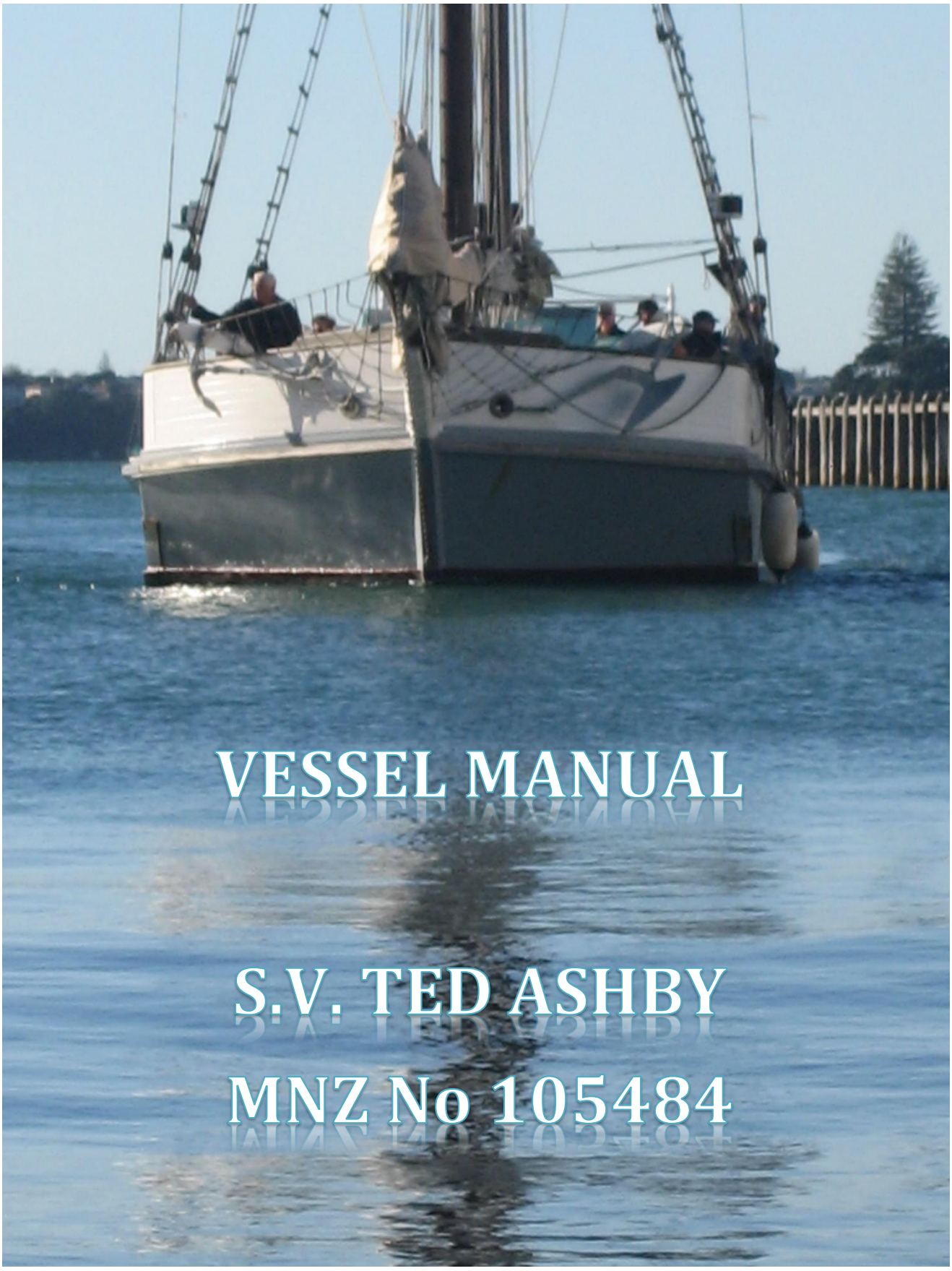


VESSEL MANUAL

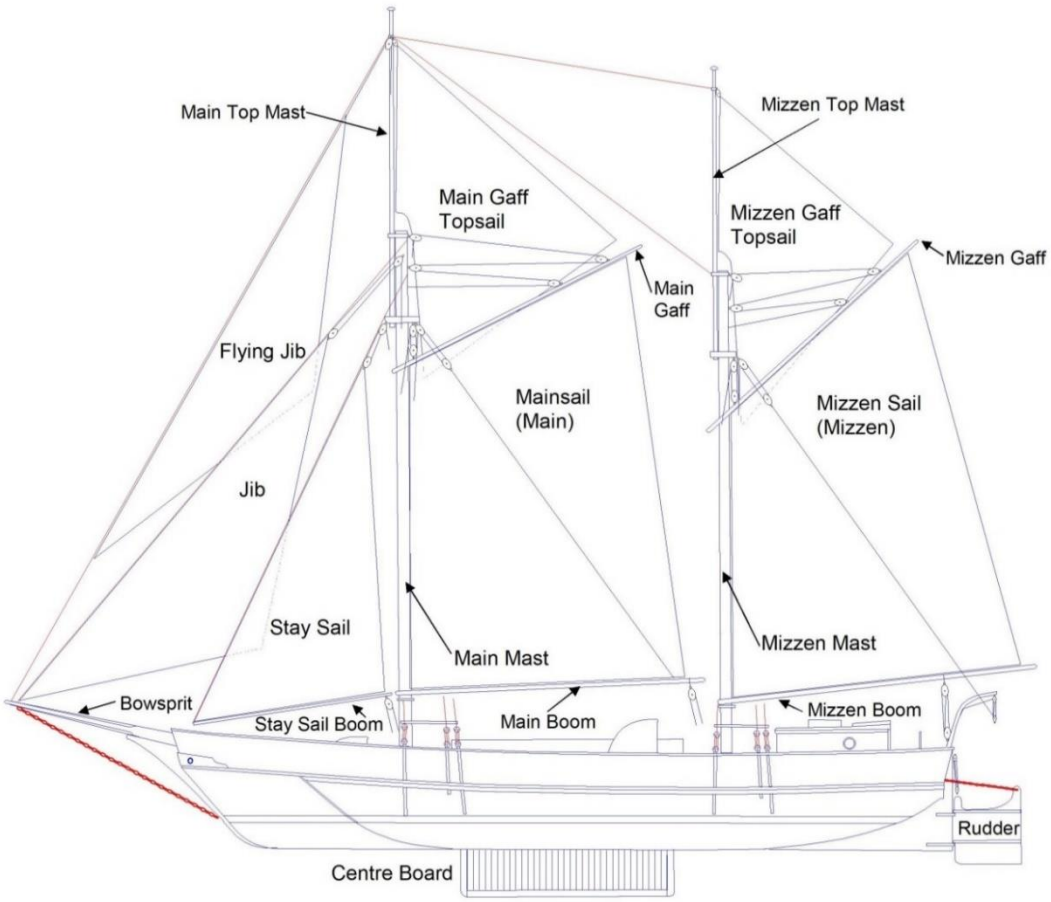
S.V. TED ASHBY

MNZ No 105484

Diagrams by Wayne Macdonald

Contents

SHIP DETAILS



Sailing vessel Ted Ashby is typical of a fleet of scows that once operated in the coastal waters of New Zealand.

Designed and built by staff of the (then) NZ National Maritime Museum Trust Board using Blackbutt, (an Australian hardwood grown in Northland) she is fastened with galvanised steel bolts and spikes.

Her hull frames are fore-and-aft bulkheads, known as partitions.

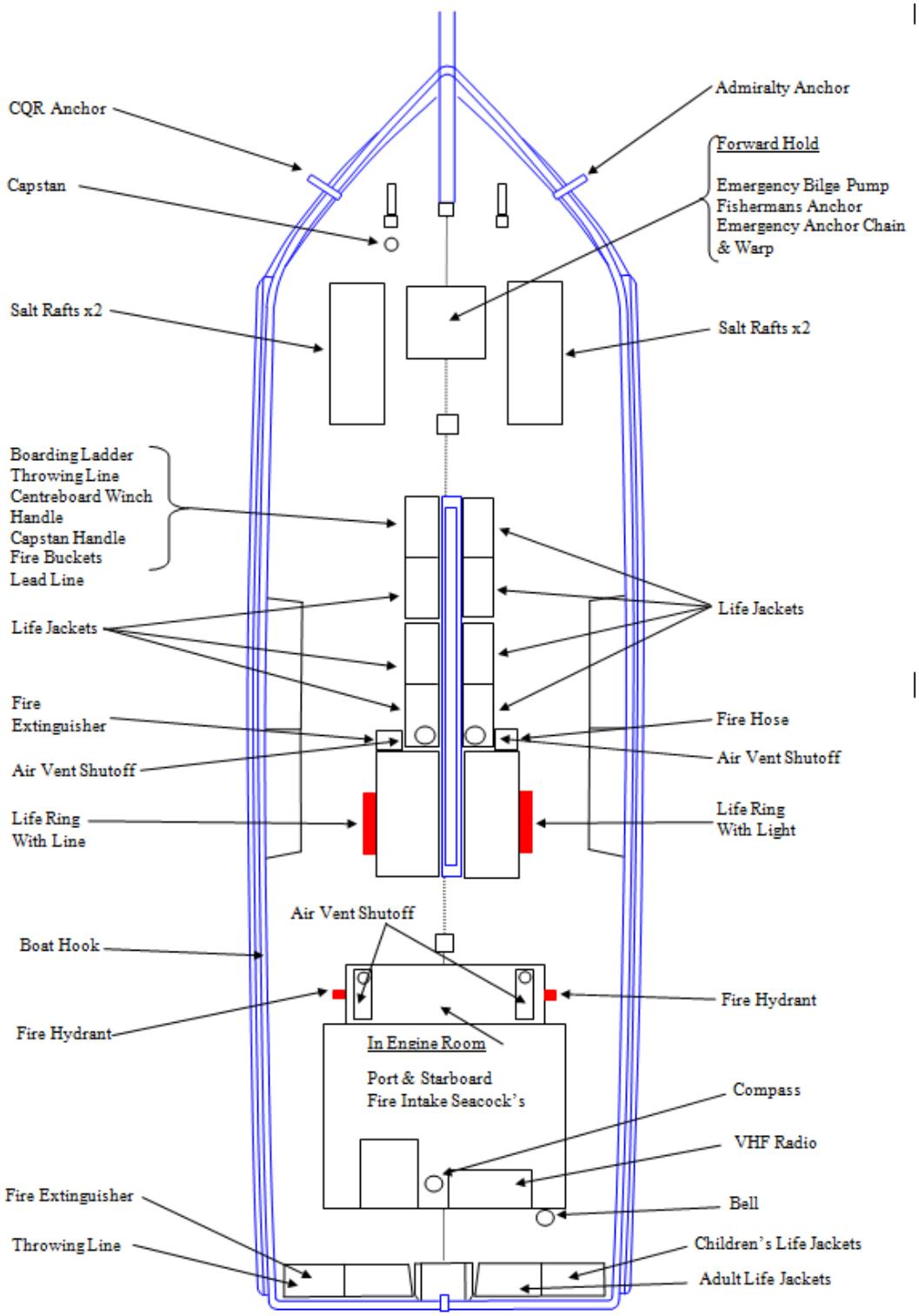
Underwater hull is cross-planked and sheathed in worm-resistant totara over tarred felt and schenam, a mixture of lime and oil.

Launched in 1993, Ted Ashby is a gaff rigged ketch deck scow.

Named in honour of a man whose life was intimately involved with scows and is the author of the book **Phantom Fleet**.

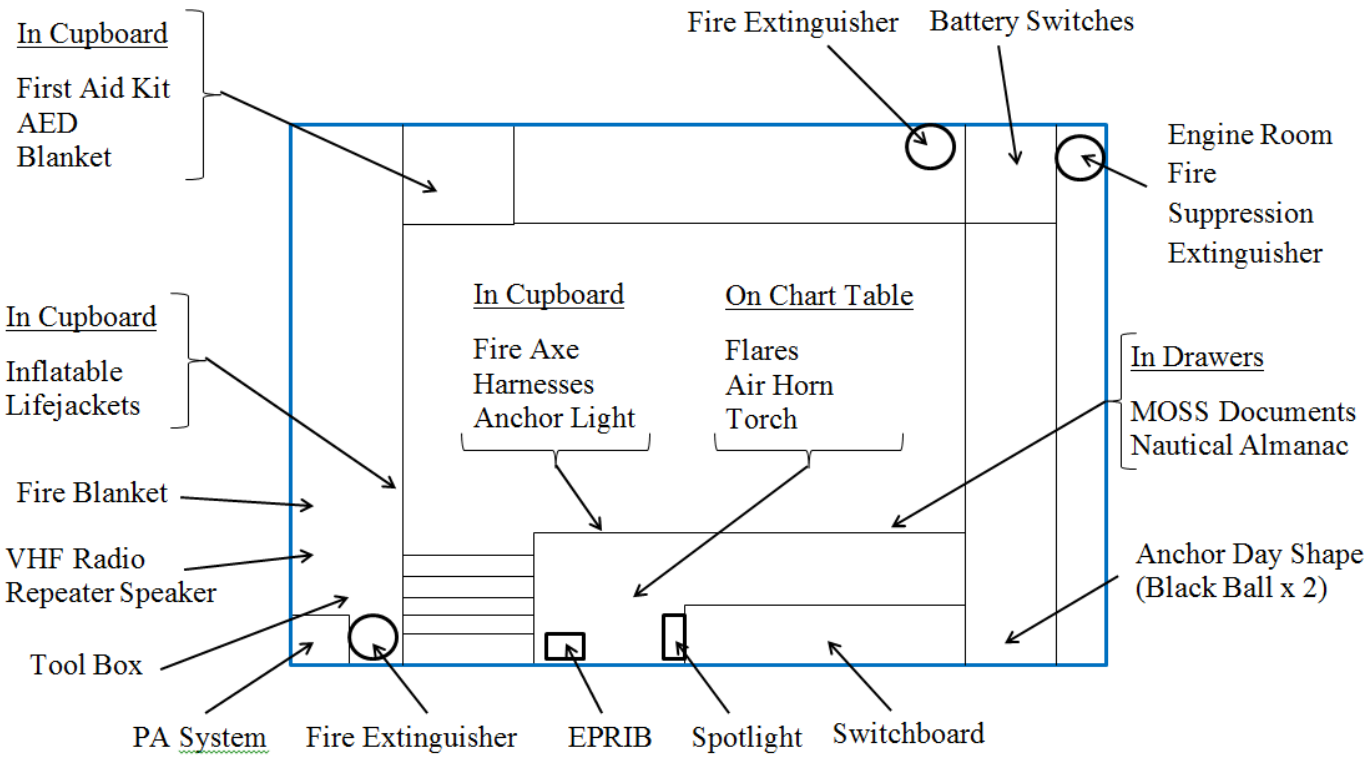
Length	57ft	18.10m	Engines	2 x 60 hp Volvo Diesels
Beam	18ft	5.5m	Consumption	14 litre/hour
Draught	Centre Board up: .609m		Fuel tanks	272 litre each
	Centre Board down: 1.676m		Call Sign	ZMV 3866
Sail Area	1700ft	160 sq. m		

EQUIPMENT

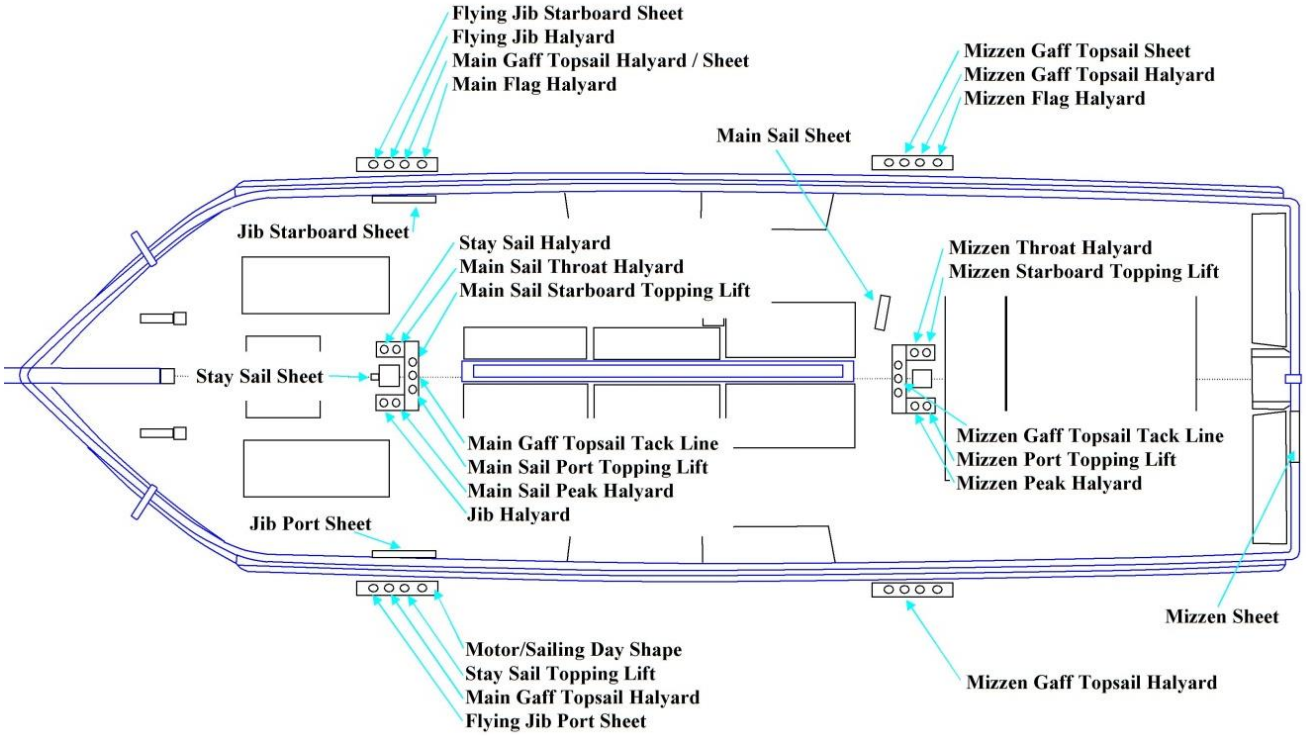


Important: It is expected that each crewmember will be acquainted with the position and use of the safety equipment.

EQUIPMENT INSIDE CABIN

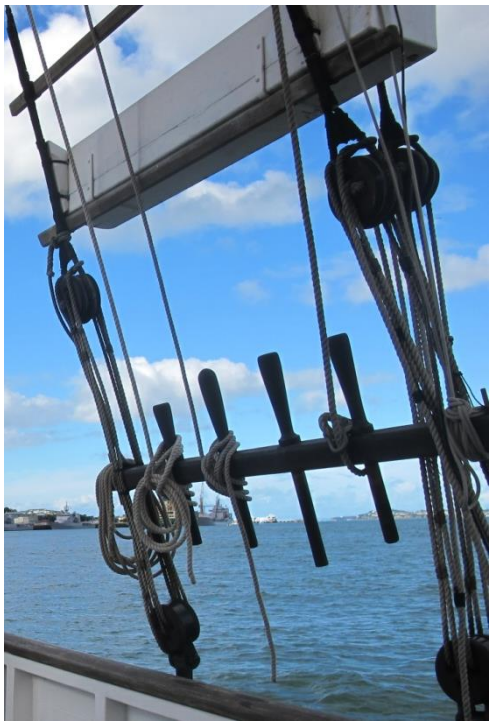


LINES AND TERMINATIONS



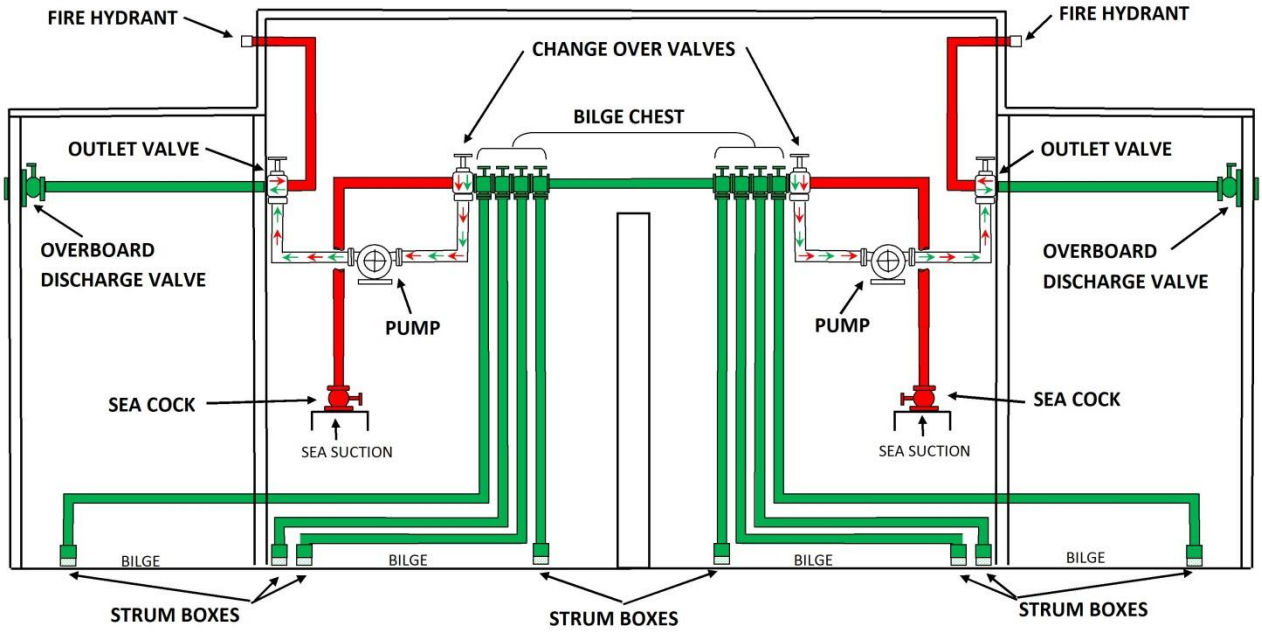
Pin Rail - a strong wooden rail or bar containing holes for belaying pins to which lines are fastened on sailing vessels.

Fife Rail – a rail around the lower part of a ship's mast to which the belaying pins for the rigging are secured.



Right: Pin Rail.

FIRE AND BILGE PIPE SYSTEM



STARBOARD **PORT**

Fire/Bilge Pump* **Fire/Bilge Pump**

Looking Aft

Fire hydrant (outlet) = where fire hose is connected.

Outlet valve = where water is directed to either fire pump or overboard.

Change over Valves = directs water to the pump. (Sea supply or Bilge water).

Overboard Discharge (Gate Valve) valve – opens or closes overboard discharge.

Bilge Chest –series of valves used to allow pumping of specific bilge section.

Seacock = Sea water intake valve.

Pump = transfers the water to where the valves direct it..

Strum Boxes = strainers for bilge water.

FIRE/BILGE PUMP

If the fire is in the engine room – activate the Engine Room Fire Suppression System (see section on ENGINE ROOM FIRE SUPPRESSION SYSTEM)

In all other circumstances of fire:

- If in a cabin or void space use a portable fire extinguisher first.
- Because water may cause damage to electrical equipment or power supply and/or result in flooding, the fire hose should only be used as a last resort.
- Connect fire hose to the fire hydrant, ensuring that fire hose runs freely without kinks *.
- Check Seacock is open
- Check Outlet Valve is to fire.
- Turn on **FIRE/BILGE PUMP** on switchboard in cabin.
- Increase engine revs as more pressure is needed.

Ensure the hose runs out freely with no kinks.

*If fire hose does not fill, change to **Other** engine & valve system.

BILGE – EMERGENCY PROCEDURE

Discharging oil & oily bilge water into the sea is prohibited.

Protecting NZ's unique marine environment is the responsibility of everyone.

ALARM

The vessel has four bilge alarms fitted, two in the engine room and two under the cabin. The alarm switch is on the starboard side of the cabin companionway marked 'ON/OFF' next to the red warning light and audible alarm. This switch should always be left switched ON.

Float switches activate the alarm.

These float switches should NOT be tested, testing occurs separately, and unplanned testing sends texts to museum management.

When water ingress in the bilge triggers a float switch, the alarm will sound; red light glow and NZMM will receive TXT alerts of situation.

1. The Mate will provide a damage/situation report to the Master who will, if necessary, instruct the Mate to prepare to abandon ship.
2. The Master/Mate will turn the bilge alarm switch OFF. This turns off the audible alarm to facilitate communication. NOTE THAT THE LIGHT WILL STAY ON TO INDICATE THAT THE BILGE WATER IS STILL ACTIVATING THE FLOAT SWITCH. KEEP PUMPING.
3. The Mate will then assume control of the situation, turning on the appropriate bilge pumps
4. When the bilge water falls to approx. 10cm the red light will switch off.
5. TURN THE SWITCH BACK TO 'ON' TO REACTIVATE THE ALARM IN CASE THE BILGE WATER RISES AGAIN.
6. If the bilge alarm sounds again follow Steps 1-5 again.
7. Maintain a bilge watch until the cause of the leak is rectified.
8. Update situation to NZMM.

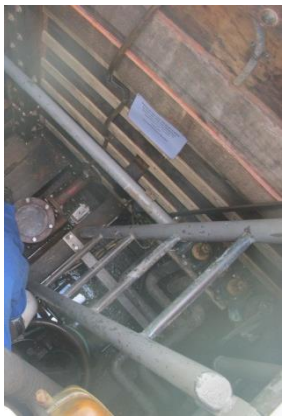
BILGE – MAINTENANCE PROCEDURE

To remove bilge water that is below the top of the strum boxes use the black water suction hose provided on the jetty.

Discharging oil & oily bilge water into the sea is prohibited.

Protecting NZ's unique marine environment is the responsibility of everyone.

When altering valves, care must be taken when re-positioning the engine room entry ladder.



Entry position Repositioned & held by strap.

BILGE/FIRE PUMP

This unit should only be run direct from the sea! Do not use the Pump for drawing from the bilges except in a case of flooding and then only while the strum boxes remain covered.

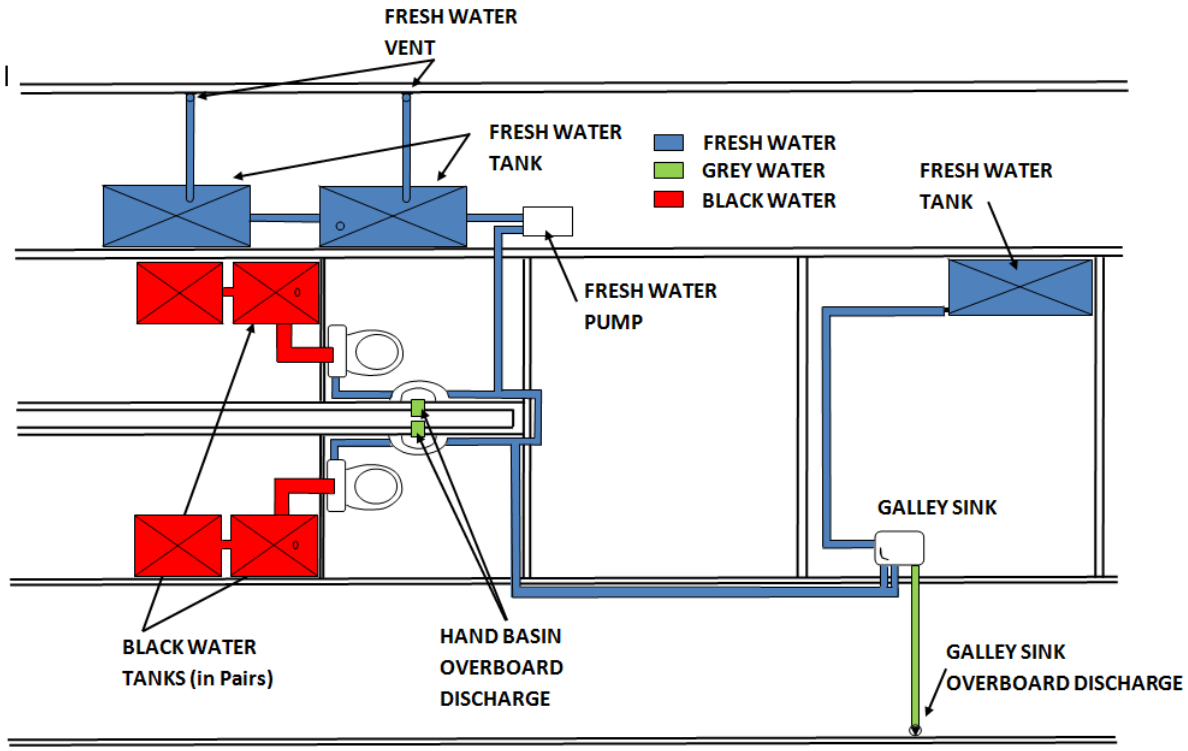
The engine must be running to operate the bilge pump.

1. On bilge chest, open the valve for the bilge to be pumped.
2. Check strum box is covered. If not covered, do not use to drain bilge.
3. Check Outlet Valve is set to overboard.
4. Turn on the relevant (port/starboard) Fire/Bilge Pump on switchboard in cabin, and the relevant switch at the helm station. This will engage the electric clutch for the bilge pump to be driven off the forward shaft.
5. When water stops flowing from overboard discharge valve, turn off pump immediately.
6. Do not run the pump dry.

Repeat Steps 1-4 for each bilge compartment needing to be pumped.

WATER SYSTEMS

- **Fresh Water** – for hand basins, galley & toilet flushing.
- **Black Water** – the discharge from the toilets



Fresh Water: The two main tanks are in the starboard outer hold. Both tanks are filled through the use of only one filler pipe. The filler pipe runs from the aft tank to the deck where it finishes at a deck fitting. The key for the fitting is in the cabin on the port aft bulkhead (it's the same key as for the diesel tanks). Water from these tanks is distributed by the fresh water pump.

The third fresh water tank: is in the cabin, under the starboard bench seat to the aft of the cabin. This tank only supplies water to the galley sink. It doesn't work on a pressurized system; the tap on the sink is a hand pump that you have to move up and down to draw water from this tank. The filler cap is under the seat.

Grey Water: The hand basins and galley sink are the simplest of the three systems as they discharge directly over the side of the vessel. A seacock can be closed to stop water entering the hull if the pipe breaks.

Black water: This tank holds the contents of the toilets after they are flushed. There are two toilets on **TED ASHBY** and each has its own black water system. The toilets discharge straight into the tanks. The only method used to empty the tanks is shore discharge, where the tanks are pumped out into the city's sewage system.

ENGINE ROOM FIRE SUPPRESSION SYSTEM

An engine room fire smothering system is installed in the engine room. This is a manually operated fire extinguishing system that allows a fire to be suppressed in the engine room without a person entering into danger. The Novec cylinder is in the main cabin, starboard side. A series of pipes discharge gas directly into the engine room.

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

- Switch off main engines and batteries. **
- Evacuate engine compartment, close and latch engine room access hatch.
- Close engine room ventilation supplies.
- Activate Novec discharge by removing safety pin from Novec cylinder and pushing the red button on top of cylinder down.
- Keep engine room closed until fire is out and compartment has cooled.
- Do not enter the protected area until it has been thoroughly ventilated.
- Avoid eye contact, breathing vapours, mist or spray.

Cylinders must be re-charged as soon as possible after discharge, as the Engine Room has no other fire protection, other than the portable fire extinguishers.

** It is very important to switch off the batteries as they supply power to the engine space cooling fans [positive pressure to engine room]. If the engines reach a certain temperature, the fans could remain running for some time after the engines are stopped, potentially feeding air to a fire in this space.

SAIL USE

TED ASHBY's wind limit for raising sails is currently 25 knots average at Bean Rock. Take into account Passenger safety and comfort in the first instance, consider Passenger Numbers and Adult or Children when deciding Sail usage. Make sure Crew numbers and Training are "fit for task" in an Emergency.

Sail usage with wind strength:

SAIL	Max Wind Strength	Conditions of use
Flying Jib	15 knots	
Jib	20 knots	
Stay sail	25 knots	
Main sail	25 knots	Reef at 20 knots
Mizzen sail	25 knots	Reef at 20 knots
Topsails	15 knots	

If the wind strength is forecast to exceed an average of thirty knots or sea conditions are predicted to be adverse during the anticipated duration of the voyage the vessel shall not normally sail from its berth or anchorage, unless to make safe haven in the case of the latter. If sailing from Hobson Wharf and winds from the North sector are (or are forecast) to exceed 15 knots; the master should consider cancellation of sailing trip. These winds could compromise either backing from or returning to the berth.

Shorten sail early if winds are strengthening, and if strengthening winds are forecast during the sailing period, apply reefs to sails before leaving the berth.

Instructions to reef or unreef sails are issued only by the Master of the vessel.

The vessel has adequate stability up to an angle of heel of twenty (20) degrees; provided that the sails are adequately reefed.

Rig load should always be considered:

Boom sheet tension dramatically changes load on the topsail and topmast – care should be exercised during wind gusts or wind shear events.

When the booms are set well out there is little support

for either mast (backstay support is the sail). Crew should be stationed at sheets to ease away in a wind change or large swell.

When multiple sails are raised, consider extra time needed to manoeuvre in an emergency.

Sail must be reduced when
Ted Ashby has more than 20° angle of heel

HOISTING SAILS

Vessel heading kept into the wind at slow speed.

Sails are normally hoisted in stern-to-bow order (Mizzen, Main, Staysail, and Jib) one sail at a time.

If topsails are used, they are hoisted after the other sails have been set. They are also hoisted stern-to-bow (mizzen topsail, main topsail and flying jib).

Main/Mizzen

1. Check all sail gaskets have been removed. An easy test is to hoist the peak a couple of feet; you will easily be able to see if any are still tied.
2. Release throat and peak halyards and lay the coil on deck. Two people are required for each halyard; one to haul, the other to tail.
3. Remove the preventer/s from the boom, but not until ready to hoist sail.
4. Ease the sheet a little.
5. A crew member must always be stationed on the windward side of the Main boom and Staysail Boom in close contact with the Sheet. The crew person stationed in this area is to prevent Passengers and Crew from standing/transiting through this area whilst working the sails. Passengers/crew may at other times transit through this area, when safe to do so. Crew person responsible, to immediately direct Passengers/crew out of the reach of the Sheet Blocks and Boom.
6. On the command "**Haul Away Main/Mizzen**", start hauling both halyards. The most efficient way of hoist the main/mizzen is by keeping the gaff horizontal.
7. Be aware that if the throat is raised quicker than the peak at the start, the gaff can catch under the topping lift.
8. Mate monitors the gaff as it is hoisted to make sure it stays level. If one end gets too far ahead, the Mate will use the commands "**Stop Peak**" or "**Stop Throat**" to correct it. "**Haul Peak**" and "**Haul Throat**" starts the hauling again.
9. The Mate will also be watching the luff rings to make sure they don't jam. If a reef was used on a previous sailing, watch for any secured reef points.
10. Once the throat is almost up, the command "**Stop Peak**" will be given. The throat is then sweated up. The aim is to raise the boom jaws off the rest by about 50mm, or three finger widths. Don't over raise the throat on the Main as this may stop the peak passing under the lower triatic stay.
11. Secure the throat halyard to the belaying pin.
12. The command "**Haul Peak**" is now given.

13. The peak is sweated up to tension the leach of the sail. The correct tension in the leach is reached when the end of the boom starts lifting. Again, don't over raise the peak on the main, as the peak may not pass under the lower triatic stay.
14. Secure the peak halyard to the belaying pin.
15. Trim sheet as required
16. Once all sails are set, coil rope in a clockwise direction and stow the halyards on their belaying pins.

Staysail

The stay sail can be hoisted with the vessel not pointing head to wind; in this case a crewmember will have to be stationed on the sheet and to ease the sheet out as pressure fills the sail.

1. Release halyard and lay coil on deck.
2. Remove the preventer hook from the halyard block on the sail. The halyard has to be eased to do this.
3. Ease the sheet and control as sail goes up.
4. One person hauls the halyard and a second tails.
5. On the command "**Haul Away Staysail**" the sail is hoisted.
6. Sweat the halyard until the correct tension in the luff is achieved.
7. Correct tension is reached when the luff is pulled straight.
8. Secure the halyard to the belaying pin.
9. Trim sheet as required using boom outhaul.
10. Once all sails are set, coil and stow the halyards on their belaying pins.

Jib

Normally the jib is hoisted when the vessel is on course.

1. Release the sheets from the cleats.
2. Release the downhaul and flake it on the deck so it will run freely.
3. Release the halyard from the belaying pin and lay the coil on the deck.
4. One person is required to haul the halyard and a second to tail it.
5. On the command "**Haul Away Jib**" the sail is hoisted.
6. As the sail is hoisted the sheet on the leeward side should be sheeted in.

7. Sweat the halyard until the correct tension is in the luff. Correct tension is reached when the luff is pulled straight.
8. Secure the halyard to the belaying pin.
9. Trim the sheet.
10. Once all sails are set, coil and stow the halyards on their belaying pins.

LOWERING SAILS

The Mate will assign positions for lowering the sails. The Mate should also check with the Master to see if they will allow crewmembers to leave the deck (on top of the heads for the main and on the stern rail for the mizzen) to help tidy the sail as it's lowered.

Jib

1. Three crew are required. One crew for the Halyard, one for the downhaul and one for the leeward sheet.
2. Lay halyard coil on the deck so it will run freely.
3. On the command "**Lower Away**", release the halyard from the belaying pin and ease.
4. Pull the sail down with the downhaul. Keep a small amount of pressure on the halyard so the hanks (luff shackles) don't jam.
5. Ease the sheet as the sail is lowered.
6. Once the sail is down secure the downhaul to prevent the sail riding back up.
7. Secure the halyard to the belaying pin, coil the spare line and stow.
8. Coil and stow the sheets

Staysail

1. Release the boom outhaul if it has been used.
2. Do not pull the sheet tight. Have a crewmember continually take the slack out of the sheet as it's lowered.
3. One crewmember will control the halyard as the sail is lowered and another will be stationed next to the luff to pull the sail down.
4. Lay halyard coil on the deck so it will run freely.
5. On the command "**Lower Away**", release the halyard from the belaying pin and ease.
6. Once the sail is down the crewmember next to the luff secures the preventer hook onto the halyard block.
7. The halyard is tensioned and secured to the belaying pin.
8. The sheet is lightly tensioned and secured to the cleat.
9. Attach the boom preventer.

10. The halyard and sheet are coiled and secured to the belaying pin and cleat respectively.

Main & Mizzen

No crewmember should climb onto the top of the heads until a preventer has been secured to the main boom.

Remember the Master is trying to keep the vessel head to wind and as the sails are normally lowered close to the museum this can mean the vessel is heading on a collision course with a wharf. If the sails are lowered too slowly the vessel may run out of room. The Mate must always be aware of the vessels surroundings because if the Master has to change course the Mate will get little or no warning.

1. As the vessel turns head to wind, haul in the sheet.
2. Set topping lifts to the marks.
3. Lay coiled halyards on the deck so it will run freely.
4. Two crewmembers are required. One crew for the throat and one for the peak. If possible, a third crew on the sheet.
5. Lower the throat about a metre and the peak about ¼ of a metre. This stops the throat from jamming. The main is prone to this.
6. Re-tighten the sheet.
7. On the command "**Lower Away**" both the halyards are eased. The gaff should be kept at the same or steeper angle.
8. Spare crew will flake the sail as it comes down.
9. The Mate will control the angle by stopping and starting the peak halyard. The sail should be lowered at a fairly good rate.
10. When the sail is down, tension the halyards so they are supporting the weight of the gaff. This stops the halyards from twisting, prevents chafing of the sails under the gaff and simplifies the gasketing process.
11. Secure the halyards to their belaying pins and coil the spare line and stow on the belaying pins.

(Image by Wayne Brown)

TOPSAILS

SETUP

The topsails re normally prepared for use while the vessel is still at her birth.

Flying Jib

The flying jib is always used in conjunction with the gaff topsails.

As the flying jib is not permanently attached to the rig, it must be prepared before use as follows:

1. While the flying jib is not in use, the end of the halyard, that attaches to the head of the flying jib, is tied to the flying jib downhaul. Separate the halyard and downhaul, ensuring that the lines do not run out of their blocks.
2. Attach the halyard to the head of the flying jib using the shackle on the end of the halyard.
3. Attach the downhaul to the head of the flying jib.
4. A crew member must be stationed at the starboard main shroud to manage the flying jib halyard while the sail is being attached.
5. Starting from the head of the sail, attached the first hank to the main topmast stay.
6. The crew member, on the halyard, hoists the sail until the next hank can be attached to the stay. All the hanks are attached to the stay in this way.
7. The flying jib tack line, which is permanently attached to the tack of the sail, is now secured to end of the bowsprit, using the shackle on the end of the tack line.
8. The flying jib is now lowered with the downhaul.
9. The port and starboard sheets are permanently attached to the main shrouds. Detach the end that runs forward through a fairlead, 2 – 3m up the shroud. Ensure that it doesn't run out the fairlead.
10. Take the sheets forward and secure it to the short loops on the clue of the sail with a bowline knot. Ensure that the sheets pass forward around the jib stay.

Gaff Topsails

The topsail has three lines - halyard, sheet and tack line. Only the halyard is permanently rigged to the vessel, because it goes through a sheave in the very top of the top mast. The end of the halyard, that attaches to the topsail, is secured on the starboard shroud pin board and the other end on the port shroud pin board. The tack line is permanently attached to the sail.

As the gaff topsails are not permanently attached to the rig, the sheet must be reeved before hoisting the main/mizzen as follows:

1. Release the sheet and lay it on the deck so it will run free.
2. Take an end of the sheet and pass it through the block, fore to aft, attached to the starboard side of the gaff jaws.
3. Run the sheet along the length of the gaff, inside of the lazy jacks and topping lifts.
4. At the end of the gaff pass the sheet **UP** through the sheave in the end of the gaff.
5. Run the sheet back to the mast, on the outside of the lazy jacks and topping lifts.
6. Temporarily tie the end of the sheet to the boom jaws.
7. Check that the halyard is led aft of the crosstrees and to starboard of the vessel.
8. Attach the shackle to the head of the gaff topsail.
9. Place the gaff topsail where it would not interfere with the hoisting of the main/mizzen sails, e.g. cabin top.

Care must be taken that the gaff topsail sheet doesn't snag while hoisting the main/mizzen sails.

HOISTING

Gaff Topsail

1. Select the correct gaff topsail, i.e. main or mizzen. They are marked at the head of the sail.
2. Attach the halyard to the head of the sail using the shackle. Tighten the shackle with a spanner or marline spike.
3. Release the end of the sheet from the boom and attach it with a bowline knot to the cringle, on the clew of the sail.
4. Tend the sheet.
5. Release the tack line and flake on deck so it will run freely. Attach the other end of the tack line to the pin rail around the mast.
6. Four crewmembers are required. Two crew on the halyard, one to haul and the other to tail. One crew on the tack and one on the sheet.
7. On the command "**Haul Away Topsail**" the sail is hoisted.
8. The tack line and sheet should be controlled as the sail is hoisted.
9. Once hoisted the halyard is secured on the belaying pin. **DO NOT** tension the halyard as all you are trying to do is pull the hard eye through the top mast.
10. One of the crew assists with the tensioning of the tack line to the belaying pin on the fife rail.

11. Sweat the sheet to pull the sail out to the end of the gaff and then secure to the belaying pin on the starboard pin rail.
12. Once all sails are set, coil and stow the lines on their belaying pins.

Flying Jib

1. Release the downhaul and flake the coil on deck so it will run freely.
2. Release the sheets from the belaying pins.
3. Release 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 Flying Jib**" the sail is hoisted.
7. As the sail is hoisted the sheet on the leeward side should be taken in.
8. Sweat the halyard until there is the correct tension in the luff. Correct tension is reached when the luff is pulled straight.
9. Secure the halyard to the belaying pin.
10. Trim the sheet.
11. Once all sails are set, coil and stow the lines on their belaying pins.

LOWERING

Flying Jib

The flying jib is normally lowered first of all the sails.

1. Three crew are required. One crew for the Halyard, one for the downhaul and one for the leeward sheet.
2. Lay halyard coil on the deck so it will run freely.
3. On the command "**Lower Away**", release the halyard from the belaying pin and ease.
4. Pull the sail down with the downhaul. Keep a small amount of pressure on the halyard so the hanks (luff shackles) don't jam.
5. Ease the sheet as the sail is lowered.
6. Once the sail is down secure the downhaul to prevent the sail riding back up.
7. Secure the halyard to the belaying pin, coil the spare line and stow.
8. Coil and stow the sheets

Gaff Topsail

Clear the deck below.

It is important to control all lines when lowering the sail to prevent the sail taking charge.

1. A crew of three are required. One for each of the three lines.
2. Flake the sheet and halyard so it will run freely.
3. Clear the tack line from the belaying pin.
4. Remove all but one turn from the halyard and sheet.
5. On the command "**Lower Away**", the crew starts pulling the sail down with the tack line.
6. The halyard and sheet are eased hand over hand. DO NOT let them run.
7. When the sail can be reached from the deck, it is gathered in.
8. Detach the halyard from the head of the sail and returned to the belaying pin. Take in the slack on the other end, coil and stow on the belaying pin.
9. The sheet is untied and returned to the boom jaws. The other end is coiled and stowed on the belaying pin that the tack line was attached to.
10. Flake the sail and place out of the way; the tack line is stowed in the sail.

DE-RIGGING

1. Un-reeve the sheet from the gaff. Coil and stow in the topsail bag.
2. Lay the sail on the deck and fold correctly and then stow it in the topsail bag.

SAIL HANDLING

TACKING

Tacking is when the vessel is turned by turning the bow of the vessel through the wind.

It is the most common manoeuvre used to turn the vessel.

To help the vessel tack, the headsail will need to be backed. Backing is where the clew of the headsail is held or pulled to the windward side of the vessel so there is still pressure in the sail. This helps push the bow of the vessel through the wind. To back a Jib, pull the sheet tight again when the vessel is close to head to wind. There are two ways of backing the staysail: the first is by using the preventer to stop the sail crossing and the second is for a crewmember to hold onto the sheet and use their body weight to stop it crossing.

1. On the command "**Stand by to Tack**", the crew move to their assigned positions. The foredeck crew need to clear the foredeck of passengers and the crew manning the main sail station need to clear the main sheet run of passengers.
2. Crew preparing to tack the headsail are to remain behind the securing point for sheets (wood cleat) well clear of the Boom sweep area, paying attention to crew who are backwinding the staysail.
3. Crew preparing to backwind the staysail to windward are to make sure no passengers or crew are to leeward of the sail (in the danger area) at all times during this manoeuvre.
4. On the command "**Tacking/lee-oh"** the helm is put down
5. All the headsail sheets (staysail, jib and flying jib) are rapidly eased out so there is no wind in the sails. If they are not released *Ted Ashby* may not tack as the headsails will stop her.
6. The mizzen sheet is hauled in as much as possible. Keep hauling in the mizzen to assist with the tack. At least two crew required for this task.
7. Attend the main sheet. Only take up any slack.
8. As the vessel approaches head to wind, one or more of the headsails are backed.
9. Once the vessel has passed through the wind the backed headsails are eased over to leeward. They are released when you hear the command "**Release/cross headsails**". DO NOT just let the sail slam over, when winds are light (under 10 knots) the crew member can walk the sheet though, otherwise a crewmember MUST use the sheet to haul the boom to the centre and ease it out again - standing well clear of sheet blocks and boom.
10. Don't sheet in the headsail at this point. Doing this can cause the vessel to keep turning.
11. On the command "**Ease Sheets**" the main and mizzen sheet are eased out until the order, "**Make Fast**" is given. The mizzen should be eased fairly quickly as it can stop the vessel finishing the tack.

12. The Mate will now go from the bow, supervising trimming the sails.
13. The excess line of the sheets is now coiled on the deck.

Note - When back winding the staysail, pressure in the sail could pull a light crew person across the vessel.

GYBING

Gybing is when the stern of the vessel passes through the wind

1. On the command "**Stand by to Gybe**" the crew move to their sail stations and clear passengers from foredeck and main sheet run.
2. On the command "**Haul In/sheet home**" the turns are removed from the cleats and the main and mizzen sheets are hauled in. The aim is to get the booms as close to the centreline as possible. At least two crew on each sheet.
3. When the Master is ready to turn the command "**Take a Turn**" is given. On this command the sheets are secured to the cleats with at least one turn (the higher the wind strength the more turns are applied)**. NEVER try to hold the sheet in a gybe by hand**.
4. Once the crew on the main indicate a turn has been taken (the Master can see the mizzen) the Master calls "**Gybing /gybe-oh**" and puts the helm up.
5. This is the dangerous part. With the main and mizzen, as the wind catches the opposite side of the sail, it will cross over until the sheet stops it. The higher the wind the harder it will cross. If the sheet does not have a turn on the cleat you may receive bad rope burns (your hands are not strong enough to hold a running sheet).
6. Normally the main will cross first and the mizzen after it. Once the sail has crossed over and come up on the sheet, ease the sheet out quickly until you hear the command "**Make Fast Main/Mizzen**". Secure sheet to the cleat.
7. Cross the headsails.
8. The Mate will now go from the bow, supervising trimming the sails.
9. All excess line is coiled and stowed.

Gybing can be dangerous to passengers, crew and vessel.

CREW MUST ENSURE THAT EVERY ACTION IS CLEARED BY THE

MASTER or MATE PRIOR TO TAKING ACTION

REEFING

Reefing is often required when the wind increases.

Reefing gear is in the cabin, in a canvas bag hanging on a hook to the starboard side of the aft bulkhead.

Main & Mizzen

1. Raise gaff about a 1 metre.
2. Using a long reefing line, secure the luff around the boom (through the thimble in the luff of the sail). Secure with a reef knot.
3. Using a long reefing line, pull the Leech out towards the end of the boom (through the rope cringle attached to the Leech of the sail). The Mizzen has a line permanently fixed for the outhaul; this replaces this reefing line.
4. Use a short reef line to secure the Leech to the boom. Secure with a reef knot.
5. Loosely tie all the reef points along the sail with reef knots. Reef points are secured under the sail, **NEVER** under the boom. The image to the right is a secured reef point.

The Master must note in the Ship's Log book and on the white board (if possible) that a reef has been used. This is so the next crew on, can double check that all the reef points were released.

When the sail is raised the Mate should watch the reefing points as the sail is raised in case a reef point was missed or, in the case of using the first reef line, that a reef point from the second line has been tied.

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

The Mate should check that all lines have been released before informing the Master that the vessel is secure at the end of the day.

Staysail

The only time the staysail will need reefing is if the vessel is doing a coastal passage.

Use a short line to secure the luff to the shackle at the tack of the staysail. Next take a long line and haul the leech out towards the end of the boom. Use the last line to secure the leech to the boom.

Lastly tie the reef points under the sail.

AWNING

Ted Ashby's awning spreads between the two masts and has two sides.

As it is not often used, it is stored ashore.

Rigging:

1. Lash together the main boom and gaff. Using the long reefing lines take two or three turns around the boom and gaff at each end. Secure with a reef knot.
2. Take the outhaul on the forward end of the awning and secure it to the main mast.
3. Clip and pull tight the straps around the boom/gaff. Starting from the forward end and working backwards, pull the awning tight as you move back.
4. Secure the outhaul on aft end onto the end of the boom and pull tight.
5. Secure the corners of the awning to the ratlines at the same height above deck.
6. Release the main sheet and remove any preventers.
7. Pull a couple of metres of sheet through the cleat so the boom/gaff rises easily.
8. To raise the boom/gaff use the throat and gaff halyards as well as the topping lifts.
9. Hoist the boom/gaff up until the slack is taken out of the awning. Do not over tighten.
10. If the sides are to be used, connect them at this point, otherwise go to step 13.
11. Connect the side to the awning using the zips.
12. Adjust the height of the corners so the sides fit.
13. Connect the bottom of the side to the vessel using the toggles along the side.
14. Tension the corners so they are tight.
15. Tension the boom/gaff so awning isn't flapping.

Clip and pull tight the straps around the boom/gaff

Removing

1. Ease of the tension from the boom/gaff by lowering it a little.
2. Ease the tension on the corners.
3. Remove the sides if used.
4. Release the corners of the awning.
5. Move one side of the awning to the other side of the vessel.
6. A crewmember to hold each pair of corners (this makes it easier to stow later).
7. Lower the boom/gaff to its normal rest height.
8. Secure halyards, topping lifts and sheet. Put on preventers.
9. Release aft end outhaul.
10. A crewmember to hold this point of the awning.
11. Moving forward, release the clips holding the awning to the boom/gaff.
12. Release the forward outhaul.
13. Fold the awning and stow away.
14. Fold and stow the sides.
15. Release the lines holding the boom and gaff together and return to reefing line bag.

*The awning does not work when **TED ASHBY** is sailing.*

ANCHORING

LOWERING ANCHOR

1. Ensure port engine is running. Hydraulic pump works on port engine only
2. On switchboard in cabin, turn on Anchor Hydraulic Pump and Winch switches.
3. Turn on the anchor hydraulic pump switch at the helm station.
4. Retrieve capstan handle from forward port amidships seat locker and break tension on friction clutch by easing off clutch and 'heave' on capstan until free.
5. Release the safety line securing the anchor to the cathead.
6. Ensure friction clutch on capstan is engaged.
7. Check pawl on capstan is disengaged.
8. Unhook preventer from chain and store away from the anchor chain.
9. Lower anchor on cathead trip line until chain tension takes up.
10. Thread trip line out of cathead sheave and secure anchor buoy to the end (if used).
11. Station ONE crewmember at fore hatch to monitor chain. No other personnel to be below.
12. Use deck foot switch to lower anchor into water ('walk' the anchor).
13. Set engines slow astern.
14. Ease capstan clutch to allow controlled run out of anchor chain. Call length measurements, marked on chain, to helmsman. Marks at 10m intervals.
15. Apply capstan clutch on master's orders.
16. *Rule of thumb – pay out chain to 3 times the depth of water minimum for short stays, 5 times for overnight.*
17. Check anchor is holding as vessel is brought up.
18. Hook preventer to chain.
19. Ease weight off chain with deck foot switch.
20. Engage capstan pawl.
21. Turn off the anchor hydraulic pump switch at the helm station.
22. Turn off anchor hydraulic pump and winch switches at switchboard.
23. Hoist anchor ball or anchor light where it can best be seen, in the forepart of the boat.

RAISING ANCHOR

1. Ensure port engine is running.
2. Turn on hydraulic pump switch and anchor winch switch at switchboard.
3. Turn on hydraulic pump switch at the helm station.
4. Retrieve capstan handle from forward port amidships seat locker.
5. Ensure capstan pawl and friction clutch are engaged.
6. Take up sufficient chain with deck switch to ease weight from preventer.
7. Unhook preventer and store away from anchor chain.
8. Station ONE crewmember at chain locker to flake chain as anchor is raised.
9. Station mate at bow to monitor progress of chain and point the direction of the chain.
10. Motor slowly ahead to ease the load on the hydraulics if necessary.
11. Operate foot switch to slowly raise anchor, flaking chain below.
12. Mate calls "*Anchors aweigh*" when chain is vertical and anchor breaks free from seabed.
13. Mate calls "*Anchor at the surface*" when anchor breaks surface.
14. Stop capstan at deck switch.
15. Hook trip line with boathook, remove anchor buoy and rethread trip line through cathead sheave.
16. Secure chain with preventer.
17. Lead anchor buoy line through block at foot of windlass post and take two turns around the capstan.
18. Release clutch. Crew on trip line to co-ordinate with hydraulic deck switch operator to draw anchor to cathead and secure.
19. Re-secure anchor to cathead with safety line.
20. Re-engage preventer hook to anchor chain.
21. Engage pawl and friction clutch.
22. Ease load on capstan with deck switch.
23. Turn off hydraulic pump at helm station.
24. Turn off hydraulic pump switch and anchor winch switch at switchboard.
25. Lower the anchor ball, turn anchor light off & return to cabin.

LOWERING WITHOUT POWER

This is a dangerous procedure and extra care needs to be taken as once the anchor starts running there is no way of stopping it until it hits the seabed.

1. Retrieve capstan handle from forward port amidships seat locker.
2. Check pawl on capstan is disengaged.
3. Unhook preventer from chain and store away from the anchor chain.
4. Station ONE crewmember at fore hatch to monitor chain. No other person below.
5. Release the safety line securing the anchor to the cathead.
6. Ease trip line until anchor is hanging on the chain.
7. Ease capstan clutch to allow controlled runout of the anchor chain.
8. Once the anchor is on the seabed, clutch is tensioned to allow for a controlled lay out. Call length measurements, marked on chain, to helmsman.
9. More chain than normal should be let out as resetting the anchor if it drags isn't an option.
10. Apply capstan clutch on master's orders.
11. Hook preventer to chain.
12. Check anchor is holding. This may take some time as the wind and/or tide is used to bring the vessel up.
13. Ease weight off chain by releasing clutch and pulling some more chain from the locker.
14. Hoist anchor ball and/or anchor light in the forepart of the boat where it can best be seen.

RAISING WITHOUT POWER

The anchor should only be raised without power if the vessel, that will be towing Ted Ashby back to the marina, is ready to tow

1. Move the port salt rafts to the starboard side of the vessel.
2. Remove salt raft brackets from the deck.
3. Disconnect two double blocks & line of the main sheet, including the lower block strop.
4. Connect the lower block strop (still attached to the block) to a point as close to the stern as possible on the port side.
5. Attach the other block to the anchor chain with shackle.
6. Lay the tail of the line along the deck, port side.
7. Mate to be positioned at bow to watch the in-coming anchor and control the preventer.
8. ONE crewmember to guide block as pulled along deck.
9. ALL other crewmembers will be needed to pull in the anchor.
10. Preventer is removed from the chain and line is pulled.
11. Once the blocks are pulled together the preventer to be put back on the chain.
12. Process is repeated until anchor is clear of the water.
13. Hook trip line with boathook, remove anchor buoy and rethread trip line through cathead sheave.
14. Re-secure anchor to cathead with safety line.
15. Leave anchor chain laid out on deck as once power is restored it will be lowered back into the water and retrieved under power.

DRAGGING

1. Inform the master that the anchor is dragging
2. If there is room and enough spare cable, let out more chain
3. Otherwise raise anchor and re-position the vessel and re-set anchor.

LOSS OF ANCHOR

1. Inform master.
2. Note the ship's position.
3. Start engines and move vessel away from any dangers.
4. Retrieve anchor chain, taking note of how much chain is retrieved.
5. To re-anchor using the Admiralty anchor and main anchor chain pass the end of the retrieved anchor chain through the port hawse pipe.
6. Attach the end of the chain to the Admiralty anchor using a shackle and seize (seizing wire or cable tie) shackle.
7. Lower the Admiralty anchor over the side.
8. Lower anchor to the seabed using the capstan.

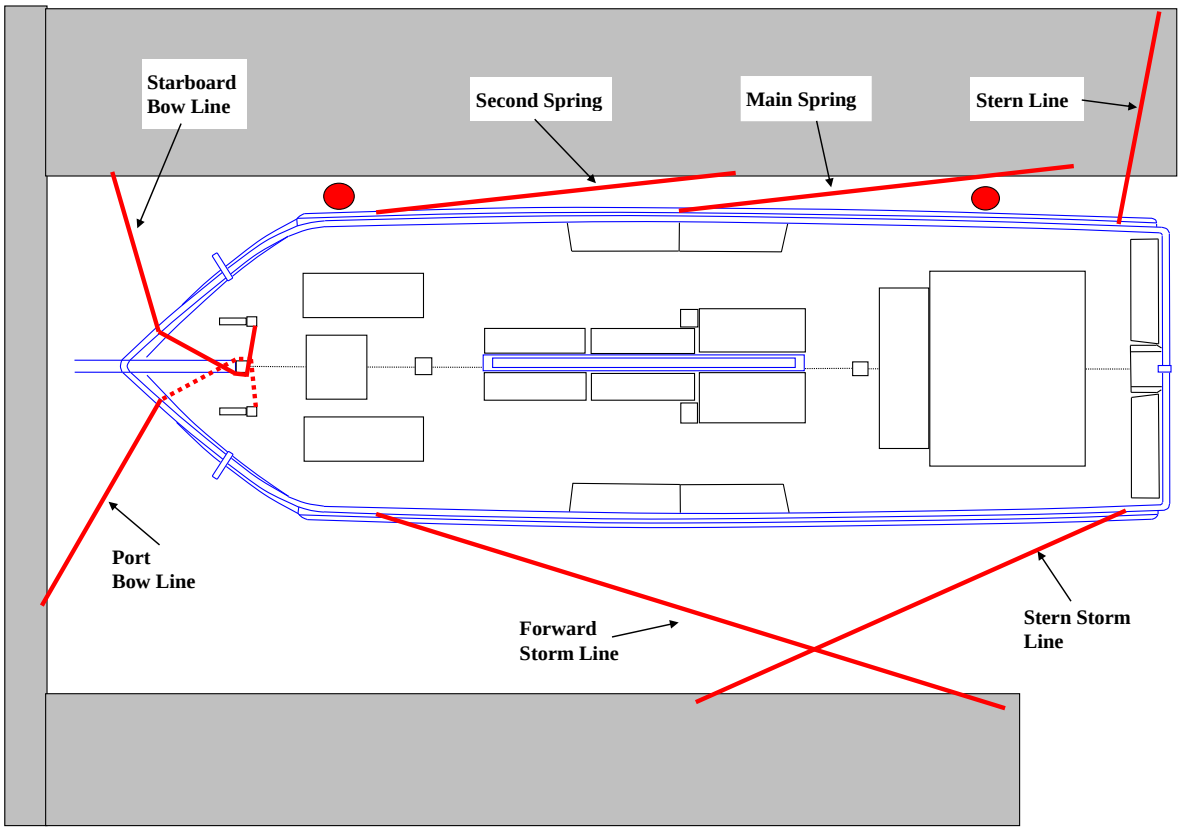
LOSS OF ANCHOR & WARP

1. Inform master
2. Note vessel's position
3. Start engines and move vessel away from any dangers
4. Retrieve anchor chain, taking note of how much chain is retrieved
5. If insufficient main chain to re-anchor using the Admiralty anchor and main anchor chain, Retrieve Emergency Warp and chain from Port Forward Hold
6. Pass the free end of the Emergency anchor chain through the Starboard hawse pipe
7. Attach the end of the chain to the Admiralty Anchor using a shackle and seize (Seizing wire or cable tie) shackle
8. Attach end of warp to Sampson post
9. Lower the Admiralty anchor over the side
10. Lower anchor to seabed using the capstan

Return to the anchor buoy of the lost anchor and retrieve it (if possible)

MOORING

LINES AND FENDERS



At *Ted Ashby's* berth at **Hobson Wharf** there are five standard mooring lines.

Two fenders on the starboard side, between the vessel and the pontoon.

Line	Location
Main Spring	The main spring goes from the centre of the starboard side to the second-to-last cleat on the outside of the pontoon. It is normally referred to as 'the spring'.
Port Bow Line	The port bow line is attached to the pontoon. Remove before the first trip of the day and returned after the last trip of the day.
Starboard Bow Line	The starboard bow line goes from the bow, on the starboard side, to the forward most inside cleat on the pontoon. It is normally referred to as 'the bow line'.
Stern Line	The stern line goes from the starboard side of the stern to the last outside cleat on the pontoon.

Second Spring	The second spring is a backup to the main spring in bad weather. Like the port bow line the second spring is removed before the first trip and returned after the last trip of the day.
Storm lines	Are set on the port side of the vessel are only used when the master deems necessary, should they be used the notice is to be placed in the logbook and on the white board.

Mooring lines only cast off on Master's instructions.

BERTHING

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

1. Contact security to ensure they are ready to receive the mooring lines.
2. Check fenders have been placed over the side.
3. Check marina is clear of other vessels.
4. Position crew and ensure correct mooring lines are used. **Spring line First.**
5. Ask passengers on Starboard side to remain seated to give Master clear view.
6. When alongside, attach bow and stern lines.

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 engines running astern.

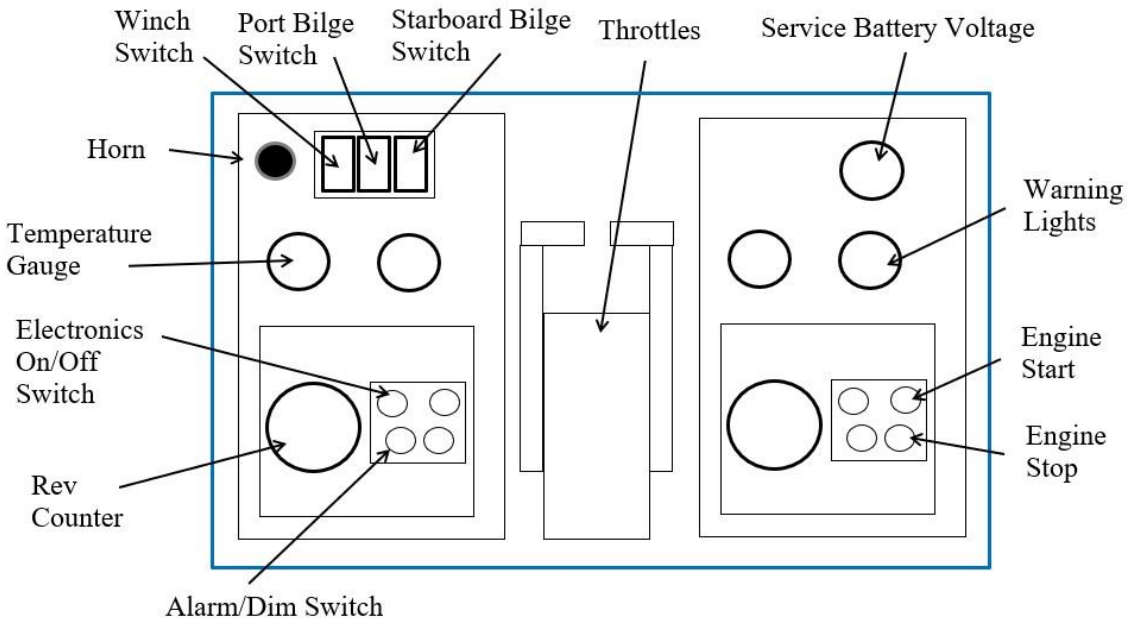
DEPARTING

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

1. Check marina is clear of other vessels
2. Position crew and ensure security personnel are ready to cast off
3. Cast off all lines except the one being used to spring the vessel
4. Go astern when ready and **Sound 3 Short Blasts**
5. Check that spring is cast off.
6. Stow mooring lines correctly and bring fenders inboard

PRE-DEPARTURE CHECKS

- Check engine oil levels
- Check coolant levels
- Check engine and bilges for anything unusual - fallen parts, fuel, oil or water, signs of heat or wear.
- Check seawater strainers
- Check position and function of bilge pumping and fire pump valves. The usual setup is to set starboard pump ready for use as a fire pump, and port pump ready for use as a bilge pump.
- Check tension in belts.
- Release the rudder preventers and check the full and free movement of the helm.
- Turn on starting & service batteries.
- Turn on switches on switchboard as needed – horn, VHF, freshwater pump, toilet lights, Navigation Lights, etc.
- Open engine cooling water valves and replace hatch cover in normal position.
- Check that both engine clutches are disengaged
- Start starboard engine first (power up ignition circuit by pressing on/off switch, then press and hold Engine Start Switch until engine fires). Observe cooling water flowing from exhaust.



- Start port engine & observe cooling water flowing from exhaust
- Check for engine alarms and charging voltage.
- Visually check in Engine Room for oil & water leaks and other possible defects.

See also MTOP pre-departure checks in section 3 (Safe Operating Procedures)

POST TRIP CHECKS

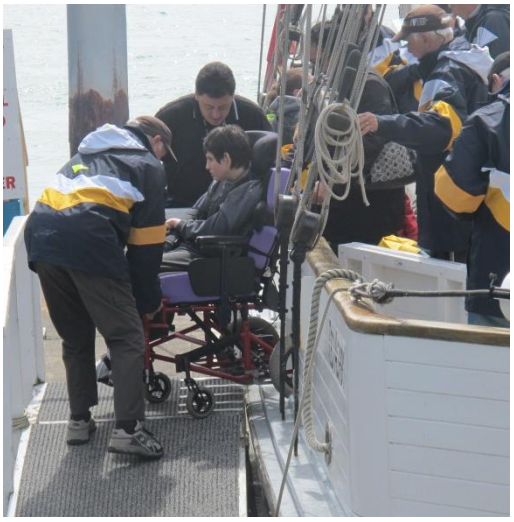
- Allow engines to run at 800rpm out of gear to cool down before switching off engines.
- Record engine operating time in the vessel logbook.
- Stop engine (Engine Stop switch) before switching off the ignition circuit (On/Off switch). Powering down the ignition circuit while the engine is running may burn out diodes in the engine control system.
- Switch off all switches on switchboard.
- Turn off starting and service batteries.
- Close engine cooling water valves and replace hatch cover in inverted position (reading "closed").
- Master or Mate must check Engine Room before leaving vessel. Note/report any Fuel/water Leaks.
- Close seacock for fire hydrant.

SECURING VESSEL

- Mooring line lengths are set and are not to be altered.
- Starboard bow line, around Main Post then to Starboard Bollard
- Port bow line and second Spring secured.
- Attach port aft and forward storm lines if storm winds, especially from the north, is forecasted.
- Keep tension on Throat halyard to create 50mm gap between "Shoes" on Boom Gaff, helps stop wear on leathers and Mast Hoops
- Set Gaff off Sail, parallel to Boom, allows air Circulation, tie Gaskets around sail
- Sail covers secure around Mast, (not outside Halyards) when required
- Lower Jib halyard Block to inside Sail cover, (use line inside the cover to secure halyard)
- Set Rudder at approx. 5 degrees to Port, haul securing preventers as tight as possible and secure.
- Ensure no lines are chafing, i.e. sheaths set under mooring lines, set fenders at correct height etc.
- Coil sheets and secure off the deck to allow to breathe

BOARDING AND DISEMBARKING

- Master or competent crewmember stationed at helm station to observe proceedings at all times.
- Boarding & Disembarking Passengers takes place on Master's orders.
- Both engines set to ahead. (Approx. 1000-1200rpm's or more if needed.)
- Rudder set half to the non-berth side.
- Vessel held alongside with all lines on except second spring & port bow line.
- Bowse in on bow line.
- Bulwark Gate held back
- Less physically mobile passengers will need extra assistance.



CREW POSITIONS - BOARDING

To assist passengers on board, one crewmember in position by the bulwark gate.

The passengers counted on board by the crewmember at the top of the boarding ramp.

If available, an additional crewmember stands close to the vessel at the bottom of the boarding ramp.

During photography by the Visitor Host at the bottom of the boarding ramp, crew must temporarily withdraw from their positions to ensure they don't appear in the photograph.

Passengers held at the bottom of the marina ramp until the photography station is clear. When passenger groups have had their photographs taken, the group permitted to embark.

Tickets clipped by crewmember standing at bottom of marina ramp**.**

Children are assisted into lifejackets or raincoats and passengers welcomed by crewmember at the lifejacket station/pontoon gate.

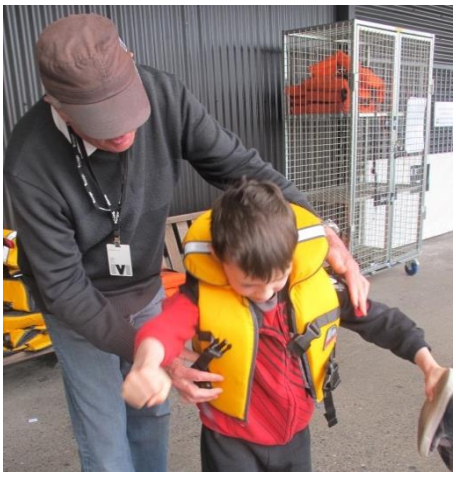
Pontoon gate closed when last passenger is down the ramp.

CREW POSITIONS – DISEMBARKING

To assist passengers disembarking, one crewmember stands by bulwark gate.

A second crewmember stands at top of boarding ramp assisting.

Passengers prevented from falling between vessel and marina, by crewmember standing by the bow at bottom of boarding ramp.



Children assisted out of lifejackets or raincoats and passengers farewelled by crewmember at the lifejacket station/pontoon gate.

Our aim: To provide a rewarding, enjoyable and unique discovery experience for present and future generations through the preservation and presentation of NZ's Maritime Heritage.

DISABLED PASSENGERS

- Less physically mobile passengers will need extra assistance in boarding and moving around the vessel once underway.
- The Master has final say in deciding if the person's lack of mobility represents a safety concern when taking into account 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.
- Ted Ashby has a limit of five Wheelchairs maximum
    - If more than two wheelchairs, then the starboard outboard seats have to be removed and left on the pontoon for the voyage
    - No electric wheelchairs are permitted

WHEELCHAIR BOARDING PROCEDURE

- Wheelchairs are limited to the area between the toilets and main mast on the starboard side.
- Preferred position for a single wheelchair is next to the engine room vent.
- It is preferred that wheelchairs be boarded first for ease of movement on board.
- The Master has discretion over which boarding method should be used depending on conditions.

BOARDING

- One crewmember, two if they can be spared to be stationed on board at the entry hatch.
- One crewmember on the boarding ramp.
- Make sure the boarding ramp is moved to the edge of the pontoon so it's hard against the vessel.
- Preferred method of boarding a wheelchair is:
    - To bring the wheelchair up the boarding ramp backwards so the big wheels cross between ramp and vessel first.
    - Then tilt wheelchair backwards and roll on board with front wheels above gap
- If wheelchair comes up forward:
    - Crewmember on board reaches though bulwark gate and lifts the front wheels across gap
    - Crewmember pushes the wheelchair through the entry hatch

DISEMBARKING

- Take the wheelchair through the bulwark gate backwards and tilt to lift the front wheels over the gap
- Take the chair down the boarding ramp backwards.

BOARDING BRIDGE

Another boarding method uses the aluminium boarding bridge and extension to the boarding ramp.

- Move the boarding ramp away from the boat by about 400mm.
- Engage the metal bracket of the extension to the corresponding bracket on the boarding ramp.
- Place the boarding bridge across the gap between the extension and the boat with the casters on the extension and the other side just inside the bulwark gate of the boat.
- Use ropes tied to the handrails of the bridge to secure the bridge to the eyelets mounted in the gate frames.
- Flip the two hinged plates down for a smooth transition to the bridge.
- Adjust the position of the ramp/extension combination, if necessary, such that there is enough space for the wheelchair to be manoeuvred over the bridge.
- Follow the boarding and disembarking procedures as above.

REFUELLING

1. If refuelling from a refuelling pontoon make sure the vessel is held alongside firmly
    a. Bow and stern lines
    b. A forward and aft spring
    c. If the wind is holding the vessel off the pontoon, then a breast line should be used
2. Open both the fuel tanks intakes.
3. Check tank levels and estimate how much fuel is needed in each tank, to refuel the vessel
4. Ensure spill kit is to hand and scuppers blocked
5. Place sorbent mats around each of the fuel intakes in the deck
6. Assign each crewmember to a position for refuelling
7. Refuelling from pump (at refuelling pontoon)
    a. Check that you are using the DIESEL pump
    b. Keep in communication with pump attendant
    c. Never leave the fuel pump unattended
    d. A crewmember should watch where the hose comes over the bulwarks in case it gets caught on the shrouds
    e. Make sure a trained person monitors the entire refuelling operation
    f. Make sure the pump is turned off before taking the hose ashore
8. Refuelling from containers
    a. Make sure you use a large funnel or siphon hose
    b. Make sure a trained person monitors the entire refuelling operation
9. Note amount bunkered in vessel log

Replace spill kit if necessary

BLACKWATER TANK PUMPING

This unit can be used to drain the Engine Room and Void Bilge Spaces.

Disposable gloves are worn when working with black water. If Spillage occurs contact Maintenance

To prevent cross-contamination, the black water tank and freshwater tank must not be open at the same time.

PUMPING OUT ALONGSIDE

1. UNWIND the pump out hose.
2. CLOSE pump valve**.**
3. UNSCREW caps marked 'Waste', using key from mid port side fire extinguisher locker.
4. SCREW in adaptor
5. PLACE the hose end on the adapter
6. LOCK levers up to make a good seal.
7. TURN **ON** the Pump-a-Head.
8. **OPEN** the hose valve.
9. PROCEED to empty waste tank until air shows in the sight glass.
10. **CLOSE hose valve immediately to keep air out of line.**
11. REPEAT Steps 3 – 8 to empty second black water tank
12. TURN the pump out hose **OFF** on pylon.
13. REMOVE adaptor
14. CLOSE cap
15. PLACE adaptor & key in container and leave in mid port side fire extinguisher locker.
16. CURL hose end under the Pump Out hose to prevent hazard.

ENSURE HANDS ARE SANITISED AFTER COMPLETING THE TASK

CENTREBOARD

Two crewmembers are required for this procedure.

Mate to monitor the height in the Centreboard Casing & relay this to the master.

RAISING

1. Remove the winch handle from the forward port seat locker.
2. Once order given, place the handle on the winch.
3. One crew turns the handle and other crew stands ready to apply foot brake.
4. Release the locking lever and start turning the winch handle.
5. If crew gets tired, the brake is applied and locking lever engaged.
6. Two crewmembers change around and procedure starts again.
7. Once at required height, brake is applied and locking lever engaged.
8. Handle is turned back until the locking lever is locked in place.
9. Winch handle is removed & stowed

LOWERING

NEVER LET IT DROP UNDER its OWN WEIGHT

1. Once order given, place handle on the winch.
2. One crew on foot brake, the other on handle.
3. Pull up on handle and apply the foot brake.
4. Release the locking lever.
5. Slowly release pressure on foot brake until crew on handle can feel the weight.
6. Hold the foot brake at this point.
7. Crew on handle now lowers the centreboard with handle.
8. Apply brake and locking lever engaged when at required height.
9. Locking lever locked in place.
10. Winch handle removed and if completely lowered, placed back in seat locker.

RUDDER

RAISING

Two crewmembers required to raise the rudder.

Depending on length of time from the last slipping – a third crewmember may be required.

The Master will control the height and rate at which the rudder is raised.

1. REMOVE the line from the cleat.
2. HAUL on the line until the rudder is raised.
3. SECURE the line to the cleat.

LOWERING

One crewmember is required to lower the rudder.

The Master will control the height and rate at which the rudder is lowered.

The Master may have to move the rudder from side to side to get it to start moving

1. REMOVE the line from the cleat, leaving one-half turn on the cleat.
2. MAINTAIN tension on fall.
3. SECURE the line to the cleat.

LOSS OF STEERING

There are two ways of steering Ted Ashby if the main steering is lost

1. The Engines
2. Rigging lines to the Rudder

ENGINES

Using the Engines to steer the vessel is only effective in lighter winds and calm seas

- Centre the rudder as best as possible
- By increasing the revs on the outboard engine and decreasing them on inboard engine you can turn the vessel in the direction of the inboard engine.
- Putting the inboard engine astern will make for a faster and tighter turn.
- Unless conditions are perfect berthing at the Museum marina shouldn't be tried under engine steering.

RIGGING LINES TO RUDDER

Do not berth the vessel using this steering method.

- Move the aft seats (over the steering chains) forward and out of the way
- If the steering chains have become detached from the Rudder at the rudder the lines will need to be attached to the Rudder itself.
    - A crewmember will need to put on a life jacket
    - The lines are passed through the steering panama's on each side of the stern
    - The crewmember climbs down onto the rudder and attaches the lines to the D plates on the Rudder
- If the steering chains have broken between the Rudder and steering panama's on the stern follow the procedure above
- If the chains have broken inboard or the problem is with the Wheel itself
    - Centre the rudder as best as possible
    - Attached the lines to the steering chains near the steering panama's
    - Use an Anchor Hitch and leave a long tail. Seize the tail in a couple of places so it doesn't catch going through the panama
- Once the lines are attached split the crew into two groups and line them up on each line down each side of the deck.
- Giving orders to "Pull Port" or "Pull Starboard" to change course.

ELECTRICAL FAILURE

This procedure deals with a failure in the service electrical system which supplies electrical power to all the vessel systems except the engine starter motors. However, it supplies the engine ignition switches.

The vessel does have a backup battery for the VHF radio on an independent circuit.

3. If starboard engine is running DO NOT TURN IT OFF. This engine has the alternator for the service system
4. Check main switchboard for signs of fire. If fire is noted, turn off battery switches and follow fire procedures
5. Check battery switchboard for signs of fire. If fire is noted, turn off all battery switches (if possible) and follow fire procedures
6. If no signs of fire, turn on the cross over switch that connects the service battery with the starboard starting batter.
7. If power is not restored, put the air horn at the helm station for sound signals.
8. Make a “Pan Pan” call on CH 16 and inform them of problem, location and navigate with caution
9. Return to marina if safe to do so, otherwise anchor vessel and arrange for tow

GOING ALOFT

Safety harnesses must be worn AT ALL TIMES when going aloft

- YOU NEED PERMISSION from the Master or Maintenance Team to go aloft
- DON safety harness
- ADJUST to a comfortable snug fit
- ATTACH safety clip to safety line before leaving the deck
- DO NOT take risks – remain clipped on at all time.
- DISPLAY warning notices
- SEND up and lower tools and stores in suitable containers
- ATTACH a lanyard to tools wherever practical
- DO NOT carry tools in pockets – they may fall out
- REMOVE warning notices when work is complete.

It is important to note that working aloft, though potentially hazardous, is acceptably safe if correct procedures are followed.

SHIP'S TENDER

The tender is for display purposes only. It isn't for functional use.

HAZARD REGISTER

Hazard	Significant Yes/No	Eliminate, Isolate or Minimise	Actions Required	Person responsible
Davit Area	Yes	Eliminate	Training. No step aft.	Master
Main Boom	Yes	Eliminate	Training, Crew member stationed at Main sheet at all times whilst sail is deployed: keep passengers/crew clear	Master
Staysail Boom	Yes	Eliminate	Training, Crew member stationed at Aft end of Boom at all times whilst sail is deployed: keep passengers/crew clear	Master
Engine space	Yes	Eliminate	No Entry to Engine space whilst Engine is operating	Master
Sail Management	Yes	Minimise	Refer to Sail Use. Apply reefs according to specified conditions, preferably before departing berth	Master
Hatches to cabin and engine room; doors to cabin and hold.	Yes	Eliminate	Hatches and doors are to be closed when passengers are aboard. Crew are to be made aware of dangers from open hatches.	Master

APPENDIX

Some points on 'Ted Ashby' in motion (under power)

By Capt. John Briand (volunteer Master 'Ted Ashby')

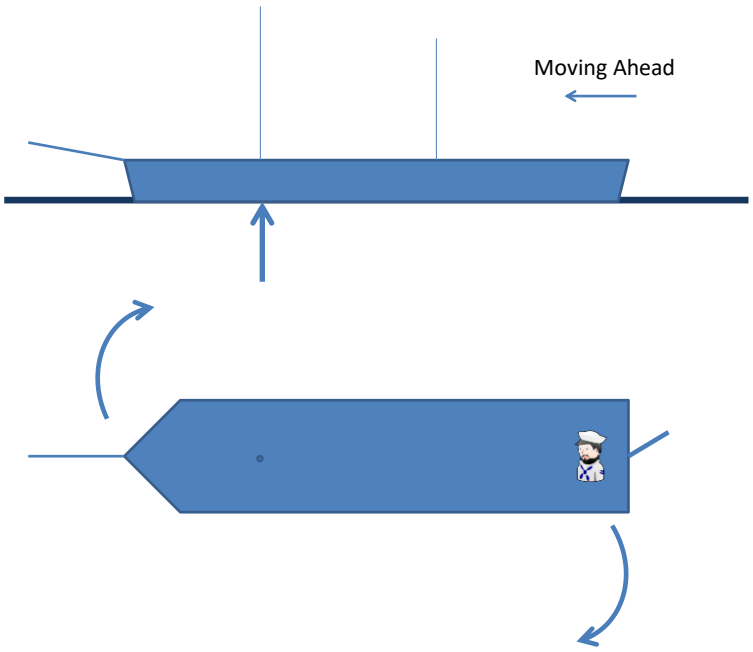
Quite a few personnel handling 'Ted Ashby' accuse the vessel of poor handling, citing the shallow draft, box-shaped underwater body and heavy displacement as the main reasons for the supposedly reluctant response to engine and helm movements. Much of this criticism stems from not understanding some of the vessel's handling characteristics.

Many of the berthing incidents are the result of approaching the pontoon at too high a speed over the ground, and / or, a pre-occupation with attempting to maneuver the vessel using the rudder at slow speeds through the water. You will note that I have deliberately used the following terms when referring to vessel speed. Vessel speed over the ground determines the actual terminal velocity when you hit the pontoon (i.e. higher the speed, the greater the impact). Vessel speed through the water determines the flow of water (or lack of) over the rudder. This does not take into account any effect of tide or current.

In the following pages, we will investigate some of the characteristics which are common to most vessels under power, where motion is controlled by propeller(s) and rudder(s).

These vessels have what is known as a 'pivot' point. This refers to the imaginary point somewhere along the centre line length of the craft, on which it 'swivels'. This is almost never in the middle of the ship's length.

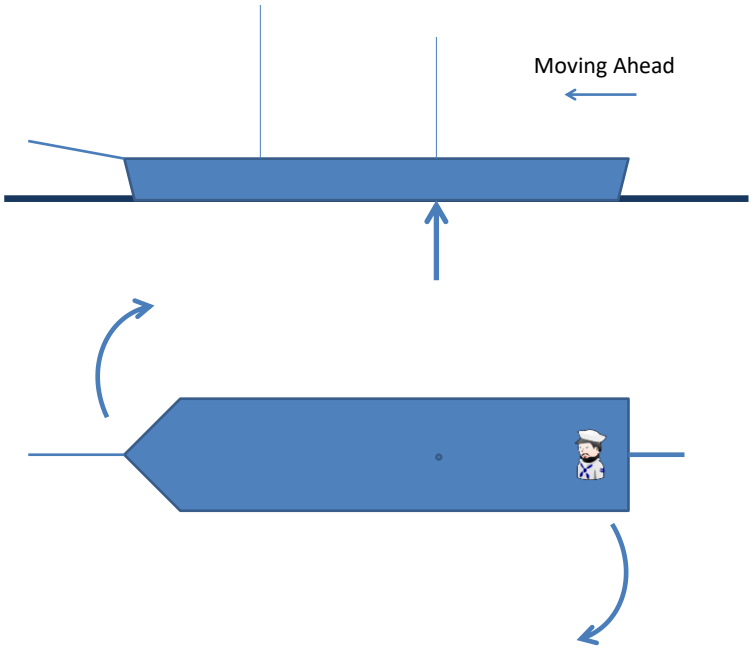
Typically, when powering ahead, this point lies 1/3rd along the length from forward, as illustrated in diagram 1/. below:



On 'Ted Ashby', this is located close to the mainmast.

In this illustration, it can be seen that more of the vessel will swing to port than to starboard – an important in close-quarter situations or berthing.

This dynamically changes when power astern is applied (even if the vessel is still moving ahead. The 'pivot' point now moves aft, so that 2/3rds of the ship is located ahead of this point, as shown in illustration 2. below:



On 'Ted Ashby', this is located close to the mizzen mast.

It is very important to keep this in mind in close quarter situations or when berthing or unberthing the vessel, as you must now allow for the fact that 2/3rds of the vessel ahead of the mizzen mast will move to starboard (and 1/3rd to port), if turning to starboard.

In berthing the 'Ted Ashby', this characteristic will be very useful during berthing, as will be explained in due course.

Speed and mass

The biggest error many vessel handlers make when berthing (or making a sharp turn in restricted areas), is carrying excessive speed. It is the combined function of speed and boat weight which creates forward or backward inertia. 'Ted Ashby' is a heavy boat, (relative to its size), with a very shallow underwater section. Go too fast and she can be difficult to stop. With the engines in reverse, this excessive speed can create cavitation of the propellers as the engine revolutions are increased in an effort to kill or reduce forward speed; in the mistaken belief that increasing the astern revolutions will put more 'backing' power to the propellers.

Unfortunately, there comes a point (somewhere between 1500 and 1800 rpm) where air becomes trapped on the propeller surfaces and the propeller no longer 'bites' and forward momentum does not reduce as expected. This is why forward speed during berthing must be at the slowest that still allows some control of the vessel. For over 90% of the berthing operations, following this practice will allow you to come alongside without using the

'forward spring as a 'brake', and snubbing the bow violently against the pontoon rubbing strip.

Some berthing techniques.

One of the main causes of some berthing maneuvers going 'pear-shaped' during the final approaches to the pontoon is pre-occupation with steering. Moving the rudder on the 'Ted Ashby' requires time and considerable physical effort, which can become a major distraction at this time. The rudder becomes increasingly ineffective in controlling the vessel heading at very slow speeds during berthing, requiring short bursts of power from either engine to make the desired change. This then results in unwanted forward motion.

However, if you can understand the steering characteristics of "Ted Ashby' under power, it is possible to have almost total control of the vessel's heading by using engines alone. This is achieved by taking advantage of the phenomenon known as 'Transverse thrust'. This can be explained by studying the following illustration.

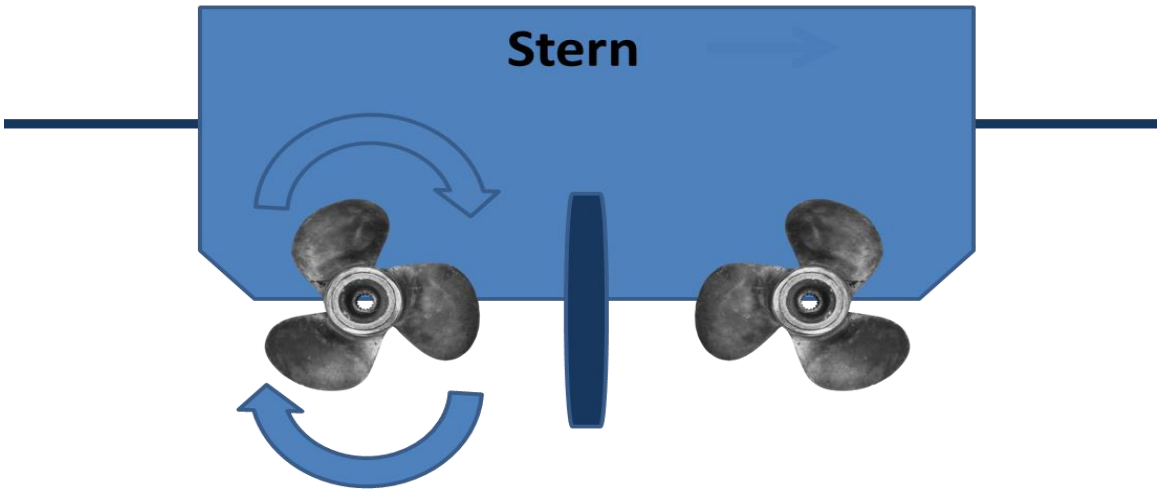
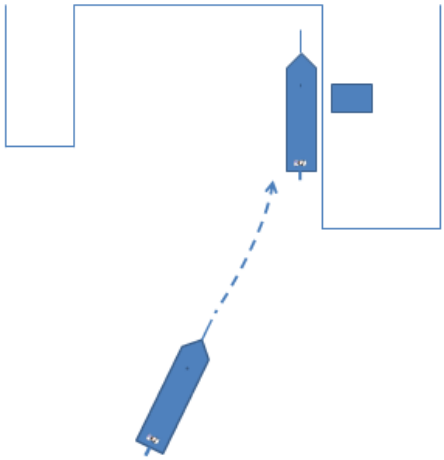


Illustration shows direction of propeller rotation when going astern.

Port propeller 'walks' stern to starboard and bow to port

On 'Ted Ashby', when going ahead, the propellers turn away from each other (outward rotation). Having the propellers turning in opposite directions assists in providing what is known as 'longitudinal stability', or the ability to assist steering the vessel in a straight line at any speed with minimal rudder correction. Some vessels will have 'inward turning' propellers and very rarely, both propellers turning in the same direction. This latter configuration provides a very unmanageable ship, at any speed, as the vessel will always want to head off in one direction – a very unhappy set of circumstances for the Master.

When berthing 'Ted Ashby', there are several advantages in approaching the pontoon with the bow towards the mid-point and at an angle of 15 to 20 degrees (see following illustration). Using this approach angle, it is almost always possible to bring the vessel neatly alongside and parallel to the pontoon. Just as importantly, it leaves you with an escape route should things go 'pear-shaped' by the simple action of backing out into open water and making a new approach.



My own experience is that the angled approach staying to port of the straight-line course into the berth (lining up the starboard 'cats eye' with the boarding steps on the pontoon works well. About 5 ship lengths from the pontoon outer pole, put the rudder amidships and leave it there. It is now 'redundant' and the vessel will be 'steered' by engine movements and transverse thrust alone. As the vessel's bowsprit comes in line with the outer end of the pontoon, come astern with the port engine alone. The transverse thrust generated by the port propeller will now rotate the forward 2/3rds of the vessel to port (away from the pontoon) and move the stern towards the pontoon – all the while continuing to reduce forward momentum. This bodily rotation can be checked either by stopping the port engine and / or coming astern on the starboard engine to check the swing (or any forward momentum) just before the weight comes onto the forward spring line.

Once the effect of transverse thrust is understood, it can be used to great effect in controlling the vessel at very slow speed and in close-quarter situations. This method also gives you the option to 'power out' of the berth by going astern on both engines, if circumstances require.

One final point that applies to the 'Ted Ashby'. If the port engine is used astern at moderate to high revolutions for an extended period, it is possible that the flow to the port engine cooling water intake will become aeriated and the cooling water pump will lose suction causing the pump impeller to fail and the engine to overheat.