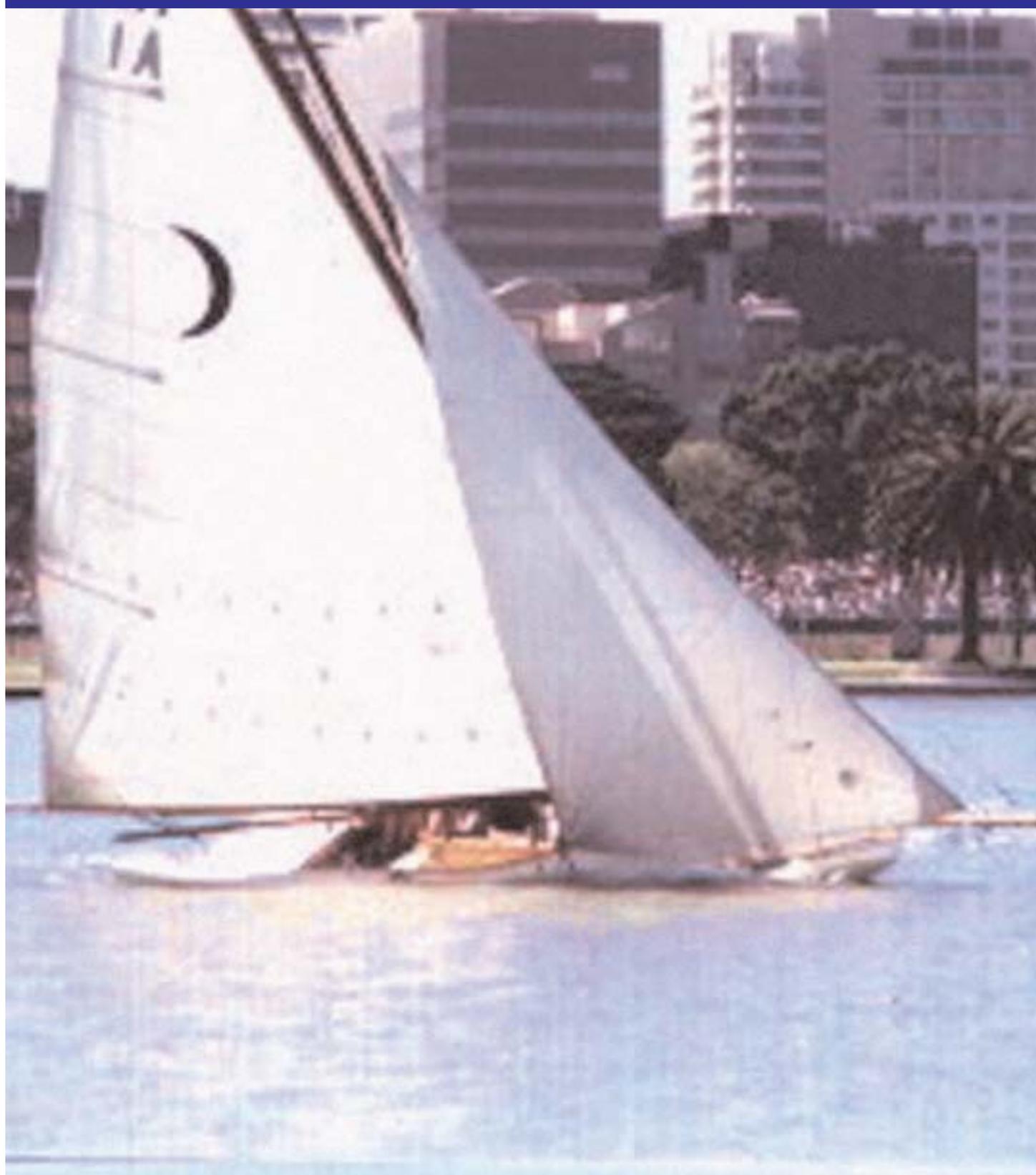


# Albert Park Yacht Club



*Learn to Sail. Course notes*



# Table of Contents

Preface	2
References	2
<b>The Philosophy of the Course and these Sailing Notes</b>	<b>3</b>
Introduction	4
Safety	4
Personal	4
Footwear	5
Clothing	5
<b>The First Sailing Lesson</b>	<b>6</b>
Wind direction	6
Points of Sailing	6
Heaving-to, and Stopping	7
The effect of controls	7
Some terms	7
Sailing across the wind - reaching.	7
Tacking	7
Coming Alongside	8
<b>The Second Sailing Lesson</b>	<b>9</b>
Sailing to windward	9
Sailing on a Broad Reach	9
<b>The Third Sailing Lesson</b>	<b>10</b>
Sailing downwind.	10
Gybing	10
<b>The Fourth Sailing Lesson</b>	<b>11</b>
Capsize	11
<b>The Fifth (On-shore) Lesson</b>	<b>12</b>
Boat Safety	12
Parts of a Boat	13
Rigging a Boat	13
Launching	14
Recovery	14
Rules of the Road	14
Knots	15
Weather	16
Tides and Current	16
Safety in Distress	16
Reefing	16
Paddling and Rowing	17
Sail Care	17
<b>Other Useful Information</b>	
Trailing Boats	18
First Aid	18
Epilogue	20
Sailing Terms	21



# Preface

These notes are to read in conjunction with the Learn to Sail Course offered by Albert Park Yacht Club. Those completing the course should be able to sail unaided around a triangular course in moderate winds and be conscious of all safety issues associated with dinghy sailing.

The syllabus for this course is partly based on the Australian Yachting Federation Get into Small Boat Sailing Level 1 and 2 Syllabus.

The notes are to remind students of material covered in the course and to complement that material.

There are many excellent publications describing Learn to Sail courses. Some of these, particularly those by the Royal Yachting Association, are directly relevant to this course. However, the on water instruction of many of these books is often less appropriate to Australian waters like Albert Park Lake and Australian boats, and so it has been necessary to prepare these notes.



# References

Australian Yachting Federation Racing Rules of Sailing for 2000 - 2004

Victorian Boating Guide (VBG)

One book which is worth purchasing because of its excellent pictures and diagrams is John Driscoll, *Learn to Sail in a Weekend*, RD Press, London 1991, \$20. The other good texts are by the Royal Yachting Association. These publications follow the basic syllabus adopted by the A.P.Y.C. Sailing School.



# The Philosophy of the Course and these Sailing Notes

After the introduction the notes deal with issues that should be covered in each lesson. At the end there is some additional information associated with first aid and sailing that may be useful.

The introduction covers matters of personal safety that are basic to the enjoyment of the sport. Some aspects of safety, such as the wearing of buoyancy vests, are covered by law.

At Albert Park Yacht Club it has been found most effective for **students to be accompanied by an instructor for the first four on the water lessons**. This has sometimes been varied for younger students, but the sequence of learning is the same.

The **first lesson** focuses on basic sailing technique. Matters to do with rigging and terminology are not covered until later. Sailing theory is left to a Learn to Race Course. The aim of the course is to teach people to sail, not to teach about sailing. For that reason information not essential while students are under supervision is left until later. Sailing is a complex skill and so students are introduced immediately to the physical technique of dinghy sailing to maximise the amount of practice possible during the course.

**Lesson two** revises the first lesson and introduces sailing to windward or beating and sailing away from the wind. **Lesson three** covers gybing and the technique of sailing around a triangular course. **Lesson four** is largely revision of all the foregoing.

There is some material that may be covered ashore and this is left until there is a day not suitable for sailing or at the end of the course. This material is also included in these notes as **Lesson five**.

**The second half of the sailing course requires students to sail in boats on their own, with the instructor nearby.** The sequence of learning repeats that of the first four lessons with appropriate sailing exercises starting with a figure-of-eight course in the first lesson and ending with a triangular course in the last two lessons. Again there is a shore based component.



# Introduction

## Safety

Compared with many modern activities such as driving a car, sailing is a very safe preoccupation. However, there is the potential for disaster if reasonable precautions are not taken. Victorian yacht clubs have an excellent safety record and the tragedies that have occurred generally involve inexperienced people, inappropriately equipped, doing unwise things without the support of a club.

Safety involves:-

- personal equipment,
- the boat and its safety devices,
- an awareness of where to sail, an appreciation of the prevailing weather conditions and their significance, and
- a knowledge of relevant first aid.

In addition to safety, it is hard to enjoy sailing without the proper equipment and an adequate understanding of the above issues.

## Personal

To safely enjoy sailing it is necessary to be suitably clothed and to be wearing the correct safety devices. The main safety device is a garment providing an aid to buoyancy. These are called Personal Flotation Devices. Other items include suitable footwear and warm clothing.

## Personal Flotation Devices (PFD's)

There are three types of PFD's:-

- **PFD Type 1's** known as life jackets are buoyancy aids that maintain the wearer in a safe floating position. They are usually constructed with a buoyant collar and have buoyant material next to the chest. This makes swimming face down difficult, and also makes them cumbersome for normal sailing activities.
- To assist with visibility, PFD 1's are coloured red, yellow or orange, and are fitted with retro-reflective tape. They should conform to Australian Standards, AS 1512.
- The correct number of PFD 1's must be carried on board by all boats except under certain circumstances, such as club racing, where the crew are wearing PFD 2's or 3's. However, children under 10 must always wear a PFD 1 when on a boat and not in a secure place such as a cabin.
- **PFD Type 2's** known as buoyancy vests are designed to help the wearer to float for comparatively short periods. They are not intended to maintain an exhausted person in a safe floating position.
- PFD 2's are constructed with buoyant material evenly on the front and back making them less clumsy to wear and easier to swim in. They are coloured red, yellow or orange. They should conform to Australian Standards, AS 1499.
- PFD 2's should be worn at all times while sailing a dinghy. They should be worn with a belt pulled firmly about the body so that when in the water the vest does not float up over the persons head.
- **PFD Type 3's** are similar to type 2 except that they are not a safety colour. The intention was to make the device more attractive for skiers and board riders to wear.

## Buying a PFD.

A **PFD 2** should be one of the first purchases of a sailor. They cost between \$50 and \$80. Properly cared for they will provide over ten years of regular use.

The PFD should:-

- have the Standards Association of Australia "Standards Mark",
- fit comfortably,
- be the correct size for body weight of the wearer.

## Using PFD's

Sailors should be experienced at wearing a PFD in the water. They should be able to:-

- put it on securely and take it off, in or out of the water,
- share it in the water with another person, and
- get in and out of the water while wearing it.

It is important that the material and fasteners are in good condition so that the garment fits firmly and does not come adrift when the sailor enters the water.

## Footwear

Suitable footwear is essential for sailing on Albert Park Lake, and normal elsewhere. Sand shoes are satisfactory to begin with, but a pair of sailing boots may be obtained eventually. These protect the feet from sharp objects in the boat or on the lake bottom. They also provide a better non-slip surface than the soles of the feet and prevent chaffing of the skin under the toe straps.

## Clothing

Suitable clothing is important for enjoyable sailing. It is necessary to combat the cold, cope with the sun and not overheat on hot days when the wind is light.

The vision of bikini clad sailors is not appropriate for Victoria or for those pursuing the sport seriously. They are cold and do not offer protection from sharp objects in the boat. Spray and wind increase the wind chill factor on waters like Port Phillip Bay, even on hot summer days. On the lake, however, there is flat water and hence less spray and so it is sometimes dangerous to wear a wet suit on hot days with little wind as dehydration can occur. It is always important to protect against the sun.

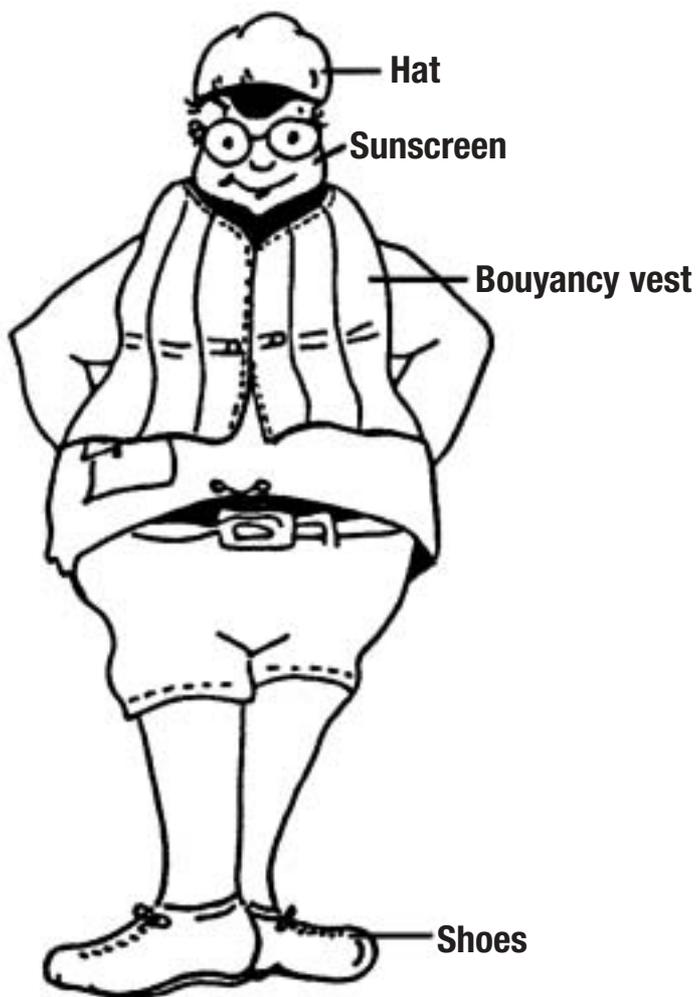
A **spray jacket** is a good initial purchase. It provides a certain amount of warmth and protection from spray. It also may have pockets and a hood for rainy weather. Truly waterproof spray jackets are moderately expensive, but they provide more warmth and often last longer than the cheaper variety.

**Wet suits** are the basic garment worn by sailors. The best design for sailing has singlet tops to allow for shoulder movement. Short or long legs are a personal preference. Some manufacturers now make sailing wet suits that have padding on the knees and bottom. It is a good idea to have a wet suit custom made to your own size with features and design as you desire. It is common to wear something under the wet suit to prevent chaffing.

**Hats, sunscreen** and **dark glasses** are essential during the summer months.

The effect of the sun is increased by reflection from the water and the burning effect of the wind. Those who sail very regularly also wear **gloves** to protect their hands.

Always have a **change of clothes** and a **towel** when going sailing. Even the best sailors are ready for a soaking.



# The First Sailing Lesson

The first sail is undertaken with the instructor who will demonstrate the basic manoeuvres of sailing and explain the orientation of the boat with respect to the wind. At the end of the lesson participants should be able to:-

- determine the direction of the wind
- identify the direction that the boat will stop and where it will not stop, and where it will not sail
- appreciate the effect of wind on the sails and the influence of rudder and sail control
- steer a course
- tack
- come alongside
- understand some basic sailing terms.

## Wind direction

Sailing is almost completely controlled by the wind, its direction, strength and variation. Sailing and its terminology uses wind direction as the main frame of reference. Wind direction may be determined by:-

- Feel on face, neck, beard etc.
- flags, smoke, trees, wind indicators, ripples on the water,
- the direction of other boats.

## Points of Sailing

The points of sailing are determined with respect to the direction of the wind.

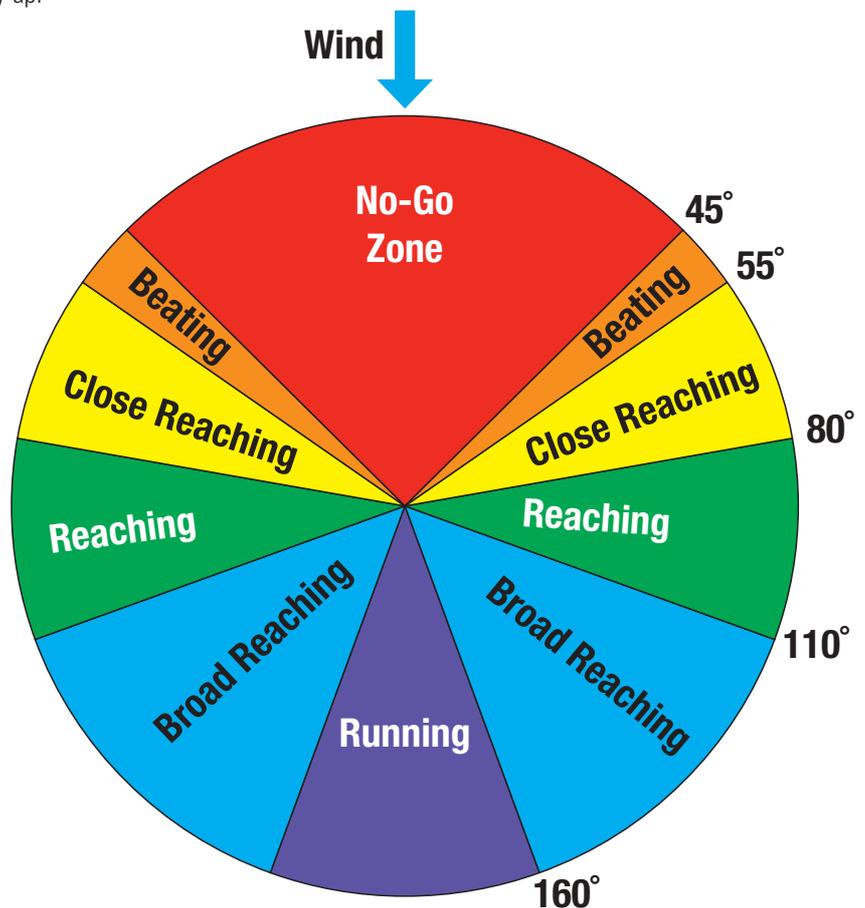
There is a 45° area either side of the wind into which boats can not sail. When pointing in this direction the sails will flap and the boat will stop. It is known as being in irons, or head to wind. Stopping in this direction is to be avoided as the boat is effectively out of control.

At 45° to the wind boats are sailing unwind, are close hauled, or are beating. This is as close to the wind a boat can point without the sails flapping and the boat coming to a halt. Sails on this point of sailing are sheeted tightly in and the centreboard is fully down.

Across the wind, i.e., at 90°, boats are on a beam reach or are reaching. Sails are sheeted out at 30° - 45° to the boat and the centreboard is about halfway down. This is the fastest point of sailing and is the direction that offers the most control. It is the point of sailing used throughout the first lesson.

At 135° from the wind, boats are on a broad reach.

When sailing directly away from the wind, the boat is running or sailing down wind. The sails are sheeted out as far as they will go and the centreboard is nearly all the way up.



## Heaving-to, and Stopping

This is not associated with sea sickness, although the problem has been seen on Albert Park Lake. It is a safe and natural position to stop the boat on the water. If the sails and rudder are left loose (and the centreboard is about halfway down), the boat will drift side on to the wind where it will generally stay. This is the heave-to position. It is a comparatively safe position, in spite of the noise of the sails.

The boat will stop when it is pointing anywhere between the heave-to position, i.e., across the wind, and the direction of the wind, provided that the sails are allowed to flap.

However unless it runs into something, it is not possible to stop the boat when it is pointing any further away from the wind than 90°. This is important to realise when coming alongside a jetty, the edge of the lake or helping someone out of the water. The boat has to be manoeuvred so that it comes to a stop at the appropriate position with the sails flapping.

## The effect of controls

From the heave-to position the following effects will be noticed:-

As the jib is sheeted on, the boat increases forward speed and starts to bear away.

As the mainsail is sheeted on, the boat increases its forward speed and starts to luff up - go toward the wind.

The rudder may also be used to alter direction of the boat, pulling the tiller towards the helms person the boat bears away and vice versa, but only while the boat is moving.

As the sails are sheeted on, the boat heels over and as they are eased, the boat becomes more upright.

## Some terms

That which is closest to the wind is **windward**, and that which is further away is **leeward**.

A change in the boat's direction of travel so that the boat goes head to wind and the wind comes to the boat on the other side is called **tacking** or **going about** and **gybing** is when this change is achieved as the boat is travelling away from the wind.

A change in direction toward the wind is **luffing up** and away from the wind, is **bearing away** from the wind.

## Sailing across the wind - reaching.

Sailing across the wind is the fastest point of sailing and it is also the easiest offering the greatest level of control. For this reason it is the first point of sailing that is practiced. In future, when a boat is being sailed for the first time or unfamiliar conditions are being encountered, it is the best way to begin. It also has the advantage that you end up where you began.

The helmsperson holds the tiller extension in the hand

The sails are eased out and the centreboard is partly raised. The crew sits where it is best to keep the boat level. The sails are constantly adjusted according to the wind direction and strength so as to keep the boat level.

Trimming the boat fore and aft is important. The crew should sit so that the boat is level. If water starts to come in over the bow, it may be necessary to move a little to the stern.

## Tacking

Before tacking the helms person should check behind to see that there are no boats with which a collision may occur during tacking. If sailing close hauled it is also an idea to take a sighting at right angles to the course of the boat as this is the direction the boat should be heading after the tack.

The sequence of tacking for the skipper is as follows:-

- check behind to see that there are no boats in the way
- ask the crew "ready to tack"
- when the crew says "ready" say "tacking" and push the tiller away
- put the foot nearest the stern across the boat and prepare to stand up
- as the boom comes across the boat move underneath it to the other side and sit down - during this movement the hand holding the tiller extension should be pushed toward the far side of the boat (the new windward gunwale)
- continuing to hold the tiller extension in the same hand now behind the back, straighten the tiller as the boat turns around to 45° from the wind
- change hands on the tiller extension by reaching back to the tiller end of the extension with the sheet hand and taking the extension palm up flip it over so that it is in front
- change hands on the sheet and move the hand on the extension up to the end of the tiller extension.



It is important never to let the tiller extension go as this would mean that the boat would be out of control. The mainsheet should never be cleated.

When the order to tack is given, the crew should release the jib so it flaps. This allows the boat to head quickly into the wind as the helms person pushes the tiller away.

As the boat passes through the eye of the wind and the boom crosses the centre of the boat, the skipper and the crew should move to the other side of the boat, in the opposite direction to the boom. When the boat is about 45° from the wind, the crew should pull the jib on from the other side and the helms person should straighten the course of the boat.

The stronger the wind, the faster the boat goes and the less tiller movement is needed to change direction. It is important to have some speed before tacking as the boat may stop during the tack causing a loss of control.

There are other ways of tacking but this is now the accepted method as it leads to more sophisticated techniques taught in the Learn to Race Course.

## Coming Alongside

One manoeuvre requiring some precision is bringing the boat to a stop at a given location, either to pick something up in the water or to come along side a jetty, landing or even another boat. The helmsperson has to plan the exercise by envisioning the final position of the boat pointing into the wind at the desired location and then plot a path to that point along which the speed of the boat will be controlled.

The path will normally begin by sailing across the wind controlling the speed by adjusting the sails and then turning toward the wind allowing the speed of the boat to dissipate. If the boat is to be stopped because it is travelling too fast it may be necessary to push the boom out on the leeward side of the boat so that it pushes against the wind.

There are many scenarios associated with coming alongside and these will be discussed and demonstrated by the instructor as the situation arises. The practice of the exercises hones ones helming skill.

# The Second Sailing Lesson

With the assistance of the instructor in the boat at the conclusion of this lesson participants should be able to:-

- recall most of lesson one,
- beat to windward
- sail on a board reach.

## Sailing to windward

Sailing a boat to windward, generally called beating, is a skill that takes years to fully develop. Wind direction and strength never stays the same, especially on Albert Park Lake, and so sailing at a precise angle to the wind requires constant changes of direction and trimming of the sails

By sheeting the sails fully in and putting the centreboard fully down it is possible to sail at about 45° from the direction of the wind. Generally speaking the end of the boom should be over the back corner of the boat when sailing to windward.

The direction of the boat and sails require constant trimming as the wind direction and strength varies. Whenever the front of the sail begins to flap, it is necessary to pull the tiller and bear away from the wind slightly.

When the boat heels over it may be a sign that the wind has changed direction and it is possible to luff up. It may also be an indication that the wind has increased in strength and that the sail should be eased slightly.

The crew should also move about the boat to balance it. As the wind increases the crew should lean out using toe straps.

This is an introduction to a skill that takes much sailing to develop. Racing is to a large part a question of who can make their boat go the fastest upwind.

By tacking every so often a zig- zag course is steered and the overall result is to go directly into the wind.

## Sailing on a Broad Reach

A broad reach course is sailed when the wind is coming over the quarter, or back corner, of the boat. The sail is eased put so that the boom is about at right angles to the direction of the wind and the centreboard is about half way down. The aim is to keep the boat level by adjusting the sail.



# The Third Sailing Lesson

With the assistance of the instructor in the boat at the conclusion of this lesson participants should be able to:-

- recall previous lessons
- sail downwind without accidentally gibing
- gybe
- sail a triangular course

## Sailing downwind.

To bear away onto a run it is important to first ease the sails out. In strong winds the boat may not respond to the rudder unless the sails are first eased.

The mainsail should be almost at right angles to the wind direction. The crew should sit on each side of the boat so as to keep it level and the centreboard should be partly raised. It is important that the course sailed does not bring the wind onto the same side as the boom as this may cause an accidental gybe and a possible capsize. Accidental gybing can also result in the crew being hit by the boom as it swings across unexpectedly. In dinghy sailing, it is the downwind sailing direction where most capsizes occur.

## Gybing

Gybing is turning the stern of the boat through the wind and changing the boom onto the opposite side of the boat. It is different to the tack in that the sails have wind in them for the entire manoeuvre.

The following sequence should be followed:-

- put the centreboard no more than a quarter down
- sail with the wind directly behind the boat
- check that the way ahead is clear of boats
- ask the crew "ready to gybe" and put the tiller extension across to the far side of the boat
- when the crew replies "ready" the helms person calls "gybe-oh" and bears away by pulling the tiller toward him/her
- when the leach of the sail flickers give the main sheet a tug (in light winds grab the mainsheet returns and tug them)
- as the boom comes across the boat move promptly to the other side and sit down with the tiller extension held behind the back
- change hands on the tiller extension by reaching back to the tiller end of the extension with the sheet hand and taking the extension palm up flip it over so that it is in front

It is important that the gybe is a positive move and that the direction steered after the gybe and the sail adjustment are in agreement. If the sail is eased too much the boat will have a tendency to capsize to windward and if they are too tight, the tendency will be to capsize to leeward.

As with tacking, the tiller extension should never be let go. Heads need to be watched as the boom can move across with some force, especially in strong winds. The aim is to have the boat level throughout the manoeuvre.



# The Fourth Sailing Lesson

With the assistance of the instructor in the boat at the conclusion of this lesson participants should be able to:-

- sail around a triangular course
- right a capsized craft and get aboard

## Capsize

Capsizing is a normal part of dinghy sailing. Dinghies are unballasted and will capsize if left afloat without a crew, or if the crew weight is incorrectly distributed within the boat while sailing. Boats are constructed with buoyancy tanks so that they can be righted and sailed without outside assistance.

It is important to practice capsizing and righting so that crews can appreciate the behaviour of the boat during the exercise. It is also important to know how to get back into the boat without capsizing it again.

When the boat capsizes it is important to immediately drop into the water. Holding on to the upper portion of the boat will help invert it fully, or on the lake, it will drive the mast into the mud. It is also most important not to become separated from the boat as some boats drift swiftly in the capsized position and it may not be possible to swim fast enough to catch it. Separation from the boat in off-shore waters can lead to tragedy.

The crew should clear the sheets while the skipper moves around the back of the boat to right it by leaning on the centreboard. Care must be taken not to break the centreboard. Before righting the boat it is important to check that righting will be into the wind. If this is not the case, one of the crew will need to go to the bow and hold it until the boat swings round. Alternatively it may be possible to pause soon after starting to right the boat so the rig will be blown down wind. Failure to do this will probably result in the boat capsizing as soon as it is righted.

Climbing into a boat after a capsize is never easy. Everyone needs to develop a system that suits their physical ability and the boat. Possible methods include:-

1. Climbing over the side, the crew from one side and the skipper from the other.
2. When alone, climbing over the side against the wind pressure on the sails
3. The scoop; the crew being scooped up as the skipper rights the boat. This is suitable for smaller people.
4. Climbing in over the stern. A rope foothold may be put over the stern if necessary.



# The Fifth (On-shore) Lesson

Material covered in this section of the notes includes things that may have been discussed in the above lessons prior to or after the on-water part of the lesson.

## Boat Safety

Before launching a boat and setting sail it is important to carry out a safety check. This should ensure that the boat and its equipment are in good condition, all aspects of the rigging are secure, hatch covers are fastened and the bung is in, and all necessary safety equipment is present and secure.

A check of the rigging should ensure that all stays and sheets are correctly arranged and that shackles are tight and knots are correctly tied and are firm. Sail battens should be secure in their pockets.

If the boat is provided with buoyancy bags, these should be properly secured to the boat. Most boats have buoyancy tanks. Before launching, the hatch covers should be checked and tightened if necessary.

After coming ashore, the hatch covers should be removed and the tanks checked for water. If there is any water in them, investigation should be undertaken to ascertain the source of the leak. Water left in the tanks will cause the hull condition to deteriorate. Significant amounts of water in the tanks is a sign of structural problems with the hull which require immediate attention.

The Australian Yachting Federation safety recommendations and regulations include:-

- the mainsail be easily lowered from the deck in the capsized or upright position,
- centreboards be secured to the hull,
- masts be sealed except for a drain hole at the base,
- self bailers be fitted and a bailer bucket be carried.
- rudders be secured by a pin through the pintle and if rudders are not permanently attached to the stocks, they should be secured by a lanyard,
- hulls should be identified on the transom by name and number in 50mm x 8mm lettering and class and club in 20mm x 4mm lettering.

Other recommended gear includes a paddle, a sponge, and a bow painter fastened to a strong point. All items need to be secure so as not to come adrift during a capsize or to get in the way while sailing. On the Lake it is recommended that the boat have a ring near the bow through which a tow rope may be passed.

If sailing is to be conducted outside the supervision of a yacht club, additional safety equipment is required to be carried including:-

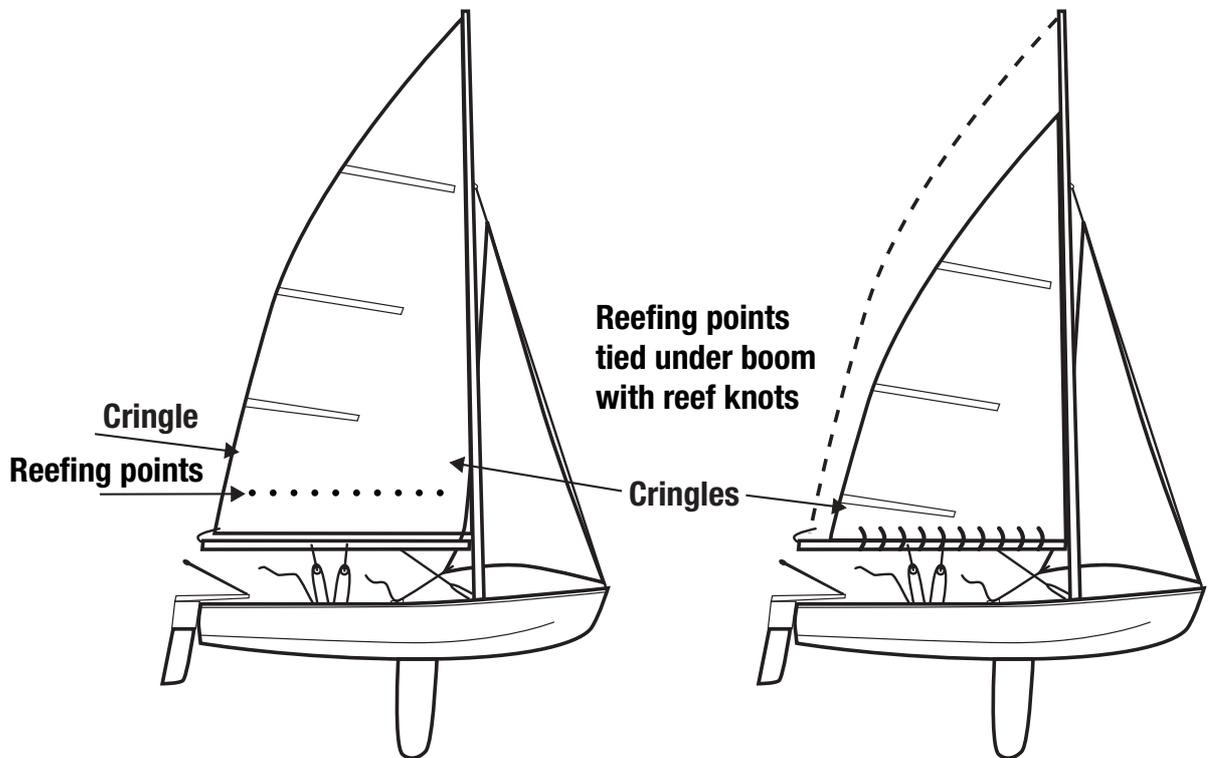
- flares, two hand-held red and two hand-held orange,
- a waterproof torch,
- paddles,
- an anchor on 45m of cable.

## Parts of a Boat

As with all sports, understanding and communication amongst participants requires a working knowledge of the terminology of that sport. Most terms are general for all sailing including yachts and historic sailing boats such as clippers.

As you rig and unrig boats, you should recite the name of the item you are handling. The instructor will do this with you initially. The names will then become familiar to you as you progress through the course.

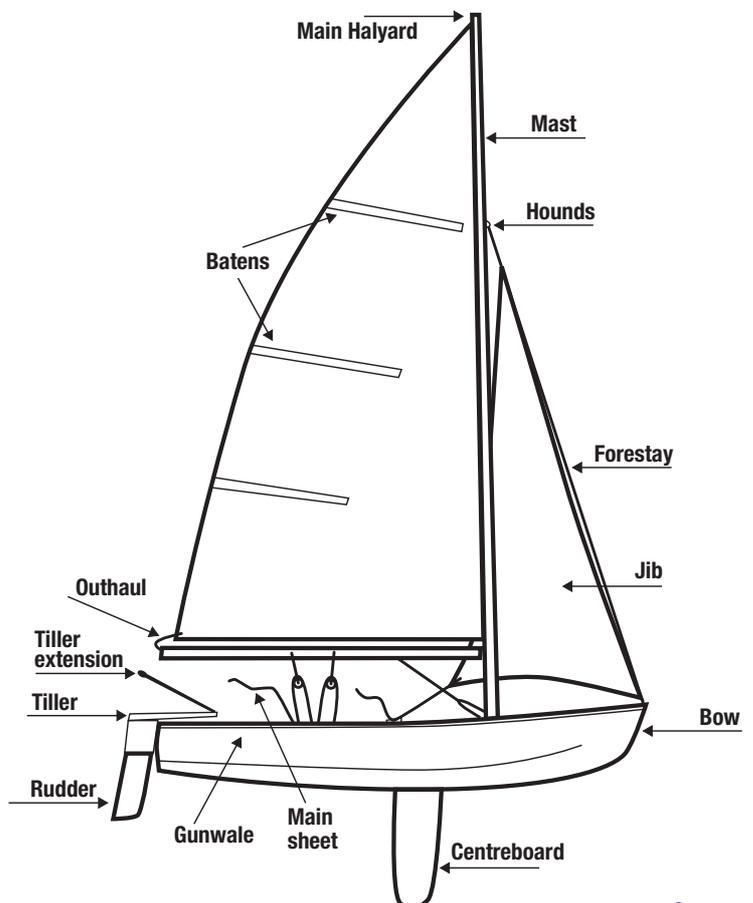
You will find some names such as bow or stem being interchangeable. These refer to a part of the hull. There are the foils, which refer to the rudder and centreboard, the spars refer to the mast and boom, the sails to the mainsail and jib, and running rigging which includes the halyards and sheets. The halyards pull the sails up and the sheets are ropes that are used to control the sails. There are fittings made from stainless steel and synthetics such as shackles and fairleads.



## Rigging a Boat

There is more potential to damage the boat and to injure people while handling the boat on shore and rigging it than there is sailing, so it is important to be careful and systematic.

1. The boat should be placed head to wind when it is to be rigged. There should be reasonable room to walk around the boat, no trees or overhead wires in the way of the mast, and no dog or swan pooh on the ground. The boat should be well clear of any walkways.
2. Step the mast. This may be done after the shrouds have been fastened to the chainplates. The forestay is then tied to the stem using a rolling hitch.
3. The jib is normally hoisted before the mainsail. The sheets are fed through the fairleads on each side and figure-of-eight knots tied in the end.
4. The mainsail is hoisted after the battens are secured into the sail. The boom is secured along the bottom of the sail and attached to the mast at the gooseneck. The various sail controls are attached and threaded. These include the main sheet, boom vang, and maybe downhaul and outhaul.
5. The rudder is attached and checked that it will not come loss in the event of a capsize.
6. Finally hatches are fastened, the bung is put in and all gear is checked to make sure that it is secure.



## Launching

There are a number of ways of launching a boat depending on equipment and the circumstances. In any case, it is important that the boat is not dragged over the ground or edge of the lake where it will be scratched.

Unless the wind is very light, it may not be possible to launch the boat with wind in the sails.

After launching the boat, the crew should hold the boat alongside, head to wind while the skipper disposes of the trolley and then climbs aboard. The rudder and the centreboard are adjusted to the sailing position. When all is clear the crew pushes off and climbs aboard.

## Recovery

Coming ashore is the reverse procedure to launching. The skipper should come alongside in such a way that the crew can take hold of the side and get out.

After raising the rudder and centre board the boat may be lifted out of the water bow first, or if the trolley is suitable designed and the water is not too low, the boat may be slid onto the trolley.

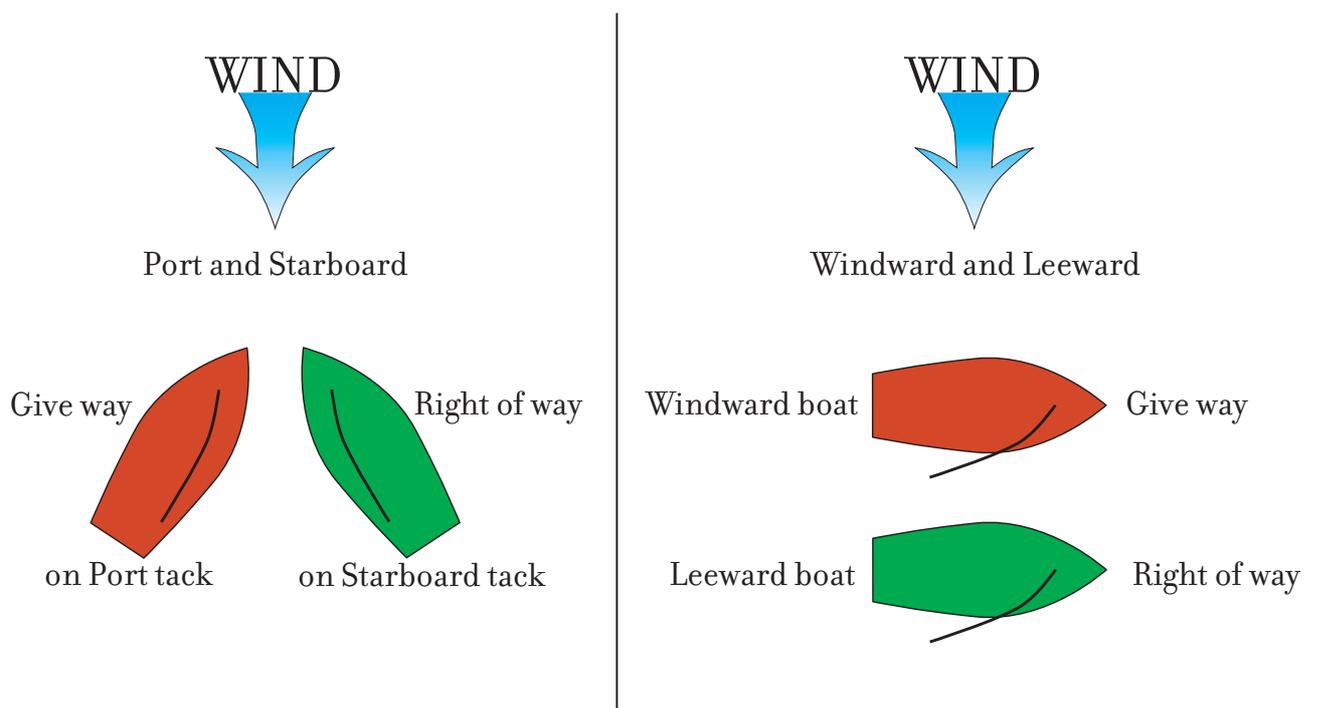
## Rules of the Road

As with motor cars, boats need rules to determine who has right of way when there is the possibility of collision.

There are two sets of rules governing the right of way for vessels afloat. The International Sailing Federation's Yacht Racing Rules govern yachts while racing and will be learnt in subsequent courses.

The International Regulations for the Prevention of Collision at Sea (or Colregs) apply at all times during the day and night. The first three of these rules should be known before going sailing:-

- Sailing craft on port tack must keep clear of those on starboard tack,
- The overtaking boat shall keep clear of the boat being overtaken.
- When sailing craft are on the same tack, the boat to windward keeps clear,
- Powerboats shall keep out of the way of sailing vessels and rowing boats.
- The giving way boat shall take early and positive avoiding action which is obvious to the other boat and the right of way boat shall hold course and speed.
- In narrow channels all craft shall keep to the right.
- Sailing craft are to keep clear of vessels fishing, not under command, and those with restricted manoeuvrability.

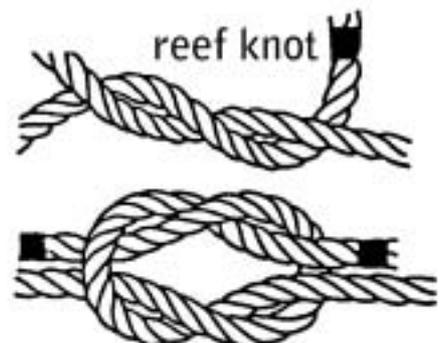
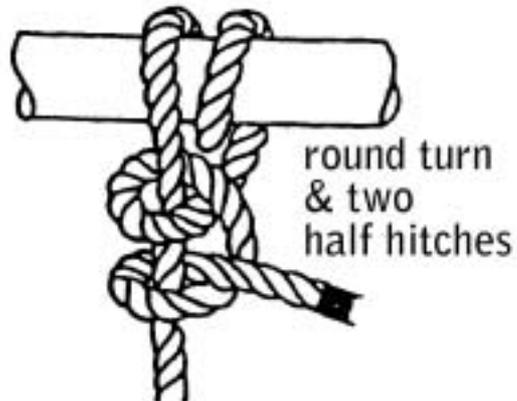
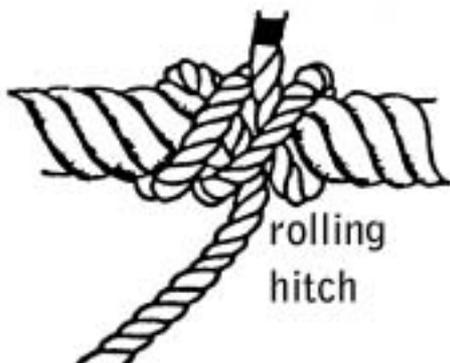
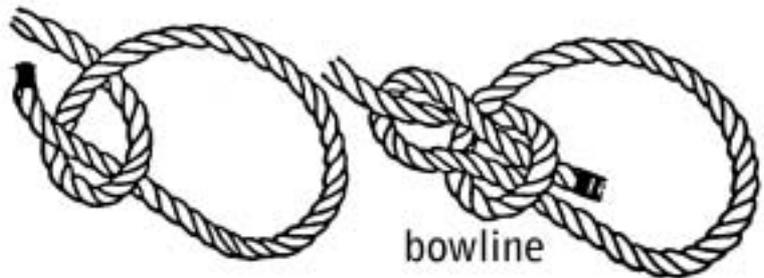
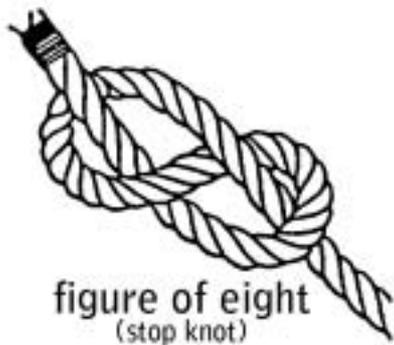


## Knots

Ropes are an essential part of any sail boat and are used for controlling the sails and tying the boat up to a jetty or mooring.

The knots that should be known include:-

- **Figure of eight knot** - used to prevent a rope running through a block or fairlead.
- **Bowline** - used to make a ring in the end of a rope to fasten a rope to sails. This knot is hard to undo when under load and so is not used for mooring boats.
- **Rolling Hitch** - used to tie up the forestay.
- **Round turn and two half hitches** - used to tie a rope to a ring or a post and is used to tie up boats.
- **Reef knot** - used to join two ropes of the same diameter.
- **Sheet bend** - used to join two ropes of unequal diameter.
- **Clove hitch** - used to join a rope to a pole or rod.



## Weather

Sailing is intimately associated with the natural elements. As sailors develop their skills, they will gain an understanding of weather patterns and the potential hazards.

**Yacht clubs take care not to run events when the weather is dangerous.** In making a decision whether to sail, club officials consider the weather forecast, the skill of the fleet, the rescue facilities available, and the local peculiarities.

**When sailing without the support of a club, sailors should not do so unless they have a current weather report and can confirm that the weather is as forecast.**

Weather maps and forecasts are in daily newspapers and on the evening TV news. Warnings will be given in these reports as well as on local radio. When there are warnings, it is best to stay on shore.

Fishermen often are in radio contact with weather reports. If when sailing most fishing craft start to head for shore, it is probably wise to follow.

Sailors should always be aware of the weather pattern upwind and be ready for squalls and wind changes. Always watch the sky where cloud patterns can give an indication of weather in the immediate future.

Weather maps give an indication of wind direction, travelling clockwise around lows and anti clockwise around highs. Wind strength may be gauged from the distance between isobars.

## Tides and Current

Tides are significant in some Victorian waters such as Western port Bay and Port Phillip Bay heads. Tide movements are published in tables and are given for each day in newspapers. The tide rises and falls approximately twice every 24 hours.

The tide flows swiftest in deeper water during the third and fourth hours of the ebb or flood (Out going or in coming) tides. The effect on sail craft is significant when the wind is light.

Tides may influence the wave pattern. Rough water will develop when the wind is against the tidal stream. When the wind blows with the tide, the water will be comparatively smooth giving a false impression of the wind strength.

## Safety in Distress

Sailors should use every means possible to prevent a disaster. However, should an accident occur, there are certain procedures available to indicate the need for assistance.

**Before setting forth, it is important that someone knows where you are going and when you intend to return. If you do not return within reasonable time, the water police should be informed. Where death or injury occur, the police at the nearest police station should be notified.**

The following are recognised distress signals:-

- Rockets or shells throwing red stars,
- Morse code SOS,
- Radio "Mayday",
- A square flag and a ball,
- Rocket parachute flare,
- Flare giving orange coloured smoke,
- Slowly raising and lowering outstretched arms,
- Code flag N over C
- EPIRB (Emergency Position Indicating Radio Beacon),
- Oar with a cloth on the end.

When using flares of which the supply is limited it is essential to know someone is there to see the flare.

## Reefing

In windy conditions it may be wise to shorten sail. In some dinghies and skiffs this is done by using sails with a smaller area. Another method is to put a reef in the sail, that is fold up the bottom of the sail to reduce its effective area.

There are two main ways to reef, roller reefing and slab reefing.

- Slab reefing requires reefing points in the sail. These are either cringles or ties. After the sail is attached in the normal way, the bottom of the sail is folded over the boom and the cringles or ties are fastened under the boom. With this method the normal boom fittings remain operative.
- Roller reefing is achieved by rolling the sail around the boom. This method requires end boom sheeting or special arrangements to be made for the fittings on the boom.

It is possible to put a reef in the sail while afloat by keeping the boat sailing slowly under the jib only and lowering the mainsail the necessary amount and securing the reef. However it is difficult to do this in rough water and a preferable strategy would be to lower the mainsail altogether, roll it up, and sail home using only the jib.

## **Paddling and Rowing**

There are times when it is necessary to paddle or row. Paddling is done facing the direction of travel.

When getting into a small rowing boat, the oars should be shipped, that is lying along the inside of the boat, the first step should be on to the keel or centre of the boat and the side of the boat should be held. After sitting down the oars may be rigged in the rowlocks and then held under the arms.

Rowing should be done rhythmically, occasionally looking ahead for obstacles and keeping a straight course by sighting shore marks behind.

## **Sail Care**

Modern materials have to be treated carefully to ensure that severe creasing does not occur. This may result in a fracture of the material.

It is therefore important to fold or roll the sails carefully and to stow them where they will not be crushed.

There are numerous ways of folding. If the battens are left in the sail, they should be loosened, and the sail rolled up with the battens parallel to the roll. The roll can be begun at the bottom, top or at one of the battens.

If the battens are removed, the sail may be folded flat. This may be done as a concertina from the bottom, or by folding it up like a handkerchief.

Sails with a wire luff such as a jib are best rolled.

Before putting sails away, any salt should be washed off the sail and the sail should be dried. Sand and mud should be promptly removed from the sail as any grit in the stitching will cause it to deteriorate rapidly.

# Other Useful Information

## Trailing Boats

The potential for damage to a boat during trailing is probably higher than at any other time during its use. The potential to cause serious damage and injury to others is also high.

Trailers used for carrying boats have to be registered. This will mean that at least, at the time of registration they were road worthy.

Most sailing dinghies are light and it is unlikely that they would overload a trailer, however it is important that bailers should be left open so that rain water will not accumulate in the boat.

Loaded trailers should be balanced so that one person can lift the hitch and guide the whole outfit. There should be positive pressure on the hitch so that the tendency will not be for the trailer to become unhitched or for the rear of the towing vehicle to ride up.

The trailer must be secured to the car by the tow ball and safety chains. Lights must be fitted. It is common for these to be fastened to the boat and to be detachable.

The boat and the mast need to be securely tied down and the mast should be located so as not to hit the towing vehicle while turning, particularly through a gutter. If the mast protrudes over the rear, it should have a red flag on it during the day and a red light at night.

Before setting off and at regular periods during the journey, the trailer and the boat should be checked to see that the trailer is secure to the towing vehicle, the boat and mast are secure, the tyres are correctly inflated and the wheels are firm, and the lights work. Much of this inspection is done by pushing and shoving with the hands and feet.

On long journeys a spare wheel should be carried and it would be common to have the wheel bearings packed before leaving.

## First Aid

The information provided in the course under first aid is intended to remove the probability of panic when someone is injured and to enable those present to prevent the situation deteriorating while professional assistance is coming. It is not intended to substitute for certificates such as those awarded by St John Ambulance.

Any sailor with particular ailments and conditions which may incapacitate them during sailing, should ensure that those in charge of safety and sailing at the yacht club where they sail are aware of the situation and what to do and who to contact in the event of an emergency.

When coming upon an injured person it is important to:-

- ascertain if it is safe to approach the person,
- assess the situation to learn what may have caused the injury.

If the person is conscious it is possible to ask what has happened. However, people who are suffering from hypothermia will probably not be aware of the fact and may indicate that they are fine.

If a person is unconscious it is important to:-

- carry out an initial assessment of the person, pulse, breathing, and bleeding,
- promptly seek medical assistance,
- check for any tags about the neck which may identify particular conditions that the person has.

There are five conditions that sailors should be able to treat:-

- Hypothermia,
- Head injuries,
- Bleeding,
- Breathing failure,
- Shock.

# Hypothermia

## Cause

Immersion in cold water. Victorian coastal waters range in temperature from about 9.5 degrees C in midwinter to 22 degrees C in summer. An adult can not expect to survive more than 3 hours of immersion in winter.

## Symptoms

- Severe shivering,
- Illogical speech,

All people who have been in the water for over an hour should be treated as if they have hypothermia.

## Treatment

Hypothermia is a lowering of the core temperature of the body. The body's defence is to restrict the flow of blood to the vital organs. Anything which stimulates the flow of colder blood from the extremities is dangerous and can cause death.

- Remove the victim from the cold-inducing environment,
- Protect the patient from cold wind,
- Warm the areas of high heat loss, head, neck, sides of the chest, armpits and groin. Do not massage the limbs,
- Place patient in the recovery position,
- Observe for deterioration,
- Do not allow the patient to drink or to walk around,
- Seek medical aid and treat for other injuries.

# Head Injuries

## Cause

- A blow to the head by an object such as a boom or mast.

## Symptoms

- Soreness
- May not be very obvious in an unconscious patient.

The danger is from the possibility of a blood vessel in the head being ruptured. This may take some time to become obvious and cause death.

## Treatment

- Do not move the patient unnecessarily.
- Keep under observation, especially watch the eyes for any change.

# Bleeding

Severe loss of blood may cause shock.

## Treatment

- Lie the patient down,
- Press sterile dressing, handkerchief or anything clean, over the wound, using the whole hand. Hold it there.
- When bleeding reduces, apply a firm bandage.
- Check pulse beyond the bandage to ensure that circulation has not been stopped by the bandage.



# Breathing Failure

Resuscitation must be commenced at the earliest opportunity. The chances of recovery diminish rapidly every minute the patient is without oxygen.

- If necessary turn the patient's head to one side to clean out foreign material.
- Open the airway by lifting the neck and tilting the head back,
- Pinch the nostrils to prevent air leakage,
- Seal mouth tightly around the victims mouth and blow in using thumb across the chin just below the lower lip to keep the patient's mouth open,
- Remove mouth, release nostrils, listen for air escaping from lungs, and watch the chest fall,
- Repeat 12 to 15 times a minute

# Shock

## Cause

- Loss of blood, severe burning, continued sea-sickness, are some of the causes.

## Symptoms

- Skin, clammy and cold,
- Rapid pulse,
- Shallow, rapid and irregular breathing,
- Apprehensive, worried or restless.

## Treatment

- Reassurance,
- Lie the patient down and make comfortable,
- Keep patient still,
- Cover the patient but do not over heat,
- Do not give alcohol or any stimulant,
- Restrict fluid intake if there is possibility of internal injury,
- Get the patient to hospital promptly.

# Epilogue

To become fully proficient at the skills taught in this course it is necessary to practice. Provided all the necessary safety matters have been addressed, **a capsize is about the most serious thing that can happen, and if this holds no fears, skippers can sail in increasingly strong winds and try more complex manoeuvres without concern.**

Experience has revealed that most sailors have a day when they capsize on numerous occasions, however by the end of that day they have the technique of sailing in moderate to strong winds mastered. It is hoped that this course has provided the basis for that day.



# Sailing terms

<b>to Back</b>	to force a sail out against the wind so that it fills on the wrong side and thus makes the boat bear away from the wind.
<b>to Beat</b>	to sail toward the wind by sailing close hauled on alternate tacks, i.e. zig-zagging
<b>to Bear away</b>	to turn a sailing boat away from wind, to pull the tiller toward you
<b>Boom</b>	a wooden or metal spar along the foot of a sail
<b>Boom vang</b>	kicking strap, a rope or wire fastened to the boom and mast bottom used to prevent the boom lifting
<b>Bow</b>	stem, the pointed front of the boat
<b>Centre board</b>	a foil, or fin, lowered from the centre of the boat into the water used to prevent the boat going sideways
<b>Close hauled</b>	sailing close (at 45°) to the direction of the wind
<b>Dinghy</b>	a small centre board sailing boat
<b>Eye of the wind</b>	the point from which the wind appears to be blowing
<b>Foresail</b>	jib, head sail, sail at the front of the boat
<b>Gunwale</b>	a ledge around the top edge of the hull
<b>to Gybe</b>	to change direction or tack, when the wind is behind the boat
<b>Halyard</b>	the rope or wire which is used to raise or lower a sail
<b>to Head up</b>	to Luff, to Harden up, to steer the boat closer to the wind, push the tiller away
<b>Heave to</b>	to allow the sails to flap with the wind abeam and the boat almost stationary
<b>in Irons</b>	when the boat is stopped head-to-wind with the sails flapping
<b>Lee</b>	a place, or point, to which the wind blows or away from the wind direction
<b>Main sail</b>	the larger sail on a dinghy
<b>to Plane</b>	a sailing attitude of the boat when its speed increases so that no water is against the transom
<b>Port side</b>	the left side, there is no red port left in the bottle, signified by a red colour
<b>Port tack</b>	when the wind blows over the port side of the boat
<b>to Reach</b>	to sail across the wind
<b>to Run</b>	to sail with the wind directly behind the boat
<b>Sheets</b>	the ropes used to control the sails
<b>Starboard</b>	the right side, of a boat when viewed from the stern, signified by green
<b>Starboard Tack</b>	when the wind blows over the starboard side of the boat
<b>Stays</b>	Shrouds, the wire ropes that support the mast
<b>to Tack</b>	to Go about, to Put about, to change direction by passing the boat head to wind
<b>Tiller</b>	helm, the attachment to the rudder by which it is controlled

