

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

AUG 16 1940

Ship's Name **EMPIRE LIGHT** Official Number **6900** Nationality and Port of Registry **British Glasgow** Gross Tonnage **6828** Date of Build **1940**

Port of Survey **Glasgow**

Date of Survey **Whilst building.**

Moulded Dimensions: Length **420** Breadth **57'-2 1/2"** Depth **34'-6 1/2"**

Moulded displacement at moulded draught = 85 per cent. of moulded depth **15358** tons

Coefficient of fineness for use with Tables **.761**

Surveyor's Signature **T.R. McShane**

Particulars of Classification **+100 A.1. with freeboard corresponding to a summer draught of 25'-5"**

Depth for Freeboard (D).	Depth correction.	Round of Beam correction.
Moulded depth ... 34'-6 1/2"	(a) Where D is greater than Table depth (D - Table depth) R = (34.53 - 28.04) 3 = + 19.47	Moulded Breadth (B) 57'-3 1/2"
Stringer plate ... 3'-03"	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = -	Standard Round of Beam = $\frac{B \times 12}{50} = \mathbf{13.75}$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$	If restricted by superstructures -	Ship's Round of Beam = 14"
Depth for Freeboard (D) = 34.53		Difference .25
		Restricted to
		Correction = $\frac{\text{Diff}^*}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.25 \times 48.35}{4} = \mathbf{.03}$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed <i>equivalent</i>	40.70	40.70	7'-6"	-	40.70
„ overhang ...	✓				
R.Q.D. enclosed	✓				
„ overhang	✓				
Bridge enclosed <i>equivalent</i>	142.67	142.67	7'-6"	-	142.67
„ overhang aft ...	✓				
„ overhang forward	✓				
F'cle enclosed <i>equivalent</i>	33.83	33.83	7'-6"	-	33.83
„ overhang ...	✓				
Trunk aft ...	✓				
„ forward ...	✓				
Tonnage opening aft ...	✓				
„ „ forward	✓				
Total ...	217.20	217.20			217.20

Standard Height of Superstructure	7'-5"
„ „ R.Q.D.	42"
Deduction for complete superstructure	42"
Percentage covered $\frac{S}{L} =$	51.65
„ „ $\frac{S_1}{L} =$	
„ „ $\frac{E}{L} =$	
Percentage from Table, Line A. ✓	
(corrected for absence of fore-castle (if required))	
Percentage from Table, Line B. 37.65	
(corrected for absence of fore-castle (if required))	
Interpolation for bridge less than 2L (if required)	
Deduction = $42 \times 37.65 =$	- 15.81

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. <i>CL Rudder Strick</i>	52.06	1		52.06	57 1/4	57.25	1		57.25
1/4 L from A.P. ...	23.165	4		92.66	24 7/8	24.125	4		96.50
1/2 L „ ...	5.725	2		11.45	6	6.00	2		12.00
Amidships ...	-	4		-	0	-	4		-
3/4 L from F.P. ...	11.45	2		22.90	12	12.00	2		24.00
1/4 L „ ...	46.33	4		185.32	47 7/8	47.875	4		191.50
F.P. ...	104.12	1		104.12	108	108.00	1		108.00
Total ...				468.51					489.25

Mean actual sheer aft = **Mean standard sheer aft** } *same.*

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

Length of enclosed superstructure forward of amidships = **> .1**

„ „ aft of „ = **> .1**

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{20.74}{18} \left(.75 - \frac{.2582}{2} \right) = \mathbf{-.57}$

If limited on account of midship superstructure. ✓

If limited to maximum allowance of 1 1/2 ins. per 100 ft. ✓

Deduction for Tropical Freeboard.	Deduction for Fresh Water.	TABULAR FREEBOARD corrected for Flush Deck (if required)
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient $\frac{.761 + .68}{1.36} = \frac{1.441}{1.36}$
Depth to Freeboard Deck = 34.53	$\Delta =$	Depth Correction ... 19.47
Summer freeboard = 9.12	Tons per inch immersion at summer load water line	Deduction for superstructures ... 15.81
Moulded draught (d) = 25.41	T =	Sheer correction57
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 6.35 = 6 1/4	Deduction = $\frac{\Delta}{40 T}$ inches	Round of Beam correction03
Addition for Winter North Atlantic Freeboard (if required) =	6 3/4	Correction for Thickness of Deck amidships ... 23.82
		Other corrections, scantlings, etc. <i>as per summer draught of 25'-5"</i>
		43.29
		Summer Freeboard = 109.50

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

Tropical Fresh Water Line above Centre of Disc ...	13"	Tropical Fresh Water Freeboard ...	9'-1 1/2"
Fresh Water Line „ „ ...	6 3/4"	Fresh Water „ „ ...	8'-0 1/2"
Tropical Line „ „ ...	6 1/4"	Tropical „ „ ...	8'-6 3/4"
Winter Line below „ „ ...	6 1/4"	Winter „ „ ...	8'-7 1/4"
Winter North Atlantic Line „ „ ...	-	Winter North Atlantic „ „ ...	9'-7 3/4"

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Empire Light

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.

$$\begin{array}{r} \text{Poop.} \quad 37.08 \\ \hline 2/3 \times 5 = \frac{3.33}{40.41} \end{array}$$

$$\begin{array}{r} \text{Bridge.} \quad 137.00 \\ \hline 2/3 \times 4.5 = \frac{3.00}{143.00} \end{array}$$

$$\begin{array}{r} \text{File.} \quad 28.78 \\ \hline 2/3 \times 6.75 = \frac{4.50}{33.25} \end{array}$$

$$\begin{array}{r} 37.92 \\ \hline 2/3 \times 4.17 = \frac{2.78}{40.70} \end{array}$$

$$\begin{array}{r} 136.00 \\ \hline 2/3 \times 10 = \frac{6.67}{142.67} \end{array}$$

$$\begin{array}{r} 30.50 \\ \hline 2/3 \times 5 = \frac{3.33}{33.83} \end{array}$$

Trade of ship *International*

Names of sister ships *Similar ITRIA*

Builder's name and yard number *Barclay Curle & Co Ltd* *Yard No 677.*

Owners *Memis Ship of Shipping.*

17.0.0.



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