

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name "EMPIRE CLARION"	Official Number 168944	Nationality and Port of Registry BRITISH WEST HARTLEPOOL	Gross Tonnage 7031.21	Date of Build August 1942	Port of Survey West Hartlepool
Moulded Dimensions: Length 425'-0" Breadth 56'-0" Depth 37'-8" To C. of Stock 425'-11 1/4" = 425.94'				Date of Survey July 1942	
Moulded displacement at moulded draught = 85 per cent. of moulded depth 17138 tons				Surveyor's Signature W. J. Craig	
Coefficient of fineness for use with Tables .785				Particulars of Classification +100 A.1 with Freeboard.	

DEPTH FOR FREEBOARD (D). Moulded depth ... 37'-8" Stringer plate65" Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ ✓ Depth for Freeboard (D) = 37.72	DEPTH CORRECTION. (a) Where D is greater than Table depth $(D - \text{Table depth}) R =$ $(37.72 - 28.40) \times 3 = +27.96"$ (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) 56'-0" Standard Round of Beam = $\frac{B \times 12}{50} =$ 13.44" Ship's Round of Beam = 14" Difference .56" Restricted to ✓ Correction = $\frac{\text{Diff}^e}{4} \times \left(1 - \frac{S_1}{L}\right) =$ $\frac{.56}{4} \times .9163 = -.13"$
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DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed ...						Standard Height of Superstructure 7.5'
" overhang ...						" " R.Q.D. ✓
R.Q.D. enclosed ...						Deduction for complete superstructure 42.00"
" overhang ...						Percentage covered $\frac{S}{L} =$ 8.37
Bridge enclosed ...						" " $\frac{S_1}{L} =$ 7.54
" overhang aft ...						" " $\frac{E}{L} =$ 3.77
" overhang forward ...						Percentage from Table, Line A. 3.77
F'cle enclosed ...	35'-8"	35.67	6.75	6.75	32.10	(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 = 42.00 x .0377 = -1.58"
" " forward ...						
Total ...	35.67	35.67			32.10	

SHEER CORRECTION. No sheer between frame 29 and frame 129.

Station	Standard Ordinate	S M	Product	Actual Ordinate inches	Effective Ordinate	S M	Product
A.P. ...	52.59	1	52.59	31.0	31.0	1	31.0
1/8 L from A.P. ...	23.405	4	93.62	-	-	4	-
3/8 L " ...	5.785	2	11.57	-	-	2	-
Amidships ...	-	4	-	-	-	4	-
3/8 L from F.P. ...	11.57	2	23.14	-	-	2	-
1/8 L " ...	46.81	4	187.24	6.0	6.0	4	24.0
F.P. ...	105.19	1	105.19	81.0	81.0	1	81.0
Total ...			473.35				136.0

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) =$ $\frac{337.35}{18} \left(.75 - \frac{.0419}{2} \right) = + 13.27"$
 If limited on account of midship superstructure. **7.081** 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 = 37.72 Summer freeboard = 11.08 Moulded draught (d) = 26.64 Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = $\frac{26.64}{4} = 6.66 = 6 \frac{3}{4}"$ Addition for Winter North Atlantic Freeboard (if required) = ✓	Deduction for Fresh Water. Displacement in salt water at summer load water line 26.9' $\Delta =$ 14.006 Tons per inch immersion at summer load water line 26.9' $T =$ 49.23 Deduction = $\frac{\Delta}{40 T}$ inches = $\frac{14.006}{40 \times 49.23} = 7.10$ $\approx 7"$	TABULAR FREEBOARD corrected for Flush Deck (if required) Correction for coefficient 785 + 68 = 1.465/1.36 Depth Correction ... 27.96 Deduction for superstructures ... -1.58 Sheer correction ... 13.27 Round of Beam correction13 Correction for Thickness of Deck amidships ... 6.00 Other corrections, scantlings, etc. to correction 47.23 Summer Freeboard = 133.00	81.21 87.48 52.8 31.71 45.52 133.00
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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	...	13 3/4"
Fresh Water Line	"	7"
Tropical Line	"	6 3/4"
Winter Line below	"	6 3/4"
Winter North Atlantic Line	"	✓

Tropical Fresh Water Freeboard	...	11'-11 1/4"
Fresh Water	"	10'-6"
Tropical	"	10'-6 1/4"
Winter	"	11'-7 3/4"
Winter North Atlantic	"	✓

No. 18312

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.

Partial flush deck penalty.

$$\begin{array}{r} 4.2594 \\ 2.1297 \\ \hline 6.3891 \end{array} \times \begin{array}{r} 1.000 \\ .754 \\ \hline .246 \end{array} = + 1.57"$$

West HARTLEPOOL

BRITISH

"EMPIRE CLARION"

WEST HARTLEPOOL

31'-8"

26'-0"

432'-11"

To or from

1138

the 19 001 +
broader

31'-0"

11'

31'-0"

20'

12'

31'-0"

32'-8"

PSI and PS mark needs on

part

Waves

31.0

-

-

-

-

31.0

Trade of ship Ocean-going

Names of sister ships "Empire Builder", "Empire Purcell", "Empire Arnold", "Empire Lionel"

Builder's name and yard number William Gray & Co. Ltd., Yard No. 1133

Owners Ministry of War Transport

Fee £ 18



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