

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

|   |                            |   |  |                        |   |
|---|----------------------------|---|--|------------------------|---|
| Ship's Name<br><b>"CARTHAGE"</b>  | Official Number<br>162658. | Nationality and Port of Registry<br>BRITISH.<br>LONDON. | Gross Tonnage<br><del>14182</del><br><i>14283 mt</i> | Date of Build<br>1931. | Port of Survey<br>GLASGOW.  |
| Moulded Dimensions: Length <b>518.50</b> Breadth <b>69.60</b> Depth <b>46.08</b> <i>14/9/48</i> |                            |   |  |                        | Date of Survey<br><i>23rd. June, 1948.</i>  |
| Moulded displacement at moulded draught = 85 per cent. of moulded depth _____ tons              |                            |   |  |                        | Surveyor's Signature<br><i>James E. Brown</i>   |
| Coefficient of fineness for use with Tables <b>72. (assumed)</b>                                |                            |   |  |                        | Particulars of Classification<br><b>* 100 A.1. with Freeboard.</b><br><i>(Reclassification Contemplated).</i> |

|   |  |   |
|---|--|---|
| <b>Depth for Freeboard (D).</b><br>Moulded depth ... .. <b>46.08</b><br>Stringer plate ... <b>50</b> ... .. <b>.04</b><br>Sheathing on exposed deck <b>2 1/2"</b><br>$T \left( \frac{L-S}{L} \right) = \frac{2.50}{12} \times 2816$ <b>06</b><br>Depth for Freeboard (D) = <b>46.18</b> | <b>Depth correction.</b><br>(a) Where D is greater than Table depth<br>(D - Table depth) R =<br>$(46.18 - 34.57) 3 = + 34.83"$<br>(b) Where D is less than Table depth (if allowed)<br>(Table depth - D) R = <b>✓</b><br>If restricted by superstructures <b>✓</b> | <b>Round of Beam correction.</b><br>Moulded Breadth (B) <b>69.60</b><br>Standard Round of Beam = $\frac{B \times 12}{50} = 16.70$<br>Ship's Round of Beam = <b>4.00</b><br>Difference = <b>- 12.70</b><br>Restricted to<br>Correction = $\frac{\text{Diff.}}{4} \times \left( 1 - \frac{S_1}{L} \right) = \frac{12.70}{4} \times 2833 = +.90$ |
|---|--|---|

## DEDUCTION FOR SUPERSTRUCTURES.

|   | Mean Covered Length (S) | Equivalent Enclosed Length (S <sub>1</sub> ) | Height       | Height Correction | Effective Length (E) |
|---|-------------------------|--|--------------|-------------------|----------------------|
| Poop enclosed ... ..                                  |                         |  |              |                   |                      |
| .. overhang ... ..                                    |                         |  |              |                   |                      |
| R.Q.D. enclosed ... ..                                |                         |  |              |                   |                      |
| .. overhang ... ..                                    |                         |  |              |                   |                      |
| COMBINED Bridge enclosed <i>Equival</i> <b>368.85</b> | <b>368.85</b>           | <b>368.85</b>                                | <b>8.50'</b> | <b>✓</b>          | <b>368.85</b>        |
| .. overhang aft ... ..                                | <b>12.00'</b>           | <b>2.74</b>                                  | <b>8.50'</b> | <b>✓</b>          | <b>2.74</b>          |
| .. overhang forward ... ..                            | <b>3.65</b>             |  |              |                   |                      |
| F'cle enclosed ... ..                                 |                         |  |              |                   |                      |
| .. overhang ... ..                                    |                         |  |              |                   |                      |
| Trunk aft ... ..                                      |                         |  |              |                   |                      |
| .. forward ... ..                                     |                         |  |              |                   |                      |
| Tonnage opening aft ... ..                            |                         |  |              |                   |                      |
| .. " forward ... ..                                   |                         |  |              |                   |                      |
| Total ... ..  | <b>372.50</b>           | <b>371.59</b>                                |              |                   | <b>371.59</b>        |

Standard Height of Superstructure **7.50**  
 " " R.Q.D. **✓**  
 Deduction for complete superstructure **42.00**  
 Percentage covered  $\frac{S}{L} = 71.84$   
 $\frac{S_1}{L} = 71.67$   
 $\frac{E}{L} = 71.67$   
 Percentage from Table, Line A. **\$ B 65.05**  
 (corrected for absence of forecastle (if required))  
 Percentage from Table, Line B.  
 (corrected for absence of forecastle (if required))  
 Interpolation for bridge less than 2L (if required)  
 Deduction = **42.00 × 65.05 = 27.32**

## SHEER CORRECTION.

| Station                | Standard Ordinate | S M | Product       | Actual Ordinate | Effective Ordinate | S M | Product       |
|------------------------|-------------------|-----|---------------|-----------------|--------------------|-----|---------------|
| A.P. ... ..            | <b>61.85</b>      | 1   | <b>61.85</b>  | <b>45.00</b>    | <b>45.00</b>       | 1   | <b>45.00</b>  |
| 1/2 L from A.P. ... .. | <b>27.52</b>      | 4   | <b>110.08</b> | <b>20.00</b>    | <b>20.00</b>       | 4   | <b>80.00</b>  |
| 3/4 L " ... ..         | <b>6.80</b>       | 2   | <b>13.60</b>  | <b>4.00</b>     | <b>4.00</b>        | 2   | <b>8.00</b>   |
| Amidships ... ..       | <b>—</b>          | 4   | <b>—</b>      | <b>—</b>        | <b>—</b>           | 4   | <b>—</b>      |
| 3/4 L from F.P. ... .. | <b>13.605</b>     | 2   | <b>27.21</b>  | <b>13.00</b>    | <b>13.00</b>       | 2   | <b>26.00</b>  |
| 1/2 L " ... ..         | <b>55.045</b>     | 4   | <b>220.18</b> | <b>45.00</b>    | <b>45.00</b>       | 4   | <b>180.00</b> |
| F.P. ... ..            | <b>123.70</b>     | 1   | <b>123.70</b> | <b>102.00</b>   | <b>102.00</b>      | 1   | <b>102.00</b> |
| Total ... ..           |                   |     | <b>556.62</b> |                 |                    |     | <b>441.00</b> |

Mean actual sheer aft = *Deficient*  
 Mean standard sheer aft  
 Mean actual sheer forward = *Deficient*  
 Mean standard sheer forward  
 Length of enclosed superstructure forward of amidships = *Deficient*  
 " " aft of " = *Sheer.*

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( \frac{.75 - S}{2L} \right) = \frac{115.62}{18} \left( \frac{.75 - 3592}{2L} \right) = +2.51$   
 If limited on account of midship superstructure.

If limited to maximum allowance of 1 1/2 ins. per 100 ft.

| <b>Deduction for Tropical Freeboard.</b><br><b>Addition for Winter and Winter North Atlantic Freeboard.</b><br>Depth to Freeboard Deck = <b>46.12</b><br>Summer freeboard = <b>16.62</b><br>Moulded draught (d) = <b>29.50</b><br>Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <b>✓</b><br>Addition for Winter North Atlantic Freeboard (if required) = <b>✓</b> | <b>Deduction for Fresh Water.</b><br>Displacement in salt water at summer load water line<br>$\Delta =$<br>Tons per inch immersion at summer load water line<br>$T =$<br>Deduction = $\frac{\Delta}{40T}$ inches = <b>7 1/2"</b> | <b>TABULAR FREEBOARD</b> corrected for Flush Deck (if required)<br>Correction for coefficient $\frac{.72 + .68}{1.36} = \frac{1.40}{1.36}$<br><table border="1"> <tr> <th></th> <th>+</th> <th>-</th> </tr> <tr> <td>Depth Correction ... ..</td> <td><b>34.83</b></td> <td><b>—</b></td> </tr> <tr> <td>Deduction for superstructures ... ..</td> <td><b>27.32</b></td> <td><b>—</b></td> </tr> <tr> <td>Sheer correction ... ..</td> <td><b>2.51</b></td> <td><b>—</b></td> </tr> <tr> <td>Round of Beam correction ... ..</td> <td><b>.90</b></td> <td><b>—</b></td> </tr> <tr> <td>Correction for Thickness of Deck amidships ... ..</td> <td><b>—</b></td> <td><b>.72</b></td> </tr> <tr> <td>Other corrections, scantlings, etc. corresponding to an all seasons moulded draught of 29'6"</td> <td><b>78.47</b></td> <td><b>—</b></td> </tr> <tr> <td></td> <td><b>116.71</b></td> <td><b>28.04</b></td> </tr> </table> Summer Freeboard = <b>199.50</b> |  | + | - | Depth Correction ... .. | <b>34.83</b> | <b>—</b> | Deduction for superstructures ... .. | <b>27.32</b> | <b>—</b> | Sheer correction ... .. | <b>2.51</b> | <b>—</b> | Round of Beam correction ... .. | <b>.90</b> | <b>—</b> | Correction for Thickness of Deck amidships ... .. | <b>—</b> | <b>.72</b> | Other corrections, scantlings, etc. corresponding to an all seasons moulded draught of 29'6" | <b>78.47</b> | <b>—</b> |  | <b>116.71</b> | <b>28.04</b> |
|---|--|--|--|---|---|-------------------------|--------------|----------|--------------------------------------|--------------|----------|-------------------------|-------------|----------|---------------------------------|------------|----------|---|----------|------------|--|--------------|----------|--|---------------|--------------|
|   | +  | -  |  |   |   |                         |              |          |                                      |              |          |                         |             |          |                                 |            |          |   |          |            |  |              |          |  |               |              |
| Depth Correction ... ..   | <b>34.83</b>   | <b>—</b>   |  |   |   |                         |              |          |                                      |              |          |                         |             |          |                                 |            |          |   |          |            |  |              |          |  |               |              |
| Deduction for superstructures ... ..  | <b>27.32</b>   | <b>—</b>   |  |   |   |                         |              |          |                                      |              |          |                         |             |          |                                 |            |          |   |          |            |  |              |          |  |               |              |
| Sheer correction ... ..   | <b>2.51</b>  | <b>—</b>   |  |   |   |                         |              |          |                                      |              |          |                         |             |          |                                 |            |          |   |          |            |  |              |          |  |               |              |
| Round of Beam correction ... ..   | <b>.90</b>   | <b>—</b>   |  |   |   |                         |              |          |                                      |              |          |                         |             |          |                                 |            |          |   |          |            |  |              |          |  |               |              |
| Correction for Thickness of Deck amidships ... ..   | <b>—</b>   | <b>.72</b>   |  |   |   |                         |              |          |                                      |              |          |                         |             |          |                                 |            |          |   |          |            |  |              |          |  |               |              |
| Other corrections, scantlings, etc. corresponding to an all seasons moulded draught of 29'6"  | <b>78.47</b>   | <b>—</b>   |  |   |   |                         |              |          |                                      |              |          |                         |             |          |                                 |            |          |   |          |            |  |              |          |  |               |              |
|   | <b>116.71</b>  | <b>28.04</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>7 1/2"</b> |
| Fresh Water Line " " ...                           | <b>7 1/2"</b> |
| Tropical Line " " ...                              | <b>N.L.</b>   |
| Winter Line below " " ...                          | <b>N.L.</b>   |
| Winter North Atlantic Line " " ...                 | <b>✓</b>      |

|                                    |                   |
|------------------------------------|-------------------|
| Tropical Fresh Water Freeboard ... | <b>16' 7 1/2"</b> |
| Fresh Water " " ...                | <b>16' 0"</b>     |
| Tropical " " ...                   | <b>16' 7 1/2"</b> |
| Winter " " ...                     | <b>16' 7 1/2"</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.

Length of Combined Bridge & Forecastle at side = 360.50  
Sidehouses  $\frac{2 \times 12 \times 24}{69.0}$  =  $\frac{8.35}{368.85}$  equivalent enclosed length.

Ofhang = 12.0 - 8.35  
= 3.65 equivalent.

Trade of ship

Names of sister ships

Builder's name and yard number

Owners

Fee £

*[Signature]*



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