

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

J- SEP 1945

N° 34287.

Ship's Name **M.V. EMPIRE** Official Number **180169** Nationality and Port of Registry **British** Gross Tonnage **3771** Date of Build **Sunderland**

Port of Survey **Sunderland**

Date of Survey **During Construction**

Surveyor's Signature **H. B. Challa**

Moulded Dimensions: Length **336.00** Breadth **48.00** Depth **26.75**

Moulded displacement at moulded draught = 85 per cent. of moulded depth **7845** tons

Coefficient of fineness for use with Tables **.75**

Particulars of Classification **+100 A-1. Carrying Petroleum in Bulk (contemplated)**

DEPTH FOR FREEBOARD (D).

Moulded depth ... **26.75**

Stringer plate ... **.48** ... **.04**

Sheathing on exposed deck ☒

$T \left(\frac{L-S}{L} \right) =$

Depth for Freeboard (D) = **26.79**

DEPTH CORRECTION.

- (a) Where D is greater than Table depth (D-Table depth) R = $(26.79 - 22.40) \times 2.584 = +11.34$
- (b) Where D is less than Table depth (if allowed) (Table depth-D) R = ☒
- If restricted by superstructures ☒

ROUND OF BEAM CORRECTION.

Moulded Breadth (B) **48.00**

Standard Round of Beam = $\frac{B \times 12}{50} = 11.52$

Ship's Round of Beam **see sketch** **12.51** eqmt.

Difference **.99**

Restricted to ☒

Correction = $\frac{\text{Diff}^\circ}{4} \times \left(1 - \frac{S_1}{L}\right) = \frac{.99}{4} \times \left(1 - \frac{.6425}{1}\right) = -.16$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed EQUIVLT. ...	89.79	90.79	7.5	-	90.79
" overhang ...	90.79				
R.Q.D. enclosed ...					
" overhang ...					
Bridge enclosed ...					
" overhang aft ...					
" overhang forward ...					
F'cle enclosed ...	29.21	29.21	7.5		29.21
" overhang25	.12			.12
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" " forward ...	120.25				
Total ...	418.88	120.12			120.12

Standard Height of Superstructure **6.86**" " R.Q.D. ☒Deduction for complete superstructure **37.73**Percentage covered $\frac{S}{L} = 35.79$

$$\left. \begin{array}{l} \frac{S_1}{L} = \\ \frac{E}{L} = \end{array} \right\} 35.75$$

Percentage from Table, Line A. TANKER 26.75 (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 = $37.73 \times .2675 = -10.09$

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	43.60	1		43.60	34.75	34.75	1		34.75
$\frac{1}{8}$ L from A.P. ...	19.40	4		77.60	7.00	7.00	4		28.00
$\frac{2}{8}$ L " ...	4.80	2		9.60	-	-	2		-
Amidships ...	-	4		-	-	-	4		-
$\frac{2}{8}$ L from F.P. ...	9.59	2		19.18	-	-	2		-
$\frac{1}{8}$ L " ...	38.80	4		155.20	1.75	1.75	4		7.00
F.P. ...	87.20	1		87.20	60.00	60.00	1		60.00
Total ...				392.38					129.75

Mean actual sheer aft
Mean standard sheer aft =

DEFICIENT.

Mean actual sheer forward
Mean standard sheer forward =

Length of enclosed superstructure forward of amidships =

" " aft of " =

NIL.

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{262.63}{18} \left(.75 - \frac{.1789}{1} \right) = +8.33$

If limited on account of midship superstructure. ☒

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 = **26.79**

Summer freeboard = **5.02**

Moulded draught (d) = **21.77**

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = $5.44 = 5\frac{1}{2}$ Addition for Winter North Atlantic Freeboard (if required) = $5.44 + 3.36 = 8.80 = 8\frac{3}{4}$

Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta = 7510$

Tons per inch immersion at summer load water line

T = **32.7**Deduction = $\frac{\Delta}{40 T}$ inches= $5.74 = 5\frac{3}{4}$

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{.749 + .68}{1.36} = \frac{1.429}{1.36}$

	+	-
Depth Correction ...	11.34	-
Deduction for superstructures ...	-	10.09
Sheer correction ...	8.33	-
Round of Beam correction ...	-	.16
Correction for Thickness of Deck amidships ...	-	-
Other corrections, scantlings, etc. ...	-	-
	19.67	10.25
Summer Freeboard =	60.24	

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

Tropical Fresh Water Line above Centre of Disc ...	11 $\frac{1}{4}$
Fresh Water Line " " ...	5 $\frac{3}{4}$
Tropical Line " " ...	5 $\frac{1}{2}$
Winter Line below " " ...	5 $\frac{1}{2}$
Winter North Atlantic Line " " ...	8 $\frac{3}{4}$

Tropical Fresh Water Freeboard ...

Fresh Water " ...

Tropical " ...

Winter " ...

Winter North Atlantic " ...

Empire Senlac.

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.

Displacement at 22'0" draft = 7534 tons.
Tons per Inch = 32.72.

Poop

$$\frac{4.92 (20 + [27.5 \times .5])}{47.5}$$

= 3.50

87.29

90.79

Camber

$$\frac{(18.75 \times 1) + (.5 \times 29.25 \times 1)}{48}$$

$$= \frac{18.75 + 14.625}{48}$$

$$= \frac{33.375}{48} = .695$$

$$\therefore \text{Equiv. camber} = \frac{3}{2} \times .695 \times 12 = \underline{12.51}$$

mint

Trade of ship

Names of sister ships

M.V. Empire Arrow Sld. Rpt. No. 34237

Builder's name and yard number

Messrs J.L. Thompson & Son Sld. Yard No. 642.

Owners

M.O.W.T.

Fee £

14.

will be charged on F.E



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