Nav
558
83

Forbes - New rig for Steamers - 1883

Digitized by Google

Nav 558.83

HARVARD COLLEGE
LIBRARY

TRANSFERRED
FROM THE
GRADUATE SCHOOL
OF
BUSINESS ADMINISTRATION

Digitized by Google

MOE

File

# NEW RIG

FOR

# STEAMERS:

## ABOUT 368 FEET OVER ALL.

BY

R. B. FORBES.

BOSTON:
1883.
JAMES F. COTTER & CO., PRINTERS,
14 STATE STREET.

Digitized by Google

Na 58.83
✓

HARVARD COLLEGE LIBRARY
RECEIVED THROUGH THE
GRADUATE SCHOOL OF
BUSINESS ADMINISTRATION
1934

Tuttle
A

Transferred by Business School Library
to Harvard College Library

Digitized by Google

# NEW RIG FOR STEAMERS:

## Say 368 Feet Over All.

## TO HAVE FOUR IRON OR STEEL MASTS.

---

The mizzen or after-mast to be 124 feet long, to carry a spanker or try-sail to brail in on boom and gaff and to be fitted to lower when required; a gaff-top-sail to hoist by hoops on the mast, or to have a yard and be hoisted from the deck.

The next mast, to be called the main, to carry three square sails, namely, a top-sail the drop of which will be about 27 feet, and the foot lashed to the lower yard 84 feet. I say "*drop*" because the sail is fitted to haul down to the lower yard and be guided down by jack-stays and down-hauls and so be furled by few men. There will be no main course. The top-gallant-sail lowers on the mast by means of a tub parrel and furls to the top-sail-yard; the royal lowers to the top-gallant-yard and is there furled or becketed as formerly done for royals. There is a main-stay, a top-mast-stay and a stay leading from above the royal yard to the "middle-mast," so that in lowering the royal and the top-gallant-sail close down to the top-sail-yard there is no stay to interfere. The lower yard is hung to a short crane-like attachment and parrels directly to the lower mast above the stay and the rigging, so that the yard can be braced as nearly fore-and-aft as it can be secured by braces and lifts. The top-sail-yard is also parrelled to the mast above the rigging and does not hoist or lower.

The middle-mast is of the same dimensions as the main-mast, say, about 168 feet long by 28 inches in the partners, tapering gradually to 12 at the upper end. This mast will carry a large stay-sail abaft it so fitted as to come down to

Digitized by Google

the deck, and before it there will be a large lower stay-sail with a bonnet, and an upper one fitted to come down to the deck.

The fore-mast is substantially like the main-mast, so far as the top-sail, top-gallant-sail and royal are concerned; but, it has in addition a square fore-sail fitted to set from the deck. The fore-mast being about 81 feet from the stem, and 154 in length, there will be ample space to set two fore-and-aft-sails to advantage when the fore-sail is not set. There will be fore-and-aft-stays from mast-head to mast-head.

It will be seen by an examination of the plans, that in going to windward in strong breezes, all the fore-and-aft sails come to the deck to furl. The two top-sails furl on the lower yard, and the two upper sails — called royal and top-gallant sails — furl on the top-sail-yard; at this point there will be the three yards close together. Apart from this nucleus, if I may so call it, the yards being braced very sharp, there will be little top hamper to arrest progress. There may be short cross-trees near the eyes of the rigging, to afford a footing to men going up to furl the sails, and life-lines, but no tops. As ocean steamers often get disabled in their machinery, there seems to be a necessity for considerable canvas. In coming to the westward in the winter, and in going eastward in the early spring, the yards on the main-mast may be kept on deck, perhaps all the yards, still leaving a considerable amount of fore-and-aft canvas available, and, perhaps, it will be well in the winter season to go without the royals. The three stay-sails in the centre of the ship come to the deck, two on movable stays which trice up by tackles to the point where the standing-stay sets up; when to be taken in these sails are first lowered to the mast, then the tricing tackle being let go the sail comes down to the deck, guided by a ring or rings, travelling on a rod, or batten, fixed to the mast. The mizzen or try-sail may have reefs in it, if necessary. The large stay-sails should have bonnets. There are jack-stays set up by lanyards, which are attached to the top-sail and lower yards, say three on each side as shown, the head of the top-sails is guided down by rings or bull's-eyes attached to it, so that if all the six tricing tackles are let go, and

Digitized by Google

the down-hauls pulled upon, the bulk of the sail comes down to the lower yard, and can be easily furled; the fore-sail comes to the deck by a similar process; in long stretches, or in trade winds, the fore-sail may be bent to the yard.

The principal advantages claimed for this rig are that there is no going aloft to furl any but the square sails, and the longest side of these, the foot, is always bent to the yard below it; there are no sheets and clew-lines, and all can be easily taken care of by few men. It is well understood by seamen brought up in steamers that to clew up and furl square sails, fitted after the old plan, is a very difficult matter when it has to be done with a head wind. A passenger steamer competing with other fast ships must go straight, she cannot afford to change her course for one moment to accommodate the men in furling sails. This rig has fewer ropes, and the yards can be braced nearly fore-and-aft.

It is probable that in fully maturing my plans, I shall arrange something like cross-trees for the men to get a footing upon in furling top-sails. As these sails come down squarely to the lower yards, guided, in a great measure, by the jack-stays, fewer men can gather up the canvas and furl it, as compared to clewing up and bunting the old style sail.

It is not expected that the eye of the old seaman will be attracted by the beauty of the furl any more than that the eye of the old naval officer will be attracted by the symmetry of the modern war ship. In these days of iron and steel for masts and yards, we must forego any attempt at beauty, and we must stick to what is the simplest and best for modern sailors. The only question in my mind is, whether masts, some of which are nearly 170 feet in length, and say 26 or 28 inches in diameter, can be made stiff enough, and at the same time not be too heavy; but when I look back a few years to what I saw in Liverpool I cannot entertain much doubt of the practicability of making them; it was there I saw the main-mast of a sailing ship, of about 1,500 tons, hoisted in with the top-mast and all the rigging attached.

As bringing courses on deck is something not generally done, I will describe my plan:—To the head of the sail there are six purchases or tricing tackles, the two centre ones are

Digitized by Google

attached to a club spar, say about 6 or 8 feet long; to the foot of the sail is attached another club spar of the same length; leading from the yard to the foot spar are two jack-stays, loosely attached, and from the head-earing cringles there are also jack-stays leading to the foot spar. To take in this sail the tricing-lines of the head-earing cringles are to be let go, thus bringing the two outer corners of the sail down to the foot spar, then lower away on the centre tricing lines, and stow the sail on deck. It will be seen that a few men can take care of a fore-sail, by these means, much more easily than it can be done by clewing up, and furling aloft after the old style. I must now be understood as speaking for the sailors of a passenger steamer, which, like angels visits, are few and far between, and not for the well-drilled crew of a ship-of-war.

The support of the top-sail-yard, and the manner of arranging the parrels of all the yards is illustrated on a separate sheet; an examination of this plan will show that the lower yard hangs to a crane which swings as the yard moves, and on the same angle; the top-sail-yard is hung by a wire rope tye to the mast-head; this rope passes through a hole in the neck of the parrel of the top-gallant-yard at the point A, and the royal yard is parrelled directly to the said tye. All the yards must, of course, have the usual means to facilitate their working, and the lifts of the top-sail-yard should come on deck so as to assist in holding the yard firmly in place.

It will be seen that when the top-gallant-sail and royal are to come in, the yards will run down freely to a point very near to the top-sail-yard; the heavier yard of the two should have the lifts so arranged as to hold its own weight, and not bring too much weight on the top-sail-yard, and its tye. The upper part of the mast, for about 60 feet, has no stay, it may be well to have the back-stays to set up by tackles, so that when carrying sail hard there will be ample support, and, also, so that when the top-sail-yard is required to be braced very sharp, the sails being furled, there shall not be too much bearing on the lee back-stays.

Digitized by Google

## NOTE.

It will be desirable to have a main-sail, which can be used when machinery becomes disabled, also receptacles at the foot of the two square-rigged masts, wherein the courses can be stowed securely out of the way of the wash of the sea, and in such cases the tricing-lines and jack-stays of courses can be unhooked and stowed away.

Digitized by Google

Digitized by Google

# NOTE.

---

## Comparative Number of Running Ropes.

| | | | |
|---|---|---|---|
| The Old Rig.— | Fore-sail | 11 | |
| | Top-sail | 14 | |
| | Top-gallant-sail | 8 | |
| | Royal | 4 | |
| | | | 37 |
| New Rig.— | Fore-sail | 15 | |
| | Top-sail | 12 | |
| | Top-gallant-sail | 4 | |
| | Royal | 3 | |
| | | | 34 |

The jack-stays to fore-sail, numbering four, are included, as they are running ropes.

The jack-stays of top-sail are permanent ropes, and not included.

In many ships the old style top-sail has two sets of halyards, and top-sails often have spilling lines.

Digitized by Google

Nav 558.83
New rig for steamers:
Widener Library 004870316
3 2044 080 602 725

Digitized by Google