

With openings in poop part closed.

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name EMPIRE SUCCESS	Official Number 167430	Nationality and Port of Registry British London.	Gross Tonnage	Date of Build 1921	Port of Survey
Moulded Dimensions: Length 450.00 Breadth 58.27 Depth 29.53					Date of Survey 11-4-41
Moulded displacement at moulded draught = 85 per cent. of moulded depth 14055 tons					Surveyor's Signature
Coefficient of fineness for use with Tables .747					Particulars of Classification 100 A.

Depth for Freeboard (D). Moulded depth 29.53 Stringer plate03 Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ ✓ Depth for Freeboard (D) = 29.56	Depth correction. (a) Where D is greater than Table depth $(D - \text{Table depth}) R =$ ✓ (b) Where D is less than Table depth (if allowed) $(\text{Table depth} - D) R =$ $(30.00 - 29.56) 3 = -1.32$ If restricted by superstructures No.	Round of Beam correction. Moulded Breadth (B) 58.27 ✓ Standard Round of Beam = $\frac{B \times 12}{50} = 13.98$ Ship's Round of Beam = 13.70 ✓ Difference .28 ✓ Restricted to Correction = $\frac{\text{Diff}^*}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.28 \times 0.464}{4} = +.016$ ✓
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DEDUCTION FOR SUPERSTRUCTURES.

Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed 365.00	365.00 ✓	8.0	-	365.00
" overhang				
R.Q.D. enclosed				
" overhang				
Bridge enclosed				
" overhang aft				
" overhang forward				
F'cle enclosed <i>equivalent</i> 63.29 ✓	63.29 ✓	8.62	-	63.29
" overhang 1.71 ✓	.85 ✓			.85
Trunk aft				
" forward				
Tonnage opening aft				
" forward				
Total	430.00	429.14		429.14

Standard Height of Superstructure **7.5'**

" " R.Q.D. **-**

Deduction for complete superstructure **42**

Percentage covered $\frac{S}{L} = 95.55$ ✓

" " $\frac{S_1}{L} = 95.36$ ✓

Percentage from Table, Line A. **94.29** ✓
(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 = $42 \times 94.29 = -39.60$ ✓

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	55.00	1		55.00	53.15 ✓	59.15 ✓	1		59.15
$\frac{1}{2}L$ from A.P.	24.48	4		97.92	20.86	26.32 ✓	4		105.28
$\frac{2}{3}L$ "	6.05	2		12.10	-1.97	4.03 ✓	2		8.06
Amidships	-	4		-	-	-	4		-
$\frac{2}{3}L$ from F.P.	12.10	2		24.20	17.72	17.72	2		35.44
$\frac{1}{2}L$ "	48.95	4		195.80	64.96	64.96	4		259.84
F.P.	110.00	1		110.00	118.11 ✓	118.11	1		118.11
Total				495.02					585.88

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{75-S}{2L} \right) = \frac{90.86}{18} \left(\frac{75-495.02}{2 \times 450} \right) = -1.37$ ✓

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 = $\sqrt{29.56}$ Ft. Summer freeboard = $\sqrt{4.08}$ Moulded draught (d) = $\sqrt{25.48}$ Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = $\frac{6.37}{4} = 1.59$ Addition for Winter North Atlantic Freeboard (if required) =	Deduction for Fresh Water. Displacement in salt water at summer load water line $\Delta = 14415$ ✓ Tons per inch immersion at summer load water line $T = 50.6$ ✓ Deduction = $\frac{\Delta}{40T}$ inches = $\frac{14415}{40 \times 50.6} = 7.12$ ✓	TABULAR FREEBOARD corrected for Flush Deck (if required) 87.10 ✓ Correction for coefficient $\frac{747+68}{1.36} = \frac{815}{1.36} = 599$ ✓ <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">+</td> <td style="text-align: center;">-</td> </tr> <tr> <td style="text-align: center;">Depth Correction</td> <td style="text-align: center;">1.32</td> </tr> <tr> <td style="text-align: center;">Deduction for superstructures</td> <td style="text-align: center;">39.60</td> </tr> <tr> <td style="text-align: center;">Sheer correction</td> <td style="text-align: center;">1.37</td> </tr> <tr> <td style="text-align: center;">Round of Beam correction</td> <td style="text-align: center;">-</td> </tr> <tr> <td style="text-align: center;">Correction for Thickness of Deck amidships</td> <td style="text-align: center;">-</td> </tr> <tr> <td style="text-align: center;">Other corrections, scantlings, etc.</td> <td style="text-align: center;">-</td> </tr> <tr> <td style="text-align: center;">Total</td> <td style="text-align: center;">-42.29</td> </tr> </table> Summer Freeboard = 49.11 ✓	+	-	Depth Correction	1.32	Deduction for superstructures	39.60	Sheer correction	1.37	Round of Beam correction	-	Correction for Thickness of Deck amidships	-	Other corrections, scantlings, etc.	-	Total	-42.29
+	-																	
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Total	-42.29																	

20 APR 1941 **SUMMER FREEBOARD** amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck:

Tropical Fresh Water Line above Centre of Disc	13 1/4"	Tropical Fresh Water Freeboard	2-11 3/4"
Fresh Water Line " "	7"	Fresh Water " "	3-6"
Tropical Line " "	6 1/4"	Tropical " "	3-6 3/4"
Winter Line below " "	6 1/4"	Winter " "	4-7 1/4"
Winter North Atlantic Line " "		Winter North Atlantic " "	

Lloyd's Register Foundation
1/7/41

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.

Trade of ship.....

Names of sister ships.....

Builder's name and yard number.....

Owners.....

Fee £.....



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