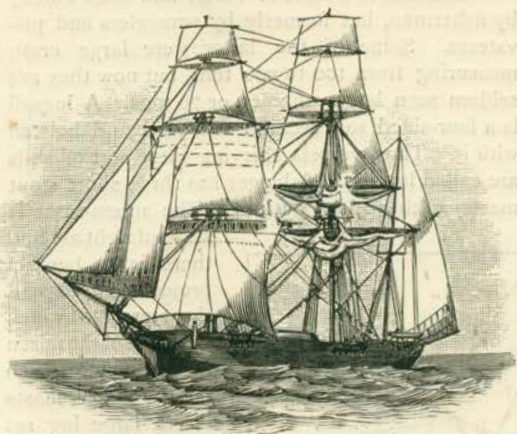


BOATS AND YACHTS, AND HOW TO SAIL THEM.

By WILLIAM H. G. KINGSTON.



BARQUE, WITH MAINSAIL AND MAIN-TOPSAIL CLEWED UP.

IT is pleasant to be the owner of a trim yacht, in which we may sail here and there over the laughing sea on a fine summer's day, or across to the shore which lies blue and indistinct in the far distance, but as a yacht, even of a moderate size, is an expensive luxury, we must be content with a model yacht, from which, if we know how to manage her, we may derive much amusement, and have an opportunity of exhibiting our nautical skill.

Supposing we wish to buy a yacht, we must know the best rig to select, and if we go down to the sea-side it is satisfactory to be able, as a sailor can at a glance, to distinguish one style of vessel from another. This I wish to enable you to do.

The largest class of sailing vessels are those which are ship-rigged. A SHIP has three masts, with yards across on all of them, on which square sails are set. Her mizzen-mast, or after-mast, has a large fore-and-aft sail called a spanker, or driver, set on it with a gaff and boom, and she has triangular sails set on the jib-boom and bowsprit, which are called fore-staysail, fore-topmast-staysail, jib, and flying jib.

Next to a ship comes a BARQUE, which has also three masts. The fore and main masts are rigged exactly like those of a ship, but the mizzen-mast has only two fore-and-aft sails, shaped something like those of a cutter, but narrower at the head, the lower called the mizen, the upper the gaff topsail. The head-sails are like those of a ship in shape and name. Both ships and barques can set staysails on stays or ropes running from one mast to that

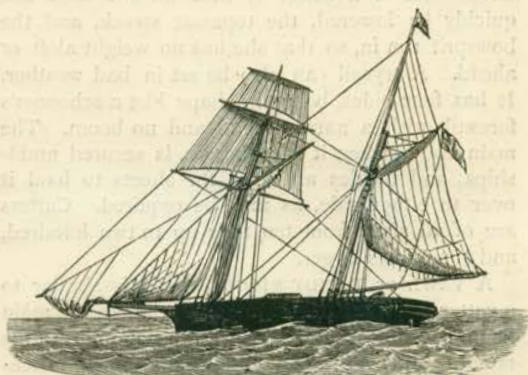
immediately ahead of it. They also, when before the wind, can set studding-sails, which are of a square form, on booms run out from the yard-arms.

There are other three-masted vessels, and some have even four masts, but these are not very common.

Next to a barque, a BRIG takes rank. She has only two masts, both of which have square sails. Her main or after mast has set on it a large fore-and-aft sail called the mainsail, with a boom and gaff, in shape like the spanker of a ship, or the mainsail of a cutter. The largest brigs are seldom above 250 tons, and they are more generally of 150 to 200 tons.

The next vessel to be mentioned is a BRIGANTINE, generally smaller than ordinary brigs, and has two masts. Her foremast is rigged like that of a brig, with a top or platform at the head of the lower mast, while the mainmast has crosstrees at its head, rakes, or leans, aft, and carries a mainsail and gaff-topsail like those of a schooner. Some carry a square topsail and top-gallant-sail. The rig is a very graceful one, but is not so general as that of a brig.

The SCHOONER is the most common rig for vessels of 200 tons down to 80 tons. There are some few larger and others smaller, mostly yachts. A schooner has two masts, which rake aft, that is, lean towards the stern. Each mast carries fore-and-aft sails, set on gaffs, much of the same shape, known as the mainsail, and main-gaff-topsail, and the foresail and fore-gaff-topsail; she has also a fore-staysail, a jib, an outer jib, and a flying jib. Some schooners have all their sails fore-and-aft, and are known as FORE-AND-AFT SCHOONERS; while others



SCHOONER, WITH SQUARE FORETOP SAIL.

have yards across the foremast, and sometimes the mainmast also, and are called SQUARE-TOPSAIL SCHOONERS. Both of these kinds of vessels, when running before the wind, set large square sails on the foremast.

The most common rig for yachts has long been that of the CUTTER. She may properly be described as a vessel with a single mast, a running bowsprit—that is, the bowsprit can be run in and out—a large fore-and-aft mainsail and gaff-topsail, a fore-staysail, and a jib; she can also set a flying jib from the topmast, and by hoisting up a yard, a large square sail when running. Her topmast is so fitted with a fid in the heel or lower end, that it being drawn out, the mast can very quickly be struck. The mainsail is much squarer or broader than that of a schooner, the boom extending a considerable way over the taffarel, while the gaff to which the head of the sail is secured is very long. The gaff-topsail is set flying, that is, it is hoisted up, made fast to a yard, which, when it reaches the top of the mast, projects some way before as well as abaft—that is, behind.

One of the many advantages of a cutter is that all the sails can quickly be lowered, the topmast struck, and the bowsprit run in, so that she has no weight aloft or ahead. A trysail can also be set in bad weather. It has four sides, being in shape like a schooner's foresail, with a narrow head and no boom. The main boom, when it is to be set, is secured amidships, and tackles are used for sheets to haul it over to either side, as may be required. Cutters are of all sizes, from ten tons up to two hundred, and sometimes larger.

A YAWL or DANDY-RIGGED vessel is similar to a cutter with regard to her sails, though the main boom is shorter, as it does not reach quite to the taffarel, and she has in addition a short mizen-mast, stepped right aft, with a bumkin, or sliding

boom, projecting out astern. On this a lug is set, called the mizen—a four-sided sail, secured to a yard, which is set and taken in with the sail.

A LUGGER is a class of vessel now used chiefly by fishermen, but formerly by smugglers and privateers. Some of the latter were large craft, measuring from 100 to 200 tons, but now they are seldom seen larger than 60 or 70 tons. A lugsail is a four-sided sail secured to a yard and hoisted with it. Thus, vessels carrying these sort of sails are called luggers. A lugger has three short stout masts, raking more or less. The mizen-mast is

stepped right aft, and there is a bumkin projecting beyond the stern, to which the sheet of the mizen is hauled out. Each of the other masts has a large lug set on it. Topmasts can be hoisted, upon which topsails, also lugs, are set. A fore-staysail and a jib are likewise carried—the latter on a short bowsprit, or jib-boom, which can be run in if necessary.

The only other rig for English vessels is the KETCH. She is like a brigantine, with her bowsprit steering or rising considerably, with square sails as well as a fore-and-aft sail on her foremast, while the

mainmast is rigged like that of a schooner.

Foreign vessels are rigged in a variety of ways, but I have not space to notice them. I will only mention the Greek POLACCA BRIG or ship. Her peculiarity is that her lower masts and topmasts are in one, so that when her sails are furled the yards are brought close together. She has thus, with her tall, wand-like masts, a light and elegant appearance.

Four distinct sorts of sails are used for boats besides the usual fore-staysails and jibs. First, the most common and safest for small boats is the *spreet-sail*, or *sprit-sail*, so called because the sail is extended by means of a sprit or thin spar, one end of which is fixed in a gromet near the lower part of the mast, and the other in the peak or

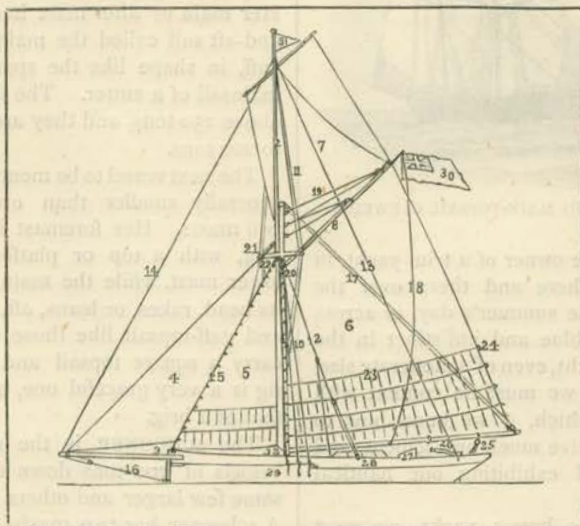


DIAGRAM OF A CUTTER, GIVING THE NAMES AND POSITIONS OF THE SPARS AND SAILS.

1. Mainmast. 2. Topmast. 3. Bowsprit. 4. Jibsail. 5. Foresail. 6. Mainsail. 7. Gaff topsail. 8. Main-gaff. 9. Boom. 10. Shrouds. 11. Topmast shrouds. 12. Backstays. 13. Topmast backstay. 14. Topmast stay. 15. Forestay. 16. Bobstay. 17. Topping lift. 18. Ensign halyards. 19. Peak halyards. 20. Main halyards. 21. Jib. 22. Cross-trees. 23. Reefpoints and carings. 24. Cringles. 25. Mainsheet. 26. Tiller. 27. Companion. 28. Skylights. 29. Channels. 30. Ensign. 31. Burgee.

32. Horse for foresheet.

upper and outer corner of the sail. Boats of fourteen feet in length carry one large sail of this description, and perhaps another small one as a mizen, with a little jib to balance it. Larger boats, like



SPRITSAIL-RIGGED BOAT.

the once well-known Ryde wherries, carry two spritsails, of which the illustration will give a good idea.

Secondly, the *lugsail* already mentioned. It may be described as an irregular oblong, one side of the head being longer than the other, and secured to a yard. Gigs and light boats are generally fitted with lugs, as the moment the masts are stepped they can be hoisted or lowered rapidly. They are dangerous, however, when taken aback if the halliards are not let go in time, as they press against the masts and capsize the boat.

Thirdly, the *lateen-sail*, set on a long tapering yard, hoisted on a short mast, generally raking forward. These sails are used generally in the Mediterranean and West Indies, where light winds prevail. They are very picturesque, but are not often seen off the English coast.

The fourth sort of sail I have to describe is the *sliding gunter*. The mast consists of a lower mast and a topmast. The latter slides up and down the former on rings. The sail is very long, and triangular. The upper angle is fastened to the top of the topmast, to which the inner leech or side is laced. When the sail is to be reefed, the topmast is lowered so that the broad and the lower part of the sail is at once rolled up or reefed while the boat continues on her course.

Reefing, or lessening the size of sails, is performed in two ways. Square topsails are reefed at the head, the sail being drawn up to the yard by reef-tackles, and then fastened by reef-points—the short pieces of thin rope which hang down in rows along the upper part of the sail. Fore-and-aft sails, like the mainsail of a cutter, are reefed at the lower part, also by reef-points.

The rigging of a vessel consists of the standing-rigging and the running-rigging. All the fixed or

standing ropes, such as the shrouds and stays, belong to the former, and all the ropes by which the sails and yards are worked to the latter. The use of the standing-rigging is to support the masts and the bowsprit. The shrouds are the stout ropes fixed on either side of the masts. In large vessels they have light ropes across those, called *ratlines*, to form ladders for the crew to ascend. When there are no ratlines the men have to shin up to the masthead. The principal ropes of the running-rigging are the halliards, sheets, braces, clewlines, and buntlines. The accompanying diagram of a cutter will give you a better idea of the names of the masts, sails, and ropes than any mere verbal description can do.

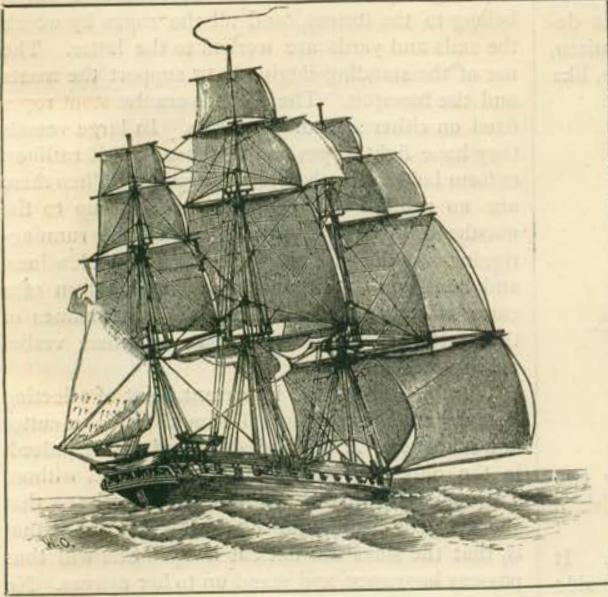
We now come to the important point of selecting a model craft for sailing. I should advise a cutter or a schooner. A fore-and-aft-rigged vessel, indeed, is the only one which can be managed without a crew on board. In choosing a vessel see that she has good beam, and a tolerably flat floor—that is, that the sides are not cut away. She will thus possess buoyancy, and stand up to her canvas. No model can sail which heels over very much; the chances are she goes over altogether. One of my sons had a pretty model given to him, cut out by a man-of-warsman who was evidently no shipbuilder, for on account of her lean sides she heeled over to the slightest breeze, and her sails lay flat on the water. Before you can make a model yacht sail



YAWL OR DANDY-RIGGED BOAT.

in the direction you wish it to go you must learn how to balance or trim the sails properly.

The wind acts with the greatest force on a sail at right angles. Take a strip of cardboard to



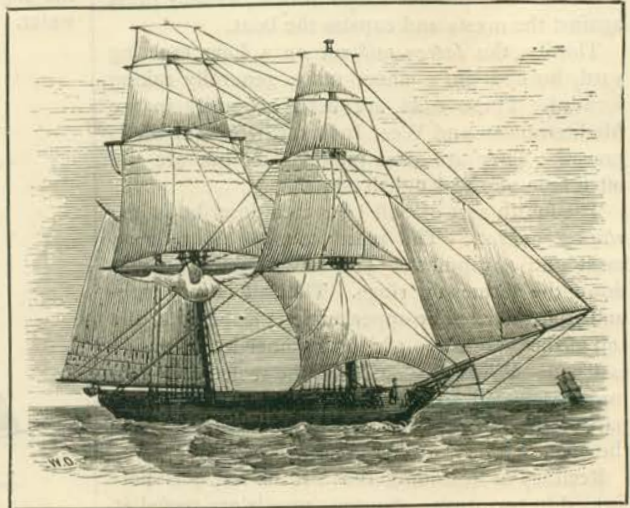
SHIP GOING FREE WITH STUDDING SAILS.

represent a vessel with all sail set and braced flat. Press with your forefinger at one end and your thumb at the other—your finger and thumb represent *the wind*. The wind has the same force on all parts, so if you wish to make the vessel's head turn from the wind you must set more sail at that end; or lessen the sail at the other if you wish to turn the stern from the wind. I am leaving out at present the power of the rudder. The water offers great resistance to vessels shaped as they are, otherwise they could only run before the wind, like feathers floating on the surface. Owing to this resistance of the water the rudder has the power of acting. Bend one end of the strip of cardboard and press against it; you find that it makes the other end turn in an opposite direction. This is exactly as a rudder acts on a vessel.

Now, having no one on board to steer, you cannot make your yacht sail before the wind; she would roll about, and soon have her sails aback. The only way to make her steer a direct course is to start from the side of the pond almost opposite to that from which the wind is blowing; you must then haul the sheets nearly flat aft, with the foresail quite flat. You must judge by the strength of the wind whether she can carry her gaff-topsail, or requires a reef or two in the

mainsail. You should place her head about five points from the wind. See first that the halliards and sheets are belayed. Don't shove her off; but let the wind fill her sails, and she will go off by herself. The tendency of vessels on a wind is to luff up, or to carry a weather helm, so that if there is too much after sail your yacht will soon be taken aback, or get the wind on the wrong side, and either go boxing about in the middle of the pond, or come drifting back to you. You may make her sail steadily if the sails are properly trimmed, by introducing a piece of lead into the outer and lower part of the rudder. Thus, when she heels over, the weight causes the rudder to go over on that side, and consequently turns her head away from the wind. As she turns away, she rises to an even keel, and resumes her proper course. The after-sail will prevent her from running too much off the wind.

Practice makes perfect. If the head of your yacht turns away from the wind, set a smaller jib, or haul down the foresail at that end, or else set the gaff-topsail, or, if you have a yawl, the mizen at the other; if she heels over too



BRIG UNDER ORDINARY SAIL.

much, take in the gaff-topsail and haul down the foresail, or take a reef or two in the mainsail. The simpler the rig of your model the better. The most convenient size is about two feet long, or a little more, so that you can carry her easily and place her where you wish.