Crude Carriers in senior engineering ranks.
4. I have extensive management experience of ships and shipping companies in Australia and Internationally and have worked for BP, Golar LNG, BW and Maersk Oil in managerial positions. I had full financial and technical responsibility of fleets of vessels made up of FPSO, Petroleum, Chemical and Gas Tankers.
5. One of the functions of MER Solutions is that we inspect vessels for large resource companies, energy companies, large international shipping companies, banks and insurance companies. I have personally undertaken approximately seventy 70 ship inspections on a wide range of technical, operational and commercial issues in the last 12 months. These inspections always involve a review/check of the Officers Certificates of Competency.

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Maritime Qualifications overview

6. The training and certification regime for commercial seafarers in Australia has the following characteristics:
 - a. Historically, the certification of seafarers for small commercial ships (generally less than 80 meters in length) was conducted by the States and Northern Territory through their respective marine safety departments. In Queensland, the relevant department was Maritime Safety Queensland (MSQ).
 - b. Since shortly after Federation, the certification of Australian seafarers for international trading ships was conducted by the Commonwealth through AMSA under the *Navigation Act 1912*. In 2012, the *Navigation Act 1912* was repealed and replaced by the *Navigation Act 2012*.
 - c. Since July 2014, the jurisdictional responsibility for the certification of seafarers was transferred by the States and Northern Territory to the Commonwealth through AMSA upon the commencement of the *Marine Safety (Domestic Commercial Vessels) National Law Act 2012 (Cth)* (The National Law). The States and Northern Territory continue to administer the certification of seafarers for small commercial ships as agents of AMSA, although AMSA will take over the direct certification of all Australian Seafarers from July 2017.
 - d. The qualification requirements for seafarers are characterised by increasingly difficult training, experience and examination requirements for seafarers to comply with as vessels increase in size, complexity and in operational area.
 - e. The reasons for this are relatively straightforward: as ships increase in size, the on board propulsion systems, control systems and cargo containment systems increase in complexity. Ships become more difficult to manoeuvre safely as well as operate and maintain. The number of personnel, passengers and cargo increases, and the operational area expands. Simply put, the larger the ship and the further the ship is from shore, the greater the risks to life and property. The training and competence of the seafarers concerned must increase proportionately to effectively manage that risk.
 - f. The highest risks are associated with large trading vessels engaged on international voyages carrying complex cargoes. The training and competence requirements for international seafarers are to the highest standards set by International Convention (such as the STCW Code¹) and
 - g. Correspondingly, the lowest risks are associated with small vessels that are operated inshore with less complex cargoes in close proximity to assistance. These seafarers have the least training and experience requirements.

Jurisdiction

7. The States and Northern Territory continue to administer the certification of seafarers for small commercial ships as agents of AMSA, although AMSA will take over the direct certification of all Australian Seafarers from July 2017.

¹ International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, International Maritime Organisation. See: <http://www.imo.org/en/OurWork/humanelement/trainingcertification/pages/stcw-convention.aspx>

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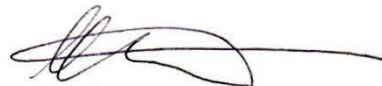
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8. Even though AMSA will be the single national authority for the certification of all Australia Seafarers from July 2017, the internal arrangements for certifying international Australian Seafarers (Unlimited and Class 2 certificates of competency) and small commercial seafarers (Deck certificates for less than 80 meters in length and for Engineer Class 3 and below) are essentially different, with the Domestic Commercial Vessels (DCVs) managed by a different internal division of AMSA.
9. Essentially, there has always been, and continues to be, a legal and administrative distinction between certificates of competency for international voyages for seafarers and certification of seafarers for what are now called DCVs.

Why is there a distinction between DCV and International seafarer certificates?

10. The International Maritime Organisation, a UN body, was established in 1958 and its first task was to adopt a new version of the International Convention for the Safety of Life at Sea (SOLAS), the most important of all treaties dealing with maritime safety. This was achieved in 1960 and IMO then turned its attention to such matters as the facilitation of international maritime traffic, load lines and the carriage of dangerous goods, while the system of measuring the tonnage of ships was revised.
11. The standards of training and certification of watchkeepers (seafarers) was recognised to be of fundamental importance to safety of life at sea, and the IMO facilitated the development of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, which was adopted on 7 July 1978 and entered into force on 28 April 1984. The main purpose of the Convention is to promote safety of life and property at sea and the protection of the marine environment by establishing in common agreement international standards of training, certification and watchkeeping for seafarers.
12. The STCW Code is under regular review, and the 2010 amendments entered into force on 1 January 2012. The amendments include:
 - a. Revised requirements on hours of work and rest and new requirements for the prevention of drug and alcohol abuse, as well as updated standards relating to medical fitness standards for seafarers;
 - b. New requirements relating to training in modern technology such as electronic charts and information systems (ECDIS);
 - c. New requirements for marine environment awareness training and training in leadership and teamwork;
 - d. New training and certification requirements for electro-technical officers;
 - e. Updating of competence requirements for personnel serving on board all types of tankers, including new requirements for personnel serving on liquefied gas tankers;
 - f. New requirements for security training, as well as provisions to ensure that seafarers are properly trained to cope if their ship comes under attack by pirates;
 - g. Introduction of modern training methodology including distance learning and web-based learning;

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amongst other initiatives to improve safety at sea.

13. These matters are all sophisticated, and reflect the more complex systems being operated by international seafarers, such as ECDIS, dynamic positioning as well as the cargo containment and operational requirements for chemical, petroleum and gas tankers. This results in significantly higher levels of training in environment, security and management that comes from increased risks posed by larger ships, their operational requirements and their cargoes.
14. What is important to appreciate is that the international seafaring community considers it important to set training and certification standards that are consistent across the world for international trading vessels, and that for Australia, these standards are implemented by the *Navigation Act 2012* and administered by AMSA's international shipping division.
15. By contrast, certification of DCV seafarers has a different foundation based in the National Standard for Commercial Vessels (NSCV) and implemented by the *National Law*. Whilst the NSCV resembles the international seafarer qualification system in some respects, it is fundamentally different legally and in its requirements because of the fundamentally different risk profiles of DCV vessels as against International Vessels.

Seafarer training and certification

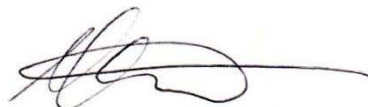
16. The training and certification of seafarers generally follows a similar process, whether it is a DCV certificate or an international certificate. The principal requirements are as follows:
 - a. a seafarer must meet the minimum medical requirements for both eyesight and general health
 - b. a seafarer must meet the minimum educational requirements and complete the appropriate academic course;
 - c. a seafarer must meet the minimum practical experience requirements, generally measured in days of 'sea-time' in the appropriate type of vessel; and
 - d. pass an oral examination conducted by a qualified examiner.
17. The different levels of medical requirements, academic entry requirements, training, practical experience and oral examination increase in difficulty and complexity in relationship to the size and complexity of the vessel and its permitted operating area.

These requirements are summarised in the table at Appendix A.

Medical requirements

18. It should be noted that:

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- a. At the lower levels of certificate, a self-declaration of medical fitness is sufficient (up to 24m length or MED 2 or 3), whilst a full medical assessment is required for higher certificates;
- b. The level of medical training required increases from a First Aid qualification for DCV vessels, to Medical Care for Shipmaster requirements (akin to basic paramedic training) for Master Class 2 and above. The training requires time with paramedic and time in the emergency department of a hospital.

Academic Requirements

19. It should be noted that as the level of certificate increases, so too does the level of qualification required, as well as a reduction in the number of training organisations able to deliver that training. In Australia, for Master unlimited, there are only 2 training organisations approved by AMSA.²
20. AMSA is careful to differentiate between training organisations that deliver STCW training and those that do not.³
21. The entry requirements for traditional Deck and Engineering cadet programs are strict. Cadets are chosen nationally and must have completed a year 12 certificate which strong passes in Advanced Mathematics, Physics and English. Typically, Cadets are expected to have attained academic standards at a similar level to those required for entry into a professional career, such as in traditional Medical, Engineering, Legal or Business professions. Often Cadets have attained the required entry standards for the Defence Force and can undertake similar training via Royal Australian Navy.
22. At the completion of their respective studies:
 - a. DCV certificate holders receive a certificate 111 or 1V from TAFE; whereas
 - b. STCW Class 1 certificate of competency holders are awarded a University Degree, or as a minimum an Advanced Diploma.

In short, STCW certificate holders would be considered tertiary qualified professionals while NCV certificate holders are considered to be qualified at trade-equivalent level.

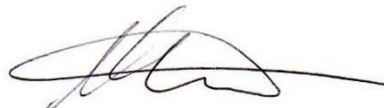
Certificate of Competency, dangerous cargo and dynamic positioning requirements

23. The sea time required for STCW qualifications is extremely rigid and more time is required to gain a Master Class 1 or Engineer Class 1 certificate of competency. Sea time is gained on larger vessels more than 80 meters in length and greater than

² <https://www.amsa.gov.au/forms-and-publications/fact-sheets/amsa1590.pdf>

³ <https://www.amsa.gov.au/forms-and-publications/fact-sheets/amsa1592.pdf>

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750KW. For STCW Class 1 Certificates of Competency the sea time requirement for certificates is measured in years, while the DCV certificates are measured in days.

24. For holders of a STCW Class 1 Certificate of Competency, a Cadet who has completed high school at age 18 and who passes all exams on the first attempt and does not take time off for personal reasons, typically achieve a Class 1 Certificate of Competency at approximately 30 years of age.
25. This qualification requires extensive educational and personal time commitment which has been compared in some professional circles as similar in time and effort to medical training.
26. In addition to STCW Certificates of Competency, endorsements for Petroleum, Chemical, Gas and Dynamic Positioning can be gained and are attached to individual seafarers Certificates of Competency. These endorsements require further academic and practical training as well as sea-time on specific vessel types in senior and junior roles.
27. By contrast, seafarers who start training at age 16 for DCV qualifications can reach their highest qualification at the approximate age of 20.
28. DCV certificates do not have dangerous cargo or dynamic positioning endorsements.

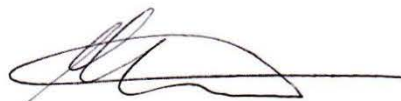
Oral examination

29. It should be noted that the oral examinations for Class 1 Certificates of Competency are the final step in achieving the penultimate qualification. They are considered by many to be the most difficult part of the overall training and a large percentage of candidates fail in their first attempt at the oral examination. The examiner must hold the same certificate or higher and in most cases the examiner has higher qualifications. In my own case the oral examination for Class 1 (Steam and Motor) took approximately 3-4 hours. The oral exam covered the whole syllabus of the 12 years of training that had been undertaken until that point in time. Questions ranged from technical, operational, managerial through to the legislative requirements across a wide range of vessel types and sizes. The Master Class 1 oral examination is also conducted in a similar way.
30. The oral examination required for DCV qualification is far less complex. The time requirement for the oral and the qualifications of the examiner are also less.

Area of Operations

31. The various STCW Certificates of Competency are specifically in place to allow ships whose Officers who hold these certifications to trade internationally. Typically, large vessels that trade internationally are registered in a 3rd party country that have no relation to the ownership of the vessel. The registry is a business decision with the countries of registry often being developing nations. Ships that register in these

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countries trade under what is known as a "Flag of Convenience". Officers who hold Australian STCW Certificates of Competencies are given equivalent certification from the nation that registers the specific vessel where they are employed.

32. DCV certification is only for Australian waters. DCV certificates are not permitted for use outside Australian territorial waters. DCV certificates would not enable the holder to obtain equivalent certification for ships registered in "Flags of Convenience".

Additional training required for (International Seafarers) on Specific Vessels

33. See fact sheet 1592:
 - a. Advanced firefighting
 - b. Proficiency in survival craft
 - c. GMDSS (Global Maritime Distress and Safety System)⁴
 - d. ECDIS⁵
 - e. Medical Care for Ship Masters
 - f. Proficiency in Fast Rescue Boats
 - g. High Voltage Electrical
 - h. Electrical Engineering
 - i. Control Engineering
 - j. Gas, Chemical and Petroleum Tankers
 - k. Dynamic Positioning
34. These additional courses are not required for shipmasters of less than 80 metres and Engineer 3 and below due to the reduced complexity of the smaller vessels. The additional requirements reflect the additional skills and training required to manage and operate the larger ships in an efficient and safe manner.

Conclusion

35. In my view, the structure and arrangement of seafarer certification is a proven mechanism to ensure seafarers are appropriately trained and competent for their duties at sea, so as to meet the risks and challenges imposed by this most demanding of professions. The increasing level of sophistication of ship systems, and the risks associated with the operation of ships, increases in relation to the size of the ship, type of cargo containment system as well as the size and type of power plant, auxiliary and positioning equipment in use on a specific vessel. The increasing sophistication and length of seafarer training and certification requirements is a direct and proportionate response to these risks.

⁴ The Global Maritime Distress and Safety System (GMDSS) is an internationally agreed-upon set of safety procedures, types of equipment, and communication protocols used to increase safety and make it easier to rescue distressed ships, boats and aircraft.

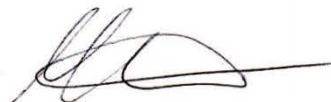
⁵ An Electronic Chart Display and Information System (ECDIS) is a computer-based navigation system that complies with IMO regulations and can be used as an alternative to paper navigation charts.

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36. The increased area of operation is also a factor, with the increasing remoteness of ships from immediate assistance requiring the seafarer to be more resilient and capable of responding to a range of shipboard emergencies independently of outside assistance. This range of scenarios is wide ranging and sophisticated. This is reflected in the higher standards of training and certification evidenced in the STCW Code for international seafarers on matters such as medical training, firefighting, life saving, GMDSS communications systems, navigation, electrical engineering, mechanical engineering and control engineering amongst other things.
37. In my view, these additional requirements separate the international seafarer from the coastal seafarer certified under the DCV. Whilst the skills and experience may appear superficially similar, the international seafarer has vastly superior skills, qualifications and experience across a wide range matters and these matters ought to be reflected in industrial relations arrangements accordingly.
38. I have been provided with a copy of the Seagoing Industry Award 2010, which contains wage rate for classifications which are internally divided into classes based on tonnage (and manning) of seagoing dry cargo and tanker vessels. The lowest class in the award is from 0-19,000 tons. It should be noted that this is an extremely wide class which would encompass a large range of vessels as well as vessel types.
39. It would include a vessel of, say, 400 tons that was used in domestic waters to land equipment or supplies in isolated coastal locations, up to a 19,000-ton petroleum, gas or chemical tankers or similar sized offshore dive support vessels that are engaged in domestic or international trade. The latter types of vessels are infinitely more sophisticated both from a maintenance and operations perspective than the former vessel. Even a general cargo vessel of the upper end of this 0-19,000-ton range would be significantly larger and vastly more sophisticated both from an operations and maintenance perspective than a coastal barge.
40. It is my opinion that it is extremely doubtful, even if legally permitted, that holders of DCV certification could manage a 19,000 ton vessel to Flagstate and International requirements outlined in the vessels ISM procedures. This likely inadequacy would become further apparent on the more sophisticated chemical, gas, offshore construction or dive support vessels which are all within this tonnage bandwidth. These type of vessels in addition to their Flagstate and company specific ISM requirements are required to also comply with additional oil and gas industry guidelines such as SIRE and OVID that are an operating requirement of large Energy Companies such BP, Shell and Exxon.
41. There is a very wide gap between the standard of training and competence required of the two groups, as outlined earlier in the affidavit, which is simply a reflection of the fact that the nature and standard of the work and the responsibility involved in the operations of smaller vessels in a DCV environment is vastly less complex than the operation of the larger vessels at the higher end of that range, which would generally be involved in international or long range domestic trade.

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42. It is my opinion based on my experience of managing large Australian and International maritime companies that an award based on such a large tonnage bandwidth does not give an accurate indication of the technical complexity or specific commercial function of an individual vessel, nor the complexity of the work required of the crew.
43. As a guide, neglecting small gas and chemical tankers (which are extremely sophisticated in their operational needs), domestic vessels up to the 5000 tons could be considered as ships that trade exclusively in Australia waters. General cargo vessels of this nature could generally be adequately managed and operated by Officers with DCV certifications. Although there is no clear line based purely on tonnage, once the size of the vessel exceeds that level, the complexity and size of the vessel and the other factors I have identified render it quite unlikely that a DCV qualified seafarer would be able to operate such a vessel, even if it was legal to do so.
44. As stated, for the most part such larger vessels would in all probability operate internationally, in which case the DCV qualifications would not be able to be applied.

Sworn / Affirmed by the deponent

at (place) Bulimba

on (date) 10/08/2016

Steph

Signature of deponent

Before me:






[Signature]

Signature of witness






Full name of witness: ANTHONY JOHN STANTON








Qualification of witness: SOLICITOR




Deck and Navigation Occupations

Statutory basis	Competency	Duties	Size of Ship	Operational limit	Approved seetime	General/Entry Requirements	AMC course	Length of course	Main syllabus	Example of vessels
NSCV	General Purpose Hand Near Coastal	Assist a master or engineer in any tasks that may be required on board, while working under direct supervision of the person in charge of the vessel or its engines	<80m	<200nm	Nil	>16 years old, self declaration of medical fitness, eyesight test	Shipboard Safety Skills	3 days	Survival at sea	
NSCV	Coxswain Grade 2 NC	Command and operate engines of a vessel <12m, not carrying passengers within 5nm of point of departure. Propulsion not to exceed 100kw unless endorsed for higher	<12m	<200nm	7 days	>16 years old, self declaration of medical fitness, eyesight test, evidence of sea service, first aid certificate	Certificate II in Maritime Operations (Coxswain Grade 1 Near Coastal)	5 weeks	Practical skills of basic coastal navigation and seamanship	
NSCV	Coxswain Grade 1 NC	Command and operate engines of a vessel <12m, carrying passengers within the EEZ. Propulsion not to exceed 500w	<12m	<200nm	30 days	>16 years old, self declaration of medical fitness, eyesight test, evidence of sea service, first aid certificate, Marine Radio Operators VHF Certificate of Proficiency (MROVCP)	Certificate II in Maritime Operations (Coxswain Grade 1 Near Coastal)	5 weeks	Practical skills of basic coastal navigation and seamanship	
NSCV	Master <24m NC	Command a vessel <24m in the EEZ	<24m	<200nm	120 days	>16 years old, self declaration of medical fitness, eyesight test, evidence of sea service, first aid certificate, Marine Radio Operators VHF Certificate of Proficiency (MROVCP)	Certificate III in Maritime Operations (Master up to 24m Near Coastal)	9 weeks	Navigation, passage planning, wheelhouse equipment, watchkeeping, vessel design, regulations	
NSCV	Master (Inland Waters)	Command a vessel <24m in inland waters	<24m	Inland waters only	60 days	>16 years old, self declaration of medical fitness, eyesight test, first aid certificate, evidence of sea service	Certificate III in Maritime Operations (Master up to 24m Near Coastal)	9 weeks	Navigation, passage planning, wheelhouse equipment, watchkeeping, vessel design, regulations	
NSCV	Master <35m NC	Command a vessel <35m in the EEZ, or a vessel <80m long inshore waters, or act as watchkeeper on vessel <80m long in EEZ	<35m	<200nm	180 days	>16 years old, provide certificate of medical fitness for a marine qualification, first aid certificate, eyesight test, evidence of sea service, Marine Radio Operators VHF Certificate of Proficiency (MROVCP), Certificate of Competency Master <24m NC	Certificate IV in Maritime Operations (Master up to 35m Near Coastal)	12 weeks	As above plus: stability, cargo ops, crew management, vessel handling, propulsion and machinery	








NSCV	Mate <80m NC	Be the second in command of a vessel <80m in the EEZ	<80m	<200nm	300 days	>16 years old, provide certificate of medical fitness for a marine qualification, first aid certificate, eyesight test, evidence of sea service, Marine Radio Operators VHF Certificate of Proficiency (MROVCP)	Certificate IV in Maritime Operations (Master up to 35m Near Coastal)	12 weeks	As above plus: stability, cargo ops, crew management, vessel handling, propulsion and machinery	
NSCV	Master <80m NC	Command a commercial vessel <80m in the EEZ. Can be endorsed up to <3000GT in EEZ.	<80m	<200nm	540 days	>16 years old, provide certificate of medical fitness for a marine qualification, eyesight test, first aid certificate, evidence of sea service, Marine Radio Operators VHF Certificate of Proficiency (MROVCP), Certificate of Competency Master <35m NC or Mate <80 NC	Additional sea time			
STCW	GPH/Rating	Act as either a deck or engineering general assistant to the master or engineer under supervision	Any ocean going	Unlimited	Min 4 months to progress from integrated rating trainee		Certificate III in Maritime Operations (Integrated Rating)			
STCW	Master <24m foreign going	Command vessel <24m in any operating area, and act as watchkeeper on ships <500T in EEZ	<24m	Unlimited	24 months sea service as OOW while holding a Master<35m, on ship >12m, voyages >24 hours	STCW approved courses in Basic Safety Training, Medical Care onboard Ships, Hold GMDSS Radio Operator's certificate, and AMSA Certificate of Medical Fitness.	Advanced Diploma/Bachelor of Applied Science (Nautical Science)	2 - 2.5 years	Navigation, seamanship, cargo and passenger transport, marine legislation and shipboard safety and management.	
STCW	Mate <500GT	Second in command of vessel <500GT in any operating area, or master of vessel <500 in NC waters, or watchkeeper on vessel <300GT in NC waters	<500GT	Unlimited	36 months sea service on ships ≥ 12m, of which 24 months as OOW holding at least Master<24 m NC, and 12 months on ships >24m, voyages >24 hours	STCW approved courses in Advanced Fire Fighting, Basic Safety Training, Medical Care onboard Ships, Hold GMDSS Radio Operator's certificate, and AMSA Certificate of Medical Fitness, Proficiency in Survival Craft and Rescue Boats	Advanced Diploma/Bachelor of Applied Science (Nautical Science)	2-2.5 years	Navigation, seamanship, cargo and passenger transport, marine legislation and shipboard safety and management.	
STCW	Watchkeeper <500GT	Act as watchkeeper on vessels <500GT in any operating area	<500GT	Unlimited	GPH/rating, 36 months sea service on ships ≥ 12m of which 12 months on ships >24m, voyages >24 hours including 6 months understudy OOW	STCW approved courses in Advanced Fire Fighting, Basic Safety Training, Medical Care onboard Ships, Hold GMDSS Radio Operator's certificate, and AMSA Certificate of Medical Fitness, Proficiency in Survival Craft and Rescue Boats	Advanced Diploma/Bachelor of Applied Science (Nautical Science)	2-2.5 years	Navigation, seamanship, cargo and passenger transport, marine legislation and shipboard safety and management.	

STCW	Watchkeeper (Separate endorsements for Chemical, Gas and Petroleum Operations)	Act as watchkeeper on any vessel in any operating area. This includes cargo operations for potential hazardous and dangerous substances.	Unlimited	Unlimited	Deck Cadet, Approved pre-sea and on board training, 18 months sea service on ships ≥ 500 GT (Diploma).	Deck Cadet Program. Entry to program requires year 12 certificate with passes in Advanced Maths, Physics and English. STCW approved courses in Advanced Fire Fighting, Basic Safety Training, Medical Care onboard Ships, Hold GMDSS Radio Operator's certificate, and AMSA Certificate of Medical Fitness, Proficiency in Survival Craft and Rescue Boats. Separate cargo based training in Chemicals. Gas and Petroleum.	Advanced Diploma/Bachelor of Applied Science (Nautical Science)	2-2.5 years	Navigation, seamanship, cargo and passenger transport, marine legislation and shipboard safety and management.	 
STCW	Chief Mate <3000GT (Separate endorsements for Chemical, Gas and Petroleum Operations)	Second in command of vessel <3000GT in any operating area, or watchkeeper on any ship in any operating area. This includes cargo operations for potential hazardous and dangerous substances.	<3000GT	Unlimited	12 months as OOW on ships >24 m while holding relevant certificate of competency, voyages > 24 hours	STCW approved courses in Advanced Fire Fighting, Basic Safety Training, Medical Care onboard Ships, Hold GMDSS Radio Operator's certificate, and AMSA Certificate of Medical Fitness, Proficiency in Survival Craft and Rescue Boats. Separate cargo based training in Chemicals. Gas and Petroleum.	Advanced Diploma/Bachelor of Applied Science (Nautical Science)	2-2.5 years	Navigation, seamanship, cargo and passenger transport, marine legislation and shipboard safety and management.	 
STCW	Master <500GT (Separate endorsements for Chemical, Gas and Petroleum Operations)	Command vessel <500GT in any operating area, or act as watchkeeper on any ship in any operating area, or command vessel <3000GT in NC waters. This includes cargo operations for potential hazardous and dangerous substances.	<500GT	Unlimited	36 or 24 months sea service as OOW on ships ≥ 24m, while holding the relevant certificate of competency	STCW approved courses in Advanced Fire Fighting, Basic Safety Training, Medical Care onboard Ships, Hold GMDSS Radio Operator's certificate, and AMSA Certificate of Medical Fitness, Proficiency in Survival Craft and Rescue Boats. Separate cargo based training in Chemicals. Gas and Petroleum.	Advanced Diploma/Bachelor of Applied Science (Nautical Science)	2-2.5 years	Navigation, seamanship, cargo and passenger transport, marine legislation and shipboard safety and management.	
STCW	Chief Mate (Separate endorsements for Chemical, Gas and Petroleum Operations)	Second in command of any ship in any operating area. This includes cargo operations for potential hazardous and dangerous substances.	Unlimited	Unlimited	12 months as OOW on ships >500GT while holding relevant certificate of competency, voyages > 24 hours	Completion of watchkeeper component of course. STCW approved courses in Advanced Fire Fighting, Security Awareness Training, Medical Care onboard Ships, Hold GMDSS Radio Operator's certificate, and AMSA Certificate of Medical Fitness, Proficiency in Survival Craft and Rescue Boats. Separate cargo based training in Chemicals. Gas and Petroleum.	Advanced Diploma/Bachelor of Applied Science (Nautical Science)	2-2.5 years	Navigation, seamanship, cargo and passenger transport, marine legislation and shipboard safety and management.	 

STCW	Master <3000GT (Separate endorsements for Chemical, Gas and Petroleum Operations)	Command vessel <3000GT in any operating area, or act as watchkeeper on any ship in any operating area, or command vessel <3000GT in NC waters. This includes cargo operations for potential hazardous and dangerous substances.	<3000GT	Unlimited	36 or 24 months sea service as OOW on ships ≥ 24m, while holding the relevant certificate of competency	STCW approved courses in Advanced Fire Fighting, Security Awareness Training, Medical Care onboard Ships, Hold GMDSS Radio Operator's certificate, and AMSA Certificate of Medical Fitness, Proficiency in Survival Craft and Rescue Boats. Separate cargo based training in Chemicals, Gas and Petroleum.	Advanced Diploma/Bachelor of Applied Science (Nautical Science)	2-2.5 years	Navigation, seamanship, cargo and passenger transport, marine legislation and shipboard safety and management.	
STCW	Master (Separate endorsements for Chemical, Gas and Petroleum Operations)	Command any ship in any operating area. This includes cargo operations for potential hazardous and dangerous substances.	Unlimited	Unlimited	36 or 24 months sea service as OOW on ships ≥500GT with 6 months ≥1500GT	Completion of Chief Officer component of course. STCW approved courses in Advanced Fire Fighting, Security Awareness Training, Medical Care onboard Ships, Hold GMDSS Radio Operator's certificate, and AMSA Certificate of Medical Fitness, Proficiency in Survival Craft and Rescue Boats. Separate cargo based training in Chemicals, Gas and Petroleum.	Advanced Diploma/Bachelor of Applied Science (Nautical Science)	2-2.5 years	Navigation, seamanship, cargo and passenger transport, marine legislation and shipboard safety and management.	 

Engineering Occupations

	Competency	Duties	Size of Ship	Operational limit	Approved seetime	General/Entry Requirements	AMC course	Length of course	Main syllabus	Example of vessels
NSCV	Marine Engine Driver Grade 3 NC	Act as engineer on vessel with propulsion <500kW within EEZ, or second engineer on vessel with propulsion <750kW, or work in engine room of vessel <80m with propulsion <3000kW	<500kW propulsion	<200nm	20 days on vessels with propulsion > 75kW	>16 years old, self declaration of medical fitness, eyesight test, evidence of sea service, first aid certificate	Certificate II in Maritime Operations (Marine Engine Driver Grade 3 Near Coastal)	3-4 weeks	Introductory marine engineering and electrical	
NSCV	Marine Engine Driver Grade 2 NC	Act as engineer on vessel with propulsion <750kW within EEZ, or second engineer on vessel with propulsion <1500kW, or work in engine room of vessel <80m with propulsion <3000kW	<750kW propulsion	<200nm	180 days on vessels with propulsion >150kW	>16 years old, self declaration of medical fitness, eyesight test, evidence of sea service, first aid certificate	Certificate III in Maritime Operations (Marine Engine Driver-Grade 2 Near Coastal)	4 weeks	Intermediate marine engineering and electrical	
NSCV	Marine Engine Driver Grade 1 NC	Act as engineer on vessel with propulsion <1500kW within EEZ, or second engineer on vessel with propulsion <3000kW, or work in engine room of vessel <80m with propulsion <3000kW	<1500kW propulsion	<200nm	240 days service on vessels with propulsion >375kW	>16 years old, a certificate of medical fitness for a marine qualification, eyesight test, evidence of sea service, first aid certificate	Certificate IV in Maritime Operations (Marine Engine Driver-Grade 1 Near Coastal)	7-13 weeks	Electrical and control systems, marine engineering, propulsion, maths and hydrostatics, engine room management, auxiliary systems	

NSCV	Engineer Class 3 Near Coastal	Act as engineer on vessel with propulsion <3000kW within EEZ, or work in engine room of vessel <80m with propulsion <3000kW	<3000kW	<200nm	180 days on vessels with propulsion >400kW	>16 years old, a certificate of medical fitness for a marine qualification, eyesight test, evidence of sea service, first aid certificate. MED 1 NC certificate of competency.	Diploma of Maritime Operations (Marine Engineering Class 3 Near Coastal)	5 weeks	Consolidation Electrical and control systems, marine engineering, propulsion, maths and hydrostatics, engine room management, auxiliary systems	
STCW	Engine Watchkeeper (steam ship and/or motor ship)	Keep engine watches on vessels of any propulsion in any operating area. (There are separate certificates for vessels dependent on propulsion) This includes cargo operations for potential hazardous and dangerous substances.	Unlimited	Unlimited	Approved Cadet program 36 weeks on vessels with propulsion > 750kW	Engineering Cadet Program. Entry to program requires year 12 certificate with passes in advanced mathematics, Physics and English. STCW approved courses in Advanced Fire Fighting, Basic Safety Training, Medical Care onboard Ships, , AMSA Certificate of Medical Fitness, Eyesight test for colour blindness, and Certificate of Proficiency in Survival Craft and Rescue Boats. Practical engineering workshop training. Practical Electrical and Control Engineering training. Separate cargo based training in Chemicals. Gas and Petroleum.	Bachelor of Applied Science (Marine Engineering)	3 years	University style Engineering degree includes advanced Mathematics, Thermodynamic, Fluid Mechanics, Materials Engineer, Electrical Engineering, Control Engineering, Marine Engineering/Naval Arch, and Management.	 
STCW	Engineer Class 2 (steam ship and/or motor ship)	Second in charge engineer on vessels of any propulsion in any operating area, or Chief Engineer on vessels with propulsion <3000kW in any operating area. (There are separate certificates for vessels dependent on propulsion) This includes cargo operations for potential hazardous and dangerous substances.	Unlimited (<3000kW)	Unlimited	12 months as qualified engineer watchkeeper on vessels with propulsion >750kW	Completion of watchkeeper component of course. STCW approved courses in Advanced Fire Fighting, Basic Safety Training, Medical Care onboard Ships, , AMSA Certificate of Medical Fitness, Eyesight test for colour blindness, and Certificate of Proficiency in Survival Craft and Rescue Boats. Practical engineering workshop training. Practical Electrical and Control Engineering training. Separate cargo based training in Chemicals. Gas and Petroleum.	Bachelor of Applied Science (Marine Engineering)	3 years	University style Engineering degree includes advanced Mathematics, Thermodynamic, Fluid Mechanics, Materials Engineer, Electrical Engineering, Control Engineering, Marine Engineering/Naval Arch, and Management.	 

STCW	Engineer Class 1(steam ship and/or motor ship)	Chief Engineer on ships of any propulsion in any operating area. This includes cargo operations for potential hazardous and dangerous substances.	Unlimited	Unlimited	36 months as qualified engineer watchkeeper on ships with propulsion >750kW, including 12 months at >3000kW	Completion of Class 2 component of course. STCW approved courses in Advanced Fire Fighting, Basic Safety Training, Medical Care onboard Ships, , AMSA Certificate of Medical Fitness, Eyesight test for colour blindness, and Certificate of Proficiency in Survival Craft and Rescue Boats. Practical engineering workshop training. Practical Electrical and Control Engineering training. Separate cargo based training in Chemicals. Gas and Petroleum.	Bachelor of Applied Science (Marine Engineering)	3 years
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University style Engineering degree includes advanced Mathematics, Thermodynamic, Fluid Mechanics, Materials Engineer, Electrical Engineering, Control Engineering, Marine Engineering/Naval Arch, and Management.

