Definitions, terminology and shipboard phrases relevant to the topic of ship handling and this text

Advance Described by that distance a vessel will continue to travel ahead on her original course while engaged in a turning manoeuvre. It is measured from that point at which the rudder is placed hard over, to when the vessel arrives on a new course 90° from the original.

Air Draught That measurement from the waterline to the highest point of the vessel above the waterline.

Anchorage A geographic area suitable for ships to lay at anchor. Ideally, it would have good holding ground and be free of strong currents and sheltered from the prevailing weather. It is usually identified on the nautical chart by a small blue anchor symbol.

Anchor Aweigh An expression used to describe when the vessel breaks the ground and no longer secures the vessel. The cable is in the up/down position and the vessel is no longer attached to the shore by the anchor.

Anchor Ball A round ball shape, black in colour, which is required to be shown by vessels at anchor, under the Regulations for the Prevention of Collision at Sea.

Anchor Bearings Those bearings taken to ascertain the ship's position when she has become an anchored vessel.

Anchor Buoy An identification buoy used to denote the position of the deployed anchor. It is hardly ever used by commercial shipping in this day and age.

Anchor Coming Home The action of drawing the anchor towards the ship as opposed to pulling the ship towards the anchor.

Anchor Plan A preparatory plan made by the Master and ship's officers prior to taking the ship to an anchorage.

Anchor Warp A steel wire hawser length, usually attached to a short length of anchor chain or directly onto the anchor for warping the vessel ahead or astern.

Astern (i) The movement of the ship's engines in reverse, to cause the stern first movement of the vessel; (ii) Descriptive term used to describe an area abaft the ship's beam and outside of the vessel's hull.

Auto-Pilot A navigation bridge control unit employed to steer the vessel in an unmanned mode. Various controls can be input by the operator to compensate for sea and weather conditions but the unit is effectively a free-standing steering unit.

AziPod Trade name for a rotable thruster unit with or without ducting, turning through 360° rotation and providing propeller thrust in any direction.

Baltic Moor A combination mooring of a vessel alongside the berth which employs a stern mooring shackled to the offshore anchor cable in the region of the 'ganger length'. When approaching the berth, the offshore anchor is deployed and the weight on the cable and the stern mooring act to hold the vessel just off the quay.

Band Brake A common type of brake system found employed on windlasses. The band brake is a screw on friction brake, designed to check and hold the cable lifter (gypsy) when veering anchor cable.

Beaching The term used to describe the act of the ship taking the ground intentionally. It is a considered action if the ship is damaged and in danger of being lost.

Bight The middle part of a line or mooring. It may be seen as a loop in a rope or may be deliberately created to run around a bollard providing two parts of a mooring (instead of one). It is considered extremely dangerous to stand in the bight of a rope and persons in charge of mooring decks should watch out for the young or less experienced seafarers, when working with rope bights.

Bitter End That bare end of the anchor cable which is secured on a quick release system at the cable locker position.

Bitts A seaman's term for describing the ship's bollards.

Bollard Pull An expression which is used in charter parties to grade the capacity of a tug and its efficiency. The bollard pull is assessed by measurement, against the pulling capacity of a tug, as measured by a dynamometer. The thrust, or force developed is known as 'Bollard Pull' and is expressed in tonnes. It is useful for marine pilots to assess the wind force affecting the ship against the available 'bollard pull'.

Bow Anchor A vessel is normally fitted out with two working bow anchors. Specialist vessels may also be equipped with additional anchors for specific trade or operations, i.e. stern anchor.

Bow Stopper A collective name to describe either a guillotine or a compressor. Both of which act as an anchor cable stopper. It is one of the securing devices

applied to the anchor cable when the vessel is at sea. Alternatives: the AKD stopper (Auto Kick Down).

Breakers These are waves which break against the shoreline producing surf.

Breast Line A ship's mooring line which is stretched at right angles to the fore and aft line of the vessel. By necessity, they are generally short compared to the long drift of head or stern lines, the function of the breast line being to retain the vessel alongside the quay.

Brought Up An expression used to describe when the vessel is 'Brought Up' to the anchor, when the anchor is deployed and holding. The scope of cable is observed to rise and fall back in a catenary indicating that the vessel is riding to her anchor and not dragging her anchor.

Bruce Anchor A trade name to describe a specialist anchor manufactured by the anchor company 'Bruce Ltd'. The original 'Bruce' design incorporated the hook effect of the Admiralty Pattern Anchor and the Spade effect of the stockless anchor to produce a high holding power anchor with no moving parts.

Bullring Often referred to as a centre lead, set well forward in the eyes of the vessel. It is often employed for towing or accommodating buoy mooring lines. When not employed with moorings it is often used to hold a company or ship's emblem.

Cable A nautical measurement equivalent to one tenth of a nautical mile, or 100 fathoms (also 608 feet).

Cable Holder A cable lifter which is mounted horizontally as opposed to vertically on a windlass axle. Some passenger and warship vessels operate anchors with cable holders rather than windlass operations.

Caisson The term used to describe a dry dock or dock gate system.

Capstan A vertically mounted warping drum with its motor secured below decks. The sides of the drum are fitted with 'whelps' to provide improved holding for mooring rope turns.

Carry Up A term used to refer to moorings being carried up the quayside when mooring alongside or entering a dock, the moorings usually then being employed to warp the vessel ahead or astern or assist in the manoeuvring of the vessel.

Cavitation A physical phenomena experienced in the region of a rotating propeller and its supporting structure. The cause is generally an air bubble flow which is non-uniform, associated with the water flow from the propeller action. Extensive cavitation effect can give rise to excessive corrosion in the propeller area of the vessel.

Chart Datum A plane of reference for charted depths. The United Kingdom employs the lowest astronomical tide, the lowest water prediction. In the United States, it is the mean low water.

Circle of Swing That area that a vessel will swing over when lying to an anchor. The circle of swing can be reduced by mooring to two anchors.

Coir Springs Heavy duty harbour moorings manufactured in coir rope. They are designed to be picked up by a vessel mooring in a harbour, usually where heavy swells are experienced. Commonly referred to as 'storm moorings'. Common to ports on the Pacific rim, they are used in addition to the ship's own moorings.

Composite Towline A towline which is established by employing the ship's anchor cable secured to the towing vessel's towing spring.

Con (Conn) An expression used to describe the person who has the control of the navigation of the vessel.

Contra-rotating Propellers Two propellers mounted on the same shaft rotating in opposite directions to balance torque.

Controllable Pitch Propeller A propeller which is constructed in such a manner that the angle of the blades can be altered to give a variable pitch angle. Namely from zero pitch to maximum pitch ahead or astern.

Crest of a Wave The peak or highest point of a wave. Opposite to the trough of a wave.

Cross A term used to describe a 'foul hawse' where the anchor cables have crossed over as the vessel has swung through 180°.

Devils Claw A securing device used to secure the anchor cable, when the vessel is at sea.

Docking Winch The name given to the aft mooring deck winch which is employed for use with the stern mooring lines. It may also have an integrated cable lifting operation if the vessel is equipped with a stern anchor.

Double-up When referred to moorings, means the act of doubling a single part mooring to a double mooring, e.g. double up the forward spring line.

Drag An effect which opposes the ship's forward motion and can be caused by shell/hull friction, rudder action or appendages extending from the hull, effectively reducing the ship's speed. The term is also used to describe a ship dragging its anchor.

Dragging Anchor An expression used to describe a vessel which is moving over the ground when its anchor is not dug in and holding.

Draught The depth measure of a freely floating ship. It is the vertical measurement between the keel of the ship to the waterline (alternative spelling 'draft').

Drawing the Anchor Home A phrase which describes pulling the anchor home towards the ship as opposed to pulling the ship towards the anchor.

Dredging (an anchor) A term when used in conjunction with an anchor, it means the deliberate dragging of an anchor when at short stay, over the ground of the sea bed.

Drop an Anchor Underfoot The action of letting go a second anchor at short stay. It is usually done to reduce the 'Yaw' or movement by the ship about the riding cable. It tends to act as a steadying influence to oscillations by the ship when at a single anchor.

Ducting A term used to describe the propeller being encompassed by a partial steel tunnel to 'chunnel' the water flow more directly onto the propeller blades.

Ebb Tide The tidal flow of water out of a port or harbour away from the land.

Elbow A term used to describe a 'foul hawse' where both the deployed anchor cables have crossed over and the vessel has turned 360°.

Even Keel An expression which describes a vessel which is without any angle of list, is said to be on 'even keel'.

Fairway That navigable and safe area of a harbour approach which may include the main shipping channel. It is usually marked with a fairway buoy.

Falling Tide A term used to describe when the tide is falling on the ebb and the depth of water is decreasing.

Fender A purpose-built addition to the ship's hull to prevent damage to the hull when landing alongside a jetty or other hard surface. It may also be a portable device suspended on a lanyard to protect the hull from damage when strategically placed between the quayside and the ships hull to cushion and protect the ships side.

Fetch Described as the distance that the wind blows over the sea without encountering any appreciable interference from land masses. The term was also previously used in sailing vessels, i.e. to 'fetch up on a starboard tack'.

Final Diameter Is defined as that internal diameter of the ships turning circle where no allowance has been made for the decreasing curvature as experienced with the tactical diameter.

Fine A bearing reference which indicates an observation bearing, less than ½ compass point off the bow, but not dead ahead.

Flipper Delta Anchor A modern high holding power anchor which can have the angle of the flukes pre-set at a variable, desired angle, prior to deployment.

Flood Tide A tide which flows into a port or harbour or into and towards the land. Opposite to an ebb tide which represents the tide flowing outwards.

Fog (see Visibility Table) Is a condition formed when cloud occurs at ground (sea) level. There are two recognized forms, namely radiation fog and advection fog. In all cases, visibility is impaired to less than 1000 metres. When mixed with polluted air it is termed as smog.

Foul Anchor A description given to an anchor which is obstructed by a foreign object (usually from the sea bed) or fouled by its own anchor cable. It is only usually detected when the anchor is heaved up to be stowed.

Foul Hawse An expression which describes when both anchor cables have become entwined with each other. It can occur when two anchors are deployed at the same time, as in a running moor. A change in the wind direction, left unobserved, causes the vessel to swing through the line of cables causing the foul.

Ganger Length A short length of anchor cable set between the anchor crown 'D' shackle and the first joining shackle of the cable. The length may consist of just a few links which may or may not contain a swivel fitting.

Girding a Tug The action of pulling on a towline at right angles to the fore and aft line of the tug, in a manner likely to cause a capsize motion on the tug. Alternative term is 'girting'.

Gob Rope (Alt., Gog Rope) A strong rope (or wire plus heavy shackle) set over the tow line of a tug. Its function is to bowse the towline down towards the aft end of the tug, so changing the direction of weight on the tug. Its function is also to reduce the risk of the tug being girted and caused to capsize.

Grounding A term used to describe when a ship touches the sea bottom accidentally. It occurs generally through poor navigation and the lack of underkeel clearance. The severity of any damage incurred will depend on the speed of striking and the nature of the ground that the vessel contacts.

Hang off an Anchor The operation of detaching the anchor from its cable and hanging it off, usually at the break of the forecastle. The operation is carried out when the vessel needs to moor up to mooring buoys by its anchor cable or if it is expecting to be towed by means of a composite towline.

Hawser A term which refers to a mooring line in the United Kingdom, meaning a large diameter fibre rope or wire rope.

Heading That direction in which the ship is pointed. It is usually compass referenced.

Headreach That distance that the vessel will move ahead after the engines have been stopped and before the ship stops steering.

Headway The forward movement of the vessel through the water. Opposite to sternway, when the vessel is moving astern.

Head Wind A condition when the wind is from the opposite direction to the ships course. Similar meaning for a head sea.

Heaving Line A light line fitted with a weighted end (Monkey fist) which can be thrown from ship to quay or quay to ship (depending on wind direction). It is used for the connection and passing of heavy moorings between the deck crew and the wharf men.

Heave To A reduction of the ship's speed, usually made in heavy weather conditions. The speed reduction is reduced to maintain steerage and hold the ship's head into the prevailing weather and sea direction.

Heel That angular measure that a vessel will be inclined by an external force, e.g. wind or waves. The condition can also occur during a turning manoeuvre.

Helm A term which refers to the tiller or ship's steering wheel. A vessel may carry 'helm' as in having a turn of the ship's wheel held to retain the vessel on course. It is also the name given to one of the controlling elements of automatic steering units.

Helmsman Alternative name for a quartermaster, who steers the ship to the orders of the watch officer, master or pilot.

Holding Ground A description of the type of ground into which a vessel is letting go her anchor, e.g. mud, sand, broken shell, etc. There is good holding ground for the anchor and bad holding ground for the anchor.

Holding Power An expression used to describe the holding power of an anchor. Some anchors like the ' Bruce' or the 'AC14' are recognized as having High Holding Power qualities, much more than a conventional anchor design like the stockless.

Hove in Sight An expression which refers to heaving the anchor clear of the water surface. Once the anchor is sighted, the bridge should be informed it is sighted and clear.

Hydro-Lift A dry docking system which employs hydrostatic force to lift and lower vessels to be docked. The system operates similar for vessels which move through the locking system of the 'Panama Canal'. The most well known example is

at Lisnave, in Portugal, where a wet basin allows three large vessels to be docked at the same time.

Interaction A term which describes the behaviour of a ship when it is influenced by either a fixed object like the proximity of the land or another vessel passing too close. There are several types of interaction (see squat) all of which are undesirable and tend to cause movement of the vessel outside the influences of the controller.

Joining Shackle A single specialized shackle that joins two shackle lengths of cable. The most common joining shackle employed is the 'kenter shackle' but 'D' lugged joining shackles are also employed for the same purpose.

Jury A term meaning temporary or improvised. As with a 'jury rudder'.

Kedge The forced movement of a vessel astern by the laying of a 'kedge anchor' to pull the vessel astern, usually off a bank. Some ships carry a specific kedge anchor but the practice of carrying this, is now rare.

Knot The nautical unit of speed which equates to approximately 1½*th* of a statute mile per hour (One knot = one nautical mile per hour).

Kort Nozzle Trade name for an encased propeller which is capable of rotating through 360°. Extensively used in tugs.

Landlocked When a vessel is surrounded by land as in a bay or other restricted waters she is said to be landlocked.

Lanyard A short line used to hold or secure something, i.e. a bucket or a sidearm. Previously used in sailing ships' rove through a block to tighten rigging.

Lead A narrow, navigable channel through an ice field.

Lee That side of the ship that lies away from the wind. Opposite to the weather side.

Lee Shore A land mass or coastline towards which the wind is blowing. A loss in engines off a lee shore could lead to the vessel being blown aground.

Leeward Refers to that side which is away from the wind. It is pronounced 'luward' and is the side opposite to windward.

Leeway That sideways movement of a vessel away from the designated course due to the force of the wind.

Let Go An expression which describes the release of the anchor from the windlass braking system. With the advent of heavier anchors being installed on larger vessels

fewer ships are actually 'letting go anchors'. The modern tendency is to 'walk back' the anchor cable under full control.

Log (i) A device for measuring the ship's mileage and subsequently its speed;
(ii) Shortened term for the ship's logbook.

Long Stay An expression which describes the line of cable when the vessel rides to an anchor; the line of cable being observed as a line near parallel to the water surface. Compared to short stay, where the angle of cable is at an acute angle to the water surface.

Lubber Line A reference mark usually found on the inside of the compass bowl in line with the ship's head. Employed with the steering of the vessel.

Magnetic Compass A ship's compass which aligns to the magnetic North Pole. It is considered the most important instrument on the vessel as it does not rely on an external power source like the gyroscopic compass.

Mediterranean Moor A ship's mooring which allows the vessel to be secured to the quay by stern moorings while the bow is held fixed by deploying both bow anchors. The mooring is suitable for non-tidal waters, like the Mediterranean Sea.

Messenger Line A light line employed as an easy to handle length, used to pass a heavy mooring hawser, as with a 'slip wire'.

Monkey Fist A heavy knot made at the end of a heaving line to provide a weighted end to improve throwing.

Mooring (i) The term used to describe a vessel secured with two anchors;
(ii) The term used to describe a vessel which is being tied up to the quayside or moored to buoys.

Mooring Anchor A heavy anchor employed as a permanent mooring for buoys or, in some cases, offshore installations.

Mooring Boat A small boat employed to carry ship's moorings to the shore or to mooring buoys. It is usually manned by a minimum of two men, one of which may have to 'jump the buoy' when securing to buoys.

Mooring Buoy A large buoy to which ships can moor using mooring lines or by means of the anchor cable once the anchor has been 'hung off'.

Mooring Deck That area of a ship from which the moorings are run ashore and secured. The vessel would normally have a forward mooring deck and an aft mooring deck. The forward deck usually accommodates the anchor arrangement.

Mooring Line A natural fibre or manmade fibre rope used to tie up and secure the vessel to quaysides or buoys. A generic term which can also include mooring wires.

Mooring Shackle A heavy duty bow shackle, listed under the anchors and cables accessories. It is used when the vessel needs to moor up to buoys.

Mooring Swivel An additional fitting placed into the anchor cable when mooring to buoys or to two anchors for a lengthy period of time. The swivel ensures that the cable does not become fouled and twisted as the vessel turns on the mooring.

Mushroom Anchor A type of mooring anchor so-called because of its shape being similar to a mushroom. It is used extensively as a permanent mooring for navigation marks and buoys.

Neap Tide A tide which occurs twice a month of reduced range or velocity. It occurs when the moon is in quadrature with the sun (opposite to a spring tide).

Not Under Command The term given to a vessel which is unable to manoeuvre as required by the 'Rules of the Road' because of exceptional circumstances.

Officer Of the Watch (OOW) The description of the navigation officer who is placed in charge of the watch at sea. The OOW is responsible for the safe navigation of the vessel during his or her period of duty and is expected to have full control of the ship's course, speed and navigation aids.

Offshore Wind A direction of wind which blows towards the sea away from the land.

Old Man The term used to describe a single roller lead, mounted on a pedestal. It is often used to change the direction of a mooring line away or towards the lead of the windlass.

Onshore That direction towards the coastline from seaward (opposite is offshore).

Open Moor The name given to a mooring which employs two anchors, each one deployed about 20° off each bow. The mooring is used in non-tidal waters to provide additional holding power against a strong flowing stream.

Overhauling A term used to describe one vessel overtaking and passing another when both vessels are going in the same direction. *NB*. Can also mean a term in maintenance to overhaul a ship or piece of machinery.

Panama Lead Often referred to as a pipe lead which prevents moorings from accidentally jumping out of the lead when under weight. For this reason, many seamen prefer the use of panama leads as opposed to roller leads.

Period of Encounter May be considered as the period of time between the passage of two successive wave crests to pass a fixed point, namely the position of the ship.

Period of Pitch Is defined by that time the bows of a ship start to make a rise from the horizontal, then fall back below the horizontal and then return to it.

Period of Roll Defined by that time period a vessel will roll from one side to the other and return, when rolling freely.

Pitch (i) The vertical upward and downward movement of the vessel along its fore and aft line caused by head or following seas; (ii) That angle a propeller blade will make with a perpendicular plane of the axis of the propeller. The pitch angle will vary along the length of the blade. Propeller pitch can also be expressed as the distance the propeller will move forward in one revolution through a soft medium (e.g. water).

Pivot Point That position aboard the vessel about which the ship rotates when turning. In conventional vessels the 'pivot point' was approximately one third (⅓) of the ship's length, measured from forward, when moving ahead. The position of the pivot point will change when going astern and with the types of ship construction.

Plimsoll Mark The loadline markings painted on the ship's side to indicate the maximum load draught that the vessel may load her cargo under different conditions.

Plummer Block An alignment support bearing, for the ship's propeller shaft.

Pointing Ship The action of changing the ship's head when lying to a single anchor. It is achieved by passing a stern mooring wire forward to secure to the anchor cable. The cable is then veered causing the vessel to lay at an acute angle to the flow. It is employed to create a 'lee' if working small craft to clear from the weather side.

Poop Deck A term which refers to the aftermost deck of the vessel. It usually carries a superstructure known just as the 'poop'. Originally it developed from what was known as the 'aft castle' of medieval sailing ships and was later to provide additional buoyancy to the ship as well as accommodation for the Master and Officers.

Pooped A term which describes a large sea or wave which breaks over the poop deck area when the vessel is running with a following sea.

Port A reference to the left side of the vessel when looking forward.

Pounding A term which describes the heavy contact of the ship's fore part when pitching in a seaway. This is a violent contact and may cause ship damage, it is sometimes referred to as slamming. The effect of pounding can usually be tempered by a reduction in speed.

Propeller Diameter That diameter described by the tips of the propeller blades when turning.

Propeller Ducting A cylindrical steel casing set around the propeller, often fitted with reaction vanes to concentrate the flow of water directly to the turning area of

the propeller. Also known as a 'Propeller Shroud' keeping the wash from the propeller into a confined area. Popular with smaller craft and harbour authorities because they tend to reduce erosion of river and canal banks.

Propeller Pitch Described by the axial distance moved forward by the propeller in one revolution, through a solid medium. *NB.* A constant pitch angle propeller is one with blades which are flat and set at a designated angle.

Propeller Shrouds A descriptive term used to describe an encased propeller often fitted with baffle plates which are set into propeller ducting for the purpose of redirecting water flow more positively to and from the propeller blades.

Propeller Slip Considered as the difference between the actual speed of the vessel and the speed of the engine. It is always expressed as a percentage (%) and determined from the formula:

$$\text{Propeller Slip \%} = \frac{\text{Engine speed} - \text{speed of vessel}}{\text{Engine speed}} \times 100$$

Pudding Fender A round rope fender usually constructed of coir interwoven rope and packed with cork granules. They are secured to light lanyards and can be easily transported to any part of the ship to prevent damage to the ship's side shell plate, in the event of a heavy landing against a dock or quay wall.

Quarter The area off the stern up to 45° either side of the fore and aft line.

Quarterdeck A traditional term which describes that aft position from which the Master conned or controlled a sailing vessel.

Quartermaster The designated title given to that person who is steering the ship and acting as the helmsman.

Racking An athwartship's stress incurred in the ship's hull by excessive rolling action by the vessel.

Range (i) Distance off of a target;
(ii) Used to describe the laying out of moorings or anchor cables. Common in dry docks is to range the anchor cable on the floor of the dry dock, usually prior to inspection.

Range of Tide That measured value between the height of low water and high water levels.

Ranging The fore and aft movement of a vessel when moored alongside. The ship is said to be 'ranging on her moorings'. This is particularly dangerous where the ship's moorings are slack and the ship's movement could cause them to part.

Rate of Turn Describes the rate of change of the ship's course per unit time. Determined while the ship completes sea trials when new. The navigation bridge

would normally have a 'Rate of Turn' indicator to permit monitoring of the ship's performance during a turning manoeuvre.

Render An old term meaning to pay out a line or the anchor cable to increase the length. An alternative term meaning the same is 'veer'.

Reserve Buoyancy The total volume of the non-submerged watertight compartments.

Resistance of the Ship's Hull The total sum of friction between the ship's wetted surface and the water, of the moving hull.

Revolutions Per Minute (RPM) The number of revolutions turned in a period of one (1) minute. In the marine environment it is generally a reference to the speed of the shaft(s) turning the propellers. The RPM being indicated on the navigation bridge by an 'RPM counter'.

Riding Cable That anchor cable which is secured to the up-tide anchor that takes the weight of the vessel when the ship is positioned in a standing or running moor.

Riding Lights An alternative name which describes the anchor lights displayed by a vessel when riding to her anchor.

Rising Tide Term used to describe when the tide is making and increasing the water depth on the flood.

Roads Generally a shortened term for 'Pilot Roads' where the vessel tends to make a landfall and attain the pilot boat station. The Roads is a focal point area for shipping and often close to narrows, where the need for the local knowledge of a marine pilot is required before proceeding.

Roadstead Similar to 'Roads' but lends to being a safe anchorage with good holding ground.

Rogue Wave A descriptive term meaning an exceptionally large wave. Recent research has shown that these are not as isolated as previously thought and in fact may occur in many geographic locations in any of the world's oceans.

Rope Guard A steel protective fitted between the hull and the propeller to prevent mooring ropes fouling in the propeller.

Rotary Vane Steering A steering system consisting of a rotor keyed to the rudder stock. Hydraulic fluid under pressure is pumped to the rotor causing the stock and subsequently the rudder to turn. The direction of the pumped fluid reflects the movement of the rudder.

Rough Sea A sea state which has considerable turbulence accompanied by wind force 5–7 on the Beaufort Scale.

Round Turn (i) A term used to describe a foul hawse, where the cables have turned about themselves with the ship passing through 720°; (ii) A term which describes the action of the vessel making a complete 360° turn. It is generally considered an extreme manoeuvre when taking action in a collision avoidance situation to evade a close quarters situation.

Rudder A vertical steering unit generally positioned at the stern of the vessel (some vessels are constructed with bow rudders where the vessel expects to conduct extensive stern first navigation). The rudder is connected to the steering systems of the navigation bridge from where it can be controlled to provide directional heading to the vessel. Some vessels would carry twin rudders, when fitted with multiple propellers.

Rudder Carrier A constructional feature fitted inboard under the tiller position, to accept the weight of the rudder stock.

Rudder Indicator An instrument on the navigation bridge that provides feedback to the helmsman showing the angle to which the rudder has moved following a helm movement. (Not to be confused with a 'Helm Indicator'.)

Running Lights The navigation lights required by law to be shown by a ship when steaming or sailing at night.

Scope The amount of anchor cable deployed, measured from the mouth of the hawse pipe to the anchor crown 'D' shackle.

Sea Anchor An improvised drogue streamed over the bow, designed to keep the vessels head to wind and reduce drift. It would only be employed as an emergency measure to prevent the unwanted movement of the vessel.

Sea Breeze A breeze which blows from the sea to the shore during the day; a land breeze being the opposite – blowing from the land towards the sea during the night time.

Sea (ships) Trials A testing and trial period for a newly constructed ship to ascertain the vessel's criteria and capabilities.

Shackle (i) A shackle length of anchor cable is defined as a length of anchor cable equal to 15 fathoms (90 feet or 27.5 metres). The number of shackles carried by vessels differs with the size of ship and trade; (ii) Shackle is a term which describes an individual fitment extensively used in anchorwork, but not excluded to just anchorwork. There are many types of shackles in operation, not all in the marine industry. Examples of shackles include: mooring shackles for securing ships to buoys; joining shackles for joining anchor cable lengths; anchor shackles for joining cable to anchor shanks.

Shallow Water Effect A form of interaction which can affect the steerage of the vessel when in shallow waters with limited underkeel clearance.

Sheer The action of turning the vessel off the line of cable when lying to a single anchor. It is achieved by placing the rudder hard over and causing the vessel to angle away, the rudder still being effective at anchor as a stream of water is passing the rudder position.

Shorten Cable A term used to describe the action of reducing the scope of the anchor cable of a vessel lying to her anchor(s).

Short Stay A description of the anchor cable of an anchored vessel, when there is a limited amount of chain cable visible above the surface, and the cable is at an acute angle to the waterline. (Long Stay describes when the cable is nearly parallel to the water line and extended.)

Sighted and Clear An expression used when heaving up the anchor to describe when the anchor breaks the surface of the water and is sighted and seen to be clear of obstructions.

Single Anchor The action of a ship going to an anchorage and deploying a single anchor. The circle of swing created with this action will be large; as opposed to a vessel mooring, which would be expected to deploy two anchors and gain a reduced swinging room.

Single-Up An order given to mooring parties to reduce the number of moorings to a manageable number (one or two) prior to a vessel; departing a berth.

Skeg The aft extension of a keel and is the deepest part of the aft structure. A sole piece of a stern frame may incorporate a skeg section.

Slack Water That interval between tides where the tidal current is very weak or non-effective, usually occurring between the reversal of the tidal flow; but it can occur at any time, about the period of the turn of the tide.

Sleeping Cable That cable which is secured to the down-tide anchor which bears no weight when deployed in a running or standing moor (see Riding Cable).

Slip Wire A bight of wire rigged to pass through the ring of a mooring buoy. It is always the last mooring out, once the vessel is secured to buoys and designed to be the last mooring released. The purpose of the slip wire is to allow the ship's personnel to control the time of departure and not be dependent on shoreside linesmen. They are rigged from each end of the vessel using a messenger and mooring boat, when the ship is secured to buoys.

Smelling the Bottom A term which describes a vessel with little underkeel clearance where the keel is close to the sea bottom. The flow of water around the hull disturbs the silt and will usually cause the water astern to be stained by the mud.

Snub Round A descriptive term for a manoeuvre, where a ship turns on its anchor when deployed at short stay.

Sole Piece The lower part of the stern frame construction which supports the bearing pintle of the rudder. When the vessel is trimmed by the stern it is that deepest part of the vessel.

Sounding That depth of water given on the nautical chart and the actual depth of water that the vessel is positioned in. An echo sounding machine or a lead line is the usual method of obtaining the water depth. (The term is also used to gauge the depth of fluid in a tank.)

Spoil Ground This is a dumping area, usually marked on the navigation chart and an area that should be avoided especially for anchoring.

Spring Tide A tide with maximum range as a result of the combined effect of the sun and moon's position. It occurs twice per lunar month.

Spring Wire A steel wire mooring line employed in opposition to head lines and stern lines to prevent the vessel ranging when alongside the quay.

Squat A form of interaction often experienced in shallow water areas like rivers and canals, where the vessel is observed to experience bodily sinkage and sit lower in the water than would normally happen as in deep water. A vessel may squat by the head or by the stern but it is a more common occurrence to squat by the stern. Squat is directly related to the speed^2 of the vessel.

Stand On Vessel That vessel which is required by the COLREGS to maintain her course and speed when given the right of way by the regulations.

Starboard Defined by the right of the ship when facing forward (opposite to the port side of the vessel). Also used as a term when giving helm orders when manoeuvring the ship. The US uses left or right rudder to express a desire to move to Port or Starboard, respectively.

Steerageway A term which describes that the vessel is still responding to the helm when the vessel is at minimum speed.

Stem Anchor An anchor set into a position on the stem of the vessel. This is not a common arrangement compared with ships which are usually fitted with two bow anchors.

Sternway An expression that describes a vessel moving astern under her own power or with her own machinery stopped.

Stockless Anchor A patent anchor common to every-day use which is stowed inside the hawse pipe of an ocean-going vessel. There are many variations of modern designs currently widely used in the marine environment which do not carry the old fashioned cross bar stock.

Stopper A length of rope or chain employed to temporarily take the weight of a rope or wire, while it is transferred from a winch to secure cleats or bollards.

Stopping Distance Defined as the minimum distance that a vessel may be seen to come to rest over the ground. The distance is usually determined from a ship's trials when the vessel is new. Test runs will normally provide the stopping distance: (a) from full ahead after ordering the main engines to stop; (b) from crash full astern (emergency stop).

Storm Moorings Shore side moorings which are secured to the vessel in the event of anticipated bad weather while the vessel is alongside. More common to Ports of the Pacific Rim, which experience heavy swell action.

Storm Surge An increase in the level of water along the coastline due to strong onshore storm winds. Negative storm surges can also be experienced some time after the passing of the storm, producing less tidal heights than predicted.

Stranding When a vessel has grounded for a period of time it is said to be stranded for the purpose of Marine Insurance.

Stream Anchor A light anchor sometimes carried at the stern of the vessel. Alternatively called a stern anchor or kedge anchor.

Surge A term used to describe a mooring rope being allowed to slip about a turning winch barrel. Synthetic ropes should not be surged because the generated heat could destroy the fibres of the rope.

Swinging Room The circle area scribed by a vessel when lying at anchor that the vessel will turn through from one tide to another.

Swivel Piece An anchor cable fitment which may be incorporated in the ganger length of the anchor cable to prevent kinks forming in the cable. Alternatively, it may be the term used to describe a 'Mooring Swivel Piece' which is set into the anchor cable when a vessel moors to buoys to prevent anchor cables becoming fouled. It would normally be employed if the vessel was being moored for a lengthy period of time.

Synchronizing A term used to describe the movement of the vessel when rolling or pitching, when the ship's movement matches the period of encounter of a wave.

Synchro-Lift A system of dry docking ships which employs an elevating platform in the single dock. Once the vessel is lifted by the elevator it is pushed and/or towed into a docking bay. The system allows several ships to be docked at the same time and does not prevent other vessels using the elevator docking operation. With the ship on, the lifting platform is raised by mechanical means (winches on dock sides) and limits the size of vessel that can use the facilities.

Synoptic Chart A weather chart showing weather patterns, fronts and pressure systems.

Tactical Diameter That greatest diameter scribed by the vessel when commencing and completing a turning circle.

Thrust Block An engine room fitting that receives the thrust from the propeller. It incorporates the thrust bearings.

Thruster A powered propeller or jet, positioned either forward or aft in the ship. Its purpose is to aid the turning motion of the vessel when manoeuvring.

Tidal Range The average difference between the high and low water, assessed over a period of a month or more.

Tide Rode An expression which describes a vessel at anchor lying in the direction of the tidal flow as opposed to 'Wind Rode' where the vessel is lying to the direction of the wind.

Topmark An additional shape carried by a buoy to emphasize the type and function of the buoy.

Towing Horse An athwartship's aft arrangement which is designed to act as a moveable lead, in the stern region of the towing vessel.

Towing Light A yellow navigation light carried by a tug when engaged in towing. The light is carried at or near the stern and has the same characteristics as the normal stern light.

Tractor Tug A tug fitted with an omi-directional propulsion system, e.g. Voith Schneider, cycloid thruster. Usually operates as a highly manoeuvrable harbour tug.

Transfer Defined by that distance gained by a vessel engaged in a turning manoeuvre which is perpendicular to the original course.

Transverse Thrust An expression that describes the imbalance from the water flow about a propeller causing a vessel to pay off to one side or another. Most pronounced when operating astern propulsion.

Trim The difference between the forward draught and the after draught. Ships generally trim by the stern to provide ease of steering.

Trough The lower dip between wave crests is termed the trough of a wave.

Tsunami A Japanese word, often incorrectly referred to as a tidal wave. A wave surge usually generated from an under surface disturbance like a sub-sea earthquake, causing major damage when reaching the shoreline.

Tunnel Thruster A type of 'Bow Thrust Unit' which passes from either side of the ship to provide thrust to port or starboard. May also be employed as a stern thruster.

Turn Short Round A ship's manoeuvre which endeavours to turn the vessel in its own length.

Typhoon A tropical storm common to the Western Pacific Ocean, derived from the Chinese word Tai-fung.

Underfoot A term used to describe an anchor being released just under the stem or the forefoot. Generally used to gain reduced movement of the ship's head when at anchor.

Underkeel Clearance A measurement of the amount of water under the ship's keel. The value is obtained from the echo sounder with corrections applied.

Underway Defined by the Regulations for the Prevention of Collision at Sea and refers to a vessel not at anchor, made fast to the shore or aground.

Up and Down A term used to describe the direction of the anchor cable being at right angles to the water surface.

Variable Pitch Propeller A propeller with blades where the angle of pitch can be altered. Also known as Controllable Pitch Propeller (CPP).

Variation That angle between the bearing of the True North Pole and the magnetic North Pole. The angle will vary with the ship's position on the earth's surface and can be found from the nautical chart. It is also coupled with deviation to provide the value of the Compass Error.

Veer A term used to describe the paying out or slacking down of a line or anchor cable. To veer anchor cable meaning to pay out and slacken the cable.

Vessel Traffic System (VTS) A system that controls shipping in and around coastlines and congested waters. It is usually operated by coastguard organizations or other respected authorities.

Voith-Schneider Propellers A propeller action fitted to a vertical shaft. The system has a number of vertical hanging blades caused to rotate in a horizontal plane generating vessel directional movement.

Wake The disturbed track of surface water left by the ship's propeller(s) as she moves ahead.

Wake Current A forward movement of water caused by hull friction from the propeller region, when the vessel is moving ahead. It is of small significance but does adversely affect the efficiency of the propeller.

Walk Back An expression used to describe the paying out under control of a mooring line or anchor cable.

Warp An alternative term to describe a ship's mooring line.

Warping The action of moving the ship by means of the ship's mooring lines. (Engines not usually being employed to move the vessel.)

Wash Turbulent water as caused, say, by a rotating propeller.

Watch Shipboard duties are contained within a shift or watch system. Navigation, engine room and anchor duties are all carried out through structured periods of time known as watches.

Water Jet A modern method of propulsion or thruster unit currently being fitted to high speed craft.

Wave Height That vertical distance between the crest of a wave and the lower part of the trough.

Wave Length Is defined by the distance between two adjacent crests of waves.

Way When a vessel starts her main engines, when fitted with a conventional fixed pitch propeller and commences to move forward, she is said to be '*gathering way*'. The term '*making way*' defines when the vessel is moving through the water, when under her own power. '*Steerage way*' is an expression which describes when the speed of the vessel will still effect and obtain a correct rudder response, causing the desired movement of the ship's head. '*Sternway*' is when the vessel is moving over the ground in an astern direction.

Weather Side That side which faces the wind (when referred to a ship).

Weather Deck The uppermost, uncovered deck of a ship, which is exposed to the weather.

Weigh A descriptive term to express the lifting and raising of the ship's anchor.

Wide Berth A term to describe giving a navigation hazard adequate clearance.

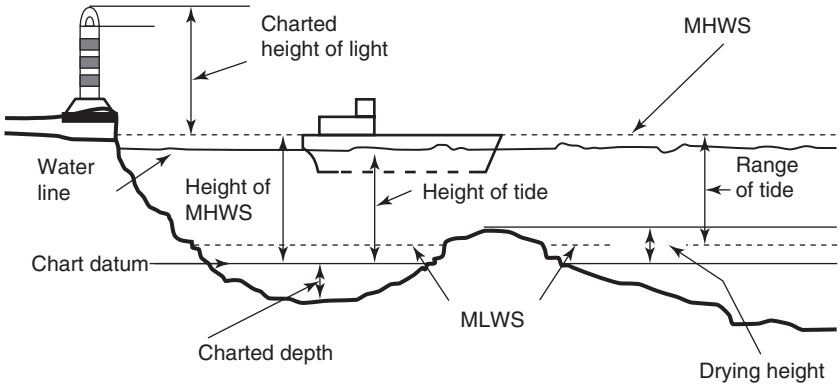
Windlass The name given to a heavy duty mooring winch in the fore part of the vessel engaged as an anchor cable lifter. They are generally multi-purpose, providing warping barrels for mooring rope use.

Wind Rode A vessel is described as wind rode when she is riding to her anchor head to wind.

Windward That side on which the wind blows and faces the prevailing weather.

Yaw A term used to describe the movement of the ship's head away from her designated course. The movement can be to either port or starboard and is influenced by a following wind, or sea conditions. It should be noted that a vessel may 'yaw about' when weather conditions are from another direction other than from astern. The vessel may even 'yaw about' the anchor position when moored to a single anchor. The movement should not be confused with 'Sheering'.

Tidal reference



MHWS = Mean high water springs	MLWS = Mean low water springs

Tidal terms and reference to chart datum