



# **BLACK ROCK YACHT CLUB**

## **Small Boat Sailing**

**(Under the auspices of Yachting Victoria)**

### **Course: Basic Boat Handling Level 1 & 2**



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# Introductory Notes

Welcome to small boat sailing at Black Rock Yacht Club.

The course is designed to teach participants how to sail a dinghy. Participants will complete basic boat handling skills identified at levels 1 and 2 in the Yachting Australian Training Scheme. The duration of the course is 24 hours completed in eight sessions.

At the completion of the course participants will be certified as a competent 'beginner sailor' and receive a certificate authorised by Yachting Victoria.

## Course Activities & Instruction

Participants will develop competency in the following:

**Safety** - individual and group safety awareness, safety equipment and clothing;

**Weather** – awareness of weather, wind strength and direction, tides

**Rigging** – identifying parts of a small boat and skill in rigging

**Boat Trim** - balance of the boat

**Launching and recovery** – leaving and returning to shore

**Basic manoeuvres** – tacking, gybing, sailing to windward, sailing downwind, heave-to, learning to sail a nominated course

**Basic Rules** – port; starboard; right-of-way

**Rescue procedures** – capsize recovery drill; towing

**Rope work** – bowline; figure of eight, reef knot, clove hitch, round turn & 2 half hitches

## Course Instruction

**Each three hour instruction period will generally comprise:**

**Theoretical component:** Theory underpinning particular sailing skills taught

**Practical component including:**

Boat Preparation and rigging

On-water sailing

Return to shore

De-rigging & packing boats away

Review of lesson

# Safety

## Personal safety

- At BRYC it is a policy that all participants who venture on the water are required to record their names on a log-sheet.
- Each participant has a responsibility to ensure that safety is upheld at all times ONWATER and ONSHORE.
- In the event of a serious incident occurring, assistance must be sought immediately. The training Instructors at BRYC are qualified in First Aid. In the case of a minor incident or emergency, procedures are followed

## Clothing & equipment

You are advised to wear recommended clothing for the prevailing conditions.

- Buoyancy vest - ***Personal Flotation Device*** - (PFD type 1 or type 2 are essential. Participants are encouraged to purchase their own buoyancy vest. A small number of PFDs is made available by BRYC Training School initially.
- Wet Suit / Shorts to protect the wear & tear of the wet suit
- Warm clothing – (preferably thermal) including long sleeve top & woollen pullover
- Spray jacket
- Suitable footwear to provide a non-slip surface and to wear in the water – runners are suitable
- Headwear - hat, cap, sun visor, sunglasses, UV block out cream
- Always have a change of clothes and a dry towel for comfort after sailing

# Weather

## Awareness of weather, wind strength and direction, tides

- Always check a weather report before sailing
  - Port Philip Local Waters  
<http://www.bom.gov.au/vic/forecasts/portphillip.shtml>
  - Port Philip Beacons  
<http://www.earthsci.unimelb.edu.au/~awatkins/bay.html>
  - Black Rock Weather station  
<http://www.floatingfloors.com.au/BRYC/page.html>
- Respect weather conditions – conditions can change dramatically
- When sailing constantly check for changing conditions and head for shore if necessary

## Wind strength & direction

- Learn to sense the wind on your body - the breeze on your cheeks, the sound of wind in your ears helps to indicate the wind direction.
- “Telltales” on the shrouds or a masthead wind pennant will indicate the wind direction.

## Tides

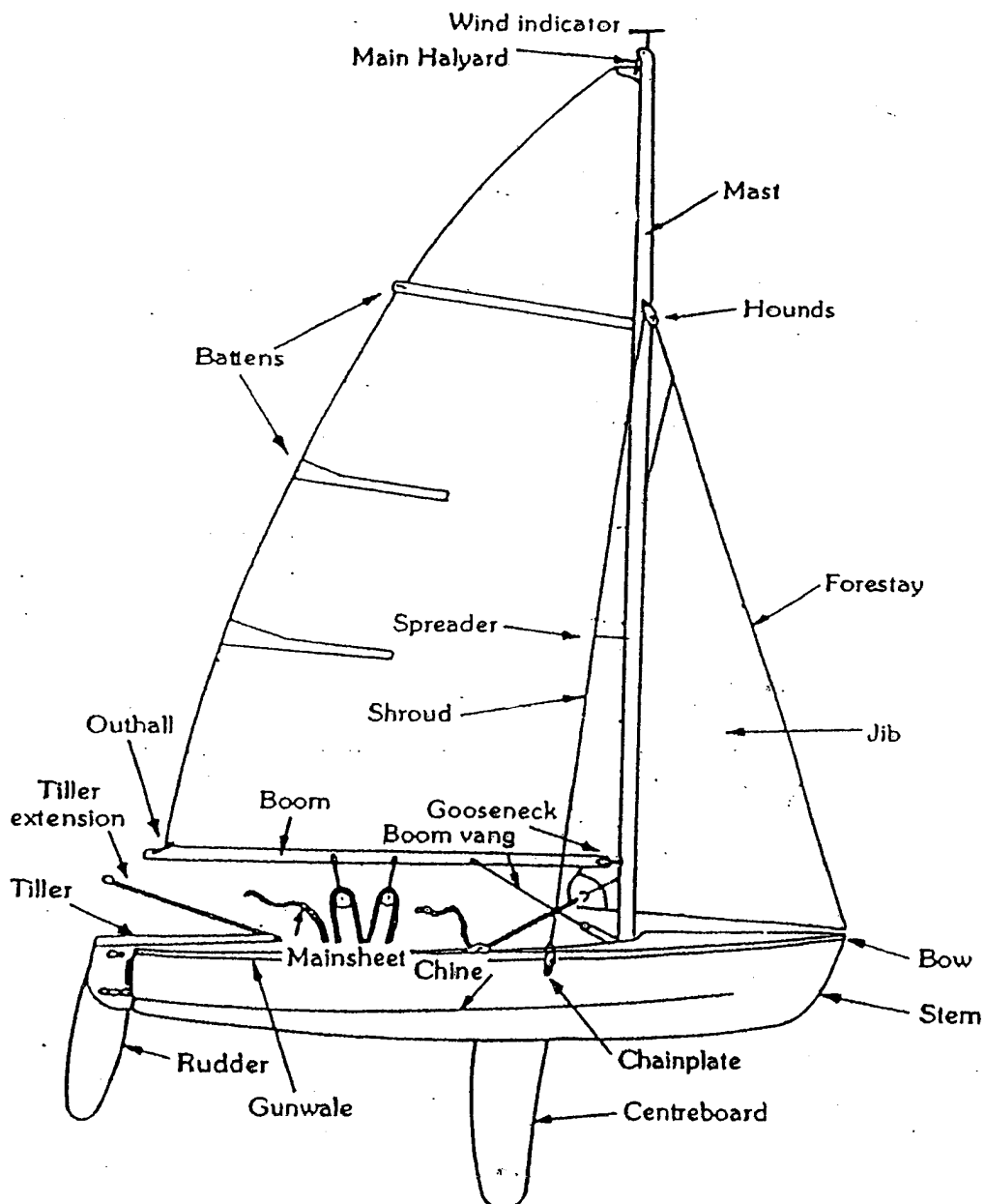
- Tides may influence the wave pattern. Rough water will develop when the wind is against the tidal stream.
- When the wind blows with the tide, the water will be relatively smooth and may give a false impression of the wind strength.

# Rigging

## Identifying parts of a small boat and skill in rigging –

- Mast and stays
- Hull, bow stern, gunwale
- Centreboard, rudder, tiller & tiller extension
- Mainsail, jib and sheets; halyards
- Boom and boom vang

### Appendix: “Guide to Boat Identification”



## Rigging a boat

- Place the boat in the direction of head to wind
- Step the mast; lever up; fasten shrouds to side stays



- Hoist the jib and feed jib sheets through fairleads; tie figure-of-eight knot
- Hoist the mainsail and secure (insert battens in mainsail); attach boom vang, pull on outhaul
- Secure boom along bottom of mainsail and attach to mast at the gooseneck
- Check that centreboard is cleated in the 'up' position
- Attach rudder and tiller
- Fasten hatches and bungs, check for bailer



## **Beware**

- Place all equipment and sails in the boat when rigging, not on the ground
- Do not sit or stand on a boat while onshore
- Allow boom to be free in case of a sudden gust of wind. Do not hold.



## **Launching**

- Have a plan to sail off the shore
- Observe wind direction – launch boat head to wind.
- Hold boat on windward side for crew to hop aboard
- Return trolley to boat rigging area
- Lower centreboard and rudder – beware of water depth
- Pull on / off sails so that boat sails off the shore
- Once clear of shore – crew & helmsman to position themselves for sailing



## **Returning to shore**

- Observe wind direction. Control speed – slow the boat by easing sails
- Raise centreboard and rudder about half way – beware of water depth
- Leave the boat from the windward side Hold boat at forestay connection only while crew retrieves trolley.
- Once boat is on trolley, lower the sails into the boat



# Sail Trim

- Proper sail trim allows the boat to move efficiently on all points of sailing. Effective use of the sail controls – sheets, halyards, outhauls and boom vang – will give your boat more incremental speed in any wind condition and add to your enjoyment.
- For proper sail trim let the sail out until it luffs, then trim it so that there is no luffing.
- Remember – as the wind is constantly shifting by as much as 5 to 10 degrees in either side of the bow, you need to be trimming your sails or adjusting your course to suit. Aim to always keep the sails full.

## Sail Controls

### **Halyards:**

Halyards haul sails up the mast and control the tightness of the luff. When rigging the boat, raise the main and jib so that the luffs are tight and without wrinkles.

### **Sheets:**

Sheets control the trim of the sail. Easing the sheets de-powers the sail.

### **Outhaul:**

This sail control tightens the “foot” of the mainsail along the boom. The stronger the wind the more tension is required. Light wind = light tension.

### **Boom Vang:**

The boom vang is a block and tackle rigged between the mast base and a point on the boom about 25 % aft of the mast. It is used to keep the boom dampened so that wave action does not cause it to bounce and spill the air out of the mainsail. Light breeze = light tension; strong breeze = stronger tension.

## **Balance & Trim:**

Dinghies are unstable moving platforms, which require the crew to act as mobile ballast and actively move their body weight around the boat to correctly trim and balance the boat to achieve the yacht's best sailing angle through the water.

To counteract the heeling movement of the boat caused by wind pressure on the sails, the helmsman and crew need to move their weight laterally across the boat.

As the wind pressure increases the crew needs to move to the windward side of the boat. As the wind pressure decreases the crew needs to move into the boat and even across to the leeward side.

The helmsman is somewhat restricted by holding both the tiller and mainsheet so it is up to the crew to make the rapid adjustment of body weight.

## **Fore & Aft Trim:**

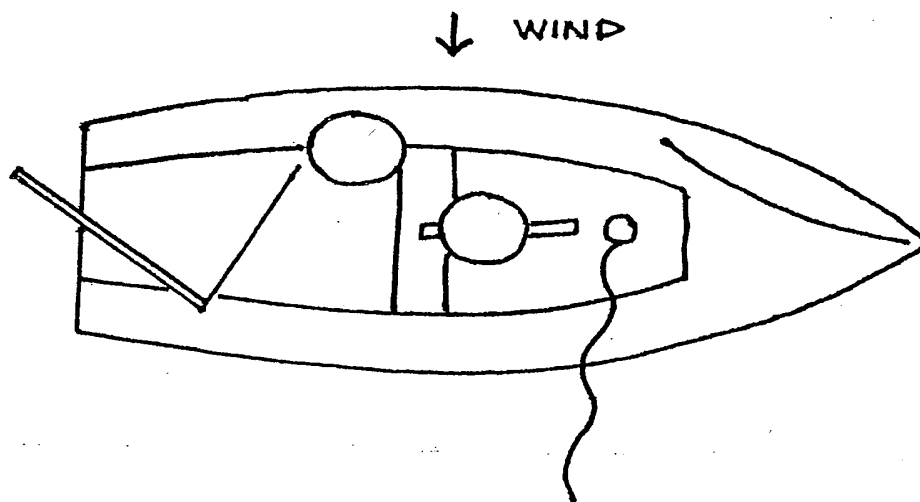
The crew needs to position themselves in the centre of the boat next to each other either side of the seat. By sitting centrally the weight is kept away from the ends of the boat, which has the effect of not slowing the boat down or making it hard to handle. To achieve sitting in this position the helmsman must use the tiller extension.

## **‘Running Free’ or ‘Downwind’ –**

The wind is at 180 degrees (Behind boat). The main is out as far as possible. The jib may be blanketed by the main or drawing on the opposite side (called goosewinged).

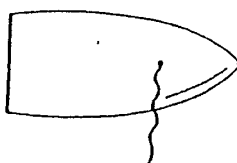
## Heaving To –*diagram*

### Appendix: “Heaving To”



#### Effects of — Salls

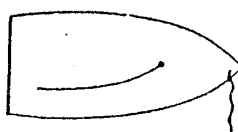
Jib sheeted  
on



Boat heads  
this way



Mainsail sheeted  
on



Boat heads  
this way



## **Points of sailing –**

### **Sailing to windward – Close hauled – On the wind**

The wind is 40 to 45 degrees off the bow. Sails are trimmed as close to the boat's centreline as possible.

### **Close Reach**

The wind is about 55 to 60 degrees off the bow. The main is sheeted with the boom approximately at the transom corner. The jib is trimmed by its luff.

### **Broad Reach**

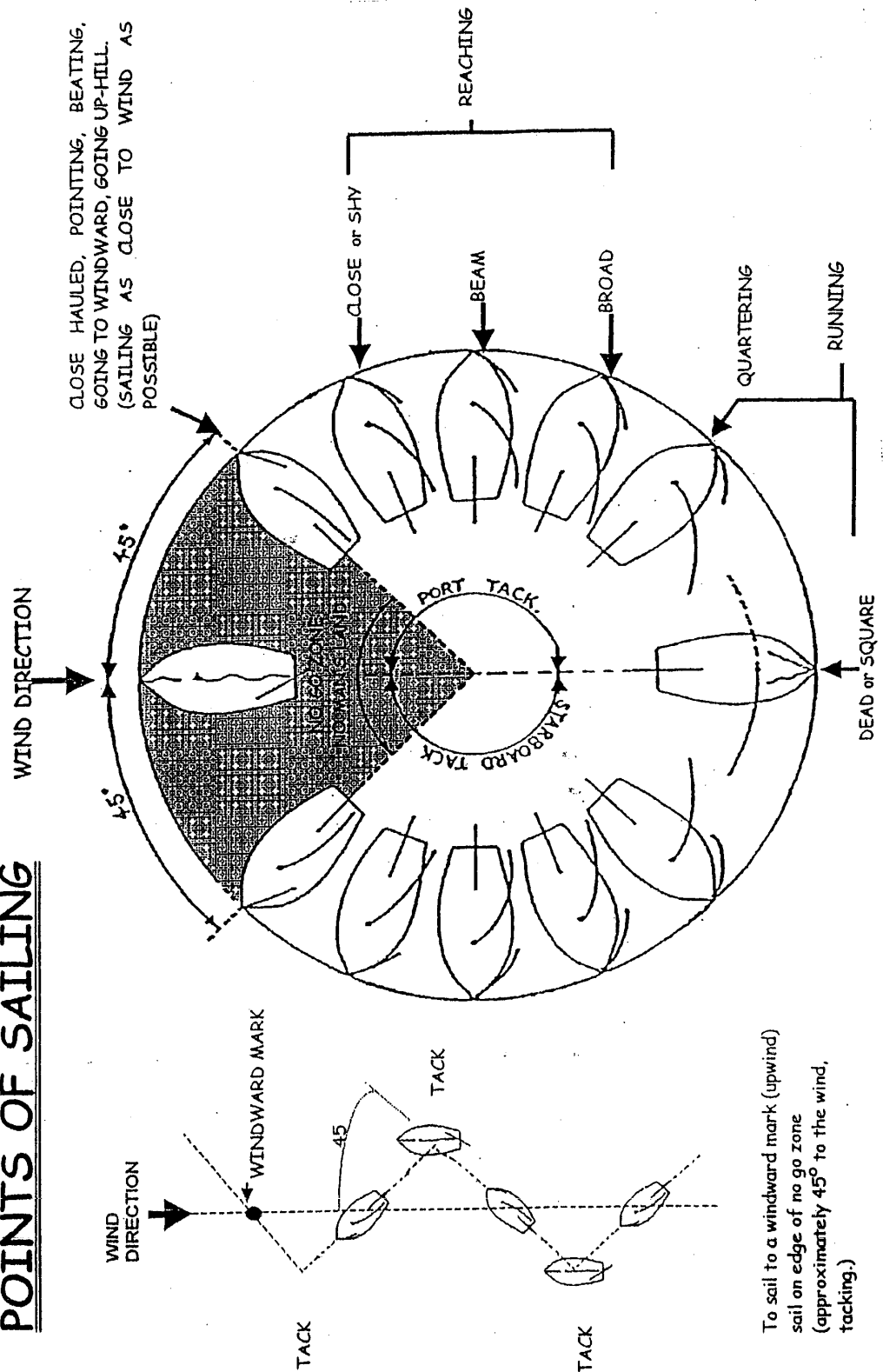
With the wind at about 135 degrees, the boat is off the wind. The main is set about halfway between the transom and shrouds. The jib is full and drawing wind.

### **Running free or Downwind**

The wind is about 180 degrees (behind boat). The main is out as far as possible. The jib may be blanketed by the main or drawing on the opposite side.

## Appendix: "Points of Sailing"

### POINTS OF SAILING



# **Basic sailing manoeuvres**

## **Capsize and Rescue procedures**

**Capsizing is a part of sailing – in a capsize stay with the boat at all times**

As the boat capsizes;

- Un-cleat the sheets – if possible
- Do not jump out of the boat - fall into the water with the boat
- If caught under the sail - stay calm and swim to the edge of the sail
- Confirm that your sailing partner is OK
- Hang onto the boat at all times
- Crew to go to bow of boat and point head to wind, hold onto forestay
- Helmsman to go to the centreboard and place weight on it to lever the boat upright
- As the boat is righted, the helmsman (or crew) should pull him/herself into the boat and gain control
- Helmsman then assists crew into boat from windward side
- Bail water out of boat if necessary
- Set sails and continue to sail

## **Towing & basic rescue**

Knowing the rules of towing is an essential skill:

- Pick up the tow-rope as it is dragged past your boat
- Put the tow-rope through the towing ring at the bow
- Turn tow-rope around mast twice - DO NOT ATTACH tow-rope
- Hold tail of tow-rope with your hand
- Always steer to the same side as you picked up the tow-rope
- Raise the centreboard half-way
- Move towards back of boat and balance
- Stay aware of other boats around you as you are being towed
- Signal for the towing speed to be lowered if you are getting out of control.
- To release the tow-rope, signal to the driver

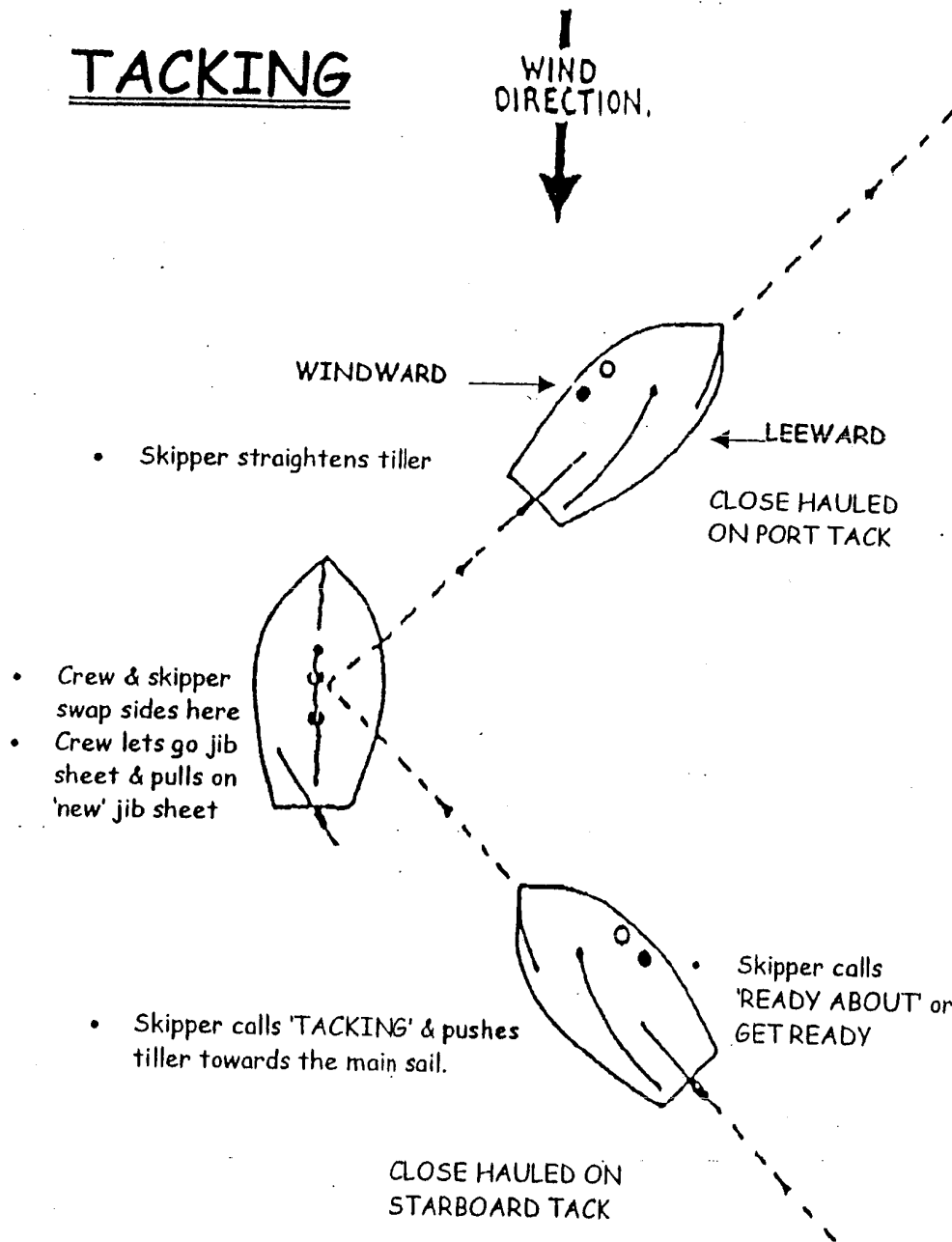
## **Tacking:** commonly referred to as ‘going about’. *See diagram*

- A boat cannot directly sail into the wind; it can only reach its destination upwind by sailing at approximately 45 degrees to the direction of the wind. The boat is forced to tack to follow a zigzag course with the wind first on one side then on the other side of the boat. When changing course this is referred to as ‘**going about**’ or ‘**tacking**’
- The helmsman uses the telltales on the jib sails to sail as close to the wind without luffing.
- The helmsman gives the crew warning of intention to tack by calling ‘**Ready about**’.
- Hearing the call the crew releases the jib sheet from the cleat, holds it tight and responds ‘**Ready**’.
- The helmsman then call ‘**lee ho**’ and pushes the tiller away to the leeward side
- As the bow of the boat comes up towards the direction of the wind the boom automatically comes to the centreline of the boat.
- At this point the helmsman moves under the boom and, while facing forward, turns to sit on the new windward side. At the same time the helmsman must straighten the tiller to the centreline of the boat.
- The crew releases the jib as the boat comes head to wind and moves to the new windward side while balancing the boat and at the same time pulling on the new jib sheet and cleating it.
- Once the tack is completed the helmsman changes hands with the tiller and mainsheet. The boat is now on a new tack.

### **Tacking Points to remember**

- Push the tiller away to commence the tack.
- Wait until the boom comes to the centre of the boat, before moving across the boat.
- Centre the tiller as you move across the boat.
- Sit forward in the boat once you are on the new tack.

# TACKING





# Gybing

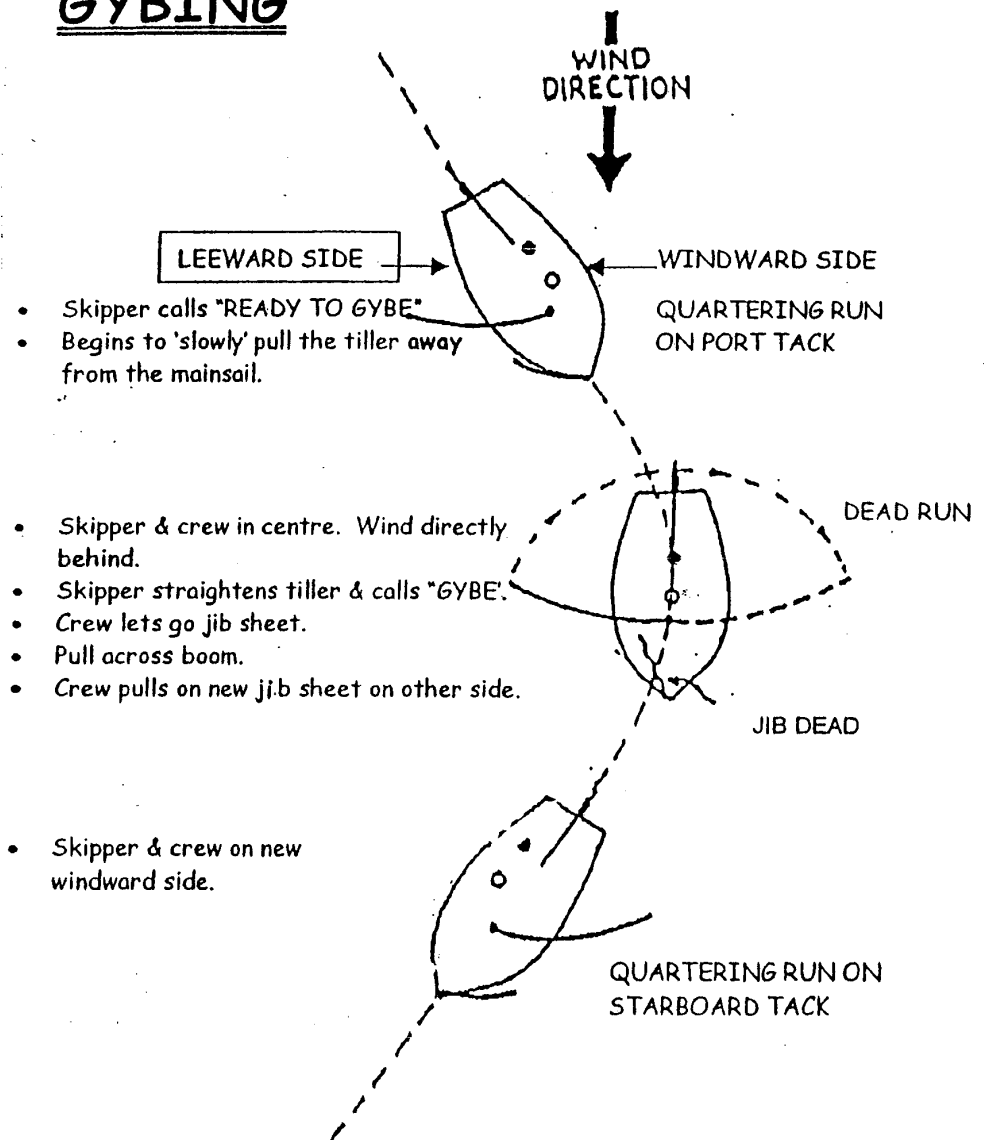
Gybing is a co-ordinated movement to turn the boat, and at the right moment, change the [position of the boom and mainsail. The gybe manoeuvre changes tack downwind, crossing from one tack to another where the stern of the boat passes through the direction of the wind. *See diagram*

- To prepare to gybe, both the mainsail and jib are eased right out. The boat is then on a run with the wind coming across the windward back corner of boat.
- The helmsman is sitting on the windward side and the crew is positioned to balance the boat either sitting on the middle or on the windward side.
- The helmsman pulls the tiller towards him until the boat has the wind directly behind. The tiller is then straightened.
- The helmsman calls '**ready to gybe**'. When the crew acknowledges when in position and ready with the jib.
- The helmsman then calls '**gybe ho**' and pulls the tiller towards him and at the same time grabs hold of all the mainsheet lines.
- The mainsheet is then used to pull the boom and mainsail across to the new tack.
- As the boom [passes over the helmsman's head the tiller must be straightened so that the force of the boom and mainsail reaching the other side of the boat, pushes the boat forward on a straight course.
- If the tiller is not in the centre of the boat, the boat will turn very quickly and may result in the boat capsizing.

## Gybing Points to remember

- Boat must be facing directly downwind at maximum speed
- Pull tiller towards you to commence a gybe
- Use mainsheet to pull boom across
- Straighten tiller as boom passes overhead.

# GYBING

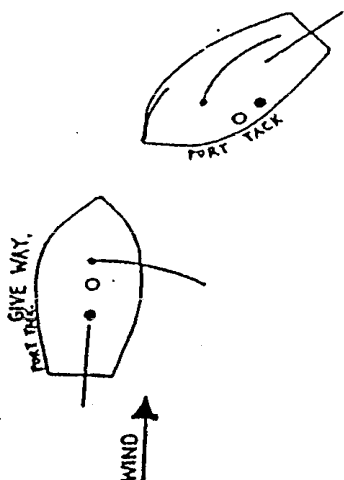


# Basic "Road" Rules

## RULES OF THE ROAD

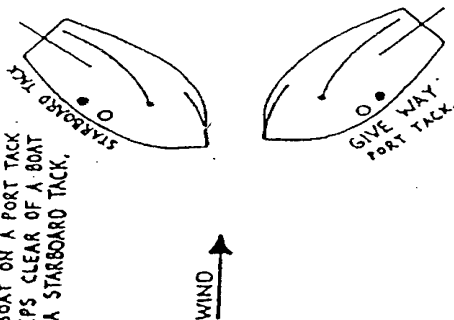
### PASSING HEAD ON ON THE SAME TACK.

A BOAT TO WINDWARD MUST KEEP CLEAR OF A BOAT ON THE SAME TACK WHILST PASSING HEAD ON.



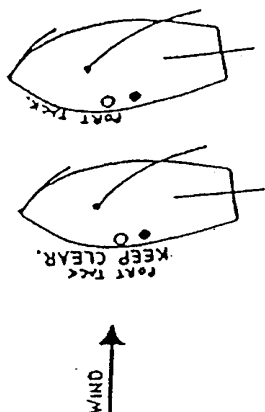
### PORT AND STARBOARD TACK.

A BOAT ON A PORT TACK KEEPS CLEAR OF A BOAT ON A STARBOARD TACK.



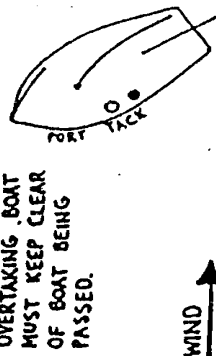
### WINDWARD AND LEEWARD.

A WINDWARD BOAT KEEPS CLEAR OF A LEEWARD BOAT.



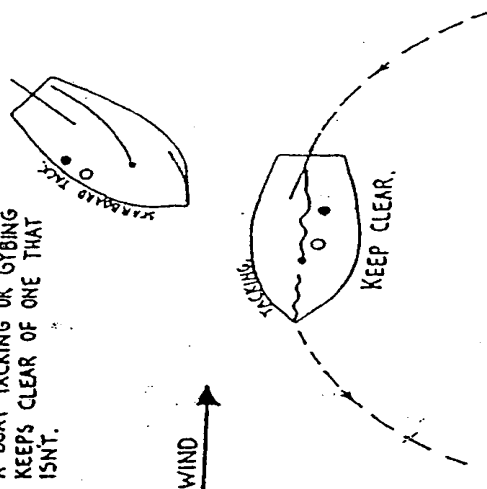
### OVERTAKING.

OVERTAKING BOAT MUST KEEP CLEAR OF BOAT BEING PASSED.



### TACKING OR GYBING.

A BOAT TACKING OR GYBING KEEPS CLEAR OF ONE THAT ISNT.



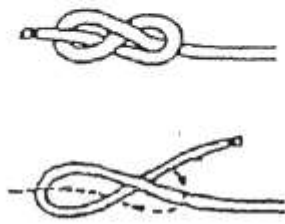
### RIGHT OF WAY

Skipper must take every possible action to avoid collision, ie. right of way must not be demanded if a collision is imminent.

# Major Knots

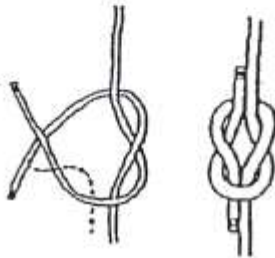
## MAJOR KNOTS AND THEIR USES

### FIGURE OF EIGHT (STOPPER KNOT)



A stopper knot. Prevents sheets running through blocks

### REEF KNOT

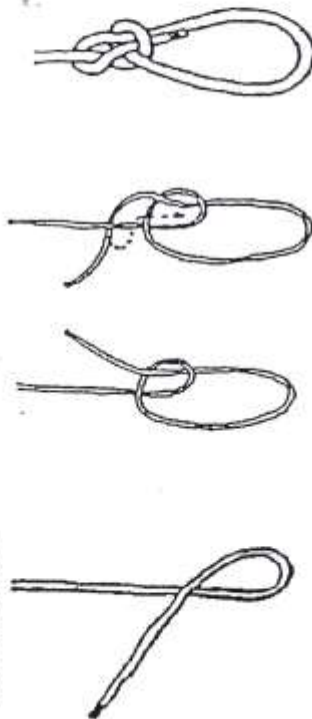


Used for reefing points, sail ties etc.



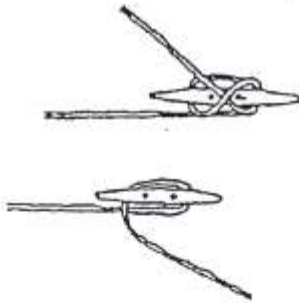
Life Beiric ACTIVE FOR LIFE VicHealth

### BOWLINE



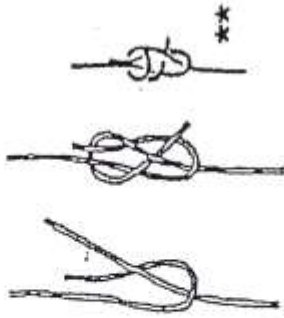
Used for tying the mainsheet to the eye of the mainsheet pulley block. Will not slip

### MAIN OR HALYARD TO HORNED CLEAT



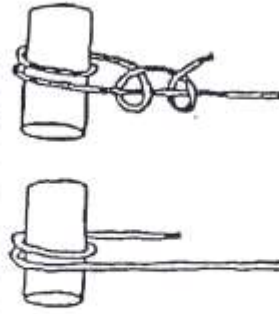
The end of the halyard is then rolled up neatly And wedged between the Mast & the standing part of the halyard.

### SHEET BEND



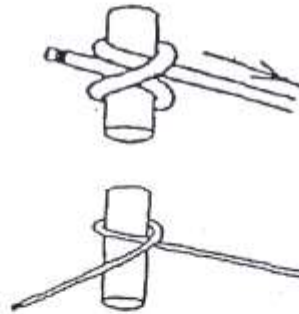
For joining lines of different thickness.  
\* Double sheet bend for safety

### ROUND TURN & 2 HALF HITCHES



Simple & Safe way of securing a line to a spar, ring or shackle.

### CLOVE HITCH



Used for securing a rope to a spar or rail.

*If you have the desire to sail,  
the adventure of sailing is available to you.*

