OF MERCHANT SHIPPING.—*Continued.*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ***Java,* Ship.** | | ***Elizabeth,* West India Ship.** | ***Diadem,* Free Trailer.** | ***Columbia,* Bri,-, Free Trader.** | ***Truine,* Cull i er Brig.** | ***Bon to.* Collier Brig.** | **J∏7∕wm, Collier Brig.** | ***Gent,* Scuouncr.** | ***Hawk,* Schooner.** | ***Liverpool.* Schooner.** | ***Alert,* bloop.** | ***Dtbcn,* Sloop.** | ***Fanny,* Sloop.** | ***Ann,* Sloop.** |
| **52.** | **r in** | | **14-83** |  |  |  |  |  |  | **■** | **■** |  |  |  |  |
| **t 20’33** | | **17 58** |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | **10’66** | **9\*08** |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | **10’21** | **(1) 8’83** |  |  |  |  |  |  |  |  |  |  |  |  |
| **53** | **-** | **9 25** |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | **716** | **(m) 7’62** |  |  |  |  |  |  |  |  |  |  |  |  |
|  | ***'*** | **408** |  |  |  |  |  |  |  |  |  |  |  | **•** |
| **51** | ***—*** | | **(n) 5 37** |  |  |  |  |  |  |  |  |  |  |  |  |
| **55** |  | |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | **12’83** | **11’25** |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | **12-71** | **(o) 1112** |  |  |  |  |  |  |  |  |  |  |  |  |
| **56.** |  | **11∙9∣ 11’25**  **8 37** |  |  |  |  |  |  |  |  |  |  |  |  |
| **(p) 1066 (∙l) 9’79** |
| **57** | **533** | |  |  |  |  |  |  |  |  |  |  |  |  |
| **5H.** |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **5,J∙** | **825** | |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **60.** | **—** | | **-** | **1C∙G6** | **II \*58** | **13-83** | **—** | **-** | **9-2∣** |  |  |  |  |  |  |
|  |  | — | **—** | **11\*66** | **11-08** | **»-GÖ** |  | **—** | **7 04** |  |  |  |  |  |  |
| **61.** |  | **—** | **—** | **115** | **10-9Î** | **9-5** |  | **—** | **G∙79** |  |  |  |  |  |  |
|  | **—** | **·—** | **10-75** | **10∙37** | **9 ”25** |  |  | **6 0⅛** |  |  |  |  |  |  |
|  |  | — | **—** | **100** | **95** | **8 61»** |  | **—** | **6-16** |  |  |  |  |  |  |
|  |  | **—** |  | **687** | **816** | **6’41** |  | **—** | **3 87** |  |  |  |  |  |  |
| **62.** | **—** | |  | **18-5** | **15-81** | **14’16** |  | **—** | **1016** |  |  |  |  |  |  |
|  |  | **—** | **—** | **9-29** | **9-66** | **H∙25** |  |  | **6-33** |  |  |  |  |  |  |
| **63-** |  | **—** | **—** | **9-46** | **9-83** | **841** |  | **—** | **6-5** |  |  |  |  |  |  |
|  | **—** | **—** | **912** | **8 75** | **7’79** |  |  | **6’16** |  |  |  |  |  |  |
|  |  | **—** | **—** | **7-75** | **6 5** | **3M** |  |  | **45** |  |  |  |  |  |  |
|  |  | **-** | ***—*** | **383** | **2 83** | **Γ33** | **—** | **—** | **ι∙o** |  |  |  |  |  |  |
| **64.** | **i -** | | **5’87** |  |  |  |  |  |  |  |  |  |  |  |  |
| **1 18 66** | | **16-33** |  |  |  |  |  |  |  |  |  |  |  |  |
|  | **( -** | | **9 5** |  |  |  |  |  |  |  |  |  |  |  |  |
| **Λ** |  |  | **(r) 9∙B6** |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | **-** | **(∙) 8∙9l** |  |  |  |  |  |  |  | **...** |  |  |  |  |
| **6f∙** |  | **10'73** | **10-25** |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | **10 4** | **10’0** |  |  |  |  |  |  |  |  |  |  |  |  |
| **67∙** |  | **9∙25** | **10-0** |  |  |  |  |  |  |  |  |  |  |  |  |
| Gm. |  | **fi∙91**  **. 25** | **Ö12** |  |  |  |  |  |  |  |  |  |  |  |  |
| ***&J.*** | **164** | |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **70.** | **0∙87** | |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **71.** | ***f* 16 5** | | **lβ∙0** | **15’1** | **15’83** | **I5∙5** | **12'5** | **11 5** | **80** | **7,5** | **9∙33** | **80** | **9Ό** | **583** | **5-5**  **5 75** |
|  | **∖ 16∙5** | | **16,5** | **161** | **150** | **155** | **12-5** | **13δ** | **8δ** | **8\*25** | **966** | **7-5** | **90** | **6 33** |
|  |  | r *τ°.* | **G∙33** | **5∙25** |  |  | **2’5** | **366** |  |  |  | **dose ford.** | **don· ford** | **Clo»e iur<∣** |  |
|  |  | **5’0** | **3∙33** | **4 58** | **4’83** | **2 33** | **2 5** | **275** | **1 83** | **3 25**  **1∙75** |
| **72.** |  | | **5Ί6** | **4,5** | **4’33** | **2 75** | **2∙5β** | **3∙t G** | **4'16** | **4\*33** | **166** | **1 87** | **1'83** | **Oo** |
|  |  | **. 7'41** | **5’16** | **6’66** | **dose aft.** | **close aft.** | **dose ait.** | **close aft.** | **close afc.** | **Close aft.** | **done aft** | **Clo∙e aft.** | **Close aft.** | **do⅛e aft.** |
|  |  | **6-66** | **4-75** | **4 08** | **4 46** | **3 33** | **3 5** | **3 21** | **271** | **34** | **1 91** | **3 0H**  **325 1∙75 3∙0β** |
|  | **f 7(W** | | **6∙4l** | **5 33** | **—** | **3 33** | **2’62** | **3 75** | **4 66** | **4-9** | **2 33** | **2 5⅛j** | **2\*β3** | **1 91** |
|  | **i** | | **5-25** | **4-5** | **Ms** | **2 83** | **2-66** | **3∙G6** | **4-25** | **4 33** | **16G** | **1∙91** | **I 83** | **0-5** |
| **74**  **75.** | **1 f∙5** | | **ft,25** | **G-83** | **—** | **483** | **4-21** | **4-58** | **558** | **5-75** | **3∙62** | **3U** | **35** | **2 0** |
| **22 54**  **1∙83** | | **20∙0**  **1 ‘29** | **21-71** | **19-37** | **1716** | **1433** | **15 71** | **11∙9** | **Pump aft.** | **10 99** | **SO** | **10-21** | **708** | **Pump aft.** |
| **76.** | **0 18** | | **0∙∙21** |  |  |  |  |  |  |  |  |  |  |  |  |
| **< 1** | **18 5** | | **15 66** | **15 5** | **14-33** | **15∙0** | **13∙5** | **120** | **14∙0** |  |  |  |  |  |  |
| **76.** | **155** | | **Il 83** |  |  |  |  |  |  |  |  |  |
| **79-** | **β,** | | **18** | **19** | **16** |  |  |  |  |  |  |  |  |  |  |
| **80** | **—** | | **—** | **None.** | **None.** |  |  |  |  |  |  |  |  |  |  |
| **81.** | **—** | | **11** | **10** | **10** |  |  |  |  |  |  |  |  |  |  |
| **M2**  **83** | Coa1j. | | **1⅛**  **Sugar and** | **6⅛ Mi>cclla-** | **β 4\***  **Sugar.** | **coals.** | **coali.** | **coals.** | **630 Boxes** | **540 Boxes** | **Salt** | **coals.** | **516 Qrs. of** | **Coala.** |  |
| **M∙ ►5. 8b.** | **G09 None.** | | **393\* None.**  **2** | **544 None.**  **12** | **422 None.**  **10** | **340 None.** | **20G**  **None.** | **250 None.** | **of Oranges.**  **55**  **10** | **of Oranges.**  **47»**  **15** | **104 None.** | **8∣J**  **None.** | **Ba71ey.**  **963 None.** | **65 None,** | **31 Nine.** |
| **«7.** | **Sunderland.** | | **Grenada.** | **Siam.** | **Mauritius.** | **→** | **—** |  | **StMichaeΓs-** |  |  |  |  |  |  |
| **⅛⅛** |  | **44.859** | **32,787** | **38,285** | **28,317** | **21,690** |  |  | **G8G7** |  |  |  |  |  |  |
|  |  |  |  | **6045** | **6401** | **—** | **6017** | **3936** | **2148** |

(k) At upper part of the deck next below the upper deck.

(l) At under part of half deck.

(m) At 3 feet below half deck.

(n) At 6 feet below the half deck.

(o) At under part of half deck.

(p) At 3 feet below the half deck.

(q) At 6 feet below the half deck.

(r) At 3 feet below the upper deck.

(s) At lower aide of half deck.

the rise of water in the box remembering that every 1/8 of an inch rise in the box indicates 50 tons increase to the displacement of the vessel Thus suppose, when the model swims at the draught of water wished for the vessel, that the water has risen an additional 1/4 of an inch more than at the launching draught of water; as it is known that the vessel will carry 50 tons for every 1/8 of an inch rise in the box, she will evidently carry 100 tons of cargo at the draught of water to which she now swims.

An additional advantage may be gained by observing the weights used according to the scale already mentioned, that is, 13 ounces to re-

present 5 tons. It is, that the vessel's lading may be so apportioned as to bring her to the exact trim forward and aft that may be wished Suppose, for instance, a steam-boat to carry a 35 horse power engine ; place 91 ounces at the centre of weight given by the engineers in the space allotted for the engine-room; then apportion the other weights, as crew and effects, ship’s stores, cargo, &c. over the respective spaces alloted for their reception. It will be seen whether the vessel, as formed, will bear them there, and swim at the trim intended; if not, either the vessel, the weights, or the trim, must be altered.

In consequence of the minuteness of the scale, and of the difficulty of observing it on account of the attraction of cohesion of the water it would be better, and very easy, to have an index or rather two, one forward and the other abaft, moving on a fulcrum over the edee of the box, and pointing to a graduated arc, which might, by lengthening the index-arm of the lever, indicate to any degree of exactness or mi­nuteness required. Of course the inner arm of the lever would rise and fall with the model.

The foregoing remarks will only apply to a box of the exact dimensions given, that is, one of which every 1/8 of an inch in depth will give a solid content of sea-water, weighing, acorrding to the scale, 50 tons, under the supposition that a cubic inch 1/8 water weighs ·594 of an ounce. If other than sea-water is used, a different calculation must be made. The water used should be that in which the vessel is to be