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1.0 Overview

1775-1783

This period in history is marked by a stark contrast. The roles naval powers would play had changed, with the English falling on the short side of the dockyard. For the first time in years, the French would prove themselves superior to their English cousins. For the first time in a century, the English found themselves on the defensive, not only having to fight a superior foe but also greatly outnumbered in naval vessels, trained crews and allies. This superiority would last until 1782, when the English implemented several naval and gunnery reforms that gave them the edge they needed to once again secure naval dominance.

The English entered this period with great optimism. Although there were problems with the American colonies, it was generally believed they could be resolved quickly and favorable to the Crown. Having, on paper, the largest navy in the world, they saw a great opportunity to gain colonies from the French, Spanish and Dutch, while easily putting down the rebellion in the American colonies.

What the British Parliament did not know was simply how corrupt the admiralty was. Most of the money allocated to the Royal Navy was being diverted to the admiralty's pockets. A large number of the navy's ships were in a state of dilapidation; in fact many had deteriorated to the point where they were no longer repairable. The large number of sailors listed on the payroll did not exist. The British navy was composed mainly of ghost ships manned by non-existent sailors.

The French during this time had the best navy in the world. The losses in the Seven Years War had made it very clear to the French crown that sea power was the only way to bring the British to their knees. To rebuild the navy, the French Naval Ministry began a program that encouraged each city and town in the country to raise enough money to construct and maintain a ship. In a very short time there was enough money from private donations to build eighteen ships-of-the-line. These donations allowed the French government to rebuild the navy without neglecting the army, which had a higher priority.

Replacing old ships with the latest designs and incorporating various naval reforms also helped the new French navy become superior to all others.

The Spanish during this period proved themselves once again inferior. Having many ships of high quality, they failed to take advantage of their situation. Most Spanish crews were good, but lacked well-trained officers willing to show initiative when it counted. Many opportunities were lost due to the lack of leadership exhibited by Spanish admirals.

The Americans did not really have a navy at this time. Most ships in the American navy were actually ships built and supported by the individual colonies, which limited their use. To correct this deficiency the federal and colonial governments began the practice of issuing licenses to captains to act as privateers. The number of captains involved in this legitimized form of piracy grew quickly, and the idea proved somewhat successful. Unfortunately, privateering proved so profitable that it became extremely difficult to get a crew for the regular navy's ships.

1784 - 1793

For the British navy this period would prove very beneficial. Its defeat by the French in the American Revolution forced the Royal Navy to institute reforms that would eventually prove the Admiralty's superiority. Improvements in the navy's fighting instructions, a new signaling system and gunnery reforms proved to be very useful. The rise of naval officers who believed in fleet melee tactics would take these new reforms and use them to great advantage.

The French situation remained basically unchanged. Their advantage over the British would fade toward the end the 1784, and would be totally lost during the French Revolution.

The Americans during this time would begin to see the need for a permanent naval presence. Although privateers were considered the first line of offense in a war, the issue of pirates forced the federal government to begin the process of building a small navy.

1794 - 1820

During this period the French navy would fall into shambles due to the policies of the revolutionary government, with Napoleon attempting to rebuild it once he gained power. Before the revolution, French gunners were highly trained and treated much better than other crew members. This practice was abolished in 1794 after being deemed unjust to the rest of the crew. Gunners were now assigned by popular vote, which reduced the gun crews' abilities. The revolution also sent many of the experienced naval officers fleeing for their lives. This in turn allowed officers to ascend through the ranks despite their lack of command experience. Upon Napoleon's rise to power, reforms were instituted in an attempt to correct these deficiencies. Unfortunately for the navy, Napoleon had other concerns that forced most of the money and effort destined for the military to be spent elsewhere.

The British navy would quickly regain naval superiority during this period. Although the many recently instituted reforms would prove beneficial, the fall in the quality of the French navy proved to be the Royal Navy's biggest boost. The greatest change occurred in the officer corps itself. Many highly trained officers served for life, and acquired the necessary skills needed for command. This included officers who were willing to follow melee instructions when they were given. Naval doctrine had changed from simply stopping the enemy to a primary objective of destroying him. The Royal Navy would rule the seas until it met the tiny American navy and its privateers, who would remind them that it is not the size that matters but how you use what you have.

The American navy would prove to be, ship for ship, the best navy in the world during this period. Officers would gain invaluable experience hunting pirates during the Tripolitanian War, and the excellent crews would prove to be the Royal Navy's worst nightmare. Once again the value of privateers would be immeasurable. During the War of 1812 American privateers would devastate the British merchant navy, which more than anything else would drive the English to the peace table.

2.0 Notes on the Navies

The navies of the era varied greatly in leadership and crew training. Below is a brief description of each navy that appears in *AGE OF SAIL*:

- 2.1 [British Navy](#)
- 2.2 [French Navy](#)
- 2.3 [Spanish Navy](#)
- 2.4 [Dutch Navy](#)
- 2.5 [Neopolitan Navy](#)
- 2.6 [Portuguese Navy](#)
- 2.7 [Swedish Navy](#)
- 2.8 [Danish Navy](#)
- 2.9 [Russian Navy](#)
- 2.10 [United States Navy](#)
- 2.11 [Ottoman Navy](#)

2.1 British Navy



The Royal Navy at this time became the largest, most powerful and best trained in the world. Considering that the ships' crews were pressed into service and the officers bought their commissions, one might wonder how this happened. Some think it was the character of the British people that showed through. With the Royal Navy constantly on blockade duty against the French during the Napoleonic wars, its men soon became highly skilled in their duties; and by the end of this period the Royal Navy ruled supreme.

2.2 French Navy



The French navy was the second largest in the world and produced some of the best ships. The British navy prized the ships it captured from the French, and even copied them when producing their own. During this period, however, French leadership and seamanship was on the decline. With the Reign of Terror destroying the officer corps and the British navy blockading the fleets to the point that their crews could not train at sea, the French navy's fighting skill degenerated and it became an easy prey for the British.

2.3 Spanish Navy



The Spanish navy was the world's third largest navy, and included the era's most powerful ship-of-the-line, the 136-gun Santissima Trinidad with four gun decks. The problem with the Spanish navy, it seems, was that it could never provide its huge navy with crews possessing even a basic knowledge of seamanship.

2.4 Dutch Navy



The Dutch navy grew quickly in size in the mid 1780s - but by the 1790s had almost ceased to exist due to hostilities with Britain. Economic conditions during the Napoleonic wars, and the constant British presence in the sea lanes, made it fruitless for the Dutch to try to build another big fleet.

2.5 Neapolitan Navy



The Neapolitan navy - i.e., that of the kingdom of Naples-Sicily (The Kingdom of Two Sicily) - was smallest of the period. Most of it fell into French hands during the Napoleonic wars.

2.6 Portuguese Navy



The Portuguese navy was small during this period. As an ally of Britain, it survived the Napoleonic wars intact. Its only accomplishments during the time seem to have been the protection of its overseas possessions and the transporting of the King of Portugal to Brazil.

2.7 Swedish Navy



The Swedish navy was small and powerful until its defeat at the hands of the Russian navy in the 1780s. Thereafter it was mainly a navy of oared ships used for coastal defense.

2.8 Danish Navy



The Danish navy had maintained a fleet primarily for operations against Sweden. It was small and not skilled enough to oppose the fleets of Britain and France, but was satisfactory for dealing with its intended foe across the Baltic.

2.9 Russian Navy



The Russian navy at the time was the fourth largest in the world. Having been created by Catherine II for use mainly in the Baltic and Black seas, its ships were of shallow draft. It performed well in its engagements with Sweden and the Ottoman Empire, and gained valuable experience during its blockade duties with the British against the Dutch. On the whole, however, its caliber was not up to that of the other major European powers.

2.10 United States Navy



The U.S. navy was small during this period but performed extremely well. The ships were the finest built, and seamanship exceeded that of Britain. During the War of 1812 the United States found that it was highly vulnerable to blockades and naval landings, which caused it to start a shipbuilding program.

2.11 Ottoman Navy



The Ottoman navy underwent great reforms and modernization during the 1790s with the help of Swedish and French advisors. In addition, its leadership belonged to the movement of Ottoman modernizers, which helped raise the navy's level of seamanship and enabled it to hold its own against the Russian navy.

3.0 Ship Rates

The rating of ships goes back to the time of England's Charles I. Originally the system was based on the number of men carried per ton of hull capacity. In 1677 the rating system was changed to the number of men needed to man each gun. Thus the ship's rating depended on the quantity and weight of her guns. Finally, when the proper gun establishment had been defined, it was no longer necessary to consider the number of men, so the ship was rated by the number of guns she carried. The term rate comes from the rate of pay the captain received.

With the advent of carronades, the number of guns a ship was rated for no longer necessarily agreed with the number of guns she actually carried. If a carronade replaced a gun that was already in place, it counted as part of the guns the ship was rated for. If the carronade was added to the ship as an additional gun, it did not count as part of the ship's rated guns. In other words, a ship rated as a 74 might actually be carrying 90 or more guns.

In reality, only Rates 1-6 are historically correct designations. For game purposes we used those six rates and added additional rates to include and classify the non-rated ships used in the game. The following is the current rating system for the game:

- 3.1 1st Rate
- 3.2 2nd Rate
- 3.3 3rd Rate
- 3.4 4th Rate
- 3.5 5th Rate
- 3.6 6th Rate
- 3.7 7th Rate
- 3.8 8th Rate
- 3.9 9th Rate
- 3.10 10th Rate
- 3.11 11th Rate
- 3.12 12th Rate
- 3.13 13th Rate

3.1 1st Rate



The first-rate ships had 100 or more guns and about 850 men in the crew. They originally carried 42-pounders on the lower-deck, but later in the 18th century it was found that 32-pounders could be loaded and fired faster, thus providing an overall increase in firepower. These ships were rare and mainly used as squadron and fleet flagships during wartime.

3.2 2nd Rate



The second-rate ships had 90-98 guns. They carried 32-pounders and had a crew of 750 men, were cheaper to operate than the first rates but just as powerful. Because of this they were more popular as flagships in foreign waters.

3.3 3rd Rate



Third-rates were the mainstay of all of the navies of the era. There were many types of ships in this rate, including both two- and three-deckers having 60-88 guns and crews of 400-650 men. The most popular were the 74s, of which there were three types: the large (French built) class, the common (British built) class and the smaller (early built) class. The French-built 74 was by far the most balanced design of its era, having the perfect size-to-gun ratio.

3.4 4th Rate



Fourth-rates were the workhorse of the early 18th Century, and were ships of prestige. They were armed with 46-60 guns and a crew of about 350 men. By the time of the late 18th Century they could no longer stay in the line of battle, and were sent to foreign stations as flagships.

3.5 5th Rate



The fifth-rates were two-deckers of 32-44 guns with a crew of about 300 men. The larger fifth-rates had the same problem as the bigger ships in that their lowest gun deck could not be used in rough seas. The smaller fifth-rates had the main armament higher up on the main gun deck and thus could out-fight and out-sail bigger ships in heavy winds. Unfortunately, they were too small to be included in battle fleets, so were used mainly for patrolling, blockading, escorting, etc.

3.6 6th Rate



The sixth-rates were of numerous sizes and types, but generally had 20+ guns on a single gun deck and a crew of about 200 men. These ships were cheap to build and maintain, and were used for a multitude of duties.

3.7 7th Rate



We use the term seventh-rate for a three-masted ship with less than 20 guns and a crew of less than 200 men. These usually were termed sloops-of-war, but this generic term was often used for any unrated ship.

3.8 8th Rate



We use the term eighth-rate for a two-masted, square-rigged ship most often called a brig. These usually had less than 20 guns and a crew of less than 200 men.

3.9 9th Rate



We use the term ninth-rate for the class sometimes known as schooners. These ships usually had two masts with fore-and-aft rigging (i.e., sails that look like those on a sailboat), with square-rigging on the topsails. Schooners usually had less than 20 guns and a crew of less than 200 men.

3.10 10th Rate



we use the term tenth-rate for the class sometimes known as cutters. These ships had a single mast with fore-and-aft rigging, with ship-rigging on the topsails. Cutter usually had no more than 10 guns and a crew of less than 75 men.

3.11 11th Rate



We term an eleventh-rate ship as a Chasse-Maree.

3.12 12th Rate



We term a twelfth-rate ship as a bark. These ships usually had three masts, with fore-and-aft rigging on the mizzen mast and square-rigging on the other masts. These ships were usually armed with no more than 20 guns and a crew of less than 150 men.

3.13 13th Rate



We term a thirteenth-rate ship as a Xebec. These were small Mediterranean vessels with lateen (triangular) sails, once used commonly by Arab corsairs.

4.0 Naval Guns

During the period covered by *Age of Sail*, naval ordnance was classified by the weight of projectile fired. Thus a 32-pounder cannon fired a cast-iron ball that weighed about 32 lbs. The types of cannons used ranged from diminutive 3-pounders to massive 42-pounders, with the latter weighing some 3 tons as compared to the former's 500 lbs.

For *Age of Sail*, the types of guns and projectile weights used by the various nations have been generalized along the British standard. At the time, countries had different standards of weight: a "24-pound" cannon ball weighed 25.91 lbs. in French service, 26.16 lbs. in Dutch service, 22.48 lbs. if Swedish, 21.66 lbs. if Russian, etc. The type and quality of powder, as well as the overall quality of the guns themselves, also made it desirable to generalize them to some degree.

Typically for this period, First-Rate ships had 32- (or 36-) pounders on the lower deck, 24-pounders on the middle deck, 12-pounders on the upper deck and 12-pounders on the forecastle and quarterdecks, totaling 100 guns or more. As the size of ship decreased, the size and number of cannon were reduced accordingly; hence a sloop-of-war might have only 6-pounders, and only on her upper deck. The 42-pounders were being phased out in favor of 32- and 36-pounders, which had been found to be just as effective given their higher rate of fire. Their lower weight also allowed ships to be built bigger.

A large cannon (e.g., a 32-pounder) usually had a gun crew of fifteen men, including powder monkeys who brought the ammunition up from the magazines and shot-lockers. Loading the gun required first that the burning embers of the last shot be sponged out. Then a cartridge bag of gunpowder was placed in the muzzle, followed by the type of shot to be fired. A rammer was used to drive them, along with a wad to keep them both in place, down into the breech end of the gun. The gunner cleaned out the touch hole with a vent bit, pierced the cartridge bag with a priming iron through the vent hole, then inserted a goose-quill tube filled with fine gunpowder. Next the gun was rolled forward into firing position and elevated so its shot would travel the desired distance. The gunner had to wait until the ship's helm brought his gun onto the target, and then wait for the ship to roll so the gun was aiming at the target. He then fired the cannon by igniting the quill, using either a flintlock device or a smoldering slow match held in a linstock.

In 1774 a short-barreled, large-bore cannon was developed and produced at the Carron Iron Works, England. These guns, soon known as *carronades*, changed naval gunnery tactics. A carronade was less than half the length and weight of a normal cannon firing a ball of the same size, which allowed ships to carry more - or alternatively bigger (in terms of shot) - guns at no additional weight. Their lower muzzle velocity sacrificed the ability to engage targets at longer ranges, but in return provided more destructive firepower at close range. Standard cannon had an effective range of 800-1200 yards, while a carronade's effective range was between 200 and 500 yards. To illustrate the increase in firepower, a small ship exchanging her 6-pounders for 12-pound carronades would triple the weight of shot she could fire.

When a carronade replaced a cannon that was already in place on a ship, it was counted as part of the ship's gun rate. However, one added to a ship without replacing a cannon was not counted as part of that ship's gun rate. Thus a 74-gun ship could conceivably have 90-100 guns instead of

the nominal 74, with the extras being "add-on" carronades.

5.0 Beaufort Scale

The Englishman Francis Beaufort devised his wind-force scale while commanding the Woolwich, a 44-gun man-of-war. It was a set of numbers applied to the various combinations of wind and waves. It gave ship captains a standardized way of setting their sails according to the applicable Beaufort number. Eventually it developed into the table below. Basically, a ship with the proper setting of sail can go about one-third the speed of the wind.

Beaufort # of Force	Wind Speed Knots	Wave Height	Description	Effects observed on sea
0	Under 1	-	Calm	Sea smooth like mirror
1	1 - 3	0.25 feet	Light Air	Ripples with appearance of scales; no foam crests
2	4 - 6	.75 feet	Light Breeze	Small wavelets; crests of glassy appearance, not breaking
3	7 - 10	2.5 feet	Gentle Breeze	Large wavelets; crests begin to break; scattered whitecaps
4	11 - 16	4.25 feet	Moderate Breeze	Small waves, becoming longer numerous whitecaps
5	17 - 21	7 feet	Fresh Breeze	Moderate waves, taking longer form; many whitecaps; some spray
6	22 - 27	11.25 feet	Strong Breeze	Larger waves forming; whitecaps everywhere; more spray
7	28 - 33	16.25 feet	Near Gale	Sea heaps up; white foam from breaking waves begins to be blown in streaks
8	34 - 40	21.5 feet	Gale	Moderately high waves of greater length; edges of crests begin to break into spindrift; foam is blown in well-marked streaks
9	41 - 47	27.5 feet	Strong Gale	High waves; sea begins to roll; dense streaks of foam; spray may reduce visibility
10	48 - 55	35 feet	Storm	Very high waves with overhanging crests; sea takes white appearance as foam is blown in very dense streaks; rolling is heavy and visibility is reduced
11	56 - 63	44.5 feet	Violent Storm	Exceptionally high waves; sea covered with white foam patches; visibility still more reduced
12	64 and over	45+ feet	Hurricane	Air filled with foam; sea completely white with driving spray; visibility greatly reduced

6.0 Preferred Reading

Below is a listing of some great books on the Age of Sail.

The Hornblower Saga: one of the best sets of books on the topic, written by C. S. Forester. The complete set includes:

Name of Book	Year of Book
Mr. Midshipman Hornblower	June 1794 - April 1798
Lieutenant Hornblower	May 1800 - April 1803
Hornblower and the Hotspur	April 1803 - July 1805
Hornblower During the Crisis	1805
Hornblower and the Atropos	December 1805 - January 1808
Beat to Quarters	June 1808 - October 1808
Ship of the Line	May 1810 - October 1810
Flying Colors	November 1810 - June 1811
Commodore Hornblower	May 1812 - October 1812
Lord Hornblower	October 1813- May 1814
Admiral Hornblower in the West Indies	May 1821 - October 1823

Gregory Peck and Virginia Mayo starred in the 1951 movie, Captain Horatio Hornblower. One wishes, of course, for a more modern version that uses 1990s-style special effects for those wonderful naval battle scenes!

Another good series of naval books is the Richard Bolitho series by Alexander Kent:

Name of Book	Year of Book
Richard Bolitho-Midshipman	1772
Midshipman Bolitho and the Avenger	1773
Stand Into Danger	1774
In Gallant Company	1777
Sloop of War	1778
To Glory We Steer	1782
Command a King's Ship	1784
Passage To Mutiny	1789
With All Despatch	1792
Form Line of Battle	1793
Enemy In Sight	1794
The Flag Captain	1795
Signal-Close Action	1798
The Inshore Squadron	1800
A Tradition of Victory	1801
Success To The Brave	1802
Colours Aloft	1803

Honour This Day	1804
The Only Victor	
Beyond The Reef	1808
For My Country's Freedom	1811

Another very good set of books is the Aubrey/Maturin books by Patrick O'Brian:

Name of Book

Master and Commander
 Post Captain
 HMS Surprise
 The Mauritius Command
 Desolation Island
 The Fortune of War
 The Surgeon's Mate
 The Ionian Mission
 Treason's Harbor
 The Far Side of the World
 The Reverse of the Medal
 The Letter of Marque
 The Thirteen Gun Salute
 The Nutmeg of Consolation
 The Truelove
 The Wine-Dark Sea
 The Commodore
 The Yellow Admiral

7.0 References

The Naval History of Great Britain - in Six Volumes

William James
Richard Bentley & Sons
1886

Fighting Sail

Time-Life Books
1978

The Frigates

Time-Life Books
1978

The Men-of-War

Time-Life Books
1978

American Ships of the Colonial & Revolutionary Periods

John F. Miller
W. W. Norton & Company, Inc.
1978

Ships

Enzo Angelucci & Attilio Cucari
McGraw-Hill Book Company
1975

The Visual Dictionary of Ships and Sailing

Eyewitness Visual Dictionaries
Dorling Kindersley Books
1991

History of the U.S. Navy

Volume One
Robert W. Love, Jr.
Stackpole Books
1992

Tall Ships of the World - An Illustrated Encyclopedia

Keith Wilbur
The Globe Pequot Press
1986

Old Ironsides - An Illustrated History of the USS Constitution

Thomas P. Horgan
Yankee Books
1980

The History of the American Sailing Navy - the Ships and their Development

Howard I. Chapelle
Bonanza Books
1949

The Search for Speed Under Sail

Howard I. Chapelle
Bonanza Books
1967

Navies of the American Revolution

Anton Preston, David Lyon and John H. Batchelor
Prentice-Hall Inc.
1975

***Stephen Biesty's Cross-Sections
Man-of-War***

Dorling Kindersley Books
1993

The History of the Sailing Ship

Arco Publishing Company, Inc.
1975

Great Battle Fleets

Oliver Warner
Hamlyn Publishing Group Limited
1973

The Battle of Trafalgar

Geoffrey Bennett
Naval Institute Press
1977

Decision at Trafalgar

Dudley Pope
J.B. Lippincott Company
1960

The Wooden Fighting Ship in the Royal Navy, AD 897-1860

E. H. H. Archibald
Arco Publishing Company, Inc.

1968

The Evolution of the Sailing Navy 1509-1815

Richard Harding
Saint Martins Press
1995

***Journées Franco-Anglaises d'Histoire de la Marine
Empires en Guerre et Paix 1793-1860***

Service Historique de la Marine
1990

The Wooden World - An Anatomy of the Georgian Navy

N. A. M. Rodger
Naval Institute Press
1986

The British Navy and the American Revolution

John A. Tilley
University of South Carolina Press
1987

Navies and Nations - Warship, Navies and State Building in Europe and America

Volume Two
Jan Glete
Almqvist & Wiksell International, Stockholm
1993

Nelson's Navy

Brian Lavery
Naval Institute Press
1989

Sailing Ships

Cedric Rogers
Golden Press, N.Y.
1974

The Lore of Ships

Tre Tryckare
Crescent Books, N.Y.
1972

The Adventure of Sail

Captain Donald Macintyre DSO DSC RN
Random House, N.Y.

1970

Nelson's Battles

Oliver Warner
Macmillan Company, N.Y.
1965

Atlas of Maritime History

Richard Natkiel & Antony Preston
Facts on File, Inc. N.Y.
1986

Decision at the Chesapeake

Harold A. Larrabee
Clarkson N. Potter, Inc. N.Y.
1964

Ships and Seamen of the American Revolution

Jack Voggins
Stackpole Books
1969

Sails Through the Centuries

Sam Svensson
Macmillan Co., N.Y.
1962

Ships Through the Ages

Douglas Labley
Octopus Books
1972

8.0 Glossary of Naval Terms

Aback: The situation of the sail of a ship, when its forward surface is pressed upon by the wind.

Abaft: The hinder part of a ship, or some point nearer to the stern than any given part; as, *abaft* the foremast.

Abeam: The point at right angles with the ship's mainmast: hence *abaft* the beam, is a situation or position between the direct line abeam and the stern, and *before* the beam is between the beam and the head.

Aboard: The inside of a ship: hence, any person who enters a ship is said to go aboard; but, when an enemy enters in time of battle, he is said to board. To *fall aboard*, is to strike against another ship. To *haul aboard* the main tack, is to bring the clew of the mainsail down to the chess-tree.

About: Is the situation of a ship immediately after she has tacked, or changed her course, by going about, and standing on the other tack.

Abreast: Synonymous with *abeam*.

Adrift: Is the state of a ship or vessel broke loose from her moorings, and driven without control, at the mercy of the wind, sea, or current.

Afore: All that part of a ship which lies forward, or near the stem.

Aft, After: Behind, or near the stern of a ship. See *Abaft*.

Afterguard: Seamen stationed on the quarter-deck and poop to work the aftersails.

Aloft: Up in the tops, at the mast-head, or any where about the higher yards or rigging.

Alongside: Close to the ship.

Amidships: The middle of the ship, either with regard to her length or breadth; as, the enemy boarded us amidships, i.e. in the middle, between the stem and stern. Put the helm amidships; i.e. in the middle, between the two sides.

Anchor: *Best bower* and *small bower*, the two anchors stowed furthest forward or near to the bows; the *best bower* being the anchor on the starboard bow, the *small bower* the one on the larboard bow; the *sheet anchor* is of the same size and weight as either of the bowers; *stream anchor* a smaller one; and *kedg anchor*, the smallest of all.

Apron: A small thin piece of lead used to cover the vent of a cannon.

At-end: Any spar or mast placed perpendicularly.

Astern: Behind the ship.

Athwart: From side to side of a ship or at right angles to.

Athwart hawse: The situation of a ship when she is driven by the wind, tide or other accident, across the stem of another, whether they bear against, or are at a small distance from, each other, the transverse position of the former with respect to the latter being principally understood.

Athwart the fore-foot: Is generally applied to the flight of a cannon-ball, as fired from one ship across the line of another's course, but ahead of her as a signal for the latter to bring to.

Avast: An order to stop or desist from doing an act.

Awash: Water washing over the side.

Backstays: Stays leading aft from the top of an upper mast to the sides of a ship to help support the masts.

Bar: A shoal running across the mouth of a harbor or river.

Bar Shot: Is a projectile of two hemispheres separated by a short bar of lead. When fired from a cannon the hemispheres separate and do great damage to rigging and spars.

Bare poles: Yoke, having no sail up.

Barque: Sailing vessel with three masts: fore and aft rigged on aftermast, square rigged on all others.

Barquentine: Sailing vessel with three masts. Square rigged on foremast, fore and aft rigged on all others.

Barricade: More commonly call *Bulwark*, the wooden parapet on the side of the forecastle quarter-deck, or poop.

Beam, On the Beam: Implies any distance from the ship on a line with the beams, or at right angles with the keel: thus, if the ship steers or points northward, any object lying east or west, is said to be on her starboard or larboard beam. See *Abeam*.

Beams Ends: A ship is said to be "on her beam ends" when she is lying over so much that her deck beams are nearly vertical.

Beat to Quarters: The beating of a drum to call the crew to battlestations.

Bear up or Bear away: Is to change the course of a ship, in order to make her run before the wind, after she has sailed some time with a side wind or close hauled; and seems to have been derived from the motion of the helm, by which this is partly produced, as the helm is then borne

up to windward or to the Weather-side of the ship. Hence, *bear up* seems to have reference to the helm only; as, "Bear up the helm a weather." With respect to any other thing, it is said, *bear away*, or *bear down*; thus: "We bore away for Torbay;" "We bore down upon the ship and engaged her.

Bearing: The point of the compass on which any object appears; as the situation of any object in reference to any given part of the ship.

Beating: The operation of making a progress at sea against the direction of the wind, in a zigzag line, or traverse; beating, however, is generally understood to be turning to windward in a storm, or fresh wind.

Belay: To make fast. Often used by seamen in the sense of arresting, stopping or canceling; "Belay the last order".

Bend: To fasten one rope to another; to *Bend* sails is to affix them to the yards; *bend* the cable, to fasten it to the anchor, etc.

Bends: The streaks of thick stuff or the strongest planks in a ship's side.

Berth: Place of anchorage: a cabin or apartment.

Bight: Any art of a rope between the end; also a collar or an eye formed by a rope.

Binnacle: Frame or box which contains the compass.

Bits: Large upright pins of timber, with a cross-piece, over which the bight of the cable is put; also smaller pins to belay ropes etc.

Board: The space comprehended between any two places where the ship changes her course by tacking; or it is the line over which she runs between tack and tack, when turning to windward, or sailing against the direction of the wind. Hence, *to wake* a good board, or stretch, *to wake short boards*, etc. See also, *Aboard*.

Boarding-netting: Network triced round the ship to prevent the boarders from entering.

Boarding Party: A group of seamen/marines detailed to board a enemy ship.

Bone: Is the foam at the stem of a ship underway. When this is unusually noticeable she is said to "have a bone in her teeth".

Bound: Is the proceeding in a specified direction, or to a specified place.

Bow: Is the rounding part of a ship's side forward, beginning where the planks arch inwards, and terminating where they close at the stem or prow. On the bow, an arch of the horizon, not exceeding 45 degrees, comprehended between some distant object and that point of the

compass which is right ahead, or to which the ship's stem is directed.

Bow Chasers: Guns mounted in the bows of a ship and able to fire ahead of the ship.

Bowliners: Ropes made fast to the leeches or sides of the sails, to pull them forward.

Bowsprit: Is a large spar which point forward, and in large ships always upwards, at about a 40 degree angle, from the bow over the ship's head.

Box off: Is when a ship having got up in the wind or been taken with the wind ahead, the head-yards are braced round to counteract its effect, and prevent the ship from being turned round against your inclination.

Braces: Ropes fastened to the yard-arms to brace them about.

Brails: Ropes applied to the after leeches of the driver, and some of the staysails, to draw them up.

Break ground: To weight the anchor and quit a place.

Breeching: A stout rope fixed to the cascabel of a gun, and fastened to the ship's side, to prevent the gun from running too far in.

Brig or brig-sloop: A ship with two masts and square rigged on both of them.

Brigantine: A ship with two-masts and square rigged on fore-mast and main topmast, but with fore and aft mainsail. Latterly, a two-masted vessel with foremast square rigged, and mainmast fore and aft rigged.

Bring to: To check the course of a ship by arranging the sails in such a manner that they shall counteract each other, and keep her nearly stationary when she is said to *lie by* or *lie to*, having according to the sea-phrase, some of her sails aback, to oppose the force of those which are full. To come to is sometimes used with the same meaning; although, more generally, it means to let go the anchor.

Bring up: To cast anchor.

Broach to: Is when, by the violence of the wind, or a heavy sea upon the quarter, the ship is forced up to windward of her course or proper direction in defiance of the helm.

Broadside: Is the number of cannon mounted on a ship's side. Is also the discharge of the guns of one side of a ship in a group or in succession.

Bulkheads: Partitions in the ship.

Bumkin: A short boom or beam of timber projecting from each bow of a ship, to extend the clew

or lower edge of the foresail to windward.

By the Board: Is said to go overboard and by the ship's side.

Cable: A large rope by which the ship is secured to the anchor.

Cable's length: A measure of 120 fathoms, or 240 yards.

Cap: A thick block of elm, with a round hole in the fore part for the topmast to enter, and a square one abaft to receive the lowermast head.

Capstan: A machine by which the anchor is weighed.

Cascabel: Is the round knob on the breech of a cannon.

Cat-head: A strong projection from the forecastle on each bow, furnished with sheaves or strong pulleys, and to which the anchor is lifted after it has been hove up to the bow by the capstan.

Cat's paw: A light air perceived by its effects on the water, but not durable.

Chains* or *Channels: Of a ship, those strong projections from the sides below the quarter-deck and forecastle ports, in large ships, but above the guns in small one, to which the shrouds or rigging of each of the lowermasts are secured, by means of wooden blocks. or *deadeyes*, strongly chained and bolted to the ship's side.

Chain-Shot: Is a pair of projectiles connected by a chain used to damage sails and ringging.

Chess-tree: A piece of wood bolted perpendicularly on each side of the ship near the gangway, to confine the clew of the mainsail; for which purpose there is a hole in the upper part, through which the tack passes, that extends the clew of the sail to windward.

Clew garnet, fore or main: Is a rope running double from nearly the center of the fore or main yard, to the clews or corners of the sails, where the tack and sheet are affixed, and is the principal means of clewing up or taking in the sail.

Close hauled: The arrangement or trim of a ship's sail when she endeavors to make a progress in the nearest direction possible towards that point of the compass from which the wind blows.

Club-hauling: Tacking by means of an anchor.

Coamings: The borders of the hatchway, which are raised above the deck.

Column: Is a group of ships in line ahead.

Come About: Is the situation where a ship will turn into the wind and onto another tack.

Conning the ship: The directions given to the steersman by a superior seaman, termed the quartermaster, or by the captain, master, or pilot, as the case may be.

Courses: A name by which the fore and main sails, and driver, are usually distinguished.

Crank: The quality of a ship which, for want of a sufficient quantity of ballast or cargo, is rendered incapable of carrying sail, without being exposed to the danger of upsetting.

Cutwater: The knee of the head.

Davit: A piece of timber used as a crane to hoist the flocks of the anchor to the top of the bow: it is called fishing the anchor.

Double-Shot: Is the loading of a cannon with two shots so as to do more damage but with the effect of lowering the range.

Draft: Is the depth of a ship below the waterline.

Driver: A large sail suspended to the mizzen gaff: called also *spanker*.

Edge away: As when a ship changes her course, by sailing *larger*, or more afore the wind than she had done before.

Fathom: Six feet (1.83 meters).

Fighting Tops: Is the platforms at the top of the lower masts for armed men to man and shoot at enemy ships.

Fill: Is to fill the sail that has been shivered or hove aback, to bring the ship to.

Fleet: An assemblage of ships of war, to the number of ten and upwards.

Flocks: The broad parts or palms of the anchors.

Flotilla: A fleet of small vessels of war.

Fore-and-aft: The lengthway of the ship.

Forecastle: Is the upper deck forward of the foremast.

Foremast: Is the mast nearest the bow of a ship that has two or more masts.

Forging ahead: To be forced ahead by the wind.

Founder: To sink.

Freeboard: Is the distance from the waterline to the lowest gun-port sill.

Frigate: Is a three-masted, square-rigged ship carrying its armament on the main deck, and on the quarter-deck and forecastle.

Furl: To wrap or roll a sail close to the yard, stay, or mast to which it belongs and wind a gasket or cord about it to fasten it thereto.

Gaff: Is the spar to which the head of a fore-and-aft sail is secured.

Gaskets: A piece of plait to fasten the sails to the yards.

Grapeshot: Is a cluster of iron balls, about nine, fastened together in tiers of three by rope and/or canvas and fired from cannons to do damage against personnel.

Gripe: Is when, by carrying too great a quantity of aftersail, a ship inclines too much to windward, and requires her helm to be kept a-weather, or to windward.

Grog: Is a mixture of water and rum.

Haul the wind: To direct the ship's course as near as possible to that point of the compass from which the wind arises.

Hawse-hole: The holes through which the cables pass.

Hawse: Is generally understood to imply the situation of the cables before the ship's stem, when she is moored with two anchors out from the bows; i.e. one on the starboard and the other on the larboard bow. It also denotes any small distance ahead of a ship, or between her head and the anchors by which she rides.

Hawser: A small cable.

Headsails: Is the jibs and staysails set between the bowsprit and the foremast.

Heave to: Synonymous with *bring-to*. *Heaving to* an anchor, is when all the cable is taken in until the ship is directly over her anchor, preparatory to its being weighed out of the ground.

Helm: Is the tiller.

Hull Down: Is said of a ship when her hull is below horizon and her masts and upper works are visible.

In Irons: Is the situation of a ship having missed stay and which refuses to fall off from the wind.

In Ordinary: Is a term used to ships laid up in peacetime, i.e. in moth balls.

Jib: Is the headsail set on a stay forward of the foremast.

Jury: Is a term put in front of any part of a ship's fittings which is doing temporary duty until the fitting can be properly repaired.

Keel: Is the beam or backbone of a ship.

Knot: Is synonymous with a mile (about 6,080 feet).

Labor: To pitch and roll heavily.

Lanyard: Rope used for securing or attaching.

Laiboard: A name given by seamen to the left side of the ship, when looking forward from the stern.

Large: A phrase applied to the wind, when it crosses the line of a ship's course in a favorable direction; particularly on the beam or quarter: hence, *to sail large*, is to advance with a large wind, so as that the sheets are slackened and flowing etc. This phrase is generally opposed to sailing close hauled, or with a scant wind.

Lateen Sail: Is a triangular sail commonly used in the Mediterranean and the East.

League: Is the measure of distance three miles in length. One-twentieth of a degree of latitude.

Lee: Is the side opposite that from which the wind is blowing.

Leeward: Is the direction away from the wind, downwind.

Letter of Marque: Is a commission authorizing a private ship to operate against the ships of the enemy.

Lie to: Synonymous with *Bring to* or *Heave to*.

Line Abreast: Is the formation of ships which are in line at right angles to their course.

Line Ahead: Is a formation in which ships are in column.

Linstock: Is a staff about 3 feet in length used to hold the end of the match to the touchhole of a cannon.

Looming: An indistinct appearance of any distant object, as ships mountains etc.

Luff: The order to the helmsman to put the tiller towards the lee-side of the ship, in order to make the ship sail nearer to the direction of the wind.

Mainmast: Is the middle mast on a three-masted ship.

Main sheet: A large rope affixed to the lower corner or clew of the mainsail by which, when set, it is hauled aft into its place.

Main tack: Another large rope affixed to the same corner of the sail, but to haul it on board or down to the chess-tree on the forepart of the gangway; when set upon a wind, or close hauled, the foresail is furnished with similar gear.

Missed Stays: Is the situation when a ship has failed to come about.

Musket-shot: Distance, from 300 to 400 yards.

Offing: Implies out at sea, or at a good distance from the shore.

Overhaul: To examine; also to overtake a ship in chase.

Pay round off: Is, when near the wind, to fall off from it against the helm, and in spite of every effort to prevent it.

Pistol shot: Distance about 50 yards.

Plying: Turning to windward.

Poop Deck: Is the small deck over the quarterdeck.

Port: Is the left side or larboard side of a ship while facing the bow.

Port the helm: The order to put the helm over to the larboard side of the ship. used instead of larboard, on account of the affinity of sound between the latter word and starboard.

Port Tack: Is the situation in which the wind comes over the ships port or larboard side.

Prize: Is a captured ship.

Quarter: That part of a ship's side which lies towards the stern, or which is comprehended between the aftmost end of the main chains and the side of the stern, where it is terminated by the quarter-pieces.

Quarterdeck: Is the upper deck in the afterpart of a ship.

Rake a ship: Is when the broadside sweeps another's deck fore and aft, either by lying athwart her bows or her stern. *Rake* means also the inclination of the masts, bowsprit, stem, or sternpost.

Razee: Is a ship that has had her upper deck removed.

Reef: To reduce a sail by tying a portion of it to the yard with points.

Ride: To be held by the cable.

Rigging: Is the ropes, chains, etc., that hold and move the masts, sails and spars of a ship.

Round Shot: Is solid round iron shot fired from a cannon.

Round to: Is when going large or before the wind, to come round towards the wind by the movement of the helm.

Schooner: Is a two-masted ship fore-and-aft rigged, but often carrying a square fore-topsail.

Ship the tiller: Is to fix it in its place.

Slipping the cable: Unsplicing it within, a buoy and buoy-rope having been previously affixed to it, to show where the ship has left her anchor.

Splicing: The mode by which the broken strands of a rope are united.

Spring, to anchor with a: Is before letting go the anchor, to cause a smaller cable or hawser to be passed out of a stern or quarter port, and taken outside of the ship forward, in order to be bent or fastened to the ring of the anchor intended to be let go, for the purpose of bringing the ship's broadside to bear in any given direction.

Spring a mast, yard, or any other spar: Is when it becomes rent or split by an overpress of sail, heavy pitch or jerk of the ship in a rough sea, or by too slack rigging.

Squadron: An assemblage of ships of war in number less than ten.

Stand on: To keep on the same course.

Starboard: The right side of the ship, when the eye of the spectator is directed forward, or towards the head.

Stay, to stay a ship: Is to arrange the sails and move the rudder, so as to bring the ship's head to the direction of the wind, in order to get her on the other tack.

Steer: To manage a ship by the movement of the helm.

Stem: Is the front end of the ship.

Tack: Is to change the course from one board to another, or to turn the ship about from the starboard to the larboard tack, or vice versa, in a contrary wind.

Tant, or taunt rigged: Means when a ship is very lofty in her masts. *All-a-tanto*, is said when a ship, having had some of her masts struck, has rehoisted them.

Taut: A corruption of tight.

Thrum a sail: Is to insert in it, through small holes made by a bolt-rope-needle, or a marline-spike, a number of short pieces of rope-yarn or spun-yarn, in order, by the sails being drawn over a hole in the ship's bottom, to assist in stopping the leak.

Topgallant Mast: Is the mast above the *Topmast*.

Topmast: Is the mast above the lower mast.

Tow: To draw a ship or boat forward in the water, by means of a rope attached to another vessel or boat, which advances by the effort of rowing or sailing.

Turning to windward: See *beating*

Unmoor: Is to reduce a ship to the state of riding by a single anchor and cable, after she has been moored or fastened by two or more cables.

Unship: Is to remove any piece of timber, wood, etc., from the place in which it was fitted.

Wake of a ship: Is to be immediately behind or in the track of her. It also means when a ship is hid from view by another ship.

Warp a ship: Is to change her situation by pulling her from one part of a harbor, etc., to some other, by means of warps (ropes or hawsers), which are attached to buoys, to other ship's, to anchors sunk in the bottom, or to certain stations on the shore, as posts, rings, trees, etc. The ship is then drawn forward to those stations, either by pulling on the warps by hand, or by the application of some purchase, as a tackle, windlass, or capstan.

Way, a ship: Is said to be under way, that is, to have way upon her, when she has weighed her anchor, and is exposed to the influence of the tide, current, or wind.

Wear, or veer ship: Is to change her course from one board to the other by turning her stern to windward.

Weather a ship, headland, etc.: Is to sail to windward of it. The weathergauge implies the situation of one ship to windward of another when in action, etc.

Weigh: Is to heave up the anchor of a ship from the ground in order to prepare her for sailing.

Work a ship: Is to direct her movements, by adapting the sails to the force and direction of the wind. To work to windward is a synonym of beat, tack, turn to windward, etc.

