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Ship Terminology

By Bunkerbarge

A

Abaft: Position on a vessel near the stern.

Abeam: Another ship or object on either side of and in line with a vessel.

Abaft the beam: Term referring to another vessel or shore location to the rear of a line drawn across the beam of a ship.

A-Bracket: Bracket resembling the letter "A" laying on its side. Certain multiple screw merchant ships and many warships have propeller shafts extending outside the hull, forward of the sternpost. Such shafts are supported by a bearing in an A-bracket attached to the hull.

Aft Peak: A watertight compartment between rear watertight bulkhead and the stern.

Aft Perpendicular: A line drawn perpendicular to the waterline where the after edge of the rudder post meets the Summer Load line.

Azimuth Thruster: A thruster that can rotate through 360 degrees, fixed or retractable.

B

Balanced Rudder: A rudder type in which a proportion of the rudder area, 25-30 % is forward of the axis of rotation. This is to reduce the required torque at the rudder stock.

Beam ends: When a vessel has heeled over to such an extent that there is no righting moment left to bring it back to the normal upright position. Also known as world ends or kiss your "xxx" goodbye.

Beam: The maximum breadth of the vessel.

Belfast Bow: Name given to raked stem introduced by Harland and Wolff of Belfast, giving a large foc's'le deck.

Bilge: Curved portion, often circular, between bottom and side shell plating and the lower parts

of holds, tanks and machinery spaces.

Bilge Keel: External fin at round of bilge to reduce rolling. May extend outwards from the vessel by up to 1 Metre in width. Extends fore and aft approximately 2/3 the length of the vessel.

Bilge radius: Radius of the shell plating that joins the side shell to the bottom shell of the hull, measured at the midships section.

Bilge strake: Continuous horizontal fore and aft strip of plating from stem to stern in way of the bilge.

Binnacle: Stand of wood or metal in which a compass is suspended. The cover protects the compass from weather and reduces glare from external lighting.

Bitt: Strong part of ships structure, generally based on the keel and attached firmly to a main deck to which a hawser or warp can be hitched when exceptionally heavy loads are applied such as when the vessel is being towed.

Bitter end: End of the anchor cable secured in the chain locker by a clench pin.

Block Coefficient: Ratio of the displacement of a ship to a given waterline and the volume of the circumscribing block having the same length, breadth and draught of the ship.

Bollard: Large and firmly secured post of circular section for securing hawsers and mooring ropes. Often fitted in pairs on the same base plate.

Boot Topping: Area of a ships side immediately above and below the deep load line. Particularly susceptible to marine weed growth and often coated with specially formulated anti-fouling paint.

Boss: Centre portion of propeller.

Bow: The forward end of the ship.

Bower anchors: The two largest anchors in a ship carried permanently attached to their cables, one on either side of the bow.

Bow thruster: Manoeuvring propeller installed at or near the bow, within a transverse tunnel, for docking assistance, or maintaining vessel heading.

Breadth moulded: Measured at midships and is maximum breadth over the frames.

Break: Point where a side shell plating section drops to the deck below such as in a poop or foc's'le.

Breast hook: Triangular plate bracket joining port and stbd side stringers at the stem, holding both sides of the ship together.

Breast plate: Horizontal plate that connects shell plating at the stem.

Bridge: Superstructure erection above the freeboard deck generally extending to the ships side giving a clear view from which the ship can be manoeuvred.

Bridge wings: Open portion of the bridge extending from the wheelhouse to the side of the

vessel.

Bulbous bow: Protruding bow below the waterline intended to reduce the vessels resistance to motion by breaking the creation of the wake.

Bulkhead: Vertical partition subdividing a ships interior into compartments.

Bulwarks: Vertical plating erected at the gunwhales of a ship to prevent persons being washed overboard and to reduce the water breaking over the deck in a seaway.

Bunker: Compartment where fuel oil or coal for ships engines or boilers is stored.

Buttock: Breadth of a ship where the hull rounds down to the stern.

Butt strap: Connecting metal strap covering a butt joint between two plates to give strength to the joint.

C

Cable Stopper: Device used to secure the anchor cable and take the load off the windlass when the vessel is riding at anchor.

Camber: Curvature of the deck in a transverse direction. Camber is measured between the deck height at the centre and the deck height at the side. Also called Round of beam.

Cant Frames: Frame not square to the centre line such as in a cruiser stern. Not required with a Transom Stern.

Capstan: Barrel device or rolling concave drum, on a vertical axis, used for heaving in mooring lines or anchor cables.

Carvel Built: Type of ships plating made flush by Vee Butt welding or Butt Strap riveting.

Caulking: 1) Making jopints watertight by filling seams of deck planks with Oakum. 2) Method of closing butts and seams of riveted steel plating.

Ceiling: Timber placed across the floor of a cargo hold to protect it from damage.

Cellular: Structural arrangement where a compartment is divided into small spaces such as a double bottom.

Centre Girder: Continuous longitudinal girder in the double bottom that runs fore and aft on the centre line.

Centre of Buoyancy: The centroid of the underwater volume and point through which the total buoyancy force it assumed to act. For a ship to float on an even keel the centre of buoyancy must be under the centre of gravity. The position of the centre of buoyancy is dictated by the loading of the vessel.

Centre of Gravity: The point through which the total mass of the vessel is assumed to act. The position of the centre of gravity of a ship depends on the distribution of internal masses. The stability of the vessel is directly related to the difference vertically between the centre of

buoyancy and the centre of gravity. The greater this distance the greater the stability.

Chain Locker: A compartment that holds the anchor chain and also contains the 'Bitter End' connection.

Chock: 1) Smooth surfaced fitting at the weather deck side through which mooring ropes are led. 2) Wedge for securing a hatch cover or adjusting the alignment of a piece of machinery such as an engine, pump or gearbox.

Clinker Built: Each strake or plank of the hull construction overlaps the strake below. Generally used only in small boat building.

Clipper Bow: A bow where the stem post is concave in form as it rises from the waterline forming a bowed shape, like the Kriegsmarine "Atlantic Bow".

Coaming: vertical plating bounding a hatchway. Heights of coamings depend on hatch position, some being more exposed than others. Coaming may be omitted altogether if directly secured steel covers are fitted. The height of the coaming is dictated by the Merchant Shipping (Load Line) Rules of 1968.

Cofferdam: A void or empty space between two bulkheads or floors preventing contamination of the two spaces contents.

Collision Bulkhead: Foremost transverse watertight bulkhead extending to the freeboard deck. Designed to limit entry of water in the event of a bow collision.

Companionway: 1) Set of steps leading between decks.
2) Ladder used for embarking and disembarking the vessel.

Compartment: Subdivision of the hull by transverse watertight bulkheads, creating compartments that allow the vessel to remain afloat and upright after flooding.

Conning Position: Part of the bridge with a commanding view from which the vessel may be conned (steered) when underway.

Controllable Pitch Propeller: Propeller made up of a boss with separate blades mounted onto it. An internal mechanism enables the blades to move simultaneously through an arc to change the pitch angle and therefore the pitch. Astern thrust can be generated without the need to reverse the rotation of the shaft. CPP units are generally not as efficient as fixed pitch propellers so tend to be used where manoeuvrability is more of a consideration than efficiency such as in ferries.

Crows Nest: Look out position on the upper foremast. Rarely used nowadays.

Crutches: Posts or saddles on the deck forming a crutch that the ends of derricks can rest and be secured when not in use.

Cycloidal Propeller: Combined steering and propulsion device comprising of a number of vertical blades arranged to rotate and revolve to give thrust in any desired direction. The most common form of these is the Voith Schneider unit.

D

Damping: A ship (boat) has six degrees of freedom, Heaving, Swaying, Surging, Rolling, Pitching and Yawing. The first three are linear motions. Rolling is rotation about a longitudinal axis, pitching is rotation about a transverse axis and yawing is rotation about a vertical axis. It is often necessary to dampen these actions and many devices from stabilizer fins to passive water tanks have been used to this effect.

Davits: Supports under which lifeboats and liferafts are stored and launched.

Deadlight: Steel cover used to protect a porthole in heavy weather. Usually secured with screws and wingnuts.

Deck: Horizontal steel or wooden flooring usually extending from one side of the vessel to the other.

Deck Head: Underside of the deck.

Deck House: Superstructure found on upper decks of a vessel which do not extend the full width of the vessel.

Deck, Main: Principal or strength deck that for structural reasons is an essential part of the ships structure. Usually the deck to which vertical watertight bulkheads terminate.

Deck, Shelter: Deck above the main deck. If this deck is not permanently closed against the weather it is exempt from tonnage dues.

Deck, Tween: In a cargo ship any deck between the bottom of the ship and the main deck.

Deep Tanks: Tanks extending from the shell or double bottom up to or beyond the lowest deck. May serve the dual purpose of carrying liquid in bulk or ballast.

Depth Moulded: Vertical distance at Midships from the Keel to the uppermost deck, taken inside the ships plating.

Devils Claw: Claw attached to the fore part of a Windlass which can be fitted over a link in the anchor cable thus enabling the weight of the anchor to be taken off the windlass when the vessel is under way.

Displacement: Weight of water in tones, displaced by a ship. Loaded displacement includes cargo, stores passengers, and crew. Light displacement is the tonnage displaced without these items. The weight of a Warship is always quoted as displacement tonnage.

Docking Bracket: Vertical stiffener fitted between each transverse bulkhead to support the centerline girder of an oil tanker.

Docking Plug: Threaded bolt usually with a socket hex head, fitted to all double bottom tanks and spaces to allow drainage prior to examination in a dry dock.

Dodger: Screen used as a protection from sea spray.

Double Bottom: Space between the outer hull plating and the inner bottom plating of the ship.

Double Skin: A method of construction that utilises an outer and an inner hull. This method of

construction is now compulsory for oil and product carriers.

Doubling Plates: Extra plates, bars or stiffeners added to strengthen sections where holes have been cut.

Down to her Marks: When a vessel is fully loaded to her maximum draught for her relevant load line.

Drain Hat: Bilge water collecting pointing a continuous tank top designed to exclude large waste material.

Draught: Distance from the bottom of the ship to the loaded water line. If the waterline is parallel to the keel the vessel is said to be on an even keel or on the keel. If not the vessel is said to be trimmed by either the head or the stern.

Duct Keel: Space formed by twin longitudinal girders in a ships double bottom. Provides longitudinal strength and is usually used to carry longitudinal pipe mains such as ballast and fuel. Big ships can have a small cart on rails that you sit on and pull yourself along to gain access to valves and fittings for inspection and repair. It is one of the scariest places I have ever been.

E

Effective Length: Ships length that is used for speed-power calculations and the coefficients relating thereto.

Effective Power: Power required to tow a ship and is a product of the total resistance and speed of the hull.

Elastohydrodynamic: A regime of lubrication where concentrated sliding or rolling contacts are separated by a full film of oil. The thickness of the film depends on the viscosity of the oil and the elastic properties of the solids. Not really a ship nomenclature term but I just like the word and thought I would throw it in!

Even Keel: A condition where the fore and aft draughts are equal and the keel is parallel to the waterline.

Extreme Breadth: The maximum breadth over the extreme points Port and Starboard of a ship.

Extreme Depth: Depth of the ship from the upper deck to the underside of the keel.

Extreme Draught: Distance from the waterline to the underside of the keel.

F

Factor of Subdivision: Value used in the calculation of the permissible floodable length of a compartment with respect to the damage stability of a ship. The value is determined by a formula, which depends on the length of the ship and is measured by a criterion of service numeral. (A numeral based on the relation between the volume of space allotted to passengers and machinery and the total volume).

Fair: Term applied to the readjustment of ships plating that has become slightly buckled in a collision.

Fairlead: Fitting allowing ropes and mooring lines to go in the required direction unobstructed. Usually fitted in a gunwhale or ships rail at the fore's'le or stern to facilitate a smooth entry of the mooring lines.

Falls: Rope and blocks attached to the davits for raising and lowering lifeboats.

Fashion Plate: Side plate at the end of the superstructure deck, generally with a curved end.

Fathom: Measurement of the depth of water and equal to 6 feet.

Feathering: 1) Positioning of the blades of a Controllable Pitch Propeller such that no thrust is generated, exactly the same as an aircraft propeller. 2) The release of small quantities of steam by a boiler safety valve as it approaches lift pressure.

Feed Tank: Storage tank for boiler feed water, usually a double bottom tank.

Feeder Ship: A smaller vessel that transfers cargoes from deep sea ports to smaller inland ports.

Fender: A resilient device, usually movable, interposed between a ships hull and the harbour walls or other vessels to minimize impact and prevent direct contact so reducing the risk of damage.

FEU: Forty Foot Equivalent Unit. Measurement of container capacity of container ships. Equal to two TEU's, Twenty Foot Equivalent Units.

Fiddley: Generally regarded as the space inside the funnel where all the uptakes come together.

Fillet: Rounded corner cut in plate or machined in a casting or as originally cast to alleviate stress concentrations found at a sharp corner.

Fineness: The ratio of the area of a waterplane to the area of the circumscribing rectangle. It varies from about 0.7 for a fine form vessel like a yacht to about 0.9 for a full form vessel such as a tanker.

Flagstaff: A flagpole at the stern of a ship, which should be used to carry the ensign of the country of registration. For UK registered vessels that would be a Red Ensign for Merchant Navy, White Ensign for the Royal Navy and a Blue Ensign for RFA or a Merchant Navy Vessel with a Captain who is a member of the Royal Navy Reserves. Also known as Red White and Blue Dusters.

Flanking Rudders: Additional rudders fitted in front of the propellers.

Flap Rudder: A rudder with a separate tail flap that moves in an angle greater than the main rudder. This gives much increased lift and can generate thrust at 90 deg to the vessel.

Flare: 1) Outward curvature of the side plating at the forward end above the waterline.
2) Firework for attracting attention or rescue services.

Flat: Minor internal, usually lower, deck. Usually without sheer or camber hence its title.

Flat Margin: A double bottom construction where the tank top extends horizontally to the ships side.

Flat of Keel: Width of the horizontal portion of the bottom shell, measured transversely. Also called the Flat of Bottom.

Flat Plate Keel: Middle or center line strake of plating in the bottom shell. It is increased in thickness for strength and as a corrosion allowance.

G

Galley: The kitchen!

Gallows: A U shaped beam on the deck of a trawler through which the trawl warp is fed.

Gangway: A ramp or steps used for embarking or disembarking the vessel.

Garboard Strake: The strake on either side of the keel plate.

General Arrangement Plan: A plan of the vessel showing the layout of machinery and all space arrangements.

Gill Jet Thruster: A thruster unit using a vertical axis propeller in a transverse tunnel. Water is drawn from both sides and is discharged through the bottom of the hull. Rotating gill fins then direct the water flow into one of a number of indexed positions around the discharge thus creating a thruster unit capable of directing the thrust through 360 Degrees.

Gimbals: Two rings, pivoted at right angles to each other that allow a compass mounted in the centre complete freedom of movement to maintain in the horizontal plane.

Gin Block: A single pulley block in a, usually fabricated and simple, frame.

Gipsy: A slotted wheel or cable holder mounted on the horizontal shaft of the windlass for heaving up the anchor cable.

Girding: A term referring to a tug that has been capsized by the vessel under tow, usually as a result of allowing the tow to become at right angles to the tug.

GM: The metacentric height of a vessel and has a direct bearing on the stability of the vessel. It is actually the vertical distance between the metacentre (M) and the centre of gravity (G). To be stable G must always be below M.

Goal Post Mast: Seen on cargo ships a mast arrangement with two vertical masts and a cross member arranged in a transverse line. Used to support more than one derrick.

Gog Rope: A short rope used in towing to position the main tow rope on the tug in an attempt to prevent the tow becoming at 90 degrees to the tug and hence Girding.

Graving Dock: The traditional type of Dry Dock, which is dug out of the ground and has watertight gates at one end. The vessel enters, the gates are closed and the dock is pumped out until the vessel rests on the blocks.

Grim Wheel: A contra rotating free wheeling vanes blade fitted behind a propeller blade, which is supposed to reclaim some of the energy lost in the propellers slipstream. It is slightly bigger than the main propeller and rotates slower. These were actually fitted to the QE2 in the 80's but

fell off during a transatlantic crossing!

Gripes: Wire ropes used to secure a lifeboat in the davits and prevent it from swinging out.

Gross Registered Tonnage: The capacity in cubic feet of the spaces within the hull and enclosed spaces above the main deck available for cargo, passengers, stores fuel, crew etc., divided by 100. Hence 100 cubic feet equals 1 Gross Ton.

Gunwhale: Sometimes pronounced as gunnal, It is the upper edge of the hull above next to the bulwark.

Gusset Plate: A fillet bracket plate fitted in a horizontal plane between two adjacent vertical plates.

H

Half Breadth: Half the breadth of a ship. At any transverse section half breadth distances could be used as the vessel is symmetrical about the keel.

Hard Patch: A plate welded or riveted over a hole to repair the original.

Hatch Beam: Removable beam fitted over a hatch opening, usually supporting a wooden or steel hatch cover.

Hatch Coaming: Vertical plating surrounding a hatch opening to prevent the ingress of water into the hatch after waves have broached the deck. The hatch covers will rest on, and be secured to, the top edge of the coaming.

Hatch Cover: The watertight covering for a hatch opening, secured to the top of the coaming. Covers could be either loose boards, as in old coasters, folded and chained on rollers, as in more modern general cargo, or solid one piece, as in container ships.

Hatches: The opening in the decks of a cargo vessel through which cargo is loaded and discharged.

Hawse Pipe: A pipe fitted between the Foc's'le and the bow plating through which the anchor cable passes.

Hawser: A wire or hemp rope used for mooring, towing etc.

Headfast: A mooring line taken from the bow and led forward. Also known as a headline or headrope.

Heave To: A manoeuvre to bring the vessel to rest but facing into the weather. Sometimes done in extreme weather to minimize damage to a ship. Usually occurs slightly before heaving up!

Heaving: Vertical linear movement of the vessel.

Heavy Lift Derrick: Large cargo handling crane, usually attached to one of the main masts and originally operated by a steam winch.

Heel: The angle in a transverse arc from vertical.

Heel Block: The pulley block found at the lower end of a derrick boom.

Helm: The entire steering mechanism of the vessel.

Helmsman: The crewmember who operates the steering gear.

High Seas: Areas of water that are outside the jurisdiction of any country or state.

Hogging: A condition of the hull where the extremities are set lower in the water than the center section. The opposite of sagging.

Hold: A volume within the hull section, which is arranged for the stowage of cargo. Separated from other compartments by bulkheads and possibly including "Tween Decks".

Homogenous Cargo: Entire cargo of the same type such as found in oil tankers, bulk carriers, gas tankers etc.

Horn: The part of the stern frame casting from which a spade rudder is hung.

Housing: The portion of a mast found below the line of the main deck.

Hunting Gear: The system of rods and linkages that provides positional feedback to the steering gear variable delivery pump of the position of the rudder.

Hydraulic Winch: A cargo or mooring winch whose motive power is provided by a hydraulic system. A centrally located hydraulic system can be used to operate a number of winches around the vessel.

Hydrofoil: Is simply a wing that is designed to operate in water. These include the wings used to generate lift and elevate a hydrofoil craft above the water and stabilizer fins found mainly on passenger vessels.

I

Ice Breaker: A vessel specifically strengthened to enable ice to be broken with the bow. Generally vessels will not have sufficient power to enable this to be done continuously in thick ice so the ship is designed to go ahead and astern quickly. The ship will ride up onto the ice and the weight of the vessel will break the ice. The vessel will then go astern to give sufficient room to gain enough speed to ride up on the ice again. Ice breakers usually have very substantial bows, sometimes actually filled with concrete and a large skeg behind the rudder to protect it when the vessel is going astern into the broken ice.

Immersion: This is the weight required by a vessel to either increase or decrease the mean draught by 1 cm. Quoted in Tonnes per cm or TPC.

Inboard: In the direction of the vessel towards the center line.

Inclination Test: Also known as the Inclining Experiment this determines the position of the vessel's center of gravity. It will always be done when a ship has been completed in the yard and is usually repeated after significant work has been done such as in dry docks. It basically consists of moving large masses in a transverse manner on the ship and measuring the respective angles

of heel. This information is then used to calculate the position of the center of gravity.

Intercostal: Is a longitudinal girder fitted between the floors and the frames of a ships structure but are not necessarily continuous.

Isherwood System: A method of ship construction that utilizes mainly longitudinal frames and stiffeners.

J

Jack Staff: The flag staff fitted at the bow.

Jack Stay: Tensioned ropes or wires to support such items as davits or masts.

Jack: Lifting device with high mechanical advantage either from a screw lifting device or hydraulic piston.

Jacobs Ladder: Rope ladder hanging over a vessels side. Used for embarking or disembarking while the vessel is at anchor or for use by pilots joining or leaving the ship.

Jetsam: Goods or items that have been discarded overboard whilst at sea. Although traditionally common this practice is now strictly controlled by internationally agreed legislation.

Jib: A projecting arm of either a crane or a derrick.

Joggle Plate: A hull plate that is shaped to enable it's longitudinal edge to overlap the adjacent plate.

Joggle Shackle: A cable shackle with a quick release pin used in anchoring to haul on one cable when mooring with two anchors.

Jumper Stay: A rope or wire fitted horizontally from one mast to another or any other fixed point.

K

Kedge Anchor: One or more anchors carried in addition to the main forward anchors, usually stowed aft. Can be carried by an anchor handling vessel and then used to winch a vessel off from aground or to hold a vessel against a tide.

Keel Blocks: Heavy blocks made of wood and concrete that a vessel sits on in dry dock.

Keel Plate: The center strake of bottom plating.

Keel: The main structural longitudinal member running the length of the vessels bottom.

Keelson: A longitudinal girder on each side of the centerline.

Kent Ledge: Permanent ballast usually of iron. Can be found in the flat bottom of vessels to

improve stability.

King Post: A vertical post fitted to support a derrick. Also referred to as a Samson Post.

Kitchen Rudder: A means of directing flow over a propeller to give ahead or astern thrust. Two curved plates form a shroud around the rudder which can be rotated to be either parallel to the propeller, allowing forward thrust or closing around the back of the propeller to redirect the thrust into an astern direction. Works exactly the same as the devices fitted to some modern jets to redirect thrust forwards for braking after landing.

Knee: A structural component fashioned into a right angle to provide strength and support at a joint such as a deck beam to a side frame specifically known as a Beam Knee.

Knuckle: Is generally regarded as a sudden change in the direction of hull plating.

Kort Nozzle: A shroud surrounding a propeller, which has the effect of reducing slip in the water flow and greatly improves propeller efficiency. Found in such vessels as tugs where the slip is considerable when under tow.

L

Labouring: The action of a vessel slowly pitching and rolling in bad weather and making little headway on course.

Lashings: All wires, ropes and chains used to secure cargo's. Nothing to do with gravy.

Leading Block: A type of rope block used to guide and change direction of a rope usually into a Capstan.

League: Nautical measure (As in 20,000 of them!), which equals 1/20th a degree of latitude or three miles.

Lee: The sheltered side of an object which can refer to either a vessel, building or a land mass.

Leeward: On the sheltered side of a vessel.

Length Between Perpendiculars, LBP: The distance along the Summer Load Line between the forward and aft perpendiculars. The forward one is at the point where the stem cuts the waterline and the aft one is where the aft side of the rudder post or rudder stock cuts the same. Often referred to as a ships length.

Length Overall, LOA: The total length of the vessel including any extremities. There can be a significant difference in LBP and LOA on sailing vessels.

Light Displacement: The weight of the unladen vessel, measured in tonnes. The difference between the Loaded Displacement and the Light Displacement is the Deadweight.

Lightening Hole: A hole cut into any form of plate that is designed to reduce weight without sacrificing strength.

Lighter: A flat bottomed, unpowered craft for the transport of goods and cargo to and from a

vessel.

Lignum Vitae: One of the very few woods that is actually denser than water. This wood was traditionally used as a stern tube and stern frame bearing material in old water lubricated bearings. This was superseded by the advent of oil filled stern tubes with stern seals but, strangely enough, the circle has turned and vessels are now using a plastic bearing material and returning to water cooled and lubricated bearings.

Load Line: A number of lines painted on the side of the vessel at the midship section which indicate the minimum allowed freeboard in a number of conditions and world wide locations. Also known as the Plimsol line and incorporates lines for the following:

Summer Load Line

Winter Load Line

Winter North Atlantic Load Line

Fresh Water Load Line

Tropical Fresh Water Load Line

Loaded Displacement: The weight in Tonnes of a vessels hull, machinery, spares, cargo, fuel, water and crew when a ship is immersed to its Summer load line.

Locking Pintle: A Rudder pintle specifically designed with a restraining collar to prevent the rudder from displacement in, for instance, heavy seas.

Loll: Also known as the Angle of Loll occurs if the centre of gravity is allowed to become above the centre of buoyancy. The vessel will "Loll" over until the centre of gravity is in line with the centre of buoyancy. If, by design, or cargo loading this cannot happen the vessel will simply capsize. Particularly significant with such things as a ships crane when the centre of gravity will instantly move upwards when a weight is lifted from a hold. The centre of gravity of the mass will shift from the bottom of the hold to the tip of the jib in the time it takes the crane to take the weight of the load.

Longitudinal Bulkhead: A bulkhead that runs from forward to aft as opposed to transversely which is across the vessel.

Luff: Opposite to Lee so it is the windward side of a vessel, building or land mass.

Luffing: Is the vertical movement of the jib of a crane, hence a "Luffing" crane is one whose jib can be moved vertically, as opposed to a "Chuffing" crane which is one that won't move at all.

M

Maierform: A very distinctive bow shape with a pronounced rake.

Main Deck: The uppermost continuous deck from which all Freeboard calculations are determined.

Main Hatch: The largest and, usually, most centrally positioned hatch reserved for heaviest cargoes.

Margin Line: This is a line drawn 76mm below the upper surface of the bulkhead deck at the ships side. A passenger ship is sub divided into watertight compartments, which are designed in such a way as to not allow this line to become submerged should any two compartments become

flooded.

Margin Plate: Is any plating that constitutes the outer boundaries of the double bottom spaces.

Marlin Spike: Not a ship construction term but simply a point of interest. A marlin spike is a pointed piece of metal with a screwdriver like head used for splicing steel wires. A common way of making them would be to turn down a large diameter stud bar and wrap copper wire into the thread to form a handle. If you made one of these for an AB you might get a nice carving or a decorative knot in return.

Mast: Traditionally used for attaching derricks for cargo operations or carrying a sail. Nowadays used simply to attach navigation lights and radar scanners.

Mast Step: The strengthened part of a vessels structure, possibly even in the keel where a mast would be secured.

Mast Table: A small platform attached to the mast used to support the end of the derrick.

Messenger: 1) Is a continuous rope passing from a capstan to a cable and is used to haul it on board. 2) Any form of small wire or rope attached to a much larger wire or rope to enable the larger to be hauled between the vessel and ashore for purposes of mooring the vessel.

Metacentre: The metacentre is a measurement of the vessels stability at small angles of heel. It is taken as an indication of the vessels behavior when underway such that a high metacentre would indicate the vessel would return to upright quickly and the vessel is considered as sensitive or tender.

Metacentric Height: Refer to the GM entry and the above.

Midship Area: Is the immersed area of the midship section.

Midship Section: A transverse section of the vessel taken at the midships point in the hull. It is usually the largest area of section.

Monkey Island: Is the area above the bridge where, traditionally, the vessel could be conned from if visibility was poor. All bridge equipment was usually repeated here. The name has stuck however and now refers to any deck on top of the bridge. A favourite sunbathing area on cargo ships, sometimes reserved for the Captains wife, who would usually not realize that she could be overlooked from the top of the funnel.

Moor: To tie up and secure a vessel by rope to either a quayside or a buoy.

Mooring Ring: A cast and usually oval ring set along a bulwark through which mooring lines could be led to keep them out of the way.

Mooring Winch: A winch gear driven by steam or electrically with a warping end on one of the horizontal shafts for the handling or mooring ropes.

Moulded Breadth: The largest possible breadth of the vessel taken at the midships section taken internally.

Moulded Depth: The vertical distance once again, at the midship section, from the top of the keel to the inside of the upper deck plating.

Mousing: A few additional turns taken around a cargo hook to prevent the rope eye jumping out of the hook.

Muff Coupling: Is a form of coupling between two ends of a shaft. It does not use flanges or bolts but is simply two tapered sleeves forced together hydraulically. This force causes the internal diameter to reduce and thus grips the two ends of the shafts. Used regularly in prop shafts the entire propeller load is transmitted through nothing more than frictional force between two metallic surfaces.

N

Net Registered Tonnage: Is a derivative of the gross tonnage arrived at by deducting spaces used for the accommodation of crew, navigation and propulsion machinery.

Norman Pins: Rollers that can be erected at a tugs aft bulwarks to guide the tow hawser over the aft of the vessel and prevent the tow passing over the vessels beam.

O

Oakum: A joint material made from tarred rope fibres used for caulking decks and sealing structures.

Observation Tank: A tank that collects condensate returns from a steam system and incorporates a weir that allows the collection of any oil contamination that may be returned from fuel tanks.

Oertz Rudder: Is a specific type of high lift or flap rudder.

Open Shelter Decker: A shelter deck vessel whereby the tonnage opening is maintained permanently open. It is specifically designed so that the registered tonnage does not include the shelter deck space even though this space could be used for the carriage of cargo.

Orlop: Not commonly used nowadays but was traditionally the lowest deck in a vessel.

Outboard: Is in a direction away from the centerline of the vessel and opposite to Inboard.

Outreach: The maximum extent cargo handling equipment can reach.

Outrigger: Is a mast extension, which effectively increases the spread of the stays to the topmast.

Overage: Is a term used to express the amount of cargo discharged in excess of the quantity declared in the manifest.

Overall Length: Is the maximum length of the vessel including all protrusions.

Oxter Plate: Is a stiffening steel plate that fits around the upper part of the rudder post.

P

Panama Chocks: Are a type of casting with an oval opening fitted at either end of a vessel used for passing the mooring lines to the Mules when going through the Panama Canal.

Panamax: A classification of vessel of any type that is the maximum size due to its breadth that can transit the Panama Canal.

Panting: is the inwards and outwards movement of hull plating. Experienced more at the bow area as a result of wave action.

Panting Beams: Additional stiffening beams in the forward and aft sections of the hull designed to resist panting.

Paravane: Is a device incorporating a steel cable used to sever floating magnetic mine wires, allowing them to float to the surface where they could be disposed of.

Parbuckle: Is the action of rolling a round object up a ramp using a rope passed around it. The rope is looped around and the free ends are hauled on causing the object to roll upwards. The term is also used when righting a vessel or boat that may be aground. When bringing it upright.

Parbuckling: Is used mainly as a term when righting a vessel, which may be aground, and needs to be upright when a tide returns. Either external forces can be used such as the ropes described above, or internal such as movement or cargo or ballast.

Pendant: Is a short length of steel wire attached to the end of a towrope to prevent chaffing of the heavily used part of the rope.

Period of Roll: The time taken for one complete rolling cycle of the vessel measured from usually full over to port or starboard.

Permissible Length: The length between bulkheads in a vessel calculated to ensure that the vessel will remain afloat if one or more compartments should become flooded. Permissible length is a quoted fraction of the floodable length and often referred to as a factor of subdivision.

Perpendiculars: The forward perpendicular is a vertical line through the intersection of the loaded waterline and the stem frame and the aft perpendicular is a vertical line through where the aft side of the sternpost meets the loaded waterline or, if there is no post, through the center of the rudderstock.

Pig's Ear: Is basically a funnel or tundish, which usually has an open-ended pipe running into it so that the quality of the fluid flowing can be monitored.

Pilgrim Nut: Is a patented design of a propeller securing nut. It incorporates an internal annular ring that is hydraulically operated to force the propeller up the tapered end of the shaft and therefore does away with the need of a stress inducing keyway.

Pilgrim Wire: A wire fixed at one end and passing over a pulley at the other with a weight on it. The tensioned wire is then used as a reference point for checking the alignment of such things as propeller shafts. The catenary or sag of the wire can be calculated using the modulus of elasticity and the weight and this can be incorporated into the calculations.

Pillars: Vertical internal structural supports between decks and the lower hull.

Pintles: Are the bearing hinges on which a rudder hangs.

Pitching: A rotational movement about a transverse axis of the ship as it progresses through a seaway.

Plane Sailing: An expression derived from the simplification of a navigational exercise by considering the surface to be flat rather than following the earth's curvature.

Plimsol Line: See Load Line. The expression came from the name Samuel Plimsol who devised the system of limiting loads after large numbers of vessels were lost at sea due to overloading.

Plummer Block: A bearing support block used mainly in propulsion shafting.

Pontoon Hatch Cover: Is a hatch cover consisting of a single removable solid piece. This type of hatch cover is found on container ships where the hatch is removed with the container crane locating in dogs set into the cover.

Poop: Is the area of superstructure on the aft upper deck.

Port: Is the left hand side of the vessel looking forward designated by a red navigation light. It could also refer to an opening in the ships side for the passage of goods or personnel.

Porthole: Circular ships window which, if fitted below the uppermost continuous deck, will incorporate a deadlight to close over it in the event of heavy weather.

Pounding: the action of the vessel when it falls onto a wave after being lifted by a previous one. This action leads to panting and can also be referred to as slamming.

Prismatic Coefficient: Is a ratio of the volume of water displaced by a ship to the volume as represented by the length of the vessel multiplied by the area of the submerged midship section.

Projected Area: The area of the blades of a propeller as projected onto a flat surface.

Q

Quarter Deck: Traditionally Is the part of the upper deck that is aft of the main mast.

Quarters: The living accommodation part of the vessel.

Quoin: A wooden wedge put under barrels or logs to prevent them from rolling when under way.

Quoit: A disc made from wood used in the game of Deck Quoits. The disc is slid at a target with a pusher in a similar manner to bowls but of course the quoit will not roll away.

R

Racking: A distortion of the hull caused by collision or grounding.

Rail: Is the wooden or metal capping of the bulwarks or handrails.

Raised Foc's'le: A superstructure at the bow built up above the normal Foc's'le deck level.

Rake: Is a line inclined from the vertical or horizontal and is used to describe the degree of deviation. i.e. a heavily raked bow.

Rapsons Slide: A mechanism used in ships steering gear that gives the feedback of a prime mover position to the control input linkage.

Reefer Ship: Slang for a refrigerated cargo vessel.

Reeve: Is a rope passing through a wooden or metal block.

Registered Length: Is the length measured from the foreside of the stem post to the aft side of the stern post.

Reserve Buoyancy: Compartments designed within the vessels hull structure, sealed and unused, that add to the buoyancy of the vessel.

Rider: A turn of rope on the capstan or warping end, which has jumped across another turn causing the rope to lock up or jam.

Riding Lights: Another term for the Anchor Lights that must be illuminated when at anchor.

Rig: General term for a derrick or lifting gear.

Rigger: A rank referring to someone who tends to the vessels wires and ropes. Little used nowadays but common on sailing vessels.

Rise of Floor: Is the height of the bottom shell plating above the base line. The rise of the floor is measured at the moulded beam and indicates a sloping of the hull used to ensure drainage.

Rolling: Is rotational motion about a longitudinal axis.

Rolling Hatch Cover: A type of hatch cover mounted on wheels that operate on runners allowing the hatch cover to be rolled away from the hatch. Used a lot on Bulk Carriers that have an abundance of deck space.

Rope Guard: A fairing piece that covers up the joint between the propeller boss and the hull and is designed to prevent ropes from fouling the shaft. Often fitted with cutters to cut any rope that may be pulled onto it.

Rubbing Strake: A strake fitted externally to the line of the hull designed to make contact first with any other object such as a harbour wall or any other vessel and therefore allow easy repairs without having to affect the main hull plating.

Rudder: A means of steering the vessel. The three main categories are Balanced, Semi Balanced

or Unbalanced and refer to the proportion of the blade forward and aft of the stock.

Rudder Bearing: The bearing within the ship that supports the weight of the rudder sometimes in conjunction with pintle bearings or sometimes it may be the only means of support.

Rudder Post: The after part of the stern frame which contains the pintle bearings for the support of the rudder. In a balanced rudder where a high percentage of the rudder is forward of the Rudder Stock the Sole Plate will be considerably more substantial.

Rudder Stock: The shaft about which the rudder is rotated by connection to the steering gear.

Rudder Stops: Physical pieces of metal that prevent the rudder being turned beyond, usually, about 38-40 degrees.

Rudder Trunk: Is a tubular structure through which the rudder stock passes into the hull and which usually houses the rudder gland.

Runner: A single rope block with a tackle on one end and a hook on the other.

S

Sacrificial Anode: A Ring or piece of metal, usually zinc, placed on the underwater surface of a structure designed to corrode instead of the structure. This protects the structure itself from corrosion.

Saddle Tanks: Tanks, usually used for ballast, which are fitted over the upper surface of the main cargo tanks. They are usually triangular in longitudinal cross-section, increasing in depth towards the ships side. They are usually found on Bulk Carriers and Tankers and are used to increase the vessels center of gravity when the ship is not loaded.

Sagging: A condition of the hull where the center section is lower than the stem and stern. This could be brought about by a condition of loading or even wave action and is the opposite of Hogging.

Samson Post: A rigid vertical post used instead of a mast to support derricks.

Sanitary Pump (Sanny Pump): A pump used to continuously supply seawater for toilet flushing. Nowadays vacuum systems are more normal and toilets are flushed with fresh water.

Save All: A steel tray built around a piece of machinery to collect any leaks or drips and direct them to a bilge or slop tank.

Scantlings: The dimensions of the structural items in a vessel such as frames, plates stiffeners etc.

Schottel Rudder: A retractable rudder powered by a diesel engine.

Scoop Cooling: A system whereby a scoop protrudes below the hull and collects water to be used for cooling purposes in the machinery spaces. Used in conjunction with a normal seawater pump the system saves energy when the vessel is under way.

Scope: The length of free cable for a ship to swing on at anchor.

Screw Aperture: Space in the stern frame in which the propeller rotates.

Screw Effect: The sideways thrust generated by a single screw arrangement, which needs to be countered by the rudder when under way. More noticeable when manoeuvring and particularly when going astern, competent ship handlers will use the effect to steer the ship.

Screw Shaft (Tail Shaft): The aftermost section of shafting that the propeller is actually attached to.

Scrubbing: The cleaning of a gas by passing it through a device that sprays water through it. Used to remove acids from exhaust gas for either environmental purposes or to prepare the gas for use in inert cargo systems.

Scuppers: Drains in the edge of the decks, internal or external, to remove water.

Sea Anchor: A device for maintaining a boats head into the prevailing wind and waves. Usually in the form of a canvas bag looking like a parachute attached to the boat with a rope and left trailing in the boats wake.

Seam: A longitudinal edge joint in any plating.

Seatings: The structures built to mount any machinery such as shaft bearings, main machinery, auxiliary machinery etc.

Seaworthy: A ship with suitable strength, freeboard and stability to carry and deliver its cargo, crew and passengers to the destination in a safe and efficient manner.

Segregated Ballast: Ballast water maintained in a system that is not connected to the cargo systems in a tanker.

Self Trimming: A bulk cargo vessel that has large hatches and clear holds to permit the cargoes to self trim as it is loaded. An arrangement usually only found in smaller vessels.

Semi Balanced Rudder: A rudder arrangement whereby part of the rudder is forward of the turning axis. Usually in the region of 20-30% of the area of the rudder, if it was 50% of the surface it would be a balanced rudder.

Senhouse Slip: A quick release arrangement usually found on lifeboat gripes, designed to allow the release of the gripes without the need for tools.

Service Tanks: Tanks containing oil that has been heated and purified and is ready for service in the engine systems.

Settling Tanks: The tanks where fuel is stored prior to going through the separation process whereby the fuel is heated and any impurities and water is sludged off at the bottom.

Shackle: A device consisting of a U-shaped piece of metal with a screwed pin through the open end. Used to join rigging and lifting equipment.

Shaft Generator: A generator attached to the extended crankshaft of an engine either directly or via a gearbox or even belts.

Shaft Tunnel: A watertight compartment in the shape of a tunnel that connects the aft end of the machinery space with the Aft Peak bulkhead through which the main propulsion shafting runs.

Shear: A stress or strain that operates on the transverse planes of a loaded member that attempts to cause parallel displacement of those planes. (Honest!)

Shear Force: A force acting on a member which is tending to cause the effect described above.

Shear Pin: A pin located in a power train so designed to carry normal load but to fail under a prescribed overload condition, thereby protecting the other elements of the transmission.

Sheave: A grooved pulley wheel for use with belts or ropes in the transmission of force.

Sheave Block: A block of either wood or metal that contains a number of sheaves and are classified by the number of sheaves they contain.

Shedder Plate: A sloping plate fitted in the trough of a corrugated bulkhead in a cargo space to enable a better flow of dry bulk cargo enabling better discharge and easier cleaning in the hold.

Sheer: The longitudinal curvature of the deck between the fore and aft ends of the vessel and is

actually measured from a line drawn parallel to the keel. Sheer is usually twice as much at the forward end as the aft end.

Sheer Strake: Is the line of hull plating directly below the main deck.

Shell: The outside hull plating.

Shell Expansion: A commonly referred to drawing which shows the entire hull plating laid out in a flat elevation. It contains all the plate detail such as penetrations and thickness.

Shelter Deck: A superstructure deck above the main deck, which is also continuous from stem to stern. Probably found more often in passenger ships.

Shifting Boards: These are boards of wood designed to be fitted into cargo holds when dry bulk cargo is being carried to prevent the shifting of the cargo during heavy seas.

Shoulder: The curved portion of a ship's side at the break of the fore's'le.

Shrouds: Are the wire ropes extending from the mast to the ship's side to support the mast and are therefore part of the fixed rigging of the vessel. Usually attached by bottle screws so that the tension can be adjusted with age.

Side Scuttles: These are portholes or sidelights fitted in the ship's hull.

Side Stringer: A longitudinal girder running alongside the inside of the shell plating.

Sill: 1) The height of an opening above the deck such as at a doorway to prevent the ingress of any water accumulated on the deck. 2) The upper edge of the base of a dock entrance that the gates locate against.

Single Decker: A vessel with no other deck below the main weather deck.

Sister Beam: This is the main beam that runs longitudinally across a cargo hold that hatch boards would have been located on. Now superseded by the use of steel hatch covers.

Skeg: A projection from the hull of the ship that supports the end of the rudder.

Skew: This is the offset of the propeller blade from the vertical in the plane of rotation.

Skids: Runners set into the deck onto which objects can be chocked such as lifeboats or rafts.

Slamming: Occurs when the bow is lifted up by a significant wave and falls onto the face of the next one. Forces large enough to damage the vessel can result unless the speed is adjusted accordingly and is the main reason why the structure is stronger at the forward section of the hull.

Slip: Is basically the difference between the theoretical progression through the water without any losses, determined from the pitch and the RPM, compared to the actual progression.

Sluice Valve: A closing valve capable of being operated from above the loaded water line to enable the integrity of watertight compartments in the event of flooding.

Snatch Block: A single block designed to change the direction of the pull on a rope and is usually fitted with a removable side plate so that the rope can be looped over the sheave without

having to thread it through the block.

Snibs: Handles that can be operated from either side of a watertight door.

Snotter: A type of sling whereby an eye is formed at the end of a straight length for attaching a hook.

Snub: Is to turn a ship around by dropping an anchor whilst maintaining way on the vessel. Can be used for manoeuvring in an enclosed area but is more often an emergency procedure.

Soft Nosed Stem: Is a curved plate fitted above the waterline in the stem continuing the shape of the bow structure. It is designed to deform and buckle under impact thus preventing damage deeper in the ships structure.

Soot Blowers: Devices fitted in the exhaust intended to remove the build up of soot from the exhaust gasses. Usually in the form of a steam lance and usually operated once a day in the middle of the night.

Sound: (Verb) To measure the depth of liquid in a tank or depth under keel.

Sounding Pipe: The pipe through which a weighted tape is dropped to determine the depth of liquid in the tank.

Spectacle Frame: A frame used to support an external section of propeller shaft. Sometimes referred to as an "A" frame or a "P" frame depending on its configuration.

Spiling: Where the plate curves as it narrows to a point at either the stem or stern.

Sponson: Projections on the side of the hull added to improve stability and buoyancy quite often noted on the sides of Ro-Ro vessels to prevent excessive heeling.

Spreader: A metal or wooden beam used to splay the wires of a lift so that they lift the item vertically.

Springs: Ropes, usually wire, arranged to prevent the vessel moving forward and aft when tied up alongside as opposed to breast lines, which keep the vessel against the quay.

Spurling Pipes: These are the pipes that the anchor cables pass through from the windlass to the chain locker.

Square Propeller: A propeller where the pitch measurement equals the diameter.

Squat: An overall lowering of the hull and change in trim experienced at higher speeds. It depends on the hull form and the speed but it can play a part in draught considerations in shallow waters.

Stabiliser: These fall into the two main categories of passive and active. Passive includes such devices as bilge keels and stabiliser tanks and active includes stabiliser fins that extend from the ships hull and operate exactly as an aircraft wing to produce lift as they pass through the water and are tilted to create a righting moment on the hull.

Stanchion: A vertical support either of a deck or structure or to hold the horizontal members of handrails.

Starboard: The right hand side of the ship when facing forward and designated by a green light.

Stations: Ten equally spaced divisions along a vessels length between the aft and the forward perpendiculars. The forward one is numbered ten and the aft one is numbered zero.

Stays: Wires or ropes from the deck to the head of a mast to either provide support or prevent movement in the case of a boom.

Stealer Strake: A single wide strake of plates that replaces two narrow strakes as the width reduces towards the extremities of the hull.

Stem: The actual furthest forward part of the bow. Traditionally formed by a length of bent pipe called the stem post with strakes attached to either side of it.

Step: A circular fitting into which the foot of the mast is located.

Stern: The aft end of the vessel.

Stern Frame: A large cast piece which usually incorporates the location of the propeller stern tube, rudder pintle mountings and skeg and is attached to the aft end of the hull structure.

Stern Tube: A tube that contains the propeller shaft running in the stern bearings. Originally it would have contained wooden bearing staves of Lignum Vitae, lubricated and cooled by water but this was superseded by oil filled stern tubes with the shaft running in white metal bearings. Modern practice is returning to using plastic bearings cooled and lubricated by water.

Stiff: The opposite to tender and is a vessel with a large metacentric height and consequently a tendency to return to upright quickly.

Stiffener: A flat bar or plate attached to flat plate to reduce flexing.

Stock: A cross piece fitted to an anchor just below the ring and at right angles to the flukes to rotate the anchor on the sea bed and allow the flukes to locate. Modern practice is to use free flukes and a stockless arrangement as this is easier to house in the hull.

Stockless Anchor: An anchor without a stock so must have free flukes to be effective in operation. This type of anchor is designed so that the stock locates inside the hawse pipe.

Stokehold: In the days of coal fired boilers this was where the stockers would be feeding the coal into the boilers and the boilers would be located. Nowadays this area in an oil fired set up is called the boiler room.

Stopper: Is a short length of rope used to secure a much larger diameter rope which may be under tension whilst the larger rope is transferred to or from a winch or bollards.

Strake: Continuous longitudinal line of hull plating.

Stringers: strakes of plating at the ships sides.

Superstructure: The decked structure above the main deck, the outboard sides usually being formed by hull plating.

Swamp: Whereby a vessel is overcome with water, not necessarily however enough to sink it.

Swashplate: A longitudinal or transverse plate fitted internally in a tank to reduce the movement of the liquid in the tank and therefore the 'Free Surface Effect'.

T

Tabernacle: The socket into which the end of a hinged mast is located when it is lowered.

Table: A platform in a transverse direction either side of a mast where cargo derrick heels are located.

Tackle: A collection of wires, ropes and blocks used to operate a ships derrick.

Taffrail: A mainly decorative handrail placed over bulwarks of, usually, highly varnished teak.

Tailshaft: The aft most section of propulsion shaft to which is attached the propeller.

Tank Top: The plating that forms the top of the double bottom tanks and is effectively the floor of the machinery spaces.

Tare: Is the weight of the packing and container of goods deducted for the net weight to give the actual weight of the goods.

Telegraph: Communication means between the bridge and the machinery spaces to enable the manoeuvring of the propulsion machinery.

Telemotor System: The system between the bridge and the steering gear, which provides the signal to the prime mover of the rudder. Traditionally a chain system but nowadays would more likely be hydraulic or electrical.

Tender: 1) A smaller vessel supplying services to a much larger vessel. 2) A ship in an unstable condition with a small metacentric height which has a tendency to roll excessively due to a lack of righting moment.

TEU: Twenty Foot Equivalent Units, a measurement of Container ship capacity.

Thole: Vertical pegs of wood or metal inserted into the gunwhale of a rowing boat to replace a crutch or rowlock.

Three Island Ship: A vessel with a Poop, a bridge and a foc's'le.

Thrusters: Propellers mounted in a transverse tunnel to generate a turning moment on the hull for use in manoeuvring in enclosed waters. Some vessels such as large cruise ships have bow and stern thrusters and can actually move sideways.

Tiller: A casting, forging, or fabricated structure located on the rudder stock to enable the stock to be turned.

TPC: Tonnes per Centimeter is a measurement of the quantity of cargo required to be loaded or unloaded to change a vessels draught by one centimeter.

Topping Wire: The wire used to control the height of a boom.

Tractor Tug: A tug whose propulsion is located forward of the centerline of the vessel and as such is usually in the form of a Voith Schneider or an Azimuth unit.

Tramp Ship: A vessel that does not operate on a regular liner run and does not have consistent cargoes. Unfairly thought of as dirty and unkempt vessels they are invariably in an equal condition to any other type of cargo ship.

Transom Stern: A stern structure that terminates with a flat transverse bulkhead.

Transverse: In a direction perpendicular to longitudinal attitudes.

Travelling Block: A block in a system of running rigging that moves with the running lines.

Tread: A dimension of the length of the keel.

Triatic Stay: A horizontal stay between the caps of two masts or a mast and for instance a funnel. Used for attaching blocks for signal halyards.

Trim: Is the inclination of the keel in a longitudinal direction. When this is level the vessel is said to be on an even keel. If the bow is lower the vessel is referred to as trimmed by the head.

Trundle Head: The circular head of the capstan into which the sockets are situated for locating the capstan bars.

Tumblehome: The inward curvature of shell plating at the top of the hull.

Turn of the Bilge: The curved area of the hull which connects the flat bottom to the vertical sides around the midship section.

Turnbuckle: A device for tensioning wires usually found in standing rigging. It consists of a central threaded section with a right hand thread on one end and a left hand thread on the other end, which locate into the end caps, attached to the rigging. When the center section is rotated it either draws the two ends together or allows them to move apart. Also known as a Bottlescrew.

Tweendecker: A popular construction of general cargo ships with one or more intermediate longitudinal decks. The idea being that different cargoes can be carried in the different deck levels and they can even be fitted with internal hatches to separate the decks.

U

Ullage: The space above a liquid in a tank or compartment. When determining tank levels by dipping the tank through the sounding pipe if it is a particularly viscous liquid such as fuel and you do not want to contaminate the sounding pipe then you may measure the ullage, the distance from the level of the liquid to the top of the tank.

Unbalanced Rudder: A rudder arrangement where the rudder stock is at the forward edge of the rudder hence all the surface area of the rudder acts behind the point of rotation.

Under Deck Tonnage: The volume of the vessel between the main deck and the tank tops.

Under Foot: When an anchor hangs down vertically because it has not reached the seabed.

Union Purchase: A method of using two derricks together to enable loads to be swung onto the quayside. It incorporates a ships derrick and a shoreside derrick attached to the load at the same time.

Upper Deck: Uppermost continuous deck or Main Deck.

Uptakes: The exhaust pipes inside the funnel spaces and the casing below.

V

Vane Pump: A type of hydraulic pump commonly used nowadays as a steering gear prime mover. It consists of a stator connected to the ships structure and a rotor connected to the rudderstock. Between the two are radial vanes connected alternatively between the two so when hydraulic oil is pumped into the space between the vanes it rotates the rudder.

Veer and Haul: A process of allowing slack on a wire connected to a windlass or winch to enable the motor to speed up before taking up the slack and tensioning the rope.

Ventilator Cowl: The traditional method of ventilating machinery spaces. The cowls could either be directed by hand to obtain the maximum airflow or they could have a head on a bearing that rotated into the wind by the action of a vane fixed to the back.

Voith Schneider Propeller: A type of propeller rotating in a vertical axis which consists of a number of rotating vanes. The vanes adjust their angle of attack as they rotate so are used to generate a directional thrust. Incredibly manoeuvrable but not a very efficient method of propulsion so used a lot in vessels such as tugs.

W

Waist: Upper deck area between the Foc's'le and the Poop.

Wake: Contrary to popular opinion the wake is the mass of water dragged by a ship through the water in which the propeller actually rotates. Consequently the speed of the propeller through the wake is actually less than the speed of the ship.

Wall Sided Vessel: A ship with a vertical hull in the area of the waterline.

Warping End: The drum on the end of the windlass or capstan around which the rope is wound when heaving on the rope.

Warps: Ropes used in docking to position the vessel or manoeuvre it without the requirement for engines.

Wash: Waves caused by the passage of the vessel.

Wash Bulkhead: Internal bulkhead fitted within a tank to prevent the movement of the liquid in the tank. Usually perforated to allow flow but at a reduced rate.

Water Jet Propulsion: An arrangement whereby the main engine drives a pump instead of a

propeller and the pump is arranged to eject a jet of water through a nozzle extending outside the hull. The nozzle can also be directional so providing steering as well as propulsion.

Waterline: The line around the hull that corresponds to the surface of the water at a specific draught and trim.

Waterlogged: A vessel full of water but remaining afloat.

Waterplane Area: The area generated if the hull was sliced at the waterline.

Waterplane Area Coefficient: A ratio of the Waterplane Area to a rectangle of the same length and breadth as the area. A vessel such as a tanker would have a very high coefficient whereas a fast refrigerated vessel would have much finer form so a lower coefficient.

Watertight Doors: Doors fitted below the waterline designed to be closed either locally or remotely, which would maintain the watertight integrity of the bulkhead and therefore the compartment.

Watertight Subdivision or Compartment: The volume between watertight bulkheads. Vessels nowadays such as passenger ships are classed as a two-compartment ship whereby they are designed to remain afloat and upright with two, even adjacent, compartments flooded.

Wave Resistance: The resistance to the hull passing through the water as a consequence of moving the waves out of the way to allow passage. This can be considerable in an older hull form whereby the bow wave comes high out of the water. The energy required to lift this water up and move it to one side is considerable and is a waste. Modern bulbous bow forms have a much smaller bow wave.

Weather Deck: The uppermost continuous deck.

Web: A plate arranged to support a frame and provide additional rigidity of the hull.

Weigh Anchor: Raise the anchor and stow the cable.

Wheelhouse: The structure on the navigating bridge deck which contains the navigating equipment.

Whelps: Projections on the warping ends of windlasses and capatans to prevent heaving ropes from slipping.

Winch: An apparatus used for hauling in or paying out ropes under load used in the handling of cargo, boats, mooring etc.

Windlass: The equipment used to haul and lower the anchor.

Winter Draught: The depth of water a vessel's hull may be immersed to in a winter zone at certain times of the year. Identified on the classification societies load markings usually by the painted letters WD.

X

X-Ray: Electromagnetic radiation with a wavelength between ultraviolet and gamma radiation

which can be used to check the quality of welds and internal structural defects.

Y

Yard: A mast spar, tapering towards the ends.

Yaw: A vessel that fails to steer on a directed course.

Yawing: Another of the six degrees of freedom of movement of a vessel. It describes movement of a rotational nature about a vertical axis.

Yoke: A structural member that usually crosses a main support to impart the loading evenly on either side. Can also be fitted to a rudder when the rudder is operated in a push and pull steering gear arrangement.

Z

Zones: Divisions into which the ship is split up for the purposes of containing and fighting fires.