

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ships Name **EMPIRE VOLUNTEER** Official Number **152349** Nationality and Port of Registry **British London** Gross Tonnage **5318.81** Date of Build **1931**

Port of Survey **Cardiff** Date of Survey **July 1940** Surveyor's Signature **W. Richardson**

Moulded Dimensions: Length **400.0** Breadth **52.08** Depth **31.0** fur.

Moulded displacement at moulded draught = 85 per cent. of moulded depth **12250** tons

Coefficient of fineness for use with Tables **782**

Particulars of Classification **Reclassification contemplated**

Depth for Freeboard (D).

Moulded depth ... **31.0**

Stringer plate ... **46**

Sheathing on exposed deck **None**

$T \left(\frac{L-S}{L} \right) =$ **0.4**

Depth for Freeboard (D) **31.04**

Depth correction.

(a) Where D is greater than Table depth (D - Table depth) R = **(31.04 - 26.67) x 3 = +13.11**

(b) Where D is less than Table depth (if allowed) (Table depth - D) R = **4.37**

If restricted by superstructures

Round of Beam correction.

Moulded Breadth (B) **52.00'**

Standard Round of Beam = $\frac{B \times 12}{50} =$ **12.48"**

Ship's Round of Beam = **13**

Difference **Excess** **52"**

Restricted to

Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) =$ **$\frac{52}{4} \times 4926 = -06"$**

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed ...	49.25	49.15	8'0"		49.25	Standard Height of Superstructure 7.5'
overhang ...	3.75	.19			.19	R.Q.D. 42.00"
R.Q.D. enclosed						Deduction for complete superstructure
overhang						Percentage covered $\frac{S}{L} =$ 50.85
Bridge enclosed...	113.25	113.15	8'0"		113.25	$\frac{S_1}{L} =$ 50.74
overhang aft	3.75	.28			.28	$\frac{E}{L} =$ 50.74
overhang forward	33.83	.17			.17	Percentage from Table, Line A.
Trunk aft	39.83	39.83	8'0"		39.83	(corrected for absence of forecastle (if required))
overhang						Percentage from Table, Line B.
Trunk aft						(corrected for absence of forecastle (if required))
forward						Interpolation for bridge less than 2L (if required)
Tonnage opening aft						Deduction = 42 x 3674 = 1543
forward						
Total	203.41	202.97			202.97	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P.	50.00	1		50.00	62	62.00	1		62.00	Mean actual sheer aft = Excess
1/4 L from A.P.	22.25	4		89.00	25	25.00	4		100.00	Mean actual sheer forward = Excess
1/2 L	5.50	2		11.00	6	6.00	2		12.00	Mean standard sheer aft
Amidships	-	4		-	0	-	4		-	Mean standard sheer forward
3/4 L from F.P.	11.00	2		22.00	17	17.00	2		34.00	Length of enclosed superstructure forward of amidships = 7.1L
1/4 L	44.50	4		178.00	55.8	55.80	4		223.20	" aft of " = 7.1L
F.P.	100.00	1		100.00	125.5	125.5	1		125.50	
Total				450.00					556.70	

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{75-S}{2L} \right) =$ **$\frac{106.70}{18} \left(\frac{75-2542}{2L} \right) = 2.94$**

If limited on account of midship superstructure.

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

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = **31.04**

Summer freeboard = **5.96**

Moulded draught (d) = **25.08**

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = **6.27 = 6 1/4"**

Addition for Winter North Atlantic Freeboard (if required) =

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta =$ **11670**

Tons per inch immersion at summer load water line

$T =$ **42.6**

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

= **6.85**

= **6 3/4"**

TABULAR FREEBOARD corrected for Fresh Deck (if required)

Correction for coefficient

782 + 68 = 1.462 / 1.36

1.36

Depth Correction ...

Deduction for superstructures ...

Sheer correction ...

Round of Beam correction ...

Correction for Thickness of Deck amidships ...

Other corrections, scantlings, etc. ...

13.11

15.43

2.94

0.06

18.74

5.32

71.54

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

Tropical Fresh Water Line above Centre of Disc ... **13"**

Fresh Water Line " " ... **6 3/4"**

Tropical Line " " ... **6 1/4"**

Winter Line below " " ... **6 1/4"**

Winter North Atlantic Line " " ... **6 1/4"**

Tropical Fresh Water Freeboard ...

Fresh Water " " ...

Tropical " " ...

Winter " " ...

Winter North Atlantic " " ...

119 JUL 1940

Lloyd's Register of Shipping SURVEYOR'S REPORT FOR FREEBOARD. (LLOYD'S REGISTER OF SHIPPING, SAILING SHIP, TANKER.)

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.

Wm. Richardson
 10th July 1940

Port of Survey <i>London</i>	Date of Survey <i>10th July 1940</i>	Surveyor's Signature <i>Wm. Richardson</i>	Name of Ship <i>British</i>	Date of Build <i>1938</i>
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Board of Trade Certificate (If applicable)	Tonnage (If applicable)	Length (If applicable)	Breadth (If applicable)	Depth (If applicable)
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Name of Ship <i>British</i>	Date of Build <i>1938</i>	Tonnage (If applicable)	Length (If applicable)	Breadth (If applicable)	Depth (If applicable)
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Trade of ship _____
 Names of sister ships _____
 Builder's name and yard number _____
 Owners *Ministry of Shipping*
 Fee £ *16* 0 0