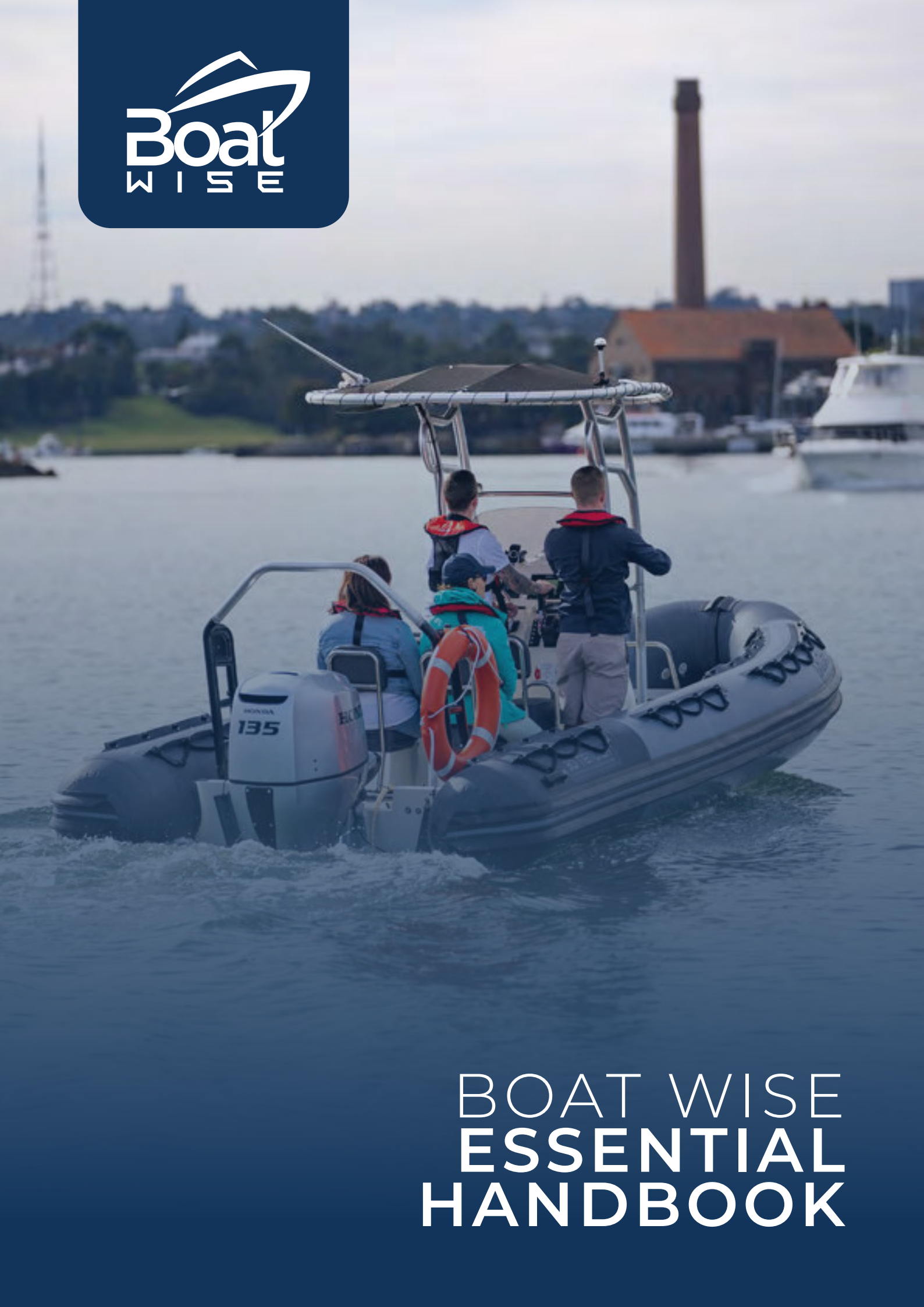

BOAT WISE
ESSENTIAL HANDBOOK

WELCOME

Welcome aboard the Essential Boat Wise Guide.

Whether you're new to the waves or have an old sailor's soul, this guide aims to make your time on the water both enjoyable and safe. From the nitty-gritty of vessel parts to the wisdom of navigating waterways, it's a one-stop shop for all your boating needs.

So, get ready to become **Boat Wise** - where the journey is as fantastic as the destination.

Note and Disclaimer:

While all care has been taken to ensure the content in this guide is accurate at the time of publishing, it aligns with the boating regulations of New South Wales as a reference point.

However, this book comes without warranties, either explicit or implicit, regarding the completeness or accuracy of its contents. Always double-check with official state government sources for the most up-to-date information.

Boat Wise Sydney Pty Ltd

COMMON TERMS

Port Side	The left hand side of a vessel when looking forward
Starboard Side	The right hand side of a vessel when looking forward
Bow	The forward end of a vessel
Stern	The ‘aft’ (rear) end of a vessel
Transom	The stern cross section of a square sterned boat
Hull	The structural body of a vessel
Propeller	A rotating device with blades that pushes the boat through the water.
Rudder	A movable vertical surface at the stern of a boat that is used to steer it.
Keel	The bottom of the vessels hull structure located along the centre line
Chine	The intersection of the bottom and sides of a flat or v-bottomed boat
Gunwale	The upper edge of a boats sides
Freeboard	The minimum distance at any point around the vessel from the water line to the gunwale or transom e.g. outboard motor cut-out
Draft	The depth of the vessel below the water line, measured vertically to the lowest part of the hull, propeller, or other reference point
Cleat	A fitting having two arms or horns around which ropes may be made fast
Helm	The wheel or tiller controlling the rudder or outboard motor
Nautical Mile	1 nautical mile is an international measurement of distance at sea level (1.8 km/h)
Knot	A measure of speed equalling 1 nautical mile per hour
Wash	Is the disturbance of the water resulting from a boat or jet ski moving through the water at high speeds

CONTENTS

Section 1: Rules, Regulations & Safety Equipment

Section 2: Becoming Boat Wise (Practical Skills)

CONTENTS

Section 3: Weather, Charts & Navigation

Section 4: Vessel Lights, Signals & Day Shapes

SECTION 1

RULES, REGULATIONS & SAFETY EQUIPMENT

Section 1 Rules, Regulations & Safety Equipment

1.1 Powers of Authorised Officers and Shipping Inspectors

Various state bodies are on duty, acting as guardians of our waterways. This includes Maritime Boating Safety Officers, Water Police, DPI, Marine Parks, National Parks and Wildlife rangers, customs, authorised council inspectors, and Authorised Harbour Masters. They're the law on the waves, overseeing water traffic and fisheries regulations.

On the high seas, Boating Safety Officers play a vital role:

- They navigate the choppy waters of marine Acts and Regulations for all navigable territories.
- They're environmental stewards, enforcing EPA standards.
- If an oil spill or pollution emergency rears its head, they're on it.

While you're cruising along, one of these authorities may pull up alongside. They're there to ensure you're shipshape according to the law. Stay legal, and you'll enjoy calm waters. Expect to show:

- Safety gear
- Registration
- Licence

Fig 1: *New South Wales Water Police vessel.*

The Water Police, DPI, and Boating Safety Officers have the authority to board your vessel. They'll ensure you're not overpacked, check that the number of passengers is in line with the rules, and enforce local water-skiing or noise reduction laws.

In addition, Fisheries inspectors may inspect your catch. Have the current fish size and bag limit pamphlets at the ready. You can reel them in from your local Fisheries office or their website.

Now you're in the know about the powers that be on the water. Ready to dive deeper? Let's plunge into the next section!

Drugs

In NSW, don't even think about taking the wheel of a vessel if you've had one too many or are under the spell of mind-bending drugs. The rules are clear: blood alcohol must be under .05, and if you're under 18, it's a straight zero – .00. Break this rule, and you're in choppy waters with the law.

1.2 A Master's Duty of Care

If you're the Master or Owner of a recreational vessel, the Marine legislation has your name written all over it. You're the captain of safety, equipment, and the care of your passengers and other vessels. It's a big hat to wear, and here's what's under the brim:

There are four big areas you've got to cover in your Duty of Care:

- Make sure the ship's safe as houses.
- Ensure it's properly equipped – no cutting corners.
- The crew has to know their stuff.
- Run the ship right, like a well-oiled machine.

Imagine heading to sea without a way to call for help. If something breaks down, it's on you to have a backup plan for signalling or

communication. Consider the place, the weather, the sea - even if the rules don't say you must.

The Act lays it down plain and simple: don't operate a vessel unless it's fit for the journey. Seaworthy, well-equipped, and manned by the right crew. Say, you lend your boat at night, and the lights are dead, leading to an accident? You could be held partly responsible. The vessel wasn't fit for a night journey.

State maritime authorities are like the lighthouses of law. They'll keep you informed and up to date, always working on better, more effective rules. As a Master or Owner, it's your job to keep a weather eye on changes.
All new vessels come with an Australian Builders Plate, laying out the essentials:

- Maximum horsepower
- Carry capacity
- Buoyancy type

And don't get crafty with modifications. If you mess with the design, you might upset the boat's flotation or other vital bits for safe sailing.

1.3 Pollution and Noise Abatement Regulations

Ahoy, eco-sailors! Let's talk trash - literally.
Rubbish: Tossing your rubbish into the water is like throwing your reputation overboard. The Environment Protection Act takes a dim view of it, and so should you. Plastic bags, fishing lines, drink cans? Keep them on board, mate. And when you're refuelling, don't let a drop escape into the water. It's not rocket science, just good manners.

And what about **sewerage discharge?** Listen up. Letting treated or untreated stuff go into the water in many places is an indictable offence. Pay attention to distances from shore, and don't become a sewage villain.

You've also got to steer clear of:

- Hurting or bothering wildlife
- The effects of detergent and anti-foul coatings
- Safety with fuel and carbon monoxide
- Messing with seagrasses, aquatic weeds & biosecurity

And then there's noise. Ever had a jet ski ruin your peaceful bay moment? The marine authorities are on it with nuisance laws. They're here to keep Australia's waters as lovely as a sunset over the harbour. Check out local websites like:

- QLD: www.derm.qld.gov.au
- NSW: www.maritime.nsw.gov.au
- VIC: www.transportsafety.vic.gov.au

And don't forget to eyeball the local signs and council by-laws. They might have their own rules to follow.

1.4 Boating Accidents

Accidents on the water? Hopefully not, but if you do find yourself in a splashy pickle, here's what you've got to do:

- Stop! Don't just sail away. Lend a hand where you can.
- Injury? Death? Damage over $5000? Report it, and make it snappy. You've got 24 hours to ring up the NSW Maritime Authority or the Police.

Incident Management

Embarking on maritime adventures comes with responsibilities. Knowing how to act in the event of an incident is a cornerstone of becoming Boat Wise.

Immediate Actions

- Cease Navigation: Halt your vessel immediately.
- Offer Assistance: Provide any necessary help to those involved.
- Evaluate the Situation: Injury? Death? Damage over $5,000?
- Reporting: You have 24 hours to contact the NSW Maritime Authority or the Police. Make it snappy.

I have read the contents of this page ☐

Reporting Protocols

Should Transport for NSW or police officials arrive on the scene, be prepared to present:

- Full identification, including name and address.
- Details of the incident: time, place, and what transpired.
- Vessel identification: name, registration, or permit number.
- Names and addresses of all those involved, including witnesses.
- An account of any injuries or damage sustained.
- All required boat or PWC licences or certificates of competency.

Be prepared, responsible, and know what to do when things don't go to plan. That's what it takes to be a true Boat Wise captain.

1.5 New South Wales License & Vessel

Registration Regulations

Ready to set sail? Hang on, skipper! Before you make waves, let's lay down the rules of the water.

Who Needs a Licence to Drive?

- Any powered vessel going 10 knots or more (that's 18k/hr, speedster!).
- Riding a personal watercraft (PWC) at any speed? You need a PWC licence.

Fig 2: *Example of New South Wales Boat Drivers Licence.*

When Can You Get a General Power Boat Licence?

- Aged 12 or over? You're good to go.
- Under 16? Here's what you need to know:
  - Must be with someone over 16 when going 10 knots or more.
  - Never exceed 20 knots.
  - After sunset and before sunrise? No going over 10 knots.
  - Towing a skier/tuber/wakeboarder? Keep it under 10 knots.
  - Operating a PWC over 10 knots? Must have a PWC licence, and be with a licensed operator 16 or older.

Is the Licence Forever?

Nope. Choose from 12 months, three, five, or ten years. Time flies when you're having fun!

Should You Carry Your Licence Onboard?

Yep, when zooming at 10 knots or more. Don't leave port without it!

Are There Vessel Carrying Capacities?

You bet. Safety labels should be shouting out loud and clear near you on powered vessels.

What Vessels Need Registration in NSW?

- Commercial vessels, power-driven ones with more than 5hp, sailing vessels over 5.5 metres.
- Got a mooring licence, permissive occupancy, or a PWC? Register it!
- More exemptions?
  Visit [www.maritime.nsw.gov.au.](http://www.maritime.nsw.gov.au)

Where to Show Off Registration Numbers on a Power Boat?

- Make 'em big, make 'em bold. At least 150mm high on each side if you're powered.
- Sailing? On the transom or both sides of the hull by the stern. Multi-hull? Outer faces, please.
- And don't play hide and seek with the numbers; they must be clear from 60m away, and in contrasting colours.

Fig 3: *Example of boat registration displayed on a power boat.*

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1.6 Safety Equipment Descriptions

All Masters have a responsibility to carry the right safety equipment, and to know how to use it. Regulations specify mandatory equipment to carry, which varies depending on the type of water being travelled.

Life jackets & Personal Flotation Devices (PFDs):

- Coastal Type 1 Type 2 Type 3
- PFDs come in different sizes – small/medium/large
- Appropriate fitting PFDs are required for all persons
- PFDs must have the required Australian Standard stamp. The current standard is AS4758.
- PFD1s are designed to keep the head above water
- PFDs 2 and 3 are more suitable for skiing and water sports as there is less risk of neck injury
- All occupants must wear a PFD1 or life jacket when crossing a coastal bar.

Distress Signals:

- Red hand-held flare: is visible up to ten nautical miles on a clear night at sea level
- Orange smoke flare: is visible up to two nautical miles during daylight in good conditions at sea level.

You must carry 2 of each kind. Everyone on board should be able to find and ignite the correct flare, even in total darkness. Keep flares in an accessible, sealed and waterproof container.

Signalling Devices:

- Waving a torch or cyalume sticks at night is very effective
- Slowly and repeatedly raise and lower arms outstretched to each side
- Simplest signalling devices: whistle, or waving your arms
- If you've broken down: shout, whistle and wave your arms within 100 metres
- V-SHEET: More visible than a person waving arms for distances 100-1000 metres.

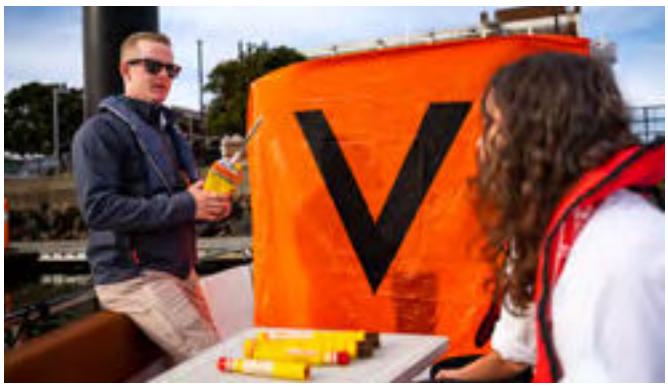

Fig 4: *Display of a V-Sheet on a vessel.*

EPIRBs – 406MHz (Emergency Position Indicating Radio Beacon):

- Use as a last resort
- Switch it on and attach it to your life jacket
- AS/NZS 4280.1 requires EPIRBS to transmit minimum 48 hrs and float in an upright position
- Register with AMSA at www.amsa.gov.au
- PLBs do not satisfy the vessel's EPIRB carriage requirements as their Standard requires them to only transmit for minimum 24 hours, and they don't have to float upright.

Fire Extinguishers:

- All mechanically powered vessels should carry at least one
- Service as required in accordance with the servicing plate that is attached

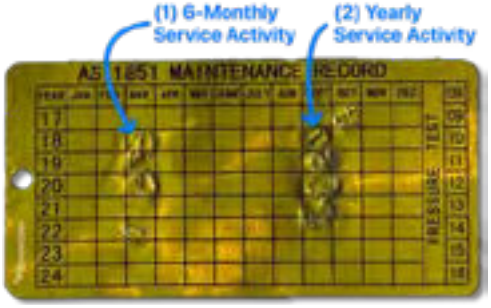

Fig 5: *Example of how a servicing plate should be marked*

Lifebuoy:

- Larger vessels should carry one or more, stowed so as to be immediately deployable

Oars And Paddles:

- Smaller craft should carry a set
- Enables another form of propulsion in case of engine failure

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Fig 6: *Collection of safety equipment for a boat.*

Important Points to Remember about Safety Equipment:

- Must be readily accessible
- Be stowed so as not to adversely affect the vessel's stability
- Should be stored in accordance with manufacturer's recommendations, used appropriately
- Must be in good condition and serviced as required
- Where applicable, must be approved under an Australian Standard
- A Master may choose to carry more than the legal minimum
- Expired equipment (e.g. flares & EPIRBS) deems the vessel inappropriately equipped.

New South Wales Safety Equipment Requirements

Definitions of required safety equipment rely on understanding the categories of water types applicable in New South Wales. There are 2 types of water:

Enclosed waters:

- Rivers, creeks, streams, lakes, waters within breakwaters

Open waters:

- All areas beyond Enclosed waters

Feeling adventurous? Carry a mobile phone, too! It's an auxiliary form of voice communication. A call to a mate could save the day!

New law proposal: The operator of a vessel shorter than 4.8 metres must wear a 'kill switch' (an automatic engine cut-off device) if it's fitted to the vessel and the engine is on and in gear. It's like an emergency brake for your boat.

NSW Compulsory Wearing of Life Jackets

Life Jacket Wearing is a must!
You've gotta wear one:

Fig 7: *Example of Level 100 Life jacket*

- Crossing a coastal bar, open ocean or at times of heightened risk - a Level 100 Life Jacket or above

Fig 8: *Example of Level 50S Life jacket*

- If you're under 12 in a vessel less than 4.8m, and in open areas of a vessel less than 8 metres underway - Level 50S or above
- In a vessel less than 4.8 metres at night; boating alone; in open or alpine waters - Level 50S or above
- If you're wearing waders on alpine waters - Level 50S or above
- When being towed by a vessel - Level 50S or above

Life jackets: They must be suitable for you, in good nick, accessible, and inflatable units serviced like a car according to the manufacturer's instructions.

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Got a bigger boat? Additional bilge pumps and fire extinguishers might be needed. It's like having an extra life in a video game!

Life jackets are exposed to heat, sun and salt, which means they damage easily. Look after your life jackets by:

- Rinsing off salt with fresh water and checking for damage after use
- Storing life jackets in a dry, well-ventilated area out of sunlight
- Not using your life jackets as cushions or fenders (bumpers)
- Keeping life jackets away from oil and fuel
- Removing new life jackets from their plastic wrapping before storing.

1.7 Marine Radio

Marine radios? They're not just for show. They're a lifeline when you're out on the water. Here's the lowdown:

Marine radios are your go-to for boat safety. They let you make distress calls, get the latest weather, and chat ship-to-ship and ship-to-shore. The volunteer marine rescue folks lean on them hard. Unlike your mobile, marine radios broadcast to everyone around. So if you're in a pickle, a nearby boat might hear your call and come assist.

Three types of Marine Radios (monitored by Volunteer Marine Rescue Groups):

VHF

- Everyone's getting these installed
- Need a special certificate to use them
- Fines if you're caught using it without a certificate

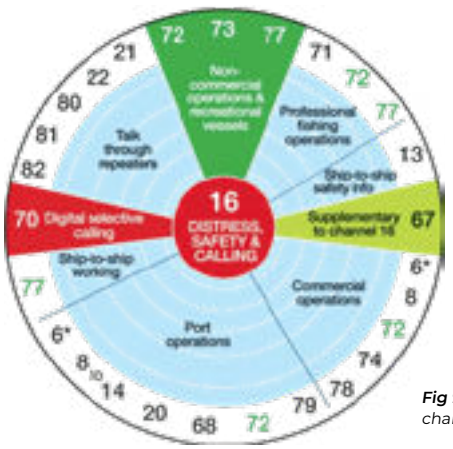

Fig 9: *Marine Radio channel numbers*

27 MHz

- No special certificate needed
- Range isn't as great as VHF
- Volunteer Marine Rescue groups are listening

HF

- Good for long-haul travelling
- Needs a certificate too
- Hefty fines for non-licensed operation

Example of a typical logon call when reception is clear:

Using channel 16 for VHF radio, channel 88 (depending on location) for 27MHz radio:

Boat Captain: "Marine Rescue Sydney, Marine Rescue Sydney, this is Boat Wise, Boat Wise, Over"

Marine Rescue Sydney: "Boat Wise, Boat Wise, this is Marine Rescue Sydney Over"

Boat Captain: "Good Morning Sydney; just want to log in for the day. We are a 5-metre aluminium boat with 3 adults on board, departing from Gladesville Bridge Marina and heading to the Heads. We plan to be back at Gladesville Bridge Marina at about 4.30pm. Could you put us on the log, please? Over"

Marine Rescue Sydney: "Romeo to that Boat Wise. We have you on the log. Have a nice day and remember to log off when you return, or call us to extend if you are staying out later. Over."

Boat Captain: "Thanks very much Sydney. Boat Wise out"

Distress calls

Use 'Mayday' if the boat is in grave danger. Use 'Pan Pan' in other serious situations, such as a person overboard. For weather and navigational warnings, use the 'Securite' signal.

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Emergency Procedures:

In an emergency, communicate the following to rescuers:

- Vessel position and name
- Nature of emergency
- Number of persons on board
- Assistance required
- Any other relevant information

And don't forget to say when it's all clear. Want a VHF or HF Operator Certificate? Just ask us!

Fig 10: *Marine Radio is use by a skipper.*

1.8 Overview - International Regulations for the Prevention of Collision at Sea

Let's talk about something important on the water – the rules of the road, so to speak. The International Regulations for Preventing Collisions at Sea aren't just for big ships; they apply to us all. You can grab a copy from most chandlers or any good boat bookshop.

In this course, we're focusing on the rules that apply to recreational boating. Most accidents can be avoided with care, courtesy, and common sense. It's all about keeping a proper lookout, going at a safe speed, and knowing what to do if things look like they might get a bit dicey.

The Master, that's you if you're in charge of the boat, needs to be aware of everything going on, especially when the weather's rough or it's hard to see. But hey, passengers aren't off the hook. If you're on a recreational boat, keeping an eye out and letting the Master know if something's up is part of the game.

And don't forget about what's happening on your boat. Moving passengers and shifting equipment can affect how your boat handles. Keep an eye on it.

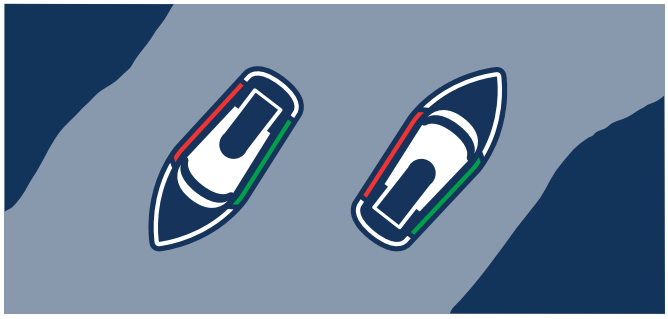
Stick to these rules, and everyone's day on the water will be safer and more fun.

1.9 Steering and Sailing Rules

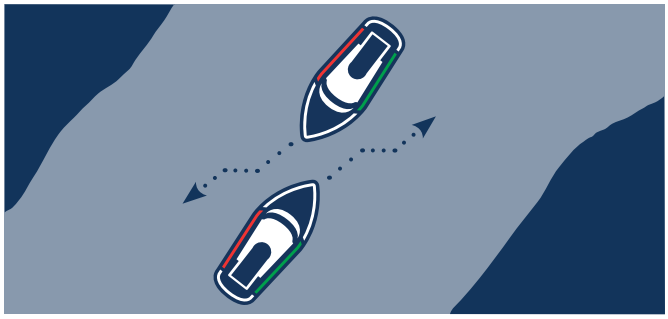
When you're at sea, you gotta follow the "Rules of the Road at Sea." Doesn't matter if you're on a boat or a PWC. These rules keep things in line, telling you all about passing, approaching, giving way, and overtaking, so you don't crash into other folks.
Keep a Proper Lookout Keep your eyes peeled and your ears open constantly. Nighttime's a bit trickier, so watch out for those unlit dangers.

Questions and Answers

Q: On which side should you travel down a channel or river?
A: Navigate on the starboard side (the right side) of a river or channel.



Q: Another vessel is approaching head-on. What action should you take?
A: Both vessels should alter their course to starboard (right)



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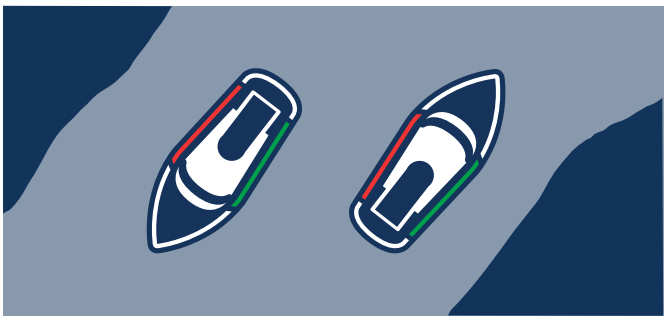
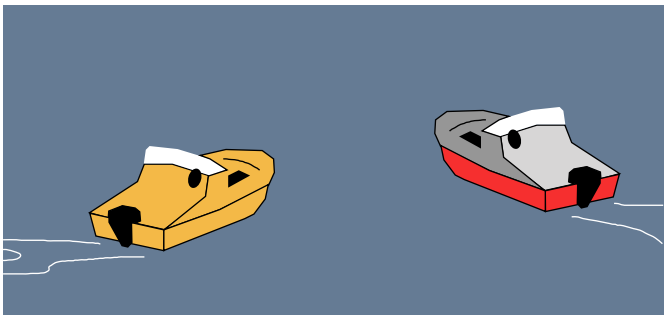
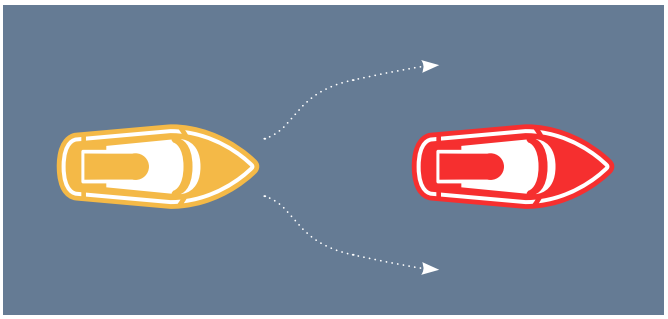
Q: A power boat is approaching your power boat from the port side. What action should you take?
A: The boat approaching from the starboard (right) has the right of way. However, if the other boat does not give way, you must take action to avoid a collision.



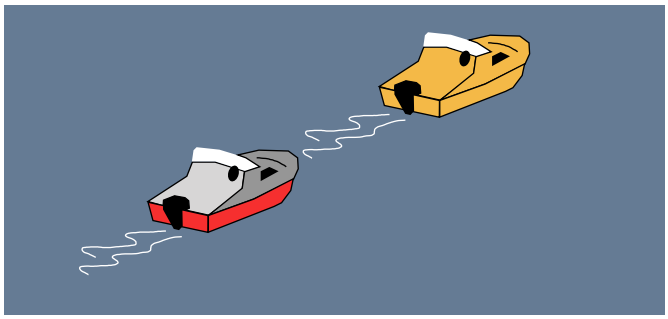
Q: You are driving the yellow boat. What action should you take?
A: You should give way to the other vessel, making your intentions clear and early to avoid confusion.



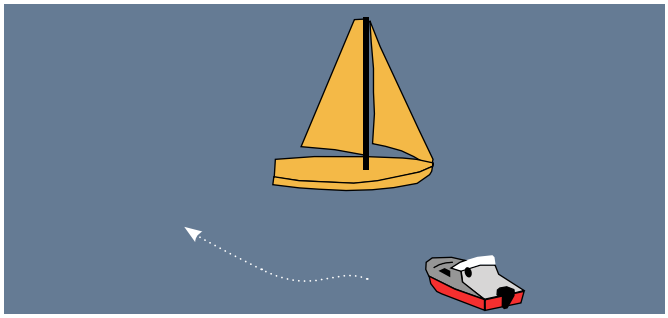
Q: You wish to overtake a boat in front of you. Who has the right of way, and which side(s) can you overtake?
A: You may overtake on either side as long as it's safe, and you must keep out of the way until clear ahead. All rules on wake and wash apply.



Q: You are driving the yellow vessel. What should you do?
A: Maintain your course and keep a lookout. You have the right of way. Always give way to larger boats or commercial vessels.



Q: Your power boat is approaching a yacht on its starboard side. What should you do?
A: Recreational-powered vessels must give way to all sail vessels, including windsurfers, kite surfers, etc.



For the Sailors

- If the wind's on different sides, the boat with the wind on the left must give way.
- The upwind boat must give way if the wind's on the same side.
- If you can't tell where their wind's coming from, just give way.

Vehicular Ferries

In some areas, vehicular ferries pull themselves across channels using chains, ropes or cables. These ferries are significantly restricted in their ability to manoeuvre.

If a vehicular ferry is moving, all vessels must:

- Slow down to 4 knots or less within 100m of the chains, ropes or cables
- Pass at a safe distance behind the ferry, preferably when it has reached the shore, to avoid getting tangled
- Turn their power off when crossing the chains, ropes or cables.

I have read the contents of this page ☐

1.10 Distance & Speed Regulations Overview

Navigating the waters isn't just about the wind in your hair and the sea beneath you. Safety is key, and that means understanding and adhering to speed and distance regulations. Let's dive into the particulars.

Keep a lookout for structures, including bridges, jetties and overhead powerlines. If you're navigating under an overhead crossing, you must follow the signs showing the maximum vessel height (clearance height). Bridge heights on maps are measured at the mean high-water mark. It's recommended that you understand the height level on signs and know the height of your vessel. This includes the mast, anything above the deck and any fishing poles.

Remember that clearance heights vary according to water levels. Allow for higher-than-average tides at certain times of the year. Clearance heights may be lower during floods. Your vessel may need more height when it's not carrying a full load.

What is a safe speed, and why is it crucial?

A safe speed is one where proper action can be taken to avoid a collision, and the vessel can be stopped in time to dodge danger. Considerations include visibility, other boats, navigation hazards, and natural conditions like wind, waves, and currents.

Consideration	Details and Importance
Visibility	Travel slowly in rain, fog, mist, smoke, and glare. Night travel requires extra caution as potential hazards may not be lit or be easily seen, and background lighting can be confusing.
Other Boats	Be cautious in busy areas and near moored or anchored boats, especially around larger ships that may have difficulty manoeuvring. Respect and awareness of other vessels are vital for everyone's safety on the water.
Navigation Hazards	Slow down in narrow channels, shallow areas, and unfamiliar territories. Water depth can change quickly. Be aware that navigation marks might have shifted or been vandalised, and mark lights may not be working.
Wind, Waves, and Currents	These natural factors may affect the boat's stopping and turning ability. The type of motor, hull, and design will all impact the boat's manoeuvrability. Understanding your vessel's behaviour in these conditions is crucial.

These considerations are the anchor to safe boating. Paying attention to them helps prevent accidents and ensures a pleasant sailing experience. It's not about being overly cautious; it's about being smart and knowing what you're up against.

I have read the contents of this page ☐

Questions on New South Wales (NSW) Distance Off and Speed Limit Regulations:

Q. What's the required distance from power-driven vessels or structures when speeding over 6 knots or towing?
A. You should keep a minimum of 30m.

Q. How close can you get to a swimmer?
A. Keep at least 60 metres from any person and 100 metres from a dredge or work barge if travelling faster than 4 knots.

Q. What's the speed limit in a harbour or marina?
A. Pay attention to speed restriction signs. In a No Wash zone, travel at a no wash speed.

Q. How do you respond to a diver's flag?
A. Keep a minimum of 60 metres away. Slow down, stay clear, and keep a proper lookout.

Remember, it's an offence to let a person bow ride or to extend any part of their body over the bow, side, or stern while underway.

What about NSW Water Skiing Regulations?

Q. Can an unlicensed driver drive for water skiing?
A. A General Licence is required if operating at 10 knots or more.

Q. What's the maximum number of skiers a boat can tow?
A. Up to 3 skiers, with a minimum tow rope length of 7m.

Q. Is a PFD required for the skier?
A. Yes, an approved PFD must be worn.

Q. What are the age requirements for a water ski observer?
A. They must be 16 years of age or hold a General licence.

Q. Where can you water ski or wake boat?
A. In areas not prohibited for skiing or wake boating. Local signs will indicate restricted areas.

Q. What should you do when taking your power boat near swimmers while towing a skier?
A. Maintain a distance of 60 metres from a person in the water if you are towing.

Q. Can you tow someone through the water while they hold onto your vessel's swim platform?
A. No, 'Teak Surfing' as it is known, is prohibited at all times

These rules don't just exist to spoil your fun; they protect everyone out on the water. Remember to keep your eyes open and your head clear, because the unexpected can and often does happen when you're at sea.

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SECTION 2

BECOMING BOAT WISE (PRACTICAL SKILLS)

Section 2 Becoming Boat Wise (Practical Skills)

2.1 Planning Your Voyage

When embarking on any boat trip, meticulous planning is vital. Every detail must be considered, from assessing the distance to ensuring the boat is ready for the journey. By becoming Boat Wise, you can guide yourself through the essential components of your trip's plan, ensuring a safe and enjoyable experience.

Here's what should be on your checklist:

- **Distance and Duration:** How far and how long are you going?
- **Fuel Usage:** Got enough petrol? Calculate it.
- **Spare Fuel:** Best to have some extra. Running out isn't fun.
- **Safety Equipment:** Don't forget the important stuff, like life jackets.
- **Weather Conditions:** Know what's coming.
- **Wind/Tide/Swell:** Check these factors.
- **Boat's Condition:** Lights, hull, engine – all good?
- **Engine:** Serviced and ready? And the oil?
- **Crew and Passengers:** All aboard and briefed?
- **Provisions:** Food and water, essential supplies.
- **Tides:** Right for passage and bar crossing?
- **Safe Haven:** In bad weather, where's safety?
- **Log-in:** Tell someone your plan, and when you're back.
- **Tools and Spare Parts:** Ready for repairs.
- **Medical Kit:** First aid's crucial.

Always be self-sufficient and have a backup plan. You'll be ready to set it right if something goes belly up.

Trip Time Example

Want to calculate trip time?
Use Trip Time = Distance/Speed.

For instance:
Trip Time = 20nm divide by 10 Knots = 2 Hours.

Rule of thumb: 1 Knot = 1 Nautical Mile

2.2 Pre-Departure Passenger Briefing

Before setting sail, the safety and comfort of every passenger should be a top priority. Follow this comprehensive checklist to ensure everyone on board is well-informed and prepared for the journey ahead. Safety starts with the right information, and that's what being Boat Wise is all about.

Here's a detailed checklist:

- **Safety Equipment:** Have you identified the location and explained the usage and function to everyone? Knowledge is power.
- **Boat Safety:** Have you explained seating requirements, movement restrictions, and other safety aspects? No unexpected surprises, please.
- **Medical and Dietary Needs:** Inquired about special requirements, swimming abilities, or boating knowledge. It's better to know now.
- **Emergency Procedures:** Explained order of command, communication with rescue services, and second in command. Everyone needs to know the chain of command.
- **Identifying Position:** Can they locate their position with a chart or GPS? In an emergency, this is critical.
- **First Aid Kit:** Do they know where it's located and how to assist an injured person? Time can be of the essence.
- **Abandoning the Boat:** Explain / show how to put on a PFD, communication, flares, EPIRB, water, provisions, clothing, anchor, and sea anchor. It's a lot, but it could save lives.
- **Recognising Distress Signals:** Have you shown your crew how to recognise signals from other vessels and created an action plan? Safety isn't just about your boat.

Crossing your T's and dotting your I's here is more than paperwork. It's a lifeline. These aren't just rules; they're the difference between a good day at sea and a really bad one.

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2.3 Navigating Emergencies

Boating adventures can sometimes lead to unexpected breakdowns or emergencies. Your ability to manage such situations effectively relies on preparation and a sound backup plan. Becoming Boat Wise means embracing the skills and knowledge needed to confidently handle any emergency and ensure the safety of all passengers on board.

If you've never been on a boat that has broken down, prepare yourself; it might happen. Frequent boating increases the odds, so always plan as if this trip might be the one where something goes awry. A backup plan makes the situation less stressful for you and your passengers.

Identifying the nature of the emergency is the first step. Communicate this to everyone on board and any necessary actions (e.g., bail!). Then, enact the appropriate distress signals or emergency management procedures.

Your top priority during an emergency should be the safety and protection of everyone on board. For a fire on a small vessel, you might need to command an 'abandon ship'.
How well you manage an emergency comes down to your preparation and the safety equipment you have on hand.

Maintain regular communication with rescuers during the emergency. Once the situation is under control, inform all personnel on board and any rescue services or other vessels involved.

For instance, if you lose a person overboard, contact rescue services immediately to begin a search. If you locate the individual, inform the rescuers. Being Boat Wise equips you with the vital tools to navigate such emergencies efficiently and safely.

2.4 Informing the Right Person

In the boating world, communication is key, and becoming Boat Wise means knowing your way around a vessel and how to keep others informed. It's your responsibility as the Master to keep someone in the loop, so they know what to do if you don't return at the expected time.

Let a responsible person know:

- **Your Trip Plan:** Share details of your route, estimated arrival time, and other key information.
- **What to Do in the Event of Your Non-Return:** Provide instructions on what steps to take if you do not return at the designated time.

By doing so, you take the responsibility off them and place it where it belongs - with you, the Master of the vessel. These trip cards, available for free at marine outlets and VMRs, are an excellent tool for this purpose. Remember, being Boat Wise means communicating responsibly and ensuring peace of mind for those back on shore.

2.5 Handling Mechanical Breakdowns

Becoming Boat Wise doesn't just mean knowing how to sail smoothly; it's about being prepared for the unexpected bumps in the journey. A mechanical breakdown is something no sailor wants but must always be prepared for.

Fig 11: *NSW Marine Rescue boat.*

Here's what you need to consider:

- **Is the Vessel in Immediate Danger?** If being swept onto rocks or into the path of oncoming vessels, use safety gear like an anchor to negate danger.
- **Identifying the Cause of the Fault:** Could it be fuel, spark, engine, or steering? Know what to look for.
- **Remedying the Fault:** If possible, have the right tools and knowledge to fix the issue.
- **Flagging Down a Passing Boat:** Know how to get attention with a V sheet, waving arms, or a whistle.
- **Location of Closest Volunteer Marine Rescue Organisation:** Know whom to call and how to contact them.
- **Reporting if Missing:** Ensure someone knows your plans and will act if you're overdue.

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- **Local Knowledge of Position:** Have a chart or GPS to inform rescuers of your location.
- **Sufficient Provisions:** Carry enough water and provisions while awaiting rescue.
- **Planning for Weather Conditions:** Prepare for possible worsening weather during a breakdown.

Remember, if someone has to rescue you, they may have to endanger themselves in the process. Think and plan ahead, for the safety of everyone concerned. Being Boat Wise means always sailing with a contingency plan tucked in your back pocket.

2.6 Preparing for a Medical Emergency

Becoming Boat Wise means more than just sailing skills and navigation. It's also about knowing what to do when health takes a hit at sea. A medical emergency onboard can be scary, but with some prep, you can handle it like a seasoned sailor.

Consider these key points:

- **Is There a First Aid Kit On Board?** Always have one packed and ready.
- **Does Anyone On Board Know First Aid?** If not, it might be time for a class. After all, knowing how to slap on a bandage or perform CPR can be a lifesaver.
- **Way to Contact Aid if Boat is Immobile:** Have a plan for things like back injuries, where moving the boat may not be an option.
- **Awareness of Passengers' Medical Conditions:** Know if anyone on board needs special medication and ensure it's accessible.

If you haven't yet done a course in First Aid, the seas are calling you to do so. Becoming Boat Wise is also about tending to the health of your crew, so don't be a landlubber – get trained!

Fig 12: *First aid bag*

2.7 Lending a Hand at Sea: Assisting Others in Distress

In the journey to becoming Boat Wise, you'll learn that the sea is a community. It's where sailors help sailors, especially in times of trouble. If you spot another vessel's distress signal, like a flare or waving arms, you're not just a good samaritan if you assist – you're obligated to. But there's an art to aiding others without causing a wreck:

- **Don't Endanger Your Vessel or Crew:** Your boat and crew's safety comes first. Always.
- **Identify Assistance Needed:** What do they need? If it's a mechanical failure, maybe you can help fix it.
- **Consider Your Vessel's Capabilities:** If it's a tow they need, ensure your boat can handle the weight without snapping like a poorly tied fishing line.
- **Check Fuel and Weather Conditions:** Enough petrol in the tank? Storm rolling in? Consider all factors.
- **Communicate with Rescue Services if Needed:** Sometimes, the best way to help is by calling in the pros and providing assistance like taking a worried mum and her kids to shore.

Being Boat Wise isn't just about your ship; it's about the whole fleet out there. So next time you spot trouble on the horizon, know what to do, and be a sailor's best friend. You might just earn yourself a sailor's salute!

2.8 Overboard Alert: Handling a Person in the Water

Becoming Boat Wise means being ready for everything, even when someone takes an unexpected dip. It's a heart-pounding moment, but with the right know-how, you can be a hero without diving into chaos.

- **Alert the Master:** The person in charge needs to know, and fast.
- **Keep Eyes on the Swimmer:** Don't lose sight of them; it's not the time for sightseeing elsewhere.
- **Toss a Floatation Device:** If they're flailing like a fish out of water, get them something buoyant.

- **Steer Smartly for Safety:** If the Master sees the fall, turn the vessel towards the fall side. It'll swing the stern and away from the person. This action is critical to avoid the propeller coming close to the person in the water.
- **Retrieve Carefully:** Approach slowly into the wind, go neutral when close, and kill the engine.
- **Stay on Board:** You're more helpful on the boat. Jumping in might just create two problems instead of one.

In the world of being Boat Wise, handling a person overboard with calm, precision, and smart action might just save a life. Keep these steps in mind, and may your crew always stay dry! Unless they're enjoying a swim at a planned stop, of course.

2.9 Turning Tides: Managing a Capsize

Becoming Boat Wise isn't just about smooth sailing; it's about dealing with the unexpected waves that might turn your boat into a reluctant submarine.

Vessels can capsize for a few reasons, such as:

- **Overloading:** Allowing water to come over the sides, which can unbalance the boat.
- **Uneven Weight Distribution:** Persons or equipment positioned unevenly can tip the balance.
- **Waves over the Bow, Sides, or Stern:** These can catch you off guard and cause the boat to capsize.

If your boat does capsize:

- **Stay with the Boat:** It's likely to float and is easier to spot from the air.
- **Take a Head Count:** Make sure all persons are accounted for.
- **Check for Injuries:** Ensure everyone is safe and free from harm.
- **Righting the Vessel:** Try grabbing the keel and rolling the boat towards you for a small runabout. If it's a medium-sized vessel, run ropes under the gunnels, stand on the upturned hull, and lean backwards to roll it upright.

Capsize doesn't have to be a catastrophe. With some Boat Wise know-how, you'll be back on your way in no time. Remember, the boat's more afraid of capsizing than you are!

2.10 Sparks Fly: Controlling Fire on Board

When it comes to becoming Boat Wise, even the most seasoned sailors know that dealing with fire isn't just a flare for the dramatic. It's about being prepared and taking control of the situation.

Any boat equipped with a stove or mechanical power can experience a fire, so here's your practical guide to being the Captain Cool in a hot situation:

- **Prevention, the Unsung Hero:** Keep oily rags, paper, and combustibles away from the bilge and engine area.
- **Wiring Wonders:** Ensure all electrical wiring is shipshape, not a twisted nightmare.
- **Fuel Lines and Storage:** Good condition is key, and keep 'em away from sparky devices like batteries.
- **No Smoking Near Fuel Tanks:** It's not just bad manners; it's a fire hazard.
- **Fire Extinguisher Familiarity:** Have one on board and know how to use it.
- **Sniffing for Trouble:** Regularly check for fumes around fuel and gas lines. Use your nose; it's not just for smelling the sea breeze.
- **Marine-Approved Systems:** Stick to fuel systems and gas-powered appliances that are approved for marine use.
- **Spill Management:** Wipe up all spills before starting the engine. Spills are for clumsy sailors, not Boat Wise captains.

Fig 13: *Example of a boat fire.*

So next time a spark tries to ruin your sail, you'll know how to keep the fireworks onshore. Remember, becoming Boat Wise means you're in control, not the fire. Keep a cool head and steer clear of the heat.

2.11 Engine Care: Maintenance & Pre-Start Checks

Embarking on a journey on the water means more than just setting a course. Becoming Boat Wise involves understanding the heart of your vessel, the engine. Proper maintenance and careful pre-start checks are vital to a successful voyage. Let's explore this important aspect.

Regular Servicing: Adhering to the manufacturer's guidelines is paramount. Don't hesitate to seek professional service promptly if there are signs of malfunction.

Pre-Start Procedures: Before turning the key, you must consider:

- **Manufacturer's Operating Procedures:** Abiding by these ensures optimal performance.
- **Safety Considerations:** Evaluate everything from people's proximity to moving parts, water depth, cooling and fuel systems, to exhaust, fumes, and ventilation.
- **Electrical System Check:** Ensure the battery and electrical system are in good condition.
- **Gas Appliances Inspection:** These must be safe and ready for the vessel to start.
- **Bilge Water Levels:** A quick check can prevent unexpected complications.
- **Kill-Switch Functionality:** Regular testing ensures it will work when needed.
- **System Awareness:** Regularly monitoring oil and cooling systems, such as the 'tell tail' on an outboard motor, is essential.

Investing time in engine maintenance and pre-start checks enhances safety and contributes to a smoother journey. Adhering to these principles is more than just best practice; it's part of being Boat Wise.

2.12 Fuel Wisdom: Refuelling Safely

In becoming Boat Wise, there's a fine line between filling up and fouling up. Refuelling is an everyday task, yet complacency could lead to disaster. Here's a guide to mastering the art of refuelling, no spills attached.

Refuelling Safety Measures:

- **Switch Off:** All electrical and gas appliances must be turned off to prevent sparks.
- **No Smoking Zone:** This is not the time for a puff; leave the lighter ashore.
- **Clear the Deck:** Passengers should step off the vessel to a safe distance while you refuel.
- **Spillage Control:** An effective transfer method, like a jiggle-syphon, can distinguish between smooth sailing and a slippery mess.
- **Engine First:** Only start the engine before passengers re-board, keeping the order in check.

The refuelling process might seem mundane, but it's a part of boating where precision and precaution shine. Just like choosing the right wind to sail, picking the right way to fuel up is a hallmark of the truly Boat Wise.

Fig 14: *Fire damaged vessel as a result of refuelling accident.*

2.13 Throttle Wisdom: Understanding Fuel Consumption

Becoming Boat Wise involves more than just knowing the ropes; it's about understanding what's happening under the hood. Fuel consumption might seem minor, but it can hit your wallet and your journey. Here's what makes the boat gulp down more fuel.

Factors Increasing Fuel Consumption:

- **Revved Up:** High engine revolutions aren't just noisy; they can also drink up fuel.
- **Heavy Lifting:** A heavily loaded vessel means the engine works harder and consumes more.

- **Rough Sailing:** Rough sea conditions or towing another vessel? Expect your fuel gauge to drop quicker.

Sailing smoothly and efficiently isn't just about going with the wind but knowing when to throttle back and keep things lean. Who knew being Boat Wise could save you a bob or two?

2.14 Smooth Sailing: Launching Your Vessel

Launching a boat is like cooking a meal; preparation is key. It's the first step in your maritime journey, and becoming Boat Wise means getting it right from the start.

Pre-Launch Preparations

- **Before the Ramp:** Prepare your boat in the car park, not on the ramp. We don't want traffic jams at sea!
- **Checklist Time:** Bungs in, battery connected, fuel, oil, weather, safety gear – all set? Don't forget the essentials like water, money, food, phone, clothing, and provisions.
- **Mind Your Head:** Launching a trailer sailor? Watch out for those overhead wires before moving the rig.
- **Tie Downs and Handles:** Remove and stow tie-downs, brackets/lighting boards. Winch handle? Stow it after use.
- **Be Ready:** Have a line ready from the boat's bow for control, and walk carefully down unfamiliar ramps. They might be slippery, so ditch the thongs.
- **Back it Up:** Back the car down to float the boat's stern but keep the trailer axles above the water line. Launch slowly, drag away from the ramp, and remove your car and trailer.

A well-executed launch is like a perfect appetiser – it sets the tone for the rest of the journey. Remember, becoming Boat Wise isn't just about mastering the waves; it's also about mastering the details onshore.

Fig 15: *Car backing up during a boat launch.*

2.15 All Aboard: Retrieving Your Vessel

Retrieving your vessel is the closing act of your maritime adventure, and it's as vital as setting sail. Ever watched a good film that's ruined by a sloppy ending? Don't let that be your boating day. Becoming Boat Wise means handling retrieval with the finesse of a seasoned sailor.

Retrieving Steps

- **Back it Up Carefully:** Keep those trailer axles dry as you back in.
- **Manoeuvre with Precision:** Use bow and/or stern lines to guide the boat onto the trailer. This isn't a time for guesswork.
- **Winch and Connect:** Hook up the winch cable, engage the lock, and bring the boat onto the trailer. Secure it with the safety chain.
- **To the Car Park:** Move away from the ramp and into the car park. Unplug those bungs and get ready for towing.
- **Mud Tactics:** Encounter mud or slime? Slow spinning those car tyres might dry it out and give you a grip.
- **Waves and Currents:** Waves giving you trouble? Get someone to hold the boat in line or run a line from the stern to someone ashore.

A proper retrieval is like a firm handshake at the end of a great meeting. It leaves a good impression and sets the stage for the next outing. So, before you hang up your captain's hat, remember that becoming Boat Wise isn't just about the journey; it's about wrapping it up right.

2.16 Mastering Anchoring

Becoming Boat Wise means mastering the art of anchoring. It's not just a convenience but a vital safety measure, whether you're stopping for leisure or facing an unexpected breakdown. Let's delve into the practicalities of anchoring:

1. Types of Anchors:

- **Danforth:** Best for sand and mud bottoms, offering excellent holding power in these conditions.
- **Plough/CQR:** Generally used for larger boats, it penetrates a variety of seabeds.

- **Sarca:** Versatile and suitable for most bottom types, including mud, sand, and gravel.
- **Reef:** Specifically designed for rocky and reef areas where other anchors may struggle.

2. Precautions Before Anchoring:

- Select a suitable location by evaluating conditions, traffic, weather, swinging room, bottom type, any signage, channels, etc.
- To alert other vessels, display an anchor light (all-round white light) at night or in reduced visibility conditions.

3. Dropping the Anchor:

- Approach your anchorage slowly, facing the wind or tide.
- Stop the vessel, then gently go astern to set the anchor.
- Let out the anchor line, three to five times the water depth depending on the conditions, constantly checking your position to ensure the anchor is not dragging.
- Once secured, turn off the engine and settle in, mindful of potential tide rises.

4. Retrieving the Anchor:

- Start the engine before attempting to retrieve it.
- Gently move forward to the anchor, engaging neutral when the line is vertical.
- Untie the anchor from the cleat, then lift, retrieve, stow, and secure it properly for travel.

Fig 16: *Understand your anchor.*

5. Avoiding Common Problems:

- Ensure your anchor and chain match your boat and the seabed type.
- Let out enough rope (usually at least three times the depth) and consider tidal changes, flow, and sea conditions.
- Use a thimble on the rope to prevent chafing against the shackle. A worn rope can break, leaving your boat adrift.
- Regularly inspect and maintain all anchoring equipment, ropes, and berthing tools, as negligence can lead to failure at critical moments.

You must not anchor:

- In a navigation channel
- Anywhere you might obstruct other vessels' access to or from wharves, launching ramps or moorings
- Within 200m of underwater cables.

Look out for 'Submarine Cable' signs. These underwater cables carry electrical power or telecommunication signals. If your anchor becomes snagged in a cable, do not pull it out. Cut the anchor line as close as possible to the anchor.

Avoid anchoring:

- Near historic shipwrecks
- On bomboras, shallow rocks, reefs, banks or shoals
- In sensitive habitats, such as shallow areas with seagrasses.

By adhering to these guidelines, you're safeguarding your vessel and enjoying the peace of mind that comes with being Boat Wise. Anchoring may seem simple, but as with all things nautical, it requires attention, understanding, and respect for the elements.

2.17 Navigating Heavy Weather Anchoring

Becoming Boat Wise isn't just about fair-weather sailing; it's about being prepared for all conditions, including heavy weather. Anchoring securely during rough weather requires a special set of skills and knowledge.

Let's explore some advanced techniques for anchoring in heavy weather, and examine the pros and cons of two specific methods.

Twin Anchors - Two Methods:

1. Two Anchors in Line

Pros:
- Greater holding power due to the force distributed over two anchors.
- More controlled drifting in heavy weather, reducing strain on the anchor line.

Cons:
- Potential tangling of anchor lines if not properly managed.
- Requires more effort and time to deploy and retrieve.

When to Use:
- During prolonged heavy weather, where stability is paramount.
- In crowded anchorages where the swinging room is limited.

2. Two Anchors at 45-degree Angles

Pros:
- Allows the boat to swing in a controlled arc, reducing the risk of dragging.
- Increases stability by distributing forces across two points.

Cons:
- Setting up requires precise positioning and alignment.
- May lead to uneven pressure, causing one anchor to bear more load.

When to Use:
- In shifting winds or tidal conditions, where the boat may change direction.
- When greater stability and control are needed in choppy waters.

Preparation for Heavy Weather:

- Especially on overnight trips, always be prepared for unexpected bad weather.
- Have at least one spare anchor and rope in the boat to ensure you can respond to rapidly changing conditions.
- Practice deploying and retrieving twin anchors in safe conditions to familiarise yourself with the process.

Navigating heavy weather anchoring might seem daunting, but you can tackle these challenges head-on with proper understanding and preparation. Being Boat Wise means being adaptable and confident in your abilities, no matter the weather. So, whether it's twin anchors in line or at 45-degree angles, you've got the skills to ride out the storm!

2.18 Tips for Smooth Overnight Anchoring

Becoming Boat Wise isn't just about the thrill of sailing through waves; it's about enjoying those serene moments when you anchor your boat in a picturesque bay, ready for an overnight adventure. Whether planning a weekend getaway or a holiday trip, these overnight anchoring tips will ensure a safe and pleasant experience.

Theft Management:

- Take your boat key with you to minimise theft risk.
- Secure valuables and essential gear, including safety equipment like EPIRB, by taking them to your camp.
- **Isolation awareness:** be mindful in remote locations, where additional safety measures might be necessary.

Anchoring in an Open Bay:

- **Positioning:** Ensure the boat is anchored far enough from the shore to prevent it from touching the bottom, particularly in rough weather.
- **Anchor line:** Release enough line to accommodate tide changes.
- **Monitoring:** Regularly check the boat, especially at the turn of the tide, to ensure the anchor is holding.
- **Weather awareness:** Keep track of wind changes and act accordingly.
- **Dual Anchoring:** In harsh conditions, use two anchors in line or at 45 degrees to enhance stability.

Anchoring in a Calm Inlet:

- **Two-anchor strategy:** Use one bow and one stern anchor, with the bow facing the sea, to keep the boat near the shore.
- **Tide planning:** Time your anchoring to ensure the boat is afloat when needed.

- **Storm readiness:** If rough weather is approaching, anchor offshore using two bow anchors (and possibly a stern anchor).

Anchoring overnight opens a world of opportunities to explore nature, enjoy quality time with family, or simply bask in the peace of a secluded bay. By following these practical tips, you'll safeguard your boat and enhance your experience. So go ahead, drop that anchor, and let the rhythm of the tides lull you into a tranquil night. Being Boat Wise means enjoying all the facets of boating life, even when the sun goes down!

2.19 Mooring Procedures: Secure Your Vessel

Mooring a vessel is an essential procedure that requires precision, attention to detail, and adherence to best practices. In your pursuit of becoming Boat Wise, understanding the mechanics of mooring is vital. Here's a practical guide to securing and releasing your vessel from a mooring point.

Fig 17: *Mooring procedure in action.*

Approaching the Mooring:

- **Into the Wind or Tide:** Approach the mooring in alignment with the wind or tide to ensure control.
- **Stopping and Securing:** Reach the mooring and retrieve the line manually or with a boat hook, fastening it to the bow cleat.
- **Engine Shutdown:** Turn off the engine once secure. Safety first.

Departing the Mooring:

- **Engine Preparation:** Start the engine before any movement.
- **Release Tension:** Gently move forward to remove tension from the mooring line, a crucial step to unfasten successfully.
- **Unfasten and Clear:** Untie from the cleat, throw the line clear, and reverse or move away to avoid the mooring line.

Maintenance and Compliance:

- **Regular Inspection:** Mooring and berthing apparatus must be maintained according to the manufacturer's and/or State government requirements, typically requiring bi-annual or annual inspections by qualified professionals.
- **Size and Condition Matching:** Ensure the mooring or berthing apparatus is appropriate for the vessel's size and the probable sea and weather conditions.

Mooring your vessel is more than just tying a knot; it's a crucial aspect of maritime safety and competence. As you continue on your journey to becoming Boat Wise, remember that securing your vessel properly reflects your skill and responsibility.

2.20 Mastering Berthing: A Boat Wise Approach to Piers and Jetties (Version 1)

Stepping up to become Boat Wise is more than conquering the open waters; it's about managing the nuanced art of berthing. When it comes to docking your boat to piers and jetties, every aspect counts, even the wind. Here's how to do it right:

Approaching the Berth

- **Consider the Wind Direction:** The wind can be your ally or adversary. Approach against the wind for better control. If that's not possible, be mindful of how the wind can push your vessel and compensate accordingly.

- **Prepare Lines and Fenders:** Set up your mooring lines and fenders to protect the boat from damage before reaching the berth.
- **Slow and Steady:** Approach at a safe, controlled speed, giving yourself time to adjust as needed.

Fig 18: *Berthing at a pier*

Berthing at the Pier or Jetty

- **Align Properly:** Ensure your vessel is parallel to the dock, using small adjustments to align perfectly.
- **Secure Bow and Stern Lines:** Once close enough, secure the bow line first, then the stern, ensuring both are taut but not overly tight.
- **Adjust as Needed:** Monitor the boat's position, adjusting lines and fenders as needed, especially if the wind changes.

Departing the Berth

- **Check Wind and Tide:** Understand how these elements affect your departure and plan accordingly.
- **Release Lines Gradually:** Start with the stern line, then the bow, controlling the boat's movement as you go.
- **Use Engine Wisely:** Utilise the engine to help you move away from the berth smoothly, being mindful of other vessels and obstructions.

Berthing is more than parking; it's an essential skill demonstrating your understanding of your vessel, the surroundings, and the elements. Being Boat Wise means knowing not just how to explore, but also how to return and rest safely.

2.21 Navigating the Nuances of Berthing (Version 2)

So, you've mastered the sea, but what about the art of berthing? It's an integral part of becoming Boat Wise. From piers to pontoons and wharfs, there's a method to the madness. And don't worry; we've got you covered with these trusty tips:

Approaching the Fixed Object

- **Slow and Steady Wins the Race:** Approach at a cautious pace. This way, you can correct your course without damaging your boat or the object.
- **Fight the Elements:** Coming in against the wind and current gives you better control. It'll keep your boat from being pushed onto the object, offering a gentle buffer.
- **Reverse When Necessary:** Be prepared to use reverse to stop forward momentum, but keep those eyes peeled for swimmers and fishing lines.

Berthing the Boat

- **Have a Helping Hand:** Someone ready to fend off, grab the pier, or handle the bowline will make berthing easier. No jumping, though - we're not in a movie.
- **Consider the Tides:** Tidal movement can play tricks on you. If tying to a fixed jetty or pier, think about the length of the rope, especially in places where tides can rise and fall significantly.
- **Pontoon Berthing:** With pontoons rising and falling with the tide, you can tie your boat closely without worrying about tidal gymnastics. Marinas are typically designed this way.

Berthing isn't just about docking; it's about understanding your environment and reacting accordingly.

So, remember these tips next time you're heading to that pier and keep your vessel safe. Being Boat Wise is all about the details, after all.

2.22 A Guide to Towing the Boat

Towing a boat isn't just hitching it up and hitting the road. Being truly Boat Wise takes a keen eye and a systematic approach. Let's break down the essential checks for a smooth, secure towing experience.

Fig 19: *A boat being towed.*

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Before Hitting the Boat Ramp:

- **Boat Essentials:** Check fuel, oil, safety gear, battery charge, canopy, keys, drinking water, food, and mobile phone. Don't leave anything that'll fly off the hull!
- **Motor and Anchors:** Ensure the motor is running and secured, anchors are functional, and anchor lines are in good shape.
- **No Loose Ends:** Secure loose items that could roll around or fly out.

Trailer Checks:

- **Lighting and Tyres:** Verify that lights, bearings, brakes, and tyre pressure are all in good order.
- **Structural Soundness:** Examine the boat safety chain, U-bolts, springs, straps, rollers, and winch.
- **Proper Connection:** Ensure it's properly coupled to the car, brakes disengaged, and chocks removed.

Towing Home After the Trip:

- **Reconnect with Care:** Secure the trailer coupling to the car and ensure the winch cable is tight.
- **Boat Positioning:** Verify that the boat is sitting properly on the trailer, with tie-downs and engine brackets in place.
- **Final Checks:** Remove bungs, loose gear, and turn off the battery isolator switch. Stow the winch handle.

Towing might seem like a side task, but it's all part of the journey. Running through these checks can save a world of trouble and keep your trip on course. It's a roadmap to being Boat Wise!

2.23 The Post-Trip Maintenance Guide

Becoming Boat Wise is a journey, not a destination. And like any good journey, it doesn't end when you dock the boat; it's in the care and maintenance that comes after. Let's navigate the essential post-trip checks that keep your vessel in shipshape condition.

Engine Care:

- **Flush Motor:** Rinse the motor with fresh water to remove salt and debris.
- **Battery Management:** Disconnect the battery and turn off the isolator switch to preserve its life.

Boat and Trailer Upkeep:

- **Clean Inside and Out:** Wash the boat, trailer, and conduct a visual check on the hull, lights, engine, and trailer.
- **Proper Storage:** Store the boat out of the sun if possible to prevent fading and wear.

Gear and Fuel Handling:

- **Stow Gear:** Ensure all gear is washed and stowed properly.
- **Fuel Management:** Manage fuel venting and remember that fuel can go off after a while. Dispose of old fuel in an environmentally friendly manner.
- **Ethanol-Based Fuels:** Check with your engine manufacturer about using ethanol-based fuels to ensure it's safe for your engine.

Trailer Maintenance:

- **Brakes:** Ensure that trailer brakes are not left on; otherwise, the callipers can seize onto the disk.

Your boat deserves the best, and that means more than just a quick rinse after a day on the water. These post-trip rituals are essential in maintaining a happy and healthy vessel. So grab that hose and a bucket of soapy water; it's cleaning time.

Being Boat Wise means taking pride in your boat, treating it with respect, and giving it the attention it needs after each trip.

Fig 20: *Always look after your trailer.*

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2.24 Off-Season Maintenance for Vessel and Trailer

You've docked your boat for the season. Now what? Becoming Boat Wise isn't a summer fling; it's a year-round commitment. Here's your guide to off-season vessel and trailer maintenance, ensuring that you're ready to set sail when the waters call again.

The Skipper's Responsibility:

- **Maintenance Log:** Keep an updated log for engine service, expiry dates of safety gear, and any other work on the vessel. This is your ship's diary, and it needs to be detailed.
- **Battery Care:** Ensure the marine battery is charged, corrosion-free, and clamped securely to the hull. Unsecured batteries are a danger on board.
- **Navigation and Electrical Checks:** Ensure lights work and terminals are dry by applying petroleum jelly. Any flaw here is like sailing blindfolded.

Engine and Mechanical Checks:

- **Frequent Engine Starts:** Keep the engine lively by starting it regularly.
- **Check Steering and Trim:** Regularly operate these parts to keep them from seizing.
- **Structural Inspections:** Eyes open for signs of structural flaws, rust, or fractures. Get professional help if needed. Your vessel's health is paramount.

Structural Care:

- Fibreglass Inspection: Look out for flaking, a sign of osmosis, affecting hull strength. Don't ignore this; call a pro.
- Metal Maintenance: No pieces of metal should sit in an aluminium vessel for long. It's like letting rust eat your dinner.

Trailer Vigilance:

- Bearings and Tyres: Keep greased, and in good condition. Spare tyres are a must. Marine trailer bearings need love, or they'll break your heart.
- Rollers, Winch, and Safety Measures: Check for damage and always use a safety chain from the trailer to the boat's bow.
- Water-Resistant Grease: An essential ingredient to keep things running smoothly.

Basic Toolkit Onboard:

- Essentials Included: A toolkit with spark plug spanners, waterproof tape, spare shackles, spare spark plugs, waterproof repellent, pliers, fuses & light bulbs, manual pull rope for outboard engine, etc. Think of it as a first-aid kit for your boat!

Manufacturer's Recommendations:

- Motor Service Schedule: Follow the manufacturer's guidelines. If your engine coughs, don't wait; get it checked.
- Environmental Considerations: Old fuel disposal needs to be environmentally friendly. Be kind to nature, it's your playground.

Being Boat Wise means understanding that your boat still needs you even when not in use. Off-season care is like putting your boat to bed with a warm blanket, knowing it'll wake up fresh and ready to embark on a new adventure.

2.25 Water Skiing: Safe Driving Guidelines

Becoming Boat Wise in the thrilling activity of water skiing is not just about fun but safety. Water skiing requires precise control, awareness, and adherence to certain guidelines to ensure that both the skier and those in the boat remain safe.

- **Before Taking Off:** Ensure the ski rope is taut and make the skier jump into the water from the up current/upwind side. This reduces the risk of being pushed in the wrong direction.
- **Communication:** Establish clear hand signals with the skier for going faster/slower/stop. Communication is key to a safe experience.
- **Observer Role:** Always have an observer in the boat to watch the skier. They are essential in monitoring the skier's well-being and communicating their needs.
- **Navigation and Engine Control:** Stay on the starboard side of the channel and leave plenty of room for the skier. Trim the engine up for better fuel economy, and always switch it off before the skier climbs back onto the boat.
- **Skier Safety:** Protect the fallen skier by putting the boat between them and oncoming boats. Ensure they signal OK after a fall to confirm they're unharmed.
- **Rope Management:** Avoid rope tangles with the propeller and pull in the rope as soon as the skier is finished. Leaving the rope trailing can lead to dangerous situations.

- **Beach Start:** Always look left and right before doing a beach start. Coordination and spatial awareness are crucial here.
- **Ensure Proper Equipment:** All skiers should wear wet-suit pants for safety, as they can protect against abrasions and cold water.
- **Environmental Awareness:** Inland waters can have strong currents, cold water, and submerged hazards. Be aware of these factors and plan accordingly.
- **Traffic and Focus:** Never come in against traffic when approaching the ski beach. Concentrate 80% on what's in front, 10% at sides, and 10% behind when driving. This balance ensures a proper field of vision.

Water skiing can be an exhilarating experience, but it comes with responsibilities. By following these practical guidelines, you're enhancing the joy of the sport and embodying what it means to be Boat Wise. Enjoy the waves, but always with safety at the forefront

Fig 21: *Driving safe means your skiers stay safe.*

SECTION 3

WEATHER, CHARTS & NAVIGATION

3.1 Navigating The Waters: An Introduction to Charts

Becoming Boat Wise means having the right tools and knowledge to navigate the open waters. Charts play a crucial role here. These are not just maps; they're lifelines, helping you to steer clear of dangers and find the right path.

A chart or map of the area is more than just an accessory; it's an essential safety item. It equips the Master with detailed knowledge of the area to be travelled, highlighting navigable channels and potential hazards.

In Australia, the Hydrographic Office produces these charts, available through licensed chart agents along the coast. What makes them valuable is their constant updating. Notices to Mariners, a Hydrographic Office publication, offer these updates. These corrections should be duly recorded on the chart, noting the correction number and year in the bottom right-hand corner.

But that's not all. Coastal stations also broadcast urgent information, often through Securite messages. Various marine authorities and rescue organisations create local maps for many inland waterways and coastal locations. These often include detailed location names, adding another layer of information. Moreover, state marine authorities use marine radio to issue navigational warnings.

Charts are complex and filled with valuable information:

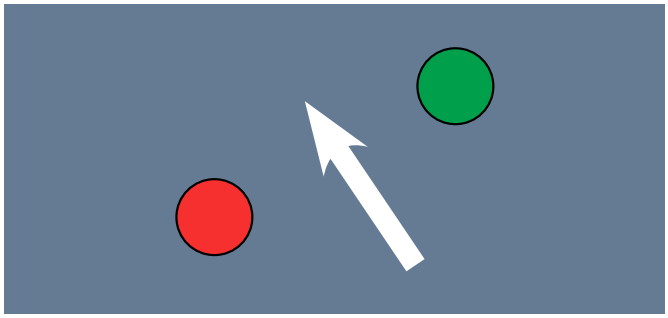
- Title: Name of the area
- Depths: Water depths
- Legend: Symbols and meanings
- IALA Buoys: International buoy system
- Scale: Proportions on the map
- Buoy Lights: Light characteristics of buoys
- Reefs, Wrecks, Lighthouses, Leads, Tidal flows: Navigational features and hazards
- Compass Rose: Shows directions
- Currents: Water movements
- Latitude and Longitude Lines: Coordinates
- Anchorages: Safe areas for anchoring
- Ship Lanes, Buoyage arrows: Traffic guidelines

Charting your way through unknown waters may feel like a daunting task. But with the right charts, understanding of what they represent, and the wisdom to update them as needed, you are not just finding your way; you're becoming Boat Wise.

3.2 Chart Features: Navigating with Confidence

Becoming Boat Wise means mastering the art of navigation, and an essential part of this skill lies in understanding the features of maritime maps and Admiralty charts. Let's dive into what these features mean for your journey at sea.

Navigating Home with Buoyage Arrows: These arrows guide you in the right direction, showing the way towards 'Home Port' for Lateral Marks. When you follow the arrow's direction, keep Starboard Marks on your right side. Keep Starboard Marks on your left if you're going the other way.



Spotting IALA Marks: International Association of Lighthouse Authorities (IALA) Marks are key identifiers you'll find on the water, and they are recognised by:

- The shape visible during the day
- The distinct pattern or colour of the mark structure
- The hue of the light it emits at night, such as a green flash

These marks may tower at 25 meters or be as unassuming as a 44-gallon drum. Yet, their role in guiding and protecting vessels is monumental.

Fig 22: *Cardinal Mark.*

Rules to Sail By: There are crucial rules to remember while navigating. You must never:

- Attach your vessel to a navigation buoy or mark
- Stay close to a navigation buoy or mark
- Drop anchor in a channel meant for navigation or in a shipping lane

Mastering these chart features will sharpen your navigational skills and understanding them is a mark of a Boat Wise sailor. These are not just symbols on a map but lifelines in the open sea.

3.3 Navigating with Precision: Understanding the IALA Buoyage Marks

To be Boat Wise on the water, you must become fluent in the IALA (International Association of Lighthouse Authorities) Buoyage System 'A'. This system has 5 marks, each with distinct features to guide you. Here's a closer look at each one.
Lateral Marks - Right and Left Indicators

Port Marks

- **Appearance (Day):** Characterised by a red can(square) shape, these mark the port side of channels.
- **Light (Night):** They flash a red light at night. The rhythm can be any except Composite Group Flashing (2+1).
- **Instructions:** When entering harbours or travelling upstream, keep port marks on your port side and starboard marks on your starboard side. Conversely, when leaving or travelling downstream, reverse the positions. If you encounter only one, apply the upstream-downstream principle.

Fig 23: *Port and Starboard Marks.*

Starboard Marks

- **Appearance (Day):** Marked by a green triangle shape, they indicate the starboard side of channels.
- **Light (Night):** Starboard Marks flash a green light. The rhythm can be any except Composite Group Flashing (2+1).
- **Instructions:** When entering harbours or travelling upstream, keep starboard marks on your starboard side. Conversely, keep starboard marks on your port side when leaving or travelling downstream.

Isolated Danger Marks

- **Appearance (Day):** Black and red horizontal stripes with two black spheres as a topmark. Indicates a solitary danger with navigable waters all around.
- **Light (Night):** The light is white, flashing in groups of two, echoing the two-sphere topmark.
- **Instructions:** As the name implies, it signifies a danger too small to mark with a series of marks. Always pass well clear, considering the surrounding navigable waters.

Fig 24: *Isolated Danger Mark.*

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Safe Water Marks

- **Appearance (Day):** Red and white vertical stripes with a single red sphere as a topmark. Indicates that there's safe water all around the mark.
- **Light (Night):** If lit, it will flash a white light, with rhythms as charted. Morse "A" rhythm may be used.
- **Instructions:** These can mark the centre or a series down the middle of a channel, not just the edges. Always refer to the chart for specifics.

Fig 25: *Safe Water Mark.*

Special Marks

- **Appearance (Day):** Yellow with a single yellow cross (X) topmark. Utilised for special areas or features like traffic separation marks, spoil ground marks, or aquaculture.
- **Light (Night):** Special Marks flash a yellow light, with any rhythm except those used for white lights on other marks.
- **Instructions:** The nature of these marks will be apparent from reference to a chart or other nautical publication. Understanding their specific use is vital for navigation.

Fig 26: *Special Mark.*

Cardinal Marks

North Cardinal Mark

- **Day:** Both cones point up, with the top of the pillar black and the bottom yellow.
- **Night:** White light, continuous flashing.
- **Instructions:** Pass to the north.

East Cardinal Mark

- **Day:** Cones point up and down, with black at the top and bottom, and yellow in between.
- **Night:** White light, 3 flashes (3 o'clock).
- **Instructions:** Pass to the east.

Fig 27: *Examples of all cardinal marks. North, East, South and West.*

South Cardinal Mark

- **Day:** Both cones point down, with black at the bottom and yellow at the top.
- **Night:** White light, 6 flashes + 1 long flash (6 o'clock).
- **Instructions:** Pass to the south.

West Cardinal Mark

- **Day:** Cones point inwards, with black in the middle and yellow at the top and bottom.
- **Night:** White light, 9 flashes (9 o'clock).
- **Instructions:** Pass to the west.

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Other navigational aids

Leads

- **Appearance (Day):** A pair of marks align to form a transit along the safe channel.
- **Lights (Night):** May use any colour, or details in the chart.
- **Instructions:** Steering is crucial here. Align the rear lead directly above the front lead to maintain the safe channel.

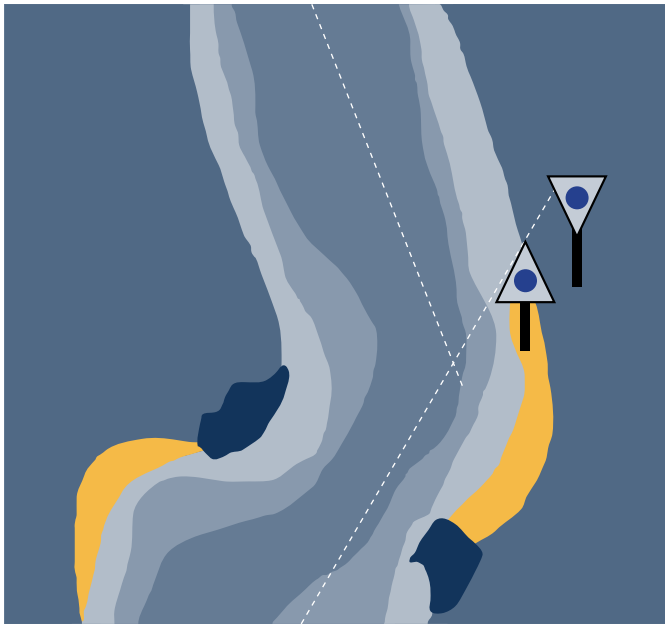

Diagram: *An example of Leads.*

Sectored Lights

- **Appearance (Day):** These lights indicate a safe channel with three different coloured lights.
- **Light (Night):** The white sector is safe, while red or green indicates areas to avoid.
- **Instructions:** Maintain the course within the white light. Adjust the course to stay on track if the light shifts to red or green.

Fig 28: *It is important to understand all navigational marks.*

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3.4 Navigating with Precision: Understanding Navigational Light Characteristics

To be Boat Wise on the water, you must become fluent in the various navigational light characteristics. These lights speak their own language, guiding you through the darkness, fog, and inclement weather. Here's a close look at each one:

Navigation Aid Light Characteristics

Type of Light	Characteristic*	Abbr.	Description
Fixed		F	A light showing continuously and steadily.
Flashing		FL	A light in which the total duration of light in a period is shorter than the total duration of darkness and the appearances of light (flashes) are usually of equal duration.
Long Flashing		LFL	A flashing light in which an appearance of light, of not less than 2 seconds duration, is regularly repeated.
Group Flashing		FL(3)	A flashing light in which a group of flashes, specified in number, is regularly repeated.
Composite Group Flashing		FL(2+1)	A light similar to a group-flashing light except that successive groups in a period have different numbers of flashes.
Quick Flashing		Q	A continuous flashing light with a rate of 50 or 60 per minute.
Very Quick Flashing		VQ	A continuous flashing light with a rate of 100 or 120 per minute.
Occulting		OC	A light in which the total duration of light in a period is longer than the total duration of darkness and the intervals of darkness (eclipses) are usually of equal duration.
Isophase		ISO	A light in which all the durations of light and darkness are clearly equal.

Chart Light Examples

1. LFl W 2s Means Long Flashing White every 2 seconds.
2. Fl(3) R 4s Means Flashing Red (in groups of 3), every 4 seconds.
3. VQ G 1s 15m 5M Means Very Quick Flashing Green every second, the light is 15 metres above the high water line, and in clear visibility can be seen for 5 nautical miles.

Understanding these navigational lights is like learning a hidden dialect of the sea. It's more than merely seeing flashes and blinks; it's about reading the messages they convey.

Just as a skilled driver knows every sign on the road, a Boat Wise mariner understands every flash and glow on the water. It's not just about safety; it's about navigating with precision.

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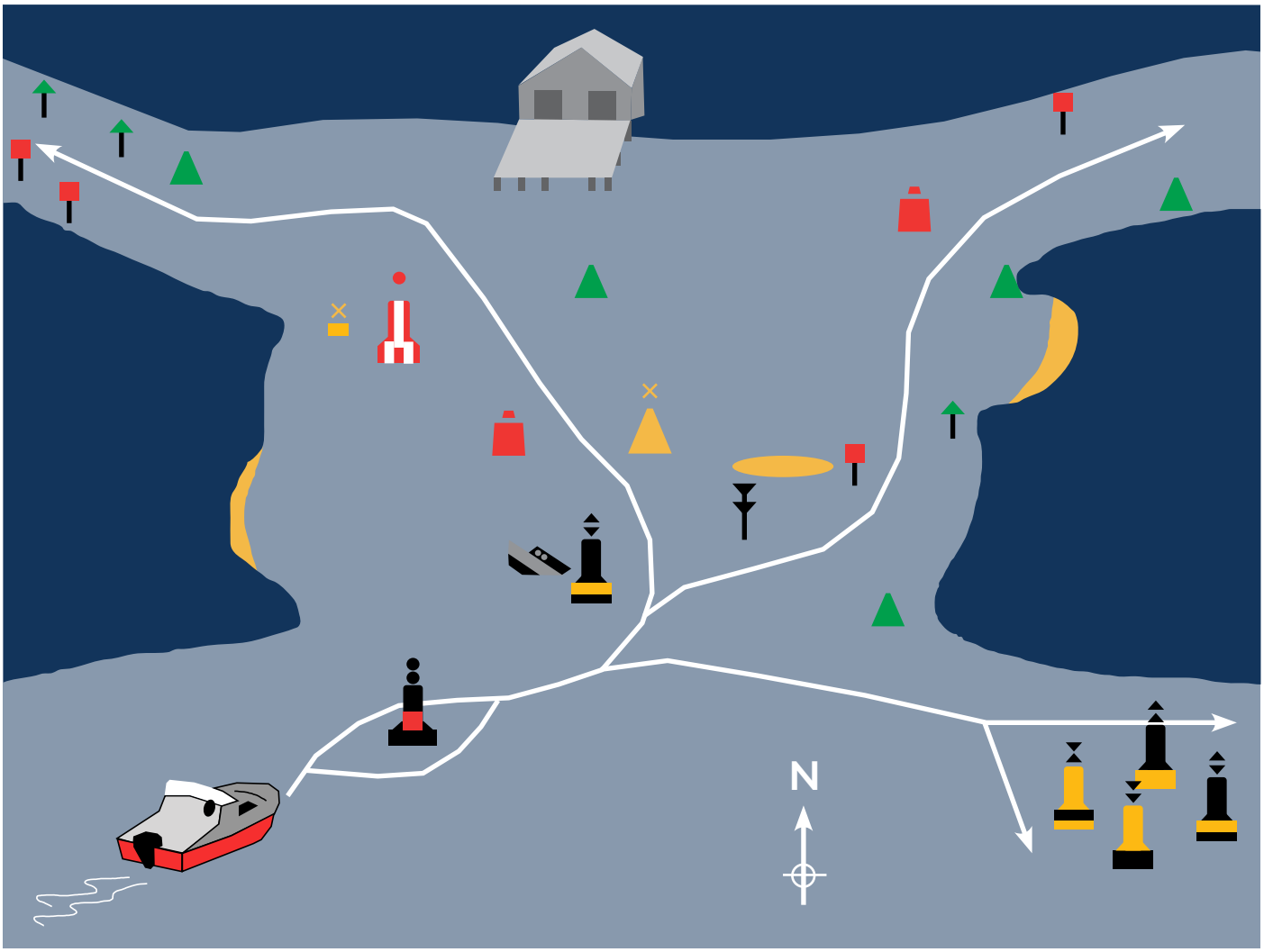
3.5 IALA Buoyage Example: Navigating Typical River Systems

To truly become Boat Wise in the waters, understanding the complex system of IALA buoyage marks within typical river systems is essential. This navigation aspect might seem intricate, but it's a fascinating puzzle that ensures your safety and ease in navigation.

The chart below depicts a typical river system from the ocean, branching into a side channel heading northwest inland and a main channel heading northeast past the boat ramp.



Important points to remember:

- Charts are only guides: They provide an indication of an area but do not replace the need to keep a proper lookout for hazards or changed conditions.
- Marks may change: Marks indicated on a chart may have moved or be missing. Stay alert!
- Check depths: The area has not been sounded if depth information is missing from a chart.
- Lights might not work: Lights indicated on a chart may not be functional on the mark itself. Don't sail blindly!
- Stop if confused: If you're unsure about the meaning of a Mark, stop, refer to the chart, or use all available means to navigate safely through the area.
- Beware of shifting sand bars: They frequently move around river mouths, and the marks may not always reflect current deep water channels.
- Protect the environment: Avoid travelling over shallow weedy areas that may contain endangered seagrasses.

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Navigating a river system with its intricate channels and ever-changing landscape is like dancing with the sea. It requires an intimate knowledge of its rhythms, a keen eye for its subtle cues, and a respectful acknowledgment of its power and unpredictability. By mastering this art, you become not just safe but Boat Wise.

3.6 Weather Wise: Understanding Conditions for Safe Boating

Becoming Boat Wise means not only mastering your vessel but also understanding the weather. Weather can make or break your day out on the water, especially for those planning an offshore or open-water trip.

Master Your Weather Knowledge:

- **Check the Weather:** All Masters must check the weather to avoid mishaps due to unexpected rough conditions.
- **Ideal Conditions:** Powerboating offshore is best with no wind and no swell, but these are rare. Plan your trip around expected conditions.
- **White Caps Warning:** If white caps (wind-driven waves) are visible, consider staying on the river or harbour instead of venturing offshore.
- **Wind Direction Matters:** In a small planning power boat, travel with the wind. Plan your offshore trip accordingly to work with the expected wind conditions.
- **Fuel Consumption:** Expect an increase of 30% in rough weather. Carry extra fuel for offshore trips.
- **Insurance Check:** Most insurance voids cover if taken into open waters when a strong wind warning is issued.
- **Understand Daily Weather Patterns:** Recognise typical situations like offshore breezes in the early morning or onshore breezes in the afternoon.
- **Seasonal Patterns:** Recognise the movement patterns of Australia's low-pressure systems, cyclones, and high-pressure systems.
- **Sources of Weather Updates:** Use the Bureau of Meteorology website, TV/Radio, Volunteer Marine Rescue, and your marine radio for weather alerts and changes.
- Extra caution must be considered when operating near rocks & reefs. Waves within this region are unpredictable and if left un-monitored, will break unexpectedly and capsize your vessel.

Fig 29: *Always check the radar if bad weather is forecast*

Navigating the weather is like playing chess with Mother Nature. You must anticipate her moves, know when to advance or retreat, and always stay one step ahead. From understanding the ideal powerboating offshore conditions to the significance of white caps and the vital importance of extra fuel, becoming weather-wise is an essential aspect of being Boat Wise.

3.7 Offshore Boating Tips

Embarking on the adventure of offshore boating? You're stepping into a realm where the sea rules, and to become truly Boat Wise, you need to understand the unique demands of this environment. Here's how to tread these thrilling but potentially dangerous waters with wisdom.

Your Offshore Boating Tips:

- Extra Care Needed: Offshore boating requires more than your usual precautions.
- Careful Planning: Every trip offshore demands detailed planning. Don't wing it; map it.
- Find Guidance if You're New: Join a club or get an experienced skipper to mentor you. There's no substitute for lived wisdom.
- Know the Stakes: The further you go from the shore, the further you are from help. This is not a journey for the unprepared.
- Essentials: Adequate communication devices, proper safety gear, and a vessel fit for offshore conditions are not optional. They're vital.

Offshore boating is like venturing into the wild unknown of the sea. It's not for the faint-hearted. It's for those who have the courage to face the challenges, the discipline to prepare thoroughly, and the wisdom to seek guidance when needed.

Ultimately, becoming Boat Wise in offshore boating is about embracing both the thrill and the responsibility. It's about respect for the sea and your limitations. It's about the joy of the journey and the awareness that, when you're far from shore, the sea is the ultimate master.

3.8 Navigating Coastal Bars: Essential Precautions and Preparations

Crossing a coastal bar is more than a daring adventure at sea; it's a task that requires full awareness, preparation, and responsibility. It's where unpredictability meets challenge, and it can turn dangerous quickly. That's why becoming Boat Wise about this aspect is essential.

Coastal bars have claimed many lives, and each crossing must be treated with the utmost caution. To embark on this undertaking, there's homework to do. Check the swell size, tide, the bar's condition, and your boat's suitability. But it's more than a checklist; it's a commitment to the safety of everyone on board.

As the captain, your responsibilities go beyond steering the boat. You hold legal and moral obligations to your passengers and your craft. Emergency planning isn't optional; it's mandatory. Think about breakdowns, swamping, overturning, and the horrifying thought of someone going overboard. A lack of planning or experience can put not only your life in danger but also those of rescue personnel.

Beware, especially during outgoing (ebb) tides, one of the more treacherous times to cross a bar. And remember, each state mandates that all occupants wear an approved PFD Type 1 or life jacket when crossing a bar.

With coastal bars, being Boat Wise means understanding the risks and planning accordingly. The sea can be beautiful yet unforgiving, requiring your respect and preparation.

3.9 Tides: Cyclical Patterns and Navigational Implications

Understanding tides is essential for maritime navigation. Their cyclical rise and fall significantly impact sea level and vary across different locations. A comprehensive grasp of tides aids in safe and efficient navigation, and it is an essential aspect of becoming proficient—or Boat Wise—in maritime activities.

Tides are characterised by two common patterns: two high and two low tides daily, or one high and one low tide daily. Some locations may not experience tides at all. These patterns are influenced by the celestial alignment of the Sun, Moon, and Earth, leading to Spring and Neap tides. Spring tides occur on New and Full moons, while Neap tides occur during the first and last quarters, leading to a 28-day pattern.

The practical implication of tides for navigation is profound. Tidal heights must be considered with chart depths to determine the actual water depth. For example, a 5-metre chart depth combined with a 2-metre tide height results in a total navigable depth of 7 metres.

For those navigating in secondary locations, adjusting the predicted times of high and low tides based on the primary port's data is essential for accurate navigation.

In summary, tides are a natural phenomenon and a critical navigational consideration. Their study and understanding enable skippers and navigators to plan and execute maritime journeys precisely. Being aware of and utilising tides is a hallmark of being Boat Wise, contributing to safer and more effective navigation.

Fig 30: *Be wary of high and low tides.*

3.10 Understanding Waves for Safe Boating

Becoming Boat Wise is about mastering every aspect of boating, including understanding the nature of the waves you'll encounter. Let's break it down:

Different Types of Waves

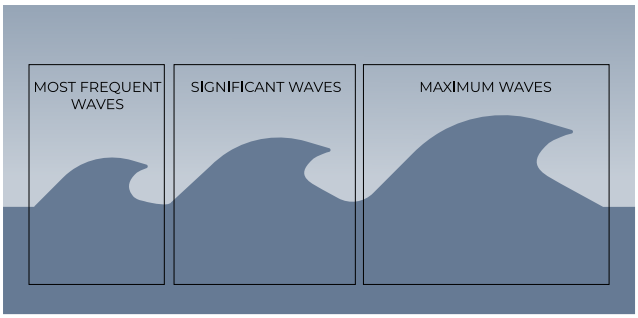
Waves can differ in size, speed, and direction. Knowing how to read these variables is vital for safe navigation.

Factors Affecting Wave Height

Wind speed, water currents, and obstructions like reefs or sandbars can all impact wave size.

Understanding Wave Heights

- **Most Frequent Waves:** Keep an eye out—the height of the most common waves is roughly half the size of the significant wave.
- **Significant Waves:** Don't let them catch you off guard—about 14% of waves will be taller than the significant wave height, which is about 1 in every 7 waves.
- **Maximum Waves:** Hold onto your hat—expect a wave that's twice the significant wave height to show up around three times in 24 hours. Be prepared for these whoppers.



In Most Frequent Wave conditions, maintain a steady but cautious speed, angling your boat to the waves rather than hitting them head-on. For Significant Waves, slow down and angle the boat about 45 degrees to the wave, this helps you ride it out. And for those Maximum Waves, point the bow into the wave and drop to the slowest speed that still lets you steer.

In short, waves are unpredictable, but your actions don't have to be. Understanding wave patterns and their nature isn't just for seasoned sailors; it's for everyone who wants to be Boat wise.

3.11 Navigating Marine Life

Understanding how to interact safely and respectfully with marine life is an essential component of maritime navigation, especially in the rich and varied waters of New South Wales. As a captain, it is your prerogative to ensure both the safety of your crew and the well-being of marine animals. Achieving this balance is crucial for becoming Boat Wise.

- All Vessels must keep a minimum distance and reduce speed in vicinity of marine mammals.

Whales

Powerboats, sailing boats and paddle craft must keep a minimum distance from whales of:

- 100m, or
- 300m if there are calves.

If there are predominantly white whales, all vessels must keep a distance of 500m. You must travel at a constant slow speed and leave minimal wash within 300m of whales.

Dolphins and Dugongs

You must keep a minimum distance from dolphins and dugongs of:

- 50m, or
- 150m if there are calves.

You must travel at a constant slow speed and leave minimal wash within 150m of dolphins and dugongs.

Seals and Sea Lions

All vessels must keep a minimum distance from seals and sea lions of:

- 10m, or
- 80m if there are pups.

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When approaching Whales, Dolphins and Dugongs

When approaching whales, dolphins and dugongs, you must keep minimum distances. You should start your approach at an angle of at least 30 degrees to their direction of travel. This helps you avoid cutting across their path or putting your vessel directly in front of or behind them. If there are other vessels approaching, wait your turn. No more than 2 vessels should approach at a time.

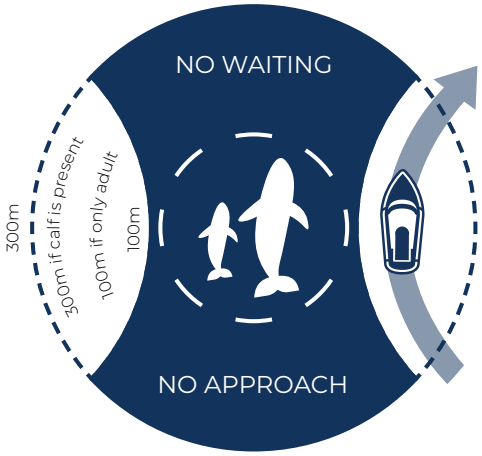
What to do if the Whales, Dolphins and Dugongs approaches you?

If an animal approaches your vessel:

- Stop or slow down to minimise your wash
- Move away or disengage your vessel's gears
- Avoid making any sudden movement
- Minimise noise.

In mastering the etiquette and safety measures associated with these marine animal groups, you safeguard your crew and contribute to our marine ecosystem's well-being. Adhering to these guidelines is emblematic of a Boat Wise captain, committed to safety, respect, and stewardship.

WHALE APPROACH DISTANCES



DOLPHIN & DUGONG APPROACH DISTANCES

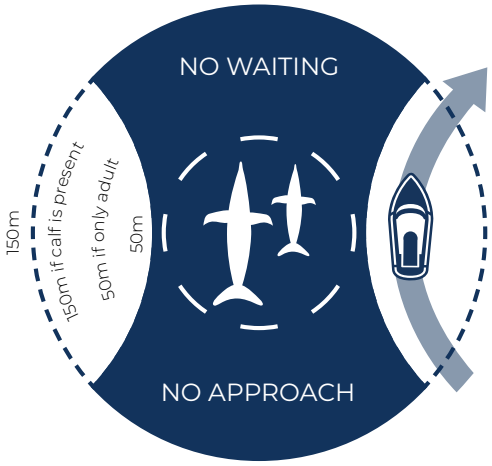


Diagram: *Example of approaching marine life.*

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SECTION 4

VESSEL LIGHTS, SIGNALS & DAY SHAPES

4.1 Understanding Vessel Lights: A Comprehensive Guide

In the realm of maritime navigation, understanding vessel lights is paramount. It's a crucial aspect of being Boat Wise, as it plays a vital role in safety at sea. In this section, we'll explore the details of different types of vessel lights, their historical significance, and their practical applications in navigation.

The Importance of White Lights: Dating back hundreds of years, white lights remain a significant international aid to navigation. These were traditionally used to mark all vessels and hazards to avoid, which still applies today. The white light displayed at the stern of ocean-going vessels is known as the Stern Light, a practice over 200 years old.

Port and Starboard Navigation Lights: Approximately 150 years ago, red and green lights were added at the forward end of large sailing vessels. The arc of visibility is determined by the peripheral vision of the helmsman.

- RED tells vessels in your port peripheral vision to GIVE WAY.
- GREEN tells vessels in your starboard peripheral vision to PROCEED with caution.
- WHITE Stern light ensures all vessels 2 points aft of your beam to KEEP CLEAR.

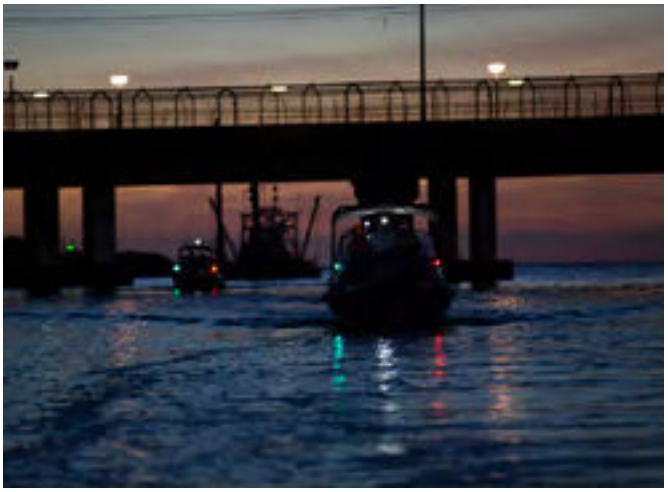
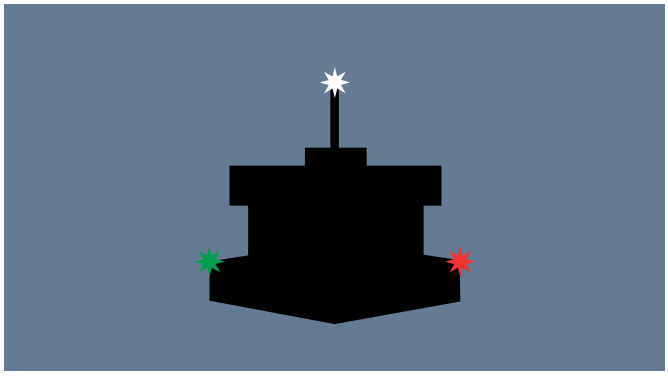


Fig 31: *Navigation lights on a vessel.*

Q&A Section:

Q: What lights are displayed by a travelling (including drifting) power boat between sunset and sunrise, and in restricted visibility?
A: Sidelights (Port and Starboard), and either an all-round white light or a stern and masthead light.



Q: What lights should be displayed if you're at anchor at night?
A: All vessels at anchor must show an all-round white light only.

Q: What lights are displayed on a rowboat or a sailing boat less than 7 metres?
A: A torch or lantern showing a white light, ready to display in time to prevent a collision.

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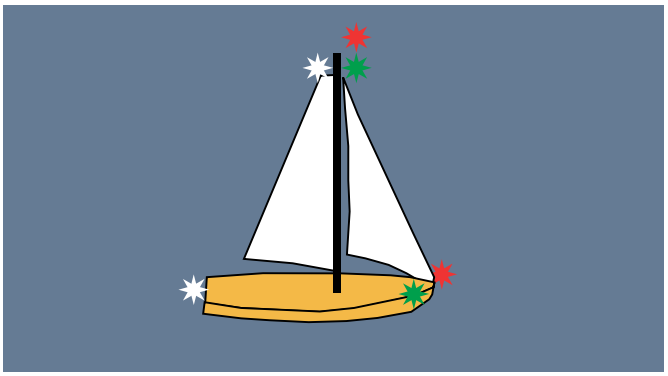
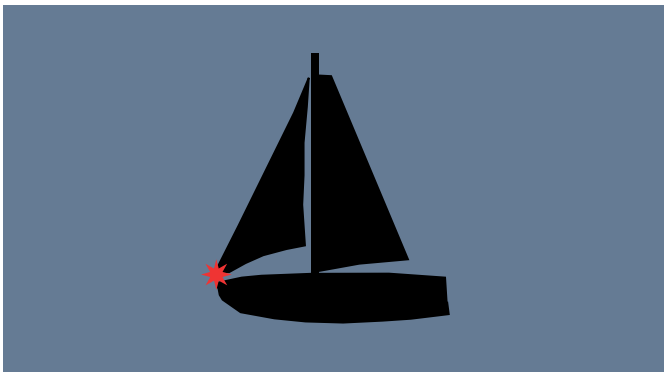
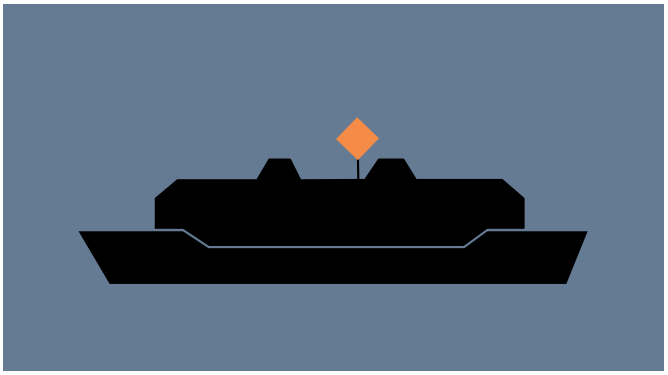
Q: What lights are displayed on a sailing boat over 7 metres?
A: Sidelights (Port and Starboard), and a stern light. Additionally, two all-round lights in a vertical line, red over green, may be shown at the top of the mast.



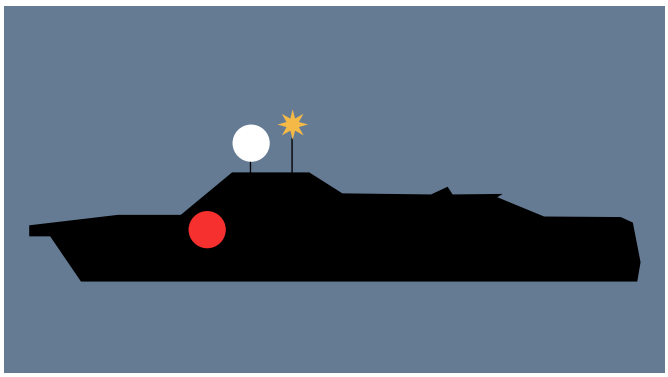
Q: You're out at night and see a red non-blinking light 400 metres ahead off your left bow. What is it?
A: You are seeing the port light of a sailing vessel. Power must give way to sail in a crossing situation.



Q: On Sydney Harbour, you see a ferry displaying an orange diamond. What does this mean?
A: The orange diamond signifies that this commercial vessel has priority over sail. Keep clear.

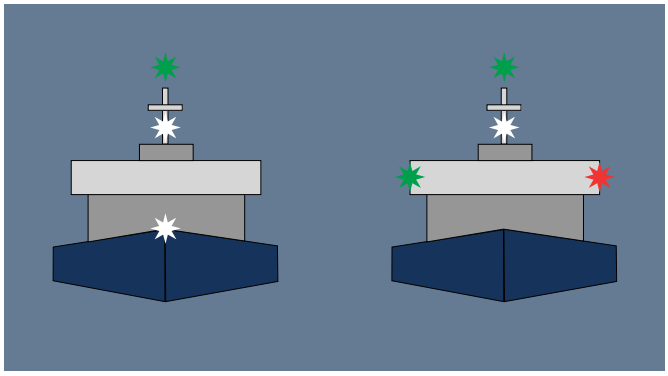


Q: You see a vessel approaching, displaying normal navigation lights and a flashing yellow light. What is it?
A: The vessel is a Jetcat or Rivercat. These vessels normally display the flashing yellow light when travelling at planing speed.



4.2 Understanding and Navigating Commercial Vessel Lights

Becoming Boat Wise means understanding the intricate language of lights used by commercial vessels. Each specific combination of lights conveys vital information about the type of vessel, its activity, and how you should approach it.



Trawlers:

1. Green Over White Lights in a Line: This is a sign of trawling. The green light indicates fishing with a net, and the white light provides directionality. Keep clear of the stern when approaching as the nets may be deployed behind the vessel. Approach cautiously from the side or front, and maintain a respectful distance.
2. Green Over White with Green Port and Red Starboard Lights: This setup communicates that the trawler is underway. The additional red and green lights provide information about the vessel's orientation. Approach from the starboard (green light) as this means the vessel has the right of way.

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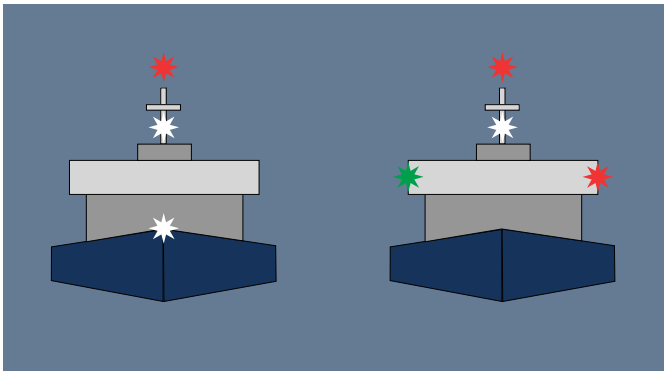
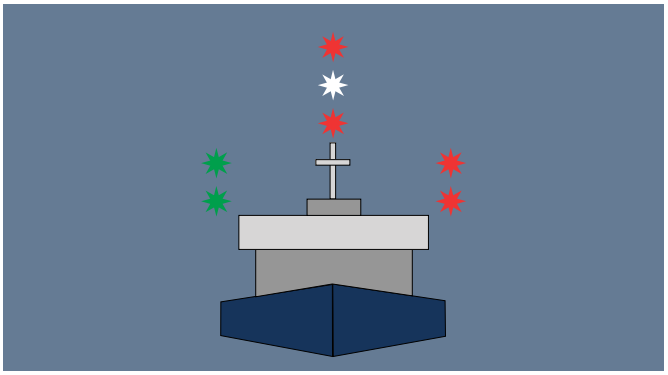


Fishing Vessels:

1. Red Light Over Two White Lights: This indicates that the vessel is engaged in fishing other than trawling. The red signifies fishing activity, while the two white lights imply that the gear extends horizontally from the vessel. To pass safely, approach from ahead or astern, avoiding the sides where the gear might be.
2. Red Light Over White Light with Green Port and Red Starboard Lights: This light pattern signals an underway fishing vessel (not trawling). The additional port and starboard lights help with orientation. Again, approach from the starboard side, giving way to the vessel's port side, as it has the right of way.

Fishing Vessels (At Anchor): Fishing vessels at anchor display an all-round white light. Approach cautiously, giving way as necessary, since the vessel is stationary and no fishing activity is conducted.



Specialised Vessels - Red on White on Red, with Two Green Lights on the Port and Two Red Lights on the Starboard Side: This particular light configuration is unique and conveys specific information:

- Red on White on Red Lights: In a vertical alignment, these lights often signal a vessel that is restricted in its ability to manoeuvre (RAM). This could be due to the nature of its work, like dredging, surveying, or other operations that limit its movement.
- Two Green Lights on the Port and Two Red Lights on the Starboard Side: This pattern further details the vessel's orientation and activities. The dual green and red lights indicate the sides of the vessel you should avoid, based on the work being conducted.

How to Pass this Vessel: Extreme caution and understanding of its activities are essential when approaching this type of vessel. You should:

1. Keep Clear of the Restricted Side: Often, the side with the double red lights may indicate the restricted or dangerous side due to ongoing operations. Keep clear of this area.
2. Communicate if Possible: If you're uncertain about the safe way to pass, attempt to communicate with the vessel, if possible, for clear instructions.
3. Pass with Caution: If safe, proceed past the vessel on the side with the double green lights, but do so slowly and with heightened awareness, as there might be unseen equipment or obstructions.

In each scenario, recognising the specific light patterns equips you to navigate safely and professionally around commercial vessels. Being Boat Wise is not just about following rules, it's about mutual respect and understanding in a shared space. Whether you're manoeuvring around trawlers, fishing vessels, or other commercial crafts, you're now equipped to do so confidently.

4.3 Sound Signals: A Guide to Navigation

Becoming Boat Wise is more than just visual understanding; it's also about tuning into the sounds of the sea, specifically the sound signals used by other vessels. These are vital in foggy weather or other low-visibility situations and are essential for communication and safety. Let's decode these sound signals to enhance our understanding of navigation and safety.
An easy way to remember the meaning of the short blasts is to use the acronym "SPA":

- S for Starboard
- P for Port
- A for Astern

Sound Signal Table:

Signal	Meaning	Blast Pattern
S	Starboard	1 short blast
P	Port	2 short blasts
A	Astern (e.g, reversing)	3 short blasts
5	What are you doing? Get out of the way!	5 short blasts

Q&A Section:

Q: You hear 3 short blasts from another vessel. What does it mean?
A: Larger vessels sound three short blasts when going astern or reversing.

Q: You hear 5 short blasts from another vessel. What does it mean?
A: Larger vessels sound 5 short blasts when unsure of your intentions or require you to provide them with clear passage.

Understanding and responding to these sound signals can make all the difference in navigating safely and effectively. By listening and reacting appropriately, you're respecting the rules of the water and taking another step to become truly Boat Wise.

4.4 Day Shapes: Understanding Visual Signals

Day shapes are essential visual cues to help you navigate your way through the water and interact with commercial vessels. Becoming Boat Wise means understanding these signals and respecting their meanings. Here's your guide to these shapes and what they represent.

Commercial Vessels & Their Signals:

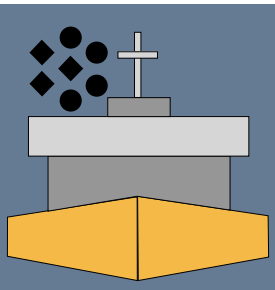
1. Boats Restricted in Their Ability to Manoeuvre: These are used by boats servicing navigation marks, towing, underwater operations, and cable laying.

Q: What does it mean if you see a vessel displaying a black ball over a black diamond over a black ball?
A: Due to the nature of their work, commercial vessels may be restricted in their ability to manoeuvre. A commercial vessel displaying these shapes is asking you to keep clear.

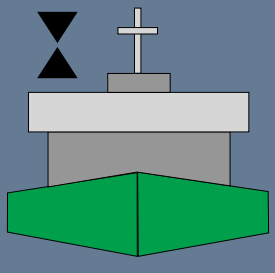
2. Boat Engaged in Underwater Operations or Dredging: This type of vessel must display day shapes and lights to indicate it is restricted in its ability to manoeuvre. If there is an obstruction on one side, it should also carry specific shapes or lights.

Q:. You are approaching a dredge in a channel, displaying day shapes to indicate that one side of the dredge is blocked from passing. What are the shapes, and how do you know which side to pass?
A: The dredge would display two vertical black diamond shapes indicating the side to pass, and two vertical black balls indicating the obstructed side. Pass on the side of the diamonds.

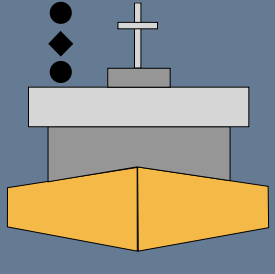
Being Boat Wise means more than knowing the rules; it's about living them. Whether it's a black ball, diamond, or any other day shape, understanding these symbols ensures your safety and that of others on the water.



Underwater operations in progress. Pass on diamond side



Fishing or Trawling



Restricted in ability to manoeuvre

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APPENDIX

Image and Diagram References

Fig 1 - Image source: Marine Area Command - NSW Police Force
Fig 2 - Image source: Service NSW
Fig 3 - Image source: Boat Wise Sydney
Fig 4 - Image source: Boat Wise Sydney
Fig 5 - Image source: Firewize
Fig 6 - Image source: Government of Western Australia Department of Transport
Fig 7 - Image source: Hooked Online
Fig 8 - Image source: Boat Accessories Australia
Fig 9 - Image source: Marine Rescue NSW - Port Jackson
Fig 10 - Image source: Boat Wise Sydney
Fig 11 - Image source: Marine Rescue NSW
Fig 12 - Image source: Terrace Boating
Fig 13 - Image source: Boat U.S.
Fig 14 - Image source: Boat Wise Sydney
Fig 15 - Image source: Western Weekender
Fig 16 - Image source: Boat Wise Sydney
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