

MARINE



With Australia's huge coastline, it's no wonder that boating is one of our fastest growing sectors, with more and more recreational and weekend watercraft being built, sold, maintained and enjoyed!

Would you like to design and build motor cruisers, powerboats, ski boats, or runabouts? What about fitting out or maintaining catamarans, yachts, fishing boats, military vessels, ocean-going ferries or even maxi yachts?

You could work in fibreglass and other hi-tech composites on anything from luxury cruisers to kayaks and canoes. Skills in steel and aluminium fabrication could see you building coastal patrol boats or ships. You could also make interior furnishings, electronic systems, deck fittings and a huge variety of components from propellers to boat trailers.

This rapidly growing industry offers a large variety of options, so a career in the Boating Industry would be a great choice. And whatever career you choose, the skills you learn could see you travelling and working all over the world.



Adam Power

"I enjoy seeing the finished product after I've repaired something. I enjoy using the skills that I've learnt. Also I can take those skills home with me, and work on my own car and make my own furniture.

I've noticed when applying for shipwright jobs overseas, everyone seems to want to have Australian shipwrights working for them. Generally our training in Australia is well above training in other parts of the world. I've just recently accepted a job offer in Bermuda..."

Shipwright @ Clontarf Marina



...For the complete case study and other fascinating stories, order your free copy of zooM3, the comprehensive interactive Careers in Boating CD-ROM.

Call MSA on 1800 358 458 or go to www.zoom3.aigroup.asn.au



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MARINE
**MARINE
ENGINEERING**



A career as a Marine Engineer is challenging. You will have responsibility for the installation, operation and maintenance of machinery and equipment on a large variety of ships. You could be involved in designing, testing and improving machinery and equipment, often working at sea.

As a Marine Engineer, you might work in the engine room of a cargo ship, on a drilling vessel, a tug, passenger ship or even an oil tanker. You'll learn everything there is to know about diesel, steam and gas turbine engines.

Your job will be to make sure that the main engines and associated machinery are operating efficiently. You'll carry out regular maintenance of the main engine and auxiliary equipment and supervise major maintenance work while the ship is in port.



Australia's high-speed catamarans are world-renowned and:

- are lighter, faster and more economical than conventional craft
- can be built for passenger transportation and military applications
- have been built for ferry and cruise ship operators around the world, the US Navy and the US Army.
- range from 30 to 110 metres in length
- can carry up to 900 passengers and 240 cars

**BIG
CATS**

If you like large vessels, and the idea of working on the monster engines and systems that power them, then Marine Engineering could be for you.

Relevant qualifications that could lead to a job in this area are to be found in the Metal and Engineering Training Package ([see the Qualifications InfoSheet](#)).



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SHIP BUILDING

Australia has an excellent reputation in constructing fast aluminium ferries and catamarans for passengers and vehicles, as well as military uses. We also construct naval vessels, like Huon class mine hunters and the Collins class submarines.

Our Ship Building industry supplies some niche export markets with our innovative designs. Clients from all over the world demand high standards of quality and cost competitiveness, which is achieved through our advanced and efficient manufacturing processes.

However, the majority of shipbuilding in Australia is for the defence forces and includes the repair and maintenance of ships as well as manufacturing the many components that make up a modern warship.



Commercial shipbuilding in Australia is worth around \$400 million each year, 80 per cent of which is for export.

The defence shipbuilding industry is worth more than \$1 billion annually and the yearly expenditure on the repair and refit of naval ships, submarines and equipment is around \$250 million.

BIG SHIPS

As a Ship Builder, you will learn about a whole range of materials including metal, wood, aluminium, fibreglass and other composites, plastic and ferro cement. If you love ships, this could be a very exciting and challenging career for you!

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BOAT BUILDING

If you choose a career as a Boat Builder, you could build boats for the recreation and leisure market including runabouts, kayaks and canoes, catamarans, yachts and ski boats. Using the latest computer software and advanced composites and polymers, you could even design and construct luxury cruisers, powerboats or maxi yachts.

You may also like to work on commercial charter vessels, fishing boats, military or police vessels, yachts, cruisers, ferries, patrol craft and even maxi-yachts.

You will study plans and specifications, fabricate hulls and install structures, such as cabins, masts, decking, propeller supports and rudders.

Australia's Boating Industry is expanding rapidly – everyone, it seems, wants to be on the water! With Boat Building skills under your belt, you'll be in high demand.



There are over half a million registered, privately-owned motor vessels in Australia. Around 70% of boats manufactured in Australia are now built in South East Queensland generating more than 7000 jobs.

Riviera Boats on the Gold Coast is the largest boatbuilding facility in the Southern Hemisphere and builds 400 luxury boats each year. They employ over 1,200 skilled craftspeople and even have their own in house apprenticeship training programmes for 200 employees.

BIG BUSINESS

Over time, you will enjoy the rewards of seeing finished boats that you built with your own hands.

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FITOUT & REFIT

Once the hull of a boat has been built, it is finished by the Fitout crew. Working with a variety of materials and construction techniques, you will construct, assemble and install the interior and above-deck components needed before a boat can be taken out on the water.

You could also work in Refit, where boats are brought in for internal refurbishments, maintenance or improvements. Refitting boats includes jobs like overhauling, detailing, polishing, engine and transmission maintenance - and even boat plumbing and electrics.

You will learn to work with materials such as fibreglass, timber and composites. Using a variety of tools and machinery, you'll work in timber joinery, surface finishing and dressing.



Brisbane Marine Industry Park operates on 40 hectares of land on the Brisbane River and is made up of 30+ boat manufacturing and servicing businesses.

The Park includes Brisbane Shiplifts and Boatyards, capable of lifting vessels to 330 tonnes, and also Furniture Manufacturing Company of Australia, Australia's largest super yacht interior manufacturer and fit out specialists.

BUILD & REBUILD

If you love boats, and like practical, 'hands on' work and seeing the results in a finished product, then this could be an exciting career path for you.

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MARINE MARINE ELECTRONICS



These days, boats and ships largely depend on electronics to help them navigate, communicate and gather information. Many vessels rely on radar, sat nav and depth sounders. Working ships use fish finders or geolocators. Luxury motor cruisers require air conditioning, stereos, speakers, satellite radio, televisions and even Dolby surround sound systems.

While many of these products are imported from overseas, there are still some local manufacturers developing products for our expanding Boating Industry. You could combine your knowledge of boat owners' needs with your engineering expertise to develop a whole range of innovative products.

We all know water and electricity do not mix! So manufactured marine electronic products also need to undergo stringent testing to ensure they can provide years of



GME is a 50 year old, privately owned Australian company which designs and manufactures state of the art electronic communications devices.

GME's range of products includes...

- GPS (global positioning systems)
- EPIRBS (Emergency Position Indicating Radio Beacons)
- Television signal and processing equipment
- Radio transceivers and marine stereos
- Satellite navigation systems;
- and even fish finders.

GONE FISHING

trouble free service in the harsh marine environment. Alternatively, there is always a demand for people to install, repair and maintain electronics on a whole range of boats. If you love the water and electronics, then this could be a great career to get into.

Relevant qualifications that could lead to a job in this area are to be found in the Metal and Engineering Training Package ([see the Qualifications InfoSheet](#)).

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COMPONENT MANUFACTURE

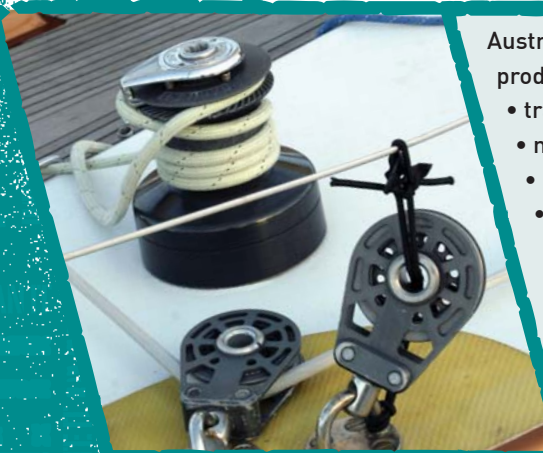


A vital part of the Boating Industry is the manufacture of the many different components that are used on and around boats, such as engine parts, anchors, propellers, winches, ropes, rigging, navigation lights and electronics.

You could work for one of the many thriving companies that supply these parts and develop skills in plastics, metals or electronics.

Specialise in making a growing number of marine components and you could develop a great career path, and perhaps even invent a new product altogether.

Although the marine environment presents particular challenges, such as corrosion of metals and the abrasiveness of the weather, the diverse skill sets you develop in



Australia's marine component manufacturers produce...

- trailers and liferafts
- masts, booms and rigging
- bridge chairs, bimini tops and awnings
- autopilots and steering systems
- propellers, anchors, windlasses and capstans;
- and of course fridges and bbqs.

So you can slip your boat into the water, set sail, sit in the shade, let the boat steer itself, then drop anchor and have a barbie...

THE COMPLETE PACKAGE

marine component manufacturing are still transferable into many other industries, like automotive, aerospace or general manufacturing.

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SLIPWAY REPAIR

Slipways and repair shops provide great opportunities to work outdoors by the water while maintaining and repairing a wide range of boats.

The variety of jobs is huge. You could become a Shipwright, who maintains and services the boats. You could use your Welding or Boilermaking skills to make metal repairs, or work as a Maintenance Engineer repairing and servicing engines.

You could be slipping boats and making repairs to boats while they're out of the water - or you could work on boats while they're at their wet berths or moorings.

If you have a practical approach and like fixing things, then a career in Slipways or Repairs may be for you.



Boating repairs can be dirty. The Marina Hindmarsh Island in South Australia is the first marina to install a purpose built waste station to handle oils and other noxious pollutants that are created through boating.

The island has been set up as a real estate development for boat lovers, including land allotments with jetties!

Like many of Australia's marinas, Hindmarsh Island offers a lifestyle that is hard to beat by world standards, and would be one of many great places to live and work in Slipway Repairs.

CLEAN SLIPWAYS

The skills you learn are transferable into other industries and will be welcome in slipways all around the world!

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SAILMAKING

With our abundant natural harbours and bays – and pleasant climate – it is little wonder sailing is so popular in Australia. The science of performance sailmaking, and advances in fibres and lamination, allows sailboats and yachts to sail with more speed and control than ever before.

Sailmakers use the latest 3D sail design and production software to create everything from cruising sails and awnings to sophisticated mould shapes and panel layouts for high performance sails.

You'll learn about 3D computer modelling and the structural properties of sailcloth materials. You'll work with optimal dimensions and shapes of sails for different boats under different conditions. You'll understand and use different production processes for making stronger, lighter and better performing sails.



Materials used in Sailmaking have improved with advances in technology - consider:

- 1950 - Dacron
- 1972 - Kevlar
- 1977 - Mylar
- 1983 - Spectra
- 1995 - Vektron
- and now - carbon fibre

The Australian built super maxi Alfa Romeo uses carbon fibre for its working sails, as well as in the hull, mast and boom.

BLOWN AWAY

If you love sailing, you could work in a Sailmaker's loft, consulting with champion sailors from around the world and creating sails with optimal shape, precise construction and fantastic performance.

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