

30 NOV 1953

Index No. _____
(For London Office only.)

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 30691 metric tons | | | | | Surveyor's Signature K. Haisby |
| 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 = $8.33(12.328 - 11.135)20$ +298 mm | 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 = $\frac{B \times 12}{50} =$.426 |
| 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 .024 |
| | | Restricted to |
| | | Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L}\right) = \frac{.024}{4} \times .5036 = -1 \text{ mm}$ |

DEDUCTION FOR SUPERSTRUCTURES.

| | Mean Covered Length (S) | Equivalent Enclosed Length (S ₁) | Height | Height Correction | Effective Length (E) |
|-----------------------------------|-------------------------|--|--------------|-------------------|----------------------|
| Poop enclosed <i>Equip.</i> ... | 38.393 | 38.393 | 2.450 | ✓ | 28.393 |
| " overhang ... | ✓ | | | | |
| R.Q.D. enclosed ... | ✓ | | | | |
| " overhang ... | ✓ | | | | |
| Bridge enclosed <i>Equip.</i> ... | 14.956 | 14.956 | 2.350 | ✓ | 14.956 |
| " overhang aft ... | ✓ | | | | |
| " overhang forward ... | ✓ | | | | |
| Fore enclosed ... | 22.900 | 22.900 | 2.310 | ✓ | 22.900 |
| " overhang ... | ✓ | | | | |
| Trunk aft ... | ✓ | | | | |
| " forward ... | ✓ | | | | |
| Tonnage opening aft ... | ✓ | | | | |
| " " forward ... | ✓ | | | | |
| Total ... | 76.243 | 76.243 | | | 76.243 |

| |
|---|
| Standard Height of Superstructure 2.290 |
| " " R.Q.D. ✓ |
| Deduction for complete superstructure 1067 |
| Percentage covered $\frac{S}{L} =$ 45.66 |
| " " $\frac{S_1}{L} =$ 45.66 |
| " " $\frac{E}{L} =$ 36.66 |
| Percentage from Table, Line A. Tanker 36.66 (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 = 1067 × .3666 = -391 mm |

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 |
| $\frac{2}{3}$ L " ... | 183 | 2 | 366 | 0.004 | 4 | 2 | 8 |
| Amidships ... | - | 4 | - | 0 | - | 4 | - |
| $\frac{2}{3}$ 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 ... | | | 14803 | | | | 6116 |

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{2689.8}{18} (.75 - .2283) = +282 \text{ mm}$
If limited on account of midship superstructure. **✓**

Mean actual sheer aft = **1000**
Mean standard sheer aft = **1144**
Mean actual sheer forward = **8**
Mean standard sheer forward = **28**
Length of enclosed superstructure forward of amidships = **28**
" " aft of " = **1936**

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 mm**

Addition for Winter North Atlantic Freeboard (if required) = $167 \times .28 = 137 = 335 \text{ mm}$

Deduction for Fresh Water.

Displacement in salt water at summer load water line
 $\Delta = 27,734 \text{ metric tons}$
Tons per inch immersion at summer load water line
 $T = 82.35 \text{ metric tons/inch}$
Deduction = $\frac{\Delta}{40 T}$ inches
= 214 mm

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

Depth Correction ... **298**
Deduction for superstructures ... **391**
Sheer correction ... **252**
Round of Beam correction ... **1**
Correction for Thickness of Deck amidships ... **-**
Other corrections, scantlings, etc. ... **-**

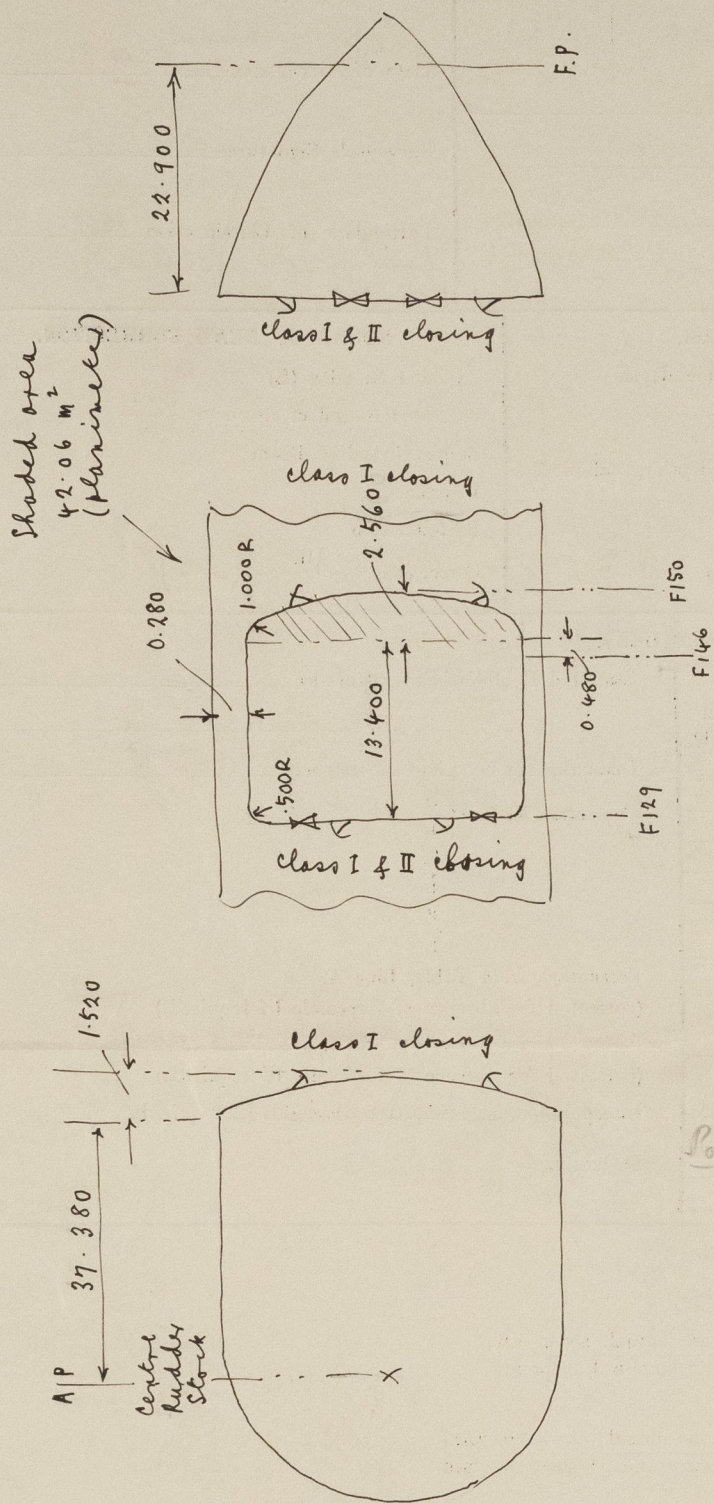
| + | - |
|------------|------------|
| 298 | - |
| - | 391 |
| 252 | - |
| - | 1 |
| - | - |
| 550 | 392 |

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 mm | Tropical Fresh Water Freeboard ... | 2202 |
| Fresh Water Line " " ... | 214 mm | Fresh Water " " ... | 2609 |
| Tropical Line " " ... | 198 mm | Tropical " " ... | 2616 |
| Winter Line below " " ... | 198 mm | Winter " " ... | 3012 |
| Winter North Atlantic Line " " ... | 335 mm | Winter North Atlantic " " ... | 3149 |

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

$$\begin{aligned}
 \text{Length} &= 13.400 \\
 + 42.06 &= 1.935 \\
 (22.300 - 1.560) &= 21.740 \\
 \hline
 &= 15.335 \\
 \text{Equiv. Length} &= 15.335 \times \frac{21.740}{22.300} \\
 &= 14.950
 \end{aligned}$$

Poop

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

43858

Trade of ship International

Names of sister ships —

Builder's name and yard number Harima Zosen-sho K.K. Yard No. 479

Owners Daikyo Sekiyu K.K.

Fee £ —



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