

Rpt. C.11.

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker					Port of Survey NEWCASTLE	
having POOP & COMBINED BRIDGE & FORECASTLE.					Date of Survey 27th JULY 1932	
(Type of Superstructures.) 5647					Name of Surveyor Young	
Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build		
CITY OF KHIOS	BRITISH LIVERPOOL	147293	5574 5580	1925		
Moulded Dimensions: Length 400.0 Breadth 54.79 Depth 32.0					Particulars of Classification + 100 A.1.	
Moulded displacement at moulded draught = 85 per cent. of moulded depth 13184 tons					S.S. Hpl. No. 1-30	
Coefficient of fineness for use with Tables 775						

Depth for Freeboard (D)		Depth correction		Round of Beam correction	
Moulded depth	32.00	(a) Where D is greater than Table depth (D - Table depth) R =		Moulded Breadth (B)	54.79
Stringer plate	03	(32.03 - 26.67) 3 = +16.08		Standard Round of Beam = $\frac{B \times 12}{50}$	13.14
Sheathing on exposed deck		(b) Where D is less than Table depth (if allowed) (Table depth - D) R =		Ship's Round of Beam	13.2
$T \left(\frac{L-S}{L} \right) =$				Difference	.36
Depth for Freeboard (D) =	32.03	If restricted by superstructures		Restricted to	
				Correction = $\frac{\text{Diff}^e}{4} \times \left(1 - \frac{S_1}{L} \right)$	$\frac{.36}{4} \times .1575 = -$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed	67.75	67.75	8.0		67.75	Standard Height of Superstructure 7.50'
" overhang						" " R.Q.D.
R.Q.D. enclosed						Deduction for complete superstructure 42.00
" overhang						Percentage covered $\frac{S}{L} = 84.25\%$
Bridge enclosed						" " $\frac{S_1}{L} = 84.25\%$
" overhang aft						" " $\frac{E}{L} = 84.25\%$
" overhang forward	269.25	269.25	8.0		269.25	Percentage from Table, Line A. 80.57%
F'cle enclosed						(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 .8057 = -33.84
" forward						
Total	337.00	337.00			337.00	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P.	50.00	1	50.00	54.54.00	54.00	54.00	1	54.00		Mean actual sheer aft = Excess
1/2 L from A.P.	22.25	4	89.00	24.24.00	24.00	24.00	4	96.00		Mean actual sheer forward = Excess
3/4 L	5.50	2	11.00	6.6.00	6.00	6.00	2	12.00		Mean standard sheer forward
Amidships		4		0			4			Length of enclosed superstructure forward of amidships = .50
3/4 L from F.P.	11.00	2	22.00	12.12.02	12.02	12.02	2	24.04		" " aft of " = 7.10
1/2 L	44.50	4	178.00	48.48.09	48.09	48.09	4	192.36		
F.P.	100.00	1	100.00	108.108.00	108.00	108.00	1	108.00		
Total			450.00					486.40		

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left(\frac{75 - S}{2L} \right) = \frac{36.40}{18} \times \frac{(75 - 4212)}{2} = -.66$$

If limited on account of midship superstructure.

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 = 32.03
 Summer freeboard = 4.83
 Moulded draught (d) = 27.20

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = 6.80 = 6 3/4

Addition for Winter North Atlantic Freeboard (if required)=

Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta = 13250$

Tons per inch immersion at summer load water line

 $T = 45.6$ Deduction = $\frac{\Delta}{40T}$ inches $= 7.26$ $= 7 1/4$

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{775 + 68}{1.36} = \frac{1455}{1.36}$

Depth Correction ... 16.08

Deduction for superstructures ... 33.84

Sheer correction66

Round of Beam correction01

Correction for Thickness of Deck amidships ...

Other corrections, scantlings, etc. ...

Summer Freeboard = 58.07

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

Tropical Fresh Water Line above Centre of Disc ... 14'
 Fresh Water Line " " ... 7 1/4"
 Tropical Line " " ... 6 3/4"
 Winter Line below " " ... 6 3/4"
 Winter North Atlantic Line " " ...

Tropical Fresh Water Freeboard ... 3' - 8"
 Fresh Water " " ... 4' - 2 3/4"
 Tropical " " ... 4' - 3 1/4"
 Winter " " ... 5' - 4 3/4"
 Winter North Atlantic " " ...

2 AUG 1932

5m-3,52.

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PARTICULARS OF PROTECTION TO OPENINGS, ETC.

		HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS																	
		WEATHER DECKS ——— UPPER DECK																	
Description of Hatchway		N°1	N°2	N°3	N°4	N°5	N°6	N°7	N°8	N°9	N°10	N°11	N°12	N°13	N°14	FOOT TO STORE	B.DK TO B.KRS.	B.DK TO B.KRS.	P.DK TO AFT STORE
Dimensions of Hatchway		24'-9"	42'-0"	24'-0"	12'-6"	24'-0"	24'-9"	42'-0"	11'-3"	14'-3"	12'-0"	36'-0"	24'-0"	3'-0"	4'-3"	2'-6"	2'-3"	5'-10"	4'-0"
COAMINGS	Height above Deck	30"	30"	30"	30"	30"	18"	18"	18"	18"	18"	30"	18"	9"	18"	18"	18"	19"	19"
	Thickness	44"	56"	44"	48"	44"	48"	50"	44"	44"	44"	50"	44"	44"	44"	44"	44"	44"	44"
	Stiffeners	7-3/8"	9-3/8"	7-3/8"	10-3/8"	7-3/8"	12-3/8"	12-3/8"	9-3/8"	12-3/8"	12-3/8"	10-3/8"	10-3/8"	10-3/8"	10-3/8"	10-3/8"	10-3/8"	10-3/8"	10-3/8"
	Brackets, Stays	2" DIA	6"	4"	3"	1"	3"	5"	4"	2"	1"	5-1/2"	3"	3"	3"	3"	3"	3"	3"
HATCH BEAMS	Number	4	7	4	1	4	4	7	1	1	6	4	4	4	4	4	4	4	4
	Spacing	4'-11 1/2"	5'-3"	4'-9 3/4"	6'-0"	4'-9 3/4"	4'-11 1/2"	5'-3"	5'-7 1/2"	6'-0"	5'-2"	4'-9 3/4"	4'-9 3/4"	4'-9 3/4"	4'-9 3/4"	4'-9 3/4"	4'-9 3/4"	4'-9 3/4"	4'-9 3/4"
	Scantling and Sketch	14" x 7 1/4"	14" x 7 1/4"	13 1/2" x 7 1/2"	13 1/2" x 7 1/2"	13 1/2" x 7 1/2"	14" x 7 1/2"	14" x 7 1/2"	17" x 8 1/2"	17" x 8 1/2"	14 1/2" x 7 1/2"	14" x 7 1/2"	14" x 7 1/2"	14" x 7 1/2"	14" x 7 1/2"	14" x 7 1/2"	14" x 7 1/2"	14" x 7 1/2"	14" x 7 1/2"
	Bearing Surface	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"
FORE AND AFTERS	Number																		
	Spacing																		
	Unsupported Lengths																		
	Scantling* and Sketch																		
HATCH COVERS	Material	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.	W.P.
	Thickness	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"
	How fitted	F&A	F&A	F&A	F&A	F&A	F&A	F&A	F&A	F&A	F&A	F&A	F&A	F&A	F&A	F&A	F&A	F&A	F&A
	Bearing Surface	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"
Spacing of Cleats		26"	30"	25"	25"	25"	24"	24"	24"	23"	27"	24"	24"	20"	22"	18"	24"	21"	21"
Number of Tarpaulins		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
*Are wood fore and afters steel shod at all bearing surfaces?		YES.																	
Are battens and wedges efficient and in good condition?		YES.																	
Are tarpaulins in good condition and in accordance with rule requirements?		YES.																	
Are lashings provided in accordance with rule requirements?		YES.																	

Particulars of fiddle, funnel and ventilator coamings:—

Fiddle gratings protected by steel plate covers ~~not~~ permanently attached.

Funnel & Vents in efficient condition

F.R. Skylight strongly constructed of steel.

Particulars of Flush Bunker Scuttles:—

None.

Particulars of Companionways:—

Aft end of Bridge Dk Casing to Engine Room. Opening 2'-6" x 5'-0" Sill 13"
Door 1 3/8" Solid Teak. Operated both sides.
Ent. to Crow Space in Steel House aft. 2'-2" x 5'-0" Sill 16" Door Hinged Steel Operated both sides.
To Seamans etc. Lavatories aft end of Poop. Steel 3'-10" x 2'-5" x 6'-6" high
opening 1'-10" x 5'-0" Sill 16" Door 1 3/8" Teak solid. Operated both sides.

Particulars of Ventilators in exposed positions on freeboard and superstructure decks:—

Hold Vents. 24" x 28" diam 3'-0" high. ✓
" " 30" " 16'-4" " Well stayed ✓
" " 28" " 12'-10" " Well stayed ✓
Bunker " 10" " 2'-6" " ✓
Crow Space " 10" x 8" x 6" " 2'-6" " ✓
Vents are well constructed to Rule requirements. ✓
Wood Plugs & Canvas covers are on board. ✓

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks:—

Fore Dk to No. 1 2 1/2" diam. 2'-3" high. to mouth ✓
To all D.B. Tanks 2 1/2" " 2'-7", 2'-5" x 2'-0" high to mouth ✓
Upper Dk to Deep Tank 6" " 3'-1" high. ✓
Wood plugs fitted to all air pipes.

Particulars of Gangway Cargo and Coaling Ports:—

Bridge Tween Deck. Coaling Door P&S.
Hinged Door 5'-6" x 3'-0" Sill 6"
Secured by 3 Strongbacks across adjacent frames
with 2-1 1/4" bolts through each.



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Particulars of Scuppers and Sanitary Discharge Pipes :—

Scuppers from Weather decks are Collinson type thro deck & shell.
aft Well thro gunwale bar.
Bridge Sweer Dns. 4 scuppers each side thro gunwale bar above deck.
(These are all closed with an iron plate and filled in with cement)

Particulars of Side Scuttles :—

Crew Spaces 9" diam and fitted with hinged iron deadlight.

Particulars of Guard Rails :—

Forecastle Dk. 3'-4" high Stanchions 4'-8" apart 3 Rails
aft Well Bulwark 4'-2" " Stays 5x3 Lx9" B.P. 4'-8" " Rail 6"x3/2" B.A.
Poop Dk 3'-4" " Stanchions 4'-0" " 3 Rails

Particulars of Gangways, Lifelines, etc. :—

Gangway from Bridge to Poop. 3'-0" wide. Well supported by
stanchions 2 7/8" diam and stays 1 1/2" diam
Handrail Stanchions 3'-0" high 6'-0" apart 1 Rail.

Particulars of Freeing Arrangements.

	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
After Well	63'-0" ✓	4'-2"	3'-6" x 1'-6"	5	26.25 f ✓	12.8 f ✓
Forward Well						

State position of each freeing port } After Well :— from Bridge 7'-0", 16'-6", 28'-3", 39'-9", 49'-6" Sills 15" ✓
(F. and A. position and height above deck edge) } Forward Well :—
State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such :— Hinged Shutters, also 2 Rails. ✓
Additional area where sheer is less than standard.

Particulars of Superstructures, Trunks, Casings, Deckhouses.

	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead ... ..	.40 ✓	.40 ✓	6"x3" BA	2'-3" ✓	Bkts & Lugs	3'-0" x 5'-0" ✓	18" ✓	8'-0" ✓
Raised Quarter Deck Bulkhead ...	✓							
Bridge, After Bulkhead ... ..	.30 ✓	.30 ✓	3 1/2" Pte. flange	2'-6" ✓	none	4'-0" x 5'-0" ✓	18" ✓	8'-0" ✓
Bridge, Forward Bulkhead								
Forecastle Bulkhead								
Trunk, Aft								
Trunk, Forward								
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	.34 ✓	.34 ✓	4 1/2" Pte flange	3'-0" ✓	none	2'-0" x 4'-10" ✓	16" ✓	8'-0" ✓
Exposed Machinery Casings on Super-structure Decks ... ..	.34 ✓	.34 ✓	4 1/2" Pte flange	3'-0" ✓	Bkts & Lugs	2'-0" x 4'-10" ✓	16" ✓	7'-6" ✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances								
Deckhouses on Flush Deck Ships ...								

Particulars of Closing Appliances (state if capable of being manipulated from both sides).

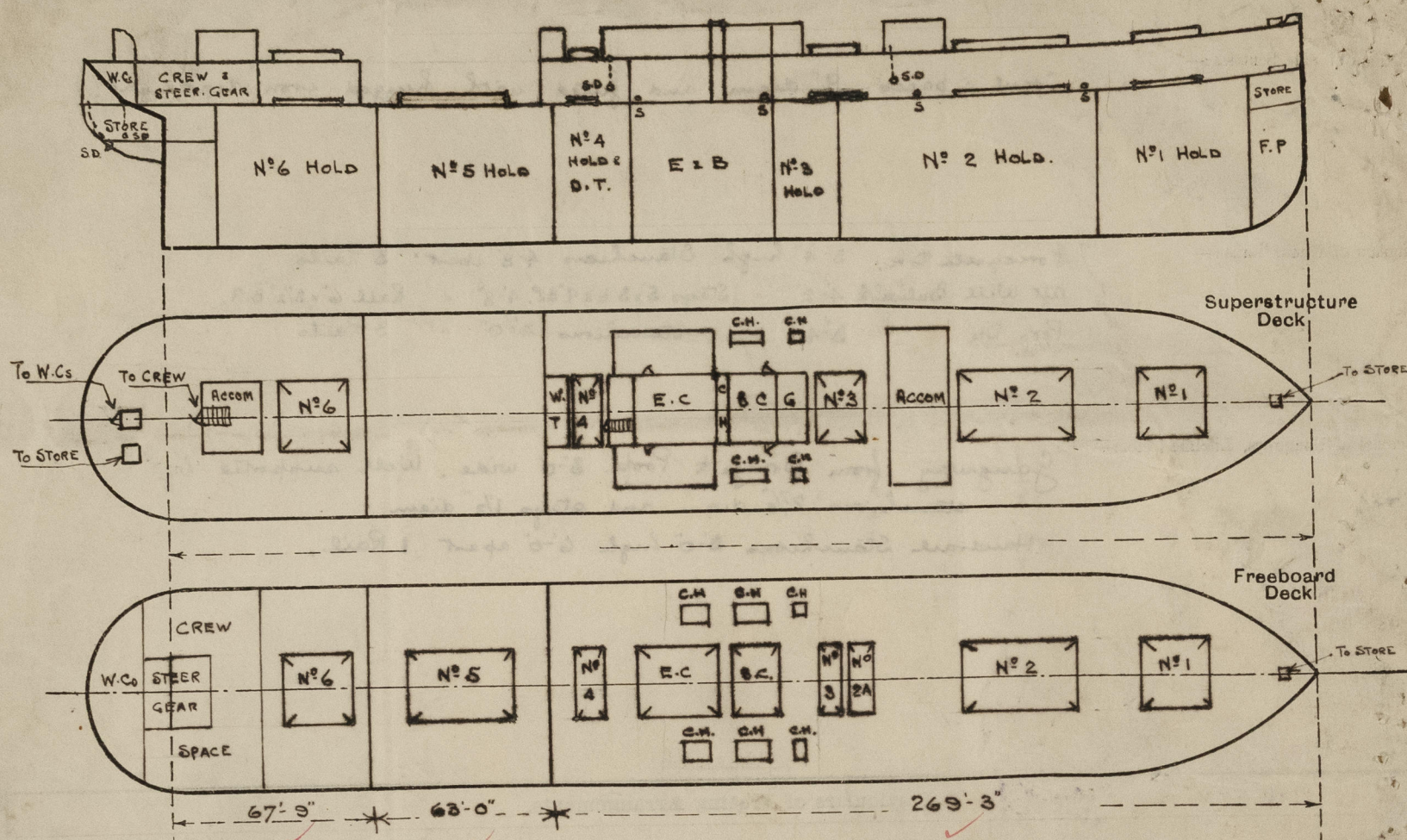
Poop Bulkhead	Steel Plate secured by hook bolts not through bulkhead ✓
Raised Quarter Deck Bulkhead ...	
Bridge, After Bulkhead	Steel Plate secured by hook bolts not through bulkhead ✓
Bridge, Forward Bulkhead	
Forecastle Bulkhead	
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	Hinged steel doors operated both sides ✓
Exposed Machinery Casings on Super-structure Decks	Hinged steel doors operated both sides. ✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	
Deckhouses on Flush Deck Ships ...	



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Superstructure bulkheads, trunks, deckhouses, casings, cargo and coaling hatchways, extent and thickness of sheathing on the freeboard deck, gangways, cargo and coaling ports, and any other openings, etc., which would affect the seaworthiness of the ship are to be shewn on the following sketches:—



State any special features in the construction of the ship:—

81 27.20
 27'-2 1/2
 Keel 1 1/2
 27'-4
 4 x 45.6 = 182
 13068
 13250
 66
 13184

FW

VESSEL WAS SURVEYED
 APLAAT. WHILE ALTERATIONS
 IN PROGRESS FOR FITTING AN
 EXHAUST STEAM TURBINE. ✓

FROM DEADWEIGHT SCALE

DRAFT	Δ	T.P.I.
27'-0"	13068 ✓	45.6 ✓
26'-0"	12522 ✓	45.1 ✓
25'-0"	11978 ✓	44.7 ✓
24'-0"	11445 ✓	44.3 ✓

Builder's name and yard number MESSRS BARCLAY CURLE & CO. GLASGOW.

Names of sister ships

Owners ELLERMAN LINES LTD (HALL LINE LTD)

Fee £ 13 : 12 : 0 Received by me



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