

**NEW ZEALAND MARITIME MUSEUM
(NZMM)**

S.S. BREEZE

MNZ 104468

VESSEL MANUAL



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SHIP DETAILS



BREEZE is a small traditional wooden sailing ship similar to vessels used in the New Zealand coastal and inter-Dominion trades in the 19th and early 20th centuries. She was designed and built at Coromandel by Ralph Sewell, from locally milled kauri and Totara. His aim was to create a 19th century sailing craft that made use of traditional sailing skills. For modern conditions she is fitted with an auxiliary engine, and the main hold is fitted out as a cabin.

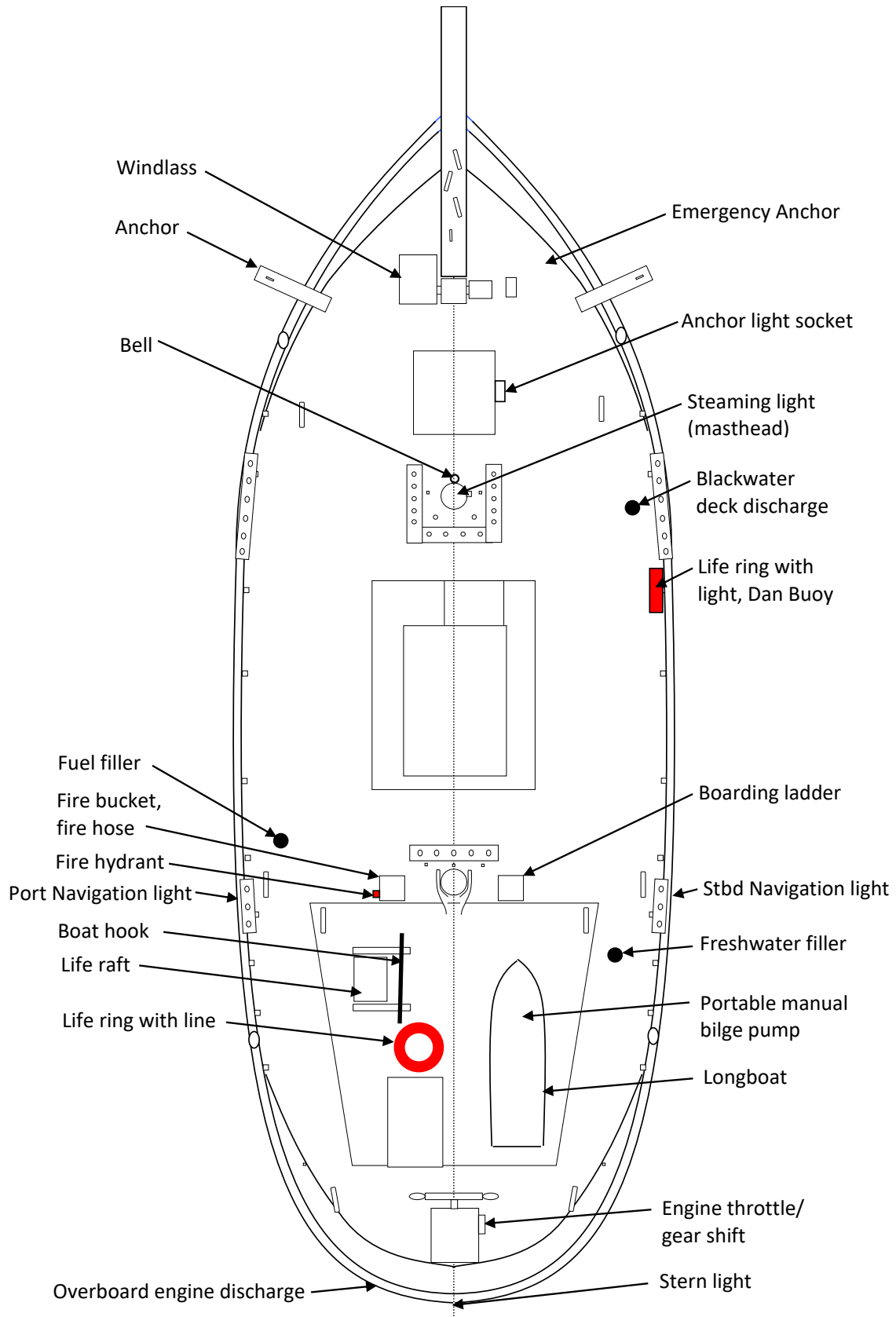
The hull and deck of **BREEZE** are planked in two skins, the inner diagonal and the outer fore-and-aft, copper-fastened in the manner common in New Zealand ship and yacht building from the 1880s.

BREEZE is rigged as a Brigantine, that is square sails on the foremast, along with fore and aft sails on the fore and main masts.

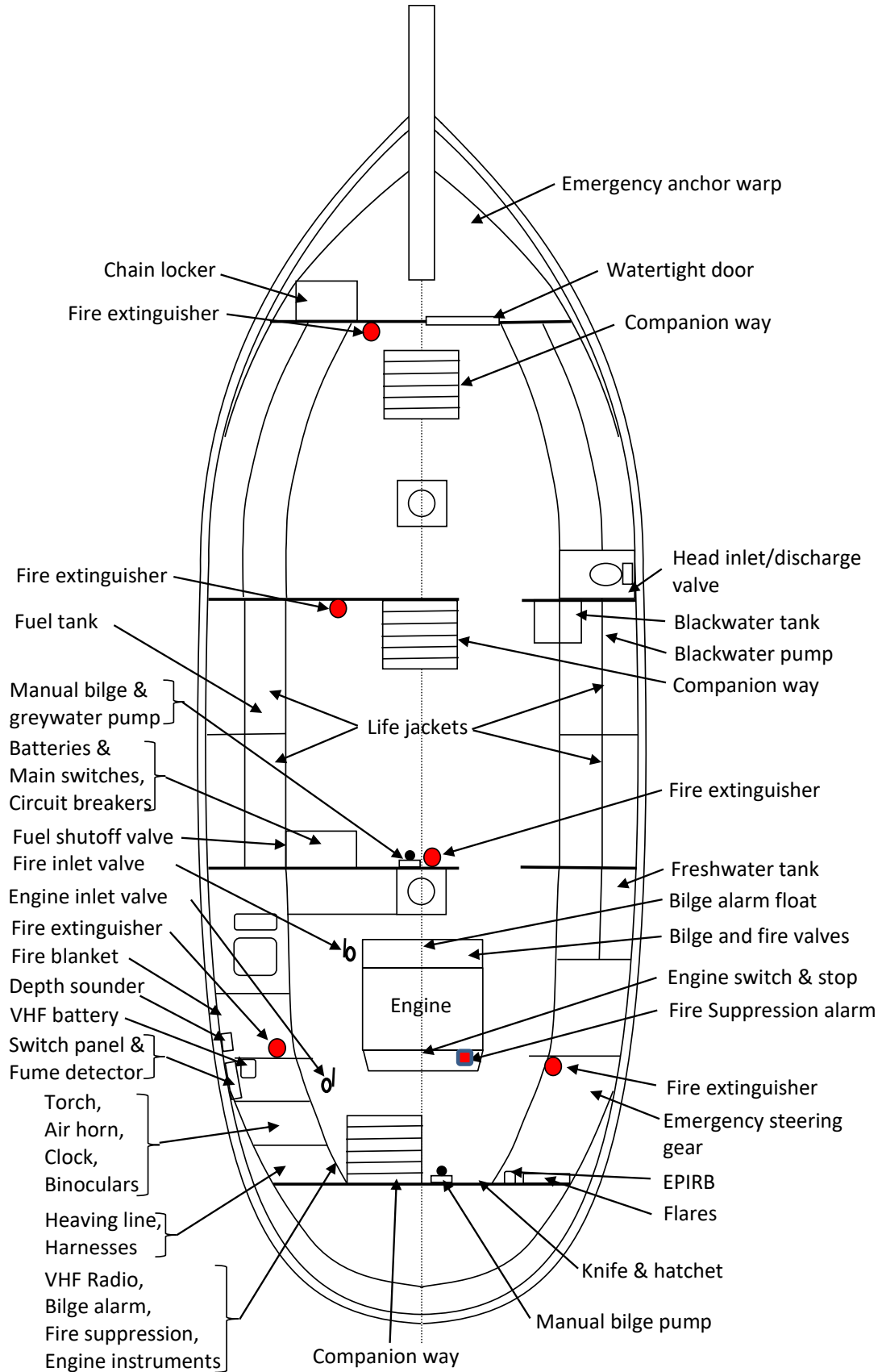
LENGTH SPARRED	24.2 m	ENGINE	Ford 80hp diesel
LENGTH OVERALL	18.3 m	FUEL TANK	180 litre
LENGTH ON DECK	15.9 m	CALL SIGN	ZM 2729
BEAM	5.03 m	DAYTIME VOYAGES RESTRICTED TO 18 PERSONS MAXIMUM	
DEPTH	1.61 m	OVERNIGHT VOYAGES RESTRICTED TO 12 PERSONS MAXIMUM	
DRAUGHT	2.13 m	MAXIMUM WIND LIMIT	ave 25kts
SAIL AREA	225 sq. m	MINIMUM WATER DEPTH	3 meter
TONNAGE	31.0 GT		

EQUIPMENT

ON DECK



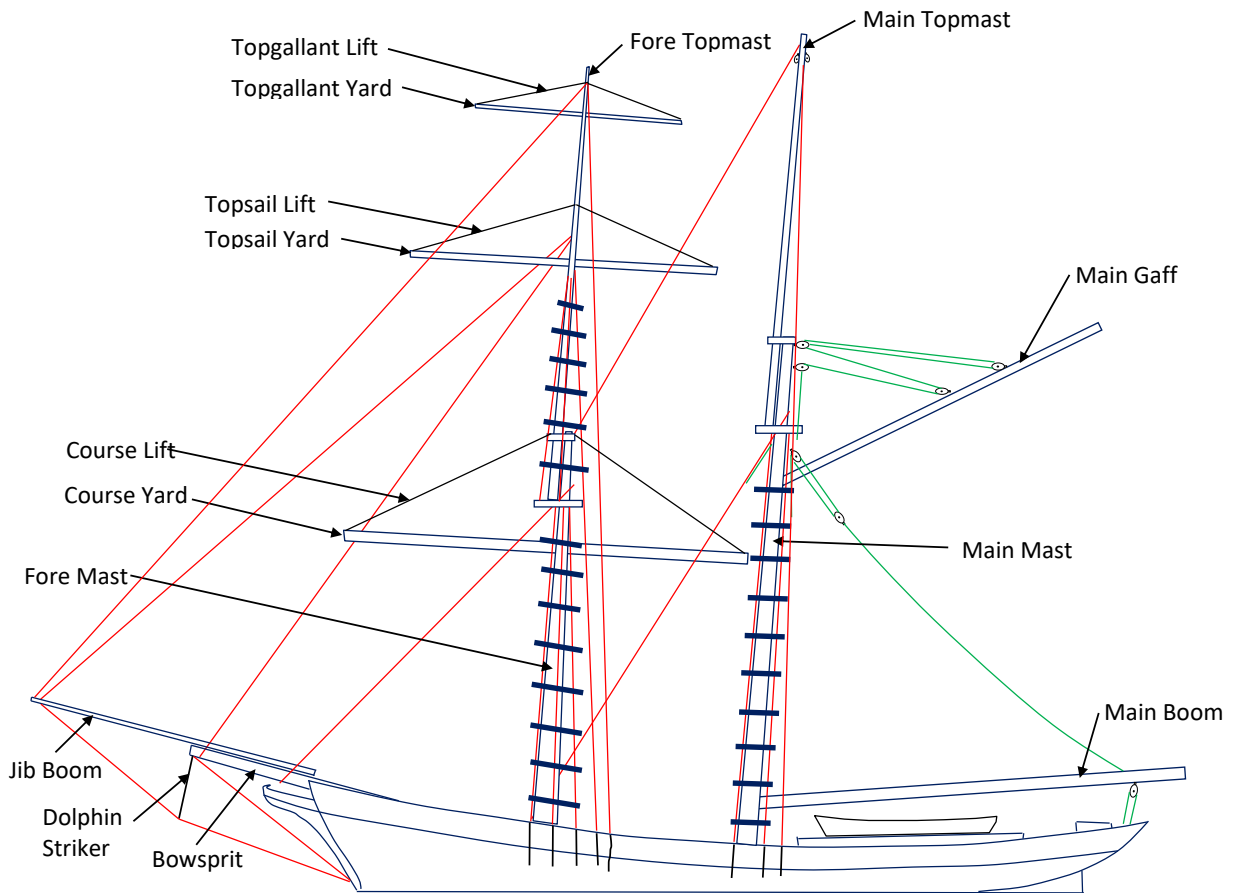
BELOW DECK



Important: it is expected that each crew member will be acquainted with the position and use of the safety equipment.

SAILING RIGGING

SPARS



Main Mast — aft mast

Main Top Mast — attached to the top of the main mast

Fore Mast — forward mast

Fore Top Mast — attached to the top of the fore mast

Bow Sprit — horizontal spar from bow of vessel

Jib Boom — attached to top of the bow sprit and extending further forward

Main Boom — lower horizontal spar attached to main mast — carries the foot of the main sail

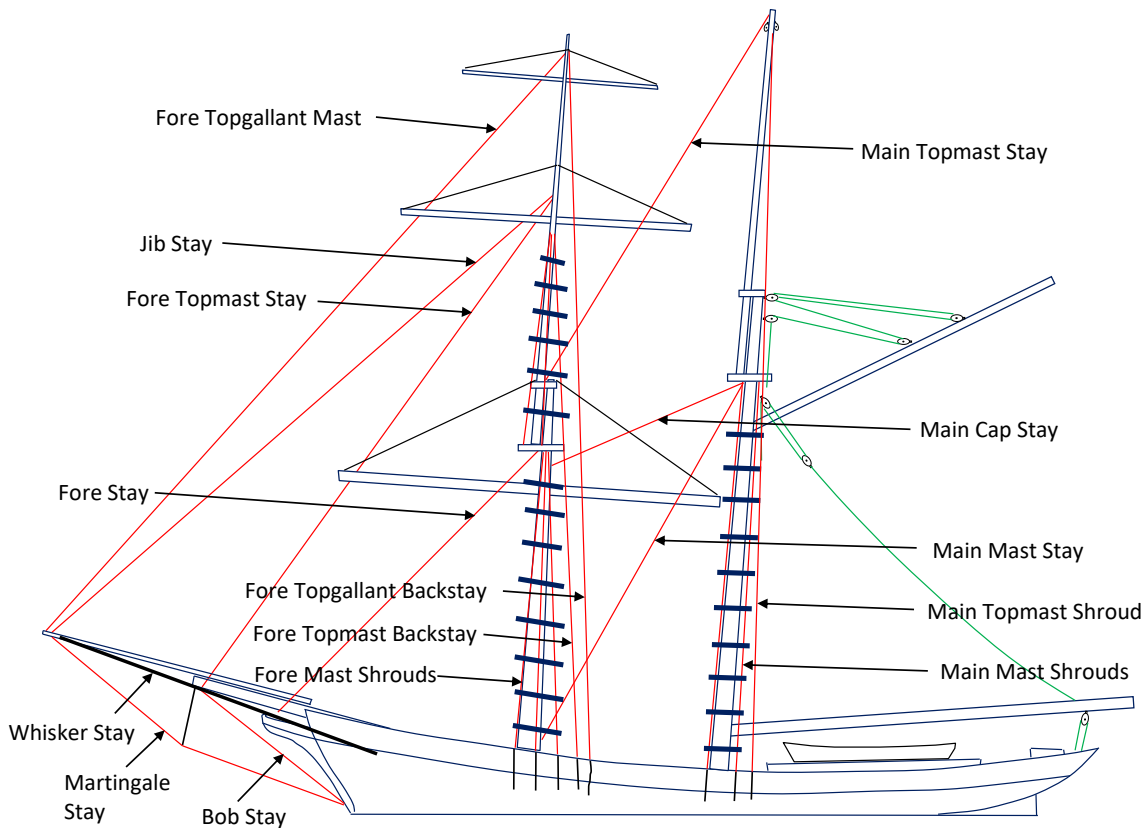
Main Gaff — upper horizontal spar attached to main mast — head of main sail attaches to it

Course Yard — lower horizontal spar attached to fore mast — carries the course

Topsail Yard — lower horizontal spar attached to fore top mast — carries the topsail

Topgallant Yard — upper horizontal spar attached to fore top mast — carries the topgallant

STANDING RIGGING



Stays

Fore Topgallant Mast Stay — goes from the head of the fore top mast to the end of the jib boom

Jib Stay — goes from the middle of the fore top mast to the end of the jib boom

Fore Topmast Stay — goes from the middle of the fore top mast to the end of the bow sprit

Fore Stay — goes from the crosstrees of the fore mast to the bow of the vessel

Main Topmast Stay — goes from the head of the main top mast to the head of the fore mast

Main Cap Stay — goes from above the main stay to the futtock band on the fore mast

Main Mast Stay (Main Stay) — goes from the crosstrees of the main mast to the base of the fore mast

Bob Stay — goes from the end of the bow sprit to the stem of the vessel, just above the waterline

Martingale Stay — goes from the end of the jib boom to the dolphin striker then two stays (Martingale shrouds / backstays) go to the bulwarks of the bow, one to port and one to starboard

Port/Starboard Whisker Stays (also known as jib boom and bow sprit shrouds) — these go from the end of the bow sprit and jib boom, (a set each) to each side of the vessel

Shrouds/Backstays

For each mast the port and starboard shroud & backstay setups are the same so we will describe the setup for just one side.

Fore Mast Fore and Middle Shrouds (one wire)— goes from a chain plate on the vessel's side to crosstrees and around mast then back to another chain plate on the vessel's side — parts are seized together just below crosstrees

Fore Mast Aft Shroud — goes from the crosstrees to the side of the vessel

Fore Topmast Fore Shroud — goes from the middle of the topmast to the end of the middle crosstrees of the fore mast and down to the futtock band — the section from the cross tree down is known as a futtock shroud

Fore Topmast Aft Shroud — goes from the middle of the topmast to the end of the aft crosstrees of the fore mast and down to the futtock band — the section from the crosstree down is known as a futtock shroud

Fore Topmast Backstay — goes from the middle of the topmast to the side of the vessel, aft of the fore mast shrouds

Fore Topgallant Mast Backstay — goes from the top of the topmast to the side of the vessel, aft of the fore topmast backstay

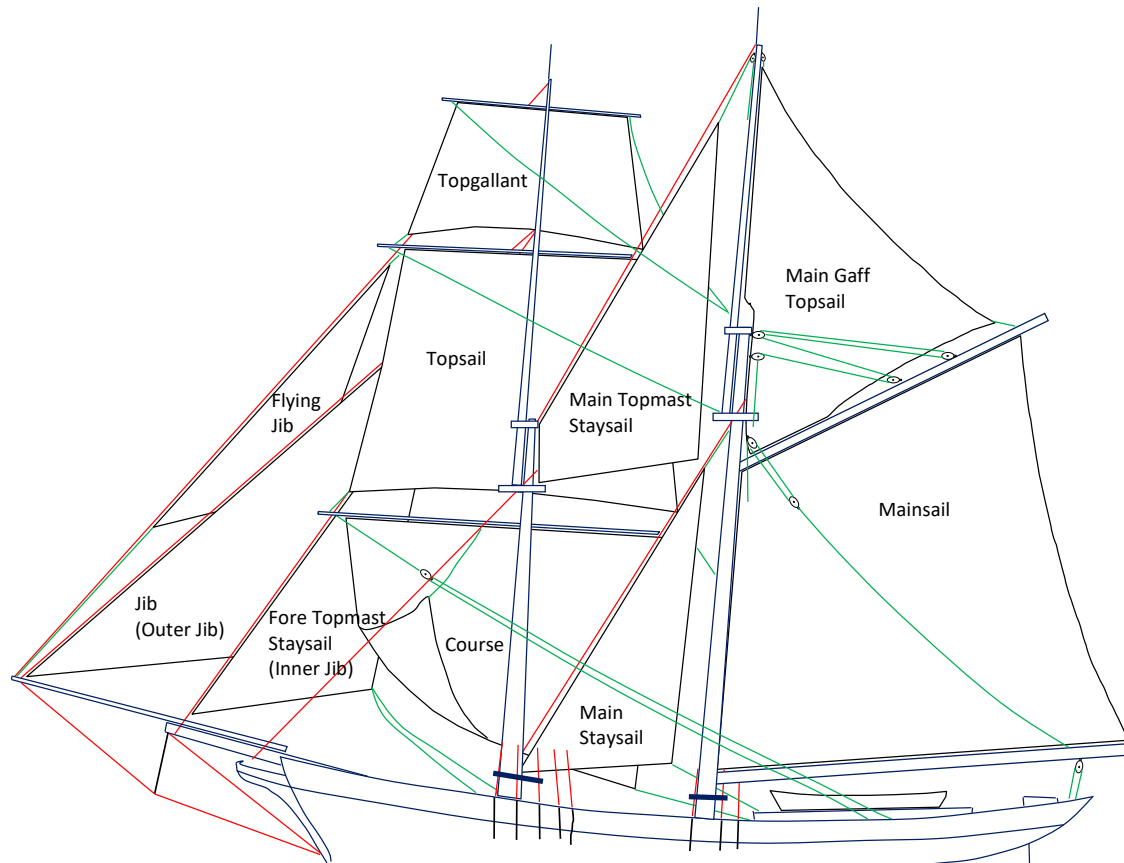
Main Mast Fore and Aft Shrouds (one wire)— goes from a chain plate on vessel side to crosstrees and around mast then back to another chain plate on the vessel side — parts are seized together just below crosstrees

Main Topmast Shroud — goes from the head of the topmast to the side of the vessel, aft of the main mast shrouds

The pieces of line and wood lashed to the shrouds are called **Ratlines** and form a ladder for climbing the masts.

The **futtock band** is the steel fitting below the crosstrees / foretop that the course yard is attached to.

SAILS



Main — four-sided fore-and-aft sail attached to the main mast

Main Gaff Topsail — a three-sided sail attached to the main mast above the main sail

Course — four-sided square sail attached to the course yard on the fore mast

Topsail — four-sided square sail attached to the topsail yard on the fore mast

Topgallant — four-sided square sail attached to the topgallant yard on the fore mast

Main Staysail — a three-sided sail attached to the main mast stay

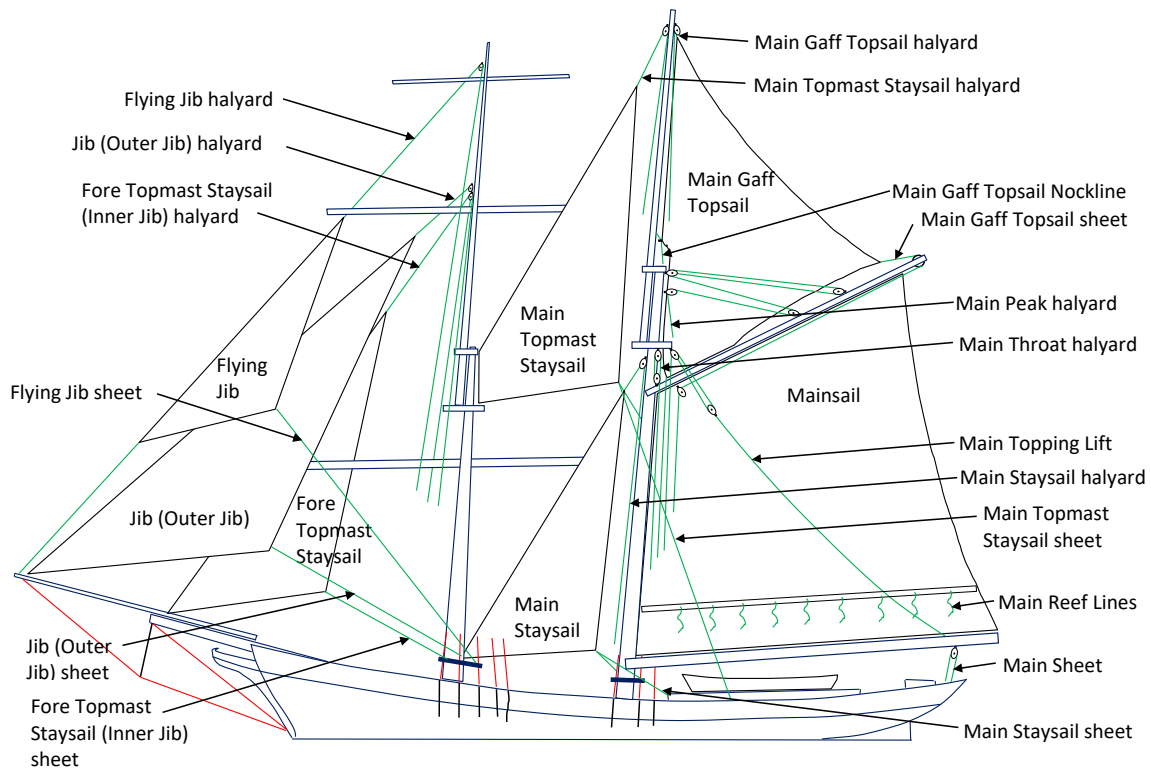
Main Topmast Staysail — a four-sided sail attached to the main topmast stay

Fore Topmast Staysail — a three-sided sail attached to the inner fore topmast stay

Jib — a three-sided sail attached to the jib stay

Flying Jib — a three-sided sail attached to the fore topgallant mast stay

RUNNING RIGGING - FORE AND AFT



The lines that control the sails are called the running rigging. Most of the lines work with blocks to achieve their function. These lines are secured to Pins and Cleats around the deck of the vessel; a later image shows the securing location of each line.

Main

Throat Halyard — used to hoist and lower the throat (end next to mast) end of the gaff and sail

Peak Halyard — used to hoist and lower the peak (far end) end of the gaff and sail
Sheet — used to ease out and haul in the boom

Topping Lifts — supports the weight of the boom, gaff and sail when the sail is lowered. There is a port and starboard topping lift

Lazy Jacks — attached to the topping lifts and pass under the boom. Used to gather in the sail as it's lowered

Reef Points — part of the sail, used to reduce the size of the sail area

Main Gaff Topsail

Halyard — used to hoist the sail

Sheet — used to haul the sail out to the end of the gaff

Tack Line — used to tension the tack when setting the sail and to assist when lowering the sail

Nock Line — holds the nock of the sail to the mast

Main Staysail

Halyard — used to hoist the sail

Sheets — used to set the sail on one side of the vessel or the other. There is a port and starboard sheet

Main Topmast Staysail

Halyard — used to hoist the sail

Downhaul (sometimes called a brail) — used to lower the sail and gather the clew up to the head of the sail.

Sheets — used to set the sail on one side of the vessel or the other. There is a port and starboard sheet

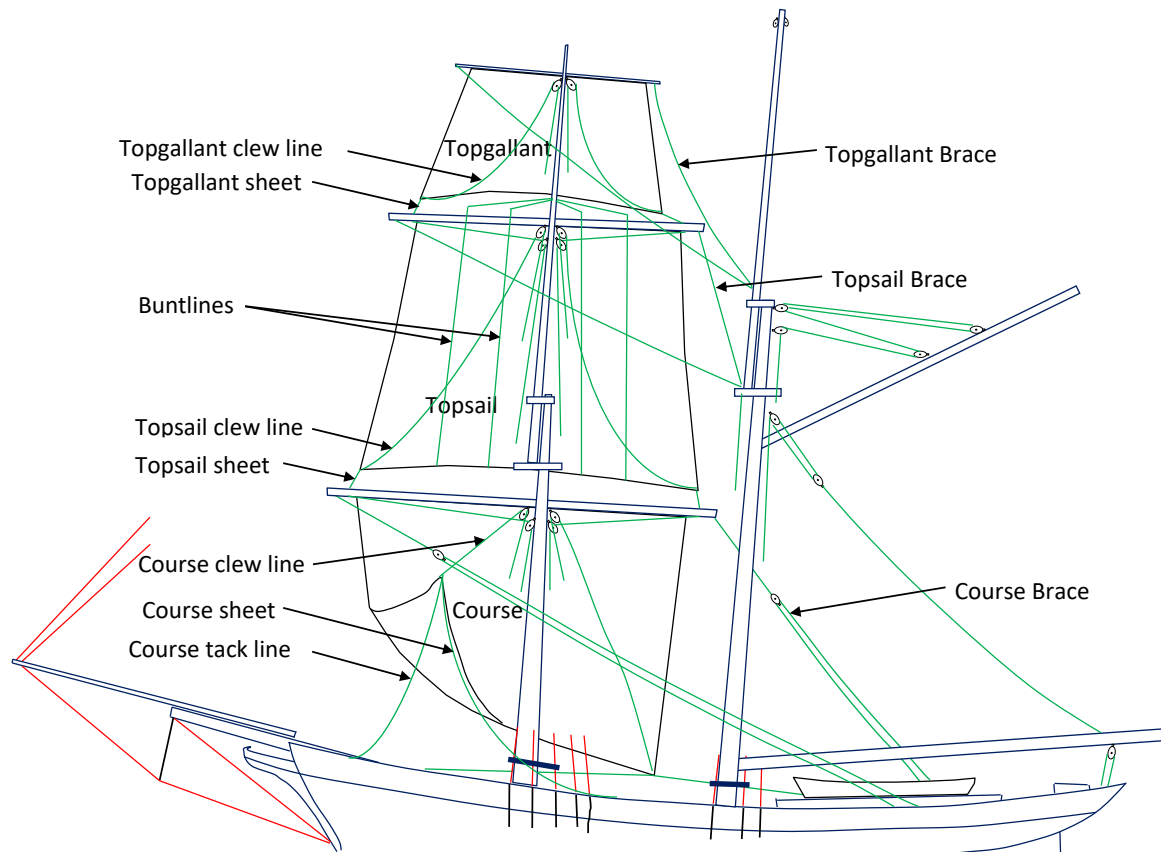
Fore Topmast Staysail/Jib/Flying Jib

Halyard — used to hoist the sail

Downhaul — used to lower the sail

Sheets — used to set the sail on one side of the vessel or the other. There is a port and starboard sheet

RUNNING RIGGING - SQUARES



COURSE

Lifts — support the ends of the yard so crew can work on the yard. There is a port and starboard lift, an experienced crew can use them to adjust the set of the yards when under sail. Always check that there is tension on them before crew go onto the yard.

Braces — used to control the angle of the yard to the wind

Sheets — used to adjust the shape of the sail by adjusting the lower corners (clews) of the sail.

Tacks — used to adjust the shape of the sail by adjusting the lower corners (clews) of the sail.

Clews — used to raise the lower corners (clews) of the sail to the yard.

Buntlines — used to raise the foot and bunt of the sail to the yard.

TOPAIL/TOPGALLANT

Lifts — supports the ends of the yard so crew can work on the yard

Halyard — used to hoist the yard up the mast

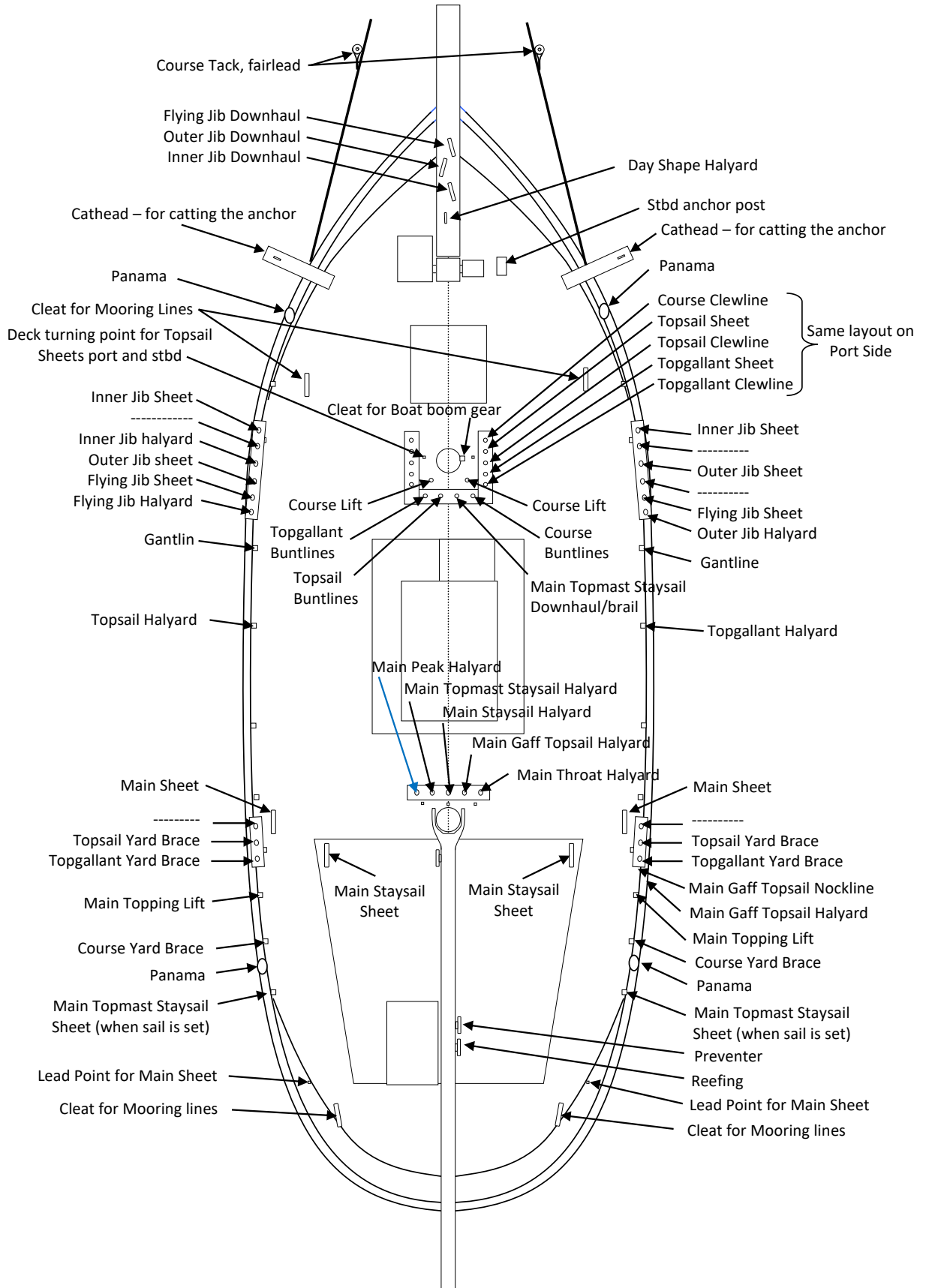
Braces — used to control the angle of the yard to the wind

Sheets — haul the lower corners (clews) of the sail out to the ends of the yard below the sail

Clews — used to hoist the lower corners (clews) of the sail to the yard

Buntlines — used to hoist the foot and bunt of the sail to the yard

LINES AND TERMINATIONS



SAIL HOISTING AND HANDLING

The general principle is that hoisting and handling sails should be done as quickly as possible, whilst keeping the entire process smooth and under control. This is to minimise wear, tear, and possible damage, to the sails. (About 80% of wear and tear on a sail occurs while it is flapping, or worse, flogging!)

Prior to Sailing:

- Check with the Master which sails are going to be used
- Remove sail covers, stow safely in a location that does not inhibit deck work
- Before going aloft, let go the appropriate sheets
- For the squares, main topmast staysail, and foresails, follow the “Working Aloft” procedures listed in this manual. Let go the gaskets, and ensure they hang free. On the bowsprit and jib boom, and bottom of the fore topmast (where the main topmast staysail is normally stowed) they will need to be coiled and hitched on to the appropriate stay, ensuring they are clear of any running rigging. Take the sheets off the yardarms. Run the main topmast staysail sheets, ensuring each is on the correct side of the main stay, and led inside the main shrouds to the cleats on the inside of the bulwarks aft. Check each sail is ready to set
- Let go the gaskets on the other sails to be used
- On the Mate’s instruction, the gasket line may be removed from the main gaff, and stored in the long boat
- Check aloft for twisted halyards and clean run of all lines

ADVERSE WEATHER

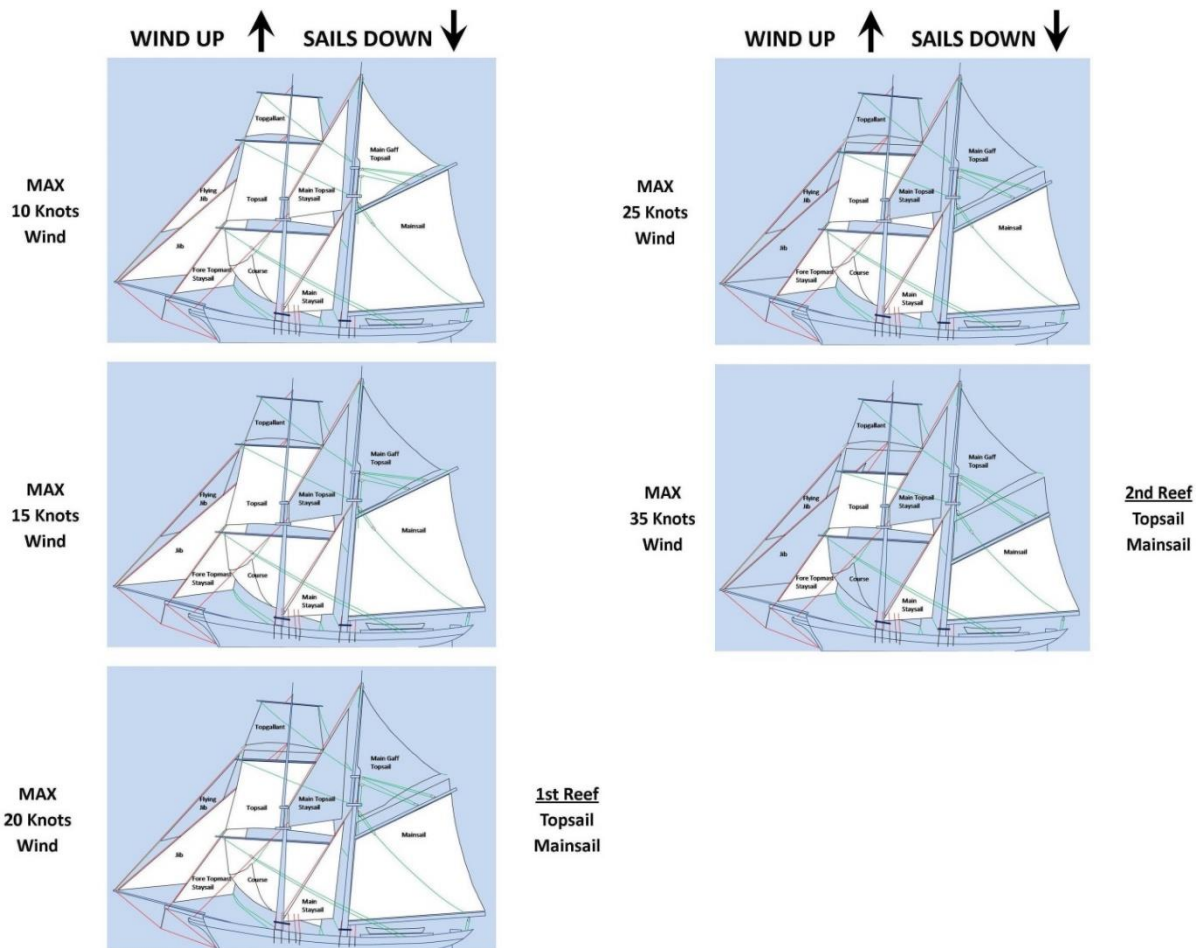
- Ship not to sail in exposed winds exceeding **the maximum wind limit**.
- Master and crew to take best practice precautions, make port or safe harbour, reduce sail early, secure vessel for heavy weather. Safety equipment ready.

Not all sails are designed for all wind strengths. The diagrams below show at what wind strength you shouldn’t be using each sail. This is a guideline only - you should always be checking the pressure on the rigging when underway. If the wind strength is forecasted to exceed the maximum limit for the vessel or sea conditions are predicted to be adverse during the anticipated duration of the voyage, the vessel should not normally sail from its berth or anchorage unless to make a safe haven in the case of the latter.

The Master will decide what sails are used and when.

Generally, the main topmast staysail should be set with the main gaff topsail, as the main topmast has no backstays to support it, and that support must come from the main gaff topsail. If these two are not set, then consideration should be given regarding dropping the flying jib, too. These three sails generally work together and are for light winds only.

Likewise, whilst broad reaching or running in front of an increasing wind, consideration should be given to reducing sail aft, reefing the main early or just dropping it, before reducing sail forward. To provide extra strength from aft in a bad blow, the main can be secured and the gaff lashed to the boom.



HOISTING SAILS

The vessel is normally kept at slow ahead headed into the wind, this can be varied at the direction of the Master.

The order of hoisting sails is normally mainsail, foresails, and staysails (altogether if crew numbers allow).

The vessel must be sailed either on a reach or downwind to hoist the squares; first, the yards must be braced into position.

Main

1. On the command **“Set the Main”**.
2. ‘Top Up’ on the topping lifts and the peak halyard whilst easing the sheet and removing the boom crutch so that the boom is at a level just above the helmsperson’s head. Be aware that the mainsail sheet is double ended, and only one end should be in use at any one time.
3. Let go gaff topsail sheet, ensure it is ready to run freely.
4. Let go the reefing lines on the boom, leave the tails leading over their cleats, and ensure they are free to run. Ensure no reef pennants from the sail are done up around the sail, and no tack or clew reef lashings are in place.
5. Ensure both peak and throat halyards are led through the deck hooks then up to the fife rail.

6. Report **“Ready on the Main”** to the Master.
7. On the command **“Hoist the Main”** or **“Haul Away on the Main”**, hoist the mainsail by hauling on both throat and peak halyards. Keep gaff horizontal ensuring peak goes up between topping lifts.
8. Keep eyes on the luff lashing to ensure they are sliding up the mast and not jamming.
9. Tension the throat first so that the jaws of the gaff and boom align into the copper bands fitted around the Mast. This will require 2 people sweating, tailing and belaying.
10. Tension peak halyard until: (Peak tension is important as insufficient tension will allow the leech to flog)
 - If the vessel is head to wind - there is a crease between the peak and tack.
 - If the vessel is not head to wind - tension the peak so that the angle between boom and gaff is approximately 10 to 15 degrees, horizontally (or looking down from the top), and the sail is smooth over its area.
11. Ease off the topping lifts. No weight should be on these except in extremely light airs if the sails won't set.
12. Trim sail; tidy up all lines. Be aware that this sail has a huge effect on sail balance and therefore the helm. It is desirable to set the main to reduce excess helm.

Foresails: Fore Topmast Staysail, Jib and Flying Jib

Normally these are hoisted when the vessel is on course, in order as instructed by the Master.

1. Let go the downhaul and flake the coil on deck so it will run freely.
2. Let go the sheets from the belaying pins.
3. Let go the halyard and place coil on deck.
4. One person is required to haul the halyard and a second tails.
5. Both sheets need to be tended.
6. On the command **“Haul Away _____”** the sail is hoisted.
7. As the sail is hoisted the sheet on the leeward side should be hauled in, and the windward sheet should be made fully slack, with no tension on it at all. This is important to avoid cupping the sail, which prevents the wind from travelling smoothly past it.
8. Sweat the halyard until the correct tension is in the luff, i.e. when the luff is straight.
9. Secure the halyard to the belaying pin.
10. Trim leeward sheet.
11. Once all sails are set, coil and stow the halyards on their belaying pins.

Main Staysail

Normally hoisted when the vessel is on course, it can be hoisted at the same time as the foresails if crew numbers allow. This sail is normally set before the main topmast staysail, but sometimes is left stowed, to allow for large numbers of passengers.

1. Let go the sheets from the belaying pins.
2. Let go the halyard and place coil on deck
3. One person is required to haul the halyard and a second person to tail.
4. Both sheets need to be tended.
5. On the command "**Haul Away _____**" the sail is raised.
6. As the sail is raised the sheet on the leeward side should be taken in, and the windward sheet should be made fully slack, with no tension on it at all. This is important to avoid cupping the sail, which prevents the wind from travelling smoothly past it.
7. Sweat the halyard until there is the correct tension in the luff, i.e. when the luff is pulled straight.
8. Secure the halyard to the belaying pin.
9. Trim the leeward sheet.
10. Once all sails are set, coil and stow the halyards on their belaying pins.

Note: There is no downhaul for the main staysail.

Main Topmast Staysail

This should be set after the main gaff topsail, as the main gaff topsail provides the necessary rigging strength from aft for the main topmast, to sustain the forward loading that the main topmast staysail imposes. Likewise the main topmast staysail should be dropped before the main gaff topsail.

1. Let go the downhaul and flake the coil on deck so it will run freely
2. Let go the sheets from the belaying pins.
3. Let go the halyard and place coil on deck.
4. One person is required to haul the halyard and a second person to tail.
5. Both sheets need to be tended.
6. On the command "**Haul Away _____**" the sail is raised.
7. As the sail is raised the sheet on the leeward side should be taken in, and the windward sheet should be made fully slack, with no tension on it at all. This is important to avoid cupping the sail, which prevents the wind from travelling smoothly past it.
8. Sweat the halyard until there is the correct tension in the luff, i.e. when the luff is pulled straight.
9. Secure the halyard to the belaying pin.
10. Trim the leeward sheet.
11. Once all sails are set, coil and stow the halyards on their belaying pins.

Top Sail & Top Gallant

The topsail must be set before setting the topgallant, as the topsail yard takes the sheets for the topgallant.

1. On the command "**Set the _____ sail(s)**":
2. Check aloft that no one will be in danger when bracing the yards.
3. Check with the Master on the position required and then brace the yards to that position.
4. Have someone in a harness go aloft, ready to overhaul buntlines and clew lines.
5. Take the clew lines and bunt lines off the pins, hold, and ensure ready to run.
6. Let go the sheets and be ready to haul in.
7. On command from the Mate: "**Let go clews and bunts, haul on the sheets**", let go clews and bunts and let run.
8. Haul on the sheets until the tension is called by the Master or Mate. Make fast.
9. Ensure that clews and bunts are free to run, and that the appropriate lee brace is eased.
10. Hoist yard until Master or Mate calls. Make fast the halyard. Tension the lee brace and make fast.
11. Person aloft to overhaul bunt lines and clew lines, ensuring that a little slack is left around the each sail.
12. On deck, leaving a little slack (about a metre or so), make fast the clews and bunts.
13. Coil up all lines.

Course

1. On the command "**Set the Course**":
2. Check aloft that no one will be in danger when bracing the yards.
3. Check with the Master on the position required and then (if required) brace the yards to that position.
4. Have someone in a harness aloft, ready to overhaul bunt lines and clew lines.
5. Take the clew lines and bunt lines off the pins, hold, and ensure ready to run. The tacks (the shorter of the two lines) and sheets must also be set up, the tacks run forward *inside* the foresail sheets to the eyes in the bow then back to their deck cleats, and the sheets led, from aft of the foremast shrouds, aft outside of everything else to the quarter cleats.
6. On command from the Mate: "**Let go clews and bunts, haul on the sheets and tacks**", let go clews and bunts and let run.
7. Haul on the sheets and tacks for the course until the tension is called by the Master or Mate. The tacks or sheets maybe pulled down around amidships bulwarks cleat to ensure the correct setting angle as part of this process. Make fast.
8. Person aloft to overhaul bunt lines and clew lines, ensuring that a little slack is left around the each sail.

9. On deck, leaving a little slack (about a metre or so), make fast the clews and bunts.
10. Coil up all lines.

Main Gaff Topsail

The main gaff topsail is stowed below decks when not in use, on a bunk in the focsle. It is set on the starboard side by the halyard next to the masthead, held to the mast by the knock line which leads through a block at the mainmast cap, a tack line to the mainmast fyfe rail, and a sheet to the peak of the gaff.

The main gaff topsail is preferably set on port tack to ensure a clear run when hoisting.

1. On the command "**Set the Main Gaff Topsail**":
2. Lay out the sail and confirm which are the head, knock, tack and clew. Attach the halyard, knock, and sheet. The sheet is double ended, so care must be taken that the correct end, the one which runs direct to the peak of the gaff is the one secured to the sail. The tack line is permanently attached to the sail.
3. Ensure the tack line runs under the fyfe rail close to its pin, with the remainder free to run.
4. Have slack in the knock line.
5. When all lines are attached, visually check that the sail is ready to hoist, with all lines running clearly. This is important, so check thoroughly.
6. Once all is ready, on the command "**Haul Away on the Main Gaff Topsail**", haul away on the halyard at the same time the tack line is eased, the two working together to keep the sail close to the mast.
7. Take in the slack on the sheet and knock line, as the sail goes up, but do not expose too much of the sail to the wind.
8. Take in on the knock line until there is no slack at all and make fast.
9. Once the sail is stretched between the knock and head, the sail is in position. Make fast the halyard.
10. Tension the tack line so that some of the upwards tension comes off the knock line. Make fast.
11. Haul in the sheet until the Master or Mate calls. Make fast.
12. Coil all lines.

Note: If there are problems, bring the sail down and sort it out on deck.

LOWERING AND CLEWING UP SAILS

Main

1. On the command "**Drop the Main**", flake out halyards to prevent fouling when gaff is lowered.
2. Take up the topping lifts (whilst easing the sheet if necessary), until the boom will clear the helmsperson's head, and make fast.
3. Sheet the boom to amidships if coming head to wind. Make fast.
4. When all is ready, on the command "**Ease Peak and Gaff, haul away on the Gaff Topsail Sheet**", ease the peak and throat halyards together keeping the gaff at the same (peak up) angle to prevent throat and lashing jamming on the mast.
5. At the same time assist the lowering of the throat by hauling down on the gaff topsail sheet, and luff.
6. If Master permits, flake the sail as it comes down, from the leech.
7. Lower the sail until the gaff sits just above the sail and boom, leaving room to place gaskets. Make fast.
8. Gasket the sail, and coil lines.

Jibs & Staysails

1. On the command "**Drop the _____ sail(s)**", flake out the halyard(s).
2. Let go the downhaul(s) and ensure they are free to haul.
3. On the command "**Let go the halyard(s), haul away on the downhaul(s)**", let go and run out the halyard(s), tend the sheets and heave on the downhaul(s) until the sail is all the way down.
4. Secure sail head with the preventer and tighten halyard, make fast.
5. Flake and then gasket the sail.
6. Tidy lines.

Note: There is no downhaul on the main staysail, it is hauled down by hauling on the luff (placing hands on the luff between the luff rings).

Squares

1. On the command "**Drop the _____ sail(s)**":

The following applies only to the Topsail and Topgallant

2. Let go and be ready to ease the lee brace.
3. Flake out the sheets.
4. Lower the yard by easing out the halyard hand over hand, and haul away on the clew lines whilst taking in the slack on the bunt lines; until the yard is in its lifts (i.e. hanging in the lines that run to the ends of the yard from the mast, with no tension on the halyard). In windy conditions clew up weather side first.

5. Make fast the halyard, tension and make fast the lee brace.

The following applies to all squares from this point

6. Let go sheets, haul in on clew lines and bunt lines until the sail is fully pulled in against the yard. Make fast clew lines and buntlines.
7. Check with the Master; either the sails will be left hanging 'in their gear' for use a little later on, or a few people will be needed aloft to stow the sail (curling the sail into itself and then gasketing it and secure on top of the yard using a gasket hitch).
8. Brace yards as required, normally square, check braces are hauled in hard to prevent movement whilst people are aloft on them, tend bunts, clews and sheets.
9. Topmast hands aloft and stow the sail, placing the sheets over the yardarms.
10. Once stowed, deck crew take in slack and coil all lines.
11. Brace the yards for coming alongside.

Main Gaff Topsail

1. On the command "**Drop the Main Gaff Topsail**", without releasing the lines from the pins, flake out the halyard, knock line and sheet.
2. When all is ready, on the command "**Let go halyard, knock and sheet, haul away on the tack**", let go and lower away the halyard, knock line and sheet maintaining only enough tension to control the sail and keep it close to the mast.
3. Haul down the sail with the tack as quickly as possible (this will need at least a couple of people).
4. Once the sail is on deck, temporarily stow the sail, with lines attached out of the way. Make fast the lines and coil up.
5. If striking, disconnect lines except the tack, make fast and coil up.
6. Coil tack line into the sail.
7. Fold and stow sail below.

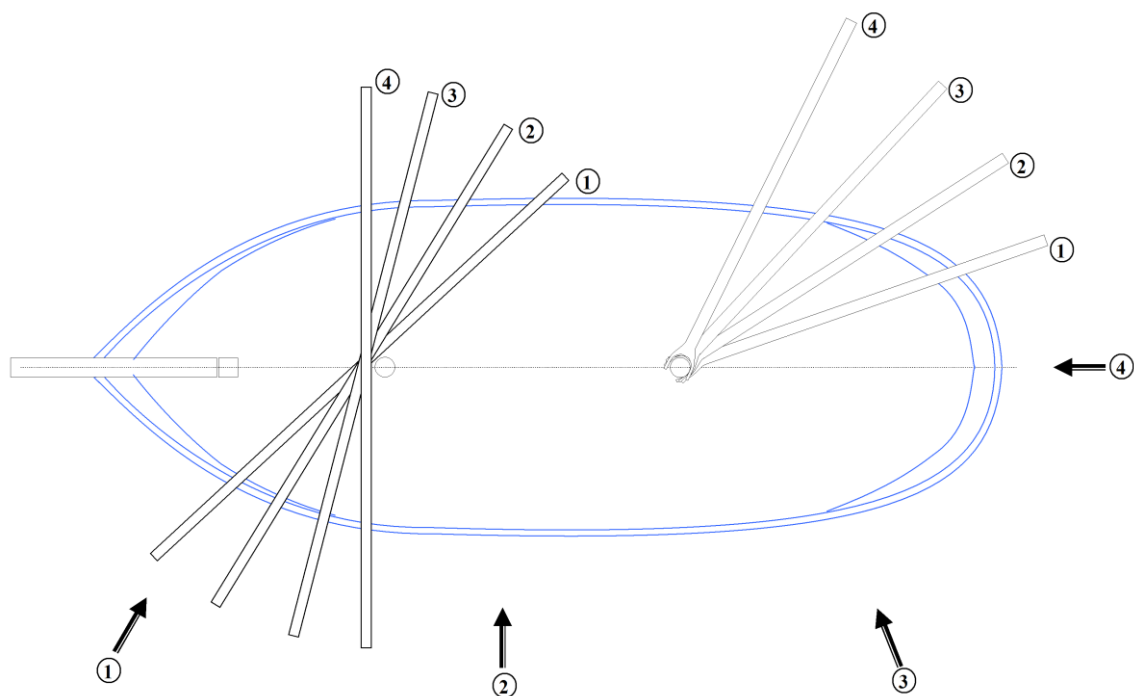
SETTING SAILS

The first thing to remember about *Breeze* is that she will not sail any closer than about 60 degrees to the wind under fore and aft sails, and about 80 degrees under squares and fore and aft sail. She will not make any meaningful distance into the wind without at least one square up.

The Master will inform the Mate when the vessel is on course. When trimming sails, you always start forward and work your way aft.

The easiest way of trimming a sail is to ease it out until the luff starts to backfill (this is called luffing) and then haul it back in a little. The sail is now trimmed. Backfilling is when the sail starts filling from the opposite direction from the wind, usually caused by the disturbed wind from another sail.

The image below shows the approximate positions of the sails for different wind directions.



All of the wind directions above apply to either port or starboard tack. The beam or the middle of the boat is used as a reference point. All terms relating to the boat are referred to as forward or aft of the beam.

Position	Wind direction – sail trim description
1	Wind forward of the beam – close hauled or close reach
2	Wind on the beam – reaching
3	Wind aft of the beam – broad reach
4	Wind aft-stern - running

A vessel will not sail efficiently if the sails are incorrectly set. Sails should always have an even curve – not flapping (should be sheeted (pulled) in) or have hard lines through them (ease out). When in doubt ease it out; check the Luff and reset the sail until the Luff is only just full.

TACKING

This is where the bow of *Breeze* is put 'through the wind' going from one tack to another, and changing course by approximately 120 degrees.

First a little speed is needed, to gain momentum for the tack. This is sometimes done by 'bearing away' -from the wind a little until more speed is gained. The course, if set, is normally clewed up at this point. Enough slack should be left in the tacks and sheets to allow the yards to come fully round for the new tack.

Then *Breeze* is steered steadily up into the wind, with the main being hauled in hard to the centreline.

The square(s) become backed and then forestaysail or jib may be backed as well, with the other foresails and staysails being allowed to come through from side to side of the vessel, as the wind takes them.

If the crew are fast enough, these sails can be made fast in place for the tack, before the wind fills them. Once the vessel has the wind on the opposite bow, the backed foresails can come across.

Once the main staysail is full, the yards are braced around for the new tack, and once they are around, the main is eased out as the vessel gathers way.

Procedure:

On the command "**Raise tacks and sheets, clew up the Course**":

1. Let go tacks and sheets and let run, ensuring they do not drag over the side, and haul away on the clews and bunts until the sail is fully against the yard. Make fast clews and bunts.
2. Ensure enough slack is left in the tacks and sheets to ensure the yards can be braced for the new heading and ensure they cannot drag over side.

On the command "**Stand by to Tack**":

3. Crew are needed ready on one side of the main sheet, remaining crew to the other sails. Cast off the coils and have lines in hands ready.
4. When all are ready, the Mate to report to Master "**Ready to Tack**".
5. On the command "**Tacking, (or Helm's down, Lee-oh)**", haul the main in hard to the centreline.
6. For those foresails not being backed, and the staysails, once the wind comes out of the sails, the sheets are eased on the windward side and hauled in on the leeward side to allow them to come across with the wind. Do not haul in too quickly, as this can back the sail, and slow the ship down!
7. For the foresail(s) being backed, the lee sheet is kept made fast, so the sail becomes backed as the wind comes onto them from the other side.
8. Once the foresails are not being backed and staysails have come into line with their new sheet line position, the sheets should already be taut, as above, and can be made fast before they fill with wind.
9. At this point, on the command "**Cross the foresails / let go and haul foresail sheets**", let go the windward sheets for the foresails being backed, and haul in on the leeward sheets, as quickly as possible. Make fast but do not tidy up.

10. Crew smartly to yard braces.
11. On the command "**Brace the yards**", check anyone aloft is safe for bracing the yards.
12. Brace the yards right around for the new heading, taking care when bracing that the yards are not hard up against the shrouds. Then tidy up all.

GYBING

This is where *Breeze's* stern is taken through the wind, onto a new heading.

Outline:

If the course is set, it may be clewed up before the manoeuvre. The yards are braced square, leaving the squares in a sailing position for the duration of the manoeuvre. The helm is then put up (tiller into the wind) and the main brought in hard to the centreline and made fast. The foresail and staysail sheets are eased across as the wind comes onto the other side of the vessel.

Once the wind fills the opposite side of the main, it is eased out for the new heading, and then the yards are braced.

Sails are then trimmed, sheets made fast, and the done, tidying up.

Procedure:

On the command "**Raise tacks and sheets, clew up the Course**";

1. Let go tacks and sheets and let run, ensuring they do not drag over the side, and haul away on the clews and bunts until the sail is fully against the yard. Make fast clews and bunts.
2. Ensure enough slack is left in the tacks and sheets to ensure the yards can be braced for the new heading then ensure they cannot drag over side.

On the command "**Stand by to Gybe**":

3. Brace the yards square.
4. Let go the preventer if set.
5. At least three crew are needed ready on one side of the main sheet, other crew to the other sheets. Cast off the coils and have lines in hands ready.
6. When all are ready, Mate to report to Master "**Ready to Gybe**".
7. On the command "**Gybing (or Helms up, Gybe-oh)**", haul in the main hard to the centreline and make fast
8. Fore and Staysails, Ease and haul in the sheets on the opposite side, the sheets, leaving the sails well rounded.
9. Once the main has filled from the opposite side, ease it out until the Mate or Master calls.
10. Brace the yards for the new heading.
11. If required, reset the course.

HEAVING TO

Heaving To is where the sails are used to bring the vessel to a stop so there is no forward or aft movement. However, the vessel will still move sideways with the wind.

Breeze will act differently to different sail configurations but basically the intention is to have sails at the fore part acting against sails in the aft part such as sheeting in the main with the foresails or squares backed.

With different sail configurations it is also possible to retain steerage but slow the forward speed.

The forward sails are trying to push the bow of the vessel away from the wind, but the main is trying to push the bow closer to the wind. So, the vessel will find a position relative to the wind where the forces equal each other.

So, if you intend to heave to, make sure you have enough sea room for the manoeuvre.

REEFING

Reefing is where the sail area is reduced by gathering a portion of the sail together. There are only two sails on *Breeze* that can be reefed; the main and topsail. The Master makes the decision to reef depending on the forecasted wind speed for the voyage.

Reefing gear is stowed under the starboard quarter berth.

Main

The main is fitted with two rows of reef points. The following procedure is done before hoisting the sail.

1. Check with Master which reef they want in, 1st or 2nd.
2. Hoist gaff about a 1 meter.
3. Lash the appropriate reef tack cringle to the boom.
4. Using the appropriate reefing line, pull the reef clew cringle out towards the end of the boom and make fast.
5. Lash the reef clew cringle to the boom.
6. Tie all the reef points along the sail. Under the sail, **NEVER** under the boom. The image to the right is a secured reef point.

When hoisting, with one reef in, try to ensure that the gaff jaws end up around the copper mast band. There is no copper band for the second reef.

Note: when hoisting with a reef in, watch carefully during the process to ensure that the correct reefing lines have been used. If not, lower, correct the problem and hoist again.



Top Sail

The top sail is fitted with two rows of reef points

1. Check with Master which reef to put in.
2. Before going aloft, cast off the sheets.
3. Cast off gaskets, take sheets off the yardarms.
4. The reefing lines are spliced to the cringles on the clews.
5. Take up as much tension on the reefing lines as possible and make fast on the yard.
6. Lash the cringles vertically to the yard.
7. Using the appropriate set of reef pennants in the sail, secure the head of the sail. Make the reef pennants fast around the sail not the yard, and clear of the clew and buntlines.
8. Watch when setting to confirm that things are as they should be, if not, clew it up and sort it out.

Notes regarding reefing:

The sail is hoisted and lowered normally. Once the sail is dropped at the end of the day or end of voyage, if the Master gives the order, the reef is removed.

The Master or Mate should also note in the log that a reef has been used, so this is so the next crew on can double check that all the reef points were let go.

There is no order to removing the reef, but the Mate is required to check that all lines have been let go before informing the master that the vessel is secure at the end of the day.

WORKING ALOFT

GOING ALOFT

It is important to note that working aloft is potentially hazardous but is safe if the correct procedures are followed.

Safety harnesses must ALWAYS be worn when going aloft or outboard when under way.



1. Don the correct safety harness and lanyards. The harness should be adjusted to be a comfortably snug fit.
2. Red safety lines are provided to clip the harness to. The technique is to “clip above” so that maximum fall is limited to the length of the tether.
3. Prepare to climb the ratlines. All ascents and descents should be on the **windward** side. Visual check aloft to check safe passage e.g. no loose lines to impede the climb. Ensure braces are tight. Secure any tools etc to a lanyard or tool belt.
4. Advise the mate that you are about to ascend.
5. Climb from **outboard** of the ratlines. always Maintain three points of contact i.e. two hands one foot; two feet one hand. Hands to the vertical, feet to the horizontal. Do not hold or clip onto the running rigging.
 - Tophands may use the rope grab to ascend ratlines to the cross trees. All other crew must be clipped on to the red safety lines while ascending lower ratlines
 - **All crew must always be clipped on** when above the lower ratlines – at least one of the two tethers must be attached.
6. When preparing to step onto a yard visually ensure an unimpeded route. Call out **“Stepping on port/starboard”**
7. Step on to the footrope and under the safety line.
8. Ease out to the working position
9. When working keep feet firmly on the footrope with body weight taken on the stomach over the yard
10. To return to the mast and descend reverse the procedure calling out **“Stepping off port/starboard”** as bodyweight is transferred from the footrope to the ratlines

RECOVERY ALOFT



A person suspended in their harness is in a very dangerous position.

Recovery must be made ASAP

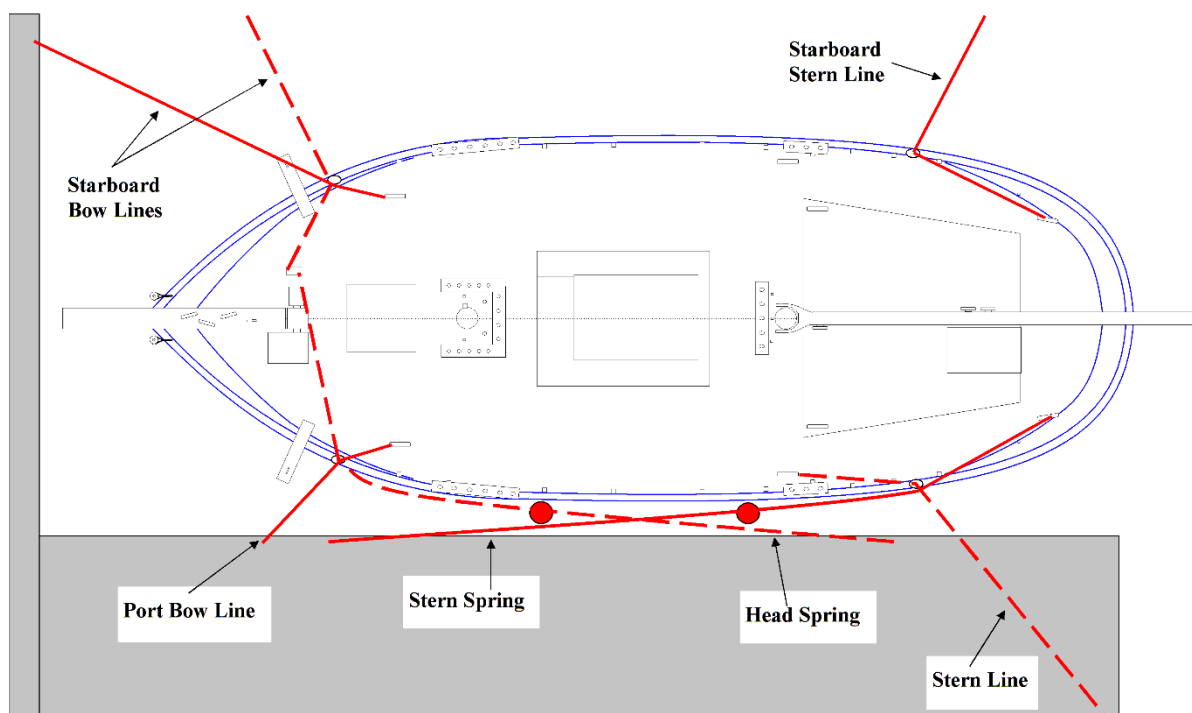
In the event of a Top Hand falling and being suspended by the safety harness, the person suspended in their harness is in a very dangerous position and recovery must be made without delay. The following is to be used as a guide, as the circumstances of a fall may require actions differing from those below:

The basic method is to use the gantline which runs through a sheave at the mast head to hook onto the casualty's harness, take the weight, release their grip and lower the person to the deck.

1. The gantline is made fast on each side of the aft pin on the foremast pin rail; this has a bowline on each end and a figure eight knot above this to prevent losing the end through the sheave.
2. Hook on the snap hook (which is in a plastic envelope above the chart table,) to one end and the descender device to the other end. Bend on the long heaving line
3. The rescuer takes the gantline hook and climbs the mast, while three deck crew attend the gantline, and one attends the attached heaving line.
4. The rescuer hooks the snap hook onto the victim's harness.
5. Deck crew heave and take the weight; the rescuer releases the casualty's harness attachment.
6. Deck crew lower casualty smoothly and quickly to deck while controlling swing with the heaving line.

Alternatively, it may be possible to bring the casualty to the ratlines or hoist back onto the footrope.

MOORING



MOORING LINES

- All mooring lines to have a good lead (fairlead) from the dock to the point at which it is secured.
- The panama leads in the bulwarks were fitted a few years ago, the bulwarks are not strengthened for the loads the mooring lines can exert when turned through close to 180 degrees.



BOARDING AND DISEMBARKING PASSENGERS

1. Ensure BREEZE is alongside as close to pontoon/wharf as possible.
2. The course yard brace should be bowsed up to a ratline so that it will be clear of people's heads when they board.
3. A crew member should be standing on the pontoon or wharf, positioned to assist passengers embarking or disembarking.
4. Another crew member should be standing on BREEZE to assist passengers embarking or disembarking.
5. Bags and other possessions should be handed over by crew.
6. When BREEZE is relatively stable with no passing boat washes, passengers are invited to embark or disembark with care, using the forward mainmast shroud as a handhold.

BOARDING OR DISEMBARKING AT NZNMM BERTH

1. Ensure the pontoon steps are close to the pontoon edge.
2. Ensure inboard steps are squarely seated on the capping rail and deck.
3. Proceed with Steps 1-5 above.
4. When BREEZE departs the steps are left on the pontoon.

DISABLED PASSENGERS

- Less physically mobile passengers will need extra assistance in boarding and moving around the vessel once it's underway.
- The Master has the final say in deciding if the persons lack of mobility represents a safety concern when considering all factors including but not limited to the weather forecast, sea state on the intended passage.
- If necessary, a disabled passenger may require a carer be present to look after the passenger during the voyage
- Due to Health and Safety requirements **Wheelchairs are not able to be boarded** on Breeze

DEPARTING

Master to ensure the mate is thoroughly briefed on the departure from the location and what signals will be used whilst manoeuvring.

Whilst we all have our preferred methods of departure from a pontoon or wharf, please follow the following basics both to clear other berthed vessels and avoid contact with the bowsprit and course yard.

1. Brief the crew and the line-handlers on the proposed method of departure
2. Cast off all lines as per Master's instructions.
3. Retrieve lines quickly from docks to deck.
4. Master notified "ALL lines clear of water" after last line is on deck.
5. Watch the bowsprit and the yards for contact.
6. All lines stowed out of the way.



BERTHING

Whilst we all have our preferred methods of berthing please follow the basics both to clear other berthed vessels and avoid contact with the bowsprit and course yard.

1. Check the height of tide regarding course yard or bowsprit contact.
2. Brace the yards to preferred side as per Master's instructions.
3. Position crew and ensure correct mooring lines are used. Make all lines ready for use.
4. Brief all line handlers to ease lines until the master tells them to make fast.
5. Watch the bowsprit and the course yard for contact.
6. When alongside, adjust lines to Master's satisfaction.

When berthing at NZMM, the angle of approach and boat speed will depend on wind and tide conditions which can only be judged on commencement, e.g. in a northerly wind it might be necessary to approach the berth with the engine astern.

Easing spring line:



CONTROLLED BEACHING

Unless Breeze is in dire emergency, **she will not be beached.**

ANCHORING AND MOORING

LOWERING THE ANCHOR

1. Bring anchor winch handle on deck.
2. Take cover off winch and check the brake is on and pawl engaged.
3. Undo the trip line from pin on cathead.
4. One crew member takes the weight of the anchor on the trip line.
5. Third crew loosens the securing line around the throat and through the shackle.
6. Take up the trip line to raise the anchor flukes clear of the capping rail and whisker stay.
7. Two crew members carefully manoeuvre the anchor into the flukes down position.
8. As the anchor turns, check all clear of hull.
9. Ease the anchor into the water with trip line.
10. Remove the trip line from the cathead sheave and secure the anchor buoy to the end.
11. Insert winch handle, take off brake and take up tension on the chain.
12. Remove preventer, disengage the pawl and re-apply the brake.
13. Remove the winch handle.
14. On Masters Orders release brake to allow free run of anchor chain as vessel motors astern.
15. Chain length called to helmsman at each 10m mark.
16. Apply brake on Master's Orders.
17. Check anchor is dug in and vessel brought up.
18. Hook preventer to chain.
19. Ease brake, take weight off chain with winch handle, engage pawl and re-apply brake.
20. Hoist anchor ball or turn anchor light on. Anchor light socket is on starboard side of forward hatch. Switch the light ON at the switchboard.
21. Note bearings and transits, lay off position on chart.



RAISING THE ANCHOR

1. Bring anchor winch handle and handy billy on deck.
2. Lash single sheave of handy billy to lowest eye of foremast starboard shroud.
3. Run out handy billy until double block reaches port cathead.
4. Check pawl is engaged, insert winch handle, and release brake.
5. Take up slack in anchor chain and remove preventer.
6. Station ONE crew member at chain locker to flake chain as anchor is raised.

7. Station mate at bow to monitor progress of chain.
8. Start engine, engage SLOW AHEAD.
9. Motor slowly ahead to ease load on the winch.
10. Wind in anchor using low or high gear on the winch as necessary.
11. When chain is vertical and anchor breaks free from seabed, mate calls 'ANCHOR'S AWEIGH'
12. When shackle on anchor shank breaks surface, mate calls 'ANCHOR AT THE SURFACE.'
13. Stop winching, engage pawl, apply brake and secure chain with preventer.
14. Bring trip line in with boathook.
15. Remove anchor buoy and thread line through cathead sheave.
16. With double sheet bend, secure handy billy double block to trip line close to cathead sheave.
17. Take up slack on handy billy, haul away and raise anchor to cathead.
18. As anchor is coming aboard, two crew members in life vests, keep flukes from fouling topsides.
19. Make off handy billy to spare belaying pin.
20. Thread securing line through shackle on shank and haul shank to horizontal position.
21. Temporarily make off securing line.
22. Two crew members turn anchor to flukes up position and place a-straddle capping rail and whisker stay.
23. Secure anchor throat with securing line and make off to pin on cathead.
24. Ease handy billy, free trip line and make off to pin on cathead.
25. Release brake, remove preventer and winch in slack chain.
26. Re-secure preventer, slacken chain to ease load on winch, re-engage pawl and re-apply brake.

ENVIRONMENTAL CONTROL

Heads should be kept clean and tidy at all times.

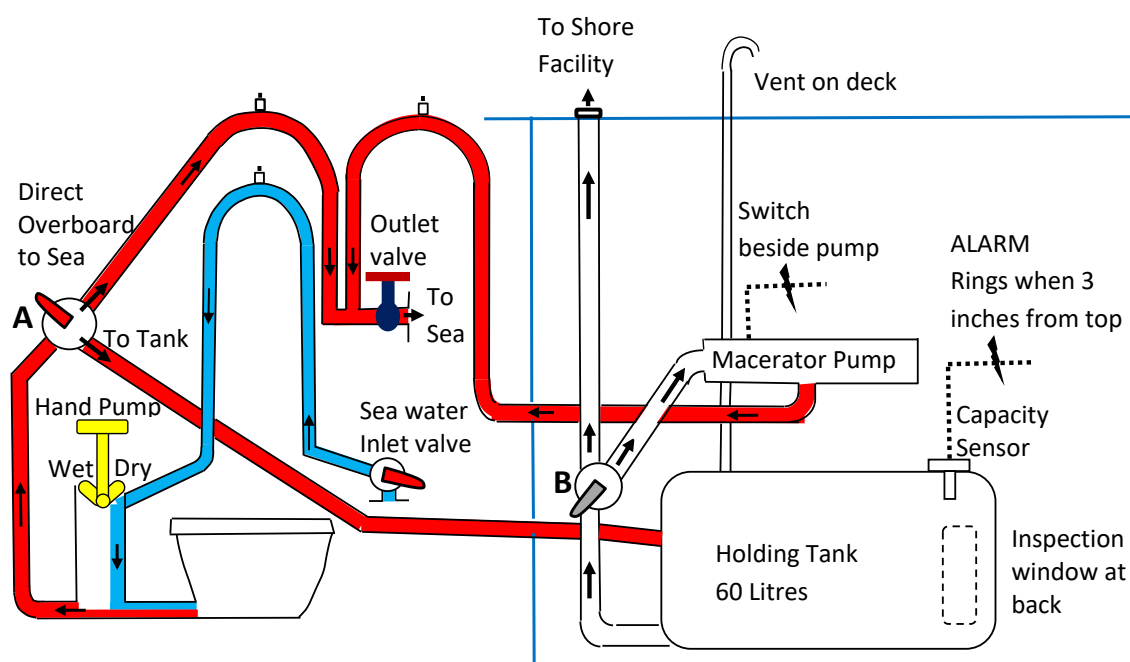
Please be sparing with toilet paper to help to prevent blocked pipes

Do not place anything in the head that has not passed through the body!

The Head provides two options for discharge.

1. Direct Overboard Discharge. (At sea)
2. To Holding Tank. (Inshore)

Crew must set up appropriate valves for passengers prior to use. If unsure of process, please seek advice.



Normal Operation:

In Port: Holding tank in use and emptied when ship goes to sea using B

At Sea: Direct overboard is selected at A

Note:

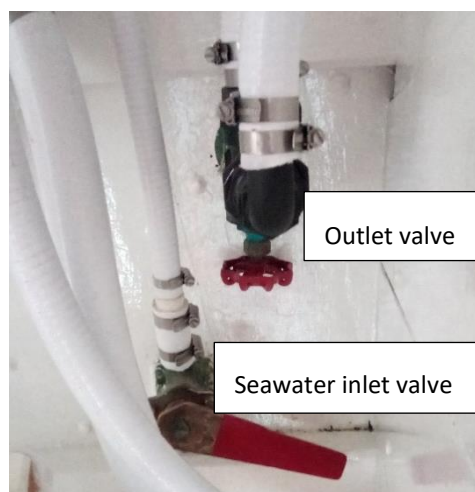
The cocks A & B direction selected, is indicated by the word "OPEN" or an arrow being revealed (not by direction of handle).

TO HOLDING TANK

1. Open the seawater inlet valve (behind toilet).
2. Close the outlet valve.
3. Turn diverter valve A to reveal "Open" on holding tank pipe. Valve is normally padlocked in this position.
4. Use toilet as per instructions.

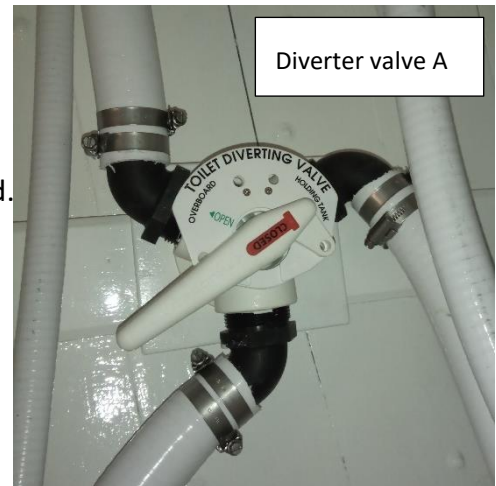
When the Aqualarm red light shines, the holding tank is full.

Please do NOT use toilet until tank is emptied.



DIRECT DISCHARGE OVERBOARD

1. Open the seawater inlet valve (behind toilet).
2. Open outlet valve for OVERBOARD discharge.
3. Turn Diverter Valve A to reveal “Open” to overboard.
4. Use toilet as per instructions.

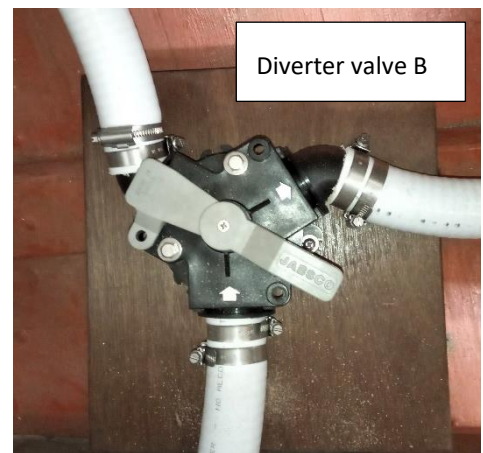


DISCHARGING BLACK WATER TANK AT SEA

Untreated sewerage will not be discharged closer than 500 metres from shore, a Maitaitai reserve or marine farm or closer than 200 metres from a marine reserve, or in any harbour operations area, or further if an applicable local bylaw is in effect.

Procedure

1. Start ship's engine.
2. Open outlet valve (behind toilet).
3. Turn diverter valve B to OVERBOARD (under starboard saloon bunk).
4. Check that circuit breaker is ON (in battery box).
5. Push Black Water switch and hold – (behind bunk panel)
6. To monitor discharge, check inspection panel at back of tank.
7. DO NOT RUN PUMP DRY.
8. When tank is empty – release Black Water switch.
9. Turn diverter valve B back to ASHORE.
10. Close outlet valve (behind toilet).
11. Shut down ship's engine.



DISCHARGING ALONGSIDE

1. Wear disposable protective gloves when pumping blackwater alongside.
2. Turn diverter valve B to 'ASHORE' (if not already set).
3. Open the blackwater deck fitting cap.
4. Fit the blackwater hose nipple to the deck fitting.
5. Connect the onshore blackwater hose to the nipple and lock it.
6. Switch the onshore blackwater pump ON.
7. Monitor the blackwater discharge through the clear section of the hose.
8. When tank is empty, switch the onshore pump OFF.
9. Remove the nipple from the deck fitting and replace the cap.
10. Leave diverter valve B in ASHORE position.



LAUNCHING AND RETRIEVING LONG BOAT



LAUNCHING

1. Starboard Long boat:
 - One crew member to put on harness, climb starboard foremast shrouds and untie boat boom lashing.
 - Undo safety lines on starboard side and stow.
 - Prepare long boat to be launched – check oars, bailer and rowlocks.
 - Screw in bung; tie on two fenders to port.
2. Square course yard, if braced to starboard.
3. Ease starboard yard brace right off.
4. Secure boarding ladder to starboard side.
5. Undo boat boom topping lift and release guy and falls.
6. Ease topping lift to lower boat boom to clear mainmast shrouds.
7. Secure topping lift.
8. Ease falls and connect to long boat lifting bridle.
9. Three crew to stead/take weight off long boat.
10. Haul away on falls, lift long boat to prevent swinging, steady boom with guy.
11. Throw long boat fenders outboard, take painter and manoeuvre long boat, bow first outboard of vessel.
12. Swing fore and aft.
13. Lower away guy for long boat to clear gunwales.
14. Lower away falls to float long boat.
15. Make off with bow and stern painters.
16. One life jacketed crew member to board long boat and unclip falls.
17. Bring falls inboard and secure.
18. Passengers into life jackets and board down ladder.
19. Loading to be in relation to sea and weather conditions but normally restricted to a **maximum of three large or four small to medium sized people** in the long boat.



Beware of flooding through the centre board case.

RETRIEVING

1. Remove all gear except as in launching procedure.
2. Attach bridle.
3. Heave boat out of water and stow on cabin top in reverse as in launching.
4. Remove bung and drain. Leave boat open to dry out. When dry replace all gear, lash and replace cover. Lashings should be a single hitch on a bight.
5. Top derrick and lash at the cross tree.



PRE-DEPARTURE CHECKS

ENGINE OPERATION

Start up

1. Open engine cooling intake valve.
2. Open fire seawater intake valve.
3. Check sump oil level – replenish if necessary.
4. Check gearbox oil level – replenish if necessary.
5. Check coolant level – replenish if necessary.
6. Turn house and engine start batteries on.
7. Check that all circuit breakers in battery box are ON.
8. Check Gas alarm is on and light is green.
9. Test bilge alarm float (below bilge valves).
10. Switch VHF radio ON.
11. Ensure engine is out of gear.
12. Turn engine ignition/start key.
13. Check overboard discharge.
14. Check battery charging after 3 minutes (voltage between 13V and 14.4V).



POST TRIP CHECKS

Engine shut down

1. Pull Engine stop button and hold until engine stops.
2. Buzzer sounds – Turn engine ignition/start key off.
3. Switch VHF radio OFF.
4. Turn off batteries. Circuit breakers must remain ON.
5. Close engine cooling intake valve.
6. Close fire seawater inlet valve.
7. Record engine running hours in Ship's Log



Lines tidied away

- All lines hung off deck to prevent dirt and water damage to deck and lines.

- If there are no toggle line, use a small lashing and note in defect book.

Main boom

- Place the boom crutch in position. Lower the topping lifts and haul the mainsheet in taut to remove the risk of the crutch getting dislodged when rocking, ensuring that the sail has not been caught between the boom and the crutch. Then take the slack out of the topping lifts.
- Rest gaff on its halyards to remove chafe caused by the gaff rolling hard on the mainsail.

Yards

- There is no need for the yards to be braced onto the backstays and shrouds.
- Black & red seizing assist with reducing damage caused by chafe on the yard braces.
- Please line them up when bracing the course yards.
- New chafe gear has been fitted over the years. This is meant to be worn away. There are only a few people that get aloft and who know what to look for – if we keep the yards off the standing rigging, it reduces wear and tear which in turn means less money wasted and less grumbling from those that replace gear well before its time.

Foresail and staysail halyards

- After stowing sails, put enough tension on the halyards so that they do not lie slack or across a stay and chafe.
- Put the sail covers on.

Squares, buntline and clewlines



- Once a harbour stow is put in, slack off the buntlines and clew lines.
- Once yards are braced to the alongside position, adjust all bunts and clews.

The most tension/load required is a “Light” securing weight only.

If there is tension left in the lines when there is a harbour stow, it can result in strain on the gear that can cause damage over the long term.

Deck wash with saltwater

- Please use fire pump system to wash the deck down with salt water.
- Only use fresh water if painting is happening the following day/week.

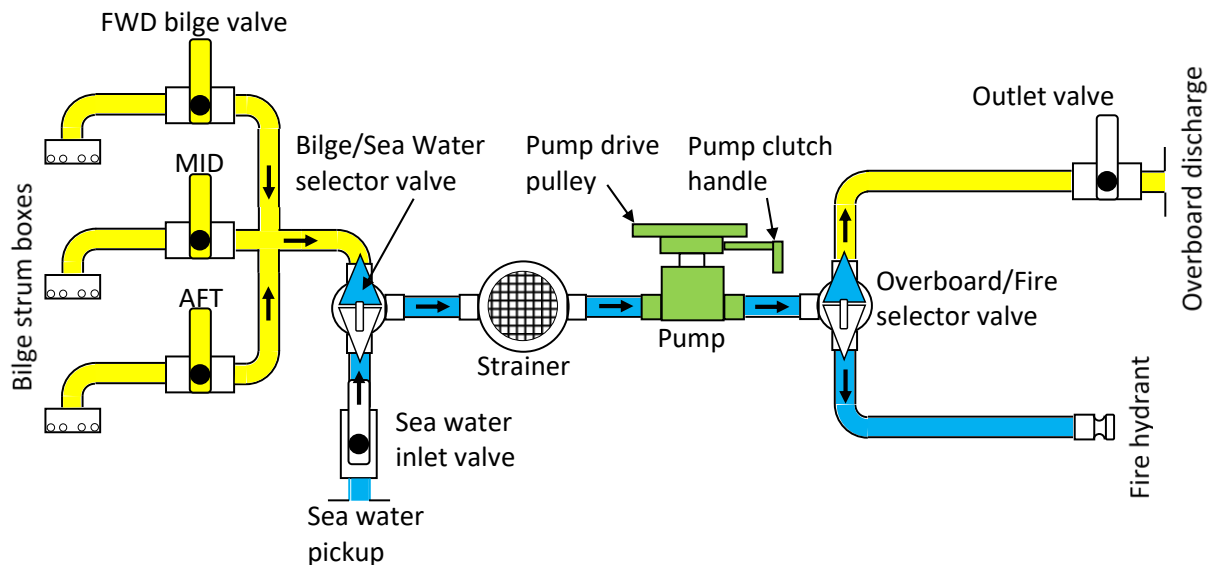
Final check

- Black water pumped out.
- Engine Shut Down done.
- Washboards in and hatches closed and locked.
- Ensure gas is off at bottle.
- Rubbish taken ashore and placed in rubbish receptacle.

REFUELLING

- Make sure vessel is secured alongside pontoon.
- Agree to a plan for how to immediately stop refuelling if a spill occurs.
- Check tank levels and estimate how much fuel is needed to refuel the vessel.
- Plug the scuppers with sorbent material.
- Place sorbent mats around the fuel intake in the deck.
- No smoking, cell phones, hot work or naked flames whilst refuelling.
- Have spill kit on hand.
- Refuelling from pump (a refuelling pontoon)
 - Check that you are using the DIESEL pump.
 - Keep in communication with pump attendant.
 - Never leave the fuel pump unattended.
 - Make sure a trained person monitors the entire refuelling operation.
- Refuelling from containers
 - Make sure you use a large funnel or siphon hose.
 - Make sure a trained person monitors the entire refuelling operation.
- Note amount of fuel bunkered in vessel log.
- Replace spill kit if necessary.

FIRE SYSTEM



FIRE / DECK PUMP

- Run fire hose out on deck (with no kinks) and connect to fire hydrant on deck.
 - Open sea water inlet valve (under galley floor).
 - Open selector valves (white tips down).
 - **Ensure all yellow handled bilge valves are closed.**
-
- Start Engine
 - Engage pump (green handle down).
 - Ensure water flowing through sight glass on top of strainer.
-
- To end, disengage pump (green handle up).
 - Shut down engine.
 - Close intake valve.



SUPPRESSION SYSTEM

The engine compartment is fitted with a “Fire Extinguishing Aerosol Generator” fire suppression system. The system is MANUALLY ACTIVATED from the control panel located in the companion way. Gas production is based on potassium salts (not CO₂).

When the system detects a fire in the engine compartment, the alarm and red flashing light is activated. The red light is fitted to the rear of the engine compartment.

- Evacuate all crew and passengers.
- Shut down engine.
- Close Air vent shut-off by pulling the pin on the starboard side of the Dorade box.

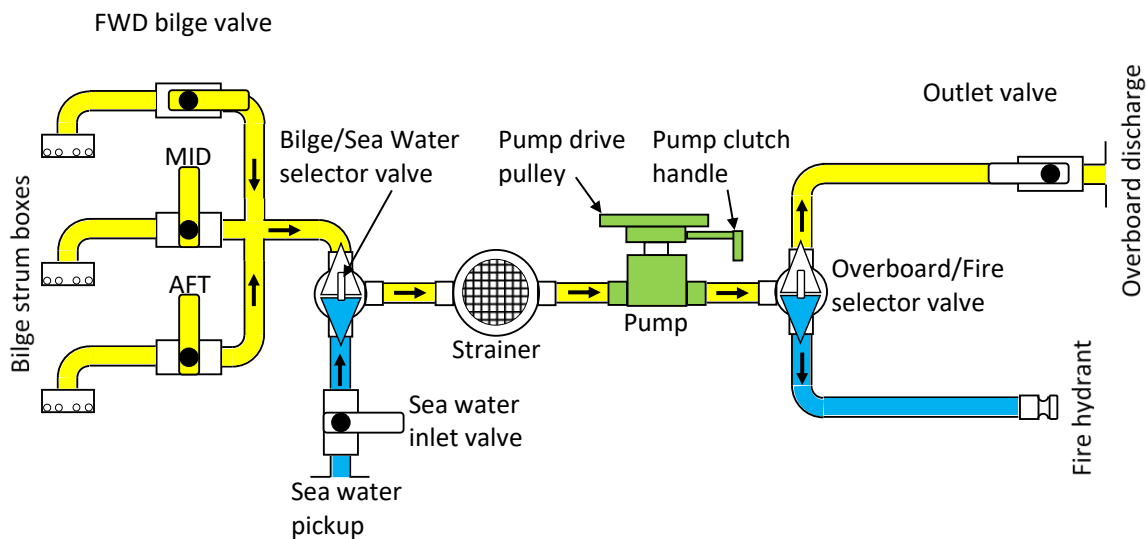


The fire suppression system is only activated under the master’s direct supervision.

- To activate the fire suppression system, on the control panel, lift the protective cover over the manual switch and push switch up. The alarm will be silenced but the red light will remain on while gas is released into the engine compartment.
- Do not open engine compartment.
- Get external help, e.g. tow into a berth.



BILGE SYSTEM



BILGE ALARM

The vessel is fitted with a bilge alarm that is permanently powered from the house battery, protected by a circuit breaker in the battery box. The float switch is in the lowest part of the bilges, forward of the engine compartment.



The alarm panel is on the left-hand side of the companion way.

If the bilges fill with water to the point of tripping the float switch, the alarm will sound, and the red LED light will be lit.

While investigating the water ingress or activating bilge pumping, the alarm may be silenced with the ON/OFF switch in the OFF position. The LED light will remain on until the water level subsided below the float switch.



During normal operation, the switch must remain ON.

BILGE PUMPING

- Start engine.
- Check bilge overboard discharge valve (behind stove) is open.
- Open both selector valves – white tips up.
- Open the valve from required compartment to be pumped. (yellow handles)
- Ensure all other yellow handles are closed.



- Engage pump (green handle down).



- When bilge is empty, disengage pump (green handle up).
- Close both selector valves – white tips down.
- Close all yellow handle valves.



MANUAL BILGE PUMPS

There are two manual bilge pumps:

- Starboard side of companionway stairs
- Aft bulkhead of mid cabin

The mid cabin bilge pump can be selected between bilge and greywater.

Note: always leave selector in BILGE position.



PERSON OVERBOARD

Three options are available to recover a person from the water, depending on the condition of the person. As the condition isn't known until alongside the person, prepare both options for use.

The options are:

1. The Bight Lift
2. Rescue Sling Lift
3. Sail Sling Lift

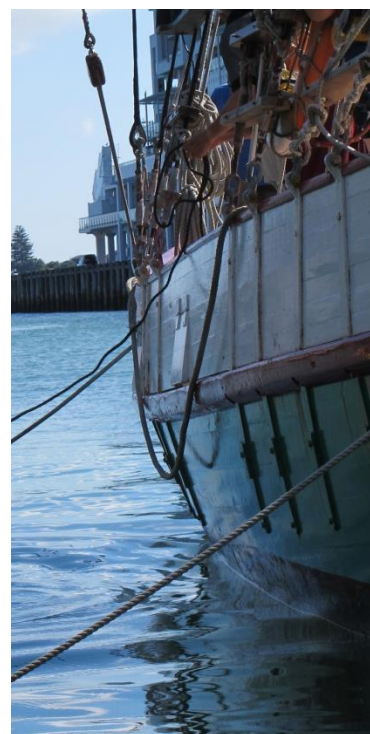
PROCEDURE:

Follow the Person Overboard Procedure in MTOP to return to the person in the water.

- Mate to use crew not employed in watching person in water to prepare for recovery
- 2 crew to put on the crew life jackets
- 1 crew member should prepare to enter the water by removing excess clothing and footwear and putting on the buoyant vest

The Bight Lift

- Take the spring line (on the side that the master is going to recover on) and run it through the forward panama, down the OUTSIDE of the hull to its full length. Secure it to the cleat on the inside of the panama, the other end is just pulled over the cap rail by the main ratlines.
- 2-3 crew (passengers can be used to assist crew here if short on crew) on the rope.
- Feed the rope into the water from the main ratlines position, DON'T walk it forward, until it is under the water below the persons feet.
- The person should hold the rubbing strip of the vessel and put their feet on the rope
- The 2 crew in life jackets to hold onto the person in the water, to help steady the person and help lift them up. Each of the crew members should also have a backup person holding onto them.



On the Mates command the rope is SLOWLY pulled in, making sure the persons feet stay on the rope, once the person's waist is level with deck they pitch forward onto the deck. The rope is still slowly pulled as this helps push them onto the deck

Rescue Sling Lift

Because it is highly likely that the casualty will be exhausted when they are brought alongside, they simply may not be able to haul themselves onto a ladder.

With clothing trapping a lot of water, the assisting crew may find it extremely difficult and heavy to pull the casualty up and onto the vessel. This is when mechanical assistance may be required.

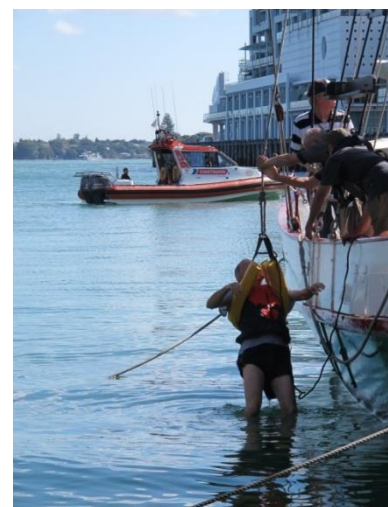
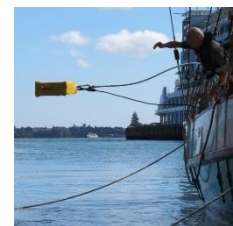


One of the devices you could choose to use in this situation, is a rescue sling. This is a padded sling which is attached to 20-30m of floating line. Instead of throwing this device overboard the vessel, it is simply streamed out behind and then the vessel circles the casualty a couple of times.

As the lines pass the person in the water, they can grab hold and put the sling under their arms, allowing the crew on board to haul them in. This avoids the weakened casualty having to 'hang-on'.

Once the casualty is alongside, a halyard can be attached to the two metal D-rings in the centre of the sling and the crew member can then be lifted on board in a similar manner to being winched up by a helicopter.

- Remove the Rescue sling from its bag and lay the line out ready for throwing.
- Release the Main Topsail halyard from both pin rails, on the side of the recovery make sure the halyard has a free run from the topmast over the side of the vessel. On the other side move the halyard to a free pin at the base of the Main mast.
- Also ask for some strong volunteers from the passengers to help with the pulling of the halyard if required. (Training showed a minimum of 3 people are required).
- The sling is thrown to the person in the water.
- If the person is unable to put the sling on then the crew member goes in the water to assist.
- Once the person in the sling is beside the vessel the Topsail halyard is attached to the sling.
- The two crew in life jackets move to the aft entry point:
 - one is to hold the halyard and person away from the side during the lift.
 - the other is to get ready to assist the lift by grabbing the sling asap and taking weight off the halyard. (training has found the angle of the halyard through the topmast made the hauling very heavy)
- Once the person's waist is level with the cap rail the 2 crew will pull the person over the rail and the mate will have the halyard eased.



- The sling can then be used to recovery the crew member.

The Sail Sling/Rescue Scoop Method

This method of recover to be used if extreme hypothermia is suspected. Symptoms such as drowsiness, incoherence, unreasonable aggressiveness, unwillingness to accept there may be a problem, or unconsciousness are all strong indicators.

This device is essentially a triangular or square-shaped panel or sail which is attached to the vessel's rail or stanchions.

The panel is then deployed over the side so that it is submerged making a u-shape in the water. The outer tip of the panel is attached to a halyard and when the casualty is floated into the scoop, the halyard is hauled up and the scoop rolls the casualty up the side of the vessel.

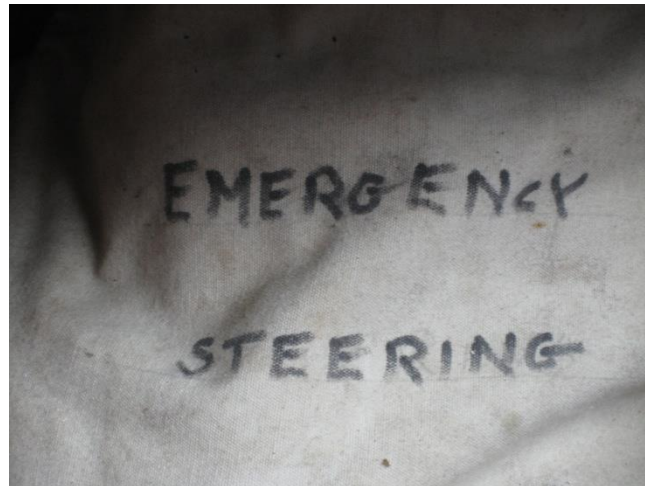


Once at deck level the crew can then manoeuvre the casualty over the handrail.

An additional benefit of this method of recovery is that it prevents gravity draining blood away from the casualty's core organs because the body is kept in a nearly horizontal position.

Once the person has been recovered follow the Medical Emergency Procedure in MARITIME TRANSPORT OPERATOR PLAN.

LOSS OF STEERING



The emergency steering gear is located in the starboard aft locker inside the cabin.

Each emergency steering gear has two blocks with a connecting handy billy system.

Procedure:

1. Retrieve Emergency Steering gear.
2. Clear steering lines from shackles on tiller – cut away if necessary.
3. Shackle one block to the tiller shackle.
4. Shackle one to the steering block shackle on the deck.
5. Lead down deck and proceed to steer.

GALLEY

BREEZE has a powered cooler. Care must be taken when storing perishable foodstuffs.

Chopping boards should be kept for separate purposes and regularly cleaned with boiling water and left to dry in natural sunshine.

The sinks should be cleaned with appropriate eco-friendly products every few days, with particular care taken to clean underside of plugs.

Hand sanitizer must be used and/or hands washed in hot water regularly.

Dishes should be washed as soon as practicable after use, in very hot water and eco-friendly detergent provided.

A clean tea & hand towel should be used each day. Tea towels should be boiled clean if unable to wash in hot water ashore.

Hands must always be washed after visiting the heads. Hand sanitizer to be available.

Care must always be taken with sharp knives and hot liquids.

Stores should be securely stowed low to prevent them from shifting during transit.



DOCUMENT LOCATIONS AND BREEZE HAZARD REGISTER

- NZMM Accident/Incident, Near Miss and Hazard Reporting Forms are in the Crew Lunchroom.
- Once filled in Refer to Maritime Transport Operator Plan.

BREEZE HAZARD REGISTER

Hazard	Risk	Controls	Controlled Risk	Person Responsible
Boarding / Departing	Moderate	Tighten mooring lines, crew assist passengers.	Low	Master
General deck operations	Moderate	Crew training. Passengers briefed and supervised as per SOP.	Low	Master
Handling mooring lines	Moderate	Crew training. Passengers not permitted.	Low	Master
Going on bowsprit	Moderate -Low	Crew training- including conditions and limits. Passengers according to specific SOP.	Low	Master
Going aloft	High	Crew training- including conditions and limits. Wearing and use of well fitting, suitable harnesses/Safety Lines. Passengers according to specific SOP.	Moderate- Low	Master
Use of hatches / companionways	Moderate	Crew training. Passenger briefing.	Low	Master
Working in Galley, Gas.	High- Moderate	Crew training.	Low	Master
Moving around below	Moderate -Low	Crew training. Passenger briefing.	Low	Master
Anchoring	High- Moderate	Crew training.	Low	Master
Manoeuvres/Sailing Ops including Setting sail, Trimming, Tacking, Gybing, Wearing, Reefing, Lowering sail.	Moderate	Crew training. Passenger general briefings. Passengers only when specifically briefed and under supervision.	Low	Master
Sails, running rigging etc stuck aloft	High	Suitably trained persons on board	Moderate- Low	Master
Crew aloft fallen but held in harness	High	Suitably trained persons on board	Moderate	Master
Master or Mate incapacitation	Moderate -Low	Mate and Crewperson on board able to take up next role in limited capacity	Low	Master

GLOSSARY OF NAUTICAL TERMS

Abeam	At right angles to fore and aft line of vessel
Aft	Behind, towards the after or stern part of a vessel.
Aloft	Anywhere above the vessel's deck.
Amidships	The middle portion of the vessel. Also, the position of the rudder when it is in line with the centreline of the vessel.
Anchor	A device used to hold the vessel to the bottom of the sea. Commonly made from metal and found near the bow of the vessel.
Anchor Line/Chain	A length of rope or chain (or a combination of the two) that connects the anchor to the vessel.
Astern	At any point behind; away from the vessel in the direction opposite to her course or going backward.
Backstays	Wire ropes which take up the forward strain of the masts; they are led from the masthead to points on either side of the vessel well aft.
Backwinded	When a headsail is sheeted too tight and spills its wind into the back of the next sail in line.
Baggywrinkle	Padding made up of yarn and wrapped round shrouds to prevent chafing of the sails.
Bear Away	Turn boat's head away from the wind.
Belay	To secure a rope round a belaying pin, bollard, or cleat, without tying a knot.
Belaying Pins	A pin or bolt of wood placed in a pin-rail for the belaying of lines.
Bilges	The lower part of the hull where the side and bottom planks meet. The deepest part inside the hull.
Bilge Pump	Used for pumping out waste liquid from the bilges.
Block	Originally a block of wood with a sheave (pulley) in it for a rope to reeve (pass) through. Modern blocks are sheaved and made of metal. It is used to change the lead of a rope, as in raising a heavy object that cannot be conveniently reached; used in rigging and tackle.
Boarding Ramp	A wooden ramp that attaches to the vessel to form a solid walkway from the boarding stage to the vessel.
Bob Stay	The stay from the stem post to the tip of the bowsprit, to counteract the upward strain of the forestays.
Boltropes	The rope sewn onto the edges of a sail for strengthening purposes. Always sewn on the port side of the sail.
Boom	A long spar, run out for the purpose of extending the bottom of a sail.

Bottle Screw	A turnbuckle with a single or double screw, some have a swivel at one end. Used for setting up ends of standing rigging, guard rails, etc; for providing tension, particularly in shrouds.
Bow	The hull surfaces in the forepart, which are rounded to meet the stem (port bow and starboard bow)
Bowsprit	A spar running out from the vessel's stem to which forestays and bobstays are fastened.
Bowsprit Netting	A rope net spread between the whisker stays
Brace	A rope attached to yardarm for trimming sail. In square-rigged vessels the braces trim the yards horizontally.
Breast Ropes	Short mooring lines holding vessel close to pontoon.
Bulkhead	Upright partition dividing a vessel into compartments; also adds stiffening to the hull.
Buntline	A rope passing from the footrope of a square sail up to the yard and thence to the deck; used in hauling the sail up to the yard.
Capping Rail	The thin wood that covers the gunwale around a boat.
Cathead	Found in the bows of the boat, used to support the anchor.
Chain plates	The metal bands on a vessel's side to which the shrouds are fastened.
Cleat	A device made of wood or metal, having two arms, around which turns may be taken with a line or rope to hold securely and yet be readily released.
Clew	The lower after corner of a fore-and-aft sail.
Companion Hatch	A fixed or sliding cover over entrance to cabin.
Companion Way	The ladder or stairway leading below.
Compass	Used for determining the magnetic meridian by which the vessel is navigated.
Cringle	A rope loop containing a metal thimble worked in the leech or clew of a sail for another rope to pass through.
Crosstrees	Found at the intersection of the mast and topmast
Dan Buoy	A small buoy with a spar, with one end secured to a weight by a mooring rope, used as a marker and easily recoverable.
Davits	1) Metal supports used for suspending or lowering a vessel's boat; 2) Any projecting arm used for hoisting.
Deadeyes	Round blocks with three holes through which shroud lanyards are rove, so named because they are not fitted with a pulley.
Deck Hook	Used for Halyards to take weight of Pin boards or Fife rails
Dolphin Striker	The small perpendicular spar below a bowsprit and jibboom acting as a lead for an extra bob stay.
Down-haul	A rope used to haul down stay sails, jibs and topsails.
Eye	A small loop or hole in a splice, anchor, bolts, or sails, etc.

Fairlead	A bolt, ring or any metal fitment attached to the deck of a vessel, through which a rope may be run.
Fall	The loose end of a rope to be hauled upon, for instance the fall of a tackle is the rope upon which to pull.
Fenders	Buffers specially made and placed where necessary to prevent damage when a vessel comes into contact with another vessel or a wharf. They are portable and taken in when under way.
Fife rail	A wooden rail fitted near or to a mast carrying belying pins.
Footrope	1) That part of the boltrope to which the lower edge of a sail is sewn; 2) Line attached to underside of a square-sail yard to support those working aloft.
Fore	Towards the bow (front) of the vessel
Foredeck	That part of the deck in front of the forward most mast.
Forestay	Part of the standing rigging, the stay running from the masthead to stem.
Forward	In front of or the forepart of a vessel.
Freeboard	The part of a vessel's side above the water-level to the deck line.
Gaff	A spar used at the head (top) of a four-sided, fore and aft sail.
Galley	The vessel's kitchen.
Gaskets	Small cords for securing furled sail to a yard, boom, or gaff.
Gunwales	The upper edge of a vessel or boat's side, formerly used to support guns.
Gybe	1) When the boat is steered off the wind until the sail fills on the opposite side; 2) when the boom of a fore-and-aft sail shifts suddenly from one side of a vessel to the other.
Halyards	Ropes or tackle used for hoisting and lowering sails, yards, or flags, etc.
Handy Billy	A small tackle, handy for odd jobs about the deck.
Hank	A fitting of metal or plastic used for attaching the luff of a headsail to its stay.
Hatch or Hatchway	An opening in the deck of a vessel which serves as a passageway or hoist way, also, a cover or door, used in closing such an opening.
Hawse Pipe	The holes through the bulwarks in the bow, which the anchor chain runs through.
Head	1) The fore-end, and upper end of any object, position, or direction; 2) "Head Wind", a wind that blows in a direction opposite to the vessel's course; 3) That part of a mast between the hounds and the cap; 4) The upper edge of a square or gaff sail; 5) The bow of a vessel; 6) "Headsail", a sail set forward of the main or foremast, a jib; 7) "Head sea", means the sea meeting the vessel head on.
Heads	Toilets

Head Rope	1) The first rope for securing a vessel; 2) That part of a boltrope which is sewn to the head of a sail.
Helm	The wheel by which the rudder is controlled. The wheel, rudder, and the head of the vessel all move to the side ordered.
Hoist	(1) To haul on a rope when a weight is being lifted. (2) The height of a fore-and-aft sail, next to the mast or stay. (3) The perpendicular measure of a flag.
Hoops	Rings fitted round a mast and attached to the luff of a fore-and-aft sail.
Horse	A metal rail running athwart the vessel, upon which a sheet tackle travels.
Hove To	Lying head to wind with, in fore-and-aft vessels, staysail aback. Used when weather too rough for sailing or when you just wish to mark time.
Jack Stay	(1) A wire rope to carry a traveller. (2) A rope used to hold a gaff topsail to its mast. (3) A rod along the upper surface of a square sail yard, to which the sail is bent.
Jaw rope	(or Parrel Line). A rope partly surrounding the mast and connecting the jaws of a gaff; sometimes threaded through parrel balls, to move easily.
Jib	A triangular sail set on a stay extending from the foremast or fore-topmast head, to the bowsprit, or to the jibboom.
Jibboom	A spar or boom which serves as an extension of the bowsprit; to carry a flying jib.
Leech	Either edge of a square sail; also, the after edge of a fore-and-aft sail.
Leech Line	(1) A line leading from the edge of either side of a square sail. (2) A line held loosely on the leech of mainsail or jib; to adjust the curvature of the sail. Leech rope that part of the boltrope to which the leech of a sail is sewn.
Leeward	The opposite side of the vessel from which the wind is blowing
Luff	(1) The leading edge of a sail. (2) To bring vessel's head closer to the wind. (3) A purchase consisting of a double and a single block; used in various ways. When an extra luff tackle is attached to the fall of another (for increased purchase) it is termed "luff upon luff"
Mast	The mast is a round or oval-shaped vertical pole upon which the sails are hoisted. They are in two forms; a built-up mast in two or three sections; and the pole-mast, which is in one whole piece, without a topmast. Lower mast is the first section of a built-up mast from the deck. Shrouds support the lower mast at a point below its top or cap.
Masthead	The top of a mast where the metal fitting carrying the rigging is fixed. In some craft that portion of mast above the hounds.
Mast Hoops	Hoops attached to the luff of a gaff sail, which slip on the mast as the sail is raised or lowered.

Navigation Lights	The lights used at night to identify the vessels type and direction of movement. The lights are the: Steaming Light, Port and Starboard Lights and the Stern Light.
Outhaul	A line used for extending the clew of a mainsail. The tack of studding sails or hauling out the traveller on a bowsprit.
Painter	A rope secured to the bow of a boat, to make her fast with
Peak	(1) The upper corner of a sail extended by a gaff. (2) The narrow part of a vessel's bow, or the part of the hold within it.
Pin Boards	The boards secured to the mast Shrouds, which belaying pins sit in
Port	Left Side/ Red Light
Port Tack	Sailing with the wind blowing on the left-hand side of the sails.
Preventer	Lines used to secure booms and gaffs against a gybe and to secure sails when lowered.
Quarter	One quarter of a vessel, 45 degrees abaft the beam, on either side, i.e., on the port or starboard side.
Ratline	A piece of wood or length of rope secured between the shrouds. The ratlines form a ladder used to go up and down the shrouds.
Reaching	Sailing across the wind. There are three types of reach: Close reach when wind is forward of the beam; beam reach when wind is on the beam; and broad reach when wind is abaft the beam.
Reef	That part of a sail which is taken in or let out by means of the reef points in order to adapt the size of the sail to the force of the wind.
Reefing	The process of shortening the sails area.
Reef Point	One of a series of small ropes used for securing the reefed portion of a sail.
Reeve	The nautical term, meaning to pass, or run a rope through a block or eyelet.
Rigging	A general name given to all ropes employed to support the masts, and to extend or reduce the sails
Rigging Screw	A small bottle-screw clamp for adjusting stays or shrouds. Sometimes called a turnbuckle or, more often, a bottle screw.
Round-up	Indicating the boat is being steered into the wind for the purpose of raising or dropping sails
Rubbing Strake	A strip of wood along the outside of a vessel, used as a protective buffer.
Rudder	The broad flat board of varying forms that is hinged vertically to the sternpost of a vessel, or at the stern of a vessel, by which it is steered
Running	Boat sailing with or in same direction as the wind with sails slackened out. To avoid a gybe, a zigzag course downwind or gybe tacking is much safer.

Running Rigging	That part of a vessel's rigging that passes through blocks, used for trimming and controlling the sails.
Samson Post	A strong pillar passing between decks and resting on the keelson, supporting the beam of a deck.
Shackle	A U-shaped metal link, fitted with a movable bolt: there are various types for several uses, such as, for connecting chains, lengths of chain, cable, or the like.
Sheets	Ropes attached to the clew of a sail and which control its angle to the wind.
Shrouds	A range of wires, extended from the masthead to sides of the boat, to support the masts from sideways movement.
Spar	A spar is a length of round wood that is used to control a sail. It is normally attached to a mast. Some names: Boom, Gaff and Yard
Springs	Lines which limit boat movement fore & aft on marina
Standing Rigging	The rope which sustain the masts and remain fixed in their position, as the shrouds and stays. Sometimes they are adjustable.
Starboard	Right side/ Green Light
Starboard Tack	Sailing with the wind on the starboard side of the sails.
Stays	Wires to support the Masts forward and aft. They go from the masthead to the bow of the vessel, the next mast forward or aft or the sides of the vessel aft of the mast.
Staysail	A triangular sail, also called the fore staysail, is usually the sail immediately forward of the mast.
Stern	The back end of the vessel
Tack	(1) The lower fore corner of a sail. (2) To change the course of a sailing-vessel to bring the wind round, by the head, to the other side of the vessel. (3) The direction in which a boat sails, considered in relation to the position of her sails; also, the distance of the course run at one time in such direction.
Throat	A name given to the end of the Gaff, which is next to the mast
Throwing Line	A length of rope with a Monkeys Fist on one end. Used to throw a line to shore or another vessel.
Topping Lift	Wires used to support booms when sails are down
Triatic Stay	A stay running from the one mast to other.
Trim	(1) To adjust sails, to present the most favourable angle to the wind. (2) A smart appearance. (3) To Balance a fore-and-aft vessel on the water by adjustment of weight.
Turn	To pass a rope once or twice round a cleat or bollard, in order to secure it.
Under Way	Having free movement through the water.
Ventilator	A coaming secured to the deck through which air circulates to various compartments. There many types and sizes of ventilators now on the market.

Wear	To change tack by gybing the vessel round before the wind. A manoeuvre used by square-riggers which sometimes had difficulty in going about.
Windless	The device used to lower or raise the Anchor.
Windward	The side of the vessel the wind is coming from
Yard	A long slender spar, nearly cylindrical but tapering from the middle part towards the ends, suspended crosswise on a mast and used to support sails; they are called square when the yard hangs parallel with the deck, and lateen when it hangs obliquely.