

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name INDIAN ENDEAVOUR "EMPIRE DOMINICA"	Official Number 180162	Nationality and Port of Registry BRITISH SUNDERLAND.	Gross Tonnage ✓ 4319	Date of Build 1945	Port of Survey Sunderland
Moulded Dimensions: Length 425.81 Breadth 56.0 Depth 38.0521 <small>TO & OF RUDDER STOCK</small>					Date of Survey While building
Moulded displacement at moulded draught = 85 per cent. of moulded depth 32.34 ¹⁷¹⁴⁴ 17120 tons					Surveyor's Signature R. Wilson
Coefficient of fineness for use with Tables 778					Particulars of Classification 100 A.1 With freeboard (Contemplated)

DEPTH FOR FREEBOARD (D).	DEPTH CORRECTION.	ROUND OF BEAM CORRECTION.
Moulded depth ... 38.0521	(a) Where D is greater than Table depth (D-Table depth) R = (38.11-28.39) × 3 = +29.16	Moulded Breadth (B) 56.0
Stringer plate ... 70 ... 06	(b) Where D is less than Table depth (if allowed) (Table depth-D) R = 9.22	Standard Round of Beam = $\frac{B \times 12}{50} = 13.44$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ ✓	If restricted by superstructures	Ship's Round of Beam equivalent = 14.25
Depth for Freeboard (D) = 38.11		Difference 77.81
		Restricted to
		Correction = $\frac{\text{Diff}^e}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{81}{4} \times \frac{886}{17120} = -1.7$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed ...	34.5		3.0			Standard Height of Superstructure 7.5
" overhang ...	✓		↓	× 3/6		" " R.Q.D. 6.0
R.Q.D. enclosed ...		34.50			17.25	Deduction for complete superstructure 42
" overhang ...						Percentage covered $\frac{S}{L} = \frac{16.14}{11.56}$
Bridge enclosed ...						" " $\frac{S_1}{L} =$
" overhang aft ...						" " $\frac{E}{L} = 11.56$
" overhang forward ...						Percentage from Table, Line A. 578
F'cle enclosed ...	34.25	34.25	7.0	× 7/5	31.96	(corrected for absence of fore-castle (if required))
" overhang ...						Percentage from Table, Line B. ✓
Trunk aft ...						(corrected for absence of fore-castle (if required))
" forward ...						Interpolation for bridge less than .2L (if required) ✓
Tonnage opening aft ...						Deduction = 42 × .0578 = -2.43
" " forward ...						
Total ...	68.75	68.75			49.21	

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P. ...	52.58	1	52.58	9.125	9.12	1	9.12
$\frac{1}{8}L$ from A.P. ...	23.40	4	93.60	.125	.125	4	.50
$\frac{2}{8}L$ " ...	5.78	2	11.56			2	
Amidships ...		4				4	
$\frac{3}{8}L$ from F.P. ...	11.57	2	23.14			2	
$\frac{4}{8}L$ " ...	46.80	4	187.20	5.25	5.25	4	21.00
F.P. ...	105.16	1	105.16	78.75	78.75	1	78.75
Total ...			473.24				109.37

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{363.87}{18} \left(.75 - \frac{.0807}{.6693} \right) = +13.53$

If limited on account of midship superstructure. **✓**

Mean actual sheer aft

Mean standard sheer aft =

Mean actual sheer forward

Mean standard sheer forward =

Length of enclosed superstructure forward of amidships =

" " aft of " =

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = **38.11**

Summer freeboard = **11.42**

Moulded draught (d) = **26.69**

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = **6.67 = 6 $\frac{3}{4}$**

Addition for Winter North Atlantic Freeboard (if required) =

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta = 13880$

Tons per inch immersion at summer load water line

$T = 48.78$

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

= **7.11 = 7 $\frac{1}{4}$**

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{.778 + .68}{1.36} = \frac{1.458}{1.36}$

	+	-
Depth Correction ...	29.16	
Deduction for superstructures ...		2.43
Sheer correction ...	13.53	
Round of Beam correction17
Correction for Thickness of Deck amidships ...		
Other corrections, scantlings, etc. ...	11.57	
Corrected to a summer extreme draught of 26.9" (26.978 actual).	54.26	2.60

Summer Freeboard = **137.00**SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, ~~Water~~ Steel, Deck :-

Tropical Fresh Water Line above Centre of Disc ...	13$\frac{3}{4}$
Fresh Water Line " " ...	7$\frac{1}{4}$
Tropical Line " " ...	6$\frac{3}{4}$
Winter Line below " " ...	6$\frac{3}{4}$
Winter North Atlantic Line " " ...	✓

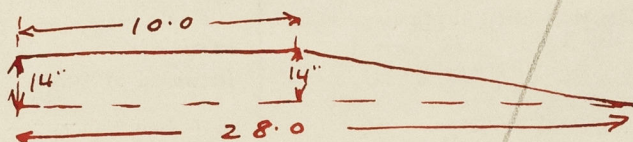
Tropical Fresh Water Freeboard ...	10$\frac{3}{4}$
Fresh Water " " ...	10$\frac{1}{2}$
Tropical " " ...	10$\frac{1}{2}$
Winter " " ...	11$\frac{1}{2}$
Winter North Atlantic " " ...	✓

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.

Displacement at 26'-9" draught = 13880 tons.

Tons per inch = 48.78 tons.

Allowance for keel = $1\frac{1}{2}$ "



Equivalent Camber:

$$\text{Area } (20 + 18) \times \frac{14}{12} = 44.33 \text{ s.f.}$$

$$\text{Mean height} = \frac{44.33}{5.6} = .792$$

$$\therefore \text{Equivalent camber} = .792 \times 1.5 \times 12 = \underline{14.25"}'$$

over

Trade of ship

Names of sister ships "EMPIRE NAIROBI" SUNDERLAND REPORT NO. 341A1

Builder's name and yard number Short Brothers Limited. Yard No. 485

Owners Ministry of War Transport

Fee £ 18 : - : -

Will be charged on F.E.



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Foundation