Safe Surfing

workbook

2nd Edition

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Valladeres

Pope

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Surfing Australia

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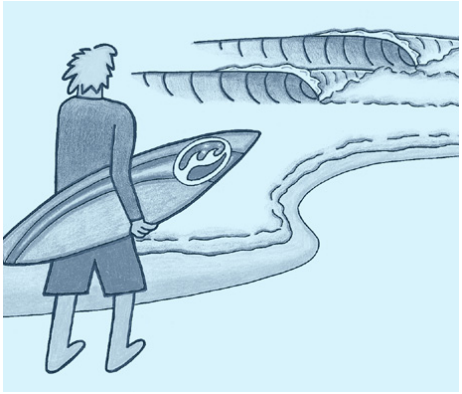
Contents

SECTION 1 SURF CONDITIONS

Surfing is a dynamic sport.

To be a proficient surfer you need a combination of skills, ability and knowledge to handle the various conditions and situations that the ocean can produce. This course is designed to provide you with skills and knowledge to be a 'Safe Surfer'.

Having an understanding of the surf conditions on any given day, gives the surfer a great advantage in the endless search for the perfect wave.



Waves

Formation

Waves are formed when wind blows across the ocean surface in areas called 'fetch zones' to form chop. When the chop moves out of the fetch zone it can form into lines of swell. These lines of swell then travel across the ocean in groups called sets. The swell becomes waves which break when they move into shallow water such as a reef, beach or headland. Waves are pulsing bands of energy that travel across the ocean until they break. When a wave breaks it is releasing energy, and it is this energy that surfers utilise for surfing.

Parts of the wave

Waves have a crest, trough, length and a height as shown in Figure 3.1. Surfers also use the terms – lip, whitewater and face when describing waves.

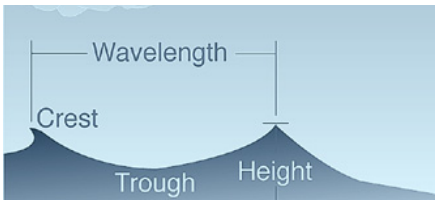


Figure 3.1 All waves have a length and a height

The lip is the top of the wave as it breaks, and the face is the wall of the wave that the surfer rides on the surfboard. The surfer tries to avoid the whitewater as this is the most difficult and turbulent part of the wave to ride. These features are shown in Figure 1.2.

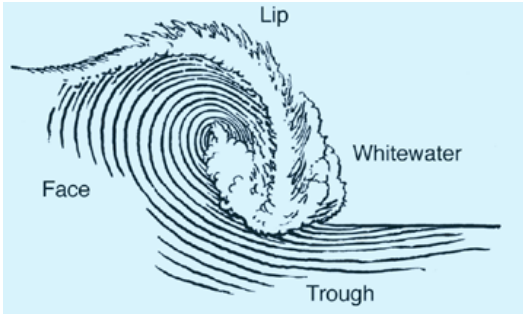


Figure 3.2 Functional parts of the wave relevant to a surfer

Types of waves

Waves can be divided into two broad categories – plunging waves and spilling waves. The slope of the seabed determines their characteristics.

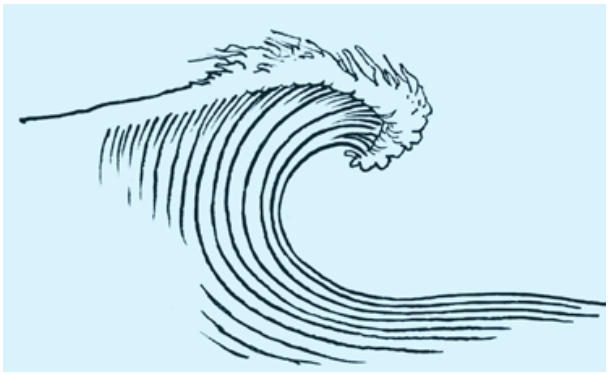


Figure 3.3 Plunging waves are for experienced surfers

Plunging waves occur where the water becomes shallow very quickly. This wave stands up and gets top heavy which causes the lip to pitch out.

These waves are powerful with resulting strong currents along the beach. They are ideal waves for experienced surfers only, and it is plunging waves that can tube or barrel creating the ultimate surfing ride.

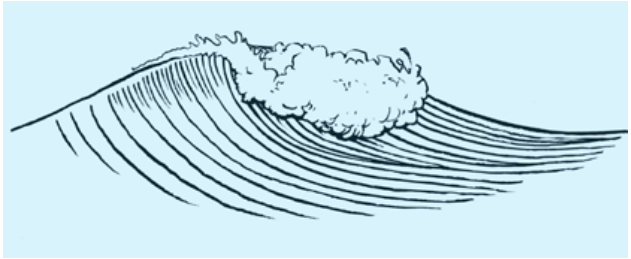


Figure 13.4 Spilling waves are great to learn to surf on

Spilling waves occur where there is a gradual slope in the sea floor; the waves break slowly and with little power. These waves are good for beginner or learner surfers.

There are three main types of breaking waves suitable for surfing, including:

a. Beach breaks: When a wave breaks on a sandy bottom it is called a beach break. Beach breaks change position, size and shape because the sand is constantly moved by waves, currents and tides which shift the sandbanks and therefore alter the shape of the wave (Figure 4.1).

b. Reef or rock shelf: Reef breaks are renowned for power. As shown in Figure 1.7 in Tahiti, large ocean swells come out of deep water and break heavily on shallow reef.

c. Point break: These breaks are mostly located on headlands and rocky points. Point break waves usually peel in one direction either 'left' or 'right' depending on the shape of the land structure (Figure 4.4).

Under suitable conditions all these types of breaks can produce perfect waves for surfing.

Figure 4.1 Perfect beach break

Rips, currents and tides

Two main currents affect surfing conditions.

- Long shore currents/sweeps
- Rip currents

When waves and wind combine together and approach a beach at an angle, they form long shore current or sweep as shown in Figure 4.3. It is important for a surfer to understand this principle and be able to tell which way the sweep is running.

When waves break onto the beach, backwash from these waves travels back out to sea in channels as seen in Figure 5.1 on the next page.

Rips will be stronger with bigger waves due to the extra volume of water heading back out to sea.

Note that rip currents do not tend to extend much further past the breaking wave zone.

Figure 4.2 Reef Break Mentawai Sumatra

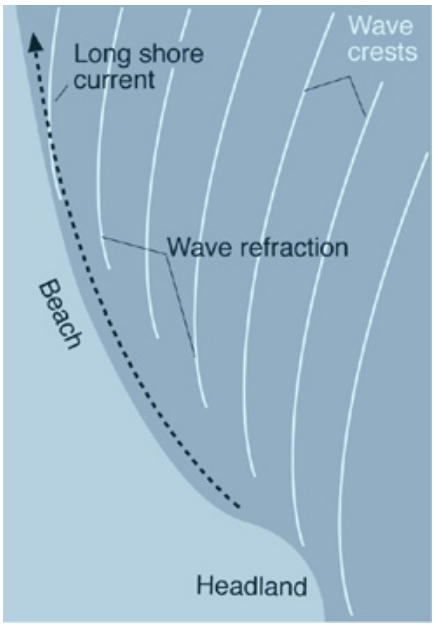


Figure 4.3 Long shore current or sweep

Figure 4.4 Point break peeling to the right around a headland

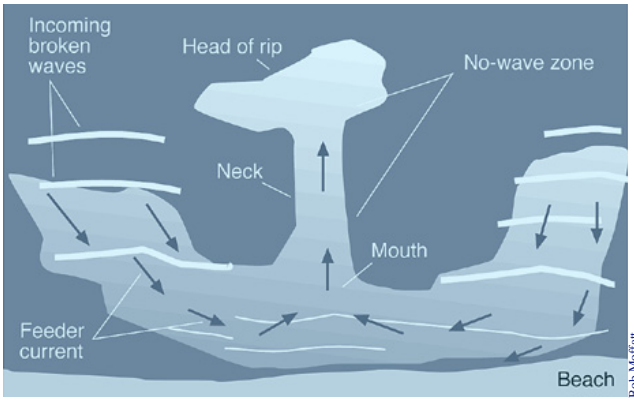


Figure 5.1 Diagram of a rip current

How to spot a rip

Look for deep water or channels of water on either side of a sand bank or white water.

Rips also tend to be discoloured with sand and have turbulent choppy water that appears to be flowing out to sea.

Rips are not always dangerous, they can be useful for experienced surfers if they know what they are doing.

Surfers use rips as an easy route out to sea after surfing to shore.

By entering the rip at the mouth they are quickly swept out through the neck and can then paddle across to the breakers.

Tides

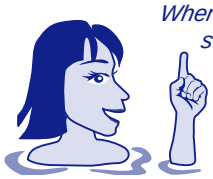
Tides can play a major role in affecting surfing conditions. Knowing what the tide is doing will allow the surfer to predict the best time for surfing.

Tides are created by the gravitational pull of the Moon and Sun on the Earth. Due to this gravitational force, and the Earth's rotation, we have two high tides every 24 hours.

Spilling waves tend to occur at high tides and plunging waves at low tide. In many surf spots, wave height tends to pick up on the rise of the tide.

When would plunging waves and spilling waves most likely occur in the tide chart shown in Figure 5.2?

Safety Tip



When caught in a rip don't panic. If you are swimming, swim across the rip on a diagonal angle and body surf back to shore using the breakers. If surfing, simply paddle with the sweep across into the wave zone.

Tide heights

Derby, *Western Australia*

Time	*Height*
0438	0.4 m
1050	9.3 m
1708	0.7 m
2330	10.9 m

Fremantle, *Western Australia*

Time	*Height*
0849	1.3 m
1901	0.5 m

Darwin, *Northern Territory*

Time	*Height*
0639	6.4 m
1219	2.7 m
1748	5.7 m

Mackay, *Queensland*

Time	*Height*
0309	5.1 m
0826	1.8 m
1445	0.3 m
2140	5.5 m

Brisbane, *Queensland*

Time	*Height*
0349	0.6 m
0908	1.7 m
1510	0.3 m
2154	2.4 m

Sydney, *New South Wales*

Time	*Height*
0232	0.4 m
0822	1.3 m
1308	0.6 m
2029	1.8 m

Melbourne, *Victoria*

Time	*Height*
0105	0.2 m
0842	0.9 m
1608	0.6 m
2138	1.2 m

Figure 5.3 Standard tidal predictions

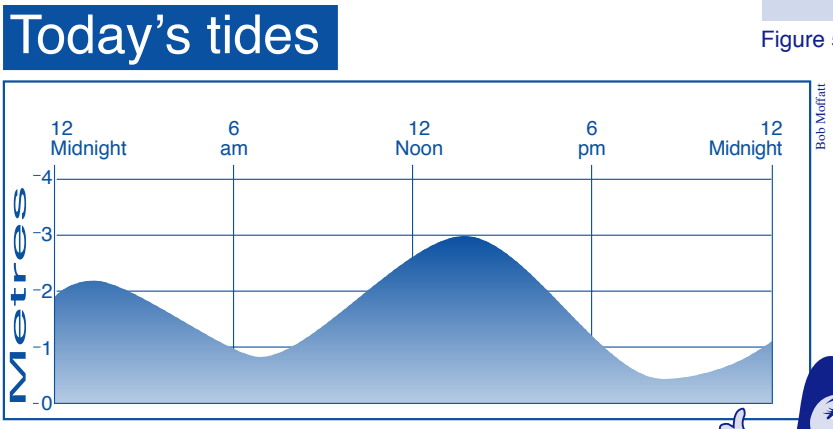


Figure 5.2 Typical tide graph as shown in local media

Surfing Tip

Being able to read a standard tide chart for a specific coastal location will allow the surfer to plan the best tidal level for surfing a particular break.

Winds and weather patterns

Wind is one of the most important elements that can affect the surfing conditions. Wind forms waves and controls the size and direction of ocean swells. Surfers generally talk in terms of 'onshore and offshore' winds. Winds are generated by differences in temperature and pressure. The onshore, offshore effect is created because the land heats up and cools down much faster than water, creating pressure differences and wind as shown in Figure 6.1.

Onshore

Onshore winds generally make the wave face crumble and too mushy for surfing. They tend to break up the formed swell lines and make the surf looked jumbled and messy (Figure 6.2).

Offshore

An offshore wind blows from the land out to sea. This makes the wave face clean and easy to ride. Offshore conditions are ideal for surfing (Figure 6.3).

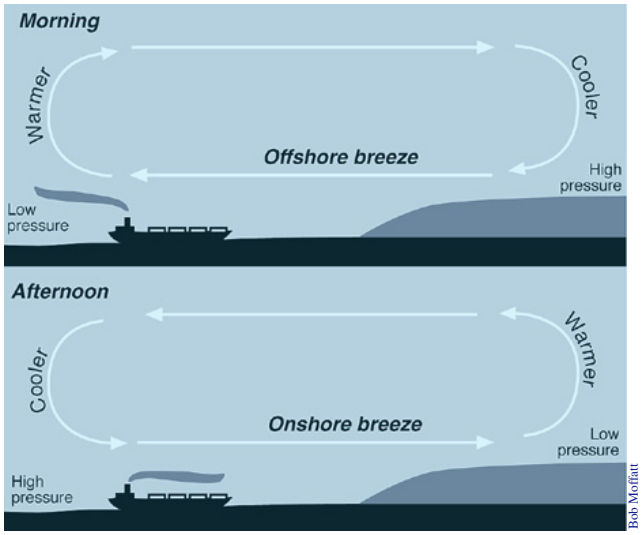
Weather patterns

The ocean is an unstable and constantly changing environment. To be a good surfer and to score the right surfing conditions takes a working knowledge of the weather. As stated above it is changes in pressure that creates wind, and in turn, waves.

By using weather charts a surfer can determine wind and swell direction. The lines connecting places of equal air pressure are called 'isobars'. The 'L' represents a low-pressure system the 'H' a high-pressure system. The winds circulate in a clockwise direction around a low-pressure and anticlockwise around a high-pressure system. Low-pressure systems can intensify to form tropical cyclones.

A weather chart like the one shown in Figure 6.4 tells a surfer when the best surfing conditions occur. The high pressure in Western Australia is producing offshore winds in Perth, and the low moving towards New Zealand will produce high winds and large surf on the west coast.

How big do you think the surf will be at your local surf spot?



Bob Moffatt

Figure 6.1 Diagram of the onshore, offshore effect


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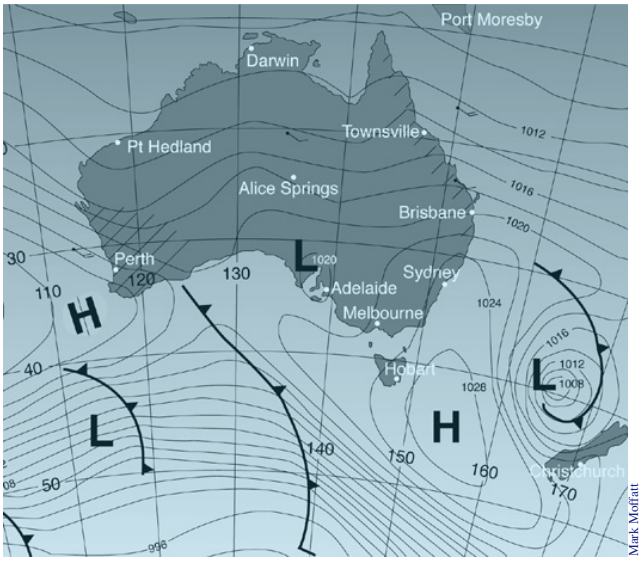
Figure 6.2 A sloppy onshore day


Bob Moffatt

Figure 6.3 An offshore day



Mark Moffatt

Figure 6.4 Isobar chart, shows air pressure

Surfing tip

Offshore winds usually occur in the early mornings. So the early surfer usually gets the best waves.

Worksheet 1 Surf conditions

1. Waves are formed when wind blows across the ocean surface in areas called fetch zones.
   a. True
   b. False
2. Name the parts of the wave in Diagram 1.

   a. _____

   b. _____

   c. _____

   d. _____

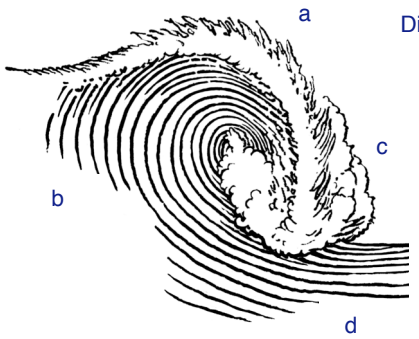


Diagram 1

3. Describe two main types of wave.

   _____

   _____

4. A wave that breaks along a headland, usually in one direction is called a point break?
   a. True
   b. False
5. Name two main types of currents that affect surf conditions.

   _____

   _____

6. Describe what to do if you get caught in a rip whilst swimming.

   _____

   _____

   _____

   _____

   _____

   _____

   _____

7. The best type of wind for surfing is usually an onshore wind.
   a. True
   b. False
8. Name the types of systems that winds circulate around.

   _____

9. Identify the types of pressure systems bring good swell.

   _____

10. Describe a tropical revolving low pressure system and recall its name.

    _____

    _____

SECTION 2 DANGEROUS CONDITIONS

The ocean can be a dangerous and inhospitable place for the unwary surfer. There are many dangers associated with surfing, but with the right skills and knowledge the threat of these dangers can be reduced.

Dangerous ocean conditions

Every surfer should know his or her limits before paddling out. Charging out into the surf without assessing the conditions is fraught with danger.

Always take the time to assess the conditions and make a realistic decision in relation to your ability level. There are certain times when the ocean is not suitable for any level of surfing.

For example, cyclones can provide excellent waves for experienced surfers, but if they come too close to the coastline, they can bring very destructive wind, waves and tides that no surfer should risk venturing into.

Crowded or rough conditions as shown in Figures 8.1 and 8.2 should be avoided by the inexperienced surfer.

Dangerous marine creatures

The ocean ecosystem includes all levels of creatures from scavengers to predators. There are two main categories of dangerous marine creatures:

- Aggressors
- Retaliators

Aggressors

Aggressors will attack humans to defend their territory or if they consider us as part of their diet, which is usually by accident.

Fortunately there are very few creatures in this group which includes saltwater crocodiles (although they don't usually live near surf locations) and a few species of sharks.

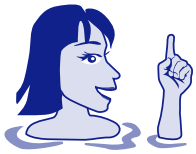
Sharks are the top of the ocean food chain. Out of approximately 350 species of shark only the great white and tiger sharks have been associated with fatal attacks on humans.

Several other species have been known to attack humans including whalers, bull, reef, mako and hammerhead. Most shark attacks occur by accident with the shark mistaking the victim for food in murky water. The chances of being attacked while surfing are very slim, but remember that when you go surfing you are entering the shark's habitat and they should be treated with a great deal of respect.

Great white sharks

These large, efficient predators are responsible for most of the fatal shark attacks on humans throughout the world. They are also called white pointers due to their cone-shaped heads and pointed snouts, as shown in Figure 9.1 over.

Surfing Tip



Always take time to assess the conditions. Only surf waves and locations that suit your ability. Make your own decisions about which waves you want to surf.

Joli Photography

Figure 8.1 Crowded conditions

Bob Moffatt

Figure 8.2 Rough conditions

Neville Coleman

Figure 8.3 Reef shark in aggressive mood – fins down

Most adult great white sharks are about 5 m long, the same length as the average family car. There have been recorded sightings of these sharks up to 10 m long.

They have a large girth up to 1.3 m and are capable of very fast speeds. Great whites live worldwide from the warm waters of the tropics to the almost-frozen ocean near the poles.

Like most sharks, they have excellent eyesight and can see much better in water than humans can. They spend considerable time circling and studying prey before attacking. The great white is the only shark that can hold its head vertically out of the water. This enables them to observe prey on the surface or on shore, such as seals on rocks.

What do you do if a shark attacks?

Although the risk of shark attack is very remote, you may reduce the risk even further by following this advice.

Try to remain calm. If you see the shark before it attacks, be aggressive and attempt to beat it off. Many sharks, even large great whites, have been discouraged and driven off by people beating fists in the water or on their snouts

If your buddy is attacked and there is no boat available for a rescue, it is possible to jump in the water and attempt to get them away from the shark. This may sound risky, but some sharks are one-bite specialists and there has never been a recorded attack on a person attempting a rescue.

Once a victim is rescued, wrap them in a blanket, apply a pressure bandage to any wounds and get them to a medical practitioner or hospital as fast as possible.

Retaliators

The retaliators are a large group containing particular species of crabs, stingrays, jellyfish, cone shells, stonefish, sea-snakes and the blue-ringed octopus.

All these creatures have killed people, but they will only attack if accidentally or deliberately disturbed.

Stonefish

The stonefish is not known for its attractive appearance. It is, in fact, very hard to see at all, because its camouflage blends in perfectly with its surroundings, as shown in Figure 2.5. Stonefish, found on reefs in tropical and subtropical waters, contain a deadly venom which can kill humans. This venom is contained at the base of 13 sharp spines. The spines are contained in sheaths which remain folded and hidden if undisturbed. They become erect upon the slightest contact and will immediately puncture the unfortunate victim, releasing the deadly venom.

To avoid stonefish, be very observant when diving on reefs. Fortunately they only use their weapons for defence and contact with humans is rare.

Stingrays

Most species of these timid, bottom-dwelling animals contain two barbs in their tails which they use for self defence. People have been stung after accidentally treading on, or swimming too close to rays as they lie hidden in the sand on the seabed. Figure 2.6 shows a common stingray.


Barry Bruce

Figure 9.1 Great white shark

Safety Tip

Sharks tend to feed at dusk and dawn and chase schools of fish. If there are schools of fish around , be wary, and if you see a shark, don't panic and return to shore.

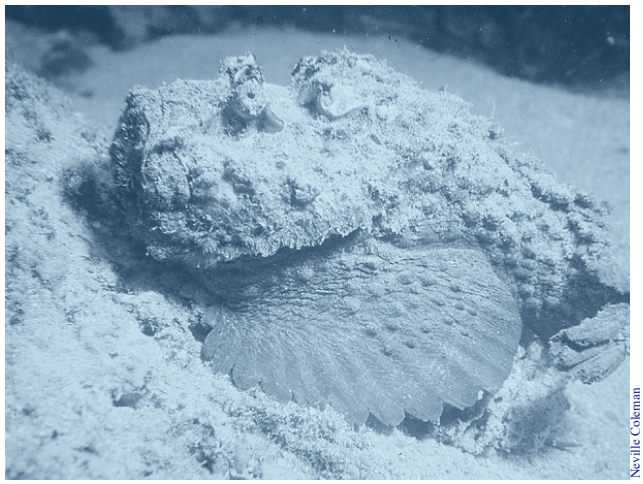

Neville Coleman

Figure 9.2 Stonefish - another very dangerous sea creature

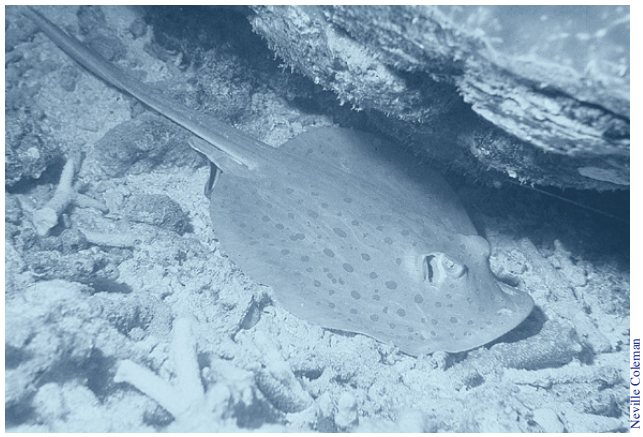

Neville Coleman

Figure 9.3 Common stingray

When such a threat occurs, stingrays respond with a rapid vertical thrust of their tails which drives the barbs deep into the victim's skin and releases toxic venom. Although very painful, most people have been stung in the leg and recover after treatment.

Sea urchins

Sea urchins or sea eggs as shown in Figure 10.1, have many long spines that can penetrate a surfer's foot. Most injuries occur when surfing rocky headlands, as the sea urchin likes to live in rock crevices just under the water. The best way to avoid sea urchin spikes, is to walk on the top of rocks when jumping off headlands, and avoid standing up in rock pools as you leave the surf. The spikes are very painful and are hard to remove so medical assistance is usually required to remove them.

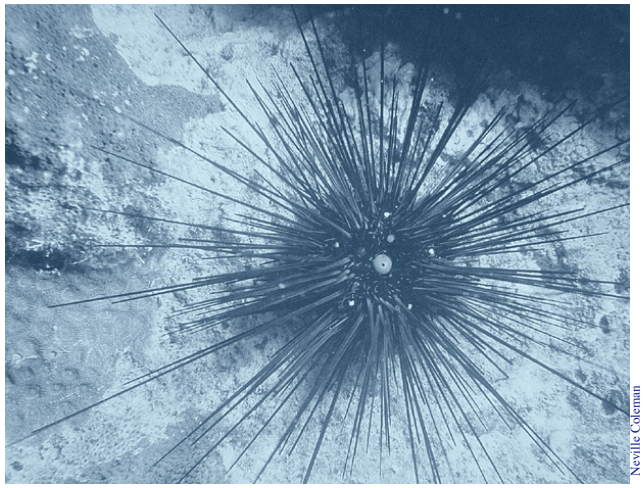


Figure 10.1 Sea Urchin

Bluebottle

Bluebottles, also called the Portuguese man o'war, are found in all oceans except the colder regions near the poles. Although more widespread, they are not as deadly as box jellyfish and have only caused death when the victim was particularly allergic to its toxin.

The bluebottle, as shown in Figure 10.2, gets its name from the colour and shape of its body which looks like a blue, sail-shaped balloon up to 25 cm long.

The trailing tentacles are up to 10 m long (over 30 feet), which makes them hard to avoid especially in strong currents or large waves. Although not fatal in most cases, the sting causes severe pain and welts on the skin. Treatment is with cold water.

Figure 10.2 Blue Bottle

Box jellyfish

Box jellyfish (Figure 10.4), also known as sea wasps, are the deadliest stinging jellyfish in the world and have killed many swimmers, particularly children, off northern Australian beaches. They have large, transparent, bell-shaped bodies up to 30 cm across, each with a large, trailing clump of tentacles up to 4 m long, containing millions of nematocysts.

Preferring warmer waters, they are found only in the tropical waters of Australia's far northern beaches between December and March. Beaches from Cairns to Broome are closed for swimming during this period.

Victims usually die within minutes of being stung: they suffer intense pain, followed by paralysis (caused by the poison shocking the heart), followed by breathing failure. The poison also attacks the red blood cells in the victim's skin upon contact, and produces large, purple, whip-like marks.

Surfing Tip

When surfing in bluebottle conditions, wearing a wetsuit or a longsleeved lycra rash shirt can help prevent painful stings.

Seasnakes

Seasnakes (Figure 10.3), are relatively harmless to surfers and are more likely to cause panic because they are very curious animals.

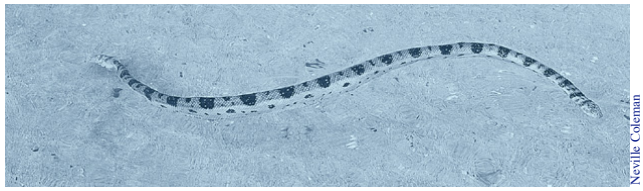
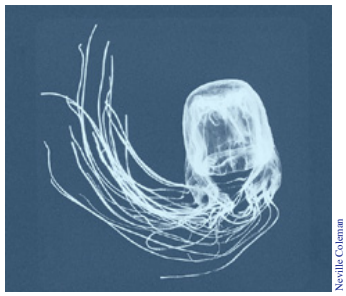


Figure 10.3 Seasnake

Blue-ringed octopuses

These small, beautiful creatures as shown in Figure 11.1, are highly venomous and have been responsible for many human deaths throughout the world.



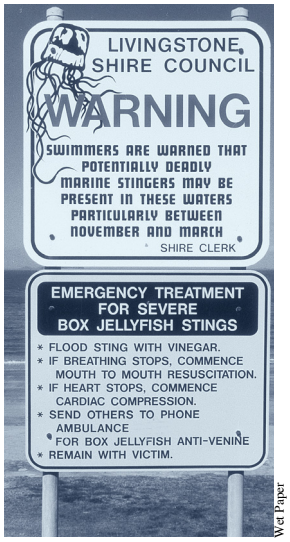


Figure 10.4 Box Jellyfish and warning sign

They are usually found in shallow rock pools at low tides, or in reef pools and areas with high concentrations of shellfish, such as mussels.

When they bite, they release highly toxic venom through a parrot-like beak in the centre of their eight tentacles.

Victims often do not realise they have been bitten because anaesthetic saliva is released with the venom. This often proves fatal because the venom affects the nervous system with paralysis occurring within 30 minutes.

When these octopuses are disturbed, brilliant, almost fluorescent, blue rings appear on their arms and bodies, giving plenty of warning to potential predators.

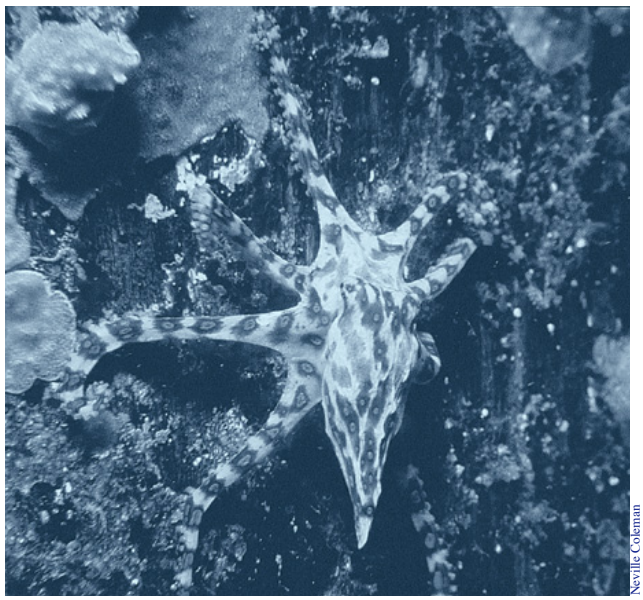

Neville Coleman

Figure 11.1 Blueringed octopus

Dangers of exposure

Exposure to the sun

Surfing is an outdoor sport that involves spending many hours exposed to the harsh elements such as sun, wind and salt water. All these things can combine to seriously affect the surfer. The most common problems associated with sun overexposure are:

- Sunburn
- Dehydration
- Heat exhaustion and heat stroke

Sunburn can occur as a result of overexposure to UV radiation from the sun and overexposure to wind. The best way to prevent sunburn is to stay out of the hot sun in summer between 10 am and 2 pm, and follow the simple slip, slop, slap rule. Cover yourself with a protective layer including a long-sleeved rash shirt, long board shorts, hat and sun block.

Surfing Tip

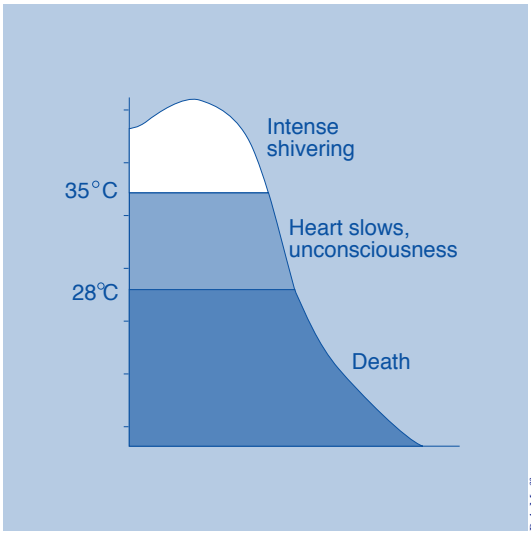
Carrying a water bottle with you in your surf bag will allow you to rehydrate regularly before and after surfing. This will prevent dehydration and allow you to perform better.

Dehydration is a major problem for surfers. Exposure to sun, wind and salt water as well as doing lots of physical exercise (surfing), can lead to excessive water loss from the body's tissues, which in turn can lead to an imbalance in the body's essential electrolytes. By the time you feel thirsty, your body is already heading towards dehydration.

Heat exhaustion and heat stroke are both serious illnesses caused by an increased core body temperature. Surfing for prolonged periods, especially in tropical climates, can lead to these problems. By avoiding overexposure through surfing early and late rather than in the middle of the day, and rehydration and rest, these serious illnesses can be avoided.

Exposure to the cold

Hypothermia can occur when the body has cooled down to a point below 35˚C where it can no longer warm itself. If a surfer does not recognise the symptoms of hypothermia and leave the water and warm their body, death can occur if the body temperature drops below 28˚C (Figure 11.2).



Bob Moffatt

Figure 11.2 Progression of hypothermia symptoms

Surfing Tip

Wetsuits can help reduce the loss of body heat while surfing, by trapping a layer of water next to the skin which is heated by the body and acts as insulation.

WORKSHEET 2 DANGERS IN THE SURF

1. Charging out into the surf without taking time to check the conditions is a smart thing to do.
   a. True
   b. False
2. Name the two different categories of dangerous marine creatures.

3. Name a species of shark that has been known to threaten humans.

4. Name the type of jellyfish that surfers encounter most often and describe how to reduce the chances of being stung.

5. Recall two examples of problems associated with overexposure to the sun.

6. Recall one consequence of over exposure to the cold.

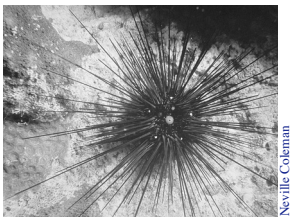
7. Every surfer should know his or her limits of skill and fitness. Give a reason for your answer.
   a. True b. False

8. Name each of the following marine animals and describe the potential dangers they pose to a surfer.

a.

b.

c.



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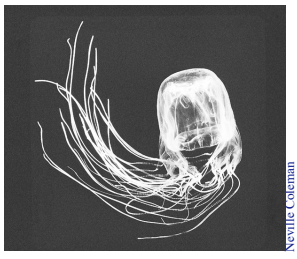
e.



f.

SECTION 3 SAFE SURFING

It takes skill and ability to be a good surfer, it also takes a lot of skill to be a safe surfer and to remain injury free.

Weather

One of the keys to scoring good surfing conditions and surfing safely is knowing how to combine knowledge of the weather and being able to read the conditions at a specific beach.

Before going surfing you should know the following weather conditions:

- Wind strength and direction (Eg. 30 knots SE)
- Time of high and low tide (Eg. high at 1300 hrs)
- Predicted size and direction of swell (Eg. SE 3-4 m)

This knowledge combined with an assessment of the conditions upon arrival at the beach, should give the surfer a good idea about the best spot to surf on that day.

What's on the bottom?

This is an important question to ask before surfing any location. Generally what you see on the shore line will be what's on the bottom under the waves. For example, if there are rocks or reefs along the shoreline you need to be aware that you could expect to find them under the waves.

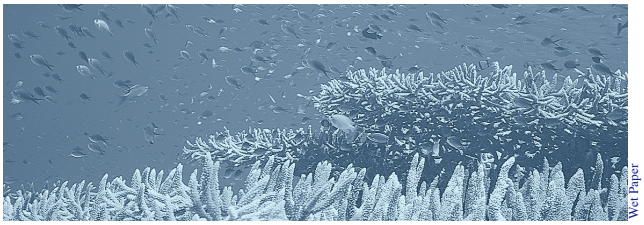


Figure 13.1 Type of reef that can be found under some breaking waves

Entering and exiting the surf zone

Once you have assessed the conditions and have decided on a location to surf, it is important to determine two things before paddling out:

- Where you will enter the surf zone
- Where you will exit the surf zone

You must also take consideration of the sweep and what's on the shoreline. Many surfing locations require entry over rocks which can be a dangerous situation with slippery rocks, sharp barnacles/oysters and breaking waves can make entry difficult. Where to enter the surf zone should be determined by your surfing ability level.

Figure 13.2 shows three different entry points into the surf zone for three different levels of surfer.

Entry point A – Beach break entry, suitable for beginner to advanced surfers.

Entry point B – Rip entry, suitable only for experienced surfers.

Entry point C – Between the flags, only suitable for swimmers and body boards. No surfboards allowed.

Safety Tip

Surfing rock break locations or entering the surf zone through rocky entry points is recommended only for experienced surfers. Beginner to intermediate surfers should stick to beach break sand entries.

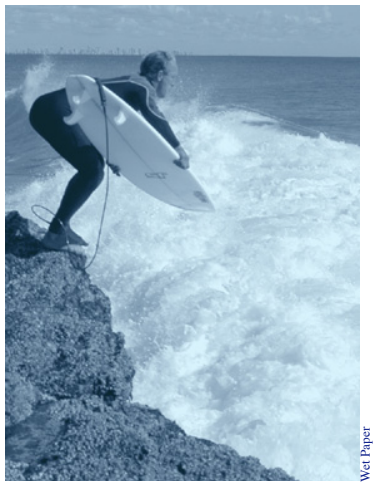


Figure 13.3 Jumping off the rocks requires great skill and timing

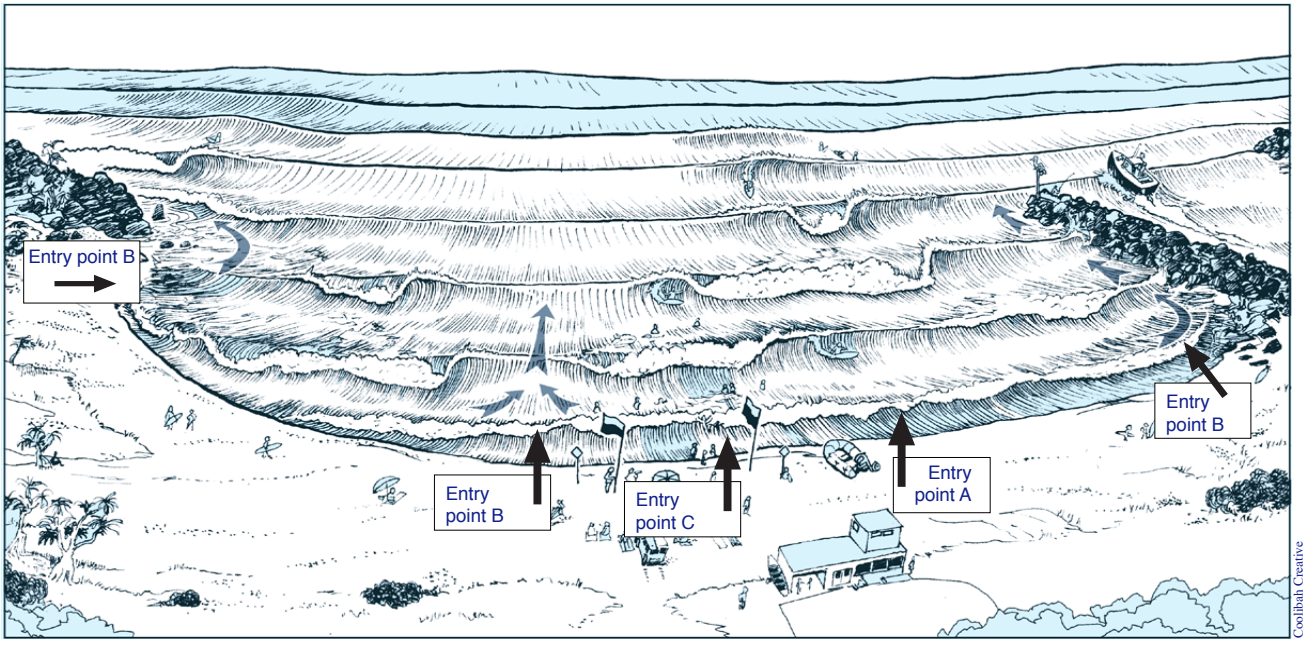


Figure 13.2 Entry points at a typical beach

Wiping out

Wiping out or falling off, is part of surfing. Whether it be world champion Kelly Slater or the learner grommet, all surfers wipe out at some time or another. While wiping out is inevitable, there are several techniques you can use which can reduce the risk of injury to yourself and other surfers.

Cover up

The standard and safest way to protect your head during a wipeout is the 'cover up' technique (Figure 14.2) for all types of wipe outs from the learner surfer to experienced big wave riding. All level of surfers utilise the cover up.

Board control is an important skill when surfing. Don't shoot your board out when you dismount. Always try and dismount under control.

Surfing Australia

Figure 14.2 The cover up technique.

Which way to fall?

If a wipe out is unavoidable, always try to come off the back of the surfboard and into the face or the back of the wave.

Never fall in front of your board. Figure 14.3 shows a surfer pulling out through the back of the wave.

The star fish

When wiping out over shallow rocks or reefs, a surfer can utilise a technique called the starfish (Figure 14.4). To perform this, the surfer goes off the board into the back of the wave, and spreads arms out flat in the form of a starfish to avoid damage from the rocks or reef.

If at all possible hold onto some part of your board. If you can grab the legrope close to the tail or the rails this stops your board from hitting other surfers.

Above all NEVER throw your board as this can really hurt other surfers.

Wipeout check list

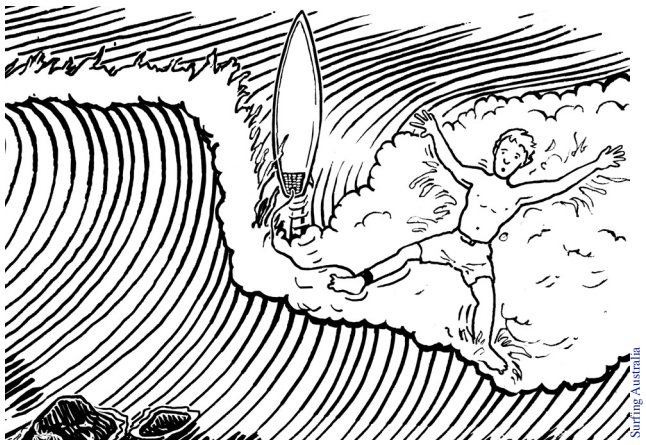
- Fall to the back of the board
- Don't panic or struggle
- Do cover up technique
- Never throw your board

Bob Meffatt

Figure 14.1 A wipeout

Viewfinder

Figure 14.3 Surfer about to pull out through back of wave



Surfing Australia

Figure 14.4 The starfish

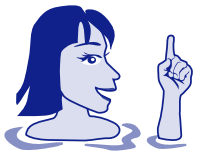
Surfing Tip

You can check the weather conditions the night before surfing by watching the news report, reading the paper or checking the internet sites such as www.coastalwatch.com

WORKSHEET 3 SAFE SURFING

1. Before going surfing you should know which of the following weather conditions?
   a. Wind direction and strength
   b. Tide times
   c. Size of swell
   d. All of the above
   Give a reason for your answer.

Safety Tip



You can protect your head by wearing a helmet designed for surfing.

2. List two ways of checking the weather before going surfing.

3. If there were reef exposed on the shoreline, you would expect to find reef under the waves.
   a. True
   b. False
4. Complete the following sentence: Before going into the surf you should know two things.

   Where you will :_____ and _____

5. Complete the sentences - The safest way to protect you head in a wipe out is to _____.

   When surfing and a wipeout is unavoidable you should fall to the _____ of the surfboard.

6. The photograph below shows a popular surf break. Draw arrows to show where you could enter the surf. Give reasons for your answer.

Section 4 Equipment for surfing

A beginner surfer needs to have an understanding of the surfboard – it's shape, function and the terminology for the various parts.

This knowledge will assist in developing surfing skills and help you make a more informed decision when choosing a board to suit your needs.

Important parts of the surfboard

A modern surfboard is made of two pieces of polyurethane foam core which are glued to a wooden stringer and coated with a fibreglass resin skin.

The nose

The nose on modern surfboards is mostly pointed. Fitting a nose guard (a rubber protector that is glued onto the nose of the board), is a way of helping prevent injuries which may occur as a result of your surfboard hitting someone else.

The tail

The tail of the board is one of many factors affecting how the board performs. Beginners should avoid using a board with a narrow or pointy tail. Choose either a rounded square tail, or a rounded pin tail. They will be less dangerous, and are more stable because of the extra width in the tail.

The fins

You can get surfboards with any number of fins, but the most common fin system is the thruster, or three fin surfboard. Thrusters are more stable than single, or twin fin surfboards and are also more manoeuvrable.

The rails

Rails are the curved sides of the board which direct the flow of water, and allow the board to hold in the face of the wave. A beginner's surfboard should have soft rails because they are more forgiving and easier to turn.

All of these parts are shown in Figures 16.1 and 16.2.

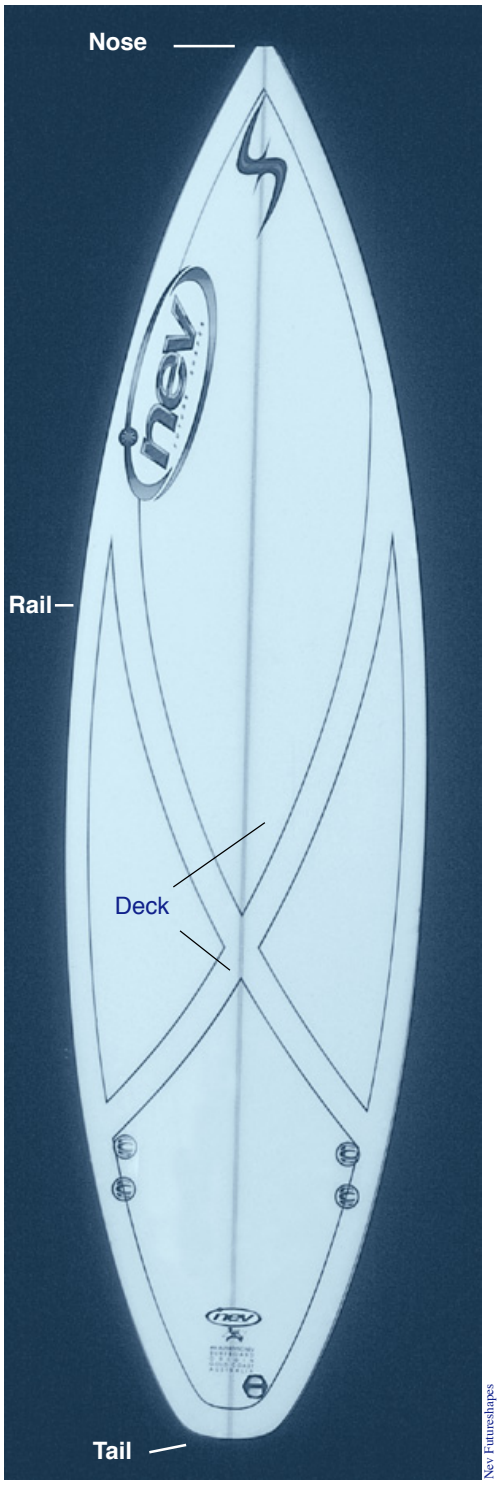


Figure 16.1 Parts of a surfboard

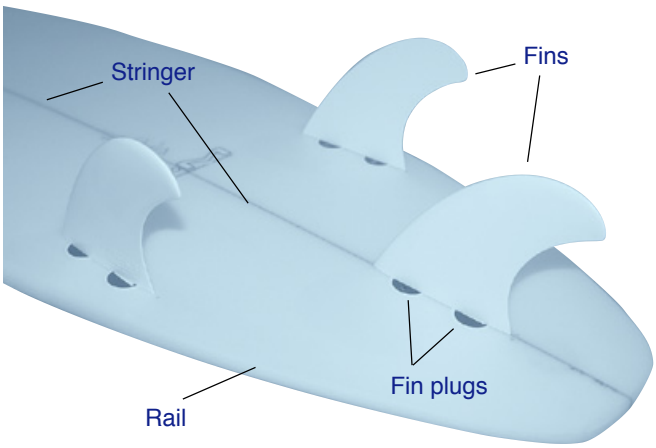


Figure 16.2 Underside of surfboard
Bob Moffatt

Safety Tip

To help avoid fin injuries, check the fins to see if they are damaged or sharp. Cracked and damaged fins should be replaced or repaired. Sharp edges should be removed with fine sandpaper or wet and dry paper.

Other surfboards and types of tails are shown in Figures 17.1 and 17.2 however the most common type of board is either a mal or a short board and the most common tail shapes are the square and rounded-pin.

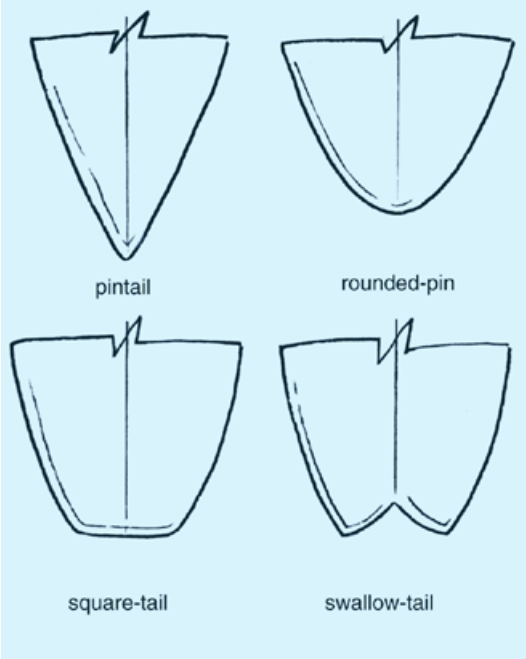


Figure 17.1 Tails come in variety of shapes for different types of surfing
Bob Moffatt

Bottom shape

The four main types of bottom shape are flat, vee, concave and channel.

To check what sort of bottom a board has, pick up the tail of the board and look along the bottom from the tail to the nose; you should be able to tell whether the board is concaved, has a vee or is flat.

Flat bottom boards are suitable for beginner surfers. Concaves, vees and channel bottoms are good for experienced surfers.

How to order a surfboard

The best place to order a surfboard is from a surf shop that makes its own surfboards. This way the staff at the shop can talk to you about what type of board you really want (Figure 17.3).

When you start surfing, you will need a good general purpose surfboard that suits your weight, height and ability to surf.

As you get better, and if your surf shop is near where you live and surf, the staff can come and watch you and match the right board to your natural abilities.

You will also find that the staff surf and they can also help you improve your skills, or provide information on how to join a surf club whose members often make surfboards.

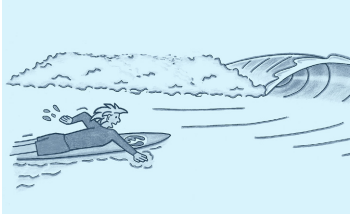


Figure 17.2 Two types of surfboard - mal (left) and shortboard (right)

Figure 17.3 The best place to order a surfboard is from a surf shop that makes its own surfboards

The measurements of the board

The staff in the shop will fill out an order form (Figure 18.1), which will detail the length, width and thickness, as well as any particular design or colours you want on your new board.

Measurements are usually given in feet and inches. Surfboard makers use the following as the standard measurement – 1 inch = 25.4 mm.

Board length

Board length is measured as the distance along the stringer, from the nose to the tail. Beginners should look for a board around 8-12 inches (20 – 40 cm) longer than your height to provide reasonable paddling speed and floatation.

Width

The width of the board is the widest point on the board from rail to rail. An ideal width for beginners is about 19 inches wide. A more narrow board less width could be unstable for a beginner, and anything wider may be harder to carry or sit on comfortably.

Thickness

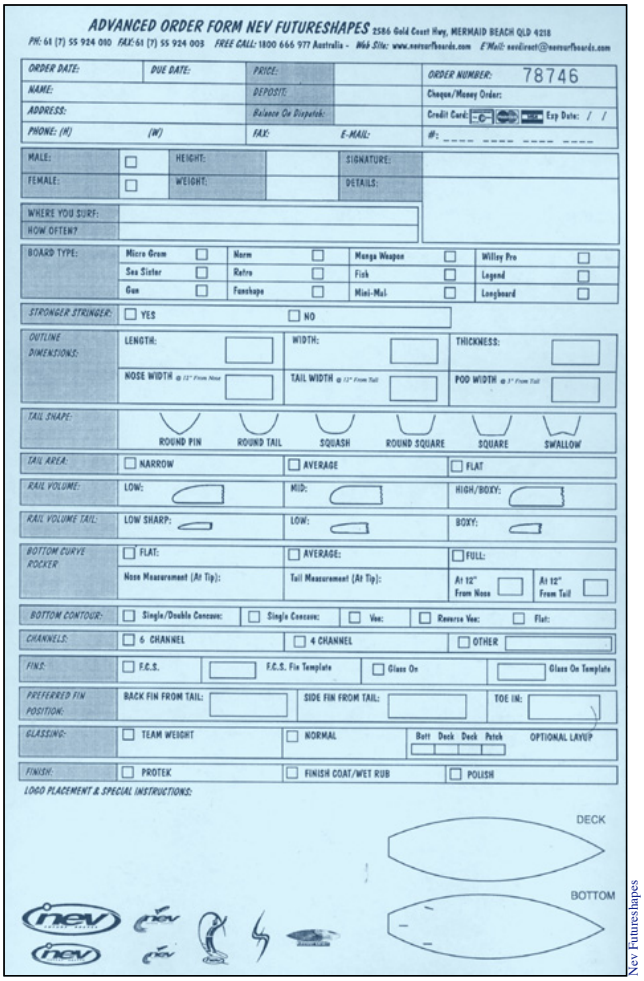
Generally the heavier you are, the thicker the board should be. Beginners should start with a board about 2.5 inches thick to give them the buoyancy they need for paddling.

Design

You can buy a clear board or a board with a design. As a general rule, the more design work you want, the more expensive the board will be. Stickers can also be added to the design and you will need to choose these and decide exactly where you want them.

Fibreglass

The surfboard manufacturer will generally want to make your board as lightweight as possible, and will recommend that you have one layer of fibreglass on the bottom of the board and two layers in the top deck. You can have more fibreglass, but this will make the board heavier and less manoeuvrable.



Nev Futureshapes

Figure 18.1 Surfboard order form

Wet Paper

Figure 18.2 Fibreglass cloth on a roll

What boards are made of

Most boards are made from polystyrene foam core blank, and are finished by hand to specific dimensions and sealed with fibreglass cloth and polyester resin (Figure 4.8).

The foam core is cut lengthwise, and a wooden or composite material stringer is glued in between the two halves to provide longitudinal strength.

Surfboard blanks are made from a mixture of foam and chemicals that are allowed to expand in a large mould under huge pressures. This makes a strong yet lightweight blank that is ready for shaping.

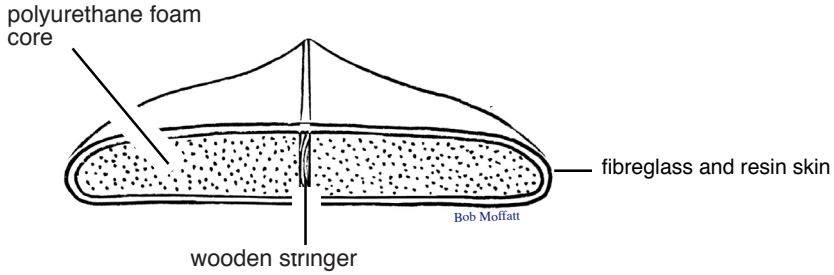


Figure 18.3 Cross-section of a surfboard

How a surfboard is made

Surfboards are made in a factory using materials such as resin and fibreglass. The surfboard blank (Figure 4.10), is delivered from the manufacturer to the factory where skilled tradespeople shape, sand, glass and finis- coat the surfboard.

Shaping

Once the blank arrives in the shaping bay as shown in Figure 19.1, it is ready to be either hand or machine shaped.

Most surfboards are machine shaped to a computer-designed template that has been programmed for wave heights or specific conditions.

As a general rule the 'bigger the wave' the longer and thinner the shape.

A big wave board needs to travel down the face of the wave with minimum drag to allow the surfer the greatest chance of making the wave.

A small wave board is wider and shorter to allow for a wide range of surfing manoeuvres such as deep slashes or 360's, where the board is quickly turned from the tail.

Shaping a surfboard is done in a shaping bay where the shaper uses a variety of tools including electric planes, shaping blocks and a template.

It is one of the best parts of the process because it does not involve any chemicals.

Wet Paper

Figure 19.1 Surfboard blank arriving from factory


Nev Futureshapes

Figure 19.2 Surfboard blank being shaped


Wet Paper

Figure 19.3 Surfboard shaper checks a customers order form before the glassing stage

Glassing

The first stage of the glassing process involves cutting pieces of fibreglass for the top and bottom decks.

Usually, one piece of 6 oz glass is cut for the bottom deck, and two pieces of 4 oz glass are cut for the top deck.

The fibreglass comes off a long roll and the glasser cuts out as shown in Figure 20.1.

The second stage involves mixing the fibreglass polyester resin with a hardener or catalyst (methyl ethyl ketone). Protective gloves and a mask are now used to protect the glasser's lungs form these dangerous chemicals.

The two substances are mixed in a bowl. The glasser is careful of the temperature of the resin so that he or she can have enough time to apply the resin with a plastic squeegee over the fibreglass before it hardens or "goes off".

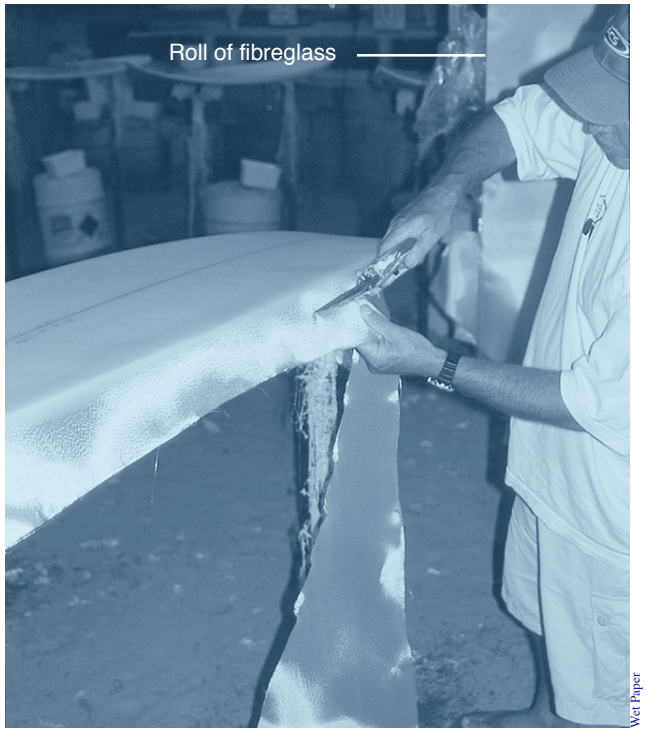
The working time is about ten minutes, during which time the glasser has to apply the resin into the fibres, add any stickers and lap the fibreglass over the rails. Figure 20.2 shows the glasser applying resin to the blank.


Wet Paper

After this, another resin, called polyester filler coat resin with a thickness of around 1 - 1.5mm, is added to seal the board. Most surfboard manufacturers use a spray gun to do this.


Wet Paper

Figure 20.2 Applying filler resin to the fibreglass



Wet Paper

Figure 20.1 Fibreglass matt being cut

Adding the fin plugs

Most surfboards have special sockets, called fin plugs, where the fins are inserted. This allows the fins to be added after the surfboard has been finished. Where surfboard manufacturers still 'glass on' the fins, special fibreglass strips called rovings is applied to the fins to add strength.

To add a fin plug, using the tools shown in Figure 4.17, a hole is drilled, and then the template plugs are glassed in using a special filler resin.

Bob Moffatt


Wet Paper

Figure 20.3 Adding the fin plugs. (Insert above: some tools used in the process)

Sanding

After about 24 hours the board must be sanded back to its original shape.

This is done with a disk sander in a special room equipped with a large exhaust fan to remove all the dust.

The sander wears a mask to protect the lungs from the glass dust as shown in Figure 21.3.

Sanding is a specialist art. The sander has to recreate the original board design while sanding the filler resin layer to less than 1 mm (as shown in Figure 21.1)

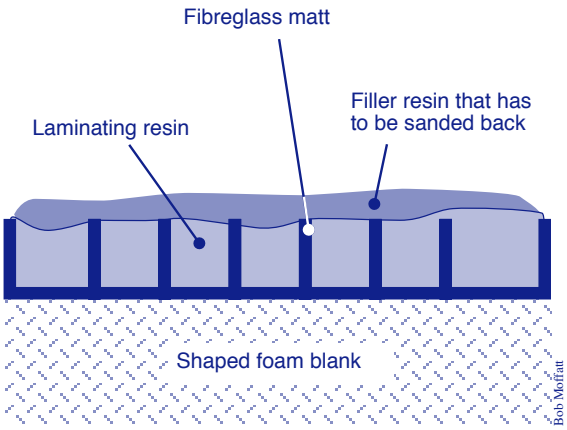


Figure 21.1 Relationship between laminating and filler resin

Figure 21.3 The sander wearing a protective mask

Art work

It is the job of the airbrush artist to add any special designs to the board.

The artist can either follow a set design, or crank up the music and use his or her artistic talents to create an original design as shown in Figure 21.2.

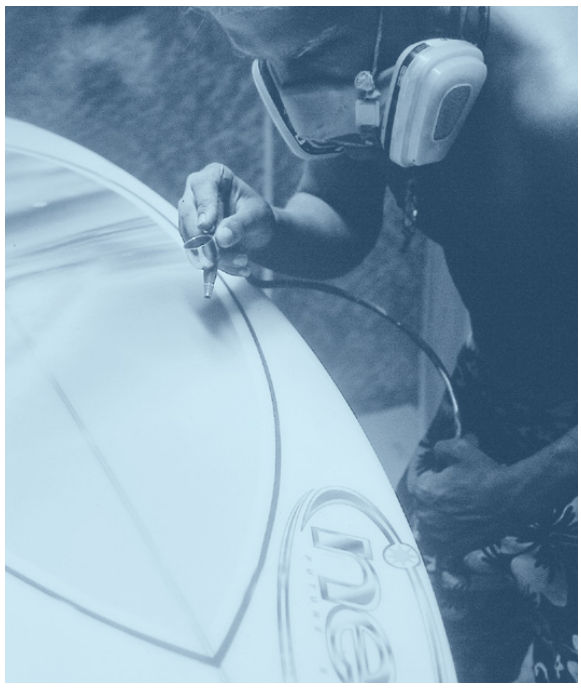


Figure 21.2 Airbrush artist

Finish coating

The last job is to spray a layer of acrylic (clear) paint to seal the surfboard, or paint a fine finish coat of resin followed by a light sanding with wet and dry sandpaper. This process is called pro-finishing. The finish coat may be made shiny with a buffing sander, or the board can be left with a matt finish.

Figure 21.4 Pro-finishing a board

Adding the fins

The fins are usually added back at the surf shop where the customer is shown how to replace them if they are damaged or lost in a surfing accident. Figure 22.1 shows how the fins fit into their fin plugs.

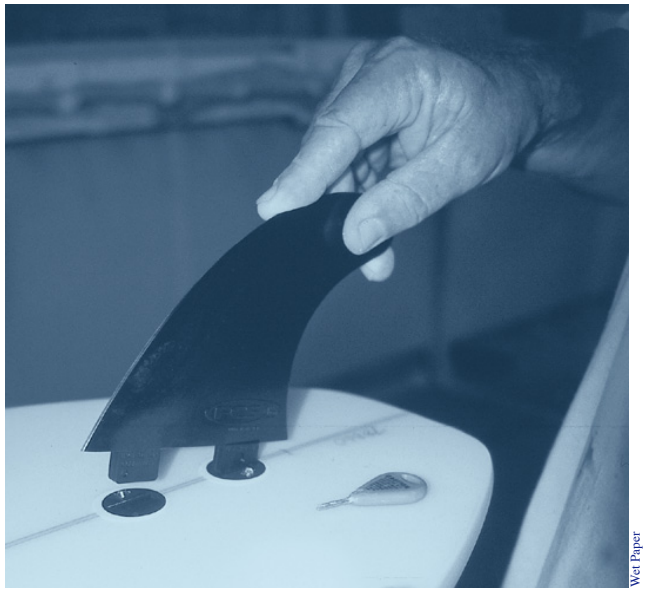

Wet Paper

Figure 22.1 Adding the fins into their plugs

Surfing accessories

Wetsuits

Wetsuits are made of rubber neoprene impregnated with millions of tiny nitrogen filled cells.

The cross section of the rubber looks like a sponge. One of the wetsuit's functions is to reduce heat loss and therefore reduce the chances of cramp and hypothermia, whilst improving performance and enjoyment levels. It achieves this by keeping out the cold water and trapping a layer of water against the skin that acts as insulation to keep you warm.

Dry suits are made for extremely cold climates and they work by preventing any water from touching the body as shown in Figure 22.2.

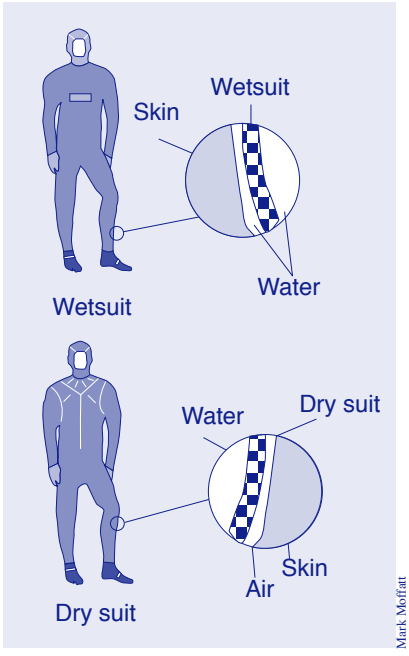
Wetsuits have a number of important functions:

- Warmth
- Protection from fin cuts, and abrasions from rocks, coral and other boards
- Floatation
- Sun protection

Surfing Tip

The wetsuit should feel comfortable through a range of movements such as bending, squatting and paddling. You should not feel restricted around your neck, chest or legs.

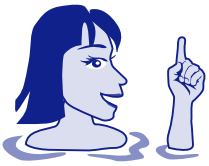
Generally the colder the conditions, the thicker the wetsuit. Wetsuits come in different styles, and arm and leg lengths to suit all climatic conditions and needs as shown in Figure 22.3.



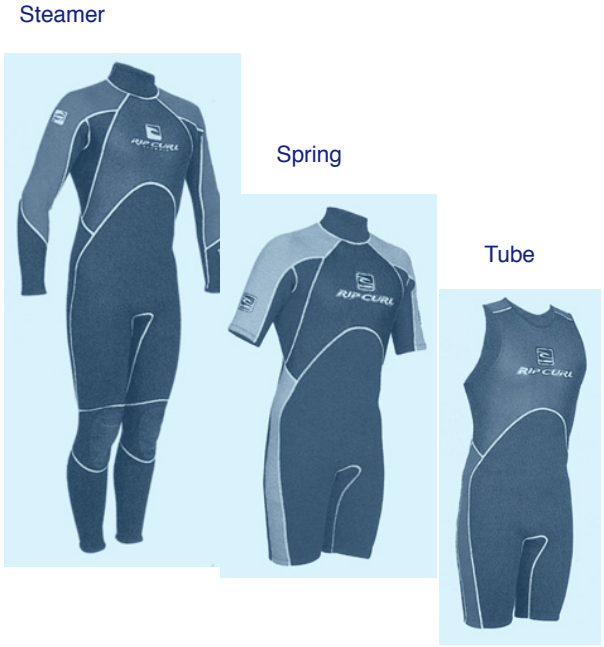
Mark Moffatt

Fig. 22.2 How a wetsuit works

Surfing Tip



When buying a wetsuit, shop around. Ensure that the wetsuit fits properly. Nothing is worse than a wetsuit that doesn't fit.



Rip Curl

Figure 22.3 Different types of wetsuits

Wetsuits come in varying thickness for different parts of the body, i.e. 3 mm chest, and 2 mm arms and legs for ease of bending and paddling. Other wetsuit products used for surfing include booties (lightweight shoes made from neoprene) for protection against cold and reef cuts, and head bags (hood) and gloves can be used for protection against extreme cold.

Leg ropes

These were invented as a convenience for surfers so that they wouldn't have to swim to shore to retrieve their boards. Leg ropes or leashes, come in many different styles, lengths and strengths to suit all levels and conditions for surfing. A leg rope is shown in Figure 23.1.

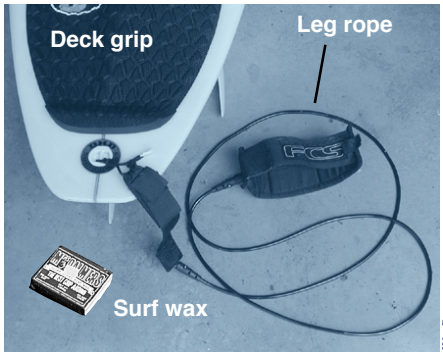


Figure 23.1 Surf wax and leg rope

Lycra rash shirts and helmets

The invention of lycra allowed surf companies to produce tightly fitting shirts that were comfortable to wear, whilst protecting surfers from sun exposure, board rash, jellyfish stings and reef cuts. Surfing helmets have been designed for protection against the elements such as wind chill, and also head injury from protection against surfboard or reef.

Wax and wax combs

There are many different types and brands of wax. Surfing wax is rubbed onto the deck of the board to provide traction. Different formulas of wax are made for different climates, such as tropical wax for warm climates, and cold water wax for the cold climates. Wax combs are useful for roughing up the wax for better traction, and removing old wax from the surfboard. Deck grip can also be stuck onto the deck of the board for traction instead of using wax. A lot of surfers use deck grip because it is more reliable than wax.

Figure 23.2 Wax comb

Looking after your gear

Personal gear such as wet shirts or wetsuits are all made from synthetic fibres, mostly nylon or lycra, or a combination of both.

The fibres are made from petrochemicals and may be damaged by sun tan oils, creams, dry cleaning fluids and other solvents like nail polish remover.

If you buy good quality, locally made equipment, you should find that it has been designed and made for local conditions. However it must be protected if you want it to last. Throwing a wet lycra shirt under your bed along with your wet towel is an example of how not to look after your gear.

Wash out neoprene wetsuits as soon as you have finished with them and hang them up to dry. They should be hung on a coat hanger, or over a line or chair, while drying to keep their shape (Figure 23.3). If left unwashed after being in the sea when the plankton count is high, the plankton that have entered the neoprene when you are in the water will die, and your suit will smell badly.

Figure 23.3 Hang surf gear in the shade

Surfboards and body boards are valuable and need to be looked after. The sun's heat and ultraviolet radiation can severely age and damage surfboards.

Sunlight causes resin to become yellow and brittle, and the foam to shrink, and the shape of the board to deform. It may even cause the fibreglass to de-laminate from the foam, causing large bubbles.

To maintaining surfboards and body boards:

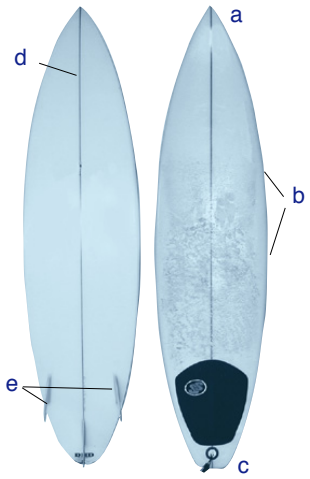
- Store your board out of sunlight whenever possible, and do not leave it in motor vehicles. A padded, reflective board cover is a valuable investment.
- Wash the salt off your board, dry it, and put it away out of the sunlight after you use it.
- Fix dings. A body board can be fixed with araldite™ or Superglue™. Surfboards require a resin and fibreglass mix which can be bought from surf shops (Figure 23.4).

Figure 23.4 Ding repair kit

Worksheet 4 Equipment for surfing

1. Name two different types of surf craft.

2. Name the labelled parts of the short board in this photo.



   a. _____

   b. _____

   c. _____

   d. _____

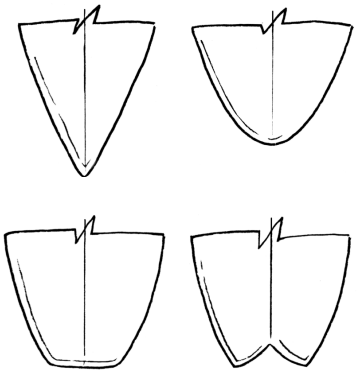
   e. _____

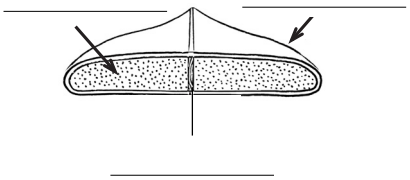
3. Which of the following is helpful in reducing fin injuries?
   a. Not using any fins
   b. Using only one fin
   c. Removing sharp edges with light sandpaper

4. Describe two functions of a wetsuit.

5. Recall two examples of surfing products other than wetsuits.

6. Using the following list, identify the following parts of a surfboard from in the diagrams below.
   - Pintail
   - Square tail
   - Round-pin
   - Swallow-tail
   - Poly foam
   - Fibreglass skin
   - Wooden stringer

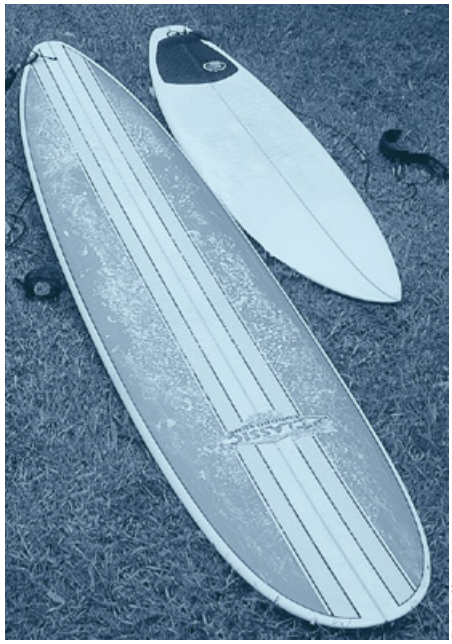




7. What is a wax comb used for?

8. How should you look after a lycra shirt or wet suit?

9. Name three differences between the two boards shown in the photograph opposite.



10. Describe what the person is doing in the photograph below.

11. Write a short sentence about each of the following stages of making a surfboard.

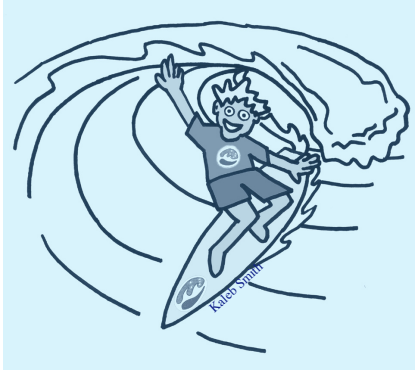
Glassing

Sanding

Air brushing

Fin blocks

Pro-finishing



SECTION 5 RULES OF THE SURF ZONE

Surfing can be a spiritual experience, but in today's society we have to abide by rules including family rules, school rules, road rules etc. Surfing also has some very important unwritten rules that all surfers should follow as summarised on the page opposite.

Basic sense in the surf zone

It is important to not paddle out in surf conditions that are beyond your ability and fitness level by observing the surf break before paddling out (venue analysis) and by making an objective assessment, you will assist in making your surfing experience an enjoyable one.

Always paddle around the break, not out through the middle of the other surfers (the pack).

If in the impact zone, paddle towards the white water when a surfer is riding a wave towards you.

Figure 26.1 Who dropped in here?

Figure 26.2 Surfers paddling wide of the wave zone

Surfing Tip

Don't paddle for a wave (take off) if there is another surfer in front of you.

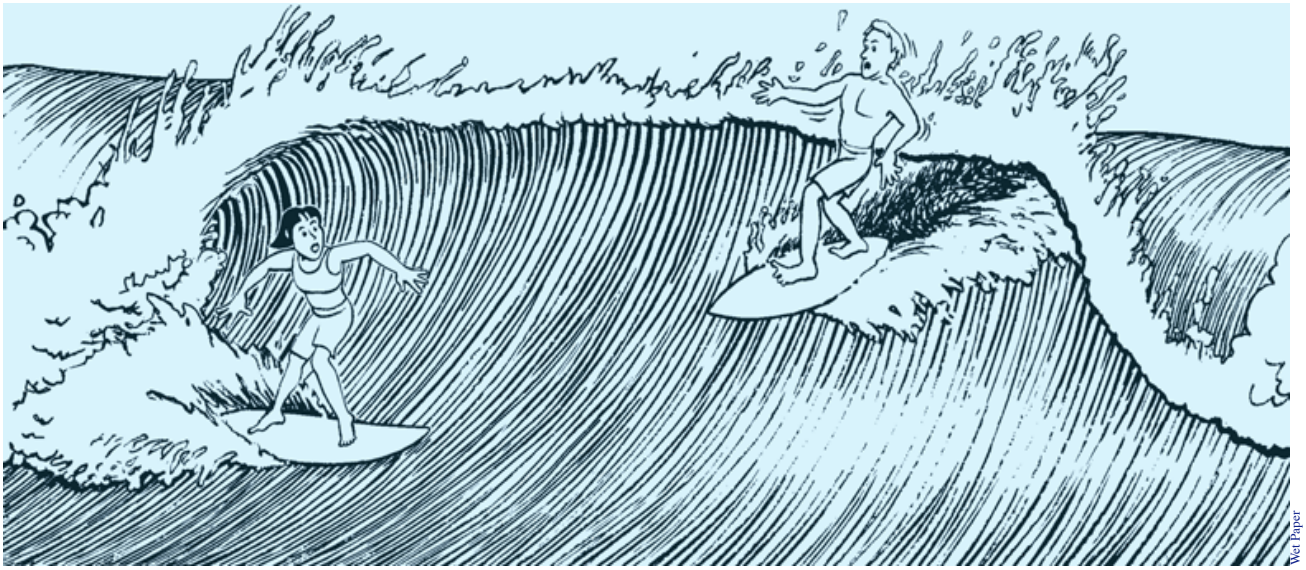
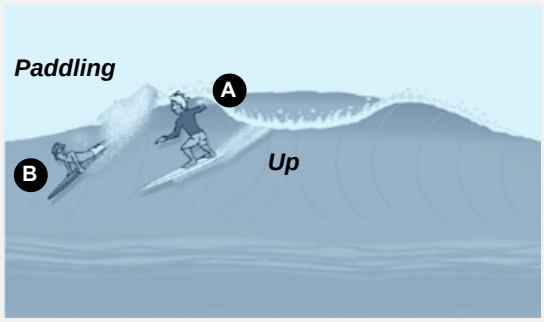


Figure 26.3 This is a dangerous situation

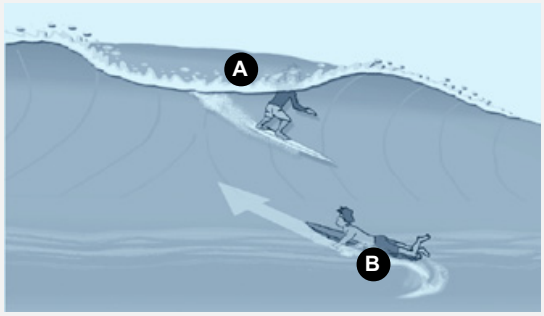
Don’t drop in



Surfer A is nearer the shoulder and has right of way. B must give way to A.

- If B does catch the wave he/she is “dropping-in” on surfer A. Don’t drop in.

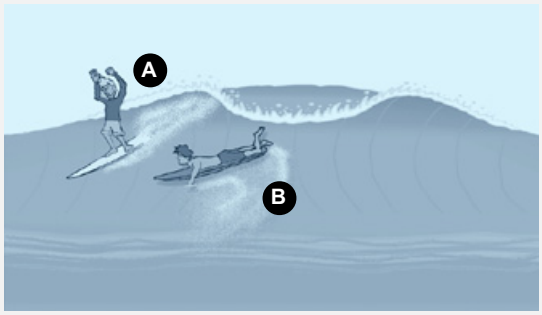
Caught inside - stay inside



Surfer A should try to avoid surfer B who is either stationary or paddling out.

- B must paddle into the broken wave so as not to interfere with A.

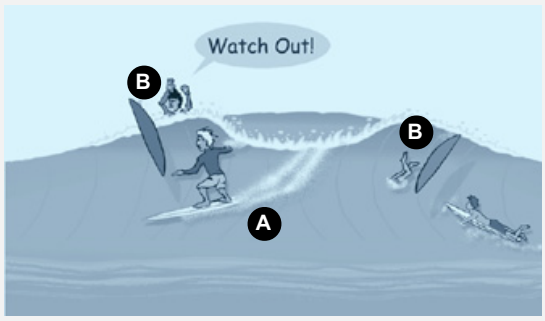
Don’t snake



Surfer B is not entitled to catch the wave that has already been caught and ridden by A.

- This is a 'Snake' Do not snake.

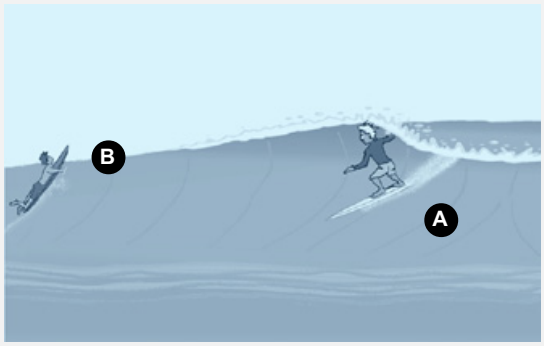
Never throw your board



Surfer B has fallen off the board and let go.

- Always hold onto your board so that it does not hit others causing serious injury

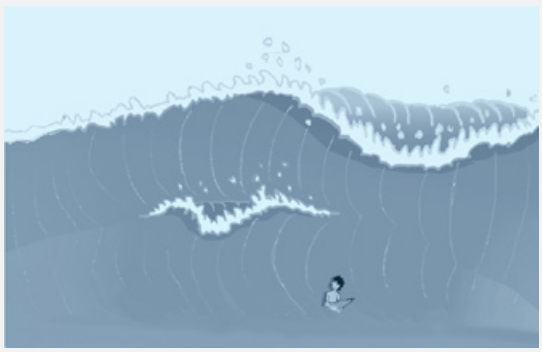
Paddle wide to stay alive



Surfer A, riding the wave, should try to avoid surfer B who is either stationary or paddling out.

- Paddle wide to allow A to make full use of the wave.

Don’t surf beyond your ability



It takes many years and lots of experience to ride challenging waves.

- If you are a learner, don’t go out in a crowded line-up or in big surf.

Illustrations by www.grinninbear

Figure 27.1 Important surfing rules

Worksheet 5 Rules of the surf

1. When paddling out, you should always paddle _____ the break to avoid paddling through the pack.
2. If paddling out through the impact zone and a surfer is riding towards you, you should:
   a. bail your board
   b. paddle to the white water
   c. sit still
3. The surfer who takes off on the inside closest to the breaking part of the wave has right of way.
   a. True
   b. False
4. What is considered the 'cardinal sin' of surfing?

   _____

5. Define the term 'Snaking' and describe how it affects other surfers.

   _____

   _____

6. Two surfers are surfing towards each other on a wave. Describe what they should do.

   _____

   _____

7. Getting angry and aggressive in the surf is acceptable behaviour.
   a. True
   b. False
8. Are any of the surfers 'dropping in' in the photograph below? If so, circle them.

Peter Wilson

Figure 28.1 Crowded line ups require a lot of tolerance

Section 6 Marine

SAFETY PROFESSIONALS

Australia's coastal beaches, rivers and oceans draw thousands of people every year to do all sorts of activities ranging from surfing to fishing. Several key organisations provide a vital network of marine safety professionals with services from learning to surf and ocean awareness, to search and rescue.

The role of key marine safety professionals

The Australian Professional Ocean Lifeguard Association Inc. (APOLA Inc.) is a non profit association of professional beach inspector lifeguards. It is recognised nationally and internationally as the peak professional ocean lifeguard body for Australia.

APOLA

APOLA Inc. brings together well qualified and highly motivated aquatic professionals to discuss, research, develop, teach and train professional lifeguards for best practice in all aspects of beach management, community education and ocean water safety. For membership and course information check out: www.apola.asn.au

Volunteer Coast Guard and Air Sea Rescue organisations

The Australian Volunteer Coast Guard and Air Sea Rescue are voluntary organisations formed to promote safety in the operation of small craft.

These organisations guard the coast in the most effective way – initially by education, example and examination, and finally, by search and rescue.

The Australian Volunteer Coast Guard has no law enforcement powers and enjoys a reputation for being helpful and courteous. The Volunteer Coast Guard services include:

- Radio monitoring
- Safety patrols
- Search and rescue

Water Police and State Authorities

Water Police and State Transport Authorities are government organisations which not only patrol waterways to enforce laws, but play a vital role in air sea rescues and control of beaches.

In some Australian states they control shark messing operations where nets are set to reduce the likelihood of shark attack. During storms, these nets can sometimes be washed onto beaches and surfers should be very careful when surfing these conditions.

Unfortunately one death occurred in Queensland when a surfer died in a shark net which had washed into the surf zone.

APOLA web site

Figure 29.1 APOLA professional lifeguards training

Murray Waite and Associates

Figure 29.2 Lifeguards practicing rescue procedures

Wet Paper

Figure 29.3 Australian Volunteer Coast Guard rescue vessel

Surfing Australia

Surfing Australia is the governing body of surfing in Australia. It aims to provide quality development and opportunities in surfing, related to the areas of competition, environment, education and recreation.

Through a nationwide network of quality surfing schools and Australian Coaching Council accredited coaches, Surfing Australia is providing a vital education path for all levels of people involved in surfing, from beginners to world touring professionals.

Surfing Australia surfing participation programs are supported by the Active Australia program.

ASSA

Australian School Surfing Association (ASSA) is the national administration group for the sport of surfing in schools across Australia.

School surfing contributes to the national school sports scene by providing rewarding life experiences through the sport of surfing.

After many years of operation as an affiliated sport, surfing was elevated to the highest 'Approved Sport' category by the Australian Schools Sports Council (ASSC).

The school sport network consists of volunteer teachers and helpers who promote and facilitate surf safety education, Surfing curriculum and competition ranges from inter-school to international level.

ASSA's motto is surf harder, play safer!

Surf Life Saving Australia

Surf Life Saving Australia is an icon of Australian surf culture. Made up off a nationwide network of clubs, the volunteer members patrol beaches every weekend during the surfing season (September to May). Life-savers assess the conditions and erect the red and yellow flags for people to swim under supervision. Surf life saving patrols have a series of flags and signs to inform the public of the surf conditions. Board riders are not permitted to surf between these flags.

Figure 30.4 Volunteer life savers

Figure 30.1 A young grommet showing the benefits of some Surfing Australia coaching

Figure 30.2 Junior surfers at National school titles

Figure 30.3 Surfer competing in tag team event

Worksheet 6 Marine safety professionals

1. The organisations responsible for training professional ocean lifeguards in Australia is?
   a. Billabong
   b. Surfing Australia
   c. APOLA
2. The organisation made up of a nationwide network of volunteer clubs that patrol beaches on the weekend is called?
   a. ASSA
   b. SLSA
   c. Rip Curl
3. The Volunteer Coast Guard's services include:

   a. _____

   b. _____

   c. _____

4. Which organisation aims to provide services in surfing relating to competition, environment, education and recreation?
   a. SLSA
   b. Surfing Australia
   c. APOLA

5. What is the motto for the ASSA?

_____

_____

Research topics

1. Check out the websites of surfing professional associations and prepare an association profile.

   Topics could include - *information about the association, what the association does, how the association helps surfing, what the association's major products or events are.*
2. Use newspaper cuttings to make a diary of a local surfing event. Use the following headings as a guide - *when the event was, who were the major sponsors, the names of local surfers who entered the competition, the rules of the competition, the types of surfing conditions on the day, a diary of events and how well the organisers cleaned up after the event to keep the sea and beaches clean.*
3. Contact your State Transport Authority to find out what roles they play in surf safety. (You can get the address from www.anzsbeg.org.au). Some things you may ask them are - *are there any shark messed beaches in your area, and what to do if a net gets washed into the surf zone. Are jet skiers controlled and are they allowed near surfers in the take off zone? Are their any local regulations controlling surfing apart from not surfing in flagged areas?*

Notes

Section 7 Fitness for surfing

Surfing is a dynamic sport. This means that when you go surfing you will be utilising all the muscles and energy systems in the body. To perform well and to stay free of injury, you will require a good overall level of fitness.

Practical prerequisites

Performing certain practical components of this course such as surfing rescues, requires some basic skills, including being able to negotiate the surf zone whilst swimming and paddling a surfboard. The following two practical drills have been set as a recommendation for the basic level of fitness and skill required.

Drill 1

A continuous:

- 100 m soft sand run, followed by a
- 100 m surf swim in a flagged surf area under suitable, supervised conditions to simulate the fitness and skills required in an emergency ocean rescue situation.

Drill 2

A continuous five minute tread water test to learn to conserve energy whilst staying afloat. The standard tread water technique encompasses an eggbeater style kick together with circular motioning of the hands as shown in Figure 32.2.

Wet Paper

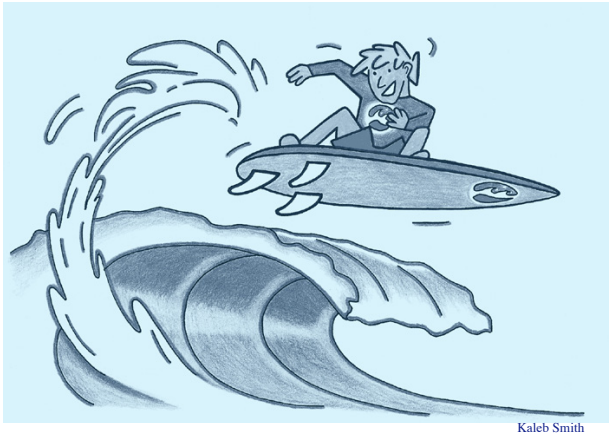
Figure 32.2 Treading water can keep you afloat

Training for surfing

Surfing regularly is the best sort of training to be 'surf fit', although many other forms of training can help better prepare your body for surfing including:

- Pool and surf swimming
- Sand running
- Stretching / flexibility program
- Light weights

Another way of improving your surfing is to obtain some coaching from a qualified Australian Coaching Council accredited coach. A good coach will assess your ability and fitness level and design a fitness and skill program to help improve your overall surfing.

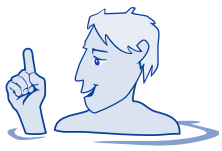


Kaleb Smith

Figure 32.1 To perform a manoeuvre like this requires a combination of strength, agility and skill

Surfing Tip

Rolling out of bed and touching your toes a few times is not a warmup. You need to move the whole body to get the blood pumping.



Basic warmup for surfing

In order to surf well and avoid injury your body needs to be warmed up before surfing. A good warmup gets the body moving and the blood pumping through the working muscles. You should warm up at a steady rate for at least five minutes. A basic warm up for surfing can include:

- 2 minute soft sand run
- 100 m surf swim
- 10 push ups
- 5 jump ups on sand
- 2 minutes of light stretching exercises (See Figures 33.1 - 33.3)

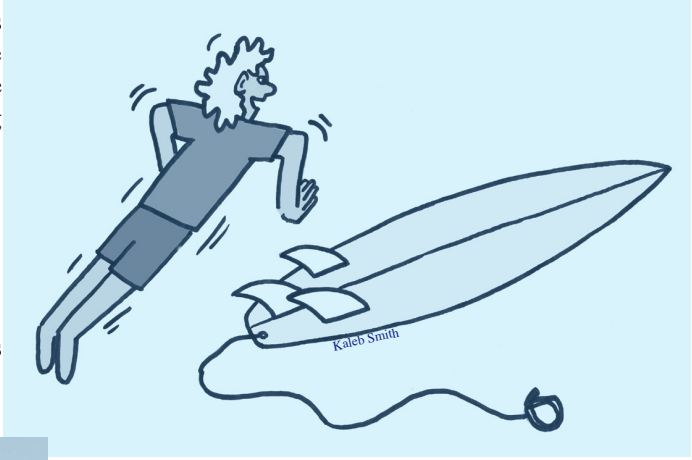


Figure 33.1 Calf muscle stretch

Figure 33.2 Paddling muscle stretches

Figure 33.3 Paddling muscle stretches

Safety Tip

Stretching should be done everyday and remember to breath regularly and relax while stretching. Stretching should never be painful!

Worksheet 7 Fitness for surfing

1. Surfing is a _____ sport which means that you use all the _____ and _____ systems in the body.
2. Describe the aim of the following practical perquisites.
   Drill 1:

   _____

   _____

   Drill 2:

   _____

   _____
3. Surfing regularly is the best sort of training for surfing.
   a. True
   b. False
4. Give two types of alternative training for surfing.

   _____

   _____
5. Is it important to warm up properly for surfing?
   a. True
   b. False
6. Identify the warmup procedures shown in diagrams 1-3 opposite.

   _____

   _____

   _____

   _____

   _____

   _____

   _____

   _____

   _____

Diagram 1

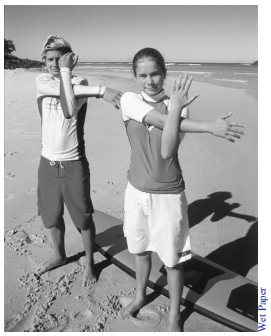


Diagram 2

Diagram 3

Section 8 Basic surfing skills

The skills described in this section are reproduced with permission from the Surfing Australia Level 1 Coaching Manual 2009 Edition written by Eddie Valladares (see page 64).

Skill 1: Carrying a surfboard

As a beginner surfer you will need a longer, wider, thicker soft board for buoyancy and stability to develop your initial skills.

To carry a surfboard comfortably and safely you need to:

- Place board under your dominant arm around the centre of the board with the nose of the board pointing forward and the fins facing out as shown in Figure 35.2.

  Note that the curve of the board fits more comfortably with the fins out.
- If you have trouble with this, ask a friend to help you as shown in Figure 35.3. with a double board carry. One student can stand between the two boards at the front (nose) and one student to stand between the boards at the back (tail) with fins of both boards facing out then two students can carry the two boards comfortably and safely.

Heather Valladares

Figure 35.2 Single board carry

Heather Valladares

Figure 35.3 Double board carry

Bob Moffatt

Figure 35.1 Basic skills are learnt in white water

Common errors

- Carrying the board out of balance
- Losing control in the wind
- Dragging the board
- Carrying the board fins forward
- Dragging the legrope

Ways to correct these

- Find centre of balance
- Nose of the board forward
- Free hand on top of the rail, forward of your body
- Wrap legrope around board

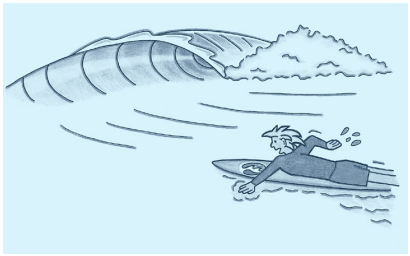
Coaching tip

The centre of balance of the board can be marked with wax when demonstrating waxing up.

Safety tip

When carrying the board, place free hand on the top of the rail forward of your body to gain better control and prevent the board blowing in the wind.

To avoid tripping or damaging the legrope, wrap the legrope around the board or carry the legrope when walking.



Skill 2: Paddling a surfboard

Paddling the surfboard correctly involves good technique, balance and rhythm.

The first requirement is to position your body on the surfboard so that it is in good trim (see Figure 36.1).

This means that the body weight is distributed correctly to keep the board flat on the water.

Activity

Your coach will explain and demonstrates paddling techniques. You then need to practise paddling skills checking that your

- chest is off the board
- head is up looking forward
- elbow is bent
- hands are cupped
- fingers are together and
- that you use smooth and fluid alternative strokes alongside the rails.

Heather Valladares

Figure 36.1 Correct paddling

Eddie Valladares

Figure 36.2 Incorrect paddling - Laying on board too far back

Common errors

- Paddling the surfboard out of trim
- Laying on board off centre
- Laying on board too far forward or too far back
- Paddling with arms too wide
- Hands not cupped with fingers together
- Laying too flat on deck of board
- Not pulling strongly enough from front to back

Ways to correct these

- Body on stringer line or body in the centre
- Slide forward
- Slide back
- Chest off board - head up
- Bend elbows
- Cupped hand - fingers together
- Pull strongly alongside rails

Coaching tip

Paddling skills can be developed effectively in still water providing students with confidence to further develop skills in the surf

Skill 3: Entering the surf zone

Before entering the surf zone you need to put on a leg rope.

- This goes on the back leg of the surfing stance, i.e. right leg in a natural foot stance and left leg in a goofy foot stance (see page 39).
- Place around your ankle on your back leg. Make sure the soft part of the ankle strap is against your skin and then attach velcro to velcro. The cord should then come out the back of the strap.

Activity

Your coach will explain and demonstrate how to carry the board out through the surf zone.

You then need to practise carrying the board on hip so that your

- hands are on the rails at the middle of the board and
- the nose of board is facing the waves and lifted over the waves

Walk out to waist deep water and turn around to catch selected suitable white water waves.

Note

If you have difficulty carrying your board on your hip, you can lift it over the white water waves by holding the board by the nose.

Surfing Australia

Figure 37.1 Entering the surf zone

Common errors

- Putting board at right angle to wave.
- Not lifting the board over the breaking waves

Ways to correct these

- Nose of the board facing waves and lift over waves
- Hand on rails at middle of board
- Carry board at your side

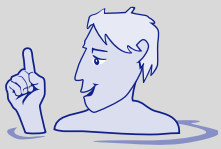
Coaching tip

Explain and demonstrate how to remove legrope in emergency situations.

Encourage students to practice removal of legrope in surf

Safety tip

Explain to students concerns regarding recoil of the legrope



Skill 4: Catching white water waves in the prone position

In order to get a feel for the sea and the power waves can generate, you need to catch a few waves without standing up. This is called the prone position.

Activity

Your coach will explain and demonstrate how to:

- Paddle with strong controlled strokes
- Glance over your shoulder to spot the wave
- Paddle strongly
- As the board moves forward propelled by the wave (tail lift) go straight into the push up position
- Hold the rails directly under the chest
- Push up arching your back

You can practise on boards drawn in sand and then practise in the surf.

Heather Valladares

Figure 38.1 Paddle strongly

Heather Valladares

Figure 38.2 Arching back while push up

Common errors

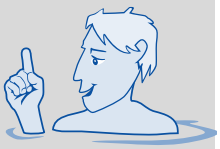
- Paddling too early
- Not paddling strongly enough
- Paddling board out of trim
- Poor wave selection
- Not looking over shoulder for approaching wave
- Not holding on to rails tight enough
- Holding rails in the wrong position (not under chest)
- Push up not quick enough to lift nose of board, causing nose diving

Ways to correct these

- Watch the wave
- Alternate strokes alongside the rails
- Pull strongly from front to back
- On tail lift - push up
- Arch back - head up
- Hold rails tightly under chest

Safety tip

Surfers should hold on to the board firmly as a loose board could nose dive into the sand - recoiling backwards



Putting your best foot forward - Goofy or Natural?

Prior to learning how to ride white water waves you need to know which foot to put forward.

- The surfer who stands with their right foot forward is called a 'goofy foot' surfer (Figure 39.1).
- The surfer who stands with their left foot forward is called a 'natural foot' surfer (Figure 39.2).


Brad Nelson

Figure 39.1 Goofy foot


Bob Moffatt

Figure 39.2 Natural stance

Determining which foot goes forward

Lie on the sand and jump to your feet with one foot forward. You should place one foot naturally in front of the other determining which stance will be comfortable for you.

Correct stance

This is achieved when:

- The legs are shoulder width apart
- Feet positioned across the stringer
- Knees are slightly bent to absorb bumps in the wave and reactions of the surfboard
- Arms are out from the surfers side, slightly raised with elbows bent
- Head up looking in front
- Back straight – hips forward

Activity

Your coach will explain and demonstrate how to do this on the sand as shown in Figures 39.3 and 39.4.

Common errors

- Legs too far apart – (broad stance)
- Legs too close together – (narrow stance)
- Legs too straight, knees not bent – (no shock absorption)
- Feet not across the stringer
- Front foot pointing forward or to one side on the stringer
- Standing too far back – (board will stall)
- Standing too far forward – (board will nose dive)

Ways to correct these

- Move legs further apart or closer together
- Position of feet – forward or back
- Feet across stringer
- Bend knees
- Straighten back
- Head up
- Sway forward – to get the board moving
- Sway back – to stop nose digging in


Heather Valladares

Figure 39.3 Practicing standup on sand


Eddie Valladares

Figure 39.4 Correcting stance

Skill 5: Standing and riding white water waves

In this skill you learn how stand up from a prone position.

PLAN A: The jump up

Activity

Note - You can practise this on the beach on a board drawn in sand.

Your coach will explain and demonstrate

- Lying on board (correct trim)
- Paddling strongly
- Looking over shoulder
- Push up (arch back) on tail lift
- Jump to feet
- Correct stance and feet placement

Feedback

Ask your coach to give feedback on your

- Feet placement
- Body position
- Head position

PLAN B: Knees to feet

If you are not capable of standing with the jump to feet in one motion method, an alternative technique (Plan B) can be used as shown in Figure 40.1.

Activity

Your coach will explain and demonstrate placing back foot (right foot for natural foot stance) or (left foot for goofy foot stance) alongside front leg next to the inside knee, then stand up (see Figure 40.1).

Notes

Cues: Front foot - back foot

This method can be slower and in two stages because you push up off the back knee, but some advantage is gained especially on bigger learn to surf boards in that the weight is taken off the back foot and transferred forward.

Also you finish up in your stance, forward up the board, assisting in projecting the board forward ahead of the broken wave.

Plan B stand up is a great alternative for students with poor flexibility and lacking upper body strength.

Bob Moffatt

Bob Moffatt

Figure 40.1 Knees to feet

Common errors

- Feet too close together or too far apart
- Front foot not under chest
- Front foot not across the stringer
- Not bending the knees
- Bending over at the waist
- Not looking up and ahead
- Front arm not held up and pointing the way

Ways to correct these

- Sway forward - sway back
- Move feet back - forward
- Bend the knees
- Straight back
- Head up - arm up
- Turn hips

Figure 41.1 Can you spot any errors in these photos?

Skill 6: Traversing right and left

After you have learnt how to stand up and ride your surfboard straight in the white water the next progression is traversing or angling across broken waves.

The best way to learn this is on your forehand as it is easier facing the wave (see Figures 42.1 and 42.2).

Start by paddling at an angle to the wave in the direction you want to go. Note that a natural foot (left leg forward) angles right and a goofy foot (right foot forward) would angle left.

Forehand

This is where you face the wave as you ride it. When standing the following suggestions may prove useful.

- Keep your knees bent and your back straight
- Keep your head and leading arm up
- Turn head, shoulders and hips toward wave face with leading arm pointing the way

The board should angle across the wave (traversing).

Backhand

This is when your back is to the wave.

- For a natural - the foot angles left as shown in the insert picture in Figure 42.2.
- For a goofy - the foot angles right as shown in the insert picture in Figure 42.1.

Figure 42.1 Traversing right (main pic - natural; insert - goofy)

Common errors

- Not paddling strongly enough
- Not paddling on an angle in the desired direction
- Not looking in the desired direction
- Leaning into the wave too much
- Weight on the back foot

Ways to correct these

- Paddle stronger – faster
- Angle the board more
- Rotate head, hips and leading arm
- Bend knees – back straight
- Weight forward

Figure 42.2 Traversing left (main pic - goofy; insert - natural)

Skill 7: Dismount drills

Just like riding a horse, you need to learn how to dismount a surfboard.

You need to learn how to prevent injury while surfing waves into shallow water where your fins strike the sand and the surfboard stops suddenly.

Dismount for riding white water waves in the prone position

From push up position (before fins hit sand)

- Control board with firm grip on both rails
- Slide hips off board
- Tuck knees to chest
- Place feet on sand
- Stop forward motion of board

Dismount for riding white water waves standing

When standing on the board in white water waves

- Slow forward movement by putting weight on back foot
- Step off board to side if possible (lead with your front foot)
- Grab tail of board

If you have space and time dismount as per dismount from the prone position, i.e. from the standing position drop down to the deck of the board and dismount as from the prone position.

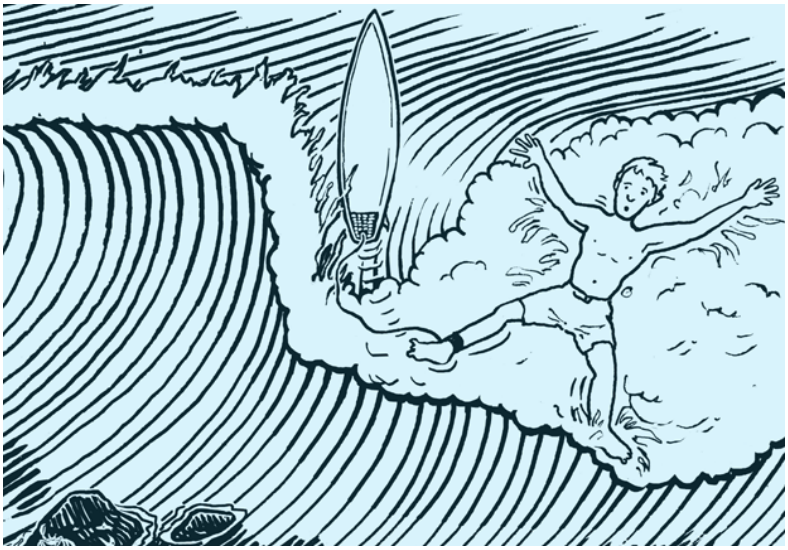
Wipeouts

Attempting to stand and ride white water waves results in many wipeouts by the beginner surfer.

To wipeout safely

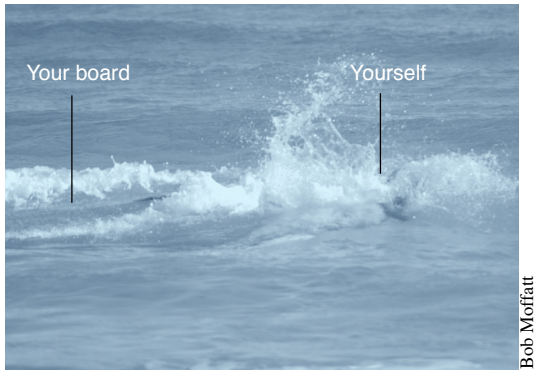
- Consider others if you can before you jump off
- Fall away from board
- Fall flat (starfish - see Figure 43.1 and 43.2) and if you can grab the leg rope as close to the tail as possible to stop the board hitting others
- When falling forward place both hands out in front and try to hold onto your board.

Remember never throw your board as you can seriously hurt others.



Surfing Australia

Figure 43.2 Wipeout (starfish)- try to make sure your board does not hit others.



Bob Moffatt

Figure 43.1 Dismount- if there is noone around, fall off the back. If you think you are going to hit some one hold onto your board.

Dismount for riding white water waves in the prone position

Common errors

- Not dismounting soon enough
- Not gripping rails strongly enough
- Not stopping forward motion of the board

Ways to correct these

- Hold board tight
- Start dismount
- Weight back

Dismount for riding white water waves standing

Common errors

- Jumping off the board when the board is moving too fast
- Not stepping off to the side
- Letting the board go

Ways to correct these

- Slow the board - weight on back foot
- Hold rails tight
- Get low – step to the side
- Hang on to tail of the board

Intermediate and advanced stage skills

Intermediate surfing skills involves learning how to

- handle the surfboard in the line-up
- take off on the green face of the wave
- traverse right and left and
- perform basic manoeuvres.

To learn these skills requires knowledge and experience that you can get from Surfing Australia coaches.

These courses provides information and practical training to enable you to progress through the intermediate to the advanced skill development stages.

Once you are competent in the core skills and riding and traversing white water waves in a proficient manner it is time to learn wave negotiation skills to enable you to move further out the back to access and ride unbroken waves (green faces).

The required skills to be developed are:

Wave negotiation i.e. Eskimo roll -

- Enables bigger more buoyant board to be pushed through and under the white water as shown in Figure 44.1.

Duck diving

- To push the board deeper under the approaching wave as shown in Figure 44.2.

Surf awareness

- Paddling around the break
- Awareness of other surfers

Basic surfing manoeuvres

Figure 45.1 over shows some intermediate and advanced skills that involve taking off, traversing right, bottom turning and cutting back.

Some other skills to be learnt are

- Traversing left
- Crowd negotiation
- Local knowledge
- The limit of your surf ability
- Dismounting (flick off)

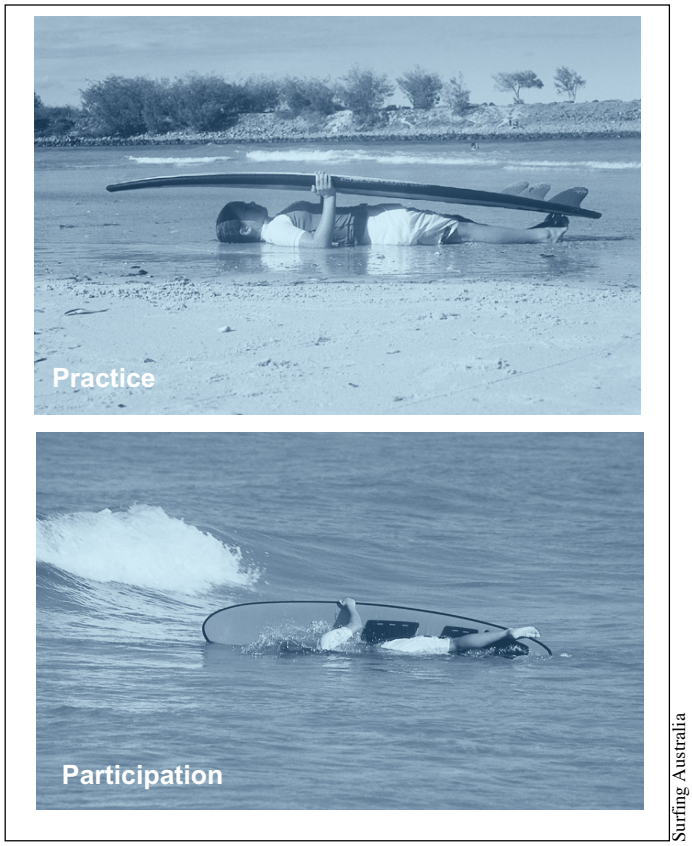


Figure 44.1 Eskimo roll

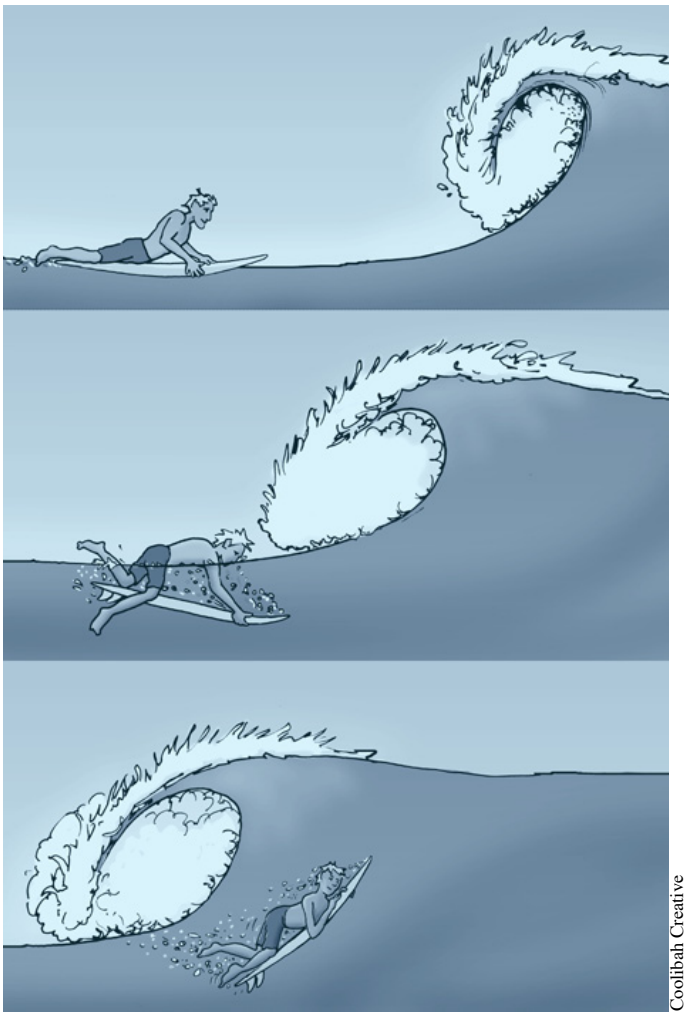


Figure 44.2 Duck diving

Take-off

Traversing right

Bottom turn

Start of cut-back

Wet Paper

Figure 45.1 Some intermediate and advanced surfing skills

WORKSHEET 8 BASIC SURFING SKILLS

1. Describe how to carry the surfboard in windy conditions.

2. When placing the surfboard on the beach, it is important to have the nose facing into the wind.
   a. True
   b. False

3. Describe how to put on a leg rope and list any two safety procedures you should follow when using one.

4. Describe two main methods used to negotiate the waves, whilst paddling out through the surf zone.

5. For each of the following skills, list two common errors and describe ways to correct them

   Carrying a surfboard

   Common errors

   Ways to correct

   Paddling a surfboard

   Common errors

   Ways to correct Entering the surf zone

   Catching white water waves in the prone position

   Common errors

   Ways to correct

   Standing and riding white water waves (Prone to feet)

   Common errors

   Ways to correct

   Traversing right and left

   Common errors

   Ways to correct

   Dismount drills

   Common errors

   Ways to correct

6. Describe any two intermediate surfing skills

Section 9 Basic Surfing First Aid

Web references

www.health.qld.gov.au; www.resus.org.au; www.betterhealth.vic.gov.au; www.emedicine.com

Note: Methods are constantly changing so for the latest information consult your state health web site.

The sea can be a dangerous place. However careful you are, accidents will happen. The way you respond could be vital to your own survival or the people involved.

The information in this chapter can never replace a first aid course such as those run by St John Ambulance Association, Red Cross or your local ambulance service.

First aid relevant to dangerous marine creatures and snorkelling accidents is covered in these courses.

The DRSABCD action plan

First aid is the treatment given to an injured person while waiting for qualified treatment from professionals. There is an important priority to be established in any emergency. We can remember this if we remember the DRABCD action plan. The illustrations on page 61 summarise the DRABCD sequence given below.

- Danger
- Response
- Seend for help
- Airway
- Breathing
- Compression
- Defibrillation (if available)

Danger

As a first aider, your first priority must be yourself. You are no use to anyone if you are hurt trying to help an accident victim. Other rescuers would then have two patients to deal with.

Consider the risks involved in helping another person. Some examples are listed below.

- assisting a person on a beach with broken glass in bare feet;
- trying to remove stinger **tentacles** from a patient using bare hands instead of gloves;
- giving mouth-to-mouth resuscitation to a patient who has a bleeding face.

Things change

If you have an earlier edition of this book, then you need to keep up to date EACH year. So check one of the following

www.stjohn.org.au, www.resus.org.au, slsa.com.au

These pages also do not replace a practical course in resuscitation run by either St. John Ambulance Association, Red Cross, Surf Life Saving Association, The Royal Lifesaving Council, your local ambulance service or any accredited rescue service provider.

Response

A person found lying face down on a rock platform might be seriously hurt and you need to establish what action to take. Try to get a response from them to assess how hurt they are.

The most common method used to get a response is to touch and talk to them.

- If they groan, they may have been asleep or may have had a heavy night.
- If they do not respond, you need to proceed to the next stage.

Send for help

Call 000 for an ambulance or find someone with a mobile and ask them to dial 112. Remain calm while answering questions and state the exact location of the incident, the phone number you are calling from and what has happened.

Airways

Depending on what happened to them, the patient's breathing may be obstructed. Lay the patient on their side, kneel near their shoulders and remove any obstacles such as sand, seaweed or false teeth from their mouth with your fingers.

It is very important to make sure the airway is open.

Breathing

Check for breathing by looking for chest expansion, listening for the sound of breathing and feeling for breathing movement on your cheek. If the patient is breathing, lie them on their side in the recovery position (see page 50).

Compression (CPR)

Check for signs of life (see box below). For example, is the patient conscious, breathing normally, moving or responsive? If not you will need to start cardiopulmonary resuscitation or CPR immediately (see over 30 compressions at a rate of approximately 100 compressions per minute followed by 2 breaths),

Defibrillation (if available)

Follow the voice prompts on the machine if one is available.

Check for signs of life

CPR should only be performed when a person shows no signs of life; that is, when they are:

- Unconscious
- Not breathing normally
- Unresponsive
- Not moving.

Figure 48.1 First response – Touch and talk. *'Can you hear me? Open your eyes! What's your name? Squeeze my hand!'*

Figure 48.2 Patient is in maximum head tilt ready for a quick start.

Figure48.3 Blowing air into patient

Figure 48.4 If the chest rises, turn your head so it is close to the patients mouth and so you can hear and see the chest fall.

CPR – the basic steps

These are the basic steps for performing CPR; they can be used for adults, children and infants.

They are based on guidelines updated in 2006 to be easier to follow and remember.

However, they are only a guide and not a substitute for attending a CPR course. CPR is most successful when administered as quickly as possible.

1. Check for danger – approach with care and do not put yourself in danger.
2. Look for a response – is the victim conscious? Gently touch and talk to them – if there is no response, get help.
3. Dial triple zero (000) – ask for an ambulance.
4. Check the airway – don't move the person.
   - Tilt their head back, open their mouth and look inside.

     If fluid and foreign matter is present, gently roll them onto their side.
   - Tilt their head back, open their mouth and remove any foreign matter (for example, chewing gum, false teeth, vomit).
5. Check signs of life – look, listen and feel for breathing.
   - If the person is breathing leave them lying on their side.
   - If they are not breathing, go to step 6.
6. Use mouth-to-mouth (rescue breathing) – if the person is not breathing normally, make sure they are lying on their back and:
   - Open the airway by tilting the head back and lifting their chin.
   - Close their nostrils with your finger and thumb.
   - Put your mouth over the person's and blow into their mouth.
   - Give 2 full breaths to the person (this is called 'rescue breathing').
   - Make sure there is no air leak and the chest is rising and falling. If their chest does not rise and fall, check that you're pinching their nostrils tightly and sealing your mouth to theirs.
   - If still no luck, check their airway again for any obstruction.

Figure 48.5 Securing the patient for a quick start

7. Cardiac compressions – start chest compressions:
    - Place the heel of one hand on the lower half of the person's breastbone.
    - Place the other hand on top of the first hand and interlock your fingers.
    - Press down firmly and smoothly (compressing to 1/3 of chest depth) 30 times.
    - Administer 2 breaths.
    - The ratio of 30 chest compressions followed by 2 breaths is the same, whether CPR is being performed alone or with the assistance of a second person.
    - Aim for a compression rate of 100 per minute.
8. Maintain CPR – continue, repeating the cycle of 30 compressions then 2 breaths. Keep going until professional help arrives.
9. Don't check the pulse. Regular recovery (pulse) checks are not recommended as they may interrupt chest compressions and delay resuscitation.

CPR techniques for young children and infants

Children aged 1–8 years

CPR steps for children aged eight years or younger are the same as for adults and older children, but the technique is slightly different.

- Use the heel of one hand only for compressions, compressing to 1/3 of chest depth.
- Follow the basic steps for performing CPR described above.

Infants (up to 12 months of age)

- Place infant on their back. Do not tilt their head back or lift their chin (this is not necessary as their heads are still large in comparison to their bodies).
- Perform mouth-to-mouth by covering the infant's nose and mouth with your mouth – remember to use only a small breath.
- Do chest compressions, using two fingers of one hand, to about 1/3 of chest depth.
- Follow the basic steps for performing CPR described above.

What to do if the person recovers during CPR

CPR may revive the person before the ambulance arrives.

- Review the person's condition if signs of life return (coughing, movement or normal breathing). If the person is breathing on their own, stop CPR and place them on their side with their head tilted back.
- If the person is not breathing, continue full CPR until the ambulance arrives.
- Be ready to recommence CPR if the person stops breathing or becomes unresponsive or unconscious again. Stay by their side until medical help arrives.

  Talk reassuringly to them if they are conscious.

Figure 49.1 Locate the compression point

Figure 49.2 Position the heel of the other hand in the middle of the sternum

Figure 49.3 Place one hand over the other

Changes to procedures

If you have an earlier edition of this book, then you need to know the Resuscitation Council of Australia issued new resuscitation guidelines in 2006.

Pages 47 - 49 have summarised the major changes but for the latest information on resuscitation please check.

http://www.resus.org.au

These pages also do not replace a practical course in resuscitation run by either St. John Ambulance Association, Red Cross, Surf Life Saving Association, The Royal Lifesaving Council, your local ambulance service or any accredited rescue service provider.

Stopping CPR

Generally, CPR is stopped for one of the following reasons:

- The person revives and starts breathing again on their own.
- Medical help, such as ambulance paramedics, arrive to take over.
- The person performing the CPR is forced to stop from physical exhaustion.

Recovery position

If pulse and breathing are present or once they return, lie the patient in the recovery position as shown in Figures 50.1–50.3, being careful to avoid spinal injuries.

Regularly check their airway, breathing and circulation (all other considerations are of minor importance), so do not leave the patient unless absolutely necessary.

If you didn't do it before, now is the time to get help.

Continuing care

While you are waiting for expert help to arrive, you must still care for the patient. Keep the patient under constant observation and record everything that has occurred (if possible).

Control shock

Shock occurs when blood pressure drops for a prolonged time.

Shock can damage vital organs such as the heart or brain, or cause death if there is a lack of oxygen to these areas.

Manage the situation by trying to remove the cause of the shock, then lie the patient down, with their feet higher than the head.

Give some reassurance to calm the patient.

Figure 50.1 Grasp the patient's leg, hips and head

Figure 50.2 Lift the leg

Figure 50.3 Gently roll the patient over and observe them until the patient recovers or expert help arrives

Call triple zero (000) in an emergency

ask for ambulance, stay with the person and resuscitate

1 Check for Danger

Ensure safety for yourself, bystanders and casualty.

If safe, remove casualty from water as soon as possible.

2 Check Response

Can you hear me?

Open your eyes.

What's your name?

Squeeze my hand.

3 Send for help NOW call triple zero (000)

Phone for an ambulance.

Remain calm while answering the questions:

- exact location of the incident
- phone number you are calling from
- what has occured.

Follow the instructions from the ambulance service.

4 Clear Airway

If water or vomit is present in mouth, roll casualty on side, tilt face downwards and clear mouth with your fingers.

5 Check for normal Breathing

Look and feel for rising and falling chest.

Listen and feel for breath sounds.

If the patient is not breathing normally, commence resuscitation.

6 Start Compressions

Adults – place heel of hand in centre of chest. Place other hand on top of first.

Children 1 – 8 years – place heel of hand in centre of chest.

Infants <1 year – place 2 fingers in centre of chest. Compress 1/3 depth of chest. Compress 30 times.

7 Position the airway

Adults and children – tilt head backward. Place one hand on the forehead and use the other hand to lift the chin.

Infants <1 year – do not tilt head. Place one hand on the forehead and use the other hand to support the chin.

8 Start breaths

Adults and children – seal nose and give 2 breaths into mouth.

Infants <1 year – give 2 breaths into mouth and nose.

Watch for chest to rise.

9 Repeat breaths & compressions

Repeat 30 chest compressions and 2 breaths.

Continue until ambulance arrives or person regains consciousness or it becomes impossible for you to continue.

10 Attach a Defibrillator as soon as available. Follow the prompts

If injured person shows signs of recovery, roll onto side and check if they are breathing.

Reassure the person and bystanders.

Learn first aid. Contact www.ambulance.qld.gov.au or 13 QGOV (13 74 68).

Edition 1 PC:QASCHARTA1

Queensland Government

Figure 51.1 Summary (Courtesy QAS)

Cuts and bleeding

This is the most usual type of injury resulting from surfing. Whether it be a fin cut or chop, or a cut from barnacles or oysters or reefs, proper treatment of these injuries is required especially if the wound is bleeding and to prevent infection.

Bleeding needs to be stopped by applying pressure to the wound, which can be done with anything clean or you can use your hand in the case of a severe bleeding emergency. Check for any foreign matter in the wound and clean carefully before applying a sterile pad and bandaging (not to tight).

If there is an object like a knife in the wound don't remove it. Stabilise the object with packing (i.e. t-shirt) and then bandage around it.

Bleeding from a severe wound can be life threatening, so always monitor for shock and seek medical help immediately.

Coral cuts can become a real problem for surfers if left untreated. The bacteria present in most marine creatures means that any cuts are likely to become infected. The cuts need to be cleaned of any debris (sand, barnacles, coral etc.) using either tweezers or cotton buds.

Once free from debris, you need to apply an antiseptic powder or ointment to prevent infection. You may need to dress the wound and always seek medical attention.

Figure 52.1Coral cut

Hypothermia

Overcooling can rapidly lead to death in cold oceans for a unprotected person. Hypothermia is caused when the body temperature drops to the point it cannot recover.

Symptoms of hypothermia include:

- Intense shivering
- Numbness
- Apathy and decreasing levels of consciousness

Treatment

1. If possible, remove the patient from the elements and into dry shelter.
2. Remove any wet clothing and replace with warm, dry clothing or blankets.
3. Warm the patient gradually to avoid the onset of dangerous heart rhythms.
4. If the patient is able, encourage them to drink warm liquids.
5. Monitor the patient and seek medical help.

Figure 52.2 Wet suits are a good defence against hypothermia for a surfer

Safety Tip

Pressure is the best way to reduce bleeding from fin chops or cut feet. You can use a rashy, towel or board shorts to stop the blood.

Sun exposure

Surfers are constantly exposed to the sun and must take precautions to avoid dehydration, overheating and getting sun burnt. Sun burn is a major problem when surfing.

The best treatment is to avoid sunburn in the first place by wearing long-sleeve rash shirts, board shorts and sunscreen (Figure 53.1). Staying out of the heat in the middle of the day is also important.

Treatment

If sunburn occurs:

1. Remove patient form the sun.
2. Cool showers and wet towels can relieve heat and pain
3. Apply a soothing skin lotion such as aloe vera to help relieve pain and help the skin recover.
4. Stay out of the sun until healed. You must not burst blisters if present.

Overheating has three basic stages and can be fatal if not treated.

Stage 1

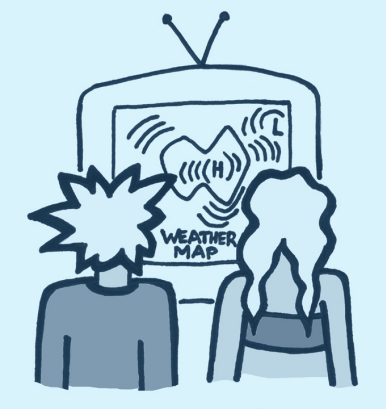
This includes muscle cramps, tiredness and nausea. Treatment involves moving the patient into a cool place, providing cool drinks to replace lost fluid, and encouraging light stretching to relieve cramped muscles.

Stage 2

Heat exhaustion is more dangerous. The patient might have muscle cramps, be thirsty and they may be uncoordinated with sweating and headaches. The treatment is as for stage 1 including sponging the body with cool water. If a quick recovery does not occur, seek medical help.

Stage 3

Heat stroke can be lethal and needs urgent treatment. The symptoms for this are similar to the previous stages except that the pulse is rapid and the skin is dry and flushed. You should treat heat stroke as for the other stages, while seeking medical attention urgently.



Wet Paper

Figure 53.1 The best treatment is to avoid sunburn in the first place by wearing long sleeve rash shirts

Marine stings

Bluebottles are the main cause of marine sting and one of the most painful. Bluebottles are brought in by onshore winds and with trailing tentacles of up to 10 metres, they can be hard to avoid.

Treatment

If stung by a bluebottle you should:

1. Remove the tentacles using the tips of your fingers (your finger tips have tough calloused skin and shouldn't be stung) being careful not to touch any more exposed skin with the tentacles.
2. Rinse the area with fresh water
3. Apply ice to reduce pain and swelling and to stop more stinging cells from firing.
4. Reassure the patient and monitor them for allergic reactions. If breathing becomes difficult seek medical help.

Safety Tip

If stung, resist the urge to rub the affected area, this will only release more stinging cells and increase the pain. Never leave a stung patient alone, keep an eye on the patient for allergic reactions. Be warned: Bluebottle stings are painful!

WORKSHEET 9A BASIC SURFING FIRST AID

1. Give two possible reasons why, when a person has stopped breathing, resuscitation may be required.
2. Recall the basic procedure for resuscitation.

D_____

R_____

A_____

B_____

C_____

3. You can use a compression bandage to help stop bleeding. True or False? Give a reason for your answer.

4. Explain why are coral cuts a problem if not treated correctly.

5. Explain why rubbing a bluebottle sting with sand is the wrong thing to do.

6. List the three stages of overheating.

7. Describe the treatment for sunburn.

Worksheet 9b Basic resuscitation

1. What is the most important thing to consider before commencing resuscitation?

2. Why is it important to check the patient's airway properly?

3. In a rescue situation, what is the cycle for compressions : inflations?

4. If more than one person is present, how often should resuscitation be varied?

5. Describe the function of the recovery or lateral position.

6. Read page 51 and complete Steps 1-10 in the spaces below.

Danger

tep 1

Response

tep 2

Airway

tep 3

Breathing

tep 4

tep 5

Compression

tep 6

Defibrillation

tep 7

SECTION 10 BASIC SURFING RESCUE PROCEDURES

Surfing can be a dangerous sport and sometimes rescues in the surf zone are required.

It should be noted that the majority of rescues performed in the surf zone are by surfers not lifeguards.

This is because surfers love to go to remote places and are often nearby when unsuspecting people get into trouble.

It is for these reasons that being able to perform a rescue on your surfboard might just save a life.

Principles of personal safety

If you are ever in the situation of needing to rescue someone, there are some very important questions you must ask before charging in. These include:

- Can I handle the surf conditions?
- What equipment can I use for the rescue?
- Is there anyone to help?

Surfing rescues

There are two main types of rescues you can perform on a surf craft.

These include rescuing a conscious person who is in trouble, or an unconscious person who needs immediate help.

Conscious patient surfing rescue

A conscious patient rescue generally involves a swimmer in distress (Figure 56.1) or a surfer who may have lost his or her board and requires assistance.

Someone requiring a rescue will generally be in a panicked state, so it is important to use the right procedures to prevent the rescue becoming dangerous for you.

Procedure

1. Assess the situation (decide on an action plan).
2. Send someone for help (if assisted).
3. Choose the equipment (surfboard).
4. Paddle out (allowing for sweeps and rips).
5. Approach the patient form the beach side (so that if a wave comes you can see it and also, the patient will be swept towards you.)
6. Verbally reassure the patient as you approach.
7. Before you get within a board's length of the patient, slip off the back of the board and offer them the nose of the surfboard. (See Figure 56.2)
8. Once the patient has hold of the board, you should be able to approach them and get them onto the surfboard, positioning them for good trim.

Figure 56.1 A swimmer in trouble signalling for help

Figure 56.2 Conscious patient rescue, offering the board

Safety Tip

Charging out to save someone in conditions you can't handle alone is foolhardy. Always assess the conditions and if it is too dangerous, get help. There is no point making it two people who require saving!

9. Next climb on the back of the surfboard placing your chest on the patient's backside (this allows good patient security, for if a wave comes you can hold onto the rails and secure the patient) (see Figure 57.1).
10. You can direct the patient to assist in paddling back to shore if they are able. Once in the wave zone, try to avoid catching dumpers, catch the smaller waves and keep the weight to the back of the board to avoid nose diving.
11. You must secure your patient all the way to the shore. If required utilise the One Person Drag (see Figure 58.3 see over) to move the patient above the water line for assessment.
12. Finally you must monitor the patient until help arrives.

Unconscious patient surfboard rescue

A person who is unconscious in the water is in big trouble and needs immediate assistance. The cause for their unconsciousness may be due to a number of reasons including drowning, a head clash with board or the bottom, or a heart attack or stroke etc. Regardless of the cause, the main priority for the rescuer is to secure the patient, administer a deep water 'Quick Start' and return them to shore as quickly as possible.

Procedure

1. Assess the situation (decide on an action plan).
2. Send someone for help (if assisted).
3. Choose the equipment (surfboard).
4. Paddle out (allowing for sweeps and rips)
5. Approach the patient form the beach side (so that if a wave comes you can see it and also, the patient will be swept towards you.)
6. Secure the patient by grabbing their arm.
7. Stay on the surfboard and turn the patient so that their back is facing the board.
8. Place your arm under their armpit and into a pistol grip position on the chin, using the rail of the surfboard to gain maximum head tilt as shown in Figure 57.2.
9. Check for breathing. If patient is not breathing administer a 'Quick Start' which is 5 full breaths in 10 seconds. This procedure is vital for the patient's chance of survival as they may have been without oxygen for some time and it might take you a while to get them back to shore.
10. Next secure the patient by the wrist and turn them to face the surfboard placing their wrist on the rail away from you, approximately where their chest will go. Slip yourself off the opposite side of the board.

Safety Tip

Remember that a person who is drowning will be in a panicked state, so do not get too close until you have verbally reassured the patient, and the situation is under your control.

Figure 57.1 Securing the patient for the paddle into shore

Figure 57.2 Securing the patient

11. Roll the board towards you so that it is upside down, the patient's armpit should now be resting on the rail (Figure 58.2A).
12. Roll it again into the upright position and the patients chest should now be on the board (Figure 58.2B).
13. Swing the patient's legs onto the board and adjust the trim.
14. Then climb on the back of the surfboard placing your chest on the patient's backside (this allows good patient security, for if a wave comes you can secure the patient by holding onto the rails - See back Figure 57.1).
15. Return to shore avoiding catching dumping waves, catch the smaller waves and keep the weight to the back of the board to avoid nose diving. It is vital that you secure the patient all the way to the shore. Use the one person drag to move the patient above the water line, and place them in lateral position.
16. Assess the patient's Airway, Breathing, and Circulation and commence resuscitation if required.

One person drag

This technique is essential for moving an unconscious or weak patient out of the water. The procedure is as follows:

1. The patient is lying face down on surfboard at the water's edge.
2. Squat next to patient on the left side.
3. Place your left hand under their left armpit and grab their wrist, followed by the right hand under the right armpit which you place onto the chin in the pistol grip position
4. Roll the patient off the board until you are in a squatting position. (See Figure. 58.3)
5. Stand up bringing the patient's back up onto your chest, with their head on your right shoulder
6. Drag the patient above the water line, come hip to hip and lay the patient into the recovery position (taking care with their head).
7. Assess the patient and commence resuscitation if required.

Figure 58.1 Rolling the patient onto the surfboard.

Figure 58.22 Securing patient on the board.

Figure 58.3 Dragging the patient

WORKSHEET 10 SURFING RESCUE PROCEDURES

1. Give two examples of questions you should ask yourself before entering into a rescue situation.

2. Name the two main types of rescues you can perform on your surfboard.

3. Describe why it can be dangerous to approach too closely to a person who is in trouble in the surf.

4. You should always verbally reassure a person who is in trouble in the surf.
   a. True
   b. False

5. Describe the three main priorities for a rescuer who is performing an unconscious patient surfboard rescue.

6. Describe seven steps used in the one person drag

SECTION 11 SURFERS AS ENVIRONMENTAL AMBASSADORS

Surfers have a vested interest in ensuring that the ocean and beach environments are protected and preserved.

Our waterways and oceans are wonderful but precious resources that we rely on to fully enjoy our sport.

As one of the major groups that utilise the ocean, we have a role as ambassadors to protect these fragile environments and to educate the public about the importance of the ocean and surrounding dunes.

Dangers to the ocean

In this every growing industrialized world, there is constant pressure placed on the environment by big industry and development. Our oceans and beaches are under threat from many areas including:

- Sewage
- Rubbish and stormwater runoff
- Oil and radioactive waste
- Agricultural run off
- Thermal pollution and other toxic compounds
- Coastal development

Beach and dune erosion

Sand dunes and beaches are very important to the coastal environment because they provide a protective barrier between the land and the sea.

A combination of development, the destruction of natural foliage and the removal of sand through wave action, can all have a devastating effect on our beaches as shown in Figures 60.1 and 60.2.

Dune conservation

The dune system shown in Figure 61.1, is a reservoir for the sand banks that make up the beach breaks.

During storms, the dune becomes eroded, moving the sand offshore so that the larger waves can break further out to sea.

In calm weather the sand moves back to rebuild the dune.

The dune is held together by plants which grow in a succession from smaller to larger. As the sand blows along a beach, it gets caught in these plants and the dune builds up.

If the plants are killed or ripped up, the sand will blow inland — never to be replaced again. The dunes will get smaller in time and finally disappear along with the great left and right beach breaks that are so much fun to learn on.

Dune plant conservation is essential for our beach breaks, and many surfers have combined with local communities to help replant dune vegetation and build walkways.

Figure 60.1 Rubbish on a beach track

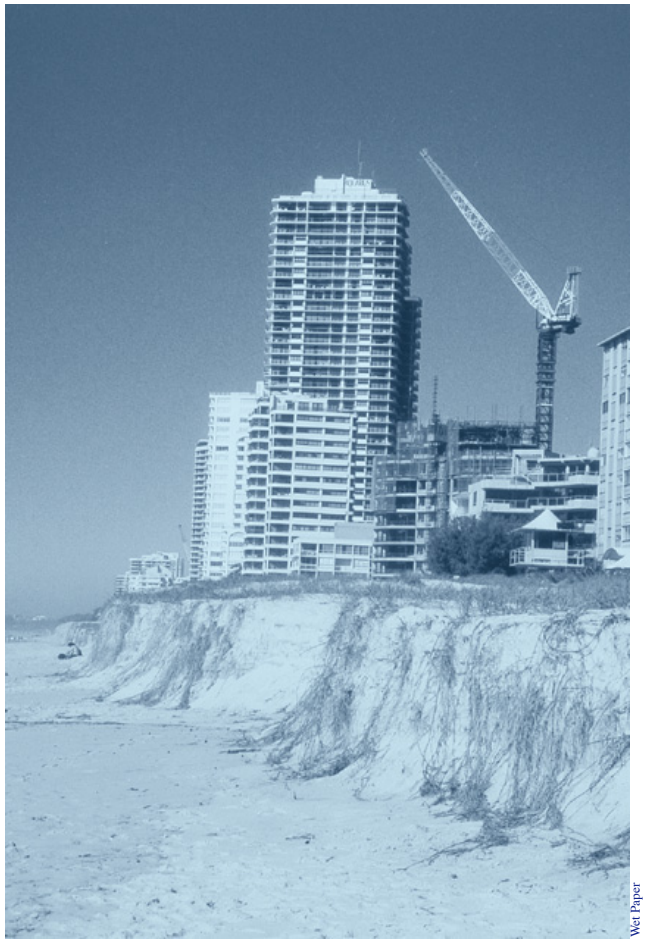


Figure 60.2 Dune erosion and development on sand dunes

Surfing Tip

Remember, when you throw rubbish in the street you are throwing rubbish in the ocean. Always do the right thing, take all your rubbish with you when you leave the beach.

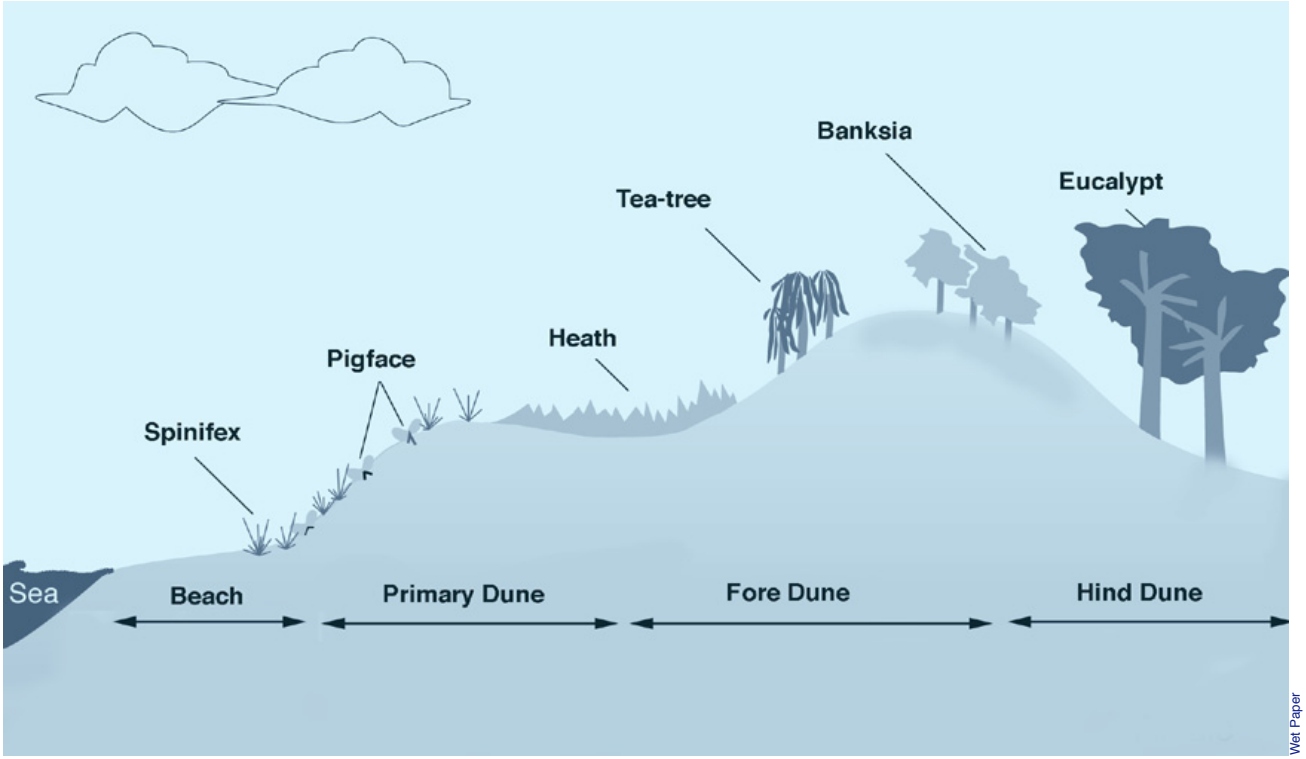


Figure 61.1 Different zones of the sand dune

Rubbish

One off the biggest threats to local surfing beaches is rubbish and stormwater runoff. In this throwaway society, rubbish can be generated from many sources such as food packaging, disposable items such as nappies, and cigarette butts which can all choke and pollute water ways and beaches. A large percentage of rubbish thrown on the ground, and other pollutants such as cleaners and oil, end up in storm drains and eventually the ocean.

Surfing Tip

To prevent erosion and further damage to the dunes, always use public access ramps and stay off the dune vegetation.

A Surfers role in protecting the environment

We have a chance as surfers to help protect the very important environment in which we play. One way to help reduce pollution and erosion is to take individual positive steps to protect the ocean. Here are some examples:

- Start at your local beach, if it needs a clean up or has a pollution problem, contact your local government and organise a clean up. Everyone can help the environment but it must start in our own back yard first.
- Find your local landcare or coast care government representative and apply for a coast care grant to do a beach revegetation project.
- Encourage people who smoke to use ashtrays.
- Take rubbish home from the beach or find a rubbish bin that birds cannot get into.
- Always use beach walkways and don't set up camp on the dunes to run surf competitions.
- Pick up plastic bags on your way out of the surf. If you are a good surfer set a good example by showing others the way.

Figure 61.2 Beach walkway designed to protect the dune system

Worksheet 11 Surfers as environmental ambassadors

1. List four threats to the ocean environment.

2. Rubbish is one of the major threats to the ocean environment. Give two examples of problem rubbish.

3. Explain how can rubbish on the beach be reduced.

4. Explain why are sand dunes important to the beach structure.

5. The photograph to the right shows dunes being fenced as part of a community project.
   a. Why has this been done?

   b. You are running a surf competition. Why should you not set up tents and judging stands on top of the dunes?

GLOSSARY OF TERMS

Aerial: A dynamic surfing manoeuvre performed above the lip-line

Barrel: The hollow section of the wave. See: tube – keg – pit

Backdoor: To take off behind a section of a wave

Backhand: Surfing with your back to the wave

Bottom turn: Banking turn off the bottom of the wave

Boost: See aerial

Carve: Perform a radical manoeuvre, surf well

Channel: Deep section of water between sand bars or reefs or special surfboard bottom shape

Charge: To take on challanging surf conditions

Close out: A wave that breaks too quickly or shuts down so it cannot be ridden

Cutty: A cutback, a manoeuvre that brings you back to the curl

Curl: Critical section of the breaking wave, the hook of the wave

Deck: Top of the surfboard

Deck grip: Foam adhered to surfboard deck as a replacement for wax

Rail: Outside edge of a surfboard

Ding: Damaged area on a surfboard

Drop in: When a surfer takes off on a wave with a surfer already up and riding. To be avoided at all costs, can be dangerous. The surfer on the inside of the wave i.e. closest to the curl, has right of way

Duck dive: Advanced surfing technique involving pushing surfboard under approaching breaking wave and emerging on the other side.

Dumper: Close out. A wave standing up and dumping on the shore

Floater: A manoeuvre when a surfer climbs up on a white water section of a wave and traverses along, re-entering on to the wave

Foam: (1) White water (2) Core of a surfboard

G–board: Type of soft surfboard suitable for beginners

Goofy-footer: Surfing with your right foot forward

Gutter: A channel between the shore and an outside sandbank

Impact Zone: An area where waves are breaking i.e. over a reef or sandbar

Keg: See barrel

Lefthander: A wave that breaks to your right as you view from the beach

Leg rope (leggie): Leash that attaches you to the surfboard, placed on your back ankle

Lip: Crest or curl of a wave

Longboard: Traditional surfboard usually over 8 ft in length

Malibu: A longboard

Natural foot: Surfing with your left foot forward

Nose: Front section of the surfboard

Nose-dive: Wipe out with nose of board going under or pearling

Nose-lift: Curve at the nose of the board

Peak: Wave breaking right or left. Take off spot on the wave

Pearl: Nosedive

Plan shape: Outline of the surfboard

Pounding: Getting hit by waves when paddling out or in the impact zone

Prone out: Going from standing to laying on your board

Radical: Advanced manoeuvres, surfing fast and powerfully, with flash and dash

Rail: Outside edge of a surfboard

Re-entry (reo): A manoeuvre when a surfer turns up into a close out section and turns back onto the wave.

Rip: (1) Current of water moving away from the beach. (2) To surf really well (ripping)

Rocker: Curve of the surfboard from nose to tail i.e. nose rocker, tail rocker

Set: A group of waves

Slash: Radical turning manoeuvre.

Snaking: Paddling around and taking off on the inside of a surfer who has already taken off. To be avoided

Soft board: A safe board for beginner surfers with soft rails, nose, tail and fins

Spring suit: Wet suit with short arms, short legs

Steamer: Full length wetsuit

Surf rage: Expressing anger sometimes violently at other surfers usually because of overcrowded conditions or another surfer snaking or dropping in

Sweep: A current running parallel to the shore

Tail: Back section of the surfboard

Thruster: Surfboard with 3 fins, first designed by Simon Anderson

Tube: See barrel – keg

Twinny: Twin fin surfboard

Unreal: Fantastic, sensational

Vertical: Radical manoeuvres as in vertical re-entry or vertical take off i.e. taking off on a steep face.

Wax: A compound rubbed on the shiny surface of the deck to provide grip

Wedge: Thick, powerful peak

Wipe out: Falling off your surfboard

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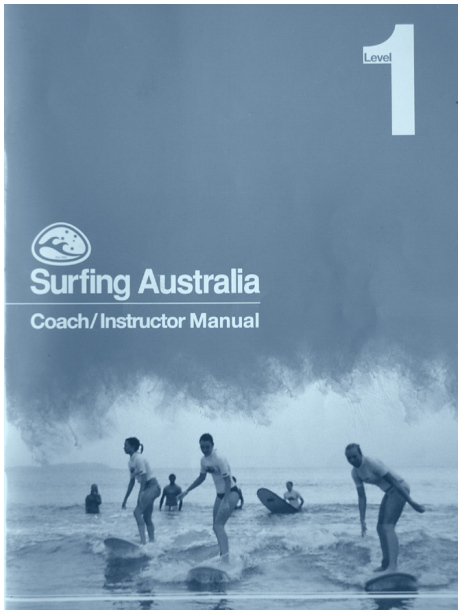

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