

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

| | | | | | |
|---|---------------------------------|---|--------------------------------|------------------------------|---|
| Ship's Name "DAIKYO MARU" | Official Number 70867 | Nationality and Port of Registry Japanese Yokkaichi | Gross Tonnage 13,224 | Date of Build 1953 | Port of Survey Aioi |
| Moulded Dimensions: Length 167.000 M ✓ Breadth 22.300 M ✓ Depth 12.300 M ✓ <i>to centre of rudder stock</i> | | | | | Date of Survey Whilst building |
| Moulded displacement at moulded draught = 85 per cent. of moulded depth 3,0691 metric tons | | | | | Surveyor's Signature K. Naisby |
| Coefficient of fineness for use with Tables .769 | | | | | Particulars of Classification +100 A1 "Carrying Petroleum in bulk" |

| DEPTH FOR FREEBOARD (D). | DEPTH CORRECTION. | ROUND OF BEAM CORRECTION. |
|---|--|---|
| Moulded depth 12.300 | (a) Where D is greater than Table depth (D-Table depth) R = $8.33(12.328-11.135)20$ +2987 ✓ | Moulded Breadth (B) 22.300 |
| Stringer plate 0.028 | (b) Where D is less than Table depth (if allowed) (Table depth-D) R = ✓ | Standard Round of Beam = $\frac{B \times 12}{50} =$.226 |
| Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ | If restricted by superstructures ✓ | Ship's Round of Beam = 0.450 |
| Depth for Freeboard (D) = 12.328 | | Difference .4 |
| | | Restricted to |
| | | Correction = $\frac{\text{Diff}^c}{4} \times (1 - \frac{S_1}{L}) =$ $\frac{.4}{4} \times .5030 =$ -.1006 |

DEDUCTION FOR SUPERSTRUCTURES.

| | Mean Covered Length (S) | Equivalent Enclosed Length (S ₁) | Height | Height Correction | Effective Length (E) | |
|-----------------------------------|-------------------------|--|--------------|-------------------|----------------------|--|
| Poop enclosed <i>equiv.</i> ... | 38.393 | 38.393 | 2.450 | ✓ | 28.393 | Standard Height of Superstructure 2.290 |
| " overhang ... | ✓ | | | | | " " R.Q.D. ✓ |
| R.Q.D. enclosed ... | ✓ | | | | | Deduction for complete superstructure 1067 |
| " overhang ... | ✓ | | | | | Percentage covered $\frac{S}{L} =$.4566 |
| Bridge enclosed <i>equiv.</i> ... | 14.950 | 14.950 | 2.350 | ✓ | 14.950 | " " $\frac{S_1}{L} =$.4566 |
| " overhang aft ... | ✓ | | | | | " " $\frac{E}{L} =$.4566 |
| " overhang forward ... | ✓ | | | | | Percentage from Table, Line A. Tanker 36.66 |
| Fore enclosed ... | 22.900 | 22.900 | 2.310 | ✓ | 22.900 | (corrected for absence of forecastle (if required)) |
| " overhang ... | ✓ | | | | | Percentage from Table, Line B. |
| Trunk aft ... | ✓ | | | | | (corrected for absence of forecastle (if required)) |
| " forward ... | ✓ | | | | | Interpolation for bridge less than .2L (if required) |
| Tonnage opening aft ... | ✓ | | | | | Deduction = 1067 × .3666 = -391 ✓ |
| " " forward ... | ✓ | | | | | |
| Total ... | 76.243 | 76.243 | | | 76.243 | |

SHEER CORRECTION.

| Station | Standard Ordinate | S | M | Product | Actual Ordinate | Effective Ordinate | S | M | Product |
|------------------------------|-------------------|----------|---|--------------|-----------------|--------------------|----------|---|-------------|
| A.P. ... | 1645 | 1 | | 1645 | 1.000 | 1000 | 1 | | 1000 |
| $\frac{1}{2}L$ from A.P. ... | 731 | 4 | | 2924 | 0.286 | 286 | 4 | | 1144 |
| $\frac{1}{4}L$ " ... | 183 | 2 | | 366 | 0.004 | 4 | 2 | | 8 |
| Amidships ... | - | 4 | | - | 0 | - | 4 | | - |
| $\frac{3}{4}L$ from F.P. ... | 366 | 2 | | 732 | 0.014 | 14 | 2 | | 28 |
| $\frac{1}{2}L$ " ... | 1462 | 4 | | 5848 | 0.484 | 484 | 4 | | 1936 |
| F.P. ... | 3290 | 1 | | 3290 | 2.000 | 2000 | 1 | | 2000 |
| Total ... | | | | 14805 | | | | | 6116 |

Mean actual sheer aft = **1000**
Mean standard sheer aft = **1144** } *Deficient Sheer*

Mean actual sheer forward = **8**
Mean standard sheer forward = **28**

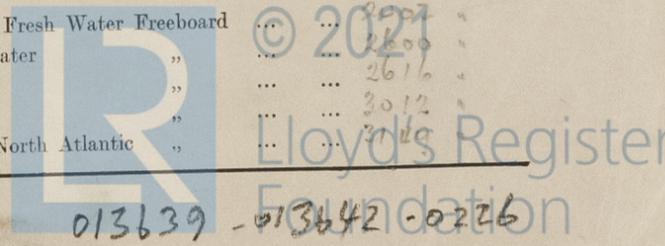
Length of enclosed superstructure forward of amidships = **28**
" " aft of " = **1936** } *Tanker*

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{2689.5}{18} \left(.75 - \frac{2283}{5217} \right) =$ **+252** ✓
If limited on account of midship superstructure. ✓
If limited to maximum allowance of 1½ ins. per 100 ft. ✓

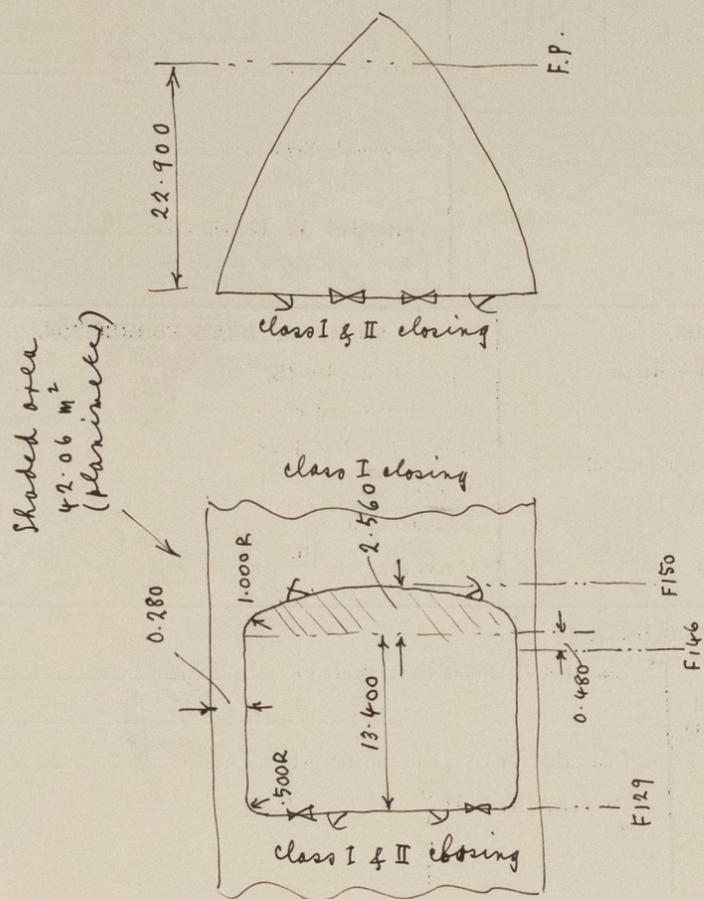
| | | | | | | | | | | | | | | | | | | | | |
|---|--|--|--|--|---|---|-----|---|---|-----|-----|---|---|---|---|---|-----|-----|--------------------------------|--|
| Deduction for Tropical Freeboard. Addition for Winter and Winter North Atlantic Freeboard. Depth to Freeboard Deck = 12.328 Summer freeboard = 2.814 Moulded draught (d) = 9.514 Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 198 ✓ Addition for Winter North Atlantic Freeboard (if required) = $167 \times .28 = 137 =$ 335 ✓ | Deduction for Fresh Water. Displacement in salt water at summer load water line $\Delta =$ 27,734 metric tons Tons per inch immersion at summer load water line $T =$ 82.35 metric tons/inch Deduction = $\frac{\Delta}{40 T}$ inches = 214 ✓ | TABULAR FREEBOARD corrected for Flush Deck (if required) Correction for coefficient $\frac{.769 + .68}{1.36} =$ 1.1049 <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"></td> <td style="width: 50%;"></td> </tr> <tr> <td style="text-align: center;">+</td> <td style="text-align: center;">-</td> </tr> <tr> <td style="text-align: center;">298</td> <td style="text-align: center;">-</td> </tr> <tr> <td style="text-align: center;">-</td> <td style="text-align: center;">391</td> </tr> <tr> <td style="text-align: center;">252</td> <td style="text-align: center;">-</td> </tr> <tr> <td style="text-align: center;">-</td> <td style="text-align: center;">1</td> </tr> <tr> <td style="text-align: center;">-</td> <td style="text-align: center;">-</td> </tr> <tr> <td style="text-align: center;">550</td> <td style="text-align: center;">392</td> </tr> <tr> <td colspan="2" style="text-align: right;">Summer Freeboard = 2814</td> </tr> </table> | | | + | - | 298 | - | - | 391 | 252 | - | - | 1 | - | - | 550 | 392 | Summer Freeboard = 2814 | |
| | | | | | | | | | | | | | | | | | | | | |
| + | - | | | | | | | | | | | | | | | | | | | |
| 298 | - | | | | | | | | | | | | | | | | | | | |
| - | 391 | | | | | | | | | | | | | | | | | | | |
| 252 | - | | | | | | | | | | | | | | | | | | | |
| - | 1 | | | | | | | | | | | | | | | | | | | |
| - | - | | | | | | | | | | | | | | | | | | | |
| 550 | 392 | | | | | | | | | | | | | | | | | | | |
| Summer Freeboard = 2814 | | | | | | | | | | | | | | | | | | | | |

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

| | |
|---|--|
| Tropical Fresh Water Line above Centre of Disc ... 412 ✓ | Tropical Fresh Water Freeboard ... 2814 ✓ |
| Fresh Water Line " " ... 214 ✓ | Fresh Water " " ... 2600 ✓ |
| Tropical Line " " ... 198 ✓ | Tropical " " ... 2616 ✓ |
| Winter Line below " " ... 98 ✓ | Winter " " ... 3012 ✓ |
| Winter North Atlantic Line " " ... 335 ✓ | Winter North Atlantic " " ... 3747 ✓ |

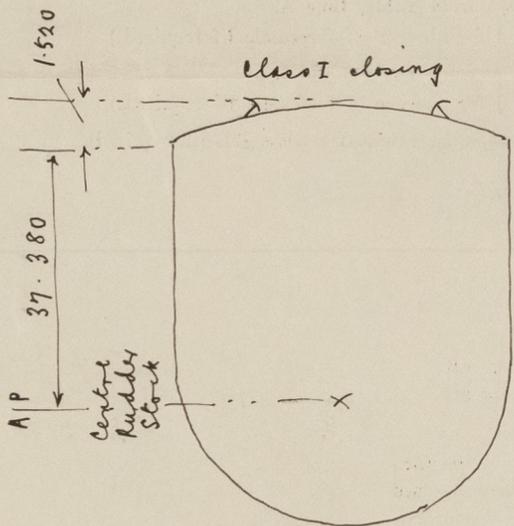


A new form should be prepared if any alterations that affect the freeboard have been made. If no such alterations have been made, the Surveyor should endorse the form on this side with his signature and the date.



Bridge

$$\begin{aligned} \text{Length} &= 13.400 \\ + 42.06 & \\ \hline &= 1.938 \\ & \frac{(22.300 - 1.560)}{21.740} \\ & \frac{15.335}{22.300} \\ \text{Equiv. Length} &= 15.335 \times \frac{21.740}{22.300} \\ &= 14.950 \end{aligned}$$



Poop

$$\begin{aligned} \text{Length all side} &= 37.380 \\ + \frac{1}{2} \times 1.520 & \\ \hline &= 1.013 \\ & \frac{38.393}{0} \end{aligned}$$

438.58

Trade of ship International

Names of sister ships _____

Builder's name and yard number Nawima Zosen-sho KK Yard No. 479

Owners Daikyo Sekiyu K.K.

Fee £ _____



© 2021

Lloyd's Register
Foundation