

Amended Computation for alteration to stern
(Elliptical Stern replaced by Cruise Stern)

Lloyd's Register of Shipping.

Index No. 33803
(For London Office only).

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name Empire Star HARPENDEN.	Official Number 162474	Nationality and Port of Registry British	Gross Tonnage 1930-9	Date of Build 1930-9	Port of Survey Glasgow computation
Moulded Dimensions: Length 400.67 Breadth 54.25 Depth 27.08 <i>To centre of keel at Stock</i>				Date of Survey 12. XI.	
Displacement at moulded draught = 85 per cent. of moulded depth 10914 tons				Surveyor's Signature G. Fullerton	
Fineness for use with Tables .764				Particulars of Classification + 100 A1	

Depth for Freeboard (D). 27.08	Depth correction. (a) Where D is greater than Table depth (D - Table depth) R = (27.12 - 26.71) x 3 = +1.23 (b) Where D is less than Table depth (if allowed) (Table depth - D) R = .41 If restricted by superstructures <input checked="" type="checkbox"/>	Round of Beam correction. Moulded Breadth (B) 54.25 Standard Round of Beam = $\frac{B \times 12}{50}$ = 13.02 Ship's Round of Beam = 13.50 Difference .48 Restricted to Correction = $\frac{\text{Diff}^*}{4} \times (1 - \frac{S_1}{L})$ = $\frac{.48}{4} \times 1.796 = -.09$
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DEDUCTION FOR SUPERSTRUCTURES.

Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	Standard Height of Superstructure	R.Q.D.
38.67	38.67	8.0		38.67	7.50	
256.50	256.50	8.5		256.50	42.00	
33.50	33.50	8.0		33.50		
328.67	328.67			328.67		

Percentage covered $\frac{S}{L} = 82.04$
 $\frac{S_1}{L} = 82.04$
 $\frac{E}{L} = 82.04$
 Percentage from Table, Line A. ☒
 (corrected for absence of forecastle (if required)) ☒
 Percentage from Table, Line B. **77.83**
 (corrected for absence of forecastle (if required)) ☒
 Interpolation for bridge less than 2L (if required) ☒
 Deduction = **42.00 x .7783 = 32.69**

SHEER CORRECTION.

Standard Ordinate	S	Product	Actual Ordinate	Effective Ordinate	S	Product
50.07	1	50.07	61.38	61.38	1	61.38
22.28	4	89.12	27.86	27.86	4	111.44
5.57	2	11.02	6.98	6.98	2	13.96
-	4	-	-	-	4	-
11.015	2	22.03	13.32	13.32	2	26.64
44.56	4	178.24	53.64	53.64	4	214.56
100.13	1	100.13	120.00	120.00	1	120.00
		450.61				547.98

Mean actual sheer aft = **Excess**
 Mean standard sheer aft = **4**
 Mean actual sheer forward = **4**
 Mean standard sheer forward = **4**
 Length of enclosed superstructure forward of amidships = **> .1**
 " " aft of " = **> .1**
 Difference between sums of products $(\frac{.75 - S}{2L}) = \frac{47.37}{78} (\frac{.75 - .4102}{.3398}) = -1.84$
 account of midship superstructure. ☒ If limited to maximum allowance of 1 1/2 ins. per 100 ft. ☒

Tropical Freeboard. Winter and Winter North Freeboard. Freeboard Deck = 27.12 Freeboard = 3.56 Moulded draught (d) = 23.56 Tropical freeboard and addition for Freeboard = $\frac{d}{4}$ inches = 5.89 = 6 Winter North Atlantic Freeboard (if <input checked="" type="checkbox"/>)	Deduction for Fresh Water. Displacement in salt water at summer load water line $\Delta = 11,175$ Tons per inch immersion at summer load water line T = 43.5 Deduction = $\frac{\Delta}{40 T}$ inches = 6.42 = 6 1/2	TABULAR FREEBOARD corrected for Flush Deck (if required) Correction for coefficient .764 + .68 = 1.444 1.36 Depth Correction ... 1.23 Deduction for superstructures ... 32.69 Sheer correction ... 1.84 Round of Beam correction02 Correction for Thickness of Deck amidships ... Other corrections, scantlings, etc. ... 1.23 34.55 = 33.32 Summer Freeboard = 42.82
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SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck

Tropical Fresh Water Line above Centre of Disc	12 1/2
Fresh Water Line	6 1/2
Tropical Line	6
Winter Line below	6
Winter North Atlantic Line	6

Tropical Fresh Water Freeboard	2 - 6 1/4
Fresh Water	3 - 0 1/4
Tropical	3 - 0 3/4
Winter	4 - 0 3/4
Winter North Atlantic	4 - 0 3/4

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