According to the present positions of the masts of a ship, the sails on the fore-mast are generally not capable of be­ing so sharply braced as those on the main-mast ; but as theory and practice, as may be instanced in fore-and-aft rigged vessels, concur in fixing the limits to which it would be desirable to brace the yards, within even what can gene­rally be attained on the main-mast, much of the force of the wind on the sails of the fore-mast must be lost ; and as this less sharpness of bracing, common for the yards on the fore-mast, is even found to be necessary in many ships, to enable them to carry their helm sufficiently a-weather, it would appear that the position of the fore-mast is too far forward, and that moving it aft would be advantageous ; be­sides the good effect it would have, as has been showm, in diminishing the violence of the pitching motion.

The position of the fore-mast appears to have remained nearly the same as it was determined in the early part of the last century, although many of the reasons which then fixed it at about one ninth the length of the ship from the stem have ceased to exist. Our ships are now longer, and there is consequently room for working the sails, without those of one mast coming in contact with, or destroying the effect of the wind on, those of the other. The after-parts of the hull above water are very considerably reduced, and do not therefore render so great a proportion of head-sail necessary to counterbalance the effect of the wind on them. The bodies of the ships are, from the increase of the dimen­sions, much finer abaft, and consequently the resultant of the resistance is farther aft. From these considerations, and from the fact that it is found that complaints are made of ships carrying lee helms, it appears not improbable that the generality of our ships would be improved by an alteration in the position of their fore-masts.

The forms of our ships, and indeed those of some of the more modern French vessels of which we are possessed, have approximated more to that recommended by Chap­man, and since his time adopted by the Swedes and Danes, than to that of the old French bodies, which were for such a series of years the chief guides of the English ship-builder. The marked characteristics of the old French body were, a flat floor, with a sharp and, beneath the water, hollow fore-part, and a comparatively very full after-part. The character of the Swedish construction is, the rising floor, full fore-body, and extremely fine after-body. The genera­lity of the English ships of the present day are built with the rising floor, and approximating more, towards the extremities, to the Swedish than to the old French characteristics. It seems therefore but reasonable that the positions of the masts of our ships should partake of the principle which appears to have dictated the alteration in the form of their bodies. With this view, and for a general example as to the positions of ships’ masts, and of the ideas of various construc­tors, the following table has been formed, of the positions of the masts of the vessels contained in Chapman’s “ large work,” of some of the present Swedish ships, of the various classes of English ships, and of several other vessels which have either some peculiarity in this feature of their construc­tion, or are remarkable for an excess of any good or bad qua­lity dependent on it. The other data in the table are neces­sary for completing the comparisons which may be made.

@@@1 An increase in the rakes of the stems.

*@@@3* The fore-mast raked four inches in ten feet.

@@@a On an even keel.

Table of the Stations of Masts in Ships.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Ships' Names.** | **No. of Guru.** | **Length on the Load Water-line.** | Distances of the Masts abaft the foremost extremity of the Load Water-line. | | | **Ratio of the Distance of the Masts from forward, to the length of the Load Water-line.** | | | **Ratio of Difference of Draught of Water to the Mean Draught of Water.** |
|  |  | **Fore-mast.** | **Main-mast.** | **Mizen-mast.** | **Fore-matt. Main-mast.** | | **Mizen-mast.** |
| Swedish ships, from Chapman's large work......................................{ |  | **Feet.** | **Feet.** | **Feet.** | **Feet.** |  |  |  |  |
| 110 | 205∙2 | 28∙8 | 118∙5 | 174·0 | ·1398 | ·579 | ·848 | ·094 |
| 94 | 190∙1 | 27∙0 | 112∙2 | 164·1 | ·1402 | ·880 | ·857 | ·085 |
| 80 | 182∙1 | 25∙7 | 105∙5 | 154∙2 | ·1402 | ·578 | ·845 | ·089 |
| 74 | 177∙9 | 24∙8 | 102∙7 | 150·0 | ·1398 | ·576 | ·848 | ·083 |
| 66 | 174∙0 | 24∙3 | 100∙0 | 146·8 | ·1400 | ·578 | ·844 | ·082 |
| 52 | 164∙1 | 22∙9 | 93∙2 | 138·4 | ·1390 | ·569 | ·845 | ·103 |
| 40 | 149∙6 | 23∙3 | 86∙5 | 125·2 | ·1570@@1 | ·580 | ·840 | ·100 |
| 32 | 125∙3 | 19∙5 | 72∙5 | 104·4 | ·15501 | ·578 | ·831 | ·093 |
| 20 | 113∙6 | 17∙5 | 65∙5 | 94·6 | ·15401 | ·578 | ·837 | ·142 |
| Carl XIII., Swedish | 80 | 177∙9 | 24∙3 | 102∙0 | 148·6 | ·1380 | ∙578 | ·858 | ·108 |
| Corvette, Swedish | 20 | 108∙5 | 15∙6 | 61∙7 | 90·8 | ·1440 | ·570 | ·835 | ·120 |
| The Chapman, Swedish |  | 149∙8 | 28∙0 | 89∙5 | 124·2 | ∙187@@2 | ·598 | ·835 | ·000@@3 |
| President, French | 46 | 159∙5 | 24∙0 | 87∙5 | 132·2 | ·150 | ·550 | ·831 |  |
| Do. altered to the Piedmontaise | 46 | 159∙5 | 21∙0 | 87∙5 | 132∙2 | ·132 | ·550 | ·831 | ... |
| Comet, bomb |  | 109∙0 | 13∙4 | 61∙7 | 90∙5 | ·123 | ·565 | ·831 | ·0003 |
| Do. as altered |  | 109∙0 | 17∙4 | 61∙7 | 90∙5 | ·162 | ·565 | ·831 | ... |
| Pearl, Mr Sainty | 18 | 114∙7 | 18∙7 | 64∙0 | 97∙4 | ·163 | ·557 | ·850 |  |
| Do. altered by his request | 18 | 114∙7 | 18∙7 | 66∙5 | 99·4 | ·163 | ·577 | ·863 |  |
| Caledonia | 120 | 205∙25 | 25∙0 | 113∙0 | 171·7 | ·122 | ·552 | ·835 | ·057 |
| Asia | 84 | 192∙25 | 22∙3 | 109∙0 | 160·2 | ·116 | ·568 | ·832 | ·053 |
| Southampton | 60 | 174∙0 | 20∙7 | 97∙2 | 146·7 | ·119 | ·560 | ·845 | ·048 |
|  | 46 | 159∙7 | 21∙2 | 85∙6 | 132·3 | ·133 | ·535 | ·832 | ·076 |
| Leda | 46 | 16∙0 | 18∙8 | 85∙3 | 128·7  123·8 | ·124 | ·565 | ·854 | ·089 |
| Euryalus | 42 | 146∙0 | 17∙7 | 82∙2 | ·124 | ·503 | ·848 | ·104 |
| Sapphire | 28 | 120∙2 | 14∙7 | 68∙7 | 102·4 | ·122 | ·508 | ·850 | ·066 |
| Orestes. | 18 | 111∙25 | 14∙5 | 64∙7 | 97·4 | ·129 | ·573 | ·864 | ∙060 |
| Queen | 110 | 202∙2 | 24∙33 | 118∙0 | 175∙84 | ·121 | ·585 | ·870 | ∙085 |
| Vanguard | 80 | 188∙2 | 25∙7 | 110∙9 | 164∙3 | ·137 | ·584 | ·823 | ... |
| Vernon | 52 | 176∙7 | 27∙6 | 104∙5 | 154∙7 | ·156 | ·590 | ·874 |  |
| Pique | 36 | 160∙6 | 23∙5 | 94∙4 | 139∙5 | ·146 | ·587 | ∙867 | ... |
| Vestal | 26 | 131∙0 | 20∙3 | 77∙3 | 114∙6 | ·155 | ·590 | ·874 | ... |
| Rover | 18 | 109∙8 | 15∙1 | 64∙8 | 96∙2 | ·138 | ·590 | ·874 | ... |
| Inconstant | 36 | 160∙0 | 20∙0 | 90∙33 | 138∙0 | ·125 | ·504 | ·860 |  |
| 465 tons |  | 115∙0 | 16∙6 | 65∙0 | 99∙2 | ·145 | ·565 | ·861 |  |
| 435 tons |  | 116∙6 | 16∙8 | 66∙0 | 98∙0 | ·144 | ∙570 | ·840 |  |
| ... | 114∙8 | 16∙2 | 67∙1 | 96∙4 | ·142 | ·584 | ·840 | ... |
| 400 tons | ... | 108∙5 | 16∙9 | 66∙2 | 92∙7 | ·156 | ·610 | ·800 | ... |