

Empire Gold 36403
etc.Index No. 36715
(For London Office only).

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

22 DEC 1941

19162

now named "EAGLESDALE" (COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

| | | | | | |
|--------------------------------------------------------------------------------------------------------------------------------|----------------------------------|-----------------------------------------------------------------------------------------------|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| Ship's Name "EMPIRE METAL" FURNESS, S.B.C.T. No 339. | Official Number 168248 | Nationality and Port of Registry BRITISH. Middlesbrough, London | Gross Tonnage 8032 | Date of Build 1941. | Port of Survey MIDDLESBROUGH. |
| Moulded Dimensions: Length 460'-0" Breadth 61'-0" Depth 33'-8" To centre of rudder clock 460.96 | | | | Date of Survey WHILE BUILDING. | |
| Moulded displacement at moulded draught = 85 per cent. of moulded depth 17665. tons T.P. 58-16. | | | | Surveyor's Signature Cyril B. Low. | |
| Coefficient of fineness for use with Tables .778. | | | | Particulars of Classification 100 A.I. CARRYING PETROLEUM IN BULK LONGITUDINAL FRAMING AT BOTTOM & AT DECK. CONTINGENT. | |

| | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Depth for Freeboard (D) Moulded depth ... 33.25 Stringer plate78 .065 Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ Depth for Freeboard (D) = 33.315 | Depth correction. (a) Where D is greater than Table depth $(D - \text{Table depth}) R =$ $(33.31 - 30.73) \times 3.0 = +7.74"$ 1.58 (b) Where D is less than Table depth (if allowed) $(\text{Table depth} - D) R =$ If restricted by superstructures <input checked="" type="checkbox"/> | Round of Beam correction. Moulded Breadth (B) 61.00 Standard Round of Beam = $\frac{B \times 12}{50} =$ 14.64 Ship's Round of Beam = 1.25 Difference .36 Restricted to Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) =$.36 \times .5809 = -.05" |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

DEDUCTION FOR SUPERSTRUCTURES.

| | Mean Covered Length (S) | Equivalent Enclosed Length (S _i) | Height | Height Correction | Effective Length (E) |
|-------------------------------|-------------------------|----------------------------------------------|--------------|-------------------|----------------------|
| Poop enclosed Equiv. | 110.29 | 110.29 | 7'-6" | ✓ | 110.29 |
| „ overhang ... | 110.29 | | | | |
| R.Q.D. enclosed | | | | | |
| „ overhang | 45.84 | 45.84 | | | |
| Bridge enclosed Equiv. | 36.42 | 36.42 | 7'-6" | ✓ | 36.42 |
| „ overhang aft | .62 | | | | |
| „ overhang forward | .42 | | | | |
| „ enclosed | 36.42 | 36.42 | 7'-6" | ✓ | 36.42 |
| „ overhang | | | | | |
| „ aft | | | | | |
| „ forward | | | | | |
| Tonnage opening aft | | | | | |
| „ forward | | | | | |
| Total | 193.38 | 193.17 | | | 193.17 |

Standard Height of Superstructure **7.5'**
 „ „ R.Q.D. **✓**
 Deduction for complete superstructure **42.00"**
 Percentage covered $\frac{S}{L} =$ **41.95**
 „ $\frac{S_i}{L} =$ **41.91**
 „ $\frac{E}{L} =$ **41.91**
 Percentage from Table, Line **A. Tanker = 32.91**
 (corrected for absence of forecabin (if required)) **✓**
 Percentage from Table, Line **B.** **✓**
 (corrected for absence of forecabin (if required)) **✓**
 Interpolation for bridge less than 2L (if required) **✓**
 Deduction = **42 \times 32.91 = -13.82"**

SHEER CORRECTION.

| Station | Standard Ordinate | S | M | Product | Actual Ordinate | Effective Ordinate | S | M | Product |
|-------------------------------|-------------------|----------|---------------|---------------|-----------------|--------------------|----------|---------------|---------------|
| A.P. ... | 56.10 | 1 | 56.10 | 60.25 | 60.25 | 60.25 | 1 | 60.25 | 60.25 |
| $\frac{1}{2}$ L from A.P. ... | 24.96 | 4 | 99.84 | 26.50 | 26.50 | 26.50 | 4 | 106.00 | 106.00 |
| $\frac{2}{3}$ L „ ... | 6.17 | 2 | 12.34 | 6.625 | 6.625 | 6.625 | 2 | 13.25 | 13.25 |
| Amidships ... | - | 4 | - | ✓ | - | - | 4 | - | - |
| $\frac{2}{3}$ L from F.P. ... | 12.34 | 2 | 24.68 | 11.5 | 11.50 | 11.50 | 2 | 23.00 | 23.00 |
| $\frac{1}{2}$ L „ ... | 49.915 | 4 | 199.70 | 51.00 | 51.00 | 51.00 | 4 | 204.00 | 204.00 |
| F.P. ... | 112.19 | 1 | 112.19 | 114.00 | 114.00 | 114.00 | 1 | 114.00 | 114.00 |
| Total | | | 504.55 | | | | | 520.50 | 520.50 |

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{75-S}{2L} \right) = \frac{15.65}{18} \left(\frac{75-209}{2} \right) = -.47"$
 If limited on account of midship superstructure.

Mean actual sheer aft = **Excess**
 Mean standard sheer aft

Mean actual sheer forward = **Excess**
 Mean standard sheer forward

Length of enclosed superstructure forward of amidships = **Tanker**

| Forward Cheek | Standard | Actual |
|---------------|----------|---------------|
| 12.34 | 3 | 34.50 |
| 49.915 | 3 | 153.00 |
| 112.19 | 1 | 114.00 |
| | | 301.50 |

Deduction for Tropical Freeboard.
 Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = **33.31**
 Summer freeboard = **6.42**
 Moulded draught (d) = **26.89**

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = **6.72 = 6 3/4"**

Addition for Winter North Atlantic Freeboard (if required) = **6.72 + 4.61 = 11.33 = 11 1/4"**

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta = 16810.$

Tons per inch immersion at summer load water line

$T = 57.0$

Deduction = $\frac{\Delta}{40T}$ inches

= **7.37**

= **7 1/4"**

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient **.778 + .68 = 1.458 / 1.36**

| | + | - |
|--------------------------------------------|-------------|--------------|
| Depth Correction | 7.74 | - |
| Deduction for superstructures | - | 13.82 |
| Sheer correction | - | .47 |
| Round of Beam correction | - | .05 |
| Correction for Thickness of Deck amidships | - | - |
| Other corrections, scantlings, etc. | - | - |
| | 7.74 | 14.34 |

Summer Freeboard = **76.45**

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

| | |
|------------------------------------------------|----------------|
| Tropical Fresh Water Line above Centre of Disc | 14" |
| Fresh Water Line | 7 1/4" |
| Tropical Line | 6 3/4" |
| Winter Line below | 6 3/4" |
| Winter North Atlantic Line | 11 1/4" |

| | |
|--------------------------------|-------------------|
| Tropical Fresh Water Freeboard | 5'-3" |
| Fresh Water | 5'-13 1/4" |
| Tropical | 5'-10 1/4" |
| Winter | 6'-11 1/4" |
| Winter North Atlantic | 7'-4 1/4" |

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.

Pooh Centre 111'-4"
Side 105'-4"
6'-0"
4'-0"
10 5'-4"
109'-4"
= 109.33
.96
110.29

$\frac{1}{3}$ diff

A.P. to centre of
main stock

Equivalent
length

Bridge Centre 48.0
Side 44.0
4.0
2.67
43.17
45.84

$\frac{1}{3}$ diff

Equivalent
length

REDUCTION FOR SUPERSTURUTURES

| Height | Reduction | Correction |
|--------|-----------|------------|
| 7.0 | 0.00 | 0.00 |
| 7.0 | 0.00 | 0.00 |
| 7.0 | 0.00 | 0.00 |

SHEER CORRECTION

| Product | Original | Corrected |
|---------|----------|-----------|
| 00.00 | 00.00 | 00.00 |
| 00.00 | 00.00 | 00.00 |
| 00.00 | 00.00 | 00.00 |
| 00.00 | 00.00 | 00.00 |
| 00.00 | 00.00 | 00.00 |
| 00.00 | 00.00 | 00.00 |
| 00.00 | 00.00 | 00.00 |
| 00.00 | 00.00 | 00.00 |
| 00.00 | 00.00 | 00.00 |
| 00.00 | 00.00 | 00.00 |

Trade of ship TANKER.

Names of sister ships N°325 EMPIRE GOLD N°326 EMPIRE GRANITE N°327 EMPIRE OIL N°328 EMPIRE MICA N°329 EMPIRE SAPPHIRE
N°330 EMPIRE AMETHYST N°334 EMPIRE EMERALD N°335 EMPIRE CALT

Builder's name and yard number FURNESS S. B. C. L. N° 339

Owners MINISTRY OF WAR TRANSPORT

Fee £ 10.00 CHARGED WITH FIRST ENTRY



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Foundation