




A Fore Mast.-B Main Mast.-C Mizzen Mast.-D Bowsprit.-E Jib boom

- |                           |                         |                                 |
|---------------------------|-------------------------|---------------------------------|
| 1 Flying Jib.             | 8 Fore Top Gallt sail.  | 15 Main Skysail.                |
| 2 Outer Standing Jib.     | 9 Fore Royal.           | 16 Cross Jack.                  |
| 3 Inner Standing Jib.     | 10 Main sail.           | 17 Lower Mizzen Topsail.        |
| 4 Fore Top Mast Staysail. | 11 Lower Main Topsail.  | 18 Upper Mizzen Topsail.        |
| 5 Fore sail.              | 12 Upper Main Topsail.  | 19 Mizzen Top Gallt sail.       |
| 6 Lower Fore Topsail.     | 13 Main Top Gallt sail. | 20 Mizzen Royal.                |
| 7 Upper Fore Topsail.     | 14 Main Royal.          | 21 Mizzen Spanker<br>or Driver. |

**EXPLANATION OF PLATES.**

-  ..... Direction of Wind.
-  ..... Sail Fall.
-  ..... Sail heaved, Lifting or Shaking.

*H. Allan Scott  
Ammer Temple*

**UNDER SQUARE SAIL:**

A MANUAL

FOR

CADETS OF THE MERCHANT SERVICE  
AND FOR YACHTSMEN.

BY

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1877.

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# UNDER SQUARE SAIL:

## A MANUAL

FOR CADETS OF THE MERCHANT SERVICE  
AND FOR YACHTSMEN.

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### STARBOARD AND PORT SIDE.

When on board ship looking forward, the right-hand side of the ship is the starboard side, and the left-hand the port-side.

### WEATHER AND LEE SIDE.

With the wind blowing in your face, the side of the ship you are looking over is the weather, or windward side, and the other the lee or leeward side.

### YARDS.

(PLATE 1.)

The yards on the fore-mast (A) are termed the head yards; those on the main-mast (B), and mizen-mast (C), are the after yards. The lower yards are those to which the courses are bent; a lower yard is held aloft by a sling, usually chain, and the yard-arms are supported by lifts G and I, and braces L (see Plate 2).

### SAILS.

(PLATE 1.)

Each square sail takes its name from the yard to which it is attached, thus, the main-sail (10) is bent to the main-yard, and so on; the sails on the bowsprit (D) and on the jib-booms

## P R E F A C E .

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A FEW years ago, at the request of a friend engaged in legal matters connected with Shipping, I undertook to give him a few hints as to the management of a square-rigged vessel under sail.

Having commenced my work, I found it necessary to prepare a series of Sketches, with a brief description of each, with which I supplied him, until my task was completed.

What advantage they were to him I cannot say, but after a time they were returned with the advice to "print them!" they were, however, laid aside.

Towards the end of last year I was impressed with the belief that my friend was right, and that I could be of assistance to youngsters just going to sea, to Yachtsmen, and also to others desirous of understanding something about manœuvring a Ship under *plane sail*, a branch of seamanship generally supposed to be unattainable unless on a cruise.

In respect to the wind's action on the sails, I have here and there used the term *right side* in a sense of proper side, not as relating to right *contra* left.

T. H. W.

London, May, 1877.

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(E), Nos. 1, 2, 3 and 4, are the **head sails**, and as they are not bent to yards they are, like the mizen (21), termed fore-and-aft sails; hence, vessels without yards are **fore-and-afters**, and those with yards are **square-rigged**; this rule is not strictly true in all cases, as a schooner carrying a fore-topsail is considered a fore-and-after.

### STARBOARD AND PORT TACK.

The **tack** is a rope or chain, used to haul the **weather clew** of a course forward and down to the ship's side, or it is the lower foremost corner of a fore-and-aft sail. It will be seen (Plate 2) that the weather clew B is inside the ship (in-board or a-board) on the starboard side, and she is, therefore, known to be on the **starboard tack**. On the port tack the weather clew is on the port side.

### THE HELM.

#### (PLATE 3.)

It is often asked, "What is the helm?" We confess we are not astonished at it, when we see the wheel, tiller, rudder, and ship's head all turned to port when the helm is said to be to starboard—(*the tiller in this case is, of course, abaft the rudder*).

We must remember that the **tiller** is the **helm**; and within the present century, it has become the practice in merchant vessels to fix it abaft the rudder, *simply because it is more out of the way*. Now suppose the tiller, as in olden times, to be shipped before the rudder (*which we must always imagine it to be, and which is the case in small vessels without a wheel*), we shall see that by pushing the end of the tiller over to starboard, *i.e.*, starboarding the helm,\* the vessel's head will be brought to port (see Fig. 1), and with the helm to port her head will be brought to starboard (see Fig. 2).

\* We pass by the fact that the stern moves by the action of the rudder, as in working a ship our attention is always directed forward.

### HELM DOWN, OR HELM UP.

#### (PLATE 4.)

When the helm is put **down**, the tiller is put to leeward (by turning the wheel down to windward), and the vessel's head is brought to the wind (Fig. 1), known as **luffing, bringing to the wind, coming to the wind, &c.**

When the helm is put **up**, the tiller is put to windward (by turning the wheel down to leeward); her head then turns from the wind (Fig. 2), and this is **keeping away, keeping off, bearing up, running off, &c., &c.**

### WIND.

The direction of the wind (unlike that of an ocean current) is the point of the compass it blows **from**, or its angle with an imaginary line a-head, a-stern, or directly athwart the ship, thus, a north wind blows from the **north** toward the **south**, and an east wind from the **east** toward the **west**. Again, suppose the vessel's head to be north, the wind at N. by E. will be one point on her starboard bow; N.N.E., two points; N.E. by N., three points; and N.E., four points; but N.E. by E. is three points before the starboard beam; E.N.E., two points; E. by N., one point; and east **right abeam**; and so on *abaft* the beam till it reaches S.E., when it is said to be four points on the **quarter**; at S.E. by S. it is three points on the **quarter**; at S.S.E., two points; at S. by E., one point; and at south **right aft**.

The wind changing from the bow towards the stern is termed **coming aft**, and changing from the stern towards the bow is **going forward**.

### ON A WIND, CLOSE HAULED, BY THE WIND, ON A BOWLINE, FULL AND BY.

Any of these terms may be used when the yards are sharp up and bowlines hauled; you a **re-steering by the wind**, *viz.*, as close to the wind as she will go without **shaking the sails**. A cutter or **fore-and-aft** schooner will sometimes

sail as close to the wind as four points, *i.e.*, with the head at an angle of 45 degrees from the direction of the wind, while a square-rigged vessel will seldom go better than six points, or at an angle of 67½ degrees.

When steering by the wind you watch the weather leech of the first sail\* that lifts,—(see Sail on Main-mast, Plate 5), where a little weather helm would be necessary to keep her full; word of command—near, no higher, or keep full. When you think she will sail a little closer, *i.e.*, she is not quite to the wind, you carefully try her with a spoke or two of lee helm (*luffing*), standing by to meet her when she lifts. The terms starboard and port, in respect to the helm, are never used when on a wind; but helm up or helm down, luff, keep full, &c. Coming up is (by a favourable change in the wind) improving your point of sailing, and breaking off is the reverse.

#### BRACING SHARP UP.

To brace sharp up you commence with the lower yard, taking care to give it plenty of play by overhauling the lee lower lift, and in light winds the weather brace. The mark for bracing sharp up is generally the top-mast backstays, *i.e.*, when the yard binds hard against them; and the mark for knowing when the main sheet is aft, is the foot of the sail (N in Plate 2) touching the forward swifter (O) with the tack down. To trim the topsail yards and those above, looking along the weather lower yard-arm you keep the topsail yard-arm a little open abaft it, and the top-gallant yard a little open abaft the topsail yard-arm, and so on.

#### GOING FREE

Is when a vessel sails on her course with her yards braced in, *i.e.*, the lee lower yard-arms clear of the backstays, and the fore and main sheets flowing clear of the foremost swifters.

\* Generally the main-royal, maintop-gallant sail, or mizen-top sail.

#### GRIPING.

A vessel on a wind should go along pretty steadily with the helm two or three spokes up; when she requires an unusual quantity of weather helm to keep her full, she is said to gripe,—probably the sails require trimming, or the ship may be too much by the head *i.e.*, out of trim.

#### TRIMMING SAILS OR YARDS

##### (PLATE 6)

Is setting the sails in the best possible manner and bracing the yards forward or aft to show the greatest surface of sail to the wind. When the wind changes from forward towards aft, you square in the after yards first, for the following reasons, *viz.*: First, the danger of the after sails coming by the lee; secondly, the risk of flying to; thirdly, because the head yards would be trimmed (if under the lee of the after sails) with greater ease. When the wind changes from aft to forward, you commence by bracing up the head yards in order to prevent her flying to. Plate 6, represents an error in trimming to a change from aft forward,—the after yards being full while the head yards are by, there is nothing to prevent her flying to.

#### RUNNING\*

##### (PLATE 7)

Is sailing with the wind aft (sometimes called scudding), with the wind on the quarter. Fig. 1, has the wind on the port quarter; Fig. 2, has it right aft. With a heavy sea running, it is necessary to scud under a press of canvas to keep the ship a-head of the sea, or she might get pooped. Running under bare poles, is running with all sails furled. The terms starboard and port are used (in steering) while going free, and you steer a compass course.

## BROACHING TO.

(PLATE 8.)

Broaching to, is when running, the ship, from bad steerage or otherwise, is allowed to turn broadside to wind and sea.

## TACKING SHIP, 'BOUT SHIP, OR STAYING

(PLATE 9)

Is bringing the ship's head to windward till the wind comes on the other side. (Fig. 1), goes in stays. At the order **ready about**, the hands take their stations, the ropes are laid down clear for running: **ready, a' ready?** the boatswain pipes or mate reports, **all ready**; the helm is put down, **hard-a-lee!** the head sheets and fore-sheet are let go (to reduce the pressure of the wind forward), the square sails immediately shake and the vessel **fies to**—(if slack in stays check the head braces.) While there is sufficient wind in the lee clew of the main-sail to overhaul the main-sheer, with her head at about (a), the order **tacks and sheets** is given, i.e., let go the main-tack, main-sheet, and generally the fore-tack, *keeping fast* the fore and main bowlines. When her head reaches about (b), the **head yards** will be **flat a-back** as well as the weather leeches of the main-sail, main-topsail, &c., while their lee leeches will be becalmed under the lee of the fore-sails; at this moment, **main sail haul!** the lee main braces and main bowline are thrown off the belaying pins, and the main-yard swings round without assistance—not so, if "*main sail haul*" is delayed till the after sails are entirely shut in, and becalmed under the lee of the fore ones at (c) with the wind right a-head; the main tack is boarded and the main-sheet hauled aft; the wind by this time will be well on the port bow, her head at about (d); the head-sheets are hauled over the stays and made fast; the fore-yard being **a-box** she will quickly *pay off*; when the after sails begin to fill **shift the helm!** and **let go and haul!** you let go the head-braces and fore-bowline and **haul round** the head-yards; before they are sharp up, **catch a turn**

with the weather-braces, keeping the yards **well in**; her head will probably by this time, be at (e), viz., two points off; the head-yards being a little by, she will **readily come to**; then brace the head-yards **sharp up** and see all properly trimmed. In **working ship** without the main-sail, the order **topsail-haul** is given, in lieu of **main-sail haul**, and the order tacks and sheets omitted; the fore-tack is often kept fast till the ship is well round.

## MISSING STAYS

Is when she fails to tack; sometimes it is not apparent until after the after-yards are swung, in which case you can readily wear, by tacking in the mizen, hauling aft the head-sheets, and letting the after-yards **run square**—(See Wearing Ship, Plate 10).

## WEARING SHIP

(PLATE 10)

Is turning the vessel round, head from the wind, until she comes to on the other tack. When **working to windward** you never wear when you can stay, on account of losing so much ground. It is usual to put the helm hard up at once, but it is recommended to put it hard down first, and deaden her way; when she begins to fall off, **hard up the helm** (keeping the after-yards braced by), and before she has time to gather much way she will have the wind on the other quarter.

In wearing (Fig. 1) round from the starboard to the port tack, the mizen was taken in, the main-sail and cross-jack were hauled up (or clews raised), the **helm was put hard up**, and the after-yards **squared** (braced by); the pressure being on the head-yards she quickly paid off; when her head reached (a) she was **before the wind**, and the head-yards were squared; when she brought the wind on her port quarter (her head about b) the mizen was set and the after-yards braced up; her fore-yard being square she quickly came to, when the fore-yard was braced up.

If blowing hard, while before the wind, the fore-yard

should be braced forward in order that it should *not* come a-back in flying to.

### WORKING TO WINDWARD.

(PLATE 11.)

Bound from A to B with the wind dead on end; we stood on the starboard tack till we reached (a), we then tacked, and stood on the port tack until we tacked again at (b), and so on; this is traverse sailing.

### LONG AND SHORT TACKS OR BOARDS.

(PLATE 12.)

When the course lies oblique to the direction of the wind, as starting from A bound to B, we should work long and short tacks, or long and short boards. In this instance, in getting under weigh we should cast her on the port tack, and make a long board out to (a) and a short one in to (b), and so on.

### COMING UP IN THE WIND.

(PLATE 13.)

When a ship comes too close to the wind, against her helm, and there is fear she will come round, you should flatten in the head sheets; when that is insufficient, you brace the fore-yard a-box, letting draw when full.

### OFF THE WIND.

(PLATE 14.)

In a light air sometimes a vessel will fall off the wind, and although the helm is down she will not readily come to; you should ease off the head sheets and fore sheet, and if necessary, check the lee head braces (as in tacking); bracing up and hauling aft again when close to the wind.

### STERN BOARD

Is sailing stern foremost.

### ABACK

(PLATE 15)

Is having the wind blowing against the wrong side of the sails (producing stern-way), caused from change of wind or bad steerage. Fig. 1 was sailing her course on the port tack when she was taken a-back with the wind on her starboard bow; she hauled round the after yards (Fig. 2) letting the mizen go over to leeward; the head yards being a-box she went off till her after yards began to fill; the head yards were then braced round, and she stood on the other tack (Fig. 3).

(PLATE 16.)

Fig. 1 was sailing on the port tack when she was taken aback; necessity compelled her to remain on the same tack, so she ported her helm—having stern way; she took in her mizen and squared her after yards (Fig. 2), the fore yards boxing her off till the after sails filled; she then gathered headway, on which the helm was put to starboard. At Fig. 3, having brought the wind a little on her port quarter, set the mizen and began bracing up the after yards; by the time they were sharp up, she was close to the wind again (Fig. 4). Had the wind been light it would have been well to have checked the head braces. (See Off the Wind, Plate 14).  
Note.—This is going round "on her heel."

### BY THE LEE

(PLATE 17)

Is sailing (Fig. 1) round before the wind until in the position of Fig. 2. A vessel may be taken by the lee by a shift of wind on the opposite side.

### HEAVING TO

(PLATE 18)

Is stopping the ship's way (by counteraction of the sails) for various purposes, such as sounding, taking on board a pilot, a man falling overboard, &c.

(PLATE 18—continued.)

When running (see Fig. 1) you bring the ship to, on either tack, keeping the after yards square and bracing up the head yards as she comes to. Fig. 2 is hove to, with her main yard to the mast, *i.e.*, the main yard a-back, and the head yards full. You may heave-to by bracing up the after yards and keeping the head yards a-back; this is not the best plan, as the fore-sail should be hauled up, and if hove to with it set, it would be troublesome to take in while pressing hard against the rigging, &c. When on a wind it is very easy to heave to by putting the helm down and letting go the lee main braces, and main tack and sheet, and when the weather leeches take aback the after yards will run square themselves. Quickly gather in the slack of the weather braces and take a turn.

## LAYING TO.

(PLATE 19.)

Laying to is taking in all sail and bringing the ship's head as close to the wind and sea as possible; the after yards are braced sharp up, and the head yards are checked in a little; this is laying to under bare poles. A tender ship will be easy under bare poles, but the more sail you can press on a stiff ship the better. The lower maintop-sail (see Plate 19) is a good sail for the purpose, for, being lofty, it keeps full when the vessel is in the trough of the sea, and prevents her rolling to windward; the main try-sail is also an excellent sail. It is a mistaken and dangerous practice to put the helm hard down; the wake will generally be seen before the beam, indicative of stern-way, yet the helm is often secured down by relieving tackles. In this case the rudder may be carried away by the force of the sea; or without the relieving tackles, the man may be thrown over the wheel.

## BOX-HAULING

(PLATE 20)

Is, wearing ship by a series of manœuvres so as to avoid running to leeward as in ordinary wearing. Fig. 1 will not stay, and there is no room to wear, and having an efficient crew they are stationed for box-hauling; she commences as in tacking (see Plate 9); when her way stops she is nearly head to wind (Fig. 2, Plate 20); then "haul of all," she hauls round the fore and main-yards simultaneously, and, if possible, hauls down the tacks, and hauls the foretop-mast stay-sail sheet to windward, the helm is of course to starboard **hard a-lee**; she keeps the mizen top-sail braced by, and the mizen in; the other sails being a-back with the wind on her port bow, she makes a stern board, at the same time turning her stern round to windward until her sails shake by the lee, when her stern-way ceases; she then fills on her fore-yard (Fig. 3) and ports her helm; she gathers headway and brings the wind on her starboard side, bracing up her fore-yard as she comes to. A species of box-hauling is often practised in getting under way in a crowded anchorage. Let us suppose Fig. 2 at anchor with the wind on her port bow, and with the stern of another ship (as at Fig. 1) in her way; she trips her anchor and makes a stern board, turning round stern to the wind at the same time (see Fig. 3), and so on as before stated.



## CLUB-HAULING

(PLATE 21)

Is, tacking ship with the assistance of an anchor. When a vessel will not stay, and cannot wear for want of room, and it is blowing too hard to box-haul, she might club-haul.

Fig. 1, sailing on the port tack, proceeds to club-haul. She gets her starboard anchor—the lee one—ready for letting go, bends a good line on to it, taking the other end over the starboard quarter for a spring, at the same time she unshackles the cable at a proper length for veering, according to the depth of water, and secures the end with a good lashing. All hands being called to 'bout ship (see Plate 9), a responsible person is placed at the cat-head stopper with orders to let go the anchor at "main-sail haul!" and the carpenter at the lashing with his axe with instructions to cut when ordered. She proceeds as in tacking, *i.e.*, **hard a-lee, tacks and sheets, or fore tack.** When she is up in the wind, and her way stops, **main-sail haul,** and she lets go the anchor; she instantly gathers in the slack of the spring and makes it fast; she hauls aft the starboard foretop-mast staysail-sheet and veers cable; as she drops a-stern she tightens the spring, and her head is cast to port (see Fig. 2). Without delay she cuts the lashing of the cable and slips the end, the spring being tight assists the sails in boxing her off; when the main yard begins to fill, she swings the head-yards; she cuts the spring, and stands on the starboard tack (Fig. 3).

Box-hauling can be done without the spring, but with less chance of success.

## GLOSSARY.

- A-BACK.**—The wind blowing against the wrong side of a sail.
- A-BEFT** is a position towards the stern of the ship.
- A-BEAM.**—From the word beam, *i.e.*, a timber placed at right angles to the keel to support the sides of the vessel, and the deck, which is laid upon it. A position right a-breast.
- A-BOARD.**—Inside the vessel.
- ABOUT SHIP.**—An order to prepare for tacking. See 'bout ship.
- AWIND.**—Having the head-yards a-back, *i.e.*, the wind blowing against the fore side of the sails.
- BEFT.**—The stern of the ship; more aft is more towards the stern; wind right aft is in a direct line with the keel.
- BEYOND SAILS.**—The sails on the main and mizen masts.
- BEYOND YARDS.**—The yards attached to the main and mizen masts.
- AGAINST HER HELM.**—Coming to, or going off, against the helm is acting contrary to the helm, as coming to with the helm up, or going off with the helm down.
- BEFORE** is in a direct line before the head of the ship. An object seen in a line with the bowsprit and jibboom would be right a-head.
- BEHIND** is in a direct line behind the ship; the reverse to right a-head.
- A-THEWART, A-THEWARTSHIP.**—Right across the ship.
- BACK STAYS** are parts of the standing rigging of a ship to

- support the topmasts, top-gallant masts, and royal masts against pressure while the sails are full.
- BAD STEERAGE** is when the man at the helm is not steering the course properly.
- BARE POLES.**—Under bare poles is having no sail set.
- BARQUANTINE.**—A three-masted vessel carrying yards on her fore-mast only; considered square rigged.
- BARQUE.**—A three-masted vessel, carrying yards on her fore and main masts, and fore-and-aft sails only on her mizen mast; a square rigged vessel.
- BEAM.**—*See* a-beam.
- BEARING UP** is keeping the vessel's head off, more before the wind.
- BECALMED.**—Without wind; a sail is said to be becalmed when it is sheltered from the wind by another sail.
- BEFORE THE WIND.**—Sailing or running before the wind is having the wind blowing after the ship.
- BELAYING** is securing a rope to a cleat or pin in such a manner as to be easily cast loose.
- BENT.**—A square sail is said to be bent when its top edge (*i.e.*, the head) is secured to the yard and the gear attached, ready for setting (*see* Plate 2); fore-and-aft sails are bent to stays or gaffs.
- BIGHT.**—A loop of slack rope or chain, or any part of a rope, &c.; a distance from the end.
- BIND HARD.**—Tight across; pressing hard.
- BOARDED.**—Being on board; "board main-tack," is hauling the clew of the sail down to its place by the tack; the tack of a square sail is always hauled down before the sheet is hauled flat aft.
- BOARD IN.**—A board in, is sailing on a wind towards the land, that is standing in.
- BOARD OFF.**—A board off, is sailing on a wind from the land, that is standing out.
- 'BOUT SHIP.**—An order to get ready to tack; the crew take their stations, and the ropes are seen to be clear for running through the blocks, &c.
- BOW.**—The fore-end of the ship on either side of the stem; "Round the bows" means an arc of four points on

- either side of the stem; "Under the bows" means at the water's edge, or near it, round the bows.
- BOWLINE.**—A line, or whip, to haul the weather leech of a square sail tight forward, so that by arching the leech the wind blows in the body of the sail—(Plate 2).
- BOWLINE BRIDLE.**—A single or double loop spliced into cringles in the leech of a square sail to regulate the strain on the leech when the bowline is hauled—(Plate 2).
- BOWLINE LIZARD.**—A small rope, either single or double, with a thimble in each end or bight; part of the fitting of a bowline bridle—(Plate 2).
- BOWSPRIT.**—*See* Plate 1 (D).
- BOX-HAULING.**—*See* Plate 20.
- BRACE.**—(*See* Plate 2.) Fore-brace is a purchase from each fore-yard-arm, leading down to the main chains, for supporting the yard when the sails are full, and for hauling the yard about as required. Main-brace is a purchase from each arm of the main-yard, leading down to the vessel's quarters, for supporting the yard when the sails are full, &c. Crossjack-brace is a whip from each crossjack yard-arm to the main rigging for hauling the yard about,—it is no support to the yard when the sail is full.
- BRACED BY** is when the yard-arm is pointed towards the wind, in which case the sail, if set, would shake.
- BRACED FORWARD** is having the yards pointing forward.
- BRACED IN** is, when having been sharp up, the weather yard-arm is brought to a direction between sharp up and right square.
- BRACE PENDANT.**—*See* Plate 2.
- BRACE ROUND** is bracing the yards round the other way.
- BRACED UP.**—Braced forward.
- BRACE UP AND HAUL AFT.**—An order in tacking ship; when she is close enough to the wind, it is an order for the fore-yard to be properly trimmed and the fore-sheet to be hauled aft.
- BRACING.**—Bracing the yards about is called trimming them,

- or trimming the sails; when braced up, bracing them across the ship is "squaring" them; slacking the weather brace and hauling on the lee one is bracing up.
- BRAIL.**—The name of a rope having its bight round the leech of a trysail or mizen, for hauling the sail in when not required.
- BREAKING OFF** is a term used when close hauled; it is the result of an unfavourable change in the wind.
- BRIG.**—A square-rigged vessel, with two masts fully rigged.
- BRIGANTINE.**—A two-masted vessel, with a brig's foremast and schooner's mainmast; a square-rigged vessel.
- BRING HER TO.**—Bringing the vessel's head nearer to the wind.
- BRINGING TO THE WIND.**—See "Bring her to."
- BROACH TO.**—Inadvertently bringing the ship's side to the wind when running.
- BROADSIDE.**—Broadside on, is exposing the vessel's side to the wind, sea, &c.
- BY.**—Yards by, is bracing the yards in a line with the wind, so as to reduce the pressure on the sails.
- BY THE HEAD.**—The fore end of the ship being deeper in the water than the stern.
- BY THE LEE** is being a-back with the wind passing round the stern, or by a shift of wind from one quarter to the other.
- BY THE WIND** is sailing with the yards sharp up; as near to the wind as possible; on a bowline; close hauled; on a wind; full and by, &c.
- CATCHING A TURN.**—Quickly making fast a rope, &c.
- CAT-HEAD STOPPER.**—A chain at the cat-head to which the anchor hangs when it is a-cockbill.
- CHECK THE BRACES** is to slack them a little.
- CHECK THE YARDS.**—To square the yards a little by checking the lee braces.
- CLEAR FOR RUNNING.**—Free from obstructions.
- CLEW** (Plate 2).—The lower corner of a square sail, and the after lower corner of a fore-and-aft one.
- CLEW-GARNET.**—The clewline of a "course"; a purchase to haul the clew of the sail up to the yard.

- CLEWS RAISED.**—The tacks and sheets are cast off, and the clews are supported by the clew-garnets.
- CLOSE HAULED** is having the yards braced sharp up, and the ship's head kept as near the direction of the wind as possible.
- CLOSER.**—To bring her head nearer to the wind.
- CLOSE TO THE WIND** is sailing as near the wind as possible.
- CLUB-HAULING.**—See Plate 21.
- COCKBILL.**—An anchor is said to be a-cockbill when it is hanging perpendicularly ready for letting go.
- COMING AFT.**—Wind coming aft, is a favourable change, allowing the vessel's yards to be squared in.
- COMING ROUND.**—The act of turning round head to wind; *going round* is turning the head from the wind.
- COME TO** is bringing her head nearer the wind.
- COMING UP** is a favourable change in the wind enabling the vessel to sail nearer her course.
- COURSE.**—In sailing, the course of a vessel is the direction in which the helmsman is ordered to keep the ship's head.
- COURSES (THE).** are the foresail, mainsail, and crossjack—(Plate 1).
- CRINGLE.**—A strand of rope passed through the strands of, or round another, rope, and laid up into a perfect rope the shape of a horse shoe.
- CROSSJACK.**—The mizen course—(Plate 1).
- CROSSJACK-YARD.**—The lower yard on the mizenmast—(Plate 1).
- CUTTER.**—A vessel with one mast; a "fore-and-after."
- DANDY.**—A cutter carrying a jigger; a "fore-and-after."
- DEADEN HER WAY,** is retarding the vessel's progress through the water. It is sometimes done by luffing and shaking the sails, or keeping very close to the wind.
- DEAD ON END.**—Wind "dead on end, *i.e.*, it is blowing from the direction of the vessel's proper course.
- DRIVER.**—See Plate 1.
- DROP A-STERN.**—Slowly going a-stern.
- EASE OFF.**—Slacking a rope, as ease off the head sheets to bring her to, or the crossjack and main sheet to pay her off.
- FAILING TO TACK.**—Refusing to turn round head to wind.
- FALL OFF,** is when the vessel's head turns more to leeward.

**FILL THE YARDS**, is bracing the yards aft to catch the wind.

**FLAT-ABACK** is when the wind blows directly against the wrong side of the sails.

**FLAT-AFT**, is when the foot of a sail is hauled by the sheet as near fore-and-aft as possible.

**FLATTEN IN** is hauling the head sheets as much to windward as possible to increase the pressure of the wind against the sails.

**FLOWING**.—When a vessel is going free, her sheets are eased off (flowing).

**FLYING JIB**.—See Plate 1.

**FLY UP**, or "FLY TO."—Coming to the wind quickly.

**FOOT OF SAIL**.—The lower edge of a square sail from clew to clew (Plate 2), or of a fore-and-aft sail from tack to clew.

**FORE-AND-AFT**.—Parallel with the keel.

**FORE-AND-AFT SAILS**.—See Plate 1.

**FORE-AND-AFTER**.—A vessel without yards.

**FORE-AND-AFT SAIL** is a sail bent to a gaff or stay (Plate 1).

**FORE BOWLINE**.—The bowline to the foresail.—(See bowline, Plate 2).

**FOREMAST**.—See Plate 1.

**FORE-RIGGING**.—The rigging belonging to the foremast.

**FORE-ROYAL**.—See Plate 1.

**FORESAIL**.—See Plate 1.

**FORWARD**.—Towards the head.

**FORESHEET**.—The rope that hauls the clew of the foresail aft.

**FORETACK**.—The chain or rope that hauls the clew of the foresail forward.

**FORETOP-GALLANTSAIL**.—See Plate 1.

**FORETOPMAST-STAYSAIL**.—See Plate 1.

**FORETOPSAIL**.—See Plate 1.

**FORE-YARD**.—(See Plate 1.) The lowest yard on the fore-mast.

**FULL**.—The sails full of wind; not shaking.

**FULL AND BY**.—Close hauled; the course given to the helmsman when "on a wind."

**FURLED, OR SAILS FURLED**.—The sails being gathered to the yards, masts, or booms, and secured by small lines called *gaskets*, when not required.

**GAFF**, is the spar to which the head of the mizen or a trysail is bent.

**GATHER IN**.—Haul in, as "gather in the slack;" haul taut.

**GATHER WAY**.—Going through the water.

**GEAR**.—Ropes for a special purpose, as gear of the mainsail—i.e., ropes attached to the mainsail; jib gear, belonging to the jib, &c.

**GETTING UNDER-WEIGH**.—Heaving up the anchor.

**GOING FORWARD, WIND GOING FORWARD**, is when it is changing more a-head; an unfavourable change.

**GOING FREE** is sailing a course with the wind more or less favourable.

**GOING IN STAYS**.—The act of tacking; going about.

**GOING OFF**.—Turning her head away from the wind.

**GOING ROUND ON HER HEEL**.—Wearing ship without making head-way, the stern post being the axis, the lower end of which is called the *heel*.

**GRIPE**.—A piece of timber fitted on the lower part of the stem; it assists in keeping the vessel's head to windward by resisting the lee drift.

**GRIPING** is, when on a wind, the sails cannot be kept full.

**HARD A-LEE**.—An order in tacking ship, to let go the foresheet and head-sheets, the helm being down.

**HARD DOWN THE HELM**.—An order to put the tiller hard over to leeward.

**HARD UP THE HELM**.—An order to put the tiller hard over to windward.

**HAUL AFT**.—Hauling aft a sheet is pulling the clew of the sail more towards the stern.

**HAUL ROUND**.—Change from one side to the other.

**HAUL UP**.—Haul up a course, is taking it in; all other square sails are said to be "clewed up," when taken in; head-sails are *hauled down*, and gaff-sails usually brailed up.

**HEAD BRACES**.—The braces attached to the head yards.

**HEAD OF A SAIL**.—The upper edge of a square sail; the part bent to the yard.—(Plate 2). The upper corner of a triangular sail.

**HEAD OF THE SEA**.—Keeping pace with the waves.

- HEAD SAILS.**—See Plate 1.
- HEAD-SHEETS.**—The sheets belonging to the head sails—(1, 2, 3, and 4, Plate 1).
- HEAD TO WIND.**—The ship being in a line with the wind; wind blowing from the head towards the stern.
- HEAD-WAY.**—Going a-head.
- HEAD-YARDS.**—The yards attached to the fore-mast.
- HEAVE TO,** is stopping the vessel's way by counteraction of the sails—(Plate 18).
- HELM.**—The tiller.
- HELM DOWN.**—Turning the end of the tiller down to leeward.
- HELM UP.**—Turning the end of the tiller up to windward.
- HULL.**—The body of the vessel—(Plate 1).
- IN BOARD.**—Inside the vessel.
- IN STAYS, STAYING.**—In the act of going about, the vessel is in stays or is staying.
- JIB.**—A fore-and-aft sail—(Plate 1).
- JIB-BOOM.**—The spar extending beyond the bowsprit; the modern practice is to have it divided into three parts—(Plate 1).
- JIB-TAKES, THE.**—The jib is said to take when it is full of wind.
- JIGGER.**—A small sail right aft in some fore-and-aft vessels; also a small tackle.
- KEEL.**—The first piece of timber laid in the construction of a ship.
- KEEP FULL.**—To fill the sails with wind by putting the helm up.
- KEEPING AWAY.**—Steering more away from the wind; keeping off; bearing up.
- KEEPING OFF.**—See "Keeping away."
- LAY DOWN CLEAR.**—Arranged so as to run freely.
- LAYING-TO.**—In bad weather, keeping the vessel's head as near the direction of the wind as possible—(See Plate 19).
- LEECHES OF SAIL.**—(See Plate 2.)
- LEECHES TAKE A-BACK.**—The wind blowing against the fore-sides of the leeches of the square sails.
- LEE CLEW.**—The clew on the lee side.
- LEE HELM.**—Tiller down to leeward.

- LEE RIGGING.**—The rigging on the leeside.
- LEE SIDE.**—The contrary side to that on which the wind is blowing.
- LEEWARD.**—Towards the lee side.
- LEEWARD SIDE.**—See "Lee sidg."
- LET DRAW.**—After "flattening in" has had the desired effect, you remove the extra pressure—(See "flatten in").
- LET GO AND HAUL.**—The word of command in tacking ship; to swing the fore-yard, *i. e.*, bracing round on the other tack.
- LIFT OR LIFTING.**—Sail lifting, means an inclination to take a-back; slightly shaking.
- LIFTS.**—Supports to the yard arms—(Plate 2).
- LITTLE OPEN.**—A term commonly used for an angle, as when steering along the land you keep a distant point *open* on your bow.
- LONG AND SHORT BOARD** is, when working to windward, you sail a short distance on one tack and a long distance on the other.
- LONG BOARD** is sailing a considerable distance on one tack, close hauled.
- LONG TACK.**—The same as "Long Board."
- LOSING GROUND.**—Going to leeward, or in any way contrary to your desire.
- LOWER LIFT.**—See Plate 2.
- LOWER YARD.**—The lowest yard on either mast—(Plate 1).
- LUFF.**—An order to the helmsman to keep the vessel's head nearer to the wind.
- LUFFING.**—See Plate 4.
- MAIN-MAST.**—See Plate 1.
- MAIN RIGGING.**—The rigging belonging to the main-mast.
- MAIN ROYAL.**—See Plate 1.
- MAIN-SAIL.**—See Plate 1.
- MAIN-SAIL HAUL.**—The order in tacking to swing the main-yard.
- MAIN-SHEET.**—The rope used to haul aft the clew of the main-sail—(Plate 2).
- MAIN SKY-SAIL.**—See Plate 1.

- MAIN TACK.**—The rope or chain used to haul forward the clew of the main-sail—(Plate 2).
- MAIN-TOP GALLANT-SAIL.**—See Plate 1.
- MAIN TOP-SAIL.**—See Plate 1.
- MAIN-YARD.**—The lowest yard on the main-mast—(Plate 1).
- MASTS.**—See Plate 1.
- MISSING STAYS** is when a vessel refuses to tack.
- MIZEN.**—See Plate 1.
- MIZEN-MAST.**—See Plate 1.
- MIZEN RIGGING.**—The rigging belonging to the mizen mast.
- MIZEN ROYAL.**—See Plate 1.
- MIZEN-TOP GALLANT-SAIL.**—See Plate 1.
- MIZEN SET.**—The mizen, like any other sail, is set when it is properly spread to catch the wind.
- MIZEN TOP-SAIL.**—See Plate 1.
- NEAR.**—A term used when sailing too close to the wind; caution to helmsman to keep the sails full.
- NO HIGHER,** has the same meaning as "Near."
- OFF THE WIND.**—The reverse to "Near"; not close to the wind.
- ON A BOWLINE.**—On a bowline is sailing on a wind, close hauled, with the bowlines hauled tight.
- ON A WIND.**—Sailing close hauled; by the wind, &c.
- ON HER COURSE.**—Going her course.
- OTHER TACK.**—Changing the direction of the ship's head so as to bring the wind on the other side.
- OUT OF TRIM** is when a vessel is too much down by the head or by the stern.
- OVERHAUL,** is slacking the rope of a tackle well through the blocks; the reverse to hauling tight.
- PAY OFF, PAID OFF, PAYING OFF,** are terms used when her head turns from the wind.
- PEAK OF SAIL.**—The highest point of a fore-and-aft sail.
- PENDANT,** is a rope or chain with a block or thimble in the lower end.
- PLAY.**—Freedom of action.
- POLACCA, OR POLACRE.**—A vessel with yards and square-sails on masts made of a single spar, viz., lower mast and top-mast in one; a square rigged vessel.

- POOPED.**—The sea rolling over the stern.
- PORT SIDE.**—The left-hand side of the vessel when you are looking forward.
- PORTING THE HELM.**—Patting the helm to the port side of the ship.
- PORT TACK.**—Having the port tacks on board.
- PRESS OF CANVAS.**—Carrying a quantity of sail.
- PURCHASE.**—A tackle of any kind.
- QUARTER.**—The angle between right aft and a-beam.
- QUARTER WIND.**—The wind blowing on the quarter.
- READY ABOUT.**—The order to prepare for tacking.
- READY A'READY ?**—Are you ready, i.e., for tacking ship.
- BELIEVING TACKLES.**—Tackles to the end of the tiller to assist the wheel chains in bad weather.
- RIGHT A-BEAM.**—Right a-breast.
- RIGHT AFT.**—The extreme after end of the ship; also, in a direct line with the keel over the stern.
- RIGHT A-HEAD.**—In a line with the keel a-head.
- RUDDER.**—A heavy piece of timber fitted to the stern of the ship to guide her as she moves through the water.
- RUNNING,** is sailing before the wind; sometimes called scudding.
- RUNNING OFF,** is a term used when she is not near the wind.
- RUN SQUARE,** is quickly squaring a yard.
- SAILING HER COURSE.**—Sailing in the right direction; going her proper course.
- SAILS**—Names of, see Plate 1.
- SAILS FULL,** is when they are expanded to their full extent by the wind blowing on their right side.
- SAILS FURLED.**—See Furled.
- SCHOONER.**—A fore-and-aft vessel with two or three masts.
- SCUDDING.**—See "running."
- SEA RUNNING.**—Waves driven before a gale.
- SETTING SAIL** is spreading a sail to catch the wind.
- SHAKE, SHAKING,** is the fluttering of a sail from the wind blowing in a line with the yard.
- SHARP-UP** is a term used when the yards are braced as much fore-and-aft as the rigging will allow.
- SHEET.**—(Plate 2.) A purchase for hauling the clew of a sail

- aft; the top-sail sheets and top-gallant sheets are chains to secure the clews out to the yard-arms.
- SHIP.—A vessel with not less than three masts, and with yards to each mast.
- SHIPPED.—Taken on board; fixing a thing in its place.
- SHIPPING.—The act of taking on board.
- SHORT BOARD.—Sailing only a short distance on a tack.
- SHORT TACK.—The same as "short board."
- SHROUDS.—The shrouds are a number of stout ropes leading from the mast-heads down to the channels or the tops; part of the standing rigging of a ship; they support the masts against the pressure of the sails when full.
- SLACK, is to loosen.
- SLACK IN STAYS.—Slow in coming to the wind in tacking.
- SLING.—The sling of a yard is a stout chain suspending the lowest yard to the mast; it is also a name given to a rope when the two ends are spliced together for slinging packages.
- SLIP.—Let go.
- SLOOP.—A fore-and-aft vessel; a cutter.
- SMALL HELM.—A limited use of the helm; a few spokes of the wheel.
- SMART.—Quick.
- SNOW.—A brig with her fore-and-aft main-sail fitted to a try-sail-mast.
- SOUNDING.—Finding the depth of water the ship is in, by heaving the lead. In sounding it is sometimes necessary to "deaden the vessel's way" by luffing and shaking the sails, or far better by heaving-to—(Plate 13).
- SPANKER.—See Plate 1.
- SPOKE.—A handle of the wheel.
- SPRING.—A rope, the end of which is fast at a distance, forming an acute angle to a line a-head or a-stern; it is either taken from aft forward, or from forward aft.
- SQUARE IN, OR SQUARE THE YARDS, is bracing the yards more at right angles with the keel; right square is right across the ship.

- SQUARE RIGGED is when a vessel has yards; also a vessel with a square fore-sail.
- SQUARE-SAILS are sails bent to yards athwart the mast.
- SQUARE THE YARDS.—Placing them exactly across the ship by the braces, and horizontally by the lifts.
- STAND BY.—Be ready.
- STANDING.—Fixed; permanent; also, a vessel sailing east on a wind would be said to be standing to the eastward.
- STAND ON.—Note, the word stand is only used when on a wind.
- STARBOARD SIDE.—The right hand side of the vessel when you are looking forward.
- STARBOARD TACK.—Having the starboard tacks a-board—(Plate 2).
- STARBOARD THE HELM.—Putting the helm to starboard.
- STATIONS.—At the word "stations," everyone runs to his allotted place. In tacking, the cook will be found at the fore-sheet and the carpenter at the main-tack, &c.
- STEERING is guiding a ship on her course; taking a turn at the wheel is called a *trick*, and each trick lasts two hours.
- STEERING SMALL is steering well; using the wheel but little.
- STERN BOARD.—Sailing stern foremost.
- STERN WAY.—Going a-stern.
- STIFF SHIP is a ship that will stand well upright under the pressure of a side wind.
- STOOD ON, STANDING ON, SAILING ON A WIND.—"Standing" cannot be applied with the wind aft, that is "running."
- STOPPING HER WAY.—The most effectual way is by "heaving-to," i.e., backing the main or fore-topsail; a vessel's way is often checked by backing the mizen-topsail, and in light winds, when on a wind, by luffing up, taking care she does not come about.
- STROP, STRAP.—A strop is a piece of chain or rope, the two ends connected or spliced together; sometimes it is made with a strand laid up into a rope (*grummet* or *gromet*, so that the join is scarcely visible; or by yarns, or spun yarn carefully laid round and round until sufficiently thick, and marled, this is a *selvages* strop.
- SWIFTER.—When a gung (set) of rigging exceeds two shrouds on

- each side, the foremost and after ones are often called swiftners—(Plate 2).
- SWING ROUND.**—Turn sharply.
- SWING YARDS.**—Brace sharply round the other way.
- TACK** is a chain or rope to haul down the foremost clew of a course (Plate 2); it is also the lower corner of a fore-and-aft sail. "On a Tack" is sailing with the tacks down.
- TACK-BOARDED, TACK ON BOARD, TACK A-BOARD,** is when the tack is hauled down. With the wind on the quarter, the main tack is generally raised to let the wind blow into the foresail.
- TACKED.**—Gone about; having turned the vessel round head to wind until the sails are full on the other side.
- TACKING SHIP** is the act of tacking or going about.
- TACKLE.**—A pulley consisting of two or more blocks.
- TACKS AND SHEETS** is an order to raise the clews of the courses in tacking; topsails, topgallant-sails, &c., have no tacks; both clews are secured by sheets, which are only let go when the sail is clewed up.
- TAKES A-BACK.**—A sail takes a-back by change of wind, or change in the direction of the vessel's head; the wind blows on the wrong side of the sails.
- TAKE A TURN** is making fast a rope, &c., temporarily or otherwise; "whip a turn" would mean taking a turn quickly.
- TAKE IN SAIL, REDUCE SAIL.**—To shorten sail, *i.e.*, either furling or reefing.
- TENDER SHIP.**—The reverse to "Stiff Ship;" when a vessel will readily yield (lay over) to her canvas.
- THIMBLE** is a metal ring, the outside concaved for a rope to lay round it; it resembles, on a large scale, the brass ring used to strengthen eyelet-holes in common use.
- THROAT OF SAIL** is the upper corner nearest to the mast of a gaff sail.
- THROWN A-BACK** is expressing emphatically the fact of being taken a-back. (*See* "Take a-back.")
- TILLER.**—A stout piece of wood or iron fitted to the rudder

- head for leverage to work the rudder. Merchant vessels of any size have their tiller fitted abaft their rudders, being more out of the way.
- TOO CLOSE.**—The vessel's head being too near the direction of the wind, causing the sails to shake.
- TOP.**—(Plate 2.)
- TOPSAIL HAUL.**—An order in tacking ship, when the main-sail is not set.
- TOPSAIL YARD** is the next yard above the lower yard. Merchant vessels often carry two topsail-yards to each mast, which is considered an immense improvement on the old fashion.
- TRAVERSE SAILING.**—A series of zig-zag courses to gain a point to windward.
- TRIMMED.**—Sails when trimmed are braced so as to spread their surface as nearly at right angles to the wind as possible.
- TRIM SAILS.**—To brace the yards to the best advantage to catch the wind.
- TRIM YARDS.**—Same as to trim sails.
- TRIP.**—Lift off the bottom.
- TROUGH OF THE SEA.**—In the hollow between two waves.
- TRYSAIL.**—A fore-and-aft sail with a gaff—(*See* Plate 19).
- TRYSAIL-MAST.**—A small extra mast abaft the lower mast to lace the luff of a trysail to, now almost entirely superseded by an iron jackstay.
- UNDER COMMAND.**—Under management; answering her helm properly.
- UNDER SAIL.**—Having sail set (little or much); under full sail, is carrying every sail that is useful; easy sail, is carrying little sail; "under plain sail," is without studding sails.
- UNDER THE LEE.**—Sheltered from the wind.
- UNDER WEIGH** is when the anchor is off the ground.
- UNSHACKLE.**—To disconnect by means of a link called a shackle. A chain cable has a shackle at every 15 fathoms.
- UNSHIP.**—Removing a thing from its place; unfixing it.
- UP COURSES.**—Hauling the courses up by the gear.



- VEER.**—To slack out.
- WAKE.**—Track left by the vessel's passage through the water.
- WAY.**—Speed; thus, sailing slowly is "little way;" sailing fast is "good way."
- WEAR.**—To wear is to change from one tack to the other—(See Plate 10).
- WEARING SHIP** is turning the ship round, head from the wind, when she will not stay—(See Plate 10).
- WEATHER.**—In small vessels a term used for the luff of a sail.
- WEATHER BRACE.**—All braces on the windward side of the ship are termed weather braces.
- WEATHER CLEW.**—(Plate 2.) The clew on the weather side. All square-sails have weather and lee clews, unless the wind is right aft, when they would be starboard, or port clews, as the case may be.
- WEATHER HELM** is when the tiller is put to windward; the wheel turned down to leeward.
- WEATHER LEECH.**—The leech on the weather side.
- WEATHER SIDE.**—The side nearest to the wind.
- WELL DOWN,** is close down. The usual way to get a tack well down is by shaking the sail. The sheet should not be hauled flat aft till after the tack is down.
- WHEEL.**—The wheel has eight spokes and a barrel, round which the tiller chains are taken. The wheel is turned down towards the port-side of the ship for starboard helm, and down to the starboard-side for port helm; down to windward for lee helm, and down to leeward for weather helm. For "helm down" it is turned down to windward, and for "helm up" down to leeward. It is sometimes supposed that "helm down" means turning the wheel down towards the helmsman; this absurdity will be apparent if we imagine two men at opposite sides of a wheel tugging against each other.
- WHIP.**—A single whip is simply a line rove through a block. In a double whip the purchase is increased by reeving one end through another block and securing the end aloft.

- WIND A-BEAM.**—The wind blowing across the vessel—(See A-beam).
- WIND AFT** is the wind blowing in a direction from the stern towards the head.
- WIND CHANGING.**—(Page 7.)
- WIND'S DIRECTION** is always reckoned from the point whence it blows.
- WIND IN THE CLEW.**—Like the mizen, the after clew of the main-sail, from its fore-and-aft position, will remain full longer than any other part of the sail.
- WINDWARD.**—Towards the point from which the wind blows.
- WINDWARD SIDE.**—See weather side.
- WORKING TO WINDWARD.**—Tacking from time to time in order to reach a point somewhere to windward.
- YARD A-BACK.**—See "a-back."
- YARD A-BOX,** is the sail attached to the yard being a-back to act on the vessel's head, turning it away from the wind; "boxing her off."
- YARD ARM.**—See Plate 2.
- YARDS.**—See Plates 1 and 2.
- YARDS BY.**—Yard-arms pointed towards the wind to reduce the pressure.
- YARDS FULL.**—Same as sails full.
- YARDS IN.**—Somewhat square; not so much fore-and-aft; more athwart the vessel.
- YARDS SQUARE.**—Yards at right angles with the keel; across the ship.
- YARDS SWUNG.**—The yards turned about by the braces.
- YARD TO THE MAST.**—The sail being a-back; blown against the rigging or mast.
- YAWL.**—A cutter.

# TEMPORARY RUDDER.

FIG. 1.

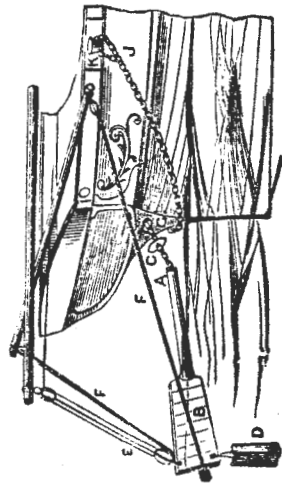
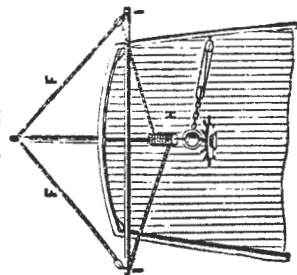
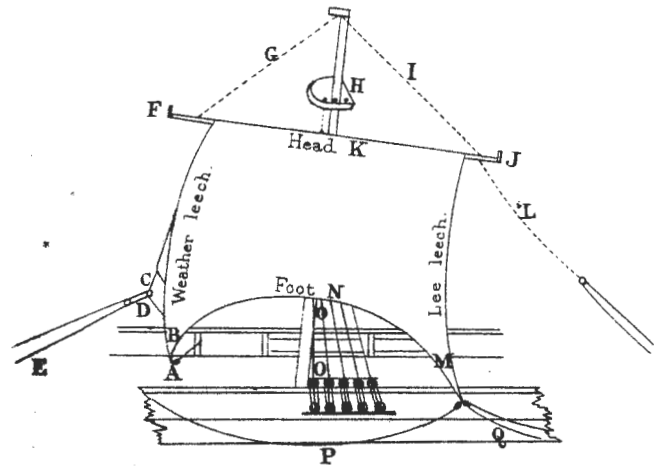


FIG. 2.



Pass the end of a Chain down the Rudder Trunk, and take it up over the stern; lash the end link to a piece of spar (A, Fig. 1) fitted with a blade (B); put a mouse (C) on the chain, leaving two or three links drift between it and the spar for play; sling a pig of ballast, or other weight, at the lower part of the blade (D); fit a block (E) for a tackle to trice it up clear of the screw in case of making sternway; fit guys (F); lower the whole over the stern, and heave the chain tight until the mouse (C) is jammed tight in the lower part of the trunk (G); secure the chain (I), and take them to the barrel of the wheel. When the end of a spar across the stern (H), and take them to the barrel of the wheel. When the main piece of the rudder cannot be unshipped, lash a large shackle to the end of the spar, and reeve the chain (J) through the shackle, drop the bight of the chain over the stern, and draw it tight under the counter, securing both ends in board at (K).—  
T. H. WITHERS, Examiner in Seamanship, London.—(*Nautical Magazine*, November, 1873.)



A Weather Tack. B Weather Clew. C Bowline Bridle. D Bowline-lizard. E Bowlines. F Weather Yard arm. G Weather lift. H Top. I Lee lift. J Lee Yard arm. K Head of Sail. L Brace Pendant. M Lee Clew. N Foot of Sail. O Foremost Swifter. P Lee Tack. Q Sheet.

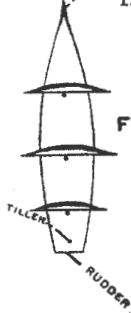
Helm Starboard.

FIG. 1.



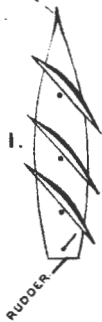
Helm Port.

FIG. 2.



Helm down.

FIG. 1.



Helm up.

FIG. 2.





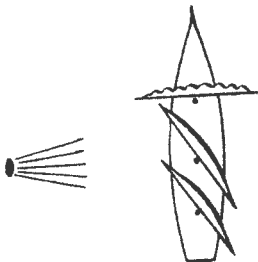
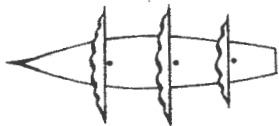


FIG. 1.



FIG. 2.







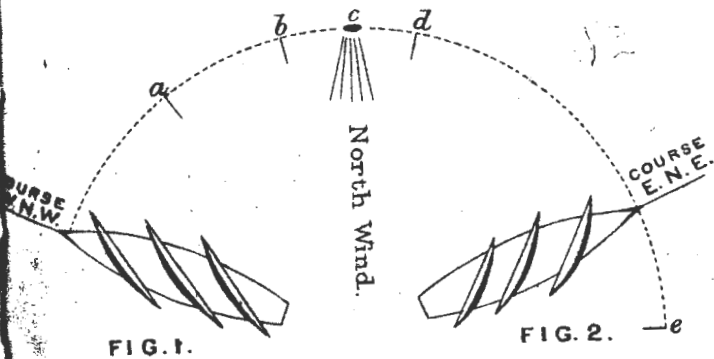


FIG. 1.

FIG. 2.



FIG. 1.

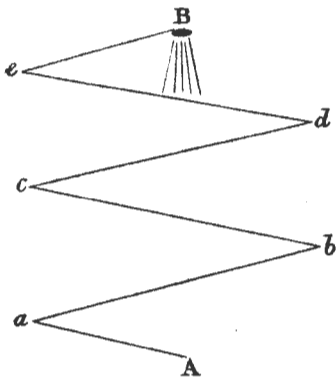


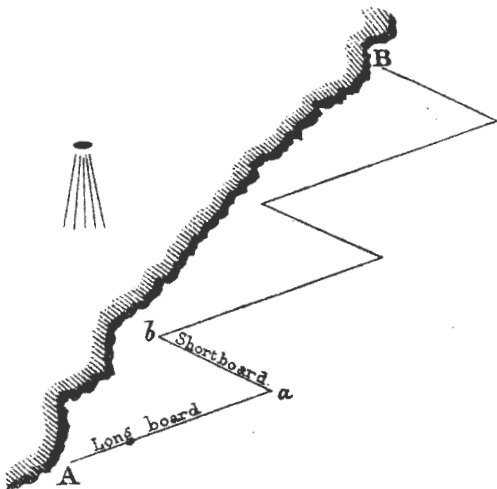
*a*

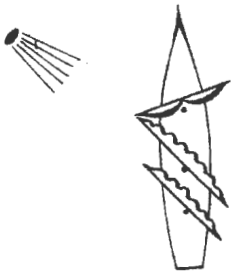
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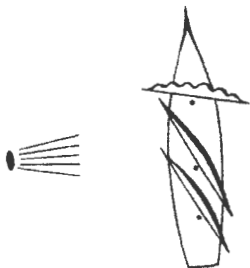


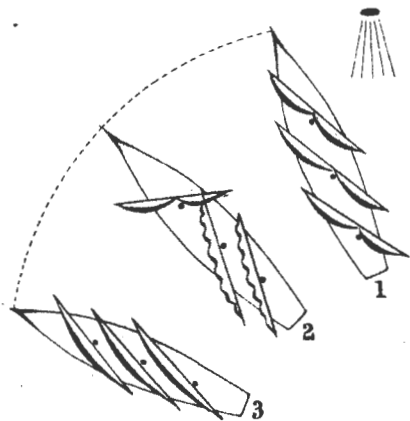
FIG. 2.

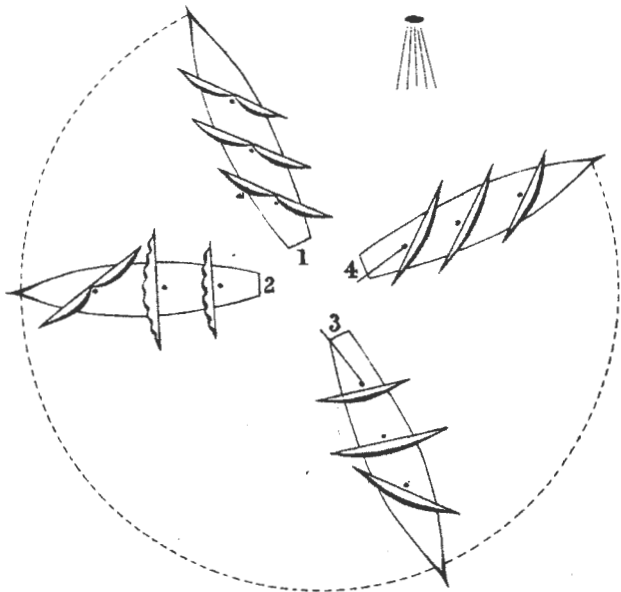














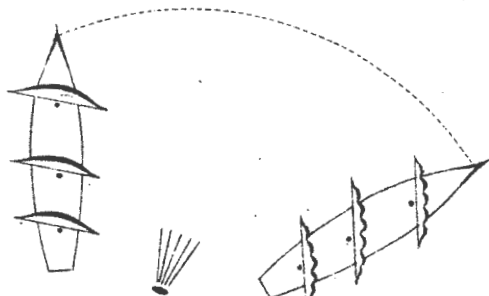


FIG. 1.

FIG. 2.

FIG. 1.



FIG. 2.

