



# SAILING BLIND



*New Zealand B2 crew at Fremantle 1994*

## AN INSTRUCTION MANUAL OF SAILING TECHNIQUES FOR BLIND AND VISION IMPAIRED PEOPLE, THEIR SIGHTED HELPERS AND INSTRUCTORS

Updated September 2000

PUBLISHED BY THE NEW ZEALAND COUNCIL FOR SAILING  
FOR THE BLIND AND VISION IMPAIRED INC.  
(BLIND SAILING NZ™)





**THE NEW ZEALAND COUNCIL FOR SAILING  
FOR THE BLIND AND VISION IMPAIRED INC.  
(Blind Sailing New Zealand™)**

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## **Acknowledgements**

### **THE ROYAL NEW ZEALAND YACHT SQUADRON and THE ROYAL NEW ZEALAND FOUNDATION OF THE BLIND**

Since its inception as recorded in the "background" section of this manual, the NZCVIP Inc. has operated with the support of the RNZYS and the RNZFB since 1987.

The RNZYS role has included sailing jurisdiction, use of club facilities and services to members of blind sailing.

The RNZFB has provided some NZ development finance and member funding for International Regattas.

Blind Sailing NZ™ continues to be appreciative of the support of these Organisations and others who contributed to this Manual.

Others who contributed to this Manual:

A O'Neill, 'Facing the Wind' (The Carroll Centre for the Blind, 1991, MA, USA); M Scanlan, 'Safety in Small Craft' (New Zealand Coastguard Federation, 1989); (The Royal New Zealand Foundation for the Blind) for 'What is it Like to be Blind?'; P Whiting, 'The Penny Whiting Sailing Book' extracts (Reid, Wellington) and 'Yacht Racing Rules and Safety Regulations' (New Zealand Yachting Federation Inc.).

This manual has been compiled by a Committee of Paul Barton, (Convenor); Colin Spanhake, Sue and Don Mason, John and Marie Murphy, Mark Mulcare, Bob Larkin and others.

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# Foreword

“They said we couldn’t do it”, was the cry of one of the earlier vision impaired girl sailors at a time when many sighted sailors and indeed most Vision Impaired Persons (VIPs), thought that sailing was an activity carried out only by the fully sighted.

Time and experience have proved otherwise - not only can the vision impaired enjoy sailing but they can also excel at it.

In New Zealand the number of VIPs sailing and racing has increased enormously over the last few years. From small beginnings at a local level in Auckland, blind sailing has graduated from ever-growing, ever popular national sailing schools and regattas held annually, to the first ever International Blind Sailing Regatta in 1992 on the Waitemata Harbour in Auckland, in which ten different countries/states took part. The racing took place in a fleet of ten MRXs - the Royal New Zealand Yacht Squadron one design match racing fleet, and the enthusiasm engendered has changed the direction and impetus of blind sailing world-wide.

This manual is more than just that - it is a testament to the challenge taken up by the vision impaired and the dedication of many men and women both on and off the water who have encouraged and taught the blind to sail; skippers with their own yachts who have participated in courses and regattas; the Royal New Zealand Navy who have lent their Crown dinghies; the active and unstinted support of the Royal New Zealand Foundation of the Blind and the Royal New Zealand Yacht Squadron. Audio compasses and tactile aids have also played their part in the progress of blind sailing and racing.

The different parts of the manual speak for themselves. The vision impaired learn quickly and their sense of feel is uncanny. This is particularly noticeable in sailing with the feel of the wind on the head and neck. Running their hands over a hauled-out hull and they at once envisage the shape of the boat. A few minutes moving round the cockpit and deck and they are extraordinarily mobile and confident in their movements.

Already there is a Blind Sailing Club in Auckland, owning two boats of their own, and Sailing Weekends have been held in Christchurch, Wellington, Foxton, New Plymouth, Kerikeri, Tauranga and the Annual National School in Auckland and more are planned.

Sailing has indeed become a new dimension in the lives of many vision impaired and long may we all continue to support their endeavours.

John and Beth Baylay

Life Members

**The New Zealand Council for Sailing  
for the Blind and Vision Impaired Inc.**



## CHAPTER 11

# INTRODUCTION

This manual is intended for instructors and potential instructors of blind sailors in New Zealand and to introduce blind and vision impaired people to discover and excel in sailing. It builds on the experience of those involved in the movement to date, to highlight an approach to instruction which will maximise benefits and results of the activity for all parties. It is specifically geared to training on yachts generally described as “keelers” being sailed by a minimum of three persons. It is a general rule that each blind sailor has a sighted helper. However, much of the content relating to general instruction of blind sailors could equally be applied to training on vessels of all types and sighted helpers.

Instructors themselves must be competent sailors with a sound knowledge of sea rules. Prior experience with the blind is not necessary. In light of this, a basic grounding in the range of visual impairment and dealing with blind sailors is included. As with sighted people, the level of sailing expertise among blind sailors varies considerably and therefore, our programme is divided into three main instructional levels - Beginners, Intermediate and Advanced.

The parameters of these variations are described in more detail under ASSESSING THE ABILITIES OF BLIND SAILORS (page 4) and the desired results of the course for each group are highlighted under CERTIFICATION REQUIREMENTS (pages 10 and 11).

Most detailed attention is given to the requirements of the Beginner group as a basis for assisting instructors with the concept and practicalities of dealing with blind sailors in general. This allows more individualised instruction of specific groups according to their past experience as both instructors and sailors progress.

As with all sailing experiences, Crew Safety is a priority of the blind sailing programme and therefore this is a consideration throughout the Manual.

## Objectives

Key objectives of the Blind Sailing Programme are to:

- Provide blind people with access to sailing.
- Introduce blind people to basic and advanced skills of sailing and promote opportunities for developing these skills.
- Give blind people additional confidence in sport and in other areas of their lives.
- Give blind people the opportunity to take part in community clubs.
- Enhance awareness among the sighted population of blind people's sailing capabilities.
- Provide opportunities for sighted people to become directly involved in assisting blind people to achieve their potential without vast commitments of time or money.

The basic concept of this manual and the whole blind sailing movement, is that blind (and vision impaired) people can sail and to provide them with the opportunity to fulfil their chosen level of achievement. The results sought are all round enjoyment and satisfaction, building bridges between the sighted and blind and sharing the joys of one of this country's most popular recreational activities.

## BACKGROUND

The 'idea' to teach blind people to sail in New Zealand originated from discussions between two Members of the Royal New Zealand Yacht Squadron, Bob Larkin and Colin Spanhake in 1985. Both were aware that some blind sailing activity had been going on for some years in overseas countries, particularly in Britain, but apart from individual sailing by some New Zealand blind, no organised teaching and promotion in New Zealand had been attempted.

With Bob Larkin's appointment as National Recreation Adviser for the Royal New Zealand Foundation for the Blind, the way was open to explore the 'idea'. Sounding out senior members of the RNZYS brought much encouragement as well as some scepticism. It also brought direct contact with John Baylay and Bressin Thompson. John had been founder of the Island Cruising Club in Salcombe, United Kingdom and had experience in teaching disabled persons to sail. Bressin, a past Commodore of the RNZYS, was owner of a 43 ft. keel yacht, 'Prize', and was willing to use it to explore the practicability of teaching the blind to sail. Colin Spanhake had access to John Lawrence's K Class keeler, 'Penelope', and these two boats were used in the early experiments. Four blind people; Glen Putz, Clive Lansink, Mary Snackenber and Bob Wicks were involved with the Royal New Zealand Foundation of the Blind staff; Bob Larkin, Darylann Hobman and Maria Moran.

A meeting between Bob, Colin, John and Bressin at the Squadron in 1987 resulted in formally establishing a Committee for Sailing for Vision Impaired Persons and the production of a Syllabus for Training. In 1988 the first National Training School was held and has become, with the addition of a Regatta, as an annual event. Also in 1988 plans were made to become the New Zealand Council for Sailing for Vision Impaired Persons (NZCSVIP) and to Incorporate. This was completed in 1989 and the first meeting of the new Body was held in July of that year. The Association then affiliated to the New Zealand Yachting Federation (Yachting NZ).

The annual training school began with nine blind people and twenty sighted volunteer helpers and has grown greatly. Sighted helpers are essential to the safe conduct of blind sailing and their training and understanding of the needs of the blind is of equal importance to the training of the blind people themselves.

The initial intention of the whole Movement was to develop basic sailing skills to the level that blind sailors would be confident to join existing sailing clubs and that has occurred in places such as Foxton and Wellington. In Auckland, however, there was felt a need for the mutual support of other blind people and there were sufficient sailors and helpers to establish the Auckland Vision Impaired Sailing Club. This club has become Incorporated and we believe is the first of its kind in the world.

As a result of a suggestion by Ralph Roberts, O.B.E, a New Zealand delegate to the IYRU conference in London in 1989, the NZCSVIP Inc. initiated and subsequently conducted the first International Regatta for the Blind. This highly successful event was held in Auckland on the Waitemata Harbour in February 1992 and attracted twenty crews from ten countries or states. Preliminary steps were also taken to establish a world association for Sailing for the Blind which was established in 1994 at an International meeting in Perth, West Australia. Blind Sailing International has now held four World Championships and future regattas will be held every three years. NZ has won three out of four World Blind Regattas.

The need for highly trained instructors and sighted helpers for the ongoing development of blind sailors in all aspects of sailing, was one of the early concerns of the NZCSVIP Inc. The syllabus provided the "what" part of the programme, but there was no "how" part. This has since been remedied with an activate NZ Development Programme spreading the activity to Provincial areas. There was also an awareness that, with the blind sailors and their helpers gaining experience under various boat owners and instructors, that there was a need for some degree of consistency in the way that various essential sailing skills were performed and this handbook is intended to provide that basis.

## CHAPTER 3

### INSTRUCTOR COMMITMENT

In line with the voluntary nature of the exercise, the level of involvement required in terms of time and energy is dependent on the individual. Currently the major undertakings of the NZCSB VIP Inc. are as follows:

- i. **Sailing School**  
Held annually, usually in November, originally over five days (Wednesday to Sunday), approximately 9.00 am to 3.00 pm. (Instructors need not be available for full course duration.)  
Now over three days to meet needs of members.
- ii. **Paxus Cup Race**  
Held annually as part of the Sailing School (requiring the involvement of experienced instructors of blind sailors).
- iii. **Cruise, Day Sails**  
A Cruise to a gulf island, Motuihi or Motutapu, with barbecue lunch and picnic. Log competitions, rowing races, picnic games and other activities. Longer cruises are held with the co-operation of the Royal New Zealand Navy.
- iv. **NZ Development Programme**  
In recent years, the NZ Development Programme has targeted blind sailing development in New Plymouth, Foxton, Christchurch, Wellington, Kerikeri, Tauranga, Napier and other provincial centres will be approached in the future, with the support of local yacht clubs. Programmes are dependent on suitable experienced skippers and craft.

In Auckland a Blind Sailing Club has been established. It has two boats and provides the basis for further racing and cruising commitments along with the associated requirements in training/preparation, etc. for those who wish to extend their participation.

The future of blind sailing in New Zealand depends entirely on the input and enthusiasm of those involved both as trainers, helpers and participants.

The ultimate objective is to provide every interested New Zealand blind and vision impaired person with the opportunity to experience sailing and achieve their chosen level of involvement - beginner to World Champion.

#### **Instructor Grading**

The suitability and skills of potential instructors will also be assessed by the NZCSB VIP Inc. with grading according to skills, including:

- Specialities, e.g. teaching beginners, racing, cruising and small boat (i.e. dinghy) capabilities.
- Formal sailing or other first aid qualifications.
- Previous experience with the blind.

As instructors are not required to have past experience in dealing with the blind, advice will be given to encourage their participation in everything from ashore to marine environments.

## CHAPTER 4

# ASSESSING THE ABILITIES OF BLIND SAILORS AND THEIR SIGHTED HELPERS

The underlying principle of this manual is that blind people are capable of performing with the same skills as sighted people, except where sight is an essential component.

Obviously, recognising coloured lights, distinguishing signals, identifying port and starboard markers, discerning approaching craft etc. must be the function of associated sighted people. But most of the other functions necessary to sail a yacht efficiently and safely can be accomplished by blind sailors with only minimal input from sighted companions.

The range of skills demonstrated will be comparative to the skills of any fully sighted group. Some individuals will achieve skills equal to those of the most experienced and talented yachts people while others may master only a few basic tasks. All will realise their own potential to a level of their own choice and will gain a sense of achievement and satisfaction.

Upon registration they are graded on a three-tier system as follows:

### **Level One - Beginners**

Blind people with little or no sailing experience, requiring guidance from the time they arrive at the dock and instruction in the basic skills of:

- Water safety.
- Ropework.
- Sail handling.
- How a yacht sails.
- Beginners on boats.

### **Level Two - Intermediate**

A good knowledge and understanding of the basic LEVEL ONE skills and are able to actively participate in:

- Helming a yacht.
- Handling sheets.
- Trimming sails.
- Tacking.

### **Level Three - Advanced**

Someone who can perform all of the above LEVEL ONE and TWO tasks with minimal assistance and ready to experience:

- Operating on different boats.
- A variety of sailing conditions.
- Overnight cruises.
- Ship's husbandry.

### **Instructor**

Some blind and vision impaired can achieve Instructor Status mainly achieved by sighted helpers.

The different achievements expected of blind sailors in order to reach certification and progress to the next level are given later under CERTIFICATION REQUIREMENTS (pages 10 and 11).

## CHAPTER 5

### WHAT IS IT LIKE TO BE BLIND?

To imagine what it is like to be blind, close your eyes tight, think of something you do every day and then work out how you would do it if you couldn't see. How would you pour a glass of water, tell the time or play a game? Remember, people who are blind use their other senses: touch, smell, hearing and taste to help them.

Some people are born blind and have no idea what the world around them looks like. Many people lose their sight when they are older and can remember what they have seen. Some people are totally blind and have no sight at all. But, most people can see a little.

THE ROYAL NEW ZEALAND FOUNDATION OF THE BLIND'S BROCHURE, 'WHAT IS IT LIKE TO BE BLIND?' on page 7, shows how the same scene may look to people with different visual impairments.

#### How Sighted Can Help

When you walk with a blind sailor:

- Ask if they need assistance.
- Offer them to take your arm (specify left or right).
- Extend your arm and the blind sailor will grasp it just above the elbow.
- Keep your elbow bent and tight to your body so that your forearm and that of the blind sailor are in a straight line.
- This should put you alongside each other with the blind sailor slightly behind.
- Walk at a natural pace.
- As you turn, the blind sailor will feel the turn through your arm and react accordingly.
- Inform the blind sailor of any major changes in the ground underfoot and overhead if dangerous.
- When approaching steps or curbs:
  - a) stop at the beginning
  - b) state whether the step or curb goes up or down
  - c) bring the blind sailor to the edge of the first step or curb
  - d) place their hand on any handrail if present
  - e) state if there is only one step or a whole flight (but don't count every step)
  - f) come to a full stop at the end of the steps or curb to indicate they have finished.

If the blind sailor uses a dog guide he/she will either hold the dog's leash and take your arm or elect to hold the harness and command the dog to follow you.

Arrangements should be made to leave dogs ashore when sailing, for the dogs' comfort and safety and of course, to protect the boats.

If the blind sailor uses a cane, he/she can hold the cane in a modified way to feel objects such as stairways, the boat, chairs and any other objects (either to locate them or avoid them) while being guided.

Describe distance in terms that a blind sailor will appreciate e.g. "there is a gap of an arm's length between the boat and dock." Greater distances may be expressed in the time likely to be taken to travel them. Guiding is exactly that - there is no need to push or pull, the motion of your arm will tell the person what to do.

When finding a seat for a blind person - put the person's hand on the back of the chair and they will be able to seat themselves.

If a blind sailor is alone - always state who you are when you approach - don't play "guess who" games.

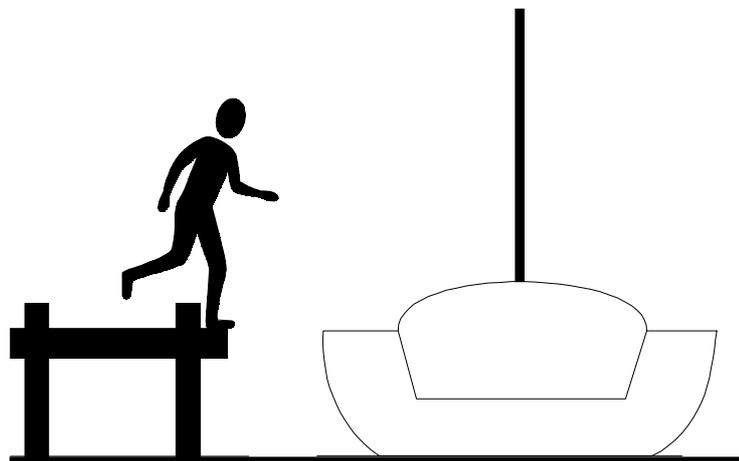
### **Special Considerations for Boating Environments**

When guiding blind sailors onto a gangway or boat ramp prepare them for a bumpy or slippery surface or a possible step or the opening at the top and bottom of gangway or boat ramp.

Be aware that travelling on floats and marinas can sometimes be hazardous if there are gaps or differences in buoyancy, requiring a step up or down. In such instances, the use of a cane to determine the nature of the step required is useful in addition to holding the guide's arm. Remember the stability of floats will be affected by people stepping on or off.

Fixed piers are less difficult to negotiate although pier endings without railings and other obvious hazards should be pointed out to the blind sailor in advance.

Be aware that harsh shadows can be hazardous for low vision sailors trying to follow the guide, visually.



## Conditions of Visual Impairment



### FULL SIGHT

A person with full sight sees a scene like this.



### CATARACT

This is what the scene looks like when a person has a cataract, which is a cloudiness over the lens in their eyes.



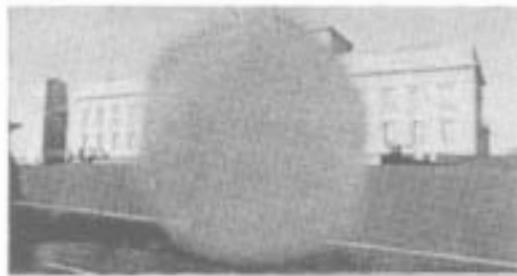
### MYOPIA

A person who is severely short sighted sees the scene this way.



### DIABETIC RETINOPATHY

Sometimes people have damaged blood vessels in their eyes and they see like this.



### MACULAR DEGENERATION

Some people have a large spot in the centre of their eye and can only see around it.



### DETACHED RETINA

In some cases the retina at the back of the eye can become detached and doesn't allow a person to see clearly.



### GLAUCOMA

This is often called tunnel vision which allows a person to see with the centre of their eye, but not the outside.



### BLINDNESS

Many people think blindness is black. It is not. There are varying degrees of blindness and most people we call legally blind have some form of vision. Sometimes this means they can see shapes, but not detail.

## CHAPTER 6

**COMMUNICATING WITH  
BLIND SAILORS****Do:**

- Remember that many blind and vision impaired people have a sight disability only.
  - Project your voice to overcome windy or other adverse situations, to make it heard by the whole crew/group.
  - Provide timely and precise information on the manoeuvre required.
  - Stipulate left or right according to the way the blind sailor is facing or port/starboard in relation to the boat.
  - Speak to the blind sailor directly - not through their companions.

Use the same sequence of instruction you would for a sighted person except describe, illustrate and demonstrate in order to effectively communicate what needs to be done, how it needs to be done and where it is located. For example:

“We’re on a port tack and we’re approaching a boat on starboard who has rights on us. In this case we can’t just bear off behind the boat because we have a pier on the right side that would be too close. We could tack but it would take us further from our destination. I suggest that you slow the boat down by letting out the mainsheet, giving the other boat room to pass. Once we’re clear, pull in the mainsheet to pick up speed and get back on course.”

Beyond sailing instruction, your conversation will depend on the personalities and interests of those aboard as in any social situation, e.g. scenery, interesting boats, past sailing experiences, etc.

- As appropriate and where possible, describe the general environment to the blind and vision impaired Sailors (and other crew) e.g., "on your right we are passing North Head."

**Don't:**

- Overly concern yourself with avoiding words like “look” and “see” as in “do you see what I mean?” and “look at it this way”, etc.
- Describe objects and their location by pointing and saying “it’s right there” or “watch out for that rock over there!”
- Shout (unless necessary due to adverse conditions).
- Be hesitant! The blind sailor needs to gain confidence in you, as a competent sailor and instructor.

## Clock Analogy

The clock analogy is commonly used in describing the location or spatial arrangement of objects for blind sailors, e.g. on a dinner plate, it can be used to describe the positioning of different foods - meat at 6 o'clock etc.

This method can also be used to describe the location of objects relative to the boat, the bow of the boat being at 12 o'clock, e.g. "there is a buoy at two o'clock to the boat," or "the wind is now at 8 o'clock to the boat". It can also be used to describe the location of objects within the boat, e.g. "the cleat for the headsail is at two o'clock to the boat" being careful to point out that 12 o'clock is at the fore end of the cockpit.

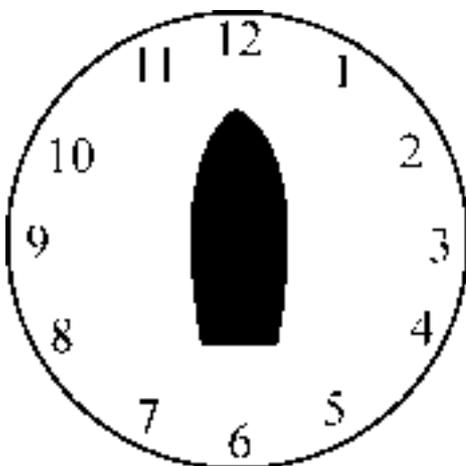
For objects aboard the boat it may be preferable to use the clock analogy relative to the person's body, the point at which the body is facing being 12 o'clock. Thus, the winch handle could be described to a person sitting on the leeward side of the cockpit as being "in a plastic holder inside the cockpit at three o'clock from you".

## "Up" and "Down"

These terms are often used to describe the required movement of the bow of the boat, or movement of the tiller, although it is important to point out that there are differences.

"Bow up" means to bring the bow towards the wind. "bow down" means to swing the bow away from the wind. To achieve "bow up" one must push the "tiller down" or away from the wind, while to achieve "bow down" the tiller is pulled towards the wind. When the boat is heeled and the helmsperson is on the windward side as recommended the terms "up" and "down" when referring to the tiller are literally true.

The clock analogy can be used to describe the degree of tiller movement required. By using a range of movement from 0 to 4 each side of the centre (being zero) "down two" would result in a slow luff, i.e. the bow would swing towards the wind while "up two" would cause the boat to bear away. The amount of tiller movement required would vary from boat to boat.



## CHAPTER 7

# CERTIFICATION REQUIREMENTS

### **Blind Sailing NZ - Certification System**

To recognise the achievements of blind people in becoming sailors, the varying degrees of proficiency will be periodically acknowledged by the NZCSBVI Inc. through the allocation of Certificates.

At all levels, training will combine both theory and practical experience. A log of each outing will be kept including assessment by the instructor, of the competencies demonstrated during the day. This log shall in turn be assessed by a panel of the NZCSBVI Inc and the results measured according to the necessary competencies as outlined in the Requirements. Log sheets are available from the Secretary, NZCSBVI Inc. (see CONTACT ADDRESS page 37 of this manual).

### **Level One - Introductory Certificate**

The blind sailor will show competence in the following:

- Know the names of parts of a yacht, its rigging and sails and explain their functions.
- Know how a yacht sails (model yacht).
- Understands simple theory of sailing, e.g. angles of sail to wind, leeway, keel angles, centres of gravity and centres of buoyancy.
- Have experienced flotation in a buoyancy aid and general water safety activities.
- Know what is suitable clothing for various conditions.
- Can assist with leaving and re-entering a dock and/or weigh anchor and re-anchor.
- Make knots, hitches and bends for appropriate circumstances.
- Make simple sail trim adjustments, according to felt wind or boat direction changes.
- Helm a yacht in easy to moderate conditions (receiving guidance from a sighted helper where necessary).
- Handle main and headsail sheets with confidence and safety.
- Know and apply safety procedures on board a yacht.
- Use safety harness competently.

## **Level Two - Intermediate Certificate**

In addition to demonstrating competence in all of the requirements of the Introductory Certificate the blind sailor should be able to:

- Steer a yacht with reasonable efficiency on all points of the wind (with sighted advice).
- Hoist sails and adjust tensions according to wind strengths.
- Keep halyards and sheets in appropriate coiled state ready for further use.
- Start and stop motor as the need arises.
- Generally handle the yacht under way, under the direction of a sighted person.
- Understand factors affecting the selection of overnight anchorages.
- Understand and practice the procedure for “man overboard” drills.
- Maintain personal tidiness and hygiene while aboard.
- Assist with the preparation of a meal and cleaning up.
- Assist with ship’s day to day operation including anchoring and mooring.

## **Level Three - Advanced Certificate**

In addition to having mastered the competencies required for the Introductory and Intermediate Certificates, the Advanced candidate shall have completed at least one cruise involving one or more overnight stops. Knowledge of charts, laying off courses and steering to those courses is required. Operating an audio compass and experience in operating the radio is required.

The advanced sailor will be proficient under varying conditions and on a variety of boats. Sighted guides should only provide information on the location of marks, buoys etc. and the blind sailor must independently control the boat to sail around the marks on the prescribed course. However, the advanced blind sailor can ask for as much information as required and should be encouraged to do so.

## **Instructor Status**

Advanced blind sailors and sighted helpers may further obtain Instructor status at the discretion of the NZCSBVI Inc.



**SAMPLE**

THIS IS TO CERTIFY THAT

.....

HAS SATISFIED THE CRITERIA OF THE  
**THE NEW ZEALAND COUNCIL FOR SAILING  
FOR THE BLIND AND VISION IMPAIRED INC.**

AND HAS QUALIFIED AS AN

**INSTRUCTOR**

ON THIS DAY .....

SECRETARY .....

CHAIRMAN .....

## CHAPTER 8

### PRE-BOAT TRAINING

It is important to respect the independence and capabilities that blind sailors exercise, or could exercise in their everyday lives. They do not need “nursing”. However, the sailing environment will present some unique situations and challenges to many and these should be taken into account.

The majority of pre-boat training will be required by Beginners who need some instruction before leaving home, on:

- Appropriate clothing (including wet weather gear, white soft soled shoes, etc.).
- Protection (such as sunscreens, sunglasses and hats).
- Food (suitable foods for your anticipated on board requirements) and drink.

#### Theory

Beginners can also benefit from some explanation of the theory of sailing before venturing aboard the boat. An introduction to include:

- The theory of propulsion and its various methods and principles.
- Underwater aspects of hulls including where stability comes from (preferably in conjunction with a boat yard visit or examination of a model to enable hands-on assessment by the blind sailors).
- Explanation of how boat is steered by stern (as opposed to motor car).
- Boat repair and maintenance systems, e.g. slippage, antifouling and explanation.
- Description of different types of boats - power boats, yachts and motor sailers, etc.

#### **The Model Yacht being shown at the New Plymouth Yacht Club during a Sailing Weekend**



## The Use of the Model Yacht

### Introductory

1. Set up model as per instructions included in the carrying case and place on a table. Remove the pin holding the gimbals to the base and the pin locking the yacht cradle to the pivot structure. In order to allow free movement around the model it is desirable to have the fan on a separate table and the model on a table only a little larger.
2. Position fan (ideally 50 cm, 3 speed) approximately 1.5 metres from bow of yacht with the centre of the fan approximately level with the half height of the mast.
3. Stand level with the cockpit of the yacht facing forwards towards the bow. Place hand nearest the yacht on the tiller protruding from the rear of the pivoting portion of the gimbals. Explain that the real tiller is in the cockpit of the full size yacht and it may be replaced by a wheel. Move the tiller to show its effect. Allow students to place their hand on yours and feel your movement. The student should be in front of you and face forward towards the bow. Allow the student to perform the movement unaided and then move to the opposite side of the boat, repeating the movements with the opposite hand. Ensure student always faces towards the bow and the hand nearest the tiller holds it. Facing towards the bow is important to easy determination of 'port' and 'starboard' Repeat this as many times as time and numbers permit.
4. Point out and name the parts of the yacht. The students touch the parts as you do so and repeat the name. Follow the sequence of Bow, Stern, Keel, Rudder, Port side, Starboard side, Port Bow, Port Quarter, Starboard Bow, Starboard Quarter, Beam, Mast, Main Boom, Jib Boom, Mainsail, Jib/Genoa/Headsail, (explain that the last three terms are often interchangeable, but do not try to explain the differences at this stage), Luff, Foot, Leech, Tack, Clew, Head, Mainsheet, Headsail Sheet, Kicking Strap. Repeat the sequence and then change order of pointing to the part at random and ask the student(s) to identify. Do not expect 100% success of recognition of the parts at this stage but point out that a competent learner sailor should know all of them, particularly Port and Starboard, Mainsheet and Headsail Sheet. Expressions such as "Aft the Beam", "Forward of the Beam", "Aft" and "Forward" may be introduced now or later. Allow ample time for the students to touch and name on their own. Encourage use of the model for this purpose during break times or when they are free to do so.

### Sailing - On the Wind

5. Switch on the fan to produce a moderate breeze. Switch on the boat motor and transmitter. Stand as before beside the starboard quarter with hand on the tiller. Place transmitter so that sail trim lever is within easy reach. Set sail trim to eased sheets.
6. Allow students to feel the direction from which the breeze is coming and relate it to the head-to-wind position of the model. Point out and allow students to feel that the sails are shaking.
7. Harden sheets with the radio sail trim lever. Draw attention to the fact that the sails are still shaking. Now pull tiller towards you gradually and point out that the sails gradually stop shaking. Students feel this as you repeat. Elicit the fact that the yacht has also heeled. While they are discovering this ask, "What side is the wind coming from?" (answer "Starboard"), and "What side is the boom on?" (answer "Port"). Then point out that this means the yacht is on the Starboard Tack. Introduce the terms 'windward' and 'leeward' (looard) and explain their meanings.

8. Pull the tiller towards you and point out that the yacht heels more because the wind is striking the sails more directly. Demonstrate that the heel can be diminished by either pushing the tiller away and thus bring the fore and aft plane of the sails closer towards the direction from which the wind comes, or by easing the sails sheets. Return the sheets and the yacht to the close hauled position.
9. Tack the model. Use the words “ready about” and “lee oh” and explain their significance. Point out that there was no need to adjust the sails on the model but that on a full sized yacht without a foresail boom the headsail sheet would need to be released and brought in on the other tack. Make sure that you move around the stern of the model to the port quarter and change hands. Point this out to the students. Allow the students to practice the manoeuvre several times.
10. Repeat the procedure outlined in 9 above, eliciting the fact that there is a new windward side, the boom is on the opposite side and therefore a new name for the tack is applied. Also point out that when a yacht is sailing “close hauled” it is identified as being on either the port or starboard tack.
11. Arrange the students in pairs. Repeat tacking several times, with the students handling the tiller and the sail controls. Interchange students so that each handles tiller and sails.

### **Sailing - Eased Sheets**

1. Arrange the students in pairs as before, one on the tiller and one on the sail controls.
2. Direct the student on the tiller to point the yacht so that the wind is coming from the beam. Note that the yacht heels excessively and that as you wish to sail in that direction the sail trimmer must ease the sails so that the yacht has less heel, but the sails remain full of wind. Point out that at this angle to the wind the yacht will sail nearly as fast as it is capable, and is called “broad reaching”.
3. The tiller student can now bring the yacht back towards the wind and the sail trimmer must adjust the sails accordingly.
4. Students tack the yacht and move to a broad reach on the other tack.
5. Repeat this several times until a smoothly co-ordinated manoeuvre is achieved.
6. Interchange students on tiller and sheets and repeat exercises 2 - 5.
7. Ensure all students have a turn, and allow them ample time to feel the position of the yacht in relation to the wind, the angle of the sails and heel.

### **Sailing - Down Wind**

1. Still working in pairs direct tiller student to turn the yacht so that it now has the wind directly over the stern. The sail trimmer must act accordingly as in the transition from close hauled to a reach. Tiller student always keeps to the opposite side of the yacht to the boom.
2. Point out that this is called “running” or “down wind sailing”. The yacht may roll from side to side and the headsail may swing across to the opposite side of the yacht from the mainboom. This is called “wing and wing” and is often used as an alternative to setting a ‘spinnaker’. Explain briefly what a spinnaker is. Remind the students that the yacht is said to be on the port or starboard gibe

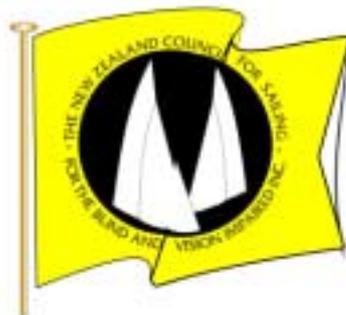
according to the side from which the wind is coming. If you feel the students are ready for it, you may explain that there is an exception to that rule, namely that it is possible to sail downwind with the wind and the boom on the same side, in which case it is called “sailing by the lee” and is not recommended for learners.

3. Direct the student to swing the stern of the yacht across the wind by pulling the tiller towards him/her. Explain that this is called gibing and can be dangerous if done without warning, or involuntarily. So it is important to give as much warning of one’s intention as possible and shout loudly “Gibe Oh” as a warning for all crew to watch for the boom(s) swinging across the yacht and to keep their heads down. As the mainboom swings across, the tiller student ducks around the stern of the model and changes hands on the tiller so as to retain the same relative position to the centre line of the yacht as on the former gibe. The ‘duck down’ movement is important, not only to minimise interference with the flow of air from the fan, but also to inculcate the habit of doing so on a full size yacht and thus escape being hit by the boom. Point out that the mainboom swings across quite violently and if allowed to do so in a strong wind on a full sized yacht considerable damage may be caused. So .....
4. Demonstrate a controlled gibe. As the stern of the yacht comes up to the wind the sail trimmer brings in the sails until they are amidships (i.e. along the centre line of the yacht). As the stern passes the direction of the wind the trimmer eases the sails fairly rapidly but in a controlled manner until they are in the same relative position as on the former gibe. Repeat the manoeuvre until it is smoothly performed.
5. Ensure all students have experience in gibing, both as tiller hands and as sheet hands.
6. Students should now be given opportunity to repeat all manoeuvres, from close hauled to gibing, until they are thoroughly familiar with the manoeuvres either as tiller or sheet hands.

### Testing

Instructors should test by selecting at random parts to be named and manoeuvres to be executed and requiring pairs of students to respond. Vision impaired students should be able to tell their partners what they are doing so that the partner may act accordingly. Do not expect instant learning of the above skills. It will require many repetitions over a period of time for the total concept to be acquired. Sighted skippers taking learners on full sized yachts can be helped in their teaching if they are also familiar with the model yacht programme outlined here.

### The Flag of the NZCSBI Inc.



## CHAPTER 9

# SAILING TERMINOLOGY

Basic terminology should be made clear and explained in advance.

Consistency is of utmost importance. To this end, a glossary of basic sailing terms along with a brief explanation of their meaning is given on page 31 of this manual.

This enables instructors to use consistent terminology in blind sailing.

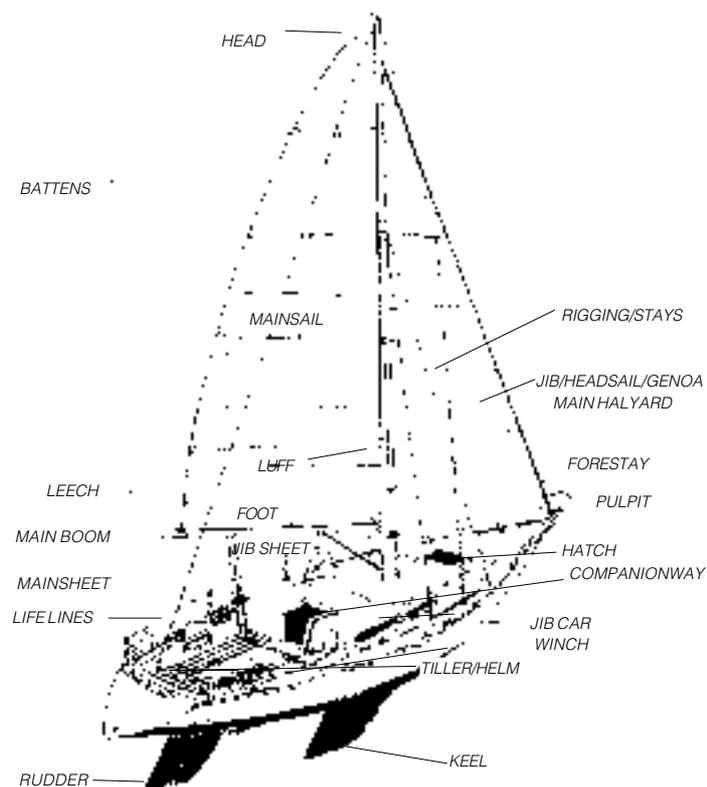
For beginners, explain:

- “Up” and “down”, as steering the bow of the boat into and away from the wind respectively. (blind sailor to be on windward side at this time.) (See Page 9.)
- Port and starboard.
- Names and functions of sheets, ropes and equipment, e.g. mainsail, halyard, winches.

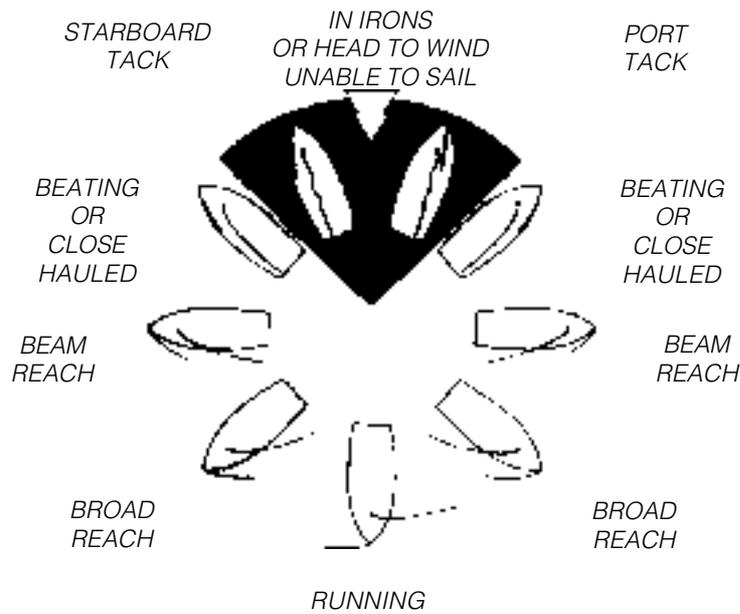
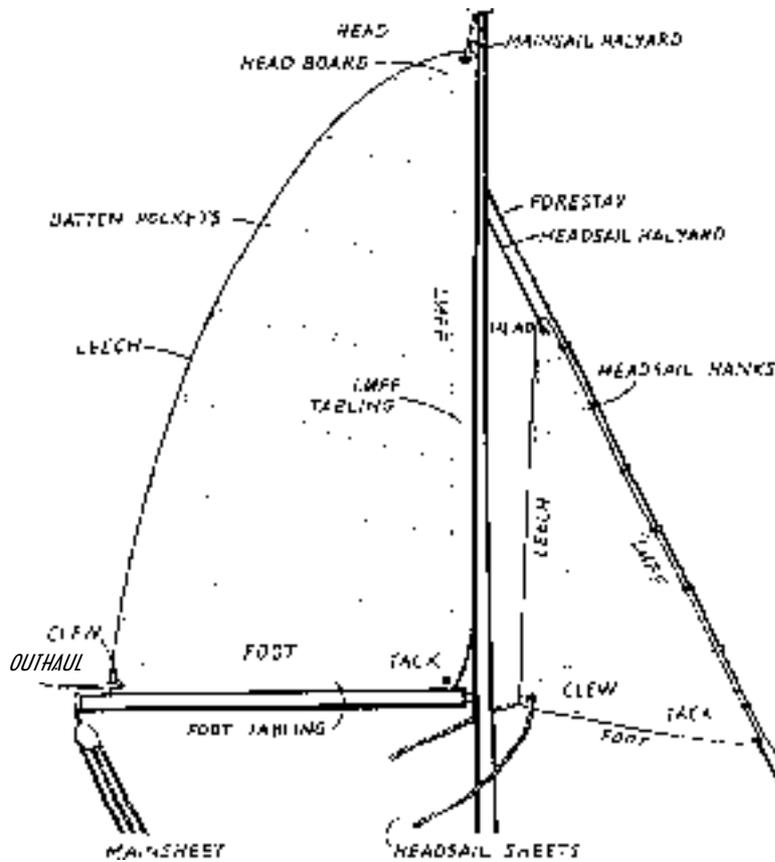
Special consideration should be given to downwind sailing as this is difficult for blind sailors.

For all blind sailors, consider the proposed voyage and likely tasks required of them. Review or elaborate on their knowledge of relevant terminology accordingly.

### Parts of a Sailing Boat



**Parts of a Sail**



**Points of Sailing**

## Weather

Training and interpretation should be given in obtaining formal information about differing weather conditions, e.g. through forecasters, radio telephone and radio receivers. (Weather Workshop.)

Set time limits for leaving dock or safe anchorage in line with weather and tide indications, e.g. wind strength, tide times, etc.

Encourage blind sailors to make their own regular assessments of weather trends through air temperature, wind direction and velocity etc. as well as acquainting themselves with known weather patterns in the locality in which they will be sailing.

### SEA CONDITIONS

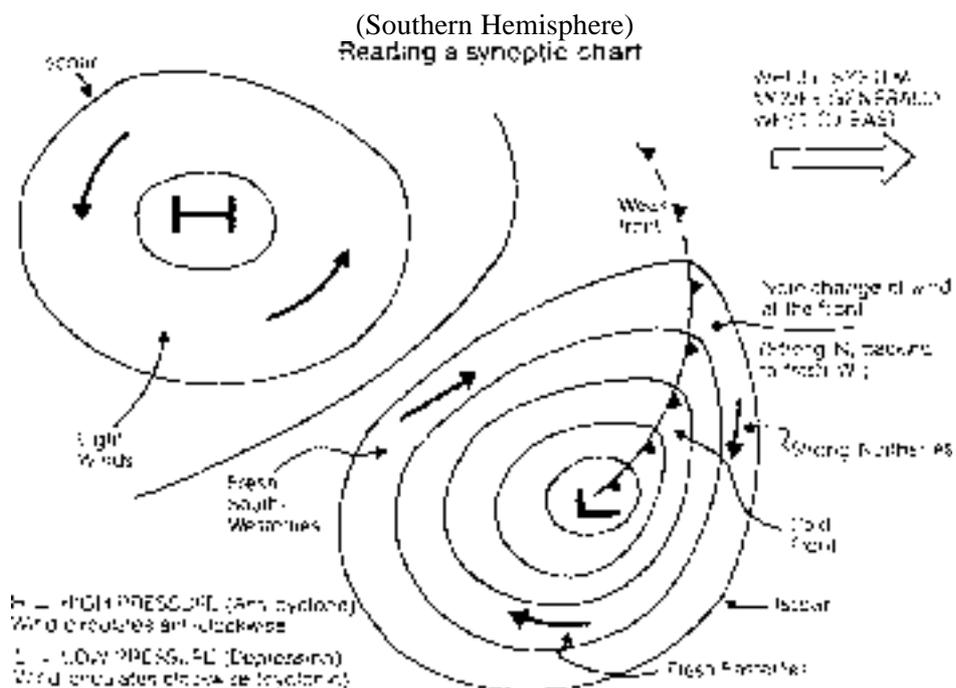
Description	Wave Size
Calm	up to 0.1 m
Smooth	0.1m - 0.5m
Slight	0.5m - 1.25m
Moderate	1.25m - 2.5m
Rough	2.5m - 4m
Very Rough	4m - 6m
High	6m - 9m
Very High	9m - 14m
Phenomenal	over 14m

### VISIBILITY SCALE

Description	Gauge
Excellent	Over 27nm
Very Good	11 - 27nm
Good	5 - 11nm
Moderate	2 - 5nm
Poor	Less than 2nm

### BEAUFORT WIND SCALE

Beaufort Number	Description	Mean Speed (Knots)
0	Calm	Less Than 1
1	Light Air	1-3
2	Light Breeze	4-6
3	Gentle Breeze	7-10
4	Moderate Breeze	11-16
5	Fresh Breeze	17-21
6	Strong Breeze	22-27
7	Near Gale	28-33
8	Gale	34-40
9	Strong Gale	41-47
10	Storm	48-55
11	Violent Storm	56-63
12	Hurricane	64 & Over



## CHAPTER 10

### IN PREPARATION TO SAILING

In addition to theoretical elements introduced at the boat yard or in the classroom setting, there are further practical aspects that need to be covered, before casting off. Make sure your crew ration is one sighted to each blind sailor on board at all times.

Many of the following boarding and pre-boarding instructions will once again be of most relevance to the blind Beginner Group. However, be aware that Intermediate and Advanced blind sailors may also need a reminder of key aspects - particularly if they have not sailed on the type of boat being used. They will need orientation.

Always pitch your level of instruction to suit the lowest level of experience and knowledge and embellish as necessary for more advanced blind sailors.

#### **Introductions**

Introduce yourself and perhaps a little of your blind sailing experience.

Ask the blind sailors to state who they are, their sailing experience and whether they are totally blind or have low vision. (What can they see?)

#### **Boat Profile**

Give relevant statistics about the particular boat involved such as:

- Length
- Type
- Age
- Any interesting history
- Construction
- Mooring method (and whether moored bow in or out).
- Gap between deck of boat and dock before boarding.

#### **Boarding Procedures**

The method of getting blind sailors to and from the boat should be based on the individual's ability, experience and preference. However, beginners should use a sighted guide instead of or in addition to, other aids. Experienced blind sailors who are familiar with the territory should be able to decide the best boarding method for themselves.

Note: Further detail on guiding VIPs is given under WHAT IS IT LIKE TO BE BLIND? (page 5); HOW SIGHTED CAN HELP (page 5); and SPECIAL CONSIDERATIONS FOR BOATING ENVIRONMENTS (page 6).

## **Dinghies and Rowboats**

If boarding involves a swing mooring, negotiating dinghies or rowboats will be required.

Consider the following steps and rules:

Introduce blind sailors to the key equipment and features of the dinghy, mentioning oars, motor, bailer, construction, etc.

Allow blind sailors to feel the shape of the dinghy or rowboat and to check the amount of water in the bottom before boarding.

When blind sailors are boarding dinghies/rowboats it is preferable that someone is already aboard and prepared to balance the weight of the blind sailors as they enter.

In disembarking onto a larger boat someone in addition to the blind sailors should be aboard each vessel as the transition is made.

At each transition, wind and sea conditions should be considered and discussed including depth of water at beaches, surf conditions, etc.

Describe suitable procedures in the event of capsizing.

Watch out for:

- Pinched fingers between vessels or dinghy and dock.
- De-stabilising dinghy without warning.

## **On Board Directions**

Board the blind sailors to the cockpit and instruct them to move to the opposite side, (ducking their heads to avoid the boom if necessary).

Introduce them to the various cockpit components, e.g. tiller, winches, rope pockets, lockers, etc. and allowing time for each blind sailor to touch the relevant objects.

Provide an overview of the boat structure by allowing hands-on identification of the whole area, above deck, including rails, boom, mast, hatches, anchor, etc.

Introduce them to below decks including:

- The head (toilet) and its use.
- Stowing and accessing personal and other gear.
- Location and purpose of fixed objects, e.g. galley, radio, engine etc.
- Where safety line “clip on” points are located and where any safety gear is stowed.

Provide instruction on:

- How to put on safety harness and how to clip on and transfer to other safety points and lines.
- Where to sit and stand when underway e.g. not in hatch.
- The effects of unexpected happenings at sea, e.g. wash from power boats, jibes, etc.
- Audio effects of hoisted sails flapping and rattling before trimming.
- Care of the boat, e.g. no smoking, shut hatches, control/stow winch handles correctly.

## **Radio/RT Communications**

Particularly for cruising situations, blind sailors should have an understanding of radio communications including:

- Notifying of ETD (estimated time of departure) and ETA (estimated time of arrival).
- Selecting a channel to be used on each occasion.

As marine airways are not appropriate for training purposes, this procedure may be simulated either simply person to person, or via walkie talkie, if available.

## **Locating Wind Direction**

Wind direction and velocity is fundamental to sailing. Feeling the wind on your face is one of the most basic and useful methods of determining these wind factors and is equally accessible to both blind and sighted people.

However, there are additional visual clues as to wind patterns, such as yarn on the stays and sails, blowing flags, distant boats, ripples on the water, etc.

While these are visual indicators, blind sailors should be advised of them as they may be able to see some of them and totally blind sailors can benefit from being advised of such indicators through a sighted guide.

Locating wind direction is a skill that should can be practised by blind sailors at all times, both ashore and at sea. Instructors should continually test this awareness by periodically asking all sailors to locate the wind direction. (Sighted with eyes closed.)

To help blind sailors identify the direction of the wind from various points, instruct them to move their faces back and forth until their noses points directly into the wind. Bear in mind, stronger winds will be easier to detect.

Next identify the direction of the wind when facing the direction the boat is moving. This involves learning the relationships between the vertical plane of the face, the centre line of the boat and the angle of the tiller. The feel of the wind on cheek, ear and back of neck should be identified.

## **Moorings**

Explain the system of permanent mooring of the craft and the procedure for casting off in readiness o sail. Also detail securing of craft to dock or wing mooring after use and names of relevant lines, springs, attachments, e.g. bollards, etc.

## **Dress**

Kit up blind sailors with appropriate clothing for the conditions and the necessary safety gear.

## **Orientation of the Boat**

Allocate sailing responsibilities and explain these.

Once basic orientation is complete, instructors should establish roles for each blind sailor, e.g. who will steer the boat, who will trim the sails, etc.

Each blind sailor should be assigned a role in the sailing of the boat. If there is only one blind sailor aboard, other crew duties should be determined around the blind sailor's abilities.

Roles should be alternated to give everyone a chance to do each job, with instruction according to their capabilities.

Familiarise each person with their job e.g. which sheet they will tend, what function it serves, how to cleat and uncleat it, etc.

## **Sighted Sailor's Duties**

The instructor or a sighted sailor should be in charge approaching and departing the dock, and sailing into open water.

Sighted sailors must keep a constant lookout for other boats and obstacles and must use prudent judgement at all times in instructing blind sailors on how to avoid problems.

Duties in the event of an emergency, e.g. man overboard, should also be allocated to sighted sailors. For further detail, see SAFETY, (page 24).

## **The Instructor's Role**

The instructor's/tactician's job is generally to provide information, guidance and instruction to ensure the safe and competent handling of the boat and its crew.

However, the instructor is ultimately responsible for the crew, both blind and sighted, at all times. This might mean taking control of the sheets in windy conditions, steering the boat in tight quarters, or taking complete control of the boat under adverse conditions.

The instructor/tactician/skipper, has the final word in any given situation.

## CHAPTER III

### SAFETY

Basic safety at sea depends upon the instructor's own competency and understanding of rules at sea. A brief outline of basic rules is given on page 32 under "RULES OF THE ROAD", together with relevant references for further detail.

Boats for blind sailing should come under the New Zealand Yachting Federation (NZYF), Category 4-without dinghy.

Life jackets and harness should be available and one or the other worn by all blind sailors, at all times on board.

Blind sailors should also be made familiar with:

- Pushpit and pulpit.
- Secure stowage of all items aboard.
- Location and operation of pumps and anchor.
- Radio location and Mayday drill.
- Other safety equipment and its use e.g. flares, horn, whistle, lights.
- Man Overboard procedure (see details following).

#### Personal Safety

Blind sailors should be alert to the dangers of:

- Slippery deck areas.
- Fingers near winches.
- Rope underfoot.
- Heads near the boom.
- Standing on sails on deck.
- Any other pertinent safety matters.

It is also important to emphasise the need for clothing adjustments according to the weather and the fact that these changes should be made in advance of suffering the effects of specific wet, cold or hot conditions, etc.

## Man Overboard Procedure

In the event of a man overboard situation, the instructor should take the helm at once to conduct the procedure described below.

The instructor should designate (or have allocated in advance), the jobs of:

1. Lifebuoy thrower and subsequently pointer to the man overboard's position, relative to the boat at all times.
2. Engine starter.
3. Obtaining and setting the rope, boathook, flotation lines and other relevant devices.

Blind sailors on board should be made aware of the situation and if safety demands it, directed below deck.

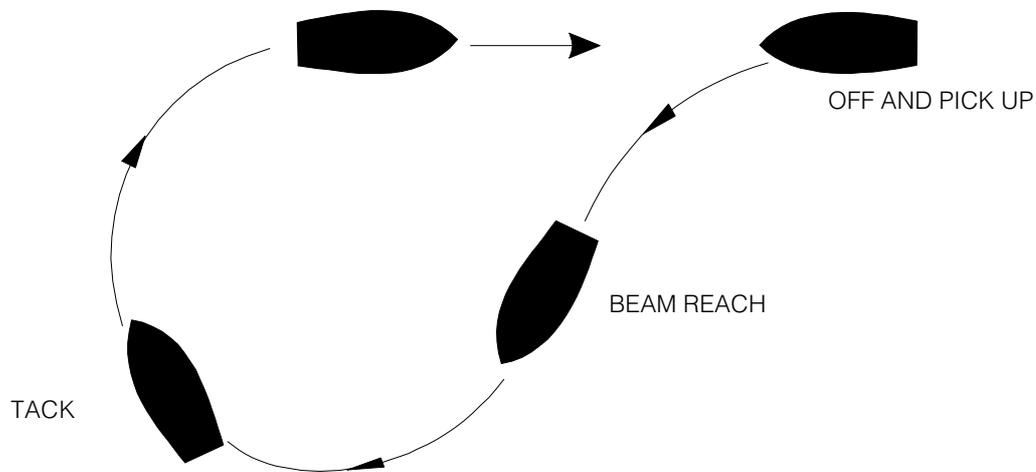
The overboard blind sailor should be instructed to remain calm and not to try to swim after the boat. The instructor should continually shout to the blind sailor overboard to make them aware of the boat position and the action being taken to retrieve them.

## Recovery Method When Boat is Under Power

### The Williamson Turn

This turn is designed to bring the boat through a 180 degree turn, so that it returns to its original course line. Full speed is maintained throughout the turn.

1. To commence the turn put the tiller hard over to port or to starboard. In the case of a man overboard, the initial direction of the helm is preferably to the side from which the person fell.
2. As the turn begins, note the compass heading.
3. After the boat has swung about 60-70 degrees from her original course, the rudder is put hard over to the opposite side. (The amount of swing before reversing rudder direction varies with the speed, size, and type of boat. With pleasure boats it is usually about 70 degrees, but a few practice manoeuvres will determine this for your own boat).
4. The boat now swings in the opposite direction and this turn is maintained with full rudder until the reciprocal of the original course is reached.
5. The rudder is now used to steady the boat onto the reciprocal course. The boat should now be proceeding back along its former track.
6. To maintain maximum control you must approach the blind sailor overboard head to wind.
7. Slow your speed before reaching the blind sailor and pull alongside.
8. Ensure that the propeller has stopped turning. On many boats the propeller turns even if the engine is in neutral, it is safer to stop the engine completely.



### **Williamson Turn**

#### **Man Overboard When Boat Is Under Sail**

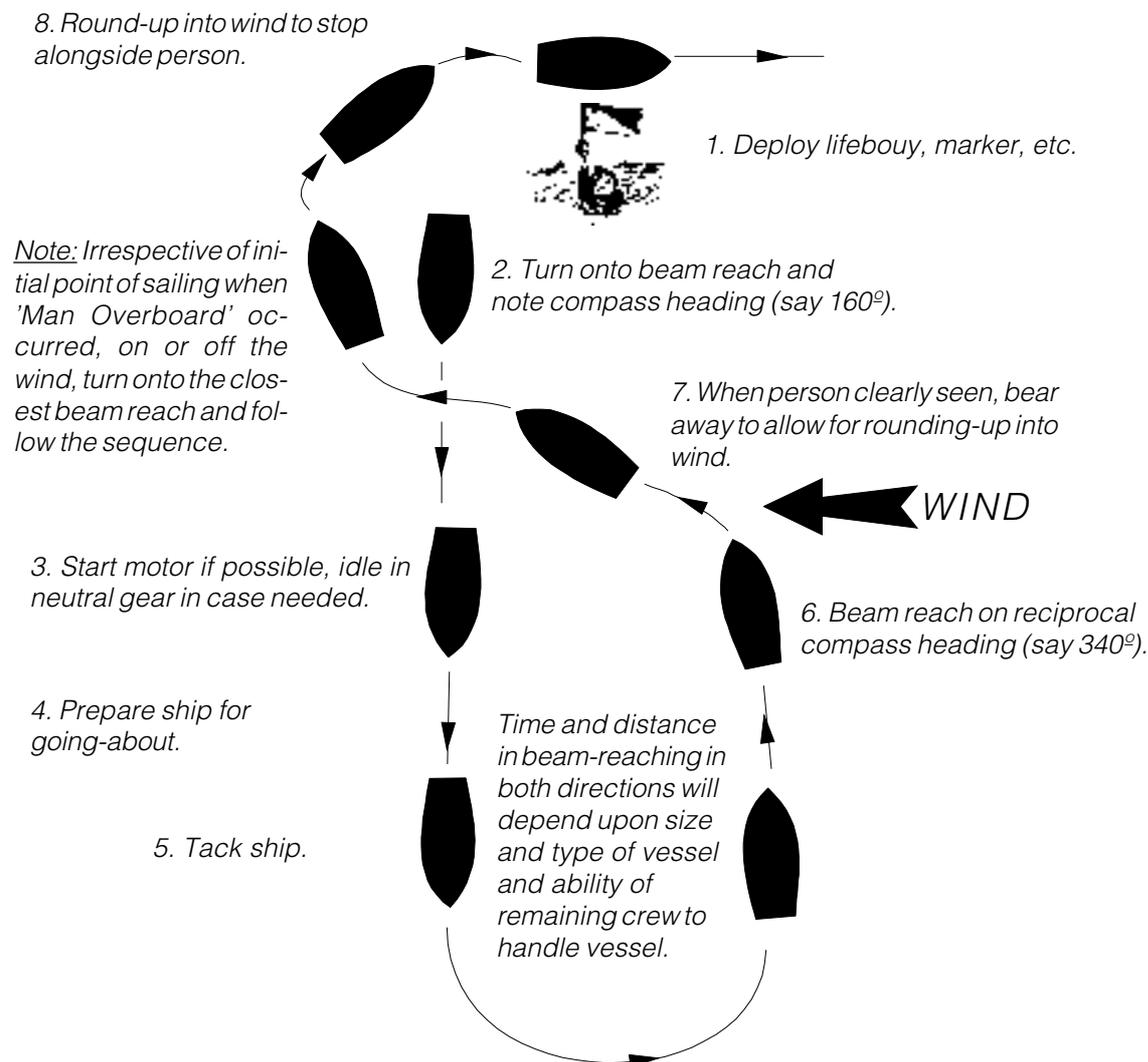
1. Boat is placed on a beam reach immediately.
2. Boat is tacked and placed on a reciprocal beam reach.
3. At a point no less than two boat lengths downwind of overboard blind sailor, the boat is turned upwind.
4. Boat is slowed and headed to recover overboard blind sailor on the boat's leeward side.

Retrieval of the blind sailor from the water is easiest where there is least freeboard and plenty of cockpit space.

To complete the rescue someone else may have to enter the water to assist the sailor, particularly if they are injured or unconscious.

Apply any necessary first aid procedures.

## Man Overboard Drill Under Sail (NZYF Method)



## Other Emergencies

Sudden squalls, equipment failure, running aground and capsizing are other potential emergencies. The instructor should be prepared to take full control in these situations.

Blind sailors should be informed of what has happened and what they should do.

In the case of a capsize, everyone should be told to stay with the boat and not swim away. A blind sailor in the water can be easily disoriented and might even need to know where the boat is located, in order to stay with it.

It is the instructor's responsibility to make sure that everyone is accounted for and holding securely onto the boat.

By making safety a priority and using prudent judgement, emergency procedures are seldom required.

## CHAPTER 12

# SAILING TECHNIQUES

Each instructor will have a different teaching style and each group of blind sailors, a different level of knowledge and skill. Therefore an outline of a few exercises for beginners follows in order to demonstrate how new skills can be developed among blind sailors. It is assumed that instructors will build on the existing experience of their crew, developing confidence in the areas required to advance their grading as specified in CERTIFICATION REQUIREMENTS (pages 10 and 11).

It is also useful to provide an ongoing description of the surrounding environment e.g. breakwaters, other boats and points of interest.

### **Boat Balance**

The blind helmsperson should sit on the windward side while the crew should be taught the importance of distributing their weight for good boat balance

The blind crew and sighted guide trimming the main and headsail should sit on whatever side is necessary to provide the proper balance to the boat.

### **Helming**

All blind sailors on board should be given the opportunity to helm the boat through all aspects of wind direction. A broad reach is a good starting point for beginners.

Next, on the wind sailing with advice to blind sailors on assessing wind direction by their own personal sensitivities, e.g. wind felt on upper body as related to boat's heading.

Down wind sailing proves the most difficult point for blind sailors, particularly "flat off" situations. To discourage inadvertent jibes in such circumstances, instructors should leave this stage of training until after the helmsperson has mastered the other wind positions.

Note: Where cruising boats are being used for instruction, it is advisable to have spray dodgers or other wind disrupting covers lowered so that the direct wind flow can be appreciated by the blind helmsperson.

### **Sail Handling**

#### Mainsheet

1. Familiarise the blind sailors with locating, cleating and releasing the mainsheet.
2. Have them trim the mainsail into close hauled, beam reach, broad reach and running positions.

## Headsail

1. Familiarise the blind sailors with the location of the port and starboard headsail sheets and how to secure and release them and operate winches.
2. Allow them to experience headsail positions for close hauled, reaching and running positions on both port and starboard sides.

## **Trimming**

The following exercise highlights the importance of sail trim to boat performance including its speed and angle of heel.

1. Sailing a straight fixed course (not running) and have the crew let the sails out and notice how the boat levels out and slows down.
2. Trim the sails back into the appropriate position and note the opposite effect. Sail luffing can be a useful sound clue that further trimming is required for maximum efficiency.

## **Tacking**

Review the terms “go up” and “go down” when referring to the bow with the blind helmsman. Prepare each person for tacking into the wind. Describe what will happen when use "up" and "down" tiller and what each sailor needs to do to make it happen. (Model Yachts can demonstrate this.)

Before tacking:

1. Review how to release and recleat the headsail sheet to the new side.
2. Review mainsheet adjustments (if needed).
3. Review with the blind helmsman procedures for steering onto the new tack.
4. Review with everyone how to transfer onto the new windward side.

Once ready to tack:

1. The blind helmsman should ask the question “ready to tack?” and on receiving a positive response announce “tacking” as the boat is tacked.
2. Everyone should transfer their sitting position to the windward side.
3. Resume sailing on the new tack.

Note: The blind helmsman must establish a method of keeping him/herself and other people clear of the tiller throughout the tack so that he or she can quickly establish a replica sitting position on the other side.

## **Jibing**

Blind helmsman warns “get ready to jibe” (jibing procedure commences), at point of jibe the blind helmsman calls, “jibing” followed by “heads” to warn all of approach of the boom. The blind helmsman transfers to windward.

In case of inadvertent or “Chinese” jibe simply call “heads” as there is not time for other comment. “Heads” applies to all other situations where the boom may suddenly come aboard, e.g. passing leeward of wind obstructions etc.

Blind sailors should be made aware of this call and to react instantly by getting heads down.

Emphasise the importance of wind direction and continue to test blind sailors for their knowledge of this.

## **Sailing Devices**

A range of electronic and computer-assisted devices that emit sounds are now available to help accurately steer a boat. Digital devices can be adapted with speech synthesizers to give speech output for virtually all of the information required.

Autopilots, wind vanes and other self-steering devices are also beneficial in enhancing the independence of experienced blind sailors. However, the intent of this sailing programme is to promote active sailing and understanding of the boat without dependence on such devices.

Audio buoys are used in some countries.

## **Audio Compass**

The audio compass, originally designed in the United Kingdom and used there for blind sailors during cross Channel cruises, comprises a compass which can be set to the current course of the yacht, and distinctive port and starboard warning sounds which activate when the yacht deviates from that course.

The degree of deviation can be controlled. A fine adjustment can reduce it to 5 degrees or increase it to 20 degrees.

Blind Sailing New Zealand owns 12 of these and they are available from the secretary for use during training or cruising courses. They operate from the ship’s 12 volt electrical supply and are easily fitted.

When sailing hard on the wind the compass can help the novice relate the feel of the wind and its relationship to heel, speed and sound of the water flowing past the hull. When familiar with this relationship the compass can be closed down at will and experience built up in sailing by feel alone. The instructor should always encourage the learner to be aware of the feel and to rely on the compass as a secondary means of maintaining course.

The compass can also be a valuable aid to sighted sailors during night sailing and cruising.

Advances on this system are constantly being developed.

Advances on this system are constantly being developed and instructors should be alert to the existence of up-dated models as well as audio buoys and more sophisticated aids.

### **Cruising/Racing**

This manual and blind sailing programme predominantly deals with the skills required for enjoyment of recreational sailing by blind sailors. Therefore, the objective is to instil a practical and general knowledge of good seamanship including safety, achieving a desired course and efficiently sailing the boat. It is desirable that the blind sailor become an integral part of the crew.

Clearly these skills are well within the grasp of blind sailors, as are their refinement for cruising and racing situations.

For further information on how to develop their sailing experience in either of these directions, blind sailors should refer to the Blind Sailing NZ. CONTACT ADDRESS on page 41 of this manual.

# CHAPTER 13

## RULES OF THE ROAD

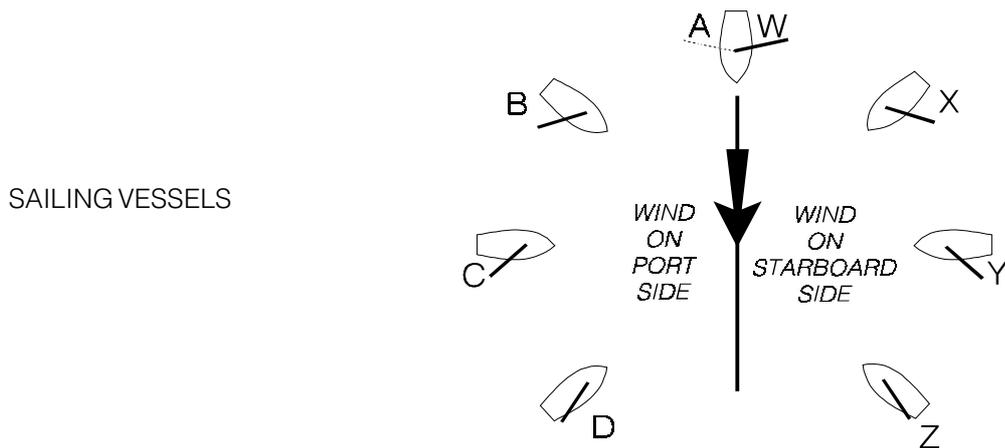
As stipulated earlier, a basic understanding of Rules of the Sea in accordance with “Safety in Small Craft” by Mike Scanlan is assumed of instructors. This manual is published by the Education Subcommittee of the New Zealand Coastguard Federation and generally available in most book shops.

### Racing Rules

A comparative guide in relation to the racing environment is provided by the official NZYF book.

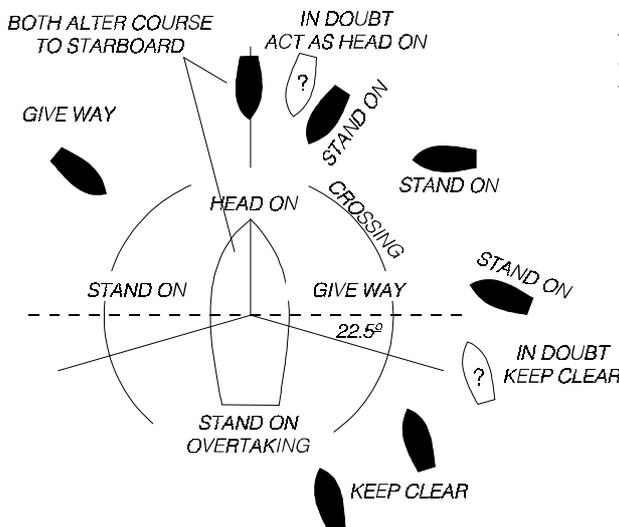
In interpretation of these rules for blind sailing emphasis should be given to “keep clear” to allow for slightly increased reaction times, due to the need to relay information through sighted sailors.

### Rules of the Road



*Wind on different sides*  
A, B, C, D all give way to W, X, Y and Z

*Wind on the same side*  
A gives way to B gives way to C gives way to D, and W gives way to X gives way to Y gives way to Z



POWER-DRIVEN VESSELS

## CHAPTER 14

**USEFUL KNOTS SHEETING AND WINCHING**

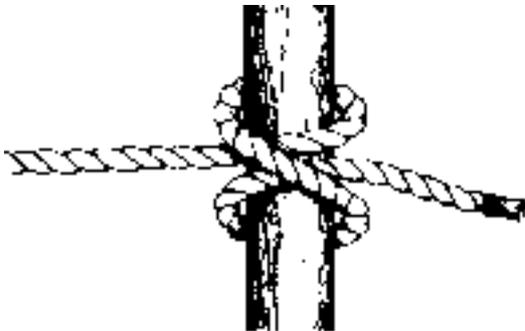
There are a number of manuals instructing on knots and splicing, and there is a wide variety that can be learnt. With today's modern craft and synthetic cordage much of the skill of ropework has disappeared. There are still a basic few knots that must be learnt to make sailing easier and be of help to any sailor. It is recommended that the VIP sailor become proficient at tying the following knots:

**THE FIGURE EIGHT KNOT**

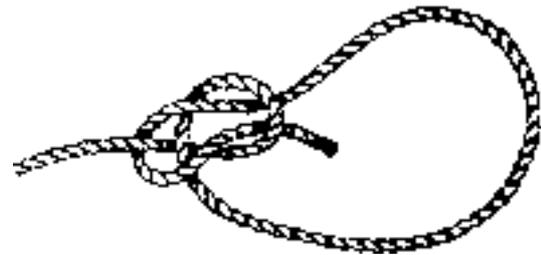
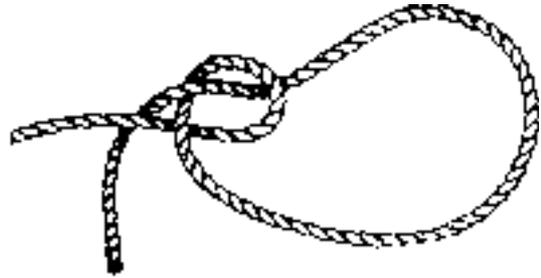
Used as a stopper to prevent a rope end from running through a block or lead.

**REEF KNOT**

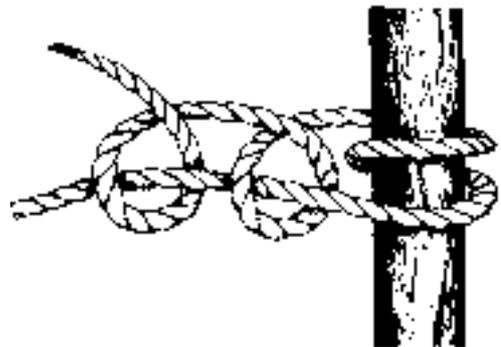
Originally used to bind sails when reefing, used for joining lines of similar size.

**CLOVEHITCH**

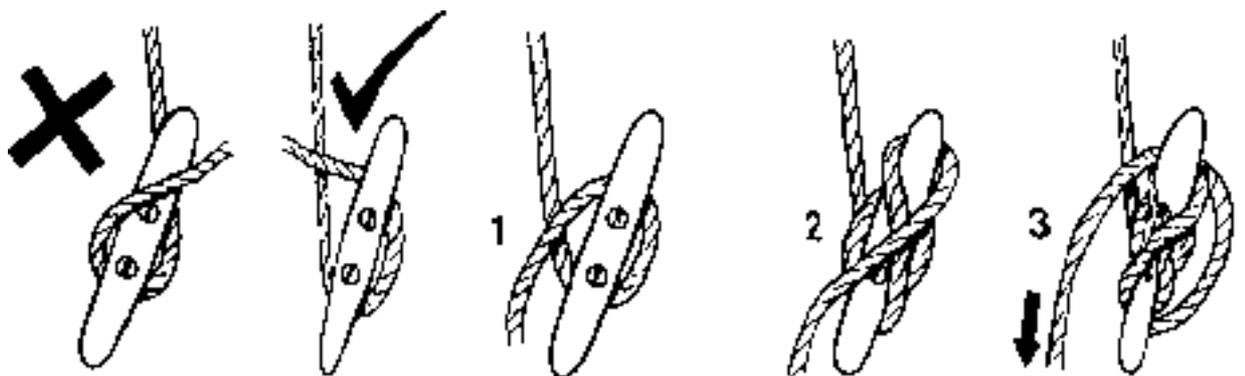
Used to make a line fast to a pole or spar; e.g., dinghy painter to a rail.

**BOWLINE**

A non-slip knot used to put a loop or bight in a line. Used to secure jib sheets to sail, loops for foot or hand holds, mooring lines and man overboard drills.

**ROUND TURN AND TWO HALF HITCHES**

Used to secure a rope to a ring, mooring, anchor, dinghy, eye bolts, spars or poles

**CLEATING OFF**

A task to secure mooring lines or sheets. There is a common misconception that there must be a half hitch completed on the wings of the cleat. The cleats are constructed so that rope jams itself and extra locking is unnecessary. In fact half hitches can become dangerous when a quick release is required from the cleat in an emergency.

**WINCHING**

The first task of any winchhand is to ascertain the direction in which the barrel turns and locks on the ratchet. Until the VIP sailor is familiar with the winch this should be done every time a rope is to be wound on. Three to five turns, depending on the size of the vessel before the winch handle is placed in the top. Some winches have two speeds, winding clockwise or anticlockwise on the handle will soon disclose if this function is present. The sheet is wound on to the required adjustment and the tail cleated off. To ease the sheet the winch does not turn rather the rope must be slipped over the surface of the stationary barrel. The left hand will ease the tail whilst the right hand can feel the rope on the barrel as it releases enabling the amount of release to be judged. When tacking, after the removal of the winch handle complete the release by quickly unwinding the sheet by pulling the rope upward in an uncoiling motion. Winch handles are a cause of distress for the sighted crew as they are easily lost overboard. A suitable pocket must be supplied so the handles are stowed when not in use in a manner that the VIP sailor can easily ascertain their whereabouts.

## GLOSSARY OF TERMS

### A

- Aback:** describes a sail that the wind has struck on its lee side.
- Abeam:** at right angles to the boat's midships.
- Aft:** at or near the stern.
- Anti-fouling:** a point compound used to prevent marine growths on the underwater area of the hull.
- Apparent wind:** a combination of true wind and that created by the movement of the boat.
- Astern:** behind the boat; to go astern is to steer the boat in reverse.
- Athwartships:** at right angles to the boat's fore-and-aft line.

### B

- Backing** when the wind backs or is backing it is changing direction anti-clockwise (see veering)
- Back a sail:** to force it against the wind, sheeting it to windward. Used when manoeuvring to make the boat fall off the wind.
- Backstay:** a stay that supports the mast from at or near the stern and prevents forward movement of the mast.
- Ballast:** heavy weight, usually iron or lead, which is placed low in the boat to provide stability.
- Ballast keel:** ballast bolted to the keel to increase the boat's stability and prevent it from capsizing.
- Batten:** a light, flexible strip of wood or plastic inserted into a batten pocket in the leech of the sail to give the sail shape and support.
- Beam:** the widest part of a boat; "on the beam" is the same as "abeam".
- Bear away:** to steer away from the wind.
- Bearing:** the compass direction of an object from an observer.
- Beat:** to sail close-hauled on a zigzag course towards the wind, on alternate tacks.
- Belay:** to secure a rope around a cleat.
- Berth:** a sleeping place on board a boat; to moor a boat; a boat's moored position in a harbour or marina.
- Bulge:** the lower inside area of the hull against the outside edge.
- Block:** a pulley in a wooden or plastic case, consisting of a sheave (a grooved wheel) around which a rope runs.
- Boot-topping:** a narrow stripe painted around the hull above the waterline and which separates the bottom paint from the topside finish.
- Broach:** to slew broadside to the wind and heel when running before the wind, usually resulting in loss of control.
- Broad reach:** with the wind aft, any point of sailing between a beam reach and running.
- Bulkhead:** partition wall in the hull of the boat, usually fitted athwartships.

**C**

<b>Catamaran:</b>	a sailing boat with twin hulls.
<b>Centreboard:</b>	a board or metal plate lowered through a slot in the keelson or hull to reduce leeway.
<b>Centre-line:</b>	the centre of a boat in a fore-and-aft line.
<b>Chainplate:</b>	a metal plate bolted to the side of the boat or bulkhead, to which the rigging is connected.
<b>Chart datum:</b>	a reference level on a chart below which the tide does not usually fall. Seabed soundings are given below chart datum.
<b>Chine:</b>	the line on a hull where the bilge meets the topsides.
<b>Claw ring:</b>	a fitting used on the boom after roller reefing the mainsail. It slips over the boom like a claw and to it is attached the main sheet or boom vang.
<b>Cleat:</b>	a horned fitting around which a rope is belayed, or secured.
<b>Clevis pin:</b>	a locking pin through which a split ring is inserted to prevent the ring's accidental removal.
<b>Clew:</b>	the after, lower corner of a sail at the junction of the boot and leech.
<b>Close-hauled:</b>	the point of sailing closest to the wind.
<b>Close reach:</b>	the point of sailing between close-hauled and a beam reach.
<b>Close-winded:</b>	a boat's ability to sail very close to the wind.
<b>Coamings:</b>	the raised structure round the cockpit and hatch, which stops water entering. The sides of the cabin top are also coamings.
<b>Course:</b>	the direction in which a vessel is steered.
<b>Cringle:</b>	an eye, often with a metal lining, worked into the sail.

**D**

<b>Dead run:</b>	running with the wind blowing straight aft.
<b>Deviation:</b>	compass error caused by magnetic attraction of metal objects on the boat. It is the difference, measured in degrees, between the magnetic course and direction indicated by the compass.
<b>Displacement:</b>	the weight of sea-water displaced by the submerged part of the boat and which is exactly equal to the boat's weight.
<b>Down tiller:</b>	movement of the tiller towards the leeward side of the boat.
<b>Down bow:</b>	movement of the tiller towards the leeward side of the boat.
<b>Downhaul:</b>	a rope fitted to pull down a sail or boom.
<b>Draft:</b>	the depth of water a boat requires in order to float, being the vertical distance from the waterline to the bottom of the keel.
<b>Drop keel:</b>	a retractable keel, which can be drawn into the hull.

**E**

<b>Eye of the wind:</b>	the direction from which the true wind blows.
-------------------------	---

**F**

<b>Fairlead:</b>	a fitting used to guide a rope, wire or chain to alter its direction.
<b>Fathom:</b>	the unit of depth measurement: 1 fathom = 6ft = 1.83m.
<b>Fid:</b>	a tapered wooden tool used in splicing rope and for sail making.
<b>Fix:</b>	the accurate positioning of a boat found by the intersection of two or more bearing lines.
<b>Forestay:</b>	the foremost stay, running from the masthead forward to the stem.
<b>Freeboard:</b>	height of the side of the boat from the waterline to the deck.

**G**

- Genoa:** a large headsail, which overlaps the mast; it is hoisted in light winds.
- Gimbals:** a device consisting of two rings pivoted to provide a base that stays level despite a boat's motion; used for compass, lights, cooker.
- Go about:** to turn the boat though the eye of the wind to change tack.
- Gooseneck:** the fitting that attaches the boom to the mast.
- Goosewing:** to have the headsail poled out to windward on a run, so that headsail and mainsail are out to opposite sides of the boat, like wings.
- Ground tackle:** a general term used for anchoring gear, including anchor, cable, warp, etc.
- Gudgeon:** a rubber fitting. A metal eye set into the transom or rudder into which the pintle fits.
- Guy:** a rope controlling a spar; a spinnaker guy controls the fore-and-aft position of the spinnaker pole; the fore guy controls the movement of the outer end of the pole.
- Gybe:** to change tack by turning the stern through the wind; by turning the bow of the boat towards the main boom.

**H**

- Halyard:** rope or wire used to hoist and lower sails.
- Hank:** fitting used to attach the luff of a headsail to a stay.
- Hatch:** an opening in the deck giving access to the interior.
- Head-to-wind:** with the bow headed right into the eye of the wind.
- Headfoil:** a streamlined forestay surround, which has a groove into which the headsail luff slides.
- Head:** the toilet.
- Headway:** the forward movement of a boat through the water.
- Heave-to:** to back the jib so the boat slows nearly to a stop. The tiller is held to leeward at the same time.
- Heel:** the leaning over of the boat due to pressure of the wind on the sails.

**I**

- In irons:** describes a boat stalled head-to-wind, while tacking and unable to bear off one way or the other. In order to get under way again, all sails should be sheeted in and the helm held hard over on one side.

**J**

- Jibe:** see Gybe.
- Jury rig:** a temporary rig to replace lost or damaged gear.

**K**

- Kedge:** a small, light second anchor.
- Keel:** the main backbone of the boat running fore and aft and supporting the frame. In a keel yacht, the ballast keel is bolted to this main beam, or a centreboard passes through it in the case of unballasted yachts.
- Ketch:** a two-masted sailing vessel, the smaller aft, mizzen mast stepped forward of the rudder post.
- Kickingstrap:** a line used to pull the boom down and keep tension on the mainsail. Used particularly on a reach or run.

**L**

- Lanyard:** a short line attached to one object to secure it to another, e.g. a harness lanyard.
- Leech:** the after edge of a sail from head to clew.
- Lee helm:** the tendency of a boat to bear off the wind, the helm needing to be kept to leeward to hold course.
- Lee shore:** a shore which the wind is blowing to.
- Leeward:** away from the wind; the direction to which the wind is going (opposite of windward).
- Leeway:** the sideways drift of a boat off its course to leeward.
- Let fly:** to let a sheet go instantly, spilling the wind from the sails.
- Lifelines:** wires or ropes strung around a boat on stanchions to prevent the crew falling overboard.
- List:** a boat's more or less permanent lean to one side, owing to shifting ballast, accumulation of water.
- Log:** an instrument for determining a boat's speed and distance travelled through the water, to record the details of a voyage.
- Luff:** the forward edge of a sail. To luff up is to bring the boat's head into the wind.

**M**

- Marlin spike:** a pointed steel or wooden spike used to separate the strands of rope when splicing.
- Mast step:** the through-deck channel, leading to an attachment in the keel, into which the mast is placed.
- Member:** a structural timber, part of the skeleton of the hull.
- Meridian:** an imaginary line around the earth, which passes through the poles and intersects the equator at right angles. All lines of longitude are meridians.
- Mizzen:** the aftermost mast on a ketch or yawl; a sail set on the mizzen mast.

**O**

- Off the wind:** sailing downwind.
- On the wind:** close-hauled.
- Outhaul:** a rope used for hauling out the foot of a sail.
- Overall length (LOA):** the boat's extreme length, measured from the foremost part of the bow to the aftermost part of the stern.

**P**

- Painter:** the rope attached to the bows of a dinghy or tender, by which it is towed or made fast.
- Pintle:** an upright pin attached to a boat's transom or rudder and which slips into the gudgeon to form a hinged pivot.
- Pitch:** the fore-and-aft rocking of a boat.
- Points of sailing:** the direct angles to the wind on which a boat may sail; the boat's course relative to the direction of the wind.
- Port:** the left side of a boat looking forward (opposite of starboard).
- Port tack:** when the wind comes from the port side and the mainsail is out to starboard.
- Position line:** a line drawn on a chart from a bearing and along which the boat's position lies. Two or more position lines give a fix.
- Pulpit:** a metal guard-rail at the bows of a boat, which provides safety for crew working forward, changing headsail, etc.
- Pushpit:** a metal guard-rail fitted at the stern.

**Q**

- Quarter:** the side of the boat aft of the beam

**R**

<b>Rake:</b>	the fore-and-aft inclination of a mast or other feature of a boat from the perpendicular.
<b>Reach:</b>	to sail with the wind roughly on the beam; any point of sailing between running and close-hauled.
<b>Reef:</b>	to reduce the sail area by taking it in at the foot and folding or rolling surplus material on the boom.
<b>Reefing line:</b>	strong line with which the leech cringle is pulled down to the boom when reefing.
<b>Rigging screw:</b>	a fitting with which the tension of standing rigging is adjusted.
<b>Roach:</b>	the curved part of the leech of a sail extending beyond the direct line from head to clew.
<b>Run:</b>	to sail directly downwind with the sheets eased well out.
<b>Running rigging:</b>	all of the moving lines such as sheets, halyards, guys used in the support and control of sails and spars.

**S**

<b>Schooner:</b>	a boat with two or more masts with the mainmast aft.
<b>Scuppers:</b>	an opening in the toe rail that allows water to drain off the deck or cockpit.
<b>Seacock:</b>	a shut-off valve on underwater inlet or outlet piping through the hull.
<b>Sea room:</b>	room in which a boat can manoeuvre without danger of collision or grounding.
<b>Shackle:</b>	a metal link of varying shape with a removable bolt across the open end, used to secure lines to sails, poles, etc.
<b>Sheave:</b>	a grooved wheel in a block or spar upon which a rope runs.
<b>Sheet:</b>	a rope controlling a sail.
<b>Shrouds:</b>	ropes or wires, usually in pairs, reaching from the mast to the chain plates at the sides of the boat to prevent the mast falling sideways.
<b>Skin fitting:</b>	a through-hull fitting through which air or water passes. A seacock is fitted to close the hole when not in use.
<b>Sloop:</b>	a single-masted boat with a mainsail and one headsail.
<b>Spar:</b>	a general term for masts, booms, poles.
<b>Spinnaker:</b>	a large, light, balloon-shaped sail set in front of the bows when the wind is aft of the beam.
<b>Splice:</b>	to join two ropes or wires or make an eye splice in the end of a line by unlaying their strands and interweaving them.
<b>Spreaders:</b>	horizontal struts attached to the mast, which spread the shrouds out from the mast and improve their support of the mast.
<b>Stall:</b>	a sail stalls when the airflow over it stops.
<b>Stanchion:</b>	upright metal post bolted to the deck to support guard rails or lifelines.
<b>Standing part:</b>	the part of a rope that is secured to an object, opposite to the hauling part.
<b>Standing rigging:</b>	the shrouds and stays that are permanently set up and support the mast.
<b>Starboard:</b>	the right side of a boat looking forward (opposite of port).
<b>Starboard tack:</b>	when the wind comes from the starboard side and the mainsail is out to port.
<b>Stay:</b>	a wire or rope that supports the mast in a fore-and-aft direction; part of the standing rigging.
<b>Steerage way:</b>	having sufficient speed for the boat to be steered, or to answer the helm.
<b>Stem:</b>	the timber at the bow, reaching from the forward end of the keel, to which the two sides of the boat are attached.
<b>Stringer:</b>	a fore-and-aft structural timber fitted to strengthen the frames.
<b>Strop:</b>	a loop of wire or rope used to raise the tack of a headsail some distance off the deck.
<b>Strop down:</b>	to secure a rope or wire so that it does not fly about and become entangled.

**T**

- Tack:** to turn the boat through the wind - either by gybing or going about - so that it blows on the opposite side of the sails; also the lower forward corner of a sail.
- Tacking:** working to windward or downwind by sailing close-hauled on alternate courses so that the wind is first on one side of the boat, then on the other.
- Tackle:** a purchase system consisting of rope and blocks and which is used to gain mechanical advantage.
- Tang:** a metal fitting on a mast or other spar to which standing rigging is attached.
- Toe rail:** the raised edge of the deck where it meets the hull.
- Topping lift:** rope or wire used to adjust boom height.
- Topsides:** the sides of a boat between the waterline and the deck.
- Track:** the course a boat has made; a fitting on the mast or boom into which the slides on a sail fit; also, a deck fitting along which a traveller runs.
- Traveller:** a fitting that slides in a track and is used to alter the angle of the sheets.
- Trim:** to adjust the angle of the sails, by means of sheets, so that they are at their best shape and angle to the wind.
- Turnbuckle:** see Rigging screw.

**U**

- Up tiller:** the movement of the tiller towards the helmsperson if he/she is on the windward side.
- Up bow:** the movement of the bow towards the wind.

**V**

- Veer:** the wind veers when it changes direction clockwise. (see backing)

**W**

- Wake:** the disturbed water left behind a boat.
- Waterline:** the horizontal line along the hull, at which a boat floats.
- Waterline length (WL):** the length of a boat from stem to stern at the waterline.
- Weather helm:** the tendency for a boat to come up into the wind (opposite of lee helm).
- Weather side:** the side of a boat on which the wind is blowing.
- Wetted surface:** the area of the hull under water.
- Whisker pole:** a light pole used on a small yacht to hold out the headsail when running.
- Windlass:** a winch used to haul up the anchor chain.
- Windward:** the direction from which the wind blows; towards the wind (opposite of leeward).

**Y**

- Yaw:** erratic movement of a boat off its course.
- Yawl:** a two-masted boat with the smaller mizzen mast stepped aft of the rudder post.



**BLIND SAILING NEW ZEALAND**

Chief Executive Officer:

Don Mason,

C/- Royal New Zealand Yacht Squadron,

P O Box 46182, Herne Bay,

Auckland, New Zealand

**BLINDNESS GRADING FORM  
FOR SPORTS COMPETITION**



**Blind Sailing  
New Zealand™**

THE NEW ZEALAND COUNCIL FOR  
SAILING FOR THE BLIND AND  
VISION IMPAIRED (INC.)  
(Blind Sailing NZ™)

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## PERSONAL DETAILS

Last Name \_\_\_\_\_

First Name \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_

Nationality \_\_\_\_\_

Date of Birth \_\_\_\_\_

Male/Female \_\_\_\_\_

Medication \_\_\_\_\_

Dosage \_\_\_\_\_

Medication \_\_\_\_\_

Dosage \_\_\_\_\_

## TO BE COMPLETED BY LOCAL EXAMINER

	Visual acuity	
	With correction	Without correction
RE	_____	_____
LE	_____	_____

Visual fields (if applicable)  
Include copy with application!

RE \_\_\_\_\_ (degrees)

LE \_\_\_\_\_ (degrees)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Ophthalmologist

\_\_\_\_\_  
Name

\_\_\_\_\_  
Address

\_\_\_\_\_  
Phone

\_\_\_\_\_  
Fax

\_\_\_\_\_  
Class

This form is based on the IBSA form and is used to determine the Athletes sight classification.

It is important to recognise that this classification is extremely important as the athlete's classification is subject to verification by an IBSA certified doctor.

## INSTRUCTIONS FOR THE 3-CLASS SYSTEM

B1 No light perception in either eye up to light perception but inability to recognise the shape of a hand at any distance or in any direction.

B2 From ability to recognise the shape of a hand up to visual acuity of 2/60 and/or visual field of less than 5 degrees.

B3 From visual acuity above 2/60 up to a visual acuity of 6/60 and/or a visual field of more than 5 degrees and less than 20 degrees.

All classifications in best eye with best correction.

Classifications should be done in an ophthalmological office.

Finger counting should be done with a contrasting background.

If the classification is based on a visual field defect, the athlete must bring a copy of the visual field test.

Visual field should be tested with equipment which allows determination in degrees, with a large object.

## **THE NZCSBVI INC. CONTACT ADDRESS**

### **For Further Information Contact:**

Chief Executive Officer  
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for the Blind and Vision Impaired Inc.

P O Box 46182

Herne Bay

Auckland

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## AN INVITATION TO BE ASSOCIATED WITH NZ BLIND SAILING™ IN ANY CAPACITY

If you are interested in being associated with Blind Sailing NZ™ please complete this questionnaire and return to Chief Executive Officer, NZCSBVI Inc., PO Box 46182, Herne Bay, Auckland or via any of the contacts contained in this Information Pack (fax, phone or email).



I am interested in being associated with Blind Sailing NZ™ as a:

Individual Member (\$10 affiliation):

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Email: \_\_\_\_\_

Group or Association (\$20 affiliation):

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Email: \_\_\_\_\_ Contact Person: \_\_\_\_\_

Anyone else you think might like to receive this Introduction Pack?

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Email: \_\_\_\_\_



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THE NEW ZEALAND COUNCIL FOR SAILING  
FOR THE BLIND AND VISION IMPAIRED INC.



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