

Timber.Index No. 36458
(For London Office only.)

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

| | | | | | |
|---|----------------------------------|--|------------------------------|---------------------------------|--|
| Ship's Name EMPIRE GAT. | Official Number 168674 | Nationality and Port of Registry BRITISH. GLASGOW. | Gross Tonnage 871. | Date of Build 1940-1. | Port of Survey..... |
| Moulded Dimensions: Length 199'-1" Breadth 33'-0" Depth 13'-10" <i>6 cr. of madder stock.</i> | | | | | Date of Survey 1.9.47. |
| Moulded displacement at moulded draught = 85 per cent. of moulded depth 1522 tons | | | | | Surveyor's Signature..... |
| Coefficient of fineness for use with Tables .690. | | | | | Particulars of Classification +100 A.1. |

| | | |
|--|---|---|
| DEPTH FOR FREEBOARD (D). Moulded depth ... 13.83 Stringer plate38"03 Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ ✓ Depth for Freeboard (D) = 13.86 | DEPTH CORRECTION. (a) Where D is greater than Table depth (D-Table depth) R = (13.86-13.27) 1.532 = +.90" (b) Where D is less than Table depth (if allowed) (Table depth-D) R = ✓ If restricted by superstructures ✓ | ROUND OF BEAM CORRECTION. Moulded Breadth (B) 33.0' Standard Round of Beam = $\frac{B \times 12}{50} =$ 7.92" Ship's Round of Beam = 9" Difference Excess. 1.08" Restricted to ✓ Correction = $\frac{\text{Diff}^e}{4} \times \left(1 - \frac{S}{L} \right) =$ $\frac{1.08 \times 257}{4} = .07"$ |
|--|---|---|

DEDUCTION FOR SUPERSTRUCTURES.

| | Mean Covered Length (S) | Equivalent Enclosed Length (S _i) | Height | Height Correction | Effective Length (E) |
|-------------------------|-------------------------|--|--------------|-------------------|----------------------|
| Poop enclosed ... | ✓ | | | | |
| " overhang ... | ✓ | | | | |
| R.Q.D. enclosed ... | 121.58 | 121.58 | 3.75' | ✓ | 121.58 |
| " overhang ... | 1.83 | .91 | | | .91 |
| Bridge enclosed ... | ✓ | | | | |
| " overhang aft ... | ✓ | | | | |
| " overhang forward ... | 25.70 | 25.70 | 7.0' | ✓ | 25.70 |
| F'cle enclosed ... | ✓ | | | | |
| " overhang ... | ✓ | | | | |
| Trunk aft ... | ✓ | | | | |
| " forward ... | ✓ | | | | |
| Tonnage opening aft ... | ✓ | | | | |
| " " forward ... | ✓ | | | | |
| Total ... | 149.11 | 148.19 | | | 148.19 |

| | |
|--|---------------|
| Standard Height of Superstructure | 6.00' |
| " " R.Q.D. | 3.661' |
| Deduction for complete superstructure | 25.91" |
| Percentage covered $\frac{S}{L} =$ | 74.89 |
| " " $\frac{S_i}{L} =$ | 74.43 |
| " " $\frac{E}{L} =$ | 74.43 |
| Percentage from Table, Line A. + B. | 84.16 |
| (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 = 25.91 × .8416 = -21.80" | |

SHEER CORRECTION.

| Station | Standard Ordinate | S | M | Product | Actual Ordinate | Effective Ordinate | S | M | Product |
|------------------------------|-------------------|---|---|---------------|-----------------|--------------------|---|---|---------------|
| A.P. ... | 29.91 | 1 | | 29.91 | 33.00 | 34.07 | 1 | | 34.07 |
| $\frac{1}{8}L$ from A.P. ... | 13.31 | 4 | | 53.24 | 14.81 | 15.16 | 4 | | 60.64 |
| $\frac{2}{8}L$ " ... | 3.29 | 2 | | 6.58 | 3.81 | 3.75 | 2 | | 7.50 |
| Amidships ... | ✓ | 4 | | ✓ | ✓ | ✓ | 4 | | ✓ |
| $\frac{3}{8}L$ from F.P. ... | 6.58 | 2 | | 13.16 | 7.31 | 7.31 | 2 | | 14.62 |
| $\frac{4}{8}L$ " ... | 26.62 | 4 | | 106.48 | 29.12 | 29.12 | 4 | | 116.48 |
| F.P. ... | 59.82 | 1 | | 59.82 | 66.00 | 66.00 | 1 | | 66.00 |
| Total ... | | | | 269.19 | | | | | 299.31 |

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

$$= \frac{30.12 (.75 - .3744)}{18} = - .63" \quad \checkmark$$

If limited to maximum allowance of 1½ ins. per 100 ft. **✓**

| Deduction for Tropical Freeboard. Addition for Winter and Winter North Atlantic Freeboard. Raised Quarter Depth to Freeboard Deck = 17.61 Timber, Summer freeboard = 3.22 Moulded draught (d) = 13.74 Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 3.43 = 3½" Addition for Winter North Atlantic Freeboard (if required) = $\frac{d}{3}$ ins = 4.58 = 4½" | Deduction for Fresh Water. Displacement in salt water at summer load water line $\Delta =$ Tons per inch immersion at summer load water line $T =$ Deduction = $\frac{\Delta}{40 T}$ inches = 3½" | TABULAR FREEBOARD corrected for Flush Deck (if required) Correction for coefficient $\frac{.69 + .68}{1.36} = 1.37 / 1.36$ <table border="1"> <tr> <th></th> <th>+</th> <th>-</th> </tr> <tr> <td>Depth Correction</td> <td>.90</td> <td></td> </tr> <tr> <td>Deduction for superstructures</td> <td></td> <td>21.80</td> </tr> <tr> <td>Sheer correction</td> <td></td> <td>.63</td> </tr> <tr> <td>Round of Beam correction</td> <td></td> <td>.07</td> </tr> <tr> <td>Correction for Thickness of Deck amidships</td> <td></td> <td></td> </tr> <tr> <td>Other corrections, scantlings, etc.</td> <td></td> <td></td> </tr> <tr> <td></td> <td>45.00</td> <td></td> </tr> <tr> <td></td> <td>45.90</td> <td>22.50</td> </tr> <tr> <td>Summer Freeboard</td> <td colspan="2">= 46.51"</td> </tr> </table> | | + | - | Depth Correction | .90 | | Deduction for superstructures | | 21.80 | Sheer correction | | .63 | Round of Beam correction | | .07 | Correction for Thickness of Deck amidships | | | Other corrections, scantlings, etc. | | | | 45.00 | | | 45.90 | 22.50 | Summer Freeboard | = 46.51" | |
|--|--|--|--|---|---|------------------|------------|--|-------------------------------|--|--------------|------------------|--|------------|--------------------------|--|------------|--|--|--|-------------------------------------|--|--|--|--------------|--|--|--------------|--------------|------------------|-----------------|--|
| | + | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Depth Correction | .90 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Deduction for superstructures | | 21.80 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sheer correction | | .63 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Round of Beam correction | | .07 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Correction for Thickness of Deck amidships | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Other corrections, scantlings, etc. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 45.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 45.90 | 22.50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Summer Freeboard | = 46.51" | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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

| | | | | | |
|--------------------|--|--------------|--------|--------------------------------|------------------------|
| Timber | Tropical Fresh Water Line above Centre of Disc | 7" | Timber | Tropical Fresh Water Freeboard | 3'-11" limited. |
| " | Fresh Water Line | " | " | Fresh Water | 3'-7½" |
| " | Tropical Line | " | " | Tropical | 3'-11" limited. |
| " | Winter Line below | " | " | Winter | 4'-3½" |
| " | Winter North Atlantic Line | " | " | Winter North Atlantic | 4'-7¾" |
| 5m T 11/41. M.C.C. | Summer Line above | ✓ 3½" | | | |