

28 FEB 1942

Rpt. C.11 (Comp.).

Empire Hope 36621.

Index No. 36767
(For London Office only.)

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name EMPIRE GRACE.	Official Number 168508	Nationality and Port of Registry British Belfast	Gross Tonnage 13478 12804 M/T 2/11/57	Date of Build 1942	Port of Survey Belfast
Moulded Dimensions: Length 512.9 Breadth 70 Depth 43.4 An C.S.S. vessel 512.88 25.84					Date of Survey during construction
Moulded displacement at moulded draught = 85 per cent. of moulded depth An C.S.S. vessel 27670 tons					Surveyor's Signature Wm Balfour
Coefficient of fineness for use with Tables 731					Particulars of Classification +100A1. with freeboard (contemplated)

DEPTH FOR FREEBOARD (D). Moulded depth ... 43.40 Stringer plate ... 04 Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ ✓ Depth for Freeboard (D) = 43.44	DEPTH CORRECTION. (a) Where D is greater than Table depth $(D - \text{Table depth}) R =$ $(43.44 - 34.19) \times 3 = +17.75$ (b) Where D is less than Table depth (if allowed) $(\text{Table depth} - D) R =$ ✓ If restricted by superstructures ✓	ROUND OF BEAM CORRECTION. Moulded Breadth (B) 70.0' Standard Round of Beam = $\frac{B \times 12}{50} = 16.8''$ Ship's Round of Beam 17.5' = 17.5'' Difference 70'' Restricted to ✓ Correction = $\frac{\text{Diff}^{\circ}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{70}{4} \times .3671 = -10.6''$
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DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...	64.3	64.3	8 ✓	✓	64.30
„ overhang ...	✓				
R.Q.D. enclosed ...	✓				
„ overhang ...	✓				
Bridge enclosed ...	199.3	199.3	8 ✓	✓	199.30
„ overhang aft ...	✓				
„ overhang forward ...	✓				
Fore enclosed Equiv ...	60.5	60.5	8 ✓	✓	60.5
„ overhang ...	1.0	.5			.5
Trunk aft ...	✓				
„ forward ...	✓				
Tonnage opening aft ...	✓				
„ „ forward ...	✓				
Total ...	325.1	324.6			324.6

Standard Height of Superstructure	7.5'
„ „ R.Q.D.	✓
Deduction for complete superstructure	42.00''
Percentage covered $\frac{S}{L} =$	63.68
„ „ $\frac{S_1}{L} =$	63.29
„ „ $\frac{E}{L} =$	63.29
Percentage from Table, Line A.	✓
(corrected for absence of forecastle (if required))	✓
Percentage from Table, Line B.	51.59
(corrected for absence of forecastle (if required))	✓
Interpolation for bridge less than .2L (if required)	✓
Deduction = $42.00 \times .5159 =$	-21.66''

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	61.29	1		61.29	69	69.00	1		69.00
$\frac{1}{2}L$ from A.P. ...	27.275	4		109.10	29.2	29.20	4		116.80
$\frac{3}{4}L$ „ ...	6.74	2		13.48	5.7	5.70	2		11.40
Amidships ...	-	4		-	-	-	4		-
$\frac{3}{4}L$ from F.P. ...	13.485	2		26.97	16.8	16.80	2		33.60
$\frac{1}{2}L$ „ ...	54.555	4		218.22	60.8	60.80	4		243.20
F.P. ...	122.58	1		122.58	132.4	132.40	1		132.40
Total ...				551.64					606.40

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

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

Length of enclosed superstructure forward of amidships = $\frac{L}{L}$ **> .1**
 „ „ aft of „ = **> .1**

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{54.76}{18} \times (.75 - .3169) = -1.32''$
 If limited on account of midship superstructure. **No.** **4331** 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 = 43.44 Summer freeboard = 12.48 Moulded draught (d) = 30.96 Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 7.74 = 73/4'' Addition for Winter North Atlantic Freeboard (if required) =	Deduction for Fresh Water. Displacement in salt water at summer load water line $\Delta = 22814$ Tons per inch immersion at summer load water line $T = 70.70$ Deduction = $\frac{\Delta}{40 T}$ inches = 8.07 = 8'' 30' aft A 2354 31 " A 22690	TABULAR FREEBOARD corrected for Flush Deck (if required) Correction for coefficient $\frac{.731 + .68}{1.36} = 1.41/1.36$ Depth Correction ... 47.75 Deduction for superstructures ... 21.66 Sheer correction ... 1.32 Round of Beam correction06 Correction for Thickness of Deck amidships ... 35.01 Other corrections, scantlings, etc. 6.00 Summer Freeboard = 149.75	106.04 110.03 81.2 3.342 +39.72
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SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Steel, Deck :-

Tropical Fresh Water Line above Centre of Disc	15 3/4''
Fresh Water Line	8''
Tropical Line	7 3/4''
Winter Line below	7 3/4''
Winter North Atlantic Line	✓

Tropical Fresh Water Freeboard	11' - 5 3/4''
Fresh Water	11' - 2''
Tropical	11' - 9 3/4''
Winter	11' - 10''
Winter North Atlantic	13' - 1 1/2''

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.

Bridge equivalent length:

$$\begin{array}{r} 195.5' \\ 3.80' \\ \hline 199.30' \end{array} = + \frac{2}{3} \times 5.67$$

Forecastle.

Recess $\frac{4.5 \times 4.75 \times 2}{43} = \frac{1.00'}{60.5} =$ overhang
equivalent endures
Total

1-2

Trade of ship

Passenger and refrigerated cargo

Names of sister ships

Empire Hope NW1050

Builder's name and yard number

Harland & Wolff No 7051

Owners

Admiralty M.S. Branch.

Fee £.

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Foundation