

# INDUSTRY PROFILE

## Maritime



**Water Transport**  
**Water Freight and Water Passenger Transport**

**ANZSIC 4810**  
**ANZSIC 4820**

**Report Prepared July 2022**

# Contents

<b>Overview</b> .....	2
<b>Industry Regulatory / Licencing Bodies</b> .....	3
<b>Opportunities affecting the supply and demand of workforce</b> .....	3
<b>Anticipated supply and demand for skills</b> .....	4
<b>The impact of COVID-19 to the workforce</b> .....	5
<b>Anticipated training needs of industry</b> .....	6
<b>Training challenges/opportunities in the training sector</b> .....	6
<b>Career pathways and graduate outcomes</b> .....	6
<b>References</b> .....	8

## Overview

- The Maritime industry carries 80% of Australia’s imports and exports by value.<sup>1</sup> The industry annual revenue of \$5.76 billion in 2020-21 added \$2.03 billion to the Australian economy.<sup>2</sup>
- There are approximately 66,000 domestic seafarers registered with the Australian Maritime Association (AMSA). Seafarers includes general purpose hands, coxswains, marine engine drivers, marine engineers, marine surveyors, cooks, integrated ratings, deck officers, ship masters, crew, volunteers and marina operations.<sup>3</sup>
- The Maritime sector services international bluewater transport, near coastal fishing/aquaculture, defence/navy, offshore oil and gas industry, scientific services, inland and near coastal water transport, the tourism industry, search and rescue.
- This industry profile for the Maritime sector should be read in conjunction with the industry profile for Ports & Stevedoring.

## Industry Regulatory / Licencing Bodies

- The Australian Maritime Association (AMSA) is the licensing and regulatory body. Previously near coastal was managed by each State and Territory government. The mandatory requirements for certificates are issued under the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1978 (STCW). AMSA has responsibility for certification for all crew members on Australian ships operating under the Navigation Act 2012. AMSA must certify to standards meeting Australia's obligations under STCW.<sup>4</sup>
- Prime Maritime occupations require qualification as a Ship's Master ANZSCO 231213 with prescribed seagoing experience as a ship's Captain. The tiny Australian flagged merchant fleet means training berths have disappeared. Australia is reliant on international vessels and an international maritime workforce.<sup>5</sup> The Australian merchant fleet has shrunk from 100 to 13 ships in three decades.<sup>6 7</sup>

## Opportunities affecting the supply and demand of workforce

- **Mining, oil and gas projects.** WA Oil and Gas sector projects will require more maritime workers. Modelling by the Australian Resources and Energy Group AMMA projected mining activities 2021 to 2026 could boost the State's direct resources workforce to approximately 126,000. AMMA identified that WA has 19 committed projects and another 22 likely to proceed of 47 projects in the Kimberly, Pilbara, Goldfield-Esperance and offshore regions of WA. Workforce shortages may impact the awarding of new projects particularly for projects located in the remote Northwest of WA.<sup>8</sup>
- **Fly In/Fly Out.** Some WA regional ports use Fly In/Fly Out (FIFO) staff rosters. For example Marine Pilots who fly from metropolitan WA, interstate or overseas. The remoteness of the Northwest can be an obstacle for employing permanent maritime workers. Factors include living conditions, amenities, working conditions, the seasonal nature of work and Australian Taxation Law. Employers must decide between the cost of training local entrants or the characteristics of rostering qualified FIFO shift workers. The COVID-19 pandemic is changing this dynamic. Long term effects are to be determined.<sup>9</sup>
- **Australian seetime training placements.** The lack of bluewater Australian flagged merchant vessels that carry training berths means that not enough young people are entering the Maritime sector to achieve the higher level occupations like ANZSCO 231213 Ship's Master.<sup>10</sup>
- **Migration.** Shipping is a global marketplace. Job opportunities for seafarers are international. As the availability of Australian qualified seafarers drops so the demand for overseas trained migrants increases. A Fremantle shipping agent said that most qualified applicants in 2021 were currently from India, China, United Kingdom and The Philippines.<sup>11</sup>
- **Technology.** International technological changes will impact maritime workforce. Particularly port automation. Developments continue in the automation of equipment and systems. For example automatic load and unload, cybersecurity, autonomous vessels, dynamic positioning, E-navigation and digitisation. Equipment developments like surface and underwater autonomous vessels will require specialist operators and maintainers.<sup>12</sup> Systems developments in automatic load and unload will require Data Analysts.
- **Fishing fleet downsize.** There has been a significant reduction in the number of WA fishing vessels with a parallel growth in fishing vessel tonnage. Fleets are smaller but more powerful. Resources are being pooled by companies to achieve quotas determined prior to the season.

This is driving fleet consolidation. For example in the rock lobster fisheries for WA there has been a decrease of 850 boats in 1990 to 200 boats in 2020.<sup>13</sup>

- **Defence veterans.** Identifying the transferability of skills of Defence veterans to the Maritime roles would be well regarded by industry. The WA Government has established a Defence Industry Veterans Employment Scheme (DIVES) scholarship program. The Department of Defence has established a Joint Transition Authority (JTA) to support ADF members and families transition to civilian life. Competition for Maritime Defence personnel will be strong given the global mobility of the workforce and the relatively small Defence footprint in WA<sup>14</sup>

## Anticipated supply and demand for skills

- **Supply and demand for skills in general.** The key to the Maritime skills crisis is the shortage of Ship's Master ANZSCO 231213. The Captain or skipper is the seagoing occupation that traditionally transitions to land-based roles. Ship's Master is an entry to Harbour Master, Deputy Harbour Master, Marine Pilot, Marine Assurance, Marine Superintendent, Cargo Planner, Regulator, Trainers and Marine or Ship's Surveyor. The decline of bluewater Australian flagged merchant ships has cut training berths. This has cut pathways from the sea to land based jobs. Employers must seek skilled migrant workers. Workforce shortages are reflected in the WA Skilled Migration Occupation List (WASMOL) and the Commonwealth Skilled Occupation list. Australian mariners must seek expensive overseas training to gain the required sea time. Many do not return to Australia to work.<sup>15</sup>
- **231213 Ship's Master.** The Ship's Master is the Captain or 'skipper' of the ship. The Master Unlimited or Master 1 is the highest Australian Maritime Safety Authority (AMSA) ticket. The mining, oil and gas industry seek Ship's Masters with 10 years seetime plus specialist tickets above their MAR60220 Advanced Diploma of Maritime Operations (Master Unlimited). The limited training berths creating the acute shortage of Ship's Master naturally creates persistent shortages of the related occupations Dredge Master, Ship's Pilot (Marine Pilot), Tug Master and downstream occupations Harbour Master and Deputy Harbour Master (classified under ANZSCO 139999 Specialist Managers not elsewhere classified) and feeder occupation 231214 Ship's Officer.<sup>16</sup>
- **899211 Deck Hand - known as Integrated Rating in WA.** The Integrated Rating (IR) is the crew level entry into the maritime industry. The Skills Priority List June 2021 lists IR nationally as No Shortage with Moderate future demand. In WA there is an oversupply of Integrated Ratings. The projected growth in the WA Oil and Gas sector is expected to increase the demand for IRs however IRs are easily up-skilled so this is not a WA workforce shortage.<sup>17</sup>
- **231212 Ship's Engineer.** There is an acute shortage of Ship's Engineer and feeder occupations 712911 Boiler or Engine Operator or Marine Engine Driver (MED) caused by the lack of Australian seagoing training berths. The Engineer requires skills to understand the complexity of different engine types to maintain and repair vessels at sea. The larger vessels in the Offshore Oil and Gas sector demand a Ship's Engineer class 1. There are many experienced Ship's Engineers based in WA however the oil and gas specialisations mean that the offshore sector has sourced their workforce elsewhere. Many Ship's Engineers are employed on work visas from countries such as New Zealand. There is a persistent shortage of the downstream occupation 231215 Marine or Ship's Surveyor.<sup>18</sup>
- **312412 Electronic Engineering Technician.** The seagoing Electronic Engineering Technician who reports to the Chief Engineer Officer on the operation of the electrical and electronic systems is known in the crew as the Electro Technical Officer (ETO) or Electrical Engineer. ETO work on vessels with complex systems such as diesel electric propulsion. There is currently no specific qualification that provides Australian Maritime Safety Authority (AMSA) certification for

ETO. AMSA requires an approved course with a 'program of workshop skills training from an approved training organisation for an Electro-technical officer'. The Australian Maritime College in Tasmania is the only AMSA approved ETO course. South Metropolitan TAFE previously undertook the Training for ETO but do not currently offer it on scope.<sup>19</sup>

- **231211 Master Fisher.** The Master Fisher controls a fishing vessel and fishing operations. WA has a surplus of Master Fishers. This is not a growth area in WA with a decrease in the number of vessels.<sup>20</sup> The COVID-19 pandemic and the China trade tensions have created an uncertain economic future for fish exports. For example China accounted for 91% of Australian rock lobster exports in 2019 and 2020. The resumption of rock lobster exports to China is the key uncertainty for forward projections. Alternative markets are being sourced. The market situation is dynamic.<sup>21</sup>
- Oyster farming in the Aquaculture sector may see moderate workforce growth in the Pilbara, Gascoyne, Mid West and South West dependent on COVID-19 effects. These roles will not require Master Fishers nor specific qualifications for engineers nor crew on trawlers. Local talent is preferred. The seasonal demand drives pressure for visa arrangements to provide a temporary workforce.<sup>22</sup>

## The impact of COVID-19 to the workforce

- Australia's health response to the COVID-19 pandemic has been successful relative to comparable countries. This success has an economic cost. The restrictions to control the spread of the virus have disrupted trade. This has impacted the workforce. The economic recovery from the COVID-19 pandemic in Australia continues but future economic conditions are uncertain.<sup>23</sup>
- The Maritime sector trades internationally so needs to be responsive to pandemic changes. COVID-19 has closed borders. This has affected shipping, demand for imports and exports, the use of national and international FIFO workers, seasonal workers, overseas workers and skilled migration. COVID-19 has affected the attraction and availability of work in the WA regions. These factors are dynamic and will continue to change as the pandemic affects world economic circumstances. For example short notice closures of Chinese ports.<sup>24</sup>
- Seafarers move between ports of countries with severe COVID-19 issues. Crew risk personal infection and introduction of COVID-19 to Australia. Employers currently provide workplace COVID-19 health and safety training to interact with ships under the State of Emergency Declarations. Ship's Pilots or Stevedores that engage with vessels require advanced biosecurity training.<sup>25</sup>
- Mining, Oil and Gas exports are vital to the economy of WA and Australia. The long term impact on project tendering is dynamic and yet to be determined. Marine Vessel operators in Offshore Support remain concerned about the impact of closed borders and quarantine on crew. The uncertainty created by short notice lockdowns, possible extension of vessel quarantines and extended time at sea is a particular problem for multi-user ports that operate complex schedules to maximise access in congested channels such as the iron ore and lithium concentrate exports at Port Hedland.<sup>26</sup>
- Closed borders and quarantine periods mean that the Maritime FIFO workforce is unable to travel. Mobilising crew is difficult in a WA Oil and Gas sector with limited access to a local skilled workforce. In some businesses more than 50% of workers are based outside WA. Some Marine Pilots in the regions were offered residential options during the initial lockdown. Employers monitor the Essential Worker List issued on lockdown to see if specialist staff like Marine Pilots can cross borders. For example the Stay at Home Order issued 31 January 21 under the

Emergency Management Act 2005 (WA) for the Perth and Peel classified 'a FIFO worker' and 'port operations' as essential workers.<sup>27</sup>

- AMSA extended all expiring National Law general exemptions to the 30 June 2025 to permit crews to continue to work on domestic commercial vessels.<sup>28</sup>
- The psychological stress of the COVID-19 pandemic is creating discussion on resilience training for workforce mental health. AMSA have released health guidance for seafarers.<sup>29</sup>

## Anticipated training needs of industry

- **Australian Maritime Safety Authority licences.** Maritime crews operating in international waters are regulated by the Australian Maritime Safety Authority (AMSA) which administers the Seafarer's Training, Certification and Watchkeeping Code (STCW 95).<sup>30</sup>
- Marine Crew in the offshore oil and gas industry support vessels, tugs, barges etc are regulated by AMSA, Department of Mines, Industry Regulations and Safety (DMIRS), Department of Transport WA (Commercial Vessel Safety Branch) plus WorkSafe WA for those crew working in Port.<sup>31</sup>
- **231213 Ship's Master.** The MAR60220 Advanced Diploma of Maritime Operations (Master Unlimited) is required to be a Ship's Master. Extensive seagoing experience of 10+ years is required for the role. Historically, Ship's Masters were trained on bluewater international vessels. A lack of Australian flagged vessels has cut training opportunities. Seafarers go to foreign flagged ships with many not returning.<sup>32</sup>
- WA has one of the three nationally recognised AMSA accredited training centres for Master qualifications (South Metropolitan TAFE). The shortage of training berths and high cost has seen a decline in the pathways for upskilling.<sup>33</sup>
- **231212 Ship's Engineer.** The Qualification pathway to achieve Engineer class 1 is prescribed by AMSA based on international regulations. MAR60215 Advanced Diploma of Maritime Operations (Marine Engineering Class 1) is the industry preferred qualification. Continuous seetime is required at each training level.<sup>34</sup>

## Training challenges/opportunities in the training sector

- The State government *Lower fees, local skills* initiative operated from 1 January 2021 through to 31 December 2021 to boost traineeships. For example a Marine Engineer could complete the theoretical training. However many Maritime occupations face a loss of income while training.<sup>35</sup>

## Career pathways and graduate outcomes

- Relevant training options and courses available and subsidised under Jobs and Skills WA are:

### Eligible traineeships

- Marine (Level 2) AUR20616 Certificate II in Marine Mechanical Technology
- Integrated Rating MAR30218 Certificate III in Maritime Operations (Integrated Rating)
- Maritime Operations—Coxswain MAR20318 Certificate II in Maritime Operations (Coxswain Grade 1 Near Coastal)

- Maritime Operations – Marine Engine Driving (Grade 3) MAR20418 Certificate II in Maritime Operations (Marine Engine Driver Grade 3 Near Coastal)
- Maritime Operations – Marine Engine Driving (Grade 2) MAR30818 Certificate III in Maritime Operations (Marine Engine Driver Grade 2 Near Coastal)
- Mobile Crane Operations (Level 3) TLI30118 Certificate III in Mobile Crane Operations

### **Priority Industry Qualifications**

- The MAR50115 Diploma of Maritime Operations (Engineer Watchkeeper) is a transitional qualification on the Priority Industry Qualifications list 2021.<sup>36</sup>
- Companies are increasingly seeking international seafarers to work on their vessels through migration and FIFO due to the lack of opportunities in Australia to achieve the higher end skills and seetime needed in the maritime sector. The level of skills required is increasing with the sophistication of carriers.<sup>37</sup>

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