

# How to Sail a Boat

A sailing primer for novices



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# Introduction

Sailing is fun. But – a lot of people are put off sailing by the complexity and strange terms.

*What exactly is a cunningham and how do you make it fast?*

Most people who get on a boat for the first time are baffled by the terminology and the obscure, arcane language. Yet, there is a point to this language. Sailing has evolved over hundreds of years and, deep within the heart and mind of the universe, there is a reason for all this ‘stuff’.

Quotes from “Overheard Sailing” (<http://www.overheardsailing.com>) :

**Dock person :** *Ok, Take this line and secure it to your aft cleat.*

**Dock person :** *No! At the STERN of the boat!*

**Dock person :** *NO! NO! That CLEAT there. There, on the back of the boat!*

**Dock person :** *THE F--KING SILVER THING!!!*

-and-

**Crew:** *It's all very well, but you're not making any friends here. I mean, the language alone is alienating. What the hell is a halyard? You yell at me to pull it, you yell at me to let some sheets go. I'm not impressed. Teaching should be complemented with sign language - pointing, for example. Call it 'thingy', call it 'that'. Complement it with direct action requests, i.e. 'pull' and 'let go'. Then, people will reach out for you.*

**Skipper:** *<sigh> Pull that, will you?*

Yes, it's true – there's a lot of bollocks that goes around sailing. If you listen to two 'salties' talking about sailing you might conclude that they are talking in another language or, at the very least, in another time.

I wrote this guide because I like sailing and I meet a lot of people who want to try sailing. The problem is they don't know much about it and are daunted by the prospect of setting foot on a boat. Even if they manage get on a boat often they are so confused by the whole thing that they never come back.

Hopefully this guide will let you understand the basics of sailing, let you talk about sailing without feeling like an idiot and, most importantly, make you useful on a sailing boat.

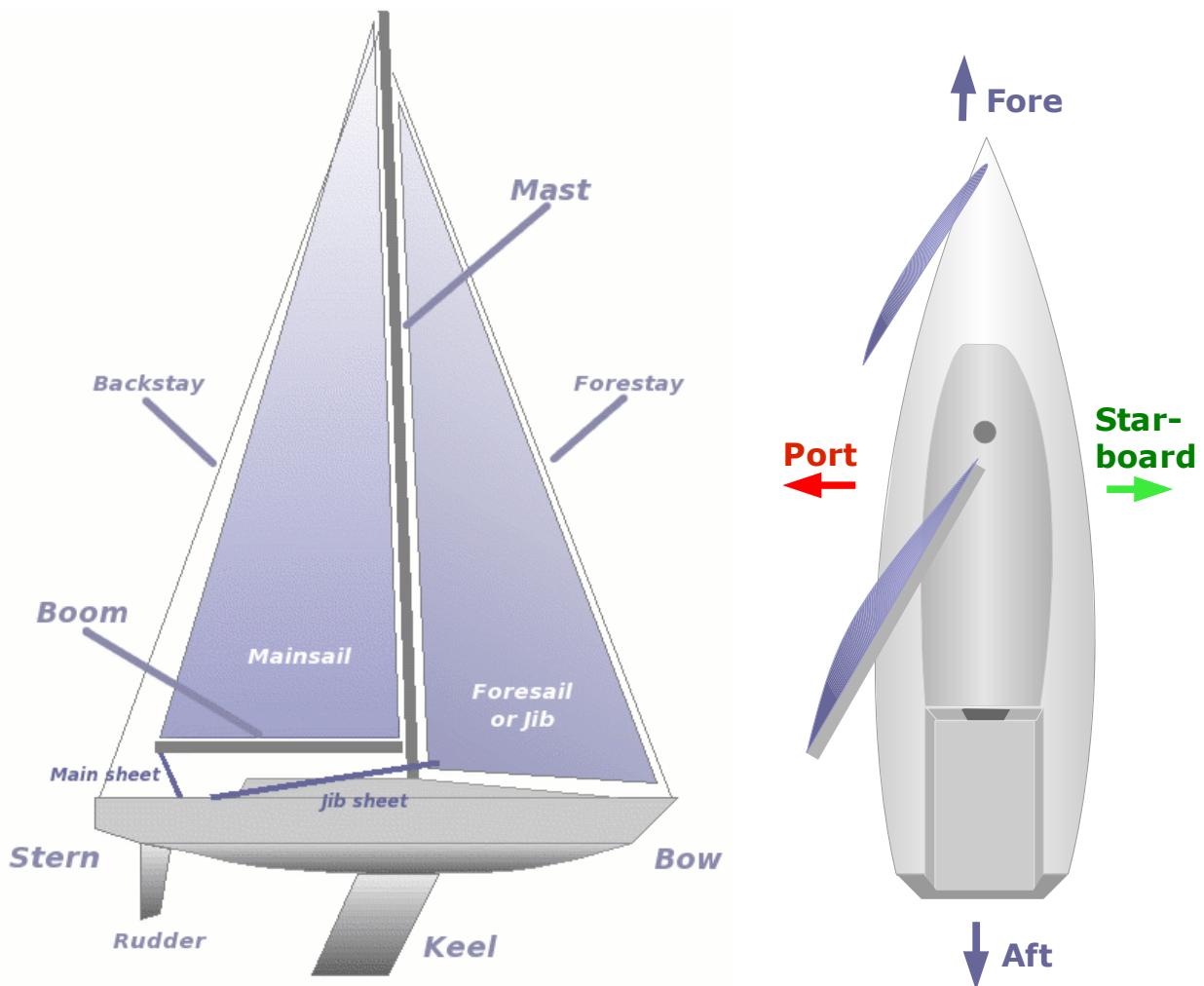
## Chartering

I also wrote this guide because I often go cruising with friends who have never sailed before.

If they've never stepped on a boat before, they feel as useful as a one-legged man at an arse kicking contest. So, before we go, I distribute this guide so they understand what's happening and, more importantly, can do some of the work.

Skippers should feel free to use this guide with new crew, on the proviso that : its source is acknowledged (i.e. me); it is not used for commercial purposes; if you take and part of it to modify you must distribute it under a similar agreement.

# Parts of the Boat



## Parts of the Hull

- Bow** – pointy bit at the front the boat
- Stern** – blunt bit at the back
- Cabin** – lump in the middle you sleep in
- Keel** – big heavy fin-thing on the bottom of the boat that keeps it from flipping over
- Rudder** – a movable fin at the back that steers the boat, connected to a wheel or tiller for steering

## Sails, Stays and Spars

- Mast** – tall vertical stick the sails hang off
- Boom** – horizontal stick hanging off the mast
- Forestay** – front wire keeping the mast up
- Backstay** – back wire keeping the mast up
- Sidestay** – work it out genius...
- Mainsail** or **Main** – the big sail behind the mast
- Foresail** or **Jib** – the ‘little’ sail in front of the mast (sometimes known as a genoa, ‘jennie’ etc)

## Sheets and Halyards

- Main sheet** – rope for controlling the mainsail
- Jib sheets** – ropes for controlling the jib, usually one on either side of the mast
- Halyard** – a rope for raising or lowering a sail

## Other

- Tiller** – a stick for steering, more fancy than a wheel

## Directions

- Fore** – towards the bow
- Aft** – towards the stern
- Port** – to the left as you face the bow
- Starboard** – to the right as you face the bow

(NB: this is important, it might sound silly but consider this – there is only ONE port on a boat, but there could be lots of lefts - depending on which way everyone is facing)

# Sails and Rigging

## Parts of sails

This diagram shows the parts of a sail on a typical sail (this is the mainsail).

The top corner is called the *head*, the bottom corners are the *clew* and the *tack*. On this sail, the tack is close to the mast and the clew is at the end of the boom.

The sides are called the *foot* at the bottom, the *luff* at the front near the mast and the diagonal *leech* at the back.

## Rigging

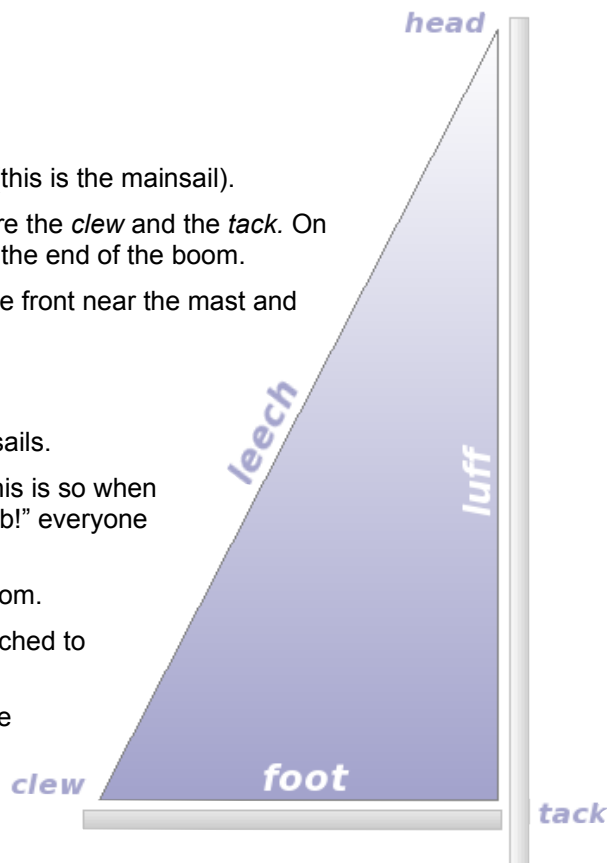
Rigging is the ropes and wires on a boat involved with sails.

Every 'rope' is named for its function and/or location. This is so when the skipper says "dump the mainsheet and take in the jib!" everyone knows which rope to let go and which one to pull.

A *topping lift* is used to raise or lower a spar, like the boom.

A *halyard* raises or lowers a sail and would thus be attached to the *head* of the sail.

A *sheet* is a rope that controls the angle of the sail to the wind. It is usually attached to the *clew*.



## Sail terminology

- *Take in / sheet in* – to tighten or pull on a rope
- *Hard on* – as tight as a sheet or sail will go (e.g. "bring the jib hard on")
- *Let go / ease* - to loosen or let out a rope (e.g. "ease the jib sheet")
- *Dump* – to let go all at once, to ease as far as it will go
- *Luffing* – when a sail flaps at the front edge (i.e. the luff)
- *Working sheet* – a sheet that is tight, because it is holding a sail against the force of the wind
- *Lazy sheet* – a sheet that is loose, because it is doing nothing (no force)

## The two types of sails

By and large you'll only have to deal with two kinds of sails : the main and the jib. As you progress you might deal with other kinds of sails including different kinds of jibs and speciality sails like storm sails or spinnakers.

For now we'll concentrate on the main and the jib.

The mainsail is the big sail behind the mast and is obviously very important to how the boat works. The mainsail is controlled by a single mainsheet that usually runs to a series of pulleys in the middle of the cockpit. The pulleys supply the extra force need to move the big mainsail when it is full of wind.

The jib (in front of the mast) is equally important to how a boat sails, especially when it sails into the wind. The jib is controlled by two sheets which run down each side of the boat. When the boat is sailing one of these, the working sheet, will be under load as it holds the force of the wind in the sail. The other, the lazy sheet, will be lying slack – essentially doing nothing. When the boat changes direction the lazy sheet and the working sheet will swap sides. The lazy sheet will hold the sail against the force of the wind and become the working sheet and the working sheet will go slack and become the lazy sheet.

We'll look at this in more detail later.

# Winches

The forces involved in sailing are sometimes more than a single human can handle.

To help we use winches.

A winch is a mechanical device which multiplies the force you can put on a rope. Because of the forces involved, winches can be dangerous.

**You should keep your fingers clear of ropes on winches if you don't want to lose them!**



## Loading a winch

Winches usually work in one direction only.

Generally it is clockwise, but not always. The easiest way to check is to put one hand on the winch before you put the rope on and turn it with your hand. The rope must go on in the same direction as it turns.

To 'load' a winch - wind the rope around the winch in the direction it turns, starting from the bottom and moving up. Each turn must be flat against the surface of the winch and must not 'ride over' another turn.

The more 'turns' or rope around a winch, the more friction and the more holding power there is. You should use a minimum of three or maybe four turns (experienced sailors might use less). The winch pictured here is 'self-tailing'. It has a set of 'jaws' at the top into which the rope may be thrust to secure it. If a winch is not self-tailing the loose end of the rope must be either held or or *secured to a cleat*.

## Cranking a winch

To supply extra force, you can put a handle on the winch. The handle goes in the top of the winch and it can then be cranked. Generally you can crank the handle in both directions. The body of the winch will still turn one way, but the two directions of the handle will supply different speeds and different forces. If you can't crank a handle one way, try cranking it the other.

**Never leave a handle in a winch!** They can be knocked overboard and they are expensive. Always take them out and put them away so you can find them next time. Usually there is a lever on top of the winch which you must move or depress to take the handle out of the winch.

## Easing a winch

To ease a rope on a winch it is not necessary to take it off the winch. The rope can be eased simply by taking the loose end of the rope and feeding it into the winch. As the coils of rope become slack, the tension on the other side of the winch will pull the coils slowly out, allowing you to ease the rope under control.

# Jammers, Cleats and Stuff

Ropes tend to flop around unless they are *secured or made fast*.

A *jammer* is a mechanical device that secures a rope by clamping it between two jaws. The jaws are activated by a lever on top of the jammer. To open a jammer, lift the lever and push it completely forward until it is parallel with the rope. Halfway is not good enough! To close it, pull it back and down until parallel with the rope.

If the jammer won't open normally this means the rope is under tension. You need to take the tension up on a winch before the jammer will open. Trying to open it under tension could be dangerous.

A *cleat* is a metal hook around which a rope is wrapped to secure it. There is a particular figure eight method that is used on cleats which is difficult to show here. Ask someone who knows how to use a cleat to show you. Note that ropes are not tied to a cleat with a knot, they are simply wrapped around them so they can be unwrapped when needed.



**Jammer**



**Cleat**

# Sailing Basics

When the wind blows, the boat wants to move forward and sideways.

The keel prevents the boat from going sideways, so it goes (hopefully) forwards :

This is easy to understand when the wind is behind the boat:

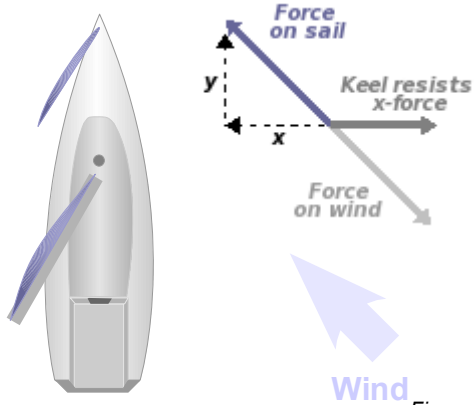


Figure 3

But is more difficult with the wind in front :

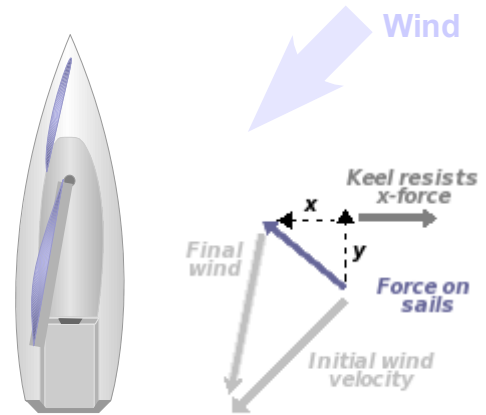


Figure 4

The angle of the sails is important. They must be set at the right angle to the wind to generate the most lift. The action of adjusting the sails is called *trimming* them. But a boat cannot sail directly into the wind. If the wind gets too far forward (in front) of the boat it will not generate enough 'lift' and the boat will stop.

## Points of sail

The relationship of a boat to the direction the wind is blowing is called the 'point of sail' :

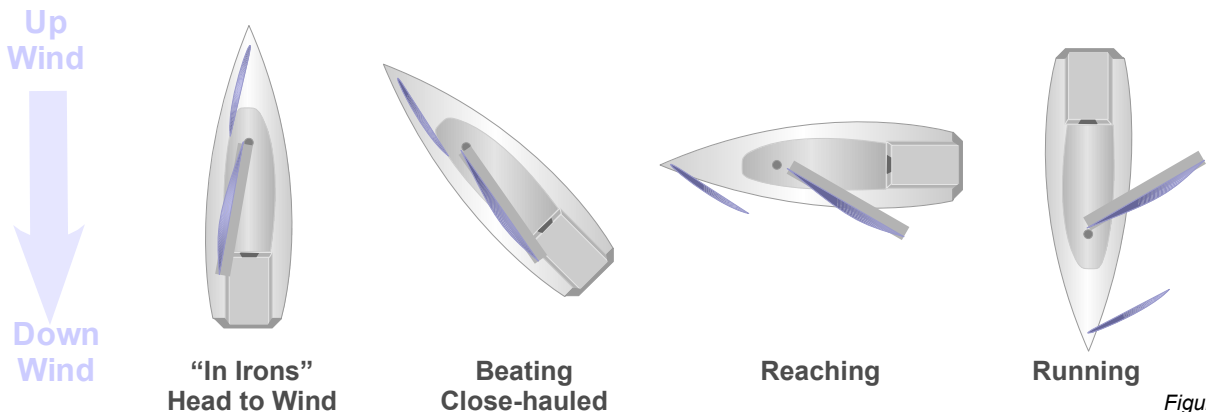


Figure 5

A boat cannot sail directly into the wind, if it does it will be *in irons* - it will stop moving. A modern boat can sail at an angle of about 45° to the wind, any closer and it will lose speed. The closest it can go is a *beat* when the boat would be said to be *close hauled*.

If the wind is coming from the side of the boat it is *reaching*. From 90° to the axis of the boat it is on a *beam reach*. If the wind is forward of this it's a *close reach* and aft of this a *broad reach*. If the wind is behind the boat it is *running* and if it is directly behind the boat it is on a *dead run*.

*Downwind* is sailing "with the wind" - in the direction the wind is blowing. *Upwind* is against the wind.

Downwind and upwind also include anything in that direction from your boat (e.g. Crew : "Skipper, can you see that bloody great rock downwind of us?" - Skipper : "What rock?").

**You can think of the wind being like a hill. Upwind is uphill from you and will take a lot of work to get there. Downwind is downhill and is much easier to get to.**

## Sailing into the Wind

Sailing downwind is easy. You hang the sails out and go!

Sailing upwind is a bit more complicated.

From the previous section you'll know that a boat can't sail directly into the wind. But quite often (and you'll be surprised how often) you'll want to go somewhere which is upwind from you. i.e. The wind is blowing directly from where you want to go. How can you get there?

You'll have to sail a zig-zag course :

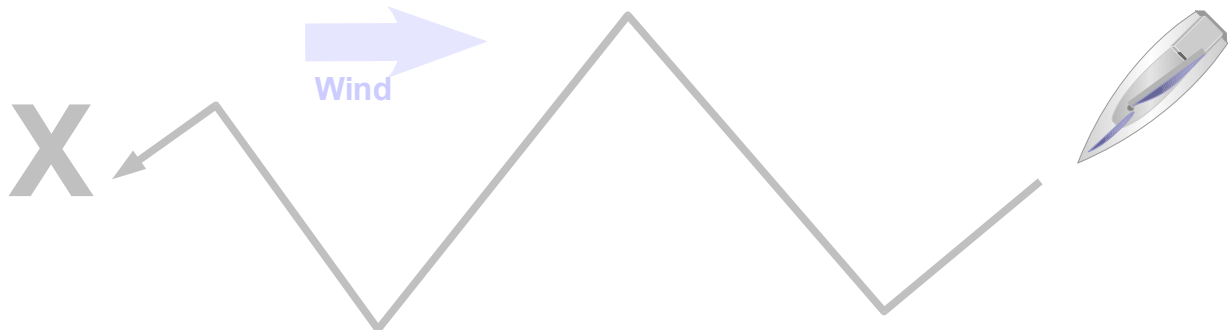


Figure 6

Each one of these zigs or zags is called a *tack* (see below). The faster and more efficiently you can tack, the faster you will get to your destination.

## Tack, Tack, Tacking!

“Tack” has a number of meanings :

- A boat is on either the “port tack” or “starboard tack” depending on where the wind is coming from. If the wind is coming from the port side of the boat you are on a port tack. If it is coming from starboard, you are on a starboard tack
- The verb “tacking” or “to tack” is the action of turning the boat so that the front of the boat passes through the wind, after which the wind will be coming from the other side
- A tack is also the time spent on a particular tack of sail (e.g. A short port tack followed by a long starboard tack)

This makes a kind of sense – e.g. You sail along on a particular port ‘tack’. To change to a starboard ‘tack’ you must ‘tack’ - you turn the front of the boat through the wind. You will then sail on the starboard tack for a while before you tack again.

Clear as mud? Good.

- Finally, the “tack” is also the bottom edge of a sail (see ‘Parts of the Sail’)

## Adjusting sail

Adjusting a sail is called *trimming* it.

Sail trim is a complicated subject and a poorly understood one. Many theories abound and every sailor will have different advice for you on how you should trim your sails. They will all disagree. This is what makes sailing fun.

A simple rule of thumb is : ease the sheet until it starts to ‘luff’ and then pull it in “a little bit”. To luff means to flap at the front edge (i.e. at the luff). If a sail is too tight it will ‘luff’ and the front edge will become loose and floppy. A taut, smooth sail that looks like the wing on an aeroplane is probably doing its job.

In general, the “closer to the wind” you sail the tighter you will have to sheet in your sails. This means that when you sail into the wind you will pull the sails in tighter than if you sail with the wind behind you.



# Tacking and Gybing

There are two main manoeuvres in sailing :

*Tacking* as we've already discussed, means putting the front of your boat through the wind.

*Gybing* is turning the other way – putting the back of the boat through the wind.

With both manoeuvres, the turn will put the wind on the other side of the boat (you will be on the other tack).

This means you must do something with your sails or they will flop about uselessly.

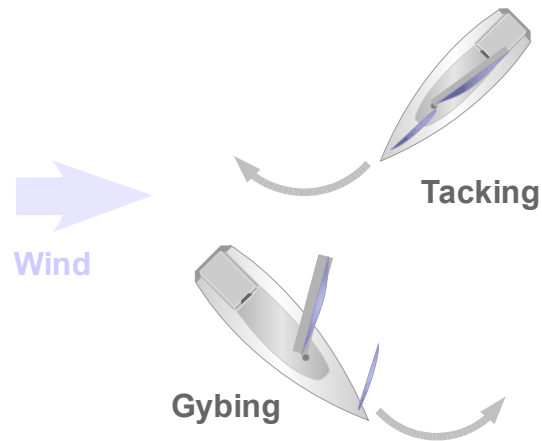


Figure 7

## Tacking

To tack the boat, the helmsman turns the wheel or pushes the tiller and the boat turns through the wind.

But what about the sails?

After a tack, the sails will be on the wrong side of the boat and the boat will stop. Someone must move the sails to the correct side of the boat. The mainsail will largely take care of itself. It will flop over to the other side. But the jib must be moved across manually. Someone will have to let the *working sheet* off and pull in the *lazy sheet* to make that the new working sheet.

Timing is important - because the boat has to turn through the wind, if it does it slowly, it might stop.

Coordination is the key :

1. The skipper announces a tack - "Ready to tack?" or "Ready about?"
2. The crew prepare, usually one takes the lazy sheet and one the working sheet
3. The skipper starts to turn announcing - "Coming about!" or "Helm's-a-Lee!" or some such jargon
4. As the jib luffs (flaps) the working sheet will go slack and the crew member can let it go, at the same time the lazy sheet can be pulled in (quickly!)
5. If necessary the lazy sheet (now the new working sheet) can be tightened by using the winch

With an inexperienced crew a skipper might say "Lee-ho!" (or something) at step #4 - to let them know when to move the jib. The timing is important. If they go too soon the boat will stop. If they leave it too long the boat will stop as well. It's also a good idea to have a bit of speed up before you try this as the momentum will help carry you through the turn.

## Gybing

Gybing is more dangerous than tacking.

In fact gybing can be downright scary.

Why? Well, when you tack the boom only has a little way to move. With gybing it's different.

But look at Figure 6 – a gybe – see where the boom is in position A? And see where it will end up, after the gybe, in position B?

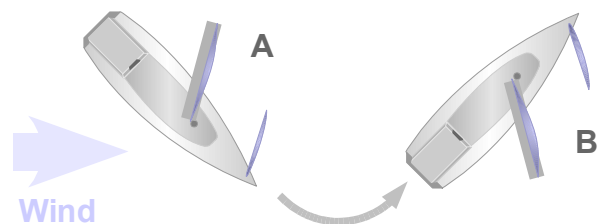


Figure 8

It has to swing nearly 180° across the boat.

If you do this wrong, you could rip the mast out of the boat or knock someone overboard.

The procedure is the same as for tacking with some important additions :

- 3a. As the skipper turns, someone pulls in the mainsheet until the boom is in the middle of the boat
- 4a. At the point where the jib kicks over the mainsheet is released (slowly and with control) until the mainsail is out wide and the boat is moving again.

If you're a novice, don't try this in strong winds. It's easier just to do a long loop and tack (think about it!)

## What can I do?

The most common task a new crew member is called upon to do on a boat is to help tacking the jib. One person will need to pull the new jib sheet on (tighten it) while someone lets the old one go (loosens it).

To sheet in a *lazy sheet* in a tack:

1. When the skipper announces he intends to tack, get ready : put two or three turns of rope on the winch (make sure it's on the right way!) and hold the loose end in both hands
2. When the jib flaps or the skipper says so, pull in the sheet quickly until it is tight
3. When you can't pull it in any more you'll have to grind it. Put another turn around the winch if you need to (you should have at least three) and put the rope in the 'jaws' of the self tailing apparatus
4. Insert a handle into the top of the winch and start grinding until the sail is 'set'

If your winch is not self-tailing you will need to continue to pull on the rope with one hand while grinding with the other. Often another crew member can grind while you 'tail' (pull) the sheet.

To let go a *working sheet* during a tack :

1. When the skipper announces he intends to tack, get ready : take the rope out of the 'jaws' of the self tailer or uncleat it but keep it with 2-3 turns on the winch, more if it is windy
2. When the jib flaps or the skipper says so, flip the remaining turns off the winch, keeping your fingers clear and let the rope run out smoothly. The other person should be pulling it across now.
3. If you are needed, help the other person by putting a handle in their winch and grinding for them

Remember both of these things should happen nearly simultaneously. The faster you get the jib moved over the faster the helmsman will be able to steer a new course.

# Miscellaneous Stuff

## Putting sails up and taking them down

One job you'll have to do a lot is putting up a sail or taking it down.

Normally a sail will be fastened to itself or the boom with *sail ties* to stop it flopping around. These must be removed before anything else happens. Be careful in strong wind as the sail might catch the wind and fly around.

It might also be necessary to attach the *halyard* or the *sheets* to the various corners of the sail. A halyard is normally attached with a *shackle*, a kind of steel pin. When moving a halyard you must hang on to it at all times – if you let it go, it might slip up the mast and someone will have to go and fetch it!

On a jib, a sheet is normally tied on with a knot called a *bowline*. On a main, the mainsheet is normally permanently attached to the boom or attached with shackles.

Once the halyards and sheets are attached and any sail ties have been removed, the sail may be raised by pulling on the halyard.

Mainsails are heavy. Normally one person stands at the mast and *sweats* the halyard – they take a big handful of rope and haul the sail up – while another person takes in the slack on a winch.

Once a sail is raised as far as it will go by hand it will probably have to be winched the rest of the way. It is good practice to keep the halyard on a winch as you raise it, then you only need to insert a winch handle and crank it the rest of the way up (see the section on winches).

To raise the mainsail :

1. Remove any sail ties
2. Attach the halyard and sheet if necessary
3. Put the main halyard on a winch
4. Open any jammers which might be securing the main halyard
5. Turn the boat into the wind (this will keep the wind out of the sail while you raise it)
6. While one person sweats the halyard another takes in the slack on the winch
7. When the sail won't go any further, insert a winch handle and crank it up until its taught
8. Cleat, lock off or otherwise secure the halyard

To lower the mainsail:

1. Put the main halyard on a winch, take up the tension
2. Turn the boat into the wind (this will keep the wind out of the sail while you lower it)
3. Tighten the mainsheet so the boom doesn't flap around and give someone concussion
4. Undo any jammers which might be securing the main halyard
5. Ease out the halyard
6. When it is safe to do so someone can move up onto the cabin roof and gather up the sail against the boom as it falls. When it has been gathered up sail ties can be tied around it.

## Furling sails

Some boats (especially of the charter variety) have a special type of sail called a *furling sail*. This is most often found on jibs but can be found on mainsails as well. A furling sail wraps itself around a stay or around/inside the mast.

For example a furling jib will wrap itself around the forestay. At the bottom of the forestay will be a drum attached to a furling line. If you pull on the furling line the jib will wrap itself around the forestay, but the sail must be slack (out of the wind) for this to work. You will also need to ease the jib sheets as you go.

To unfurl the sail, you ease the furling line (under control) and pull on one of the jib sheets. The sail will then unwrap from the forestay and deploy. Don't force the furling line, it should turn easily under hand pressure, you shouldn't need to winch it.

**Note : with furling sails you usually never need to touch their halyards, the owner of the boat will have set it and messing with it could be counter productive!**

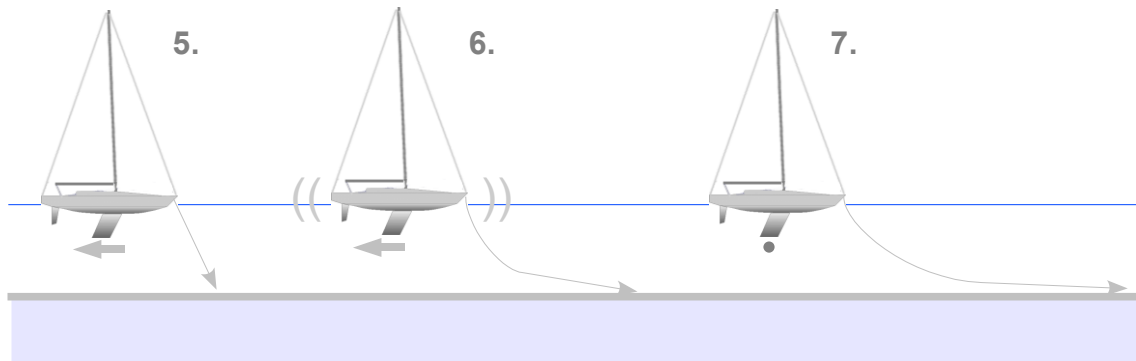
## Anchoring

One other thing you might want to do is anchor your boat.

This is another cooperative activity which works best when the team is coordinated.

Usually the anchor is kept in a locker at the front of the boat. Many boats will have a powered anchor winch which requires the motor to be running to work. There will be a shackle or pin that secures the anchor to stop it falling out accidentally. This must be removed to lower the anchor.

To anchor a boat :



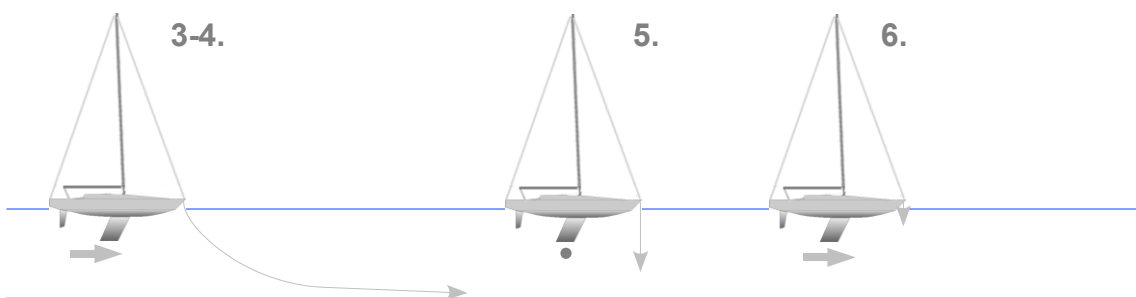
1. Look for shelter from the wind, good holding ground, sufficient depth and room to swing
2. One person goes to the anchor locker and frees the anchor shackle
3. The skipper motors to your chosen spot slowly (boats don't have brakes)
4. When the skipper stops the boat, someone will ease the anchor down into the water
5. You should let out about three times as much rope as you think you have water
6. As the anchor touches down, the skipper motors back gently until the boat stops with a tug, this means the anchor has set. If it doesn't set, raise the anchor and go back to step 1.
7. Turn the motor off and ease out more rope, normally about 5 times the depth of water
8. While someone makes the drinks, look at nearby boats and the land to determine if you are drifting
9. Check your position over the next couple of hours to make sure you don't drift

If you drift you have a couple of options : try a different spot; let out more rope; or add another anchor.

A boat at anchor swings. It rotates around the anchor depending on the wind. Make sure you have enough space around you so that you won't swing into another boat or a rock. Normally boats swing together but at different speeds, so keep an eye on your neighbours.

When raising an anchor you can't just pull it in with the winch. You'll damage the winch that way. You must motor up to the anchor so that the winch can pull it straight up.

To raise the anchor:



1. One person goes forward to the anchor locker while the skipper starts the engine
2. The person at the front points to where the anchor is (based on where the rope is running)
3. The skipper motors slowly towards the anchor
4. As the boat moves, the person at the anchor slowly takes up the slack in the anchor chain
5. When the boat is directly above the anchor, the skipper stops the boat
6. Once the anchor is up the crew secure it with a pin or shackle and the boat is free to depart

# Rules of the Road

Just like cars, boats have rules which govern what happens when they meet each other on the sea. In the rules below, a rule with a lower number takes precedence over a rule with a higher number (e.g. If a power boat approaches a sailing boat head-on [rule 7], the power boat gives way [rule 2]).

1. Everyone gives way to vessels constrained by depth or at anchor
2. Power gives way to sail
3. Sail vs sail : a boat port tack gives way to starboard tack
4. Sail vs sail : if on the same tack, the windward boat gives way to leeward boat
5. Sail vs sail : gybing or tacking gives way to sailing
6. Power vs Power (at an angle) : give way to starboard
7. Power vs Power (head on) : turn to starboard, pass port to port
8. Overtaking : boat overtaking gives way

In some areas, like marinas or sea lanes, there might be special rules. For example in a shipping lane used by big ships all other vessels must give way since these ships take about an hour to stop or turn. Small boats approaching a sea lane must cross at right angles and not travel within the lane.

Note: a sailing boat is only a sailing boat when the sails are up, if the motor is on, it's a power boat

## Safety

The *boom* is the most dangerous thing on the boat (see "Gybing" for a description of why).

**Never get in the way of a moving boom and always be alert for tacks and gybes.**

Moving about a boat can also be dangerous. There are lots of things to bump into and a boat might lurch unexpectedly which might mean an impromptu swim! The rule for moving about a boat is : one hand for you and one for the boat. Always hold onto something when moving around.

## The 7 F's of Safety

Any time you get on a boat you should look for the following 7 things :

1. **Fire** – what fire fighting equipment is on board? Where are the extinguishers? How do you turn off the gas for the stove? (Never smoke inside a cabin on a yacht – it's a recipe for disaster)
2. **Flooding** – what happens if the boat is full of water? How do you pump it out? Where is the bucket to bail water out if the pump fails? Nothing shifts water faster than a wet crewman with a bucket!
3. **Flotation devices** – okay, so the bucket didn't work. What now? Where are the life jackets, life rings and other flotation devices? Do you have a life raft? How does it work?
4. **First aid** – what happens when the skipper cuts his finger opening the Chardonnay? Where do you keep the aspirin and alka-seltzer for hangovers? Where are the seasick pills?
5. **Flashlight** – navigating at night requires a flashlight. It can also be used for signalling other boats or signalling for help. You should have at least one if not two on board.
6. **Flares** – if you need to signal for help you might have to use a flare. Flares come in two basic types, smoke and signal. Signal flares give off intense heat and light. Smoke flares give off smoke and are mainly used to signal aircraft or other vessels of your precise location.

Signal flares come in two colours – red and white. Red flares are known as 'distress' flares because they are used when you want to be rescued. White flares are known as 'ship scarers' because they are used to alert other ships to your presence.

Flares are only useful if you can see someone who might rescue you. They won't attract someone from beyond visual range (so don't pop all of them in the hope someone will magically appear!)

After use throw the flare overboard! Flares are hot enough to burn straight through a boat!

7. **Fone / Phone** – okay, so I cheated, there's no 'phone' on board and if there was it wouldn't be spelled with an F. But there is a radio. See the section marked "Radio" for how it will help you out.

# Emergencies and responses

## Man overboard

Losing someone overboard is one of the most dangerous events in sailing.

If someone goes overboard :

1. Alert the rest of the crew by shouting "MAN OVERBOARD" as loudly as possible
2. The helmsman immediately heaves-to if possible (i.e. tack the boat but do not tack the jib, and reverse the helm)
3. Throw the victim any thing which might float: life jackets; life rings; cushions; eskies; inflatable sex toys; etc.
4. Someone who is not steering points at the victim (it's very easy to lose a person against the background of the sea)
5. If the person is not recovered immediately, the helmsman falls off onto a *beam reach*, sailing downwind of the victim (someone must still point at them!)
6. Turn into the wind and tack, heading back past the victim (keep victim on your windward side, always upwind of you)
7. When the victim is close, into the wind turn into the wind and drop the jib (effectively slowing or stopping the boat).
8. Coast up to the victim and bring the person on board.

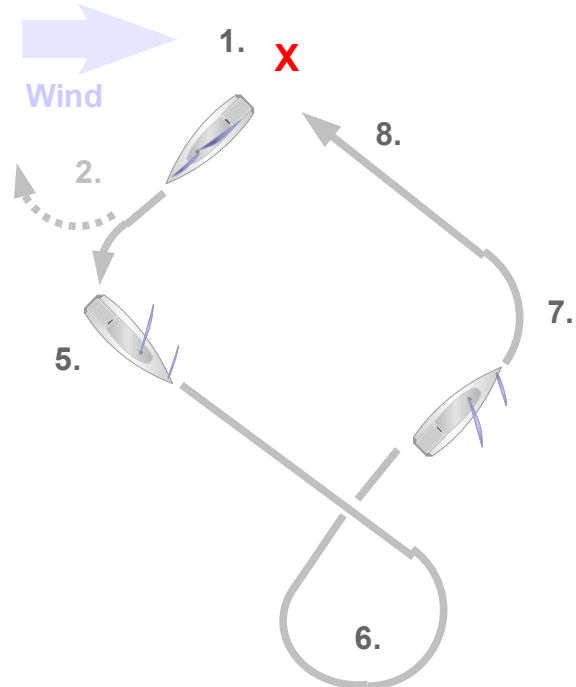


Figure 9

If you have a motor, start it at about step 5 to give you more control on the approach. Make sure the motor is in neutral however when you attempt to get the victim back on board, it would be unfortunate to suck a person or a rope into the propeller!

Getting the victim back on board will not be an easy task. Sailing boats have high sides and the victim might be injured or unconscious. Use every available hand to pull them on board.

If you cannot find the victim, don't hesitate to put out a Mayday call on the radio (see Radio below).

## Distress signals

If you need to signal for help there are a lot of ways you can do this :

1. Mayday on radio
2. Continuous sound signals from a horn or bell
3. Firing a gun at repeated intervals
4. Rocket or handheld flare
5. Orange smoke
6. Open flames on deck
7. Code flags "NC"
8. SOS by any means
9. Raising both arms over head (straight up i.e. "pick me up")
10. Square flag raised above or below a ball

Also possible - flag upside down, strobe, dye marker, orange flag (so be careful what you hang on your washing line!)

# Radio

## Using the Radio

Most boats are equipped with VHF radios. The radio has several channels to choose from. The general broadcast and hailing channel is channel 16. You can contact other boats on Ch16 but should switch to an alternate channel as soon as possible. Emergency calls are made on Ch16.

1. Turn the volume up about half way
2. Turn the "squelch" down until you hear static, turn it back up slightly till it stops
3. Pick up the microphone and, holding it about 10cm from your mouth, depress the button on it
4. Say what you have to say
5. To hear what everyone else says – LET GO OF THE BUTTON!

## Emergency calls

There are three types of emergency calls that can be used:

- **Sécurité** – a call to warn other boats of navigation dangers (e.g. A shipping container in a sea-lane)
- **Pan-Pan n** - there is an emergency on board but there is no immediate danger to anyone's life or to the vessel itself. Examples which might be appropriate are : fouled propeller; engine failure or out of fuel; small fire on board - but extinguished; unsure of position etc.
- **Mayday** - grave and imminent danger and you require immediate assistance. Examples of "grave and imminent danger" in which a Mayday call would be appropriate are fire, explosion, or sinking. Misusing this call could cost you a lot of money in fines!

### Procedure :

1. Punch up channel 16 on the radio
  2. Check the volume and squelch
  3. Call the codeword three times
  4. Identify your vessel three times
  5. State your position
  6. State the emergency and how many people there are onboard
- "Mayday – Mayday – Mayday"  
"This is the vessel Titanic – Titanic – Titanic"  
"We are 300 miles east of New York."  
"We have struck an iceberg and are sinking."  
"There are 2208 people on board."

If you get no response, wait a minute and then try again.

If you hear a mayday call on the radio, stay off the air for two minutes to allow authorities to respond. If they don't you should respond yourself and offer your assistance.

# Glossary

**Aft** – towards the stern

**Backstay** – back wire keeping the mast up

**Boom** – horizontal stick hanging off the mast

**Bow** – pointy bit at the front the boat

**Bowline** – a useless knot that sailors insist on using for everything

**Cleat** – a metal horn around which a rope is wrapped to *secure* it

**Clew** – one of the bottom corners of a sail, often attached to a *sheet*

**Cunningham** – a secret bit of rope that you'll never need to touch

**Cabin** – lump in the middle you sleep in

**Fore** – towards the bow

**Foresail** or **Jib** – the 'little' sail in front of the mast (sometimes known as a genoa, 'jennie' etc)

**Forestay** – front wire keeping the mast up

**Gybe** – to change directions by putting the back of the boat through the wind (see *tack*)

**Halyard** – a rope for raising or lowering a sail

**Hard on** – sailing close to the wind; pulling a sail in tight; what the skipper gets when he outmanoeuvres another boat

**Head** – the top corner of a sail

**Helmsman** – person steering

**Jammer** – a mechanical device used to stop a rope from moving, activated by a lever on top

**Jib sheets** – two ropes for controlling the jib, one on either side of the mast

**Keel** – big heavy fin-thing on the bottom of the boat that keeps it from flipping over

**Lazy sheet** – the inactive or unloaded rope on a sail, the loose one that's doing nothing (see working sheet for comparison)

**Leech** – the back edge of a sail

**Luffing** – when the front edge of a sail flaps

**Luff** – the front edge of a sail, also when a sail flaps or 'lifts' at this edge it is "luffing"

**Main sheet** – rope for controlling the mainsail

**Mainsail** or **Main** – the big sail behind the mast

**Make fast** – to *secure* a rope, to stop it moving

**Mast** – tall vertical stick in the middle of the boat

**Port** – to the left as you face the bow of the boat

**Rigging** – ropes and wires on a boat

**Rudder** – a movable fin at the back that steers the boat, connected to a wheel or tiller for steering

**Scope** – the amount of rope you let out when anchoring, as a ratio to the depth of water (e.g. 5:1)

**Secure** – to control the loose end of a rope, usually by wrapping it around a cleat or tying it off

**Sheet** – a rope for controlling a sail

**Sidestay** – a side wire on the mast to keep it up

**Skipper** – the boss, the big cheese, the chef, the head honcho. Often the owner of the boat.

**Spar** – a stick to with sails (e.g. the boom or mast)

**Starboard** – to the right as you face the bow

**Stern** – blunt bit at the back

**Tack** – 1. the attitude of the boat to the wind based on the direction the wind is coming from (i.e. a boat is either on "port tack" or "starboard tack"); 2. to change directions putting front of the boat through the wind (see *gybe*); 3. the bottom edge of a sail

**Take in** – to pull in a *sheet*

**Tiller** – a stick for steering, more fancy than a wheel

**Topping lift** – a rope for raising a *spar* (the *boom*)

**Working sheet** – the active or loaded rope on a sail, the tight one that's holding all the pressure (see *lazy sheet* for comparison)