

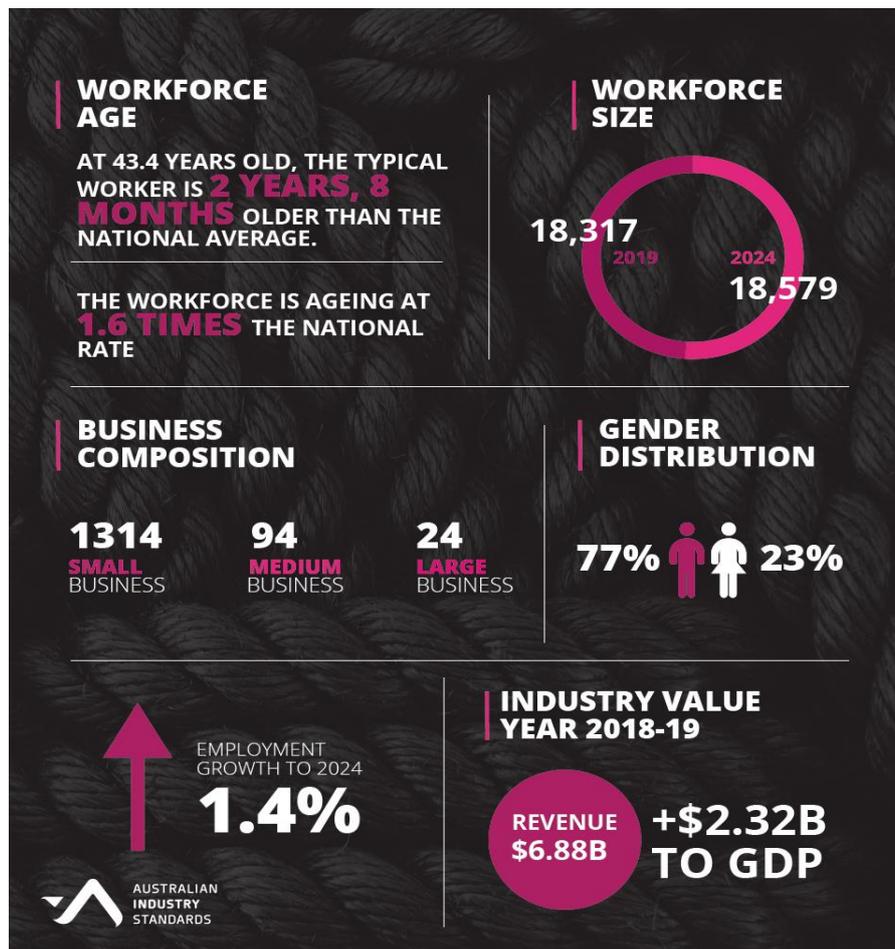
## SUMMARY

The Maritime Industry Reference Committee (IRC) Skills Forecast identifies the priority skill needs of the Maritime industry following research and stakeholder consultation.

The IRC, made up of industry leaders and experts, acts as a conduit between the Maritime industry and the Australian Industry and Skills Committee (AISC). It proposes Training Package development work to ensure that skills standards and qualifications are contemporary, as well as future focused, to meet the skill needs of industry.

## INDUSTRY TRENDS AND OVERVIEW

The Maritime industry has an estimated annual revenue of \$6.88 billion, adding \$2.32 billion to the Australian economy in 2018. Ten per cent of the world's sea trade passes through Australian ports and over 95 per cent of Australian exports are transported by sea. Our coastline is over 60,000 kilometres in length and our search and rescue region covers more than 10 per cent of the Earth's surface.



## INDUSTRY CHALLENGES AND OPPORTUNITIES

The Maritime industry is an intrinsic part of the Australian economy in the provision of import and export of goods, as well as tourism and other valued added activities. The industry employed over 18,000 people in 2018-19 and the employment rate is expected to grow by 1.4 per cent over the next five years.

### NEW TECHNOLOGIES AND AUTOMATION

New technologies are improving operational efficiency and crew safety. Onboard systems are being digitalised, improving ship-to-shore connectivity and optimising voyage fuel efficiency and navigation. Virtual Reality (VR) technology is often used in training new entrants to simulate different weather conditions. The industry is also moving towards the development and deployment of autonomous container ships and vessels. The world's first autonomous and electrical commercial ship is currently under development and is anticipated to be completed by 2020.

### INDUSTRY-SPECIFIC CYBER SECURITY

Cyberattacks are a common risk to many industries including the maritime sector. The unique nature of maritime technologies and innovations such as Big Data and automation generates large amounts of data which can expose the industry to growing cyber security risks. It is therefore imperative to have a tailored cyber security training program to give the workforce the skills and competencies to be able to identify, block or remediate against any malicious cyberattacks.

### DIGITAL LITERACY

Advancements in Artificial Intelligence, computer technology, automation, the Internet of Things, cloud computing, big data, and customer-service platforms are generating a massive volume of data and information, offering a range of benefits such as improved customer service and operational efficiency. Demand for analytical skills, digital literacy, and information management will continue to rise, making digital literacy one of the most significant areas for the new and existing workforce.

### DYNAMIC POSITIONING SKILLS (DP)

An increasing number of new vessels are equipped with DP systems which help to keep vessels at a fixed position and heading by integrating a variety of systems and functions through a computer control system. DP systems use a vessel's sensor data to calculate the steering angle and thrust power to offset the environmental factors and keep the vessel on the desired route and position. It is deemed essential to have a nationally accredited course in Australia for the growing demand for skills in Dynamic Positioning operations.

## MARITIME TOWAGE SKILLS

Towage operations form an integral part of Maritime operations. Towage operation is responsible for assisting a vessel that is damaged or in danger of grounding, sinking, or causing pollution. The Maritime industry has identified a need for safe and appropriate skills to be provided to the towage operators. It is essential to review and update the Maritime Training Package to reflect the recent industry skills requirements.

## OPERATING ENVIRONMENT AND REGULATIONS ARE CHANGING

Stagnation in the growth rate of the Australian mineral and energy commodities sector has had an immediate effect on shipping activity. There is also ongoing decline in numbers of 'blue-water' Australian flagged ships operating within Australia. AMSA's regulations are directly linked to International Marine Orders. As such, new regulatory changes proposed by AMSA for blue water and near-coastal crew members are being developed to improve the overall safety of workers on these vessels. AMSA regulatory requirements are being embedded into the qualifications and Units of Competency to ensure safety competence on vessels at sea.

## ENVIRONMENTAL CONCERNS AT THE HEART OF THE INDUSTRY

There is an increasing worldwide pressure to reduce the environmental effects of CO<sub>2</sub> emissions. The Australian shipping industry is committed to reducing its toxic emission to half by 2050. Alternative fuels such as liquified natural gas (LNG) or methanol and innovations like fuel cells are being used. Remote-operated vessels can further improve efficiencies in fuel consumption and reduce CO<sub>2</sub> emissions.

## AGEING WORKFORCE

Australia's Maritime workforce is one of the oldest in the country, with 49 per cent of workers aged 45 years or older. The ageing workforce appears to be more prominent in the ex-Seafarers working ashore where there tends to be a higher number of older workers and fewer employees under 25 years. In the short to medium term, the ability to successfully attract, train and retain younger workers will be critical in meeting the future skills requirements of the industry.

## SKILLS RELATED INSIGHTS AND OUTLOOK

Over 78 per cent of AIS survey respondents reported experiencing a skills shortage in the last 12 months. The occupations reported as being in shortage were: small vessel (<35m) masters, engineers, marine engine drivers, deckhands, navigation. The Maritime industry employers identified the following reasons for the shortage:

1. Cost/time to achieve the required qualification
2. Ageing workforce / current staff retiring
3. Wages / salaries considered too low
4. Competition from other organisations
5. Geographic location of the vacancy

## **MAR MARITIME TRAINING PACKAGE**

The MAR Maritime Training Package provides the only nationally recognised Vocational Education and Training (VET) qualifications for occupations involved in general purpose hands, coxswains, marine engine drivers, marine engineers, marine surveyors, cooks, integrated ratings, deck officers, ship's masters and marina operations. The MAR Maritime Training Package comprises 26 qualifications, 16 Skill Sets and 199 Units of Competency and associated assessment requirements and covers near coastal and ocean-going maritime operations.

## **TRAINING PACKAGE REVIEW AND DEVELOPMENT – PRIORITY WORK**

\*The following projects were proposed and submitted to Australian Industry and Skills Committee for consideration on 30 April 2019.

### **2019-20 MARITIME OPERATIONS – REVIEW AND DEVELOPMENT**

The General-Purpose Hand project will review and develop the MAR10318 - Certificate I in Maritime Operations (General Purpose Hand Near Coastal) qualification, including existing Units of Competency and up to four new Units of Competency.

### **2019-20 DYNAMIC POSITIONING – DEVELOPMENT**

The project will develop a new Dynamic Positioning Operator Skill Set with four new Units of Competency that enables Deck Officers, Engineer Officers and personnel working towards a Standards of Training, Certification and Watchkeeping (STCW) Certificate of Competency (COC) to be certified as Dynamic Positioning Operators.

### **2019-20 COMPASS ADJUSTER – DEVELOPMENT**

The project will develop a new Compass Adjuster Skill Set to meet Australian Maritime Safety Authority (AMSA) regulatory requirements and incorporate the required skills and knowledge to be a Compass Adjuster to meet Standards of Training, Certification and Watchkeeping (STCW) and associated AMSA Marine Orders.

## 2019-20 MARITIME TOWAGE – DEVELOPMENT

The project will develop a new Maritime Towing Skill Set and two new Units of Competency. The project outcomes will enable seafarers to attain the required skills and knowledge to safely tow other vessels under routine and emergency conditions. It will also incorporate environmental planning considerations, risk management procedures and safe maritime towing practices to ensure AMSA regulatory compliance.

The full Maritime IRC Skills Forecast can be accessed at:  
<https://www.australianindustrystandards.org.au/industry-reference-committee-irc-skills-forecasts-2019/>

## AUSTRALIAN INDUSTRY STANDARDS

Australian Industry Standards (AIS) is a Government appointed Skills Service Organisation (SSO) that partners with industry to shape the workforce of the future through the development of skills standards.

We work under the direction of Industry Reference Committees that represent the following sectors: aviation, transport and logistics, maritime, energy, water and utilities, public safety, police, fire, defence and corrections. Together, these industries keep Australia productive, powered and secure.

AIS supports IRCs through industry engagement, research and analysis to prioritise the skill needs of their industry. We help to develop contemporary, future focused and world class qualifications for the workforce, create career pathways, and support industry growth and productivity.

## CONTACT US



[instagram.com/ausindstds](https://www.instagram.com/ausindstds)



[twitter.com/AusIndStdS](https://twitter.com/AusIndStdS)



[www.linkedin.com/company/australian-industry-standards/](https://www.linkedin.com/company/australian-industry-standards/)

[www.australianindustrystandards.org.au](http://www.australianindustrystandards.org.au)

[enquiries@australianindustrystandards.org.au](mailto:enquiries@australianindustrystandards.org.au)