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(For London Office only.)

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

|  |                                  |   |                              |                              |   |
|--|----------------------------------|---|------------------------------|------------------------------|---|
| Ship's Name<br><b>EMPIRE MOMBASA</b>   | Official Number<br><b>181621</b> | Nationality and Port of Registry<br><b>BRITISH<br/>SUNDERLAND</b> | Gross Tonnage<br><b>7319</b> | Date of Build<br><b>1945</b> | Port of Survey<br><b>Sunderland</b>   |
| Moulded Dimensions: Length <b>425.79</b> Breadth <b>56.0</b> Depth <b>38.052</b><br>TO E OF RUDDER STOCK |                                  |   |                              |                              | Date of Survey<br><b>While building</b>   |
| Moulded displacement at moulded draught = 85 per cent. of moulded depth <b>32.3</b> = <b>17120</b> tons  |                                  |   |                              |                              | Surveyor's Signature<br><b>R. Wilson</b>  |
| Coefficient of fineness for use with Tables <b>77.7</b>  |                                  |   |                              |                              | Particulars of Classification<br><b>100 A1.<br/>with freeboard<br/>(Contemplated)</b> |

|  |  |   |
|--|--|---|
| <b>DEPTH FOR FREEBOARD (D).</b>              | <b>DEPTH CORRECTION.</b>   | <b>ROUND OF BEAM CORRECTION.</b>  |
| Moulded depth ... <b>38.052</b>              | (a) Where D is greater than Table depth<br>(D - Table depth) R = <b>(38.11 - 38.38) 3 = +29.19</b> | Moulded Breadth (B) <b>56.0</b>   |
| Stringer plate ... <b>.70</b> ... <b>.06</b> | (b) Where D is less than Table depth (if allowed)<br>(Table depth - D) R = <b>9.73</b>             | Standard Round of Beam = $\frac{B \times 12}{50} = \frac{56 \times 12}{50} = 13.44$   |
| Sheathing on exposed deck <b>✓</b>           | If restricted by superstructures <b>✓</b>  | Ship's Round of Beam <b>EQUIV.</b> = <b>14.26</b>   |
| $T \left( \frac{L-S}{L} \right) =$           |  | Difference <b>.82</b>   |
| Depth for Freeboard (D) = <b>38.11</b>       |  | Restricted to <b>✓</b>  |
|  |  | Correction = $\frac{\text{Diff}^\circ}{4} \times \left( 1 - \frac{S_1}{L} \right) = \frac{.82}{4} \times \left( 1 - \frac{16.33}{42} \right) = \frac{.82}{4} \times .6367 = .131$ |

|                                       |  |  |  |  |  |   |
|---------------------------------------|--|--|--|--|--|---|
| <b>DEDUCTION FOR SUPERSTRUCTURES.</b> |  |  |  |  |  | Standard Height of Superstructure <b>7'-6"</b>                |
|                                       |  |  |  |  |  | " " R.Q.D. <b>6'-0"</b>                                       |
|                                       |  |  |  |  |  | Deduction for complete superstructure <b>42</b>               |
|                                       |  |  |  |  |  | Percentage covered $\frac{S}{L} = \frac{16.33}{42} = .389$    |
|                                       |  |  |  |  |  | " " $\frac{S_1}{L} = \frac{16.33}{42} = .389$                 |
|                                       |  |  |  |  |  | " " $\frac{E}{L} = \frac{11.65}{42} = .277$                   |
|                                       |  |  |  |  |  | Percentage from Table, Line A. <b>5.82</b>                    |
|                                       |  |  |  |  |  | (corrected for absence of forecastle (if required)) <b>✓</b>  |
|                                       |  |  |  |  |  | Percentage from Table, Line B. <b>✓</b>                       |
|                                       |  |  |  |  |  | (corrected for absence of forecastle (if required)) <b>✓</b>  |
|                                       |  |  |  |  |  | Interpolation for bridge less than .2L (if required) <b>✓</b> |
|                                       |  |  |  |  |  | Deduction = <b>42 x .0582 = -2.44</b>                         |

|                                  |                         |  |            |                   |                      |
|----------------------------------|-------------------------|--|------------|-------------------|----------------------|
|                                  | Mean Covered Length (S) | Equivalent Enclosed Length (S <sub>1</sub> ) | Height     | Height Correction | Effective Length (E) |
| Roop enclosed ... <b>✓</b>       | <b>35.29</b>            | <b>35.29</b>                                 | <b>3.0</b> | <b>3.0</b>        | <b>17.64</b>         |
| " overhang ... <b>✓</b>          | <b>24.5</b>             |  |            | <b>6.0</b>        |                      |
| R.Q.D. enclosed ... <b>✓</b>     |                         |  |            |                   |                      |
| " overhang ... <b>✓</b>          |                         |  |            |                   |                      |
| Bridge enclosed ... <b>✓</b>     |                         |  |            |                   |                      |
| " overhang aft ... <b>✓</b>      |                         |  |            |                   |                      |
| " overhang forward ... <b>✓</b>  |                         |  |            |                   |                      |
| F'cle enclosed ... <b>✓</b>      | <b>34.25</b>            | <b>34.25</b>                                 | <b>7.0</b> | <b>7.0</b>        | <b>31.96</b>         |
| " overhang ... <b>✓</b>          |                         |  |            | <b>7.5</b>        |                      |
| Trunk aft ... <b>✓</b>           |                         |  |            |                   |                      |
| " forward ... <b>✓</b>           |                         |  |            |                   |                      |
| Tonnage opening aft ... <b>✓</b> |                         |  |            |                   |                      |
| " " forward ... <b>✓</b>         |                         |  |            |                   |                      |
| Total ... <b>✓</b>               | <b>69.54</b>            | <b>69.54</b>                                 |            |                   | <b>49.60</b>         |

|                               |                   |   |   |               |                 |                    |   |   |               |
|-------------------------------|-------------------|---|---|---------------|-----------------|--------------------|---|---|---------------|
| <b>SHEER CORRECTION.</b>      |                   |   |   |               |                 |                    |   |   |               |
| Station                       | Standard Ordinate | S | M | Product       | Actual Ordinate | Effective Ordinate | S | M | Product       |
| A.P. ...                      | <b>52.58</b>      | 1 |   | <b>52.58</b>  | <b>9.125</b>    | <b>9.12</b>        | 1 |   | <b>9.12</b>   |
| $\frac{1}{2}$ L from A.P. ... | <b>23.40</b>      | 4 |   | <b>93.60</b>  | <b>.125</b>     | <b>.12</b>         | 4 |   | <b>.48</b>    |
| $\frac{3}{8}$ L " ...         | <b>5.78</b>       | 2 |   | <b>11.56</b>  |                 |                    | 2 |   |               |
| Amidships ...                 |                   | 4 |   |               |                 |                    | 4 |   |               |
| $\frac{3}{8}$ L from F.P. ... | <b>11.57</b>      | 2 |   | <b>23.14</b>  |                 |                    | 2 |   |               |
| $\frac{1}{2}$ L " ...         | <b>46.80</b>      | 4 |   | <b>187.20</b> | <b>5.25</b>     | <b>5.25</b>        | 4 |   | <b>21.00</b>  |
| F.P. ...                      | <b>105.16</b>     | 1 |   | <b>105.16</b> | <b>78.75</b>    | <b>78.75</b>       | 1 |   | <b>78.75</b>  |
| Total ...                     |                   |   |   | <b>473.24</b> |                 |                    |   |   | <b>109.35</b> |

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{363.89}{18} \left( .75 - \frac{.0816}{2 \times 42} \right) = \frac{363.89}{18} \times .6684 = +13.51$

If limited on account of midship superstructure. **✓**

Mean actual sheer aft = **9.12**  
Mean standard sheer aft = **9.12**

Mean actual sheer forward = **5.82**  
Mean standard sheer forward = **5.82**

Length of enclosed superstructure forward of amidships = **42**  
" " aft of " = **42**

|  |   |   |
|--|---|---|
| <b>Deduction for Tropical Freeboard.</b>   | <b>Deduction for Fresh Water.</b>   | <b>TABULAR FREEBOARD corrected for Flush Deck (if required)</b>                   |
| <b>Addition for Winter and Winter North Atlantic Freeboard.</b>  | Displacement in salt water at summer load water line $\Delta = 13880$                         | Correction for coefficient $\frac{777 + 68}{1.36} = \frac{1.457}{1.36}$           |
| Depth to Freeboard Deck = <b>38.11'</b>  | Tons per inch immersion at summer load water line $T = 48.78$                                 | Depth Correction ... <b>29.19</b>   |
| Summer freeboard = <b>11.42'</b>   | Deduction = $\frac{\Delta}{40 T} \text{ inches} = \frac{13880}{40 \times 48.78} = 7.11 = 7"1$ | Deduction for superstructures ... <b>2.44</b>                                     |
| Moulded draught (d) = <b>26.69'</b>  |   | Sheer correction ... <b>13.51</b>   |
| Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4} \text{ inches} = \frac{26.69}{4} = 6.67 = 6\frac{3}{4}"$ |   | Round of Beam correction ... <b>.17</b>   |
| Addition for Winter North Atlantic Freeboard (if required) = <b>✓</b>  |   | Correction for Thickness of Deck amidships ... <b>11.64</b>                       |
|  |   | Other corrections, scantlings, etc. TO CORRECT TO A SUMMER EXT. DRAUGHT OF 26'-9" |
|  |   | Summer Freeboard = <b>137.00</b>  |

**SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck :-**

|  |                |                                    |                    |
|--|----------------|------------------------------------|--------------------|
| Tropical Fresh Water Line above Centre of Disc ... | <b>13 3/4"</b> | Tropical Fresh Water Freeboard ... | <b>10'-3 1/4"</b>  |
| Fresh Water Line " " ...                           | <b>7"</b>      | Fresh Water " " ...                | <b>10'-10"</b>     |
| Tropical Line " " ...                              | <b>6 3/4"</b>  | Tropical " " ...                   | <b>10'-10 1/4"</b> |
| Winter Line below " " ...                          | <b>6 3/4"</b>  | Winter " " ...                     | <b>11'-11 3/4"</b> |
| Winter North Atlantic Line " " ...                 | <b>✓</b>       | Winter North Atlantic " " ...      | <b>✓</b>           |



A new form should be prepared if any alterations that affect the freeboard have been made. If no such alterations have been made, the Surveyor should endorse the form on this side with his signature and the date.

Displacement at 26'-9" draught = 13880 tons.

Tons per inch = 48.48 tons.

*Over*

Trade of ship .....

Names of sister ships .....

Builder's name and yard number ..... Shipbuilding Corporation Limited (Wear Branch) Sunderland Prod No 7

Owners ..... Ministry of War Transport

Fee £ 18 : - : -

Will be charged on 7.5.

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Foundation