

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

| | | | | | |
|---|-----------------|---|------------------------------|---------------|---|
| Ship's Name ETNEFJELL | Official Number | Nationality and Port of Registry NORWEGIAN OSLO | Gross Tonnage 9832 | Date of Build | Port of Survey |
| Moulded Dimensions: Length 149.550 Breadth 19.810 Depth 11.280 | | | | | Date of Survey 4.9.50 |
| Moulded displacement at moulded draught = 85 per cent. of moulded depth 22210 M³ tons | | | | | Surveyor's Signature |
| Coefficient of fineness for use with Tables .782. | | | | | Particulars of Classification +100A1 Carrying Petroleum in Bulk. |

| DEPTH FOR FREEBOARD (D). | DEPTH CORRECTION. | ROUND OF BEAM CORRECTION. |
|---|--|--|
| Moulded depth 11.280 | (a) Where D is greater than Table depth (D-Table depth) R = 8.33(11.300-9.970) 30 = +332 mms | Moulded Breadth (B) 19.810 |
| Stringer plate 20 | (b) Where D is less than Table depth (if allowed) (Table depth-D) R = ✓ | Standard Round of Beam = $\frac{B^2}{50} = \frac{19.810^2}{50} = \mathbf{396}$ |
| Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ | If restricted by superstructures ✓ | Ship's Round of Beam = 400 |
| Depth for Freeboard (D) = 11.300 | | Difference 4 |
| | | Restricted to |
| | | Correction = $\frac{\text{Diff}^2}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{4}{4} \times 0.6159 = -1 \text{ mms.}$ |

| DEDUCTION FOR SUPERSTRUCTURES. | | | | | |
|--------------------------------|-------------------------|--|-------------|-------------------|----------------------|
| | Mean Covered Length (S) | Equivalent Enclosed Length (S ₁) | Height | Height Correction | Effective Length (E) |
| Poop enclosed | 32000 | 32000 | 2290 | ✓ | 32.000 |
| " overhang | | | | | |
| R.Q.D. enclosed | | | | | |
| " overhang | | | | | |
| Bridge enclosed | 12.488 | 12.488 | 2290 | ✓ | 12.488 |
| " overhang aft | | | | | |
| " overhang forward | | | | | |
| Fore enclosed | 12.945 | 12.945 | 2290 | ✓ | 12.945 |
| " overhang | | | | | |
| Trunk aft | | | | | |
| " forward | | | | | |
| Tonnage opening aft | | | | | |
| " " forward | | | | | |
| Total | 57.433 | 57.433 | | | 57.433 |

| |
|---|
| Standard Height of Superstructure 2.290 |
| " " R.Q.D. ✓ |
| Deduction for complete superstructure 1067 |
| Percentage covered $\frac{S}{L} =$ |
| " " $\frac{S_1}{L} =$ 38.41 |
| " " $\frac{E}{L} =$ |
| Percentage from Table, Line 29.41 (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 x 29.41 = 314 mms. |

| SHEER CORRECTION. | | | | | | | |
|---------------------------------|-------------------|----------|--------------|-------------|-----------------|--------------------|-------------|
| Station | Standard Ordinate | S | M | Product | Actual Ordinate | Effective Ordinate | S |
| A.P. | 1500 | 1 | 1500 | 1070 | 1070 | 1 | 1070 |
| $\frac{1}{2}L$ from A.P. | 666 | 4 | 2664 | 188 | 188 | 4 | 752 |
| $\frac{2}{3}L$ " | 167 | 2 | 334 | — | — | 2 | — |
| Amidships | — | 4 | — | — | — | 4 | — |
| $\frac{2}{3}L$ from F.P. | 333 | 2 | 666 | — | — | 2 | — |
| $\frac{1}{2}L$ " | 1333 | 4 | 5332 | 394 | 394 | 4 | 1576 |
| F.P. | 3000 | 1 | 3000 | 2145 | 2145 | 1 | 2145 |
| Total | | | 13496 | | | | 5543 |

| |
|---|
| Mean actual sheer aft = Deficient |
| Mean standard sheer aft = Deficient |
| Mean actual sheer forward = Deficient |
| Mean standard sheer forward = Deficient |
| Length of enclosed superstructure forward of amidships = Deficient |
| " " aft of " = Deficient |

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{7953}{18} \left(.75 - \frac{1921}{2145} \right) = +247 \text{ mms.}$
If limited on account of midship superstructure. **5579** 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 = **11.300**
Summer freeboard = **2.591**
Moulded draught (d) = **8.709**

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{48} \text{ inches} = \frac{181}{48} = 3.75 = 7\frac{1}{4}"$

Addition for Winter North Atlantic Freeboard (if required) = $181 + 123 = 304 \text{ mms.} = 12"$

Deduction for Fresh Water.

Displacement in salt water at summer load water line $\Delta = 19461$
Tons per inch immersion at summer load water line $T = 65.70$
Deduction = $\frac{\Delta}{40 T} \text{ inches} = \frac{19461}{40 \times 65.70} = 7.405 = 7\frac{1}{2}" = 190 \text{ mms.}$

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

| | | |
|---|------------|------------|
| | + | - |
| Depth Correction | 332 | — |
| Deduction for superstructures | — | 314 |
| Sheer correction | 247 | — |
| Round of Beam correction | — | 1 |
| Correction for Thickness of Deck amidships | — | — |
| Other corrections, scantlings, etc. | — | — |
| | 579 | 315 |

Summer Freeboard = **2592.**

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

| | | | |
|--|---------------------------|--------------------------------|----------------------------|
| Tropical Fresh Water Line above Centre of Disc | 14 3/4" = 374 mms. | Tropical Fresh Water Freeboard | 8'-6" = 2591 mms. |
| Fresh Water Line " " | 7 1/2" = 190 " | Fresh Water " " | 7'-3 1/4" = 2217 " |
| Tropical Line " " | 7 1/4" = 184 " | Tropical " " | 7'-10 1/2" = 2401 " |
| Winter Line below " " | 7 1/4" = 184 " | Winter " " | 7'-10 3/4" = 2407 " |
| Winter North Atlantic Line " " | 12" = 305 " | Winter North Atlantic " " | 9'-1 1/4" = 2775 " |
| | | | 9'-6" = 2896 " |