

Empire Lightning
36380

Lloyd's Register of Shipping.

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3 SEP 1941

SURVEYS FOR FREEBOARD.

No 33187

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name **"EMPIRE WYCLIF"** Official Number **168923** Nationality and Port of Registry **BRITISH SUNDARLAND** Gross Tonnage **6966** Date of Build **1941**

Port of Survey **SUNDERLAND**

Date of Survey **WHILE BUILDING**

Surveyor's Signature **R.M. Wilson**

Particulars of Classification **+ 100 A.1. WITH FREEBOARD (CONTEMPLATED)**

Moulded Dimensions: Length **422.5** Breadth **56.67** Depth **36.83** ~~24.00~~ ~~28.08~~

Moulded displacement at moulded draught = 85 per cent. of moulded depth ~~16196~~ ~~11888~~ tons

Coefficient of fineness for use with Tables ~~746(31.32)~~ ~~693(23.00)~~ **.756**

Depth for Freeboard (D). Moulded depth ... **36.83** Stringer plate **.65"** Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ **.05'**

Depth correction. (a) Where D is greater than Table depth $(D - \text{Table depth}) R =$ **$(36.88 - 28.16) \times 3 = 26.16$** (b) Where D is less than Table depth (if allowed) (Table depth - D) R =

Depth for Freeboard (D) = **36.88'** If restricted by superstructures

Round of Beam correction. Moulded Breadth (B) **56.67** Standard Round of Beam = $\frac{B \times 12}{50} =$ **13.60** Ship's Round of Beam = **14"** Difference **.40** Restricted to Correction = $\frac{\text{Diff}}{4} \times (1 - \frac{S_1}{L}) =$ **$\frac{.40}{4} = .10$**

DEDUCTION FOR SUPERSTRUCTURES.

| | Mean Covered Length (S) | Equivalent Enclosed Length (S ₁) | Height | Height Correction | Effective Length (E) |
|--------------------|-------------------------|--|--------|-------------------|----------------------|
| Poop enclosed ... | | | | | |
| " overhang ... | | | | | |
| R.Q.D. enclosed | | | | | |
| " overhang | | | | | |
| Bridge enclosed... | | | | | |
| " overhang aft | | | | | |
| " overhang forward | | | | | |
| F'cle enclosed ... | | | | | |
| " overhang ... | | | | | |
| Trunk aft | | | | | |
| " forward ... | | | | | |
| Tonnage opening af | | | | | |
| " " forward | | | | | |
| Total ... | | | | | |

Standard Height of Superstructure **7.5'**

" " R.Q.D. **42.00"**

Deduction for complete superstructure

Percentage covered $\frac{S}{L} =$ **Nie.**

" " $\frac{S_1}{L} =$

" " $\frac{E}{L} =$

Percentage from Table, Line A. ☒

(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 = **Nie.**

SHEER CORRECTION.

| Station | Standard | S | Product | Actual Ordinate | Effective Ordinate | S | Product |
|-------------------------------|----------|---|---------|------------------|--------------------|---|---------|
| A.P. ... | 5 15 | 1 | 51.25 | 63 | 63.00 | 1 | 63.00 |
| $\frac{1}{4}$ L from A.P. ... | 13.25 | 4 | 93.00 | 27 $\frac{3}{4}$ | 27.75 | 4 | 111.00 |
| $\frac{2}{4}$ L " ... | 5.745 | 2 | 11.49 | 7 $\frac{1}{2}$ | 7.5 | 2 | 15.00 |
| Amidships ... | - | 4 | - | 0 | - | 4 | - |
| $\frac{3}{4}$ L from F.P. ... | 11.49 | 2 | 22.98 | 13 $\frac{1}{2}$ | 13.50 | 2 | 27.00 |
| $\frac{1}{4}$ L " ... | 46.50 | 4 | 186.00 | 53 $\frac{1}{2}$ | 53.50 | 4 | 214.00 |
| F.P. ... | 104.50 | 1 | 104.50 | 136 | 136.00 | 1 | 136.00 |
| Total ... | | | 470.21 | | | | 566.00 |

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) =$ **$\frac{15.78}{18} \times .75 = -3.91"$**

If limited on account of midship superstructure.

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

Mean actual sheer forward = Mean standard sheer forward =

Length of enclosed superstructure forward of amidships = **0**

" " aft of " = **0**

If limited to maximum allowance of $1\frac{1}{2}$ ins. per 100 ft. ☒

Deduction for Tropical Freeboard.
Addition for Winter and Winter North Atlantic Freeboard.Depth to Freeboard Deck = **36.88**
Summer freeboard = **10.31**
Moulded draught (d) = **26.57**Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = **$6.64 = 6\frac{3}{4}"$**
Addition for Winter North Atlantic Freeboard (if required) = ☒

Deduction for Fresh Water.

Displacement in salt water at summer load water line $\Delta =$ **13622**
Tons per inch immersion at summer load water line $T =$ **47.5**
Deduction = $\frac{\Delta}{40T}$ inches = **7.17**
= **$7\frac{1}{4}"$**

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient **$756 + 68 = 1.436 / 1.36$**
Depth Correction ... **26.16**
Deduction for superstructures ... **-**
Sheer correction ... **3.99**
Round of Beam correction ... **.10**
Correction for Thickness of Deck amidships ... **-**
Other corrections, scantlings, etc. to corrected draught **12.03**
38.19 **4.00** **+ 34.10**
Summer Freeboard = **123.75**

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 $\frac{1}{4}"$**
Tropical Line **6 $\frac{3}{4}"$**
Winter Line below **6 $\frac{3}{4}"$**
Winter North Atlantic Line **✓**Tropical Fresh Water Freeboard **10'-3 $\frac{3}{4}"$**
Fresh Water **9'-13 $\frac{1}{4}"$**
Tropical **9'-8 $\frac{1}{2}"$**
Winter **10'-10 $\frac{1}{2}"$**
Winter North Atlantic **✓**

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.

Ms. A. 9. 2. 18

Wm. W. Wilson

Trade of ship.

Names of sister ships S.S. Empire Lightning, Empire Sumner, Empire Jean, Empire Burton Sld. Pfts No 32933, 33064, 33105, 33149.

Builder's name and yard number Yeom Short Bros. No 467

OWNERS..... *Ministry of War Transport.*

Fee £ 17 - -

Will be charged on completion.

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