

3. Safety on the water

Having an enjoyable and safe day on the water goes well beyond avoiding an engine breakdown. As the boat operator it's your responsibility to provide a duty of care to everyone on board to ensure everyone stays safe on the water.

This chapter outlines steps you can take to ensure a safe day on the water, including your duty of care, children aboard, stable loading, speed limits and the dangers of alcohol and drugs.

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Let someone know

Before you go boating, always tell someone where you are going, your departure point, when you plan to return and the number of passengers with you.

Provide them with a description or photo of your vessel including its registration number and, if it sits on a trailer, that registration number also.

Also, log your journey with a volunteer marine rescue group such as Australian Volunteer Coast Guard or South Australian Sea Rescue Squadron, but remember to log-off when you return to avoid an unnecessary search being launched.



Always let someone know

Your duty of care

As the vessel operator, you are responsible for the safety of the vessel and of your passengers.

This handbook lists the minimum safety equipment required. In deciding if you need more safety equipment, you should assess your vessel's and your own capabilities, the weather conditions, the area of operation, and the people who are coming on board.

Throughout the trip you should constantly:

- Assess the weather forecast, including sea conditions, to decide if it is safe to continue.
- Ensure all hatches and doors are unlocked and clear of obstruction so that access is available in an emergency.
- Travel at a safe speed, particularly when visibility is reduced.
- Monitor your wellbeing and that of any passengers.
- Check your location/position by referring to charts, navigation markers and beacons (GPS can also be used as a guide, but it cannot be relied on solely).
- Watch for potential emergencies or accidents.
- Observe other vessels nearby to determine right-of-way and to take evasive action if needed.
- Keep clear of larger vessels that cannot manoeuvre as quickly and easily as you.
- Follow navigation rules, including local area rules.
- Adjust the outboard leg trim to suit the direction of travel (generally, you trim the leg in - closer to the stern of the vessel - when heading into sea and out - away from the stern - when running with it).
- Monitor the engine gauges.
- Ensure the vessel is not taking on water, and use your bailer or manual or electric pump if water does come on board.
- Assess and select safe anchorage sites.
- Ensure any rubbish is stowed and taken home for disposal.

Care of passengers

As the boat operator, you must be aware of your responsibility to your passengers at all times - and passengers must be prepared to follow your directions, especially in emergencies. In emergencies, always keep your passengers informed about what is going on.

For safety, at least one other person on board should have at least a basic understanding of how to operate the vessel and the safety equipment, including the radio.

Many injuries occur because people fall overboard while the boat is moving. To minimise this risk, ask your passengers:

- To keep to the centre of the boat for stability.
- To sit in particular places for better trim and stability.
- Not to sit on the bow - unless your boat's bow is specifically designed for this - or to dangle legs in the water while the boat is moving.

When to wear a lifejacket

As the skipper, you are responsible for ensuring that passengers wear or put on a lifejacket according to the legislation.

A lifejacket must be of an appropriate size and properly adjusted for the person who is wearing or will be wearing the lifejacket.

Know the regulations around the type of lifejacket needed and when you must wear it.

Wearing lifejackets on motor boats that are 4.8 metres or less in length:

- Everyone on board must wear a lifejacket at all times when the vessel is underway or at anchor.
- The lifejacket worn must be in line with lifejacket wear requirements. (See table page 32-33)
- The lifejacket worn must be suitable for your activity.

Wearing lifejackets on boats 4.8 metres to 12 metres in length (with or without an engine)

When in an open area of a vessel, the following lifejacket wear requirements apply when the vessel is underway or at anchor:

- Children who are 12 years old or younger must wear a lifejacket at all times. (lifejacket level depends on where you are operating).

In circumstances of heightened risk, all occupants must wear a lifejacket level 50 or 50S or higher in semi-protected or protected waters and must wear a lifejacket level 100 or higher in unprotected waters.

Circumstances of heightened risk are as follows:

- When operating alone.
- When operating **only** accompanied by a child, or children, who is 12 years old or younger.
- When operating after sunset or before sunrise.
- When the boat is disabled.
- When crossing a coastal bar.
- At times of restricted visibility.
- When in an area subject to gale, storm force, hurricane force wind, severe thunderstorm or severe weather warning issued by the Bureau of Meteorology.

Refer also chapter 4, Safety equipment.

CATEGORY OF WATERWAY AND VESSEL TYPE	LEVEL 100 OR ABOVE	LEVEL 50	LEVEL 50S
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Children of or under 12 years of age when:

- on vessels not more than 4.8 m fitted with engine when underway or anchored and
- when in an open area of a vessel not less than 4.8 but not more than 12 metres when underway or at anchor

PROTECTED WATERS – must wear		•	
SEMI PROTECTED WATERS – must wear	•		
UNPROTECTED WATERS – must wear	•		

Vessels not more than 4.8 metres fitted with engine when underway or anchored

PROTECTED WATERS – all persons must wear (other than children -see above)	•	•	•
SEMI PROTECTED WATERS – must be equipped with level 100 or above for all persons, but all persons must wear level 100 or above, level 50 or level 50S (see requirements above for children)	•	•	•
UNPROTECTED WATERS – all must wear (see requirements above for children)	•		

Vessels not less than 4.8 metres but not more than 12 metres when underway or anchored

PROTECTED WATERS – children of or under 12 years on an open deck must wear	•	•	
All other persons when on an open deck or at times of heightened risk must wear (see requirements above for children)	•	•	•
SEMI PROTECTED WATERS – must be equipped with level 100 for all persons	•		
All persons when on an open deck and at times of heightened risk must wear (see requirements above for children)	•	•	•
UNPROTECTED WATERS – must be equipped with level 100 for all persons, (see requirements above for children)	•		
All other persons when on an open deck and at times of heightened risk must wear	•		

Personal Watercraft

PROTECTED WATERS – must wear		•	•
SEMI PROTECTED WATERS – must wear		•	•
UNPROTECTED WATERS – must wear		•	•

CATEGORY OF WATERWAY AND VESSEL TYPE	LEVEL 100 OR ABOVE	LEVEL 50	LEVEL 50S
Paddle board or surf ski			
PROTECTED WATERS – all must wear	•	•	•
SEMI PROTECTED WATERS – must wear when greater than 400 metres from shore	•	•	•
UNPROTECTED WATERS – all must wear	•	•	
Sailboards or kiteboards			
PROTECTED WATERS – must wear	•	•	•
SEMI PROTECTED WATERS – when less than 400 metres from shore must wear	•	•	•
SEMI PROTECTED WATERS – when greater than 400 metres from shore must wear	•		
UNPROTECTED WATERS – all must wear	•		
Surfboard			
PROTECTED WATERS – must wear	•	•	•
SEMI PROTECTED WATERS – no requirement to wear			
UNPROTECTED WATERS – no requirement to wear			
Canoe or kayak (including a motorised canoe or kayak)			
PROTECTED WATERS – must wear	•	•	•
SEMI PROTECTED WATERS – must wear	•	•	•
UNPROTECTED WATERS – must wear	•	•	
Rowboats			
PROTECTED WATERS – must be equipped with lifejacket for each person on board	•	•	•
SEMI PROTECTED WATERS – must be equipped with lifejacket for each person on board	•	•	•
UNPROTECTED WATERS – all must wear	•	•	
Dragon boats			
PROTECTED WATERS – must wear		•	•
SEMI PROTECTED WATERS – must wear	•	•	•
UNPROTECTED WATERS – must wear	•	•	
Small sailing dinghy or multi hull sailing craft less than 6 metres			
PROTECTED WATERS – must wear	•	•	•
SEMI PROTECTED WATERS – must wear	•	•	•
UNPROTECTED WATERS – must wear	•		

Boating with children

Many children love boating and other water activities. You can improve their confidence and your peace of mind by investing some time in training and education before you hit the water.

- Show children around the vessel - especially where lifejackets, the first aid kit and other equipment are kept.
- Teach them emergency procedures - if the boat capsizes everyone should stay with it or an easily seen floating object.
- Teach them about stability, getting on and off the boat, and distributing the load evenly.
- If they are old enough, show children how to use safety equipment such as the radio, EPIRB and flares.
- Before you take them boating, encourage children to learn to swim, and practise emergency positions in the water, such as treading water, HELP (heat escape lessening posture) and Huddle (refer chapter 9, Emergency action, first aid afloat, hypothermia).
- Look at ways of rigging lifelines in open areas to give children enough handholds.
- Children should wear a lifejacket at all times when out on the deck. Make sure it is:
 - Well fitting.
 - Suitable for their size.
 - Check they can't slip out of it (it is recommended to use a crotch strap if fitted to the lifejacket).
 - They can move in it freely without being too tight.

- Check that the type of lifejacket is appropriate for the activity they are undertaking.
- Ideally check that they can put a lifejacket on in water or in darkness (refer chapter 4, Safety equipment, standards and features).
- Though very small lifejackets are available, if you can't provide a correctly fitted lifejacket, the child shouldn't go out on the water.



Children who are 12 years old or younger must wear a lifejacket at all times when on deck

Speed limits

Travelling at a safe speed means that your vessel can be stopped in time to avoid sudden danger. This depends on the circumstances and conditions at the time. It's up to you to keep a good lookout and continually assess your speed for safety.

Always drive slowly when visibility is low, including at night and in rain, fog, mist, smoke or glare.

Some SA waters have speed limits in areas where high-speed boats can be hazardous to other aquatic activities. These are often signposted near boat ramps. Make sure you know of any local restrictions, particularly if you plan to waterski or use a PWC (refer chapter 11, *Special activities*).

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

4 knots

- 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 50 m of:
 - A person in the water.
 - A vessel or buoy displaying a blue and white flag - international flag A (refer chapter 7, *Buoys, marks, beacons, signals & signs, Daymarks*) indicating that there is a diver below.
 - A person in or on a kayak, surfboard, sailboard or similar small unpowered recreational vessel.

- 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 Boat Operator Licensed person or by a Special Permit holder without supervision. Special Permit holders can only operate unsupervised if they have passed a Special Permit theory examination and Special permit practical examination. Unlicensed persons and Special Permit holders may not operate a PWC.

Loading for stability

Overloaded and unevenly-loaded vessels or vessels with unsecured loads are unstable and dangerous.

To be safe, your boat must have adequate freeboard for all possible weather conditions.

Ensure that the total load, including the passengers, is within the boat's specifications. If your boat is not fitted with a manufacturer's compliance plate or Australian Builders Plate (ABP), use the following tables to calculate the number of people your vessel can legally carry.

The maximum number of adults you can carry safely in calm conditions, based on an average weight of 90 kilograms (75 kg and 15 kg of personal gear), is shown on the tables where the length and width measurements of your boat intersect. Reduce this number when boating in the open sea, in rougher conditions, or when carrying extra weight (eg. diving gear).

Generally, children aged less than 12 can be counted as half an adult when working out safe capacity.

For a vessel longer than 10 m, or where length or breadth are not shown on the tables, use the appropriate formula below to calculate the maximum safe capacity in calm conditions.

For single-deck vessels (no flybridge):

Maximum capacity (nearest whole number) = $0.75L\sqrt{B}$

where **L** = length of vessel in metres, $\sqrt{\quad}$ is the 'square root' symbol, and **B** = breadth (width) of vessel in metres.

		Length (m)										
		3	3.5	4	4.5	5	5.5	6	7	8	9	10
Width (m)	1	2	3	3								
	1.5	3	3	4	4	5	5	6				
	2			4	5	5	6	6	7	8	10	11
	2.5					6	7	7	8	9	11	12
	3							8	9	10	12	13
	3.5									11	13	14
	4									12	14	15
	4.5											16

Maximum safe capacity (adults) for conventional vessels without flybridges

Example: A vessel that is 5.5 m long and 2 m wide has a capacity of six adults.

For flybridge vessels:

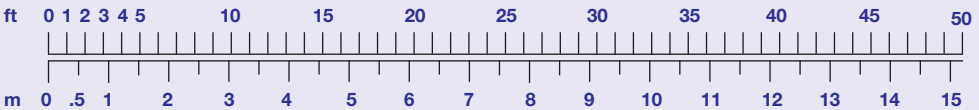
Maximum capacity (nearest whole number) = $0.6L\sqrt{B}$

where **L** = length of vessel in metres, $\sqrt{\quad}$ is the 'square root' symbol, and **B** = breadth (width) of vessel in metres. (No more than one quarter of the maximum number of passengers allowed on board should be on the flybridge at one time.)

		Length (m)								
		4	3.5	5	5.5	6	7	8	9	10
Width (m)	1.5	3	3	4	4	4				
	2	3	4	4	5	5	6	7	8	8
	2.5			5	5	6	7	8	9	9
	3					6	7	8	9	10
	3.5							9	10	11
	4								11	12
	4.5									13

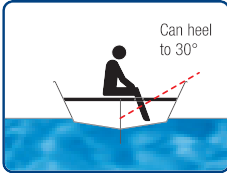
Maximum safe capacity (adults) for conventional vessels with flybridges

Example: A flybridge vessel that is 8 m long and 2.5 m wide has a capacity of eight adults.




Metric Conversion Chart (feet into metres)

Light load
Can resist waves 300 mm high



Can heel to 30°

Lightly loaded with 2 people



Loaded to maximum 4 people



Can heel less before swamping

Overloaded
Cannot resist any wave



Can take no heel before swamping

Vessel stability example: Dinghy 1.5 m x 4 m

To load your vessel for stability:

- Stow all gear securely.
- Stow heavy items low.
- Distribute items evenly.
- Don't allow gear to move; restrain any loose gear with straps or ropes
- Advise passengers that their movements may affect stability, especially in smaller boats.

Monitor the level of any water on board the vessel and regularly bail water out to help stability.

Australian Builders Plate (ABP)

AUSTRALIAN BUILDERS PLATE

3mm	Built by [XXXXX]		
	[HIN or BUILD DATE]		
5mm	Max [xxx] hp	[xxx] kg	
8mm	Number	[#] or not exceeding [xxx] kg	
	Max + +	[xxx] kg	
	Buoyancy	[xxx] flotation	
3mm	Alteration of the boat's hull or permanent fittings may invalidate the particulars on this plate.		
8mm	The values on this plate have been calculated for operations in [XXX] waters. The maximum persons and maximum load should be reduced in bad weather, or when the boat is operated outside these waters. Refer to the owner's operating manual for more information.		
	Information determined [XXXX]		

The ABP has been introduced to inform purchasers of new recreational vessels as to the loading capacities for the vessel and states the maximum number of people allowed on a vessel (not exceeding a certain weight in kg), its maximum weight and load capacity, its buoyancy and the engine's maximum power rating. Where a HIN is affixed to a vessel the number must be displayed on the ABP. Where a HIN is not present a build date may be used. The information on an ABP helps a buyer to choose a boat to suit their needs.

For boats under six metres in length, the plate will also provide information on buoyancy performance.

For further information on ABP visit www.marinesafety.sa.gov.au.

Fuelling and fire prevention

Lack of maintenance, or inattention while refuelling, can cause damage to the environment and increase the risk of fire. Take the following maintenance steps to reduce fire risk.

The engine

- Check the fuel lines for cracks and splits.
- Ensure engine bays are ventilated to reduce the chance of fuel vapour build-up and possible explosion.
- If your engine runs on petrol, ensure it is properly grounded to reduce static electricity build-up, particularly on hot days.
- Lift the cover before the first start-up of the day to clear fume build-up.

The fuel system

- Don't fill the fuel tank to the brim - fuel expands as it warms up.
- Where practical, install an anti-surge valve in the fuel vent line to prevent fuel leaks.

Bilge/s

- Keep bilges clean.
- If bilge contains oil or fuel use polypropylene bilge socks to absorb any fuel or oil.
- Dispose of used bilge socks and waste oil facility at a waste oil station, or contact your local council.

Refuelling

Before refuelling

- Check that the dispensing point has appropriate fire-fighting appliances.
- Ensure all passengers and crew are above deck and clear of any areas where fumes may build up.
- Clear any blockages or obstructions from in or around refuelling equipment.

- Turn off pilot lights to gas appliances, and electric power at main switch.
- Close all hatches and openings to prevent fumes entering the hull and bilge.
- Turn off mobile phones.
- Place a discharge bucket under the air/overflow pipe.

During refuelling

- Don't start the dispenser until the outlet nozzle is in the tank.
- Operate the fuel dispenser by hand - don't lock it open. Make sure the hose nozzle is connected to the filler neck to prevent static sparks.
- Carefully monitor the tank as it fills, using your hand to check for air escaping from the vent - a distinct increase in airflow is the signal to stop filling.
- Have a cloth handy to clean up any spills.

After refuelling

- Don't remove the filler hose until the fuel has stopped flowing.
- Lift the filler hose to drain all residual fuel into the tank.
- Check for any fuel which may have spilled into the bilges and clean up if necessary
- Leave boat wide open to ventilate and start the engine only once satisfied the boat is free of fumes.
- Allow the passengers aboard.

Refuelling on water

You should only refuel on water if there is no other option. Ideally, fill up at a service station, where any spills are easier to contain.

If you must refuel on water, take extreme care. Use a funnel and hose from the fuel can to the fuel tank, and make sure the area is well ventilated, to safeguard against fire, fumes and toxic spills.

For what you should do if a spill or other incident occurs during on-water refuelling refer [chapter 9. Emergency action](#).

Alcohol and drugs

Drugs or alcohol and boating do not mix. A vessel operator with a blood alcohol concentration (BAC) of .05 has double the risk of collision compared with an operator who has not been drinking alcohol.

In South Australia, it's an offence for vessel operators, waterskiers or ski observers to have a BAC of .05 or more or to be under the influence of drugs, and severe penalties apply. Marine Safety Officers and South Australia Police can conduct random breath tests for alcohol on waterways and at launch sites.

If a person aged over 10 years is admitted to hospital after a boating accident, a blood test for alcohol and other drugs is compulsory.

If you are on prescription drugs, read the label or ask your doctor or pharmacist if they will affect your ability to operate a vessel or participate in water activities such as waterskiing.



Drugs or alcohol and boating do not mix

Chapter 3. Self-check questions

1) Below what level must the maximum Blood Alcohol Concentration (BAC) be for a person to legally operate a recreational boat?

- A. There is no limit.
- B. Below 0.05.
- C. Below 0.08.

2) In which of the following areas does a 4-knot speed limit apply in South Australian waters?

- A. Within 100 m of a ferry crossing on the River Murray.
- B. For Personal Water Craft (PWC), within 200 m of the metropolitan coast and in backwaters of the River Murray.
- C. Within 50 m of a person in the water, or of a "Diver Below" flag.
- D. All of the above.

3) At what maximum speed may an unlicensed person operate a recreational vessel (not a PWC) while under the direct supervision of a Boat Operator Licence holder?

- A. 20 knots.
- B. 10 knots.
- C. There is no speed limit.

4) When out on the water, which of the following would be considered "safe boating behaviour"?

- A. Six friends and a cooler full of beer in a small dinghy.
- B. Going boating in unfamiliar waters without telling anyone.
- C. Monitoring weather changes as you go, and preparing to return to shore if the weather starts to turn bad.
- D. Trusting your GPS alone for navigation.