

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

No. 18315.

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"					Date of Survey July 1942
To C. of Stack 425'-11 1/4" = 425.94'					Surveyor's Signature <i>W. J. Craig</i>
Moulded displacement at moulded draught = 85 per cent. of moulded depth 17138 tons					Particulars of Classification +100 A.1 with Freeboard.
Coefficient of fineness for use with Tables .785					

DEPTH FOR FREEBOARD (D).		DEPTH CORRECTION.		ROUND OF BEAM CORRECTION.	
Moulded depth	37.66	(a) Where D is greater than Table depth $(D - \text{Table depth}) R =$ $(37.72 - 28.40) \times 3 = +27.96"$		Moulded Breadth (B)	56'-0"
Stringer plate	.65	(b) Where D is less than Table depth (if allowed) (Table depth - D) R =		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 =	14"
Depth for Freeboard (D) =	37.72			Difference	.56"
				Restricted to	✓
				Correction = $\frac{\text{Diff}^2}{4} \times \left(1 - \frac{S_1}{L}\right) =$	$\frac{.56^2}{4} \times .9163 = -.073"$

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						„ „ $\frac{S_1}{L} =$
„ overhang aft						„ „ $\frac{E}{L} =$ 7.54
„ 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

Mean actual sheer aft =
Mean standard sheer aft = } Deficient

Mean actual sheer forward =
Mean standard sheer forward =

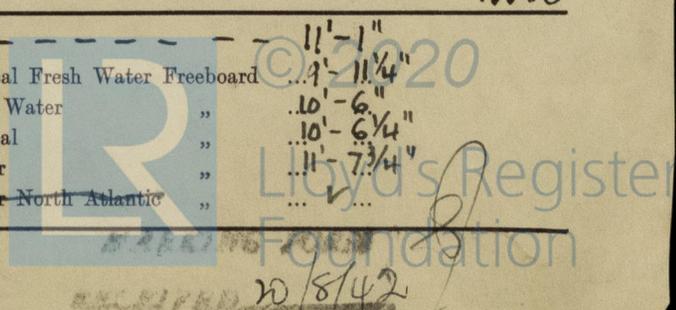
Length of enclosed superstructure forward of amidships =
„ „ aft of „ = } Nil.

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{337.35 - .0419}{18} = + 13.27"$
If limited on account of midship superstructure. If limited to maximum allowance of 1 1/2 ins. per 100 ft.

Deduction for Tropical Freeboard.	Deduction for Fresh Water.	TABULAR FREEBOARD corrected for Flush Deck (if required)	81.21
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line 26'-9"	Correction for coefficient $\frac{785 + .68}{1.36} = 1.465/1.36$	87.48
Depth to Freeboard Deck = 37.72	$\Delta = 14.006$	Depth Correction	27.96
Summer freeboard = 11.08	Tons per inch immersion at summer load water line 26'-9"	Deduction for superstructures	- 1.58
Moulded draught (d) = 26.64	$T = 49.23$	Sheer correction	13.27
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 6.66 = 6 3/4"	Deduction = $\frac{\Delta}{40 T}$ inches = 7.10	Round of Beam correction	- .13
Addition for Winter North Atlantic Freeboard (if required) = ✓	7"	Correction for Thickness of Deck amidships	-
		Other corrections, scantlings, etc. to correction 6.00	-
		with an extreme summer draught of 26'-9"	47.23 - 1.71 = +45.52
			Summer Freeboard = 133.00

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, ~~Wood~~ Steel, Deck :-

Tropical Fresh Water Line above Centre of Disc	13 3/4"	Tropical Fresh Water Freeboard	11'-1"
Fresh Water Line	7"	Fresh Water	10'-6"
Tropical Line	6 3/4"	Tropical	10'-6 1/4"
Winter Line below	6 3/4"	Winter	11'-7 3/4"
Winter North Atlantic Line	✓	Winter North Atlantic	✓



27 AUG 1942

20/8/42

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.

4.2594 1.000
 2.1297 .754
 6.3891 X .246 = + 1.57"

West Hartlepool

BRITISH

"EMPIRE CLARION"

WEST HARTLEPOOL

31'-8"

29'-0"

432'-0"

To or from

1138

432'-11"

31'-0"

20'

42'

Surveyor

No alterations from 29 and from 124

Measure

31.0

-

-

-

0.0

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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