ABC BOAT & PWC GUIDE

AUSTRALIAN BOATING COLLEGE

WELCOME

From the trainers at ABC, we hope you enjoy the course

Ask plenty of questions & make the most of it!

It's as Easy as ABC **www.abcboating.com**

Introduction & Aims

The issue of a licence to operate a registrable recreational boat is conditional on an applicant's ability to demonstrate competence as the skipper of a vessel. This Department of Planning, Transport and Infrastructure (DPTI) approved course aims to give applicants the required competencies to obtain a boat licence. It assesses an applicant's competence in accordance with criteria as set out by DPTI. The course is broken into 4 sections.

Course Structure
Section 1 – Safety & regulations
Section 2 – Seamanship & regulations
Section 3 – Charts and navigation
Section 4 – Practical seamanship

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Disclaimer:
This book contains at time of printing, current boating information as per South Australian government regulations. Best efforts have been made to ensure accuracy, but no warranty, either expressed or implied, is given as to the material within. Check the respective state government web sites for latest updates.

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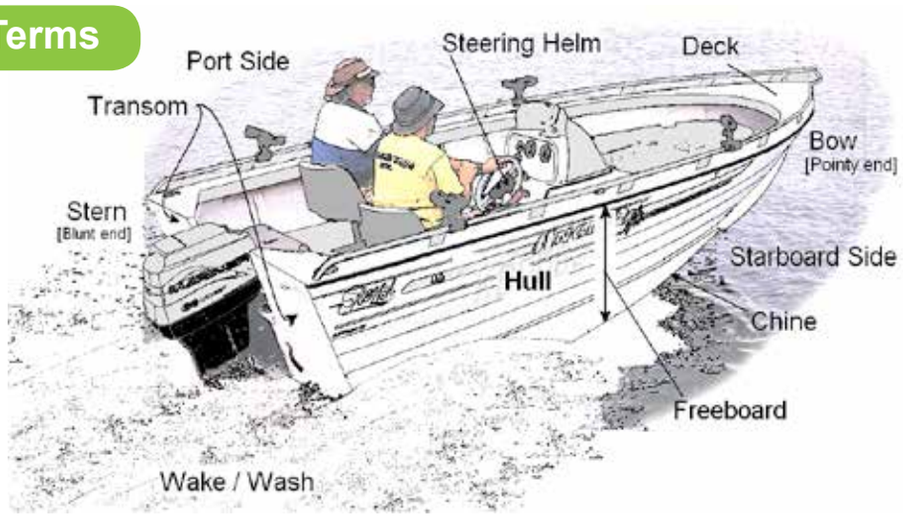
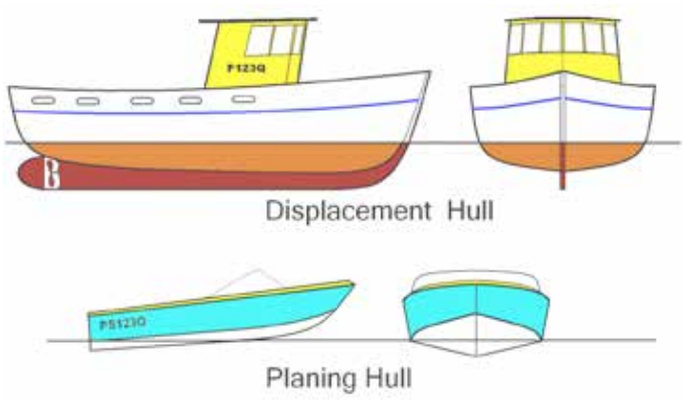
1.1 Common Boating Terms



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
Keel	the bottom of the vessel's 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 boat's 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 (1.85 klms).
Knot	a measure of speed equalling 1 nautical mile per hour



A PWC (Personal Water Craft) has a planing hull

Twin hulled planing vessels offer some comfort in rough seas, due to the cushioning effect of the air trapped between the hulls

1.2 Powers of Authorised Officers and Shipping Inspectors

The following South Australia Government bodies enforce the Act and Regulations.

- The South Australian Water Police
- DPTI - Marine Safety Officers
- Local government officers and
- PIRSA – Fisheries Compliance Officers

South Australian Water Police, DPTI Marine Safety Officers and PIRSA

Fisheries Officers perform the following functions on the water.

- They enforce the Act and regulation, and Standards
- PIRSA Fisheries Compliance Officers monitor fish catches also.

It's quite normal that a person from one of the above authorities will come alongside your vessel to ensure that you're in accordance with the law.

They will

- check that your boat is not overloaded and that the number of persons on-board complies with your vessel manufacturer's compliance plate or loading capacity.
- Carriage of certain safety equipment, depending on the vessel's size, type, and where it is being used.

Normal things, which you'll be requested to show, are:

- Safety gear
- Registration
- Licence
- Any fish caught - current fish size & bag limit pamphlets are available from your local PIRSA office, or via their web site www.pir.sa.gov.au

It is an offence for vessel operators, water-skiers or ski observers to have a blood alcohol concentration (BAC) of .05 or more or to be under the influence of drugs, and severe penalties apply. Marine Safety Officers and SA Police can conduct random breath tests for alcohol on waterways and at launch sites.

DPTI Marine Safety Officers are also responsible for all aspects of recreational boating safety and assist in registration and licensing, surveying commercial vessels, and oil spill clean-up operations.

1.3 A Master's Duty Of Care

The Marine legislation places total responsibility on the Master and/or Owner of a recreational vessel, for the equipping & safe operation of that vessel; and for the duty of care to the passengers and to other vessels.

There are 4 main areas comprising a Master's Duty of Care:

- The ship is safe
- The ship is properly equipped
- The ship is properly crewed
- The ship is operated properly

The duty of care is illustrated by the example of proceeding to sea without some form of adequate communication. In the event of breakdown it is the Master's duty to carry some form of adequate signalling or communication device, taking into account the locality, the weather and sea conditions on the day, even though they may not be required by regulation.

Under the Act, a vessel should not be operated unless the vessel is safe. ie.. it is seaworthy, and is appropriately equipped and crewed to meet the ordinary perils of the voyage on which the vessel is undertaking.

In another example, if the vessel was lent to another person at night, and the lights on the boat were inoperable, which in turn led to a marine accident occurring, then the Owner could also be held partly responsible. (Vessel wasn't safe to be operated at night)

From time to time, information will be put out by the state maritime authorities. Continuously reviewing their boating legislation to improve safety levels, the authorities are progressive in maintaining adequate and effective legislation, and as an Owner and/or Master of a vessel, you should stay abreast of changes.

An **Australian Builders Plate** is fitted to all new vessels and details the vessel's:

- max horsepower
- carry capacity
- buoyancy type

All new boats are required to have either flotation material or buoyancy compartments.

If you modify the boat's design it may compromise the boat's flotation or other aspects essential to it's safe operation.

1.4 Pollution and Noise Abatement Regulations

Rubbish

The Environment Protection Act makes it an offence to offload any pollution into the water.

Take particular care not to allow plastic bags, fishing line, drink cans, etc, into the water, and avoid spillage when refueling.

Check your state's sewerage discharge laws. It is an indictable offence to discharge either treated or untreated sewerage in many localities, and within certain distances from shore.

Noise

The marine authorities have introduced nuisance laws to help make Australia a more liveable place. The laws govern noise made by power boats and Personal Water Craft.

Also check local signage and council by-laws for any local restrictions which may be in place.

1.5 Boating Accidents

If you have an accident, all marine accidents where damage is over $300, or where there is an injury or death, must be reported with 48 hours to the local police or a Transport Compliance Officer – Marine.

Licence, Registration and Safety Equipment

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Before heading out on the water, there are rules a Master needs to know governing licensing, registration, vessel carrying capacities, and what to do in the event of an accident. The questions and answers below reference these topics.

1. What vessels require an operator who holds a Recreational Boat Operators License?

   All vessels with an engine fitted. The licence also allows you to operate a personal water craft (PWC).

2. At what age can a person obtain a Recreational Boat Operators Licence?

   16 years of age

3. Can an unlicensed driver operate a power boat under control of a licensed operator?

   Yes, minimum age 12, and maximum speed 10 knots. Must be under the direct supervision of the licensed operator and not permitted to engage in towing skiers or operate a PWC.

   Responsibility falls on the licensed operator.

4. What vessels require registration?

   All vessels with an engine fitted

5. Where should the registration numbers be displayed?

   Numbers must be clearly visible and displayed on both sides of vessel towards the bow

6. What height should the registration numbers be?

   Vessels 3 metres in length or more– minimum height of numbers 150mm.

Vessels less than 3 metres in length - minimum height of numbers 100 mm

7. Where should the registration label be placed on a vessel?

   Label to be placed adjacent to the steering position and clearly visible in daylight

8. How many people are allowed to be in a boat?

   As many as the Australian Builders Plate (ABP) or manufacturers compliance plate states, (if fitted), otherwise in accordance with DPTI regulations.

9. What should you report in the event of a boating accident?

   A boating incident must be reported within 48 hours you are obliged to submit a completed Vessel Accident Form to a DPTI Marine Safety Officer, or to your nearest police station.

Personal Water Craft (PWC) questions

10. Can a non-licensed person operate a PWC?

    No, all operators must have a Recreational Boat Operators licence.

    A Special Permit holder cannot operate a PWC

11. Where should the registration numbers be displayed on a PWC?

    Numbers must be clearly visible above the waterline and displayed on both sides of PWC

12. What height should the registration numbers be on a PWC?

    PWCs less than 3 metres in length - minimum height of numbers 100 mm

    PWCs 3 metres in length or more – minimum height of numbers 150mm

13. Are there time restrictions for when a PWC can be operated?

    Yes, a PWC cannot be operated after sunset or 8pm (whichever is the earlier) on any day, or before 9am on a Sunday or before 8am on any other day.

A Ride Smart sticker must be affixed to a PWC in a place where it can be easily read by the operator.

1.7 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.

LIFEJACKETS & Personal Flotation Devices (PFDs)

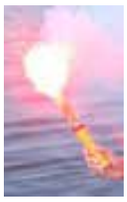
Coastal	Type 1	Type 2	Type 3
Level: 150	100	50	50S

- PFDs come in different sizes – small/medium/large
- Appropiate 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 watersports as there is less risk of neck injury
- All occupants must wear a PFD1 or lifejacket when crossing a coastal bar.

DISTRESS SIGNALS

Use appropriate signal

If other boats or aircraft are in the area you can attract their attention by using :



A **Red hand-held flare:**

is visible up to ten nautical miles on a clear night at sea level

An **Orange smoke flare:**

is visible up to two nautical miles during daylight in good conditions at sea level.

SIGNALLING DEVICES

Waving a torch or cyalume sticks at night is very effective. Slowly and repeatedly raise and lower arms outstretched to each side. One of the simplest signalling devices is a whistle, or waving your arms.

If you've broken down in a river and can't restart the motor your first action to attract the attention of other vessels anchored up to 100 metres away would be to shout, whistle and wave your arms.

A **V-SHEET** should be displayed to attract the attention of other boats or overpassing aircraft. It is more visible than a person waving their arms, and therefore more effective for distances 100-1000 metres.

EPIRBs – 406MHz

(Emergency Position Indicating Radio Beacon) should be used as a last resort. Switch it on and allow it to float beside the vessel until help arrives, then alert all SAR that the emergency has ceased. AS/NZS 4280.1 requires EPIRBS to transmit minimum 48 hrs and to float in an upright position.

EPIRBS need to be registered with AMSA See **www.amsa.gov.au**

Personal Locating Beacons (PLBs) do not satisfy a vessel's EPIRB carriage requirements, as their Standard AS/NZS 4280.2 requires them to only transmit for minimum 24 hours, and they don't have to float in an upright position.

FIRE EXTINGUISHERS

All mechanically powered vessels should carry at least one suitable fire extinguisher, in the event that either your vessel, or another nearby vessel catches fire. Service as required.

LIFEBUOY

Larger vessels should carry one or more lifebuoys, stowed so as to be immediately deployable if needed.

OARS AND PADDLES

Smaller craft should carry a set of oars or paddles with rowlocks. These enables another form of propulsion in case of engine failure.

Important Points to Remember

Safety Equipment:

- must be readily accessible in case of emergency
- be stowed so as not to adversely affect the vessel's stability
- should be stored in accordance with manufacturer's recommendations, and used appropriatedly
- must be in good condition and serviced as required, for the vessel to be deemed properly equipped
- where applicable, must be approved under an Australian Standard.

A Master may choose to carry more safety equipment than the legal minimum.

Vessels carrying safety equipment whose expiry date has passed (e.g. flares & EPIRBS), are not deemed to be appropriately equipped.

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Safety Equipment Requirements

All Masters have a responsibility to carry the right safety equipment, and to know how to use it. Schedule 9 of the Harbours and Navigation Regulations 2009 lists the specified mandatory equipment to be carried depending on the type of water being travelled. Definitions of required safety equipment rely on an understanding of the categories of water types applicable in South Australia.

There are 3 types of water:

- Protected waters – all inland waters, excluding any waters subject to tidal influence, Lake Alexandrina and Lake Albert.
- Semi Protected waters – waters inshore of a line 2 nautical miles seaward of the low water mark of the coast of the mainland or Kangaroo Island, or the banks of Lakes Alexandrina and Lake Albert. Tidal waterways such as the Port River and the Coorong are classified as Semi-protected waters.
- Unprotected waters – the waters beyond two nautical miles from the low water mark of the coast and from the banks of Lake Alexandrina and Lake Albert.

SAFETY EQUIPMENT REQUIRED FOR VESSELS LESS THAN 8 METRES LONG			
EQUIPMENT	**PROTECTED WATERS**	**SEMI-PROTECTED WATERS**	**UNPROTECTED WATERS**
Approved PFD per person	Yes, Type 1, 2, or 3	Yes - Type 1 - Level 150 / 100	Yes - Type 1 Level 150 / 100
Bucket with line attached and bilge pump(s)	Yes	Yes	Yes
Firebucket	Yes	Yes	Yes
One approved fire extinguisher (if engine fitted, or cooking facilities on board)	Yes	Yes	Yes
Anchor and cable	Yes	Yes	Yes
Waterproof and buoyant torch	Yes (if operating at night)	Yes	Yes
Approved compass fitted to the vessel			Yes
Four litres of fresh water			Yes
Two approved flares and smoke signals		Yes	Yes
Marine radio			Yes
Paddles / oars	Yes if your vessel is under 6 metres	Yes, or another type of propulsion	Yes, or another type of propulsion

14. What is the minimum safety gear required to be carried by regulation for a 4 metre power boat on protected waters?

Approved PFD per person, bucket with line attached and bilge pump(s), fire bucket, one approved fire extinguisher (if engine fitted or cooking facilities on board), anchor and cable, water proof and buoyant torch (if operating at night), paddles/oars.

15. What is the minimum safety gear required to be carried by regulation for a 4 metre power boat on semi protected waters?

Approved type 1 PFD per person, bucket with line attached and bilge pump(s), fire bucket, one approved fire extinguisher (if engine fitted or cooking facilities on board), anchor and cable, water proof and buoyant torch, paddles/oars. (or another type of propulsion), two approved flares and smoke signals.

SAFETY EQUIPMENT REQUIRED FOR VESSELS 8 METRES LONG AND OVER			
EQUIPMENT	**PROTECTED WATERS**	**SEMI-PROTECTED WATERS**	**UNPROTECTED WATERS**
Approved PFD per person	Yes, Type 1, 2, or 3	Yes - Type 1 - Level 150 / 100	Yes - Type 1 Level 150 / 100
Bucket with line attached and bilge pump(s)	Yes	Yes 2 bailers	Yes 2 bailers
Firebucket	Yes	Yes	Yes
Two approved fire extinguishers (if engine fitted, or cooking facilities on board)	Yes	Yes	Yes
Anchor and cable	Yes	Yes *	Yes *
Waterproof and buoyant torch	Yes (if operating at night)	Yes	Yes
Approved compass fitted to the vessel			Yes
Four litres of fresh water			Yes
Two approved flares and smoke signals		Yes	Yes
Marine radio			Yes
Paddles/oars, or other auxilliary propulsion	Yes	Yes	Yes
Lifebuoy with line *	Yes	Yes	Yes
Additional equipment for all vessels regardless of length in prescribed unprotected waters ie: • **More than three nautical miles from shore, except in land waters, in lakes Alexandrina and Albert; or** • **More than five miles from shore in Gulf of St Vincent or Spence Gulf**			
EPIRB			Yes
V Sheet			Yes
2 approved rocket parachute flares			Yes
Chart of the area of water			Yes
* If your vessel is over 15 metres in length you are required to carry an extra lifebuoy with line and life raft. If vessel is under 12 metres, second anchor can be carried as a spare			

Personal Water Craft safety equipment

Operators and any passengers on board personal watercraft (PWC) - such as jet skis, wave-runners, wet bikes and jet boards - must wear an approved Type 2 or Type 3 PFD, but are generally exempt from carrying other safety equipment.

Personal Watercraft are not permitted to operate in unprotected waters without approval from the CE of DPTI.

16 What is the minimum safety gear required to be worn by regulation for the operator and passenger(s) of a Personal Water Craft on protected or semi protected waters?

Each person on board must wear an approved and properly fitted PFD Type 2 or Type 3 at all times.

1.8 Marine Radio

Whilst primarily used for boats travelling in open waters, a marine radio is a useful safety device to carry on all boats as it enables voice communication of distress, obtaining up to date weather forecasts, and general ship to ship and ship to shore communications. It is used extensively by the volunteer marine rescue organisations as a log on/log off mechanism for recreational craft; for search and rescue co-ordination, and for issuing weather advices.

A marine radio is preferable to using a mobile phone, as it is a general broadcast communication, rather than one to one communication facility. This means that a vessel close to you may pick up your distress call and be able to render immediate assistance.

Phonetic Alphabet			
A	Alpha	N	November
B	Bravo	O	Oscar
C	Charlie	P	Papa
D	Delta	Q	Quebec
E	Echo	R	Romeo
F	Foxtrot	S	Sierra
G	Golf	T	Tango
H	Hotel	U	Uniform
I	India	V	Victor
J	Juliett	W	Whiskey
K	Kilo	X	X-Ray
L	Lima	Y	Yankee
M	Mike	Z	Zulu

There are 3 types of Marine Radios

(Each type is monitored by Volunteer Marine Rescue Groups)

VHF

- Most manufacturers now installing these
- Require operators certificate for routine calling
- Fines exist for non-certified operation

27 MHz

- No operators certificate required
- Monitored by Volunteer Marine Rescue groups
- Range not as good as VHF

HF

- Greater range for long distance travelling
- 100 miles plus off coast. Require operators certificate
- Large fines exist for non-licensed operation

Example of a typical logon call when reception is clear to Coast Guard/Marine Rescue. If reception was not clear the call signs would be repeated three times:

Using channel 73 for VHF radio, channel 88 (depending on location) for 27MHz radio

Boat Skipper:- "Coast Guard Sydney, Coast Guard Sydney, this is (Boat Name, Boat Name, e.g. SeaQuest) Over"

Coast Guard Sydney:- "SeaQuest, SeaQuest, this is Coast Guard Sydney Over"

Boat Skipper:- "Good Morning Sydney, just wanting to log in for the day. We are a 5 metre aluminium boat with 3 adults on board, departing from Fort Denison and heading over to the Heads. We plan to be back at Fort Denison about 5.00pm. Could you put us on the log please? Over"

Coast Guard Sydney:- "Romeo to that SeaQuest. 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 Skipper:-
"Thanks very much Sydney. SeaQuest out"

Coast Guard Sydney:-
"Coast Guard Sydney standing by"

Distress calls

The distress call 'Mayday Mayday Mayday' should only be used if the boat is threatened by grave and imminent danger and immediate assistance is required. Give the boat's name, location, nature of distress, and assistance required. The signal 'Pan Pan' should be used in other serious situations such as man overboard.

Weather and navigational warnings – use 'Securite' signal. Monitor and relay another vessel's Mayday, if a shore station fails to respond.

Emergency Procedures

In the event you need to use your marine radio in an emergency situation, the following information must be communicated to would-be rescuers:VHF ch16 / 67

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

Remember to advise all parties once the emergency has ceased.

To obtain your VHF or HF Operator Certificate see www.vhfradioonline.com

2.1 Overview – International Regulations for the Prevention of Collision at Sea

Everyone using the waterways should know the International Regulations for Preventing Collisions at Sea, which all vessels must obey on the water. A full description of the regulations can be obtained from most chandlers or a boat books shop.

This course focuses on the rules which are relevant to recreational boating. Most boating mishaps can be avoided if a Master exercises care, courtesy, and commonsense, and satisfies the obligation to keep a proper lookout, travel at a safe speed, and correctly assesses the risk of a collision and takes the appropriate avoidance action.

The Master is responsible for keeping a lookout for dangers. Be aware of the boating environment, especially in bad weather, restricted visibility and darkness.

Good passengers also keep a lookout on a recreational boat and inform the Master if needed.

A proper lookout includes maintaining a situational awareness of the movement of passengers and equipment on your vessel, and the affect this may have on vessel stability and safety.

2.2 Steering and Sailing Rules

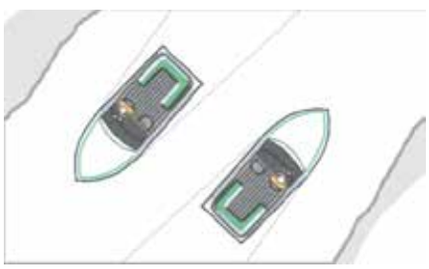
Navigation rules are often called “Rules of the road at Sea” and apply to all boats (and PWCs). These rules give clear indication about passing, approaching, giving way and overtaking to avoid collisions with other boats.

Keep a Proper Lookout

A proper lookout, through sight, sound, and situational awareness, must be kept at all times. More difficult at night as many dangers are unlit.

Rules of the Road

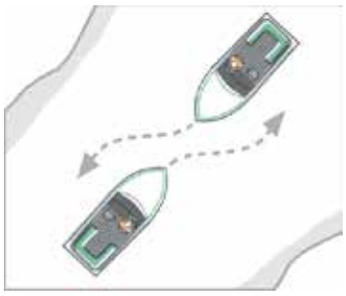
17. What side do you travel down a channel or river?



Rivers and channels

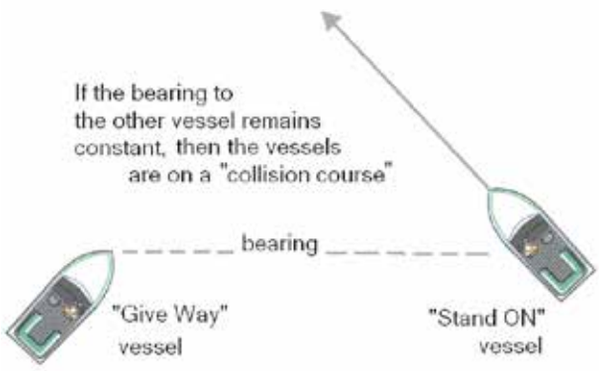
A vessel should always be navigated on the Starboard (right side of a river or channel)

18. Another vessel is approaching you head on. What should you do?



Approaching head on to another boat.
Each boat alters course to starboard (right)

19. A power boat is approaching your power boat from the port side. What should you do?



Power driven boats crossing

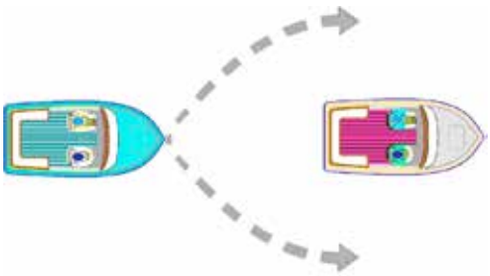
The boat approaching from the starboard (right) has right of way.

However, if the other boat does not give way, the boat with right of way must take action to avoid collision.

20. You are the driver of the yellow boat What should you do?

You should give way to the other vessel, making your intentions early, and very clear so as to avoid confusion.

21. You wish to overtake a boat in front of you. Who has right of way, and which side(s) can you overtake on?



When Overtaking

A vessel may overtake on either side so long as it is safe, and is required to keep out of the way of the boat being overtaken until clear ahead, such that its wash and wake does not interfere with the boat being overtaken or any other vessel. All rules on wake and wash apply.

Always apply common sense and seamanship by giving them a wide berth.

When is a boat considered to be an overtaking vessel?

When a boat is gaining on a vessel ahead and is approaching from a direction that is more than 2 Points (22.5 degrees) abaft of the beam of the vessel ahead then an overtaking situation exists. This applies to both sail and power.

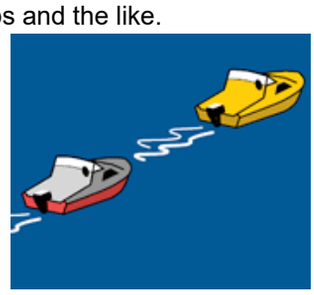
22. You are driving the yellow vessel.
What should you do?

Maintain course and keep a lookout. You have right of way.

Always give way to larger recreational boats that may be restricted by draft or have difficulty manoeuvring.

Always give way to and keep well clear of any commercial vessel carrying out operations.

That includes rescue, commercial fishing, ferries, diving, all the way up to container ships and the like.



23. Your power boat is approaching a yacht on its starboard side. What should you do?

Recreational powered vessels give way to all sail vessels, wind surfers, kite surfers, etc

Sailing Vessels and Sailboards

When each has the wind on a different side, the vessel which has the wind on the port side shall keep out of the way of the other.
When each has the wind on the same side, the vessel which is to windward shall keep out of the way of the vessel which is leeward.
When a sailing vessel with the wind on it's port side sees another sailing vessel to windward and cannot determine with certainty whether that sailing vessel has the wind on its port or its starboard, it shall keep out of the way of that other sailing vessel.

2.3 Distance & Speed Regulations Overview

Always travel at a safe speed. A safe speed is where proper and effective action can be taken to avoid a collision and the vessel can be stopped in time to avoid any danger that arises suddenly.

Safe speed considerations include:

- **Visibility** – drive slowly in rain, fog, mist, smoke and glare. Take special care at night as potential hazards may not be lit or be easily seen and the background lighting may be confusing.
- **Other boats** – slow down in busy areas and when near moored or anchored boats, working boats and larger ships that may have difficulty manoeuvring.
- **Navigation hazards** – slow down in narrow channels, shallow areas and in unfamiliar areas. Water depth can vary and change quickly.
- Be aware that navigation marks may have shifted or been vandalised. Mark lights may not be working.
- **Wind, waves and currents** – may affect the boat's stopping and turning ability. The type of motor, hull and design will all impact on the boat's manoeuvrability.

International Code Flags R over Y:

R Proceed at a slow speed when passing and make no wash.

Y Commercial vessels that require you to slow down when passing so they can safely carry out their work.

SA

Some South Australia Regulations

SA Speed Limits

As well as local restrictions, the following general speed limits apply;
4 knots

• All vessels within 50 m of:

– a person in the water;

– a vessel or buoy displaying a blue and white flag—international flag A and

– a person in or on a kayak, surfboard,

sailboard or similar small unpowered

recreational vessel.

• All vessels within marinas and other restricted

areas.

• All vessels within 30 m of any other vessel

(whether stationary or underway) that may be adversely affected by your wake or wash.

• All vessels within 100 m of a ferry crossing.

• All vessels within or passing through a mooring area or boat haven.

• All vessels within 30 m of a jetty, wharf or other place at which a boat is being launched or retrieved.

• All PWC operating within 200 m of the metropolitan shoreline (edge of water) between the Outer Harbor southern breakwater and the southern end of Sellicks Beach unless zoned otherwise; and the

backwaters of the River Murray (excluding Lake Bonney at Barmera).

7 knots

Speed restrictions applied to specified areas, eg. sections of the Port Adelaide River. Refer to Schedule 10 of the Harbors and Navigation Regulations 2009 for details of these waters.

10 knots

The speed limit applied to vessels being operated by an unlicensed person under the direct supervision of a licensed person, or by

a special permit holder without supervision.

Unlicensed persons and special permit holders may not operate a PWC

SA Waterskiing Regulations

24. Can an unlicensed driver drive for water skiing?

No, not under any circumstances

25. How many skiers can a boat tow?

Max number of 3 skiers

26. Can a skier wear a PFD Type 1?

No, there is risk of serious neck injury. A PFD 2 or PFD 3 must be worn whilst skiing

27. What is the minimum age of a water ski observer?

16 years of age.
The observer's job is to immediately alert the driver if the skier falls, or if the skier signals, or if any approaching traffic from behind. Everyone should be familiar with the skiing signals.

28. Where are you allowed to water ski?

In areas which are not prohibited for skiing. Local signage will usually indicate prohibited areas.

2.4 Vessel Lights

Navigation at night requires special care. It is essential for you to see other boats and have them see you. A white light was the first navigation light and dates back hundreds of years. It is still used today as the main international aid to navigation.

White lights were traditionally used to mark all vessels and hazards you should avoid, that still applies today.

Around 200 years ago, a white light was displayed at the stern of ocean-going vessels and is still known as the Stern Light.

On a moonless night it is not possible to see the silhouette of objects at sea and on land.

The FIRST rule at night is:
You must keep clear of or give-way to any white light because it will be attached to something you don't want to run into!

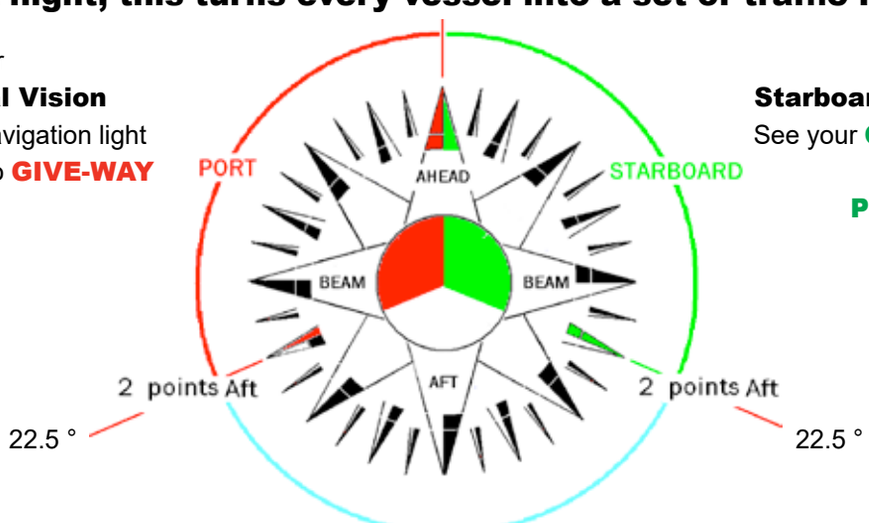
Port and Starboard Navigation Lights

About 150 years ago red and green lights, called port and starboard navigation lights, were added at the forward end of large sailing vessels to indicate size and direction of travel.

The arc of visibility of these lights was determined by reference to the peripheral vision of the helmsman. When you are in the helm position with your front facing the bow you can turn your head and eyes fully to the left or right and see from the bow to 2 points (22.5deg) aft of the beam on either side. Any vessel approaching you from aft of your peripheral vision (2 points aft of the beam) will see your white stern light and must keep clear.

In effect, at night, this turns every vessel into a set of traffic lights

All vessels in your
Port Peripheral Vision
See your **RED** navigation light
RED tells them to **GIVE-WAY**



All vessels in your
Starboard Peripheral Vision
See your **GREEN** navigation light
GREEN tells them
PROCEED with Caution

All vessels aft of your stern, that is 2 points aft of your beam, see a WHITE Stern light and must KEEP CLEAR

NIGHT LIGHTS Cont.

29. What lights are displayed by a travelling (includes drifting) power boat between sunset and sunrise, and in restricted visibility?

Sidelights (Port and Starboard), and either an all-round white light, or a stern and masthead light.

30. If you're at anchor at night, what lights should be displayed?

All vessels at anchor must show an all round white light only.

31. What lights are displayed on a row boat, or a sailing boat less than 7 metres?

A torch or lantern showing a white light, ready to display in time to prevent a collision.

32. What lights are displayed on a sailing boat greater than 7 metres?

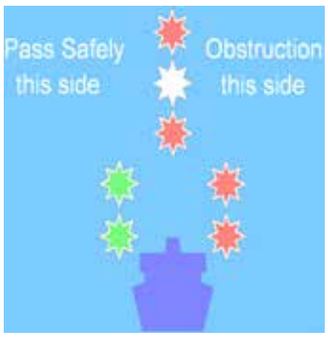
Sidelights (Port and Starboard), and a stern light. In addition, two all round lights in a vertical line, red over green, may be shown at the top of the mast.

33. You're out at night and see a red non blinking light 400 metres ahead off your left bow. What is It?

We are seeing the port light of a sailing vessel. It must be a vessel under sail, as we cannot see a white all round light, which is a requirement of all powered vessels. Power must give way to sail in a crossing situation.

2.5 Other Commercial Vessel Lights

34. What would you do if you came across any vessel displaying these lights?



2.6 Sound Signals

Sound Signal remembrance hint: SPA

S = Starboard	**1 short blast**
P = Port	**2 short blasts**
A = Astern	**3 short blasts**

5 = What are you doing/ Get out of the way?

35. You hear 3 short blasts from another vessel. What does it mean?

Larger vessels sound three short blasts when they are reversing or stopping

36. You hear 5 short blasts from another vessel. What does it mean?

Larger vessels sound 5 short blasts when they are unsure of your attentions, or require you to provide them clear passage.

2.7 Day Shapes

Commercial vessels also use our waters. Some of the day shapes and lights they show are depicted in the diagrams below. Give way and keep clear of all commercial vessels.

Boats restricted in their ability to manoeuvre

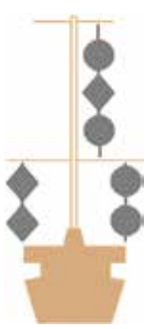
Used by boats engaged in servicing navigation marks, towing, underwater operations, cable laying.

37. If you see a vessel displaying a black ball over a black diamond over a black ball, what does it mean?

Commercial vessels, due to the nature of their work, may be restricted in their ability to manoeuvre. A commercial vessel displaying these shape is asking you to keep clear.

Boat engaged in underwater operations or dredging :

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 two black balls or two all round red lights on the side of the obstruction, and two black diamonds or two all-round green lights on the side where boats should pass.



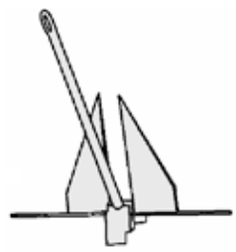
38. You are approaching a dredge in a channel, which is displaying day shapes to indicate that one side of the dredge is blocked for passing. What are the shapes, and how do you know which side to pass?

The dredge would display two vertical black diamond shapes indicating the side to pass, and two vertical black balls indicating which is the obstructed side.
Pass on the side of the diamonds.

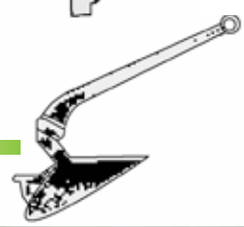
2.8 Anchoring

Anchors are important safety equipment. Even if you do not plan to use them, anchors are imperative if a boat breaks down. An anchor and drogues will keep the boat in the one location or reduce the rate of drift until help arrives. These are types of anchors which are generally used for recreational boating:

Danforth
for sand and mud bottom

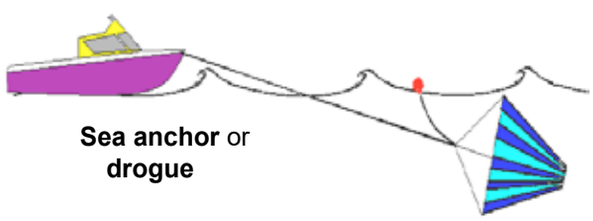


Plough/CQR
for larger boats



Sarca
Suitable for most bottom types and for small and large vessels

Reef
for rocky and reef areas



Sea anchor or **drogue**

A Danforth, or a Sarca anchor, would be more reliable than a reef anchor to hold a 4-metre aluminium boat on a sandy river bottom.

Precautions before anchoring:

- Select a suitable anchorage, allowing for conditions, traffic, weather, swinging room, bottom type, signage, channels etc
- Display anchor light (all-round white light) by night and in poor visibility

When dropping anchor:

- Approach slowly into wind or tide
- Stop vessel and gently go astern
- Let out plenty of anchor line and check your position regularly to ensure anchor not dragging
- Length of anchor line should be 3 times depth of water in calm conditions and 5 times depth in choppy conditions, plus an allowance for the rise of tide
- Once anchored securely, then turn engine off

When retrieving anchor:

- Start engine first
- Go gently forward up to anchor
- Untie from cleat
- When anchor line vertical engage neutral and retrieve anchor
- Stow and secure anchor

Most anchoring problems can be avoided by the following:

Use an anchor of sufficient size for boat. The manufacturer or your local dealer can advise what size anchor you need. Use an anchor in accordance with the type of bottom to which you're anchoring. Reef anchors don't work very well on sand bottoms.

Sufficient length and weight of chain is most important. Chain is used to keep the direction of pull at a deeper angle on the anchor. Boat size, currents and conditions will impact on the size and weight of chain you use. It's better to have too much chain, rather than not enough.

Let out enough rope so that anchor will hold. Usually at least three times the amount of rope as the depth being anchored in is suitable. Tidal height, flow, and sea conditions may increase this to five times or more.

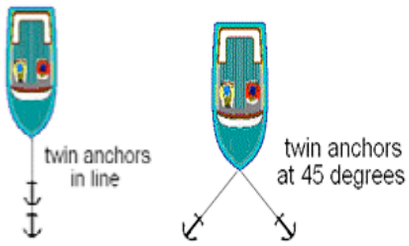
The anchor rope must have a thimble to prevent the rope from chafing on the shackle. A rope without a thimble can be worn through, leaving your boat at the mercy of wind and tide.

It is the Master's and Owner's responsibility to check and maintain anchoring equipment, ropes, and all berthing equipment.

2.9 Heavy Weather Anchoring

The diagrams below illustrate anchoring options for rough weather and overnight situations, where the conditions may be such that 1 anchor only, cannot be trusted to hold.

Especially on overnight trips, always be prepared for bad weather, and have at least one spare anchor & rope in the boat.



2.10 Overnight Anchoring Tips

Many off shore boaties plan weekends and holidays where they camp on an island overnight, and head off shore at first light. This reduces the time to get out to fishing grounds, and enables staying on land and getting a comfortable night's sleep. Anchoring your boat in crystal clear waters in a quiet and protected bay and having a combined boating and camping holiday is one of life's joys, and a great family activity.

If you're staying overnight on land and leaving your boat in the water, here are a few tips.

Theft Management

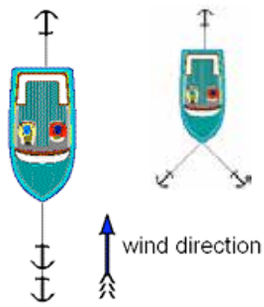
- Take the boat key with you – minimise risk of boat theft
- Take any valuables or gear which you're worried about to your camp. (may include sounders/radio etc).
- In an isolated location, take your safety equipment incl EPIRB with you in case the boat drifts off.

Anchoring in an open bay

- In open bays, anchor your boat far enough off shore so that there's no way it can touch the bottom during the night. Especially important in rougher weather
- Let out plenty of anchor line to allow for rise and fall of tides
- Before dark, keep an eye on the boat to ensure anchor not slipping
- Don't use a stern anchor as you'll always want the bow to face the wind and current
- The most likely time for your anchor to slip is at the turn of the tide, so wander down and have a look – day or night, to check if all okay.
- Keep a weather eye on the wind strength and direction, and check your boat if it changes
- In rough weather, string two anchors out; either in line one after the other, or on separate anchor lines and strung out at 45 degrees to the bow. This doubles the holding power.

Anchoring in a calm inlet where there is no current or waves

- To keep the boat near the shore, anchor with 2 anchors, 1 bow and 1 stern, with the bow out to sea
- Work the tides so that boat will be floating when you want to use it
- If rough weather/storm coming, anchor off shore with two bow anchors (and possibly a stern anchor)



3.1 Introduction to Charts

A chart or map of the area is an important safety item to carry on board. It allows the Master to obtain knowledge of the area to be travelled, and indicates the navigable channels and hazards. Charts are produced in Australia by the Hydrographic Office and sold through licensed chart agents along the coast.

Australian charts are kept up to date by the issue of Notice to Mariners, a Hydrographic Office publication available to the Mariner. Updates should be recorded on the chart and the correction number and year noted on the chart in the bottom right hand corner. Coastal stations broadcast urgent information, often as a Securite message

Marine authorities produce local maps for many inland waterway and coastal locations. Likewise many rescue organisations produce maps that often have detailed location names. The state marine authorities issue navigational warnings on marine radio.

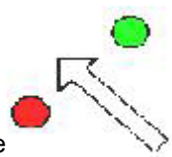
Title	Depths	Legend	IALA Buoys
Scale	Buoy Lights	Reefs	Lighthouses
Wrecks	Leads	Tidal flows	Compass Rose
Currents	Latitude Lines	Anchorages	Longitude Lines
Ship Lanes	Buoyage arrows		

3.2 Chart Features

Maritime maps and Admiralty charts have these features:

Direction of Buoyage arrows indicates the direction towards 'Home Port' for Lateral Marks

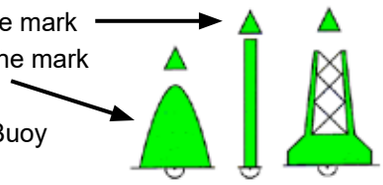
i.e. If travelling in the same direction as the arrow, keep Starboard Marks on your starboard (right)



If travelling in the opposite direction to the arrow, keep Starboard Marks on your port (left)

IALA Marks have three means of identification

- Day shape atop the mark
- Colour pattern of the mark structure
  i.e. Pole, Spar or Buoy
- the light colour



eg.. this mark flashes a green light at night

IALA marks come in many sizes, some very high, up to 25 meters, while others are quite small such as a 44 gallon drum at a river mouth. They are there for the safety of all vessels.

A vessel must not:

X tie up to a navigation buoy or mark
X anchor or linger near a navigation buoy or mark
X anchor in a navigable channel or shipping lane

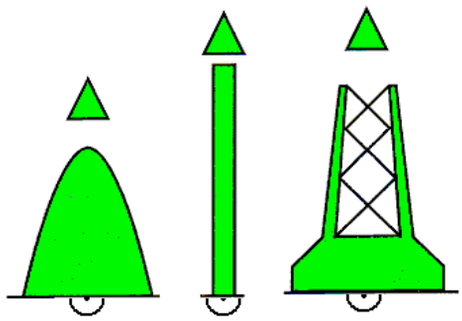
3.3 IALA Buoyage System by Day

There are 5 types of marks in the IALA System 'A' (International Association of Light house Authorities) Each type has variations in size and configuration e.g. floating Buoy or Tower or a Spar or Pole.

Lateral Marks - Port and Starboard Marks

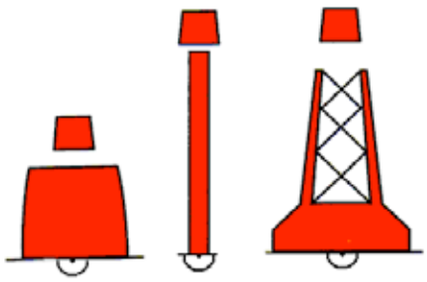
Starboard Marks

- Coloured green
- Triangle (or Cone) top mark
- Flashing green light at night
- Indicates right side of channel when approaching from seaward



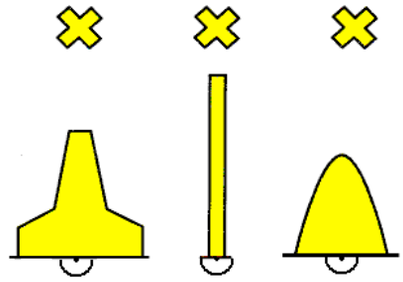
Port Marks

- Coloured red
- Can (square) top mark
- Flashing red light at night
- Indicates left side of channel when approaching from seaward



Special Mark

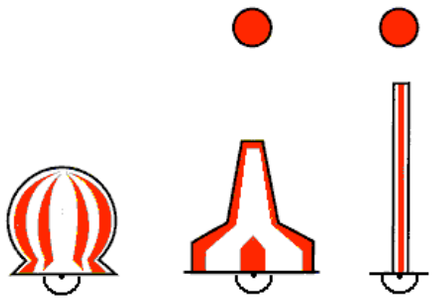
- Coloured yellow
- X top mark if present
- Flashing yellow light at night
- Used to indicate a feature such as channel change in direction or intersection, spoil ground, cable or pipe line. You must consult the chart for more information.



Safe Water Mark

(Remembrance hint: Red and white barber's pole)

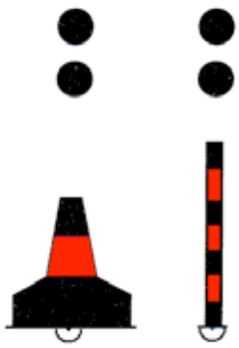
- Coloured white with red vertical stripes
- Single red sphere top mark
- Iso/Occ/LFl10s white light at night
- Indicates there is navigable water all around the mark



Isolated Danger Mark

(Remembrance hint: Red-back spider)

- Coloured black with one or more red horizontal bands
- Two vertical black spheres top mark
- White light at night in groups of 2
- Indicates an isolated danger of limited extent which has navigable water all around it



Cardinal Marks

indicate which side to pass

North Cardinal Mark

- Coloured black band above yellow band
- Double vertical black cones pointing up top mark
- Indicates safe water to the north

East Cardinal Mark

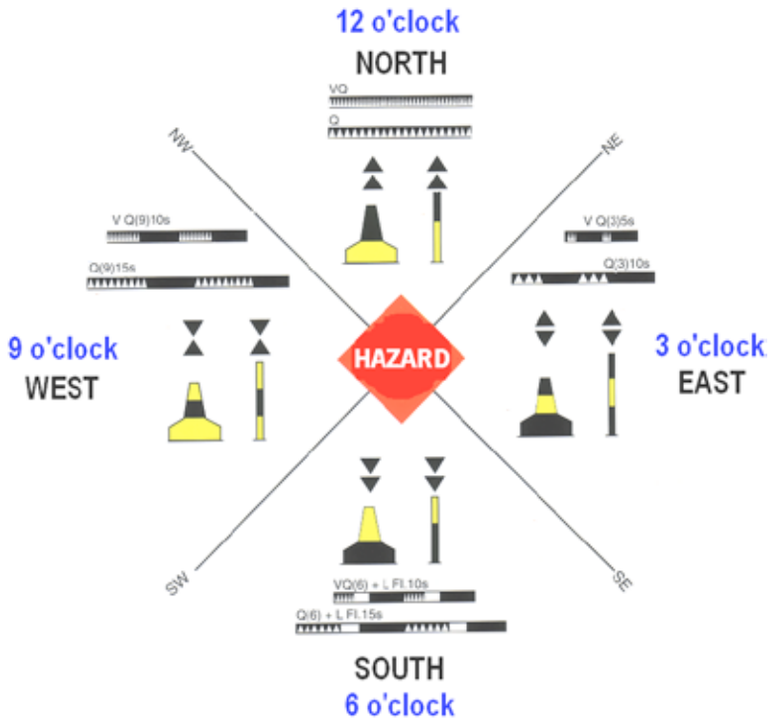
- Coloured black bands above and below yellow band
- 2 cones pointing outward top mark
- Indicates safe water to the east

West Cardinal Mark

- Coloured black band between yellow bands
- 2 cones pointing inward top mark
- Indicates safe water to the west

South Cardinal Mark

- Coloured black band below yellow band
- Double vertical cones pointing down top mark
- Indicates safe water to the south



3.4 IALA Buoyage System by Night

Not all marks have lights. Those that are lit will have a light description adjacent to the symbol on the chart.

Chart Light Examples

Fl G 3s

Means Flashing Green every 3 seconds

QY

Means a Quick Yellow flash (approximately once per second)

Fl G(2) 5s

Means Flashing Green (in groups of 2), every 5 seconds

Fl Y 4s 25m 3M

Means Flashing Yellow every 4 seconds, the light is 25 metres above the high water line, and in clear visibility can be seen for 3 nautical miles.

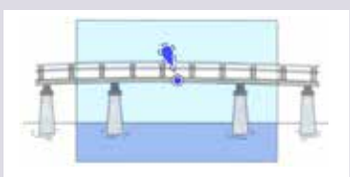
Where a light's colour is not indicated the default is white.

In this example the light emits a long white flash every ten seconds.

CLASS OF LIGHT Chart	Illustration of flashing sequences over a period of time
Symbol	
Fixed (constant light)	F
Occulting (light is On for more time than it is Off – it 'blinks')	
Single-occulting	Oc
Group-occulting eg.	Oc(2)
Isophase (time On and Off are equal)	Iso
Flashing (light is on for less time than it is off)	
Single flashing	Fl
Group flashing eg.	Fl(2)
Long flashing (flash is 2s or longer)	L Fl
Quick (about 1 flash per second)	
Continuous quick	Q
Group quick	Q(3)

Mid Channel Markers

Fixed blue lights of a bridge are identified as mid channel markers and are used to mark the channel between the piers of a bridge.

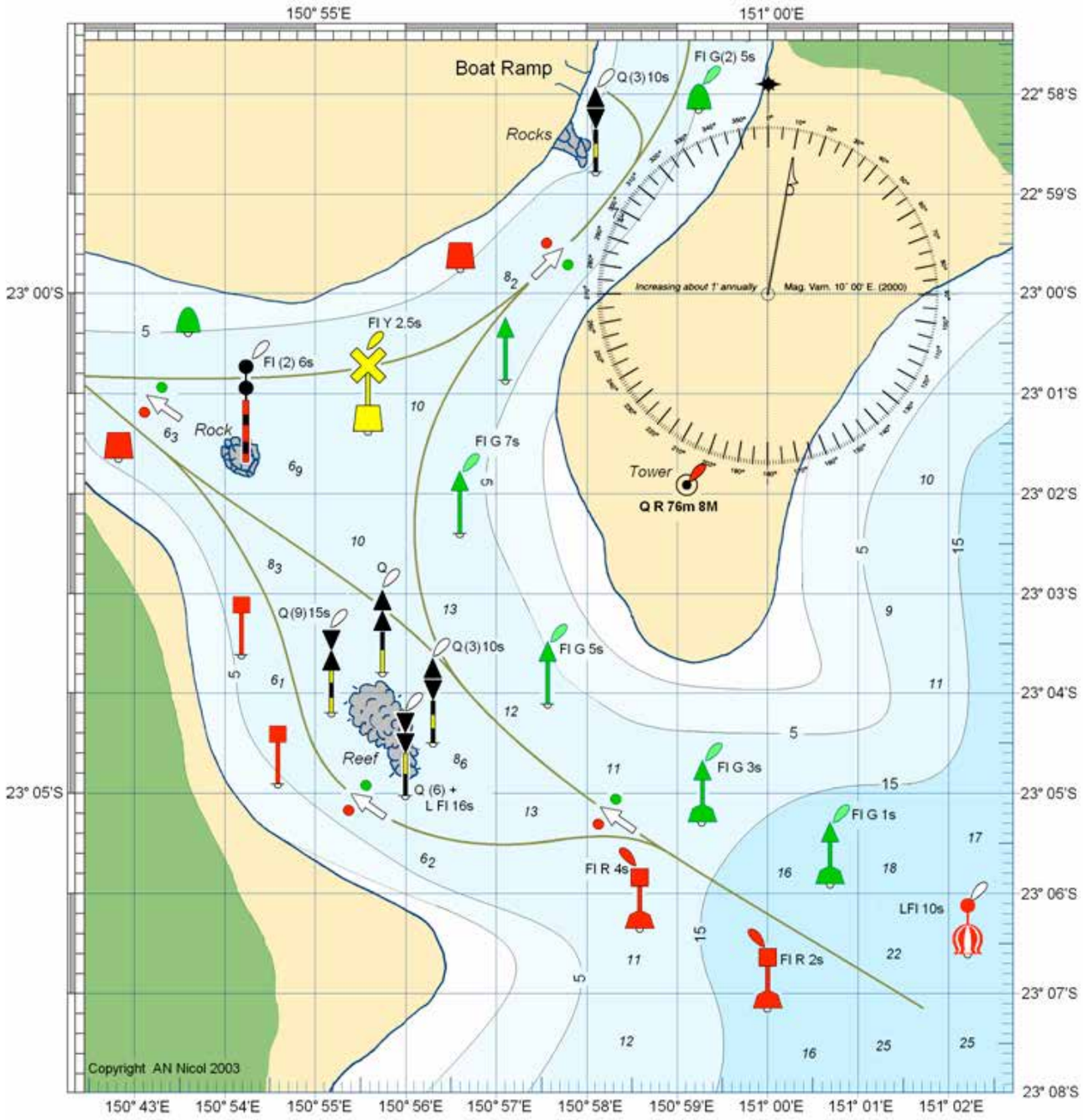


'Port Closed' or 'Channel Blocked' Mark

Lead Marks will be found on a chart and when in line, mark the centre of the channel.

3.5 IALA Buoyage Example

The chart below depicts a typical river system coming in from the ocean.
The river has a side channel heading northwest inland and a main channel heading northeast past the boat ramp.



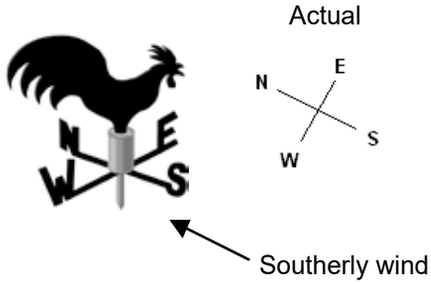
Important points to remember:

- Charts provide an indication only of an area, and do not replace the need to keep a proper lookout for hazards, changed conditions etc
- Marks indicated on a chart may have moved or be missing
- If depth information is missing from a chart, the area has not been sounded
- Lights indicated on a chart may not be actually functional on the Mark itself (broken)
- If you are unsure as to the meaning of a Mark, stop and refer to the chart, or use all possible means at your disposal to navigate safely thru the area
- Sand bars around river mouths frequently shift, and though the authorities frequently relocate them accordingly, the Marks may not necessarily reflect the current deep water channels
- Avoid travelling over shallow weedy areas, which may contain endangered sea grasses

3.6 Weather

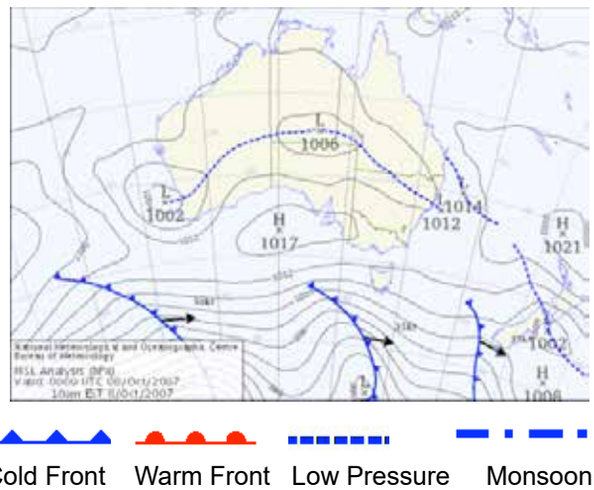
- All Masters have an obligation to check the weather, especially if planning an off shore or open water trip.
- Many a boat has been lost because the weather turned bad, and the boat was not able to cope with the rough conditions.
- The ideal powerboating offshore conditions are when there is no wind, and no swell. Unfortunately, these conditions occur rarely, and skippers going off-shore should plan their trip around the weather conditions expected to occur on the day.
- Generally, for most skippers, if there are white caps visible from shore, then it is not worth while venturing out in a small craft. White caps are wind driven waves, and usually occur when the wind is around 15 knots. It may be possible to shelter from rough conditions behind an island or headland, but if these shelters are not available in your area, then call the trip off, or alter your trip to a day on the river or dam, rather than going off-shore.
- In a small planing power boat it is always easier to travel with the wind, rather than into the wind. So when planning a trip off shore, plan to head out early and into the wind first up, so that on the way home later in the day when the wind has picked up, you will be heading home travelling in the same direction as the wind and the waves. This is the key to off shore boating. Always plan your trip around the expected conditions of the day.
- Strong wind or current from side quarters will tend to drift your vessel off course.
  This affect needs to be taken into account:
  - in bad visibility
  - at night
  - when operating offshore
  - in narrow channels
  - in confined areas with other vessels/obstacles
- In rough weather, you can expect your engine's fuel consumption to increase by 30%, so carry plenty of extra fuel for all off-shore trips.
- The Bureau of Meteorology issues a strong wind warning when the winds are expected to reach 25-33 knots. Check your insurance policy. Most insurance companies void their cover if a boat is taken into open waters when a strong wind warning is issued.

Winds blow from the direction indicated.
For example, a southerly wind blows from the south.



Daily Weather Conditions, caused by the daily pattern of large varying land temperatures and more constant sea temperatures, are categorised by the following typical situation:

- Light Offshore breeze early morning
- Stronger Onshore (Sea breeze) late morning/afternoon
- Lighter breezes in the evening



Cold Front Warm Front Low Pressure Monsoon

Low-pressure systems (rotating clockwise) tend to move southwards into Queensland during summer, and move northwards towards Asia during winter.
A cyclone is an intense low-pressure system.

High Pressure Systems (rotating anti-clockwise), and causing South Easterly winds along the East Coast of Australia, tend to move northwards into New South Wales and Queensland in winter, and move southwards as summer approaches. High-pressure systems tend to move across the continent from West to East, generally following a Perth to Melbourne direction.

Sources of Weather Updates

- The Bureau of Meteorology web site www.bom.gov.au
- Other sources include TV/Radio/ Volunteer Marine Rescue
- Telephone

Your marine radio can be used whilst at sea to monitor any weather alerts or changes

3.7 Offshore Boating

Offshore boating requires extra care, knowledge and experience. All offshore trips require careful planning. They should be treated with caution. If you are new to offshore boating, join a club, or get an experienced skipper to take you out. The further away from shore you are, the further you are from assistance. Adequate communication, safety gear and vessel, are essential.

3.8 Coastal Bars

Crossing a coastal bar is a hazardous activity, where many lives have been lost. If planning to cross a coastal bar there are a number of things to check.

These include swell size, tide, the bar, and your boat.

As skipper of the boat you have a legal and moral responsibility for your passengers and craft, so always plan for an emergency on the bar. Emergency planning includes for such things as breakdown, swamping, being overturned, and losing a person overboard. Your lack of planning or inexperience may cause personnel from rescue organisations to endanger themselves whilst attempting to rescue you.

One of the more dangerous times to cross a bar is on an outgoing (ebb) tide. Each state now requires all occupants to be wearing an approved PFD Type 1 or life jacket when crossing a bar.

3.9 Tides

A tide is a cyclical rise and fall of sea level. The extent of the rise and fall and the frequency with which it occurs varies from place to place. Some places have virtually no tides. Others have one high and one low tide in a day.
Mostly tides comprise two high and two low tides each day.
Spring tides occur on New and Full moons, the effect is to increase high and decrease low tides.

Neap tides occur when the Sun, Moon and Earth are at right angles, first and last quarters, the affect is smaller high tides and bigger low tides.

There is a 28 day pattern of tides – Spring – Neap – Spring – Neap that occur at New Moon – 1st Quarter – Full Moon – 2nd Quarter.

The time lapse between a high water and a successive low water (or between low water and a successive high water) is known as the tidal period or the period of the tide and is generally around 6 hours.

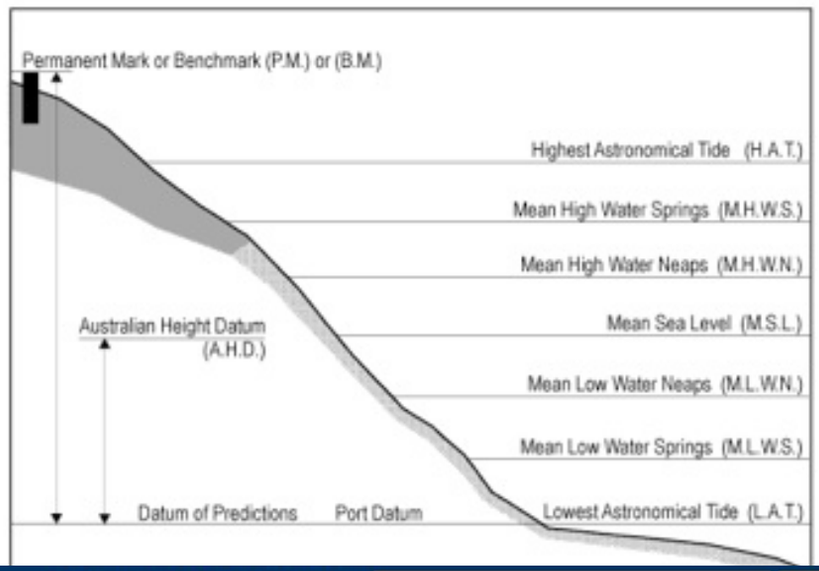
Tides

Tide heights are added to chart depths to give total water depth.

eg. If a chart showed the depth of a location to be 5 metres, and the tide height at the location was 2 metres at the time we were travelling over it, then the total depth at that time of us travelling over the location would be 7 metres.

Secondary places - add or subtract the appropriate hours and/or minutes to the times predicted for the primary port, to obtain the times of high and low tides at secondary places.

eg Noosa Beach is -1.30 from times at primary port Brisbane Bar



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Brisbane Bar - Times and Heights of High and Low Waters
November - 2013

Sunday 24		*Monday 25*		*Tuesday 26*		*Wednesday 27*		*Thursday 28*	
Time	**Height**	**Time**	**Height**	**Time**	**Height**	**Time**	**Height**	**Time**	**Height**
0102	1.58	0158	1.55	0309	1.57	0424	1.67	0529	1.82
0654	*0.67*	0749	*0.76*	0858	*0.82*	1014	*0.82*	1127	*0.77*
1330	2.06	1420	1.99	1518	1.95	1621	1.93	1721	1.94
2010	*0.70*	2107	*0.69*	2207	*0.64*	2306	*0.55*		

4.1 Trip Planning

When planning any boat trip, the plan needs to include the following assessments:

- What is the distance and duration of the trip
- How much fuel will be used
- How much spare fuel to carry
- What safety equipment is required, and what extra safety gear will be carried
- What is the weather condition expected
- What is the wind/tide/swell doing
- Is the boat safe for the trip – including working navigation lights and fitness for purpose
- Is the engine serviced and ready for the trip
- Is it's oil reserve sufficient
- Are the passengers and crew ready, comply with carry capacity, and properly briefed for the trip
- Are provisions such as food and water on board
- Will the tides be right for passage, and for crossing a bar if required
- What is the nearest safe haven if the weather turns bad
- Will we log in with the Marine Rescue service on departure, or inform an appropriate person (eg family member/friend/neighbor of our trip plan and scheduled return, and advise them of what action to take if we are overdue. Remember to inform them of return.
- Are the tools and any spare parts on board
- Is there a medical kit on board, and someone with first aid training

All planning needs to be done on the basis of self-sufficiency..ie.. if something goes wrong, what is the backup plan to solve the problem.

Trip Time Example

Trip Time= $\frac{\text{Distance}}{\text{Speed}}$ eg $\frac{\text{20 Nautical Miles}}{\text{10 knots per/hr}}$ = 2 Hrs

4.2 Pre-Departure checks - Passengers

- Have you identified the location and accessibility of safety equipment to all personnel on board
- Have you explained the usage and function of safety equipment to all personnel on board
- Have you explained safety aspects of the vessel to all personnel – such as seating requirements, movement whilst underway etc
- Have you enquired if any on-board personnel has any special medical or dietary requirements, or as to their swimming ability or boating knowledge
- Have you explained procedures to deal with an emergency situation on board – eg order of command, second in command, communications to rescue services and other vessels
- Have you explained how to identify your position in case of emergency – eg chart, GPS
- Have you explained where the First Aid Kit is located and how to assist an injured person
- Have you explained the procedures for abandoning the boat, including donning a PFD, communicating nature of emergency and vessel position with rescue services or other vessels, flares, EPIRB, drinking water, provisions and clothing, deployment of anchor and sea anchor, staying together, and other information relevant to the area and type of boating
- Have you explained if in cold water, limit body heat loss by assuming the Heat Escape Lessening Posture (HELP) and do not remove clothing.
- Have you explained the need to cancel any emergency broadcast once the emergency has ceased
- Have you explained how to recognise distress signals from another vessel and an appropriate action plan. This plan will be based on factors such as your vessel's capacity, the area, the conditions, and the nature of the distress, whilst at all times maintaining your vessel's safety.

4.3 Emergency Management

If you have never been on a boat that has broken down, your turn is still coming. The more often you go boating, the odds increase that you will eventually suffer a breakdown. Therefore all planning needs to be done on the basis that it might be this trip on which you break down. With a backup plan already in place, the situation becomes less stressful for both you and your passengers.
The nature of the emergency must first be identified.
This must be communicated to all personnel on board.
Any actions you wish personnel to perform to combat the emergency need to be communicated to them – eg.. bail!
Thereafter the appropriate distress signals or emergency management procedures can be enacted.
Your highest priority in combating an emergency should be the safety and protection of all persons on board.
In the case of a fire on a small vessel, this might mean having to make an 'abandon ship' command.
Your ability to manage an emergency comes back to how prepared you are and what safety and other equipment you have.
You should maintain regular communication with rescuers during the emergency, and once the emergency ceases, all personel on board, and any rescue services or other vessels with which emergency communications had been established, need to be advised.
For example if you have lost a person overboard, you should immediately contact the rescue services so an immediate search can be commenced. If you thereafter locate your person, inform the rescue services.

4.4 Let Responsible Person Know

Let a responsible person know:

- Your trip plan
- What to do in event of your non-return at a certain time

This takes the responsibility from them and leaves it with you – the Master.

These trip cards are available for free at marine outlets and VMR's

I'VE GONE BOATING

HERE ARE MY TRIP DETAILS FOR: (DATE) / /

I am departing at: am/pm (please circle)

I am departing from:

My trip intentions are:

I will return no later than: am/pm (please circle)

Number of people onboard (including me):

Weather expected:

Keep a whiteboard marker handy to enter fresh trip details and **ALWAYS** inform a relative or a friend of your boating plans by leaving them with this card. If you fail to return by the time specified they should:

CALL 000 IMMEDIATELY

PLACE PICTURE OF YOUR BOAT HERE – TO ASSIST POLICE WITH VESSEL IDENTIFICATION IN THE EVENT OF A SEARCH

NOTICE TO SKIPPERS

Please keep this information up-to-date.
It will greatly assist in the event of a search for you and your vessel.

SKIPPER'S DETAILS

Name:
Address:
Phone – Home: Mobile:

VESSEL DETAILS

Boat Name: Type/Make:
Hull Colour: Deck Colour:
Length: Registration No:

ENGINE TYPE

☐ Diesel ☐ Petrol ☐ Other
☐ Inboard ☐ Outboard ☐ Size of Motor

COMMUNICATION AND SAFETY EQUIPMENT ONBOARD

Radio: ☐ 27MHz ☐ VHF ☐ HF
EPIRB (406) Carried: ☐ YES (Expiry Date: / /) ☐ NO
Flares Carried: ☐ YES (Expiry Date: / /) ☐ NO

CAR DETAILS

Registration:
Type/Make:
Colour:

TRAILER DETAILS

Registration:
Type:

4.5 Mechanical Breakdown

The following points should be considered in preparation for managing a mechanical breakdown

- Is the vessel in immediate danger (being swept onto rocks, into path of oncoming vessels etc)? If so, use appropriate safety gear (anchor etc) to negate danger
- Are you able to identify the cause of the fault (fuel/spark/engine/steering, etc)
- Are you able to remedy the fault with appropriate action or tools
- Are you likely to be rescued by a passing boat
- How will you flag down a passing boat (V sheet/waving arms/whistle etc)
- Where is the closest volunteer rescue organisation
- How will you contact that rescue organisation
- Will somebody report you as missing if you are overdue
- Do you have local knowledge of your position, or a chart or GPS on board so as to be able to inform rescuers of your location
- Do you have sufficient water and provisions on board whilst awaiting rescue
- Before departing, have you planned for possible worsening weather conditions during a breakdown

Remember that 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.

4.6 Medical Emergency

The following points should be considered in preparation for managing an onboard medical emergency:

- Is there a First Aid kit on board
- Does anyone on board know First Aid
- Is there a way to contact aid if the boat is unable to be moved (e.g. back injury)
- Are you aware if any of your passengers or crew have a medical condition. Do they need special medication which needs to be available on board

If you have not yet done a course in First Aid, there's no better time than now to do it.

4.7 Assisting Others in Distress

- If you notice another vessel's distress signal, whether that be a flare, V sheet, persons waving arms, reflective mirror, light signals, radio call etc, you have an obligation to assist
- Your first priority is not to endanger your vessel or your personnel
- Your next priority is to identify the assistance the vessel in distress requires, and the best way to help them. eg. If they have mechanical failure:-
- Is there a way to remedy the failure. Often VMRs go to callouts and it's the simple things such as people not realising their kill-switch is engaged
- Is your vessel capable of towing the other vessel to a safe port. A 4 metre tinnie should not tow a 12 metre catamaran at anything above idle speed, due to the strain the tow creates. Tow cleats have a weight rating.
- Do you have sufficient fuel to perform the tow
- Are their wind/tide/weather affects to consider, such as an approaching storm or strong current
- Is the best way to help, simply communicating the distress to a rescue service, and providing personnel assistance as required – eg mother with young children taken to shore

4.8 Person Overboard

- The Master must be immediately advised, and the person in the water must be kept in constant sight
- Immediately deploy a flotation device or life ring if the person is struggling in heavy clothes/gear etc
- If a person is falling off the side of the vessel and the Master notices, the vessel should immediately be turned towards the side where the person has fallen. This will push the stern and propeller away from the person in the water.

To retrieve the person:

- slowly approach into the wind
- engage neutral when close enough
- switch off engine if person is to climb over the stern, or if propeller danger exists
- do not enter the water to assist unless as a last resort. You are best able to assist by aiding them from the vessel, rather than being in the water with them

4.9 Capsize

Vessels can capsize for a number of reasons including:

- Overloading, allowing water to come over the sides
- Uneven weight distribution of persons or equipment
- Waves over the bow, sides or stern

If your boat capsizes:

- stay with the boat. Most boats have at least some level of flotation, and a swamped or capsized vessel is easier to spot from the air
- take a head count and ensure all persons are accounted for
- check for injuries with all persons

If a small runabout, you may decide to attempt righting the vessel and bailing it out. Do this by grabbing the keel and rolling the boat towards you. Maintain the roll until the boat is upright.
It may be possible with a medium size vessel to run rope(s) under the gunnels, and by standing on the upturned hull and leaning backwards, establish enough ballast to roll it upright.

4.10 Fire on Board

Any mechanically powered vessel or vessel equipped with a stove can experience a fire, so all Masters need to have fire management planning in place.
Fire prevention is far better than fire management:

- keep the bilge and engine area free of oily rags, paper, and any other combustible material
- ensure all electrical wiring is in good condition
- ensure all fuel lines and fuel storage systems are in good condition and stored away from batteries or any other electrical device likely to give off a spark
- don't allow smoking on or near fuel tanks
- have a suitable fire extinguisher on board, and know how to use it
- regularly check for fumes around fuel systems and fuel lines, gas lines and gas powered appliances
- use only fuel systems and gas powered appliances which are approved for marine use
- wipe up all spills before starting engine

4.11 Engine Maintenance & Pre-Start Checks

Your engine should be serviced by a qualified person In accordance with the manufacturers recommendations, or sooner if the engine shows any signs of malfunction. Do not wait for something to happen on the water.
Before starting a vessel's engine you should check

- That the manufacturer's operating procedures were being observed
- That it was safe to do so, taking into account people's proximity to moving parts, depth of water, obstructions, cooling systems, fuel systems, exhaust systems and fumes, ventilation
- That the vessel's battery and electrical system was safe, and ready for the engine to be started
- That any gas appliances were safe, and ready for the vessel to be started
- Bilge water levels – just to be sure the bungs or a sea-cock havn't been left open
- When running the engine, check that the kill-switch functions properly
- When running the engine, maintain awareness of all systems including oil and cooling.

eg if running an outboard motor, keep regular watch on the 'tell tail'

a

4.12 Refuelling

The danger of fire or explosion increases at times when a boat is being refuelled.
The following safety precautions should be adhered to:

- Turn off all electrical and gas appliances
- Don't smoke
- Remove any passengers off the vessel to a safe distance
- Avoid any spillage of fuel. Have an effective transfer method pre-organised such as a jiggle-syphon
- Start engine before passengers re-board

4.13 Fuel Consumption

What factors are likely to increase a vessel's fuel consumption?

- Travelling at high engine revolutions
- Having the vessel heavily loaded
- Travelling in rough sea conditions, or towing

4.14 Launching

Prepare your boat in the car park, not on the ramp.
Prior to launching at the boat ramp: -

- Bungs in
- Battery connected
- Fuel ok/oil ok
- Weather ok/safety gear ok
- Water/money/food/phone/clothing / provisions on boat
- Check for overhead wires if launching a trailer sailer, before moving the rig
- Any tie-downs or brackets/lighting boards removed and stowed
- Winch handle stowed after use
- Have a line ready from the bow of the boat so you can control the boat once it's floating
- Walk carefully down a boat ramp you've never tried before. It may drop off or be slippery. Boat ramps are normally slippery. Do not wear thongs etc
- Back the car down so as to float the boat's stern, but try to keep the trailer axles above the water line
- Release the winch and launch the boat slowly, and using the bow line, drag the boat away from the ramp to the beach
- Remove your car and trailer from the ramp

4.15 Retrieving

- Back the trailer in so as to keep the axles dry
- Maneovre the boat onto the trailer using bow and/or stern lines
- Connect winch cable to boat and engage the winch lock
- Winch boat onto trailer
- Connect safety chain from trailer to boat
- Move the boat and car to the car park away from ramp
- Remove the bungs and prepare the rig for towing
- If there is mud or slime on the ramp, slow spinning of the car tyres may dry it out and enable the car to claw its way up.
- If you are retrieving with waves, wash, or current affecting the boat ramp, getting someone to hold the boat in line will greatly assist. If water is too deep for them to stand in, run a line from the stern cleat or bollard to a person on the shore so that they can keep boat in line

4.16 Mooring

Picking up a mooring buoy can be achieved by following the process:

When approaching mooring:

- Approach into wind or tide
- Stop vessel at mooring
- Retrieve mooring line by hand or using boat hook, and fasten to bow cleat
- Turn off engine

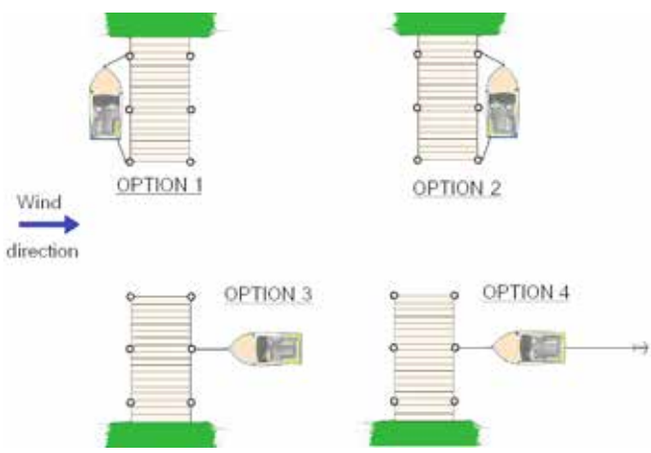
When departing mooring:

- Start engine first
- Go gently forward to remove tension from mooring line
- Untie from cleat
- Throw line clear
- Reverse away or move away at angle to avoid mooring line
- Mooring and berthing apparatus needs to be maintained in accordance with the manufacturer's and/or State government requirements. This usually requires bi-annual or annual inspections by a qualified contractor.
- Also ensure that the mooring or berthing apparatus is sufficient to cater for the vessel's size and for the sea and weather conditions likely to be experienced

4.17 Berthing

The diagrams below depict various ways in which boats are berthed to piers and jetties.

Which do you think is the best way?



4.18 General Advice on Berthing

Approaching a pier, pontoon, wall, or other fixed object

When approaching a fixed object, the potential exists to either damage your boat, or damage the object itself. The effects of wind, current and waves can add further complications to the process.

Some general rules of thumb to make berthing easier:

- Always approach slowly. That way it's easier to do an about turn or fend off your boat if needs be
- Come in against the current and wind so you won't be pushed onto the object and will have much better engine control. Therefore when placing the engine in neutral you will be pushed away from the object, rather than onto it if you've miscalculated your approach. It also means that when tied to the object, your boat will be kept off it and not bashed against it by waves
- Be ready to use reverse gear to stop the boat's forward momentum. Watch out for swimmers, divers, and fishing lines
- Keep a sharp eye out for kids and don't forget that other people enjoy using piers and pontoons Have someone ready to fend off. When coming in slowly, having someone on the bow who can grab the pier or step (never jump) on to it with a bowline will make berthing easier.

Allow for tides if you are tying to a jetty or pier that is fixed and not rising and falling with the tides. Consider the length of rope required to tie off boat. Tidal movement up to 17 metres occurs in some Australian locations.

That means if you've tied up at high tide and used a short rope, in a few hours time your boat could be hanging vertical!
If berthing to a pontoon, the pontoon will rise and fall with the tide, so you can tie your boat closely without worrying about the above. All marinas are constructed using pontoons.

4.19 Towing the Boat

Before each trip to the boat ramp - check

- Fuel/oil/safety gear/battery charged/canopy secured/ boat key/drinking water/food/mobile phone
- Motor running & secured hull/lights/radio/provisions/ proper clothing/bung plugs/spares/tools/nothing left on hull which will fly off
- Nothing loose in boat which will roll around/fly out
- Anchor(s) secured and functional/anchor line ok/ shackle secured

Check trailer: -

- Lights/bearings/brakes/tyre pressure
- Boat safety chain/U-bolts/springs
- Straps/rollers/winch
- Properly coupled to car/brakes disengaged/chocks removed

Towing home after the boat trip
Before leaving car park - check

- trailer coupling to car secure
- winch cable is tight
- boat sitting properly on trailer
- boat tie downs/engine brackets in place
- bungs removed
- loose gear removed
- battery isolator switch off
- winch handle stowed after use

4.20 Post Trip Maintenance

- Flush motor with fresh water
- Wash boat/trailer/visual check on hull, lights, engine & trailer
- Disconnect battery/turn off isolator switch
- Boat properly stored out of sun if possible
- Trailer brakes not left on, otherwise the callipers can seize onto the disk
- Gear properly washed and stowed
- Fuel venting managed
- Fuel goes off after a period of time, so any old fuel should be disposed of in an environmentally friendly manner
- With the introduction of ethanol based fuels, check with your engine manufacturer as to whether this fuel is safe for your engine

4.21 Off season Vessel and Trailer Maintenance

Simple maintenance can prevent you from breaking down at sea. Even if you're not an expert there are some basic things, which you can do to prevent mechanical, gear, and boating problems. As skipper, it is your responsibility to ensure the vessel is safe:

- Keep and refer to an updated maintenance schedule and log for the vessel, which would include things such as the date the engine was last serviced, the expiry date of applicable safety gear such as flares and EPIRBs, and any other work carried out on the vessel. eg..

Vessel Maintenance Log

Safety Equipment Service & Replace Dates

Flares Expiry Date:
Fire Extinguisher inspect 2009 2010 2011 2012
EPIRB Expiry Date:
First Aid Kit Inspect 2009 2010 2011 2012
Torch Batteries Purchase Date:
Inflateable PFDs Service Date:

Comments:

Motor/Vessel Service Dates:

Date serviced:
Serviced by:
Work performed:
Next service:

Comments:

- Ensure marine battery is charged and in good condition.
- Ensure navigation lights work and electrical cabling is not corroded. Note the corrosion. Terminals should be kept clean, and dry by applying petroleum jelly.

An unsecured battery is dangerous. Batteries should be stowed securely and clamped to the hull

- Ensure no pieces of metal are left sitting at the bottom of an aluminium vessel for any length of time
- Start engine regularly during the off-season and follow manufacturers recommendations
- Work steering, power trim, pumps and bilge pumps regularly, to keep parts from seizing
- Keep a good eye on the vessel for any obvious signs of structural flaw, rust, osmosis,or stress fractures.
- If in doubt, engage the services of a qualified surveyor to examine the hull
- Maintain a regular check on any structural fittings for signs of fractures, rust or stress

Ensure trailer bearings are constantly greased and in good condition. Marine trailer bearings are constantly immersed in water, and hence will deteriorate quicker than road trailer bearings and car bearings.

- Ensure trailer has a spare tyre that is in good condition.
- Ensure rollers/winch are in good working condition.
- Ensure winch cable is not frayed nor damaged.
- Always use a safety chain from trailer to bow of boat. Don't rely on winch cable alone.
- Use an appropriate water resistant grease

Basic Tool Kit

Have on board a basic tool kit min. comprising:

spark plug spanner	screw drivers
waterproof tape	knife
spanners	rag
spare shackles spare spark plugs	water repellent eg. Inox or Lanoguard
pliers fuses & light bulbs	spare manual pull rope for outboard engine

Motors should be serviced as per manufacturers schedule recommendations, and also at the first hint of trouble

Flaking fiberglass is a sign of osmosis, which can affect the hull's strength and integrity. Inspections and repairs should only be carried out by qualified persons

4.22 Safe Driving for Water Skiing

- Make sure ski rope is taut before taking off
- When skier is jumping into water from boat, make them jump on up current/upwind side
- Always travel on starboard side of channel, leaving plenty of room for skier to ski
- Make sure the skier, and you, know what hand signals to use to go faster/slower/stop
- Always have an observer in boat
- Never cut across the path of an oncoming boat
- Trim the engine up when under way to achieve better fuel economy
- Always switch engine off before skier climbs back on to boat
- Driver must keep skier sighted when drawing alongside to pass rope
- Never reverse when boat near skier in water
- Avoid rope tangles with propeller
- Always look left and right before doing a beach start
- Have observer pull in rope as soon as skier finished. Never leave rope trailing
- Never allow skier to wrap rope around a limb whilst in water
- Put boat between fallen skier and oncoming boats
- Skier should signal ok after a fall
- Never come in against traffic when approaching ski beach
- Concentrate on what's in front (80%), at sides (10%), and behind (10%) when driving
- Ensure observer knows their role
- Ensure driver, observer, and skier agree on meanings of signals before taking off
- Ensure all skiers wear wet-suit pants for safety
- Inland waters can have strong currents, cold water, and submerged hazards

5.1 General Operation

- Noise Annoys – don't operate continuously in an area where houses or other boats are present
- Be aware of the environmental impact your PWC may have, and don't operate over sea grasses in shallow water
- Allow plenty of room to stop
- When near boat ramps, other vessels, and the shore, be aware of the wake your PWC puts out and minimize it by slowing to an idle
- Ensure passengers are holding on and safely accommodated before departing. The best place for passengers to hold on when facing forward is the straps of your PFD.
- If you are training a new driver and sitting behind them, connect the safety lanyard to yourself, not to them
- Practice reversing to ensure familiarity
- Practice turning at slow and higher speeds to become familiar with the craft

5.2 Propulsion

Propulsion is achieved by the engine driving a powerful pump which sucks up water from underneath the craft thru the jet pump intake grate. This water passes thru an impellor, which pressurises the water and forces it out a jet nozzle at the stern of the craft.

No-one should stand directly behind the jet nozzle within 5 metres when the craft takes off.

5.3 Controls

5.4 Maintenance

The Owners Manual of your PWC will describe important maintenance and operator features. It should be read and understood by the owner and operator(s). It is important to ensure your PWC is in good order by inspecting key features before you leave home or the ramp, mooring or wharf. The major causes of breakdown are engine failure, fuel shortage or contamination, mechanical failure and battery failure.

Check:

- Steering control to ensure working properly
- Fuel and oil supplies. Top up as required
- There is no hint of fumes in the engine compartment before trying to start the engine
- All hoods and compartment covers are attached securely
- Battery is secure and terminals clean
- The pump/intake area is free of debris
- For cracks and other damage to the hull
- The throttle is in proper working order
- The lanyard cut-off switch is in proper working order and is attached to your wrist or PFD
- Tools and tow-ropes are on board in case of break down
- Speak with your dealer regarding fitting a towing tap to prevent water ingress when being towed
- Before flushing the motor, consult your owners manual for the flushing process
- Wake or wave jumping is not recommended by most PWC manufacturers due to the possibility of back injuries

5.5 Trip Planning

Check the weather before you go out
www.bom.gov.au

- Ensure you have sufficient drinking water and fuel for the trip.
- Let a responsible person know your trip details and when you intend to return
- Make sure you know how to handle the PWC in the water conditions likely to be encountered
- Go with another PWC for backup purposes
- Be aware of speed restrictions and local rules
- Keep a lookout at all times and always look behind before you turn
- Alcohol. Waves, wind and weather multiply the effects of alcohol
- If your PWC experiences difficulties, return to shore. If this is not possible stay with your PWC until help arrives. A PWC is easier for a rescuer to see than a person in the water.
- Always exercise care, courtesy, and commonsense
- Never allow anyone to place their hands,hair or feet near the jet pump intake. Serious injury or even drowning could occur

- Keep clear of the jet nozzle and never allow anyone to stand near so as to allow jet thrust to enter body cavities as severe injury can result.

- Attach a bow line to PWC when launching from trailer

5.6 Minimum Starting Depth

Ensure the PWC is in minimum .6 metre before starting, otherwise sand and debris may be sucked up by the impellor and damage it.

5.7 Fuelling

- Fuel up on land so as to avoid spillage and polluting the waterway
- Fill slowly to avoid a spill and do not overfill
- Use absorbent material to collect any overflow.
- Never place those materials into the PWC or the water

5.8 Steering

Most PWC have a steerable nozzle at the stern through which water is forced, propelling the craft. The direction in which the nozzle is aimed is controlled by the handle bar or steering wheel. The nozzle is located at the aft end of the pump housing and the direction that it is pointed controls the direction of the exiting water. Refer to your PWC owner's manual for more specific operating instructions.
For steering control, power to the pump must be maintained. If the engine is allowed to idle or shut down during a turn all power will be lost and the PWC will continue to move in the same direction regardless of any movement of the steering controls. ie.. If you back off the throttle the steering capability of the PWC will lessen.

Give yourself plenty of room and in a safe environment become familiar with the steering features of your craft at different throttle levels.

5.9 Capsize

Most manufacturers have placed a decal at the rear or bottom of the craft that indicates the direction to roll the PWC to an upright position. If no decal exists, check your owner's manual. Many PWCs must be turned upright in a particular direction, or water will enter the motor causing serious damage.

5.10 Re-Boarding

When re-boarding the craft from the water, always approach the PWC from behind. Do not board whilst the engine is running to avoid the dangers of straps/ long hair etc being sucked into the impellor, and also the dangers caused by water expulsion from the jet nozzle . Pull yourself carefully aboard, making sure to keep your weight centred on the craft.

Most new craft now come equipped with a drop-down boarding ladder.
Remember to reconnect the lanyard in order to start the engine.