

Lloyd's Register of Shipping.
SURVEYS FOR FREEBOARD.

GLASGOW REPORT No. 57455

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having

Complete Superstructure.
(Type of Superstructures.)

Port of Survey Glasgow

Date of Survey September 1936

Name of Surveyor Norman Dobson

Ship's Name

CITY OF BENARES.

Nationality and Port of Registry

British
Glasgow

Official Number

164096

Gross Tonnage

11080.97

Date of Build

1936

Moulded Dimensions: Length 473.0 Breadth 62.33 Depth 34.26 43.26
Moulded displacement at moulded draught = 85 per cent. of moulded depth 22860. 17318 tons
Coefficient of fineness for use with Tables .738 ✓

Particulars of Classification +100A1
With Freeboard Contemplated
Responding to a Summer Draught of 28' 4" moulded

Depth for Freeboard (D)		Depth correction		Round of Beam correction	
Moulded depth	34.26	(a) Where D is greater than Table depth (D - Table depth) R =		Moulded Breadth (B)	62.33
Stringer plate	.05	(43.51 - 31.53) 3 = +35.94		Standard Round of Beam = $\frac{B \times 12}{50}$	14.96
Sheathing on exposed deck	✓	11.98		Ship's Round of Beam	6 inches
$T \left(\frac{L-S}{L} \right) = .21 \times .9305$.20	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = ✓		Difference	8.96
Depth for Freeboard (D) =	43.51	If restricted by superstructures ✓		Restricted to	✓
				Correction = $\frac{\text{Diff}^2}{4} \times \left(1 - \frac{S_1}{L} \right)$	$\frac{8.96^2}{4} \times .932 = +2.09$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...					
" overhang ...					
R.Q.D. enclosed ...					
" overhang ...					
Bridge enclosed ...					
" overhang aft ...					
" overhang forward					
F'cle enclosed ...	21.12	21.12	7.6"	✓	21.12
" overhang ...	11.75	11.06		✓	11.06
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" " forward					
Total ...	32.87	32.18			32.18

Standard Height of Superstructure	7.50
" " R.Q.D.	✓
Deduction for complete superstructure	42.00
Percentage covered $\frac{S}{L} =$	6.95
" " $\frac{S_1}{L} =$	6.80
" " $\frac{E}{L} =$	6.80
Percentage from Table, Line A.	4.46
(corrected for absence of forecastle (if required))	
Percentage from Table, Line B.	
(corrected for absence of forecastle (if required))	
Interpolation for bridge less than 2L (if required)	
Deduction =	$42.00 \times .0446 = -2.00$

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	57.30	1		57.30	30.75	30.75	1		30.75
$\frac{1}{2}$ L from A.P. ...	25.50	4		102.00	12.70	12.58	4		50.32
$\frac{2}{3}$ L " ...	6.30	2		12.60	2.75	2.75	2		5.50
Amidships ...	-	4		-	0	0	4		0
$\frac{2}{3}$ L from F.P. ...	12.60	2		25.20	13.00	13.00	2		26.00
$\frac{1}{2}$ L " ...	51.00	4		204.00	44.88	44.88	4		191.52
F.P. ...	114.60	1		114.60	104.88	104.88	1		104.88
Total ...	515.70			515.70					408.97

Mean actual sheer aft
Mean standard sheer aftMean actual sheer forward
Mean standard sheer forward

Length of enclosed superstructure forward of amidships =

" " aft of " =

Load Sheer

0	1	0	0	1	0
12.60	3	37.80	13.00	3	39.00
51.00	3	153.00	44.88	3	143.64
114.60	1	114.60	104.88	1	104.88
		305.40			287.52

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{75-S}{2L} \right) = \frac{106.73}{18} \times (.75 - .0347)$

If limited on account of midship superstructure.

= +4.24

If limited to maximum allowance of 1 1/2 ins. per 100 ft.

= 94.16% Standard.

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = 43.52 ✓
Summer freeboard = 15.19 ✓
Moulded draught (d) = 28.33 ✓

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = 7.08 = 7" ✓

Addition for Winter North Atlantic Freeboard (if required) = ✓

Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta = 16880$ ✓

Tons per inch immersion at summer load water line

T = 28.83 ✓

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

= 7.14 ✓

= 7 1/4" ✓

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

	+	-
Depth Correction ...	35.94	✓
Deduction for superstructures ...	2.00	✓
Sheer correction ...	4.24	✓
Round of Beam correction ...	2.09	✓
Correction for Thickness of Deck amidships ...	12	✓
Other corrections, scantlings, etc. and to correspond to approved summer moulded draught of 28' 4"	43.64	✓
	86.03	2.00 ✓ + 84.03 ✓
Summer Freeboard =	182.25	✓

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck: 15' 2 1/2" ✓

Tropical Fresh Water Line above Centre of Disc ... 14 1/4" ✓

Fresh Water Line " " ... 14' 0" ✓

Tropical Line " " ... 14' 1/4" ✓

Winter Line below " " ... 15' 9 1/4" ✓

Winter North Atlantic Line " " ... ✓

22 SEP 1936

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS											
Description of Hatchway	U.D.K.	U.D.K.	U.D.K.	U.D.	U.D.	U.D.K.	Shelter Dk	Shelter Dk	Shelter Dk	Shelter Dk	Shelter Dk
Dimensions of Hatchway	No 1	No 2	No 3	No 4	No 5	No 6	No 1	No 2	No 3	No 4	No 5
COAMINGS	Height above Deck	9"	Trunk	Trunk	Trunk	Trunk	33"	33"	33"	33"	33"
	Thickness	.48	.30	.30	.30	.30	.44	.44	.44	.44	.44
	Sides	.48	.30	.30	.30	.30	.44	.44	.44	.44	.44
	Stiffeners		3" 2 Round	3" 3" 30	2" 3" 30	3" 3" 30	7" 3" 36	7" 3" 36	7" 3" 36	7" 3" 36	7" 3" 36
	Brackets, Stays		@ 30"	@ 30"	@ 30"	@ 30"	2" Round	2" Round	2" Round	2" Round	2" Round
HATCH BEAMS	Number	Three					Three	Six	Four	Three	Three
	Spacing	4'-3 3/4"					4'-7 1/4"	4'-10 3/16"	4'-7"	4'-5 3/8"	4'-5 3/8"
	Scantling and Sketch	4 @ 3" 3" 42	Trunked	Trunked	Trunked	Trunked	4 @ 3" 3" 42	4 @ 4" 3" 42	4 @ 3" 3" 42	4 @ 3" 3" 42	4 @ 3" 3" 42
		P. 12" 32					P. 12" 30	P. 15" 34	P. 12" 30	P. 12" 30	P. 12" 30
	Bearing Surface	3"	to	to	to	to	3"	3"	3"	3"	3"
FORE AND AFTERS	Number		Shelter Dk	Boat Dk	Casing Dk	Shelter Dk	Shelter Dk				
	Spacing										
	Unsupported Lengths										
	Scantling* and Sketch										
	Bearing Surface										
HATCH COVERS	Material	Wood					Wood	Wood	Wood	Wood	Wood
	Thickness	2 1/2"					3"	3"	3"	3"	3"
	How fitted	2" gap					2" gap	2" gap	2" gap	2" gap	2" gap
	Bearing Surface	3"					3"	3"	3"	3"	3"
	Spacing of Cleats	24"					24"	24"	24"	24"	24"
Number of Tarpaulins	One						Three	Three	Three	Three	Three
*Are wood fore and afters steel shod at all bearing surfaces? <input checked="" type="checkbox"/> Are battens and wedges efficient and in good condition? <input checked="" type="checkbox"/> Are tarpaulins in good condition and in accordance with rule requirements? <input checked="" type="checkbox"/> Are lashings provided in accordance with rule requirements? <input checked="" type="checkbox"/>											

Particulars of fiddle, funnel and ventilator coamings:—

Engine Room Skylight, Fiddle, funnel and Ventilator Coamings of steel substantially constructed. Steel covers fitted to fiddle openings and permanently fastened.

Particulars of Flush Bunker Scuttles:—

On Shelter Deck 3 Flush Cast Iron Scuttles secured by bayonet joints fitted with chain.

Particulars of Companionways:—

On Shelter Dk. Forward house plating .30 Stairs 5" 3" 30 @ 33" 2 wood doors 2" thick Coaming 18" in height. (7/15-119) Midship .60 Coaming 9" .40 Steel doors. 85 .50 15" 2" wood doors. 33 .30 15" All doors capable of manipulation from both sides. (3-5) Aft deck house .28 15" 25 Steel doors. (30 holds & Incom Dks.)

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

On Shelter Dk. 4 @ 24" dia, 1 @ 20", 1 @ 30", 2 @ 23 1/2" 2 @ 22 1/2" 2 @ 16 1/2", 2 @ 14 1/2", 2 @ 13 1/2" and 10 @ 24 1/2" Coamings all 140 x 36" in height. On Deck Dk 1 @ 12" dia Coaming 36 x 36" in height. On Navigating Bridge 1 @ 25 1/2" dia & 1 @ 18" dia Coamings 25 x 18" in height to hold & Incom Dks. Boat Dk 2 @ 22" dia 1 @ 15 1/2" 1 @ 19" dia .25 x 18" to 36" Deep Tanks. All provided with wood plugs & canvas covers. Casing Dk 1 @ 25" dia 1 @ 20" 2 @ 13 1/2" 1 @ 20" dia .25 x 18" to 24" Bunkers & Incom Dks. Prom. Dk 1 @ 33" dia .25 x 18" in height to hold & Incom Dks. Shelter Dk 1 @ 23" .40 x 36" Funnel. 8 @ 6" dia 2 @ 13" 3 @ 9" 2 @ 12" 1 @ 11" 2 @ 14" 2 @ 10" 1 @ 13 1/2" Coamings 30 to 36 x 36" in height to Crew and Incom deck stns etc. 2 @ 5" dia & 2 @ 6" dia Incom Dks Coamings 30 x 36" to Lavatories on upper Dk.

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

On Shelter Deck 11 @ 4" dia 20" in height to Double bottom tanks. Fitted with wood plugs and Canvas Covers. 10 @ 3" . After Peak. 2 @ 3" . Coff. dams. 6 @ 2 1/2" . Fresh water living tanks. 2 @ 3" . Fore peak tanks. On Forecastle Dk 1 @ 3" .

Particulars of Gangway Cargo and Coaling Ports:—

2 Gangway doors on Starboard 1 on Port side between Upper and Shelter Deck 5'-6" x 3'-6" Angles 6" x 6" x 60. Door .82 thick secured by dog and Channel strongback tested and found watertight. 3 Coaling ports on each side 7" above upper Dk 2'-6" x 2'-5" clear opening Doors .64 thick. Secured by two strongbacks tested and found watertight.

Particulars of Scuppers and Sanitary Discharge Pipes:—

All sanitary discharges at end of vessel (Crew spaces) led overboard and fitted with Metal Storm Valves.

All Scuppers from Shelter Deck waterway led overboard and fitted with M. Storm Valves. Two Sewage Ejector units fitted to take all passengers and midship soils, waste and Scuppers.

Particulars of Side Scuttles:—

Between Shelter Upper Dks.— 12" dia in Domestic Offices and Crew spaces fitted with permanently attached hinged deadlights.

14" x 12" dia and 20" x 16" to passenger accommodation fitted with portable deadlights.

Upper Main Dks.— 12" dia of such construction as will effectively prevent any person opening them without the consent of the master and fitted with permanently attached hinged deadlights.

Forecastle — 12" dia to Crew spaces fitted with permanently attached hinged deadlights.

Particulars of Guard Rails:—

On Forecastle Stanchions 3'-6" in height 4'-6" apart with 3 rails.

Shelter Dk. Clear of bulwark, Stanchions 3'-9" in height 4'-0" apart with 5 rails.

Particulars of Gangways, Lifelines, etc.:—

— Arrangements provided —

Particulars of Freeing Arrangements.

	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
Open at After end After Well	250'-0"	3'-8½"	3'-3" x 1'-3"	Four	16.24 sq ft	
Forward Well	93'-0"	3'-8½"	3'-3" x 1'-3"	Three	12.18 sq ft	

State position of each freeing port { After Well: 63'-0" F. 19'-0" 56'-0" 104'-0" aft of midships } 10" above deck edge ✓
(F. and A. position and height above deck edge) { Forward Well: 117'-0" 150'-0" 177'-0" and " }
State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— Fitted with plate shutters & 1 Rod ✓

Additional area where sheer is less than standard.

Particulars of Superstructures, Trunks, Casings, Deckhouses.

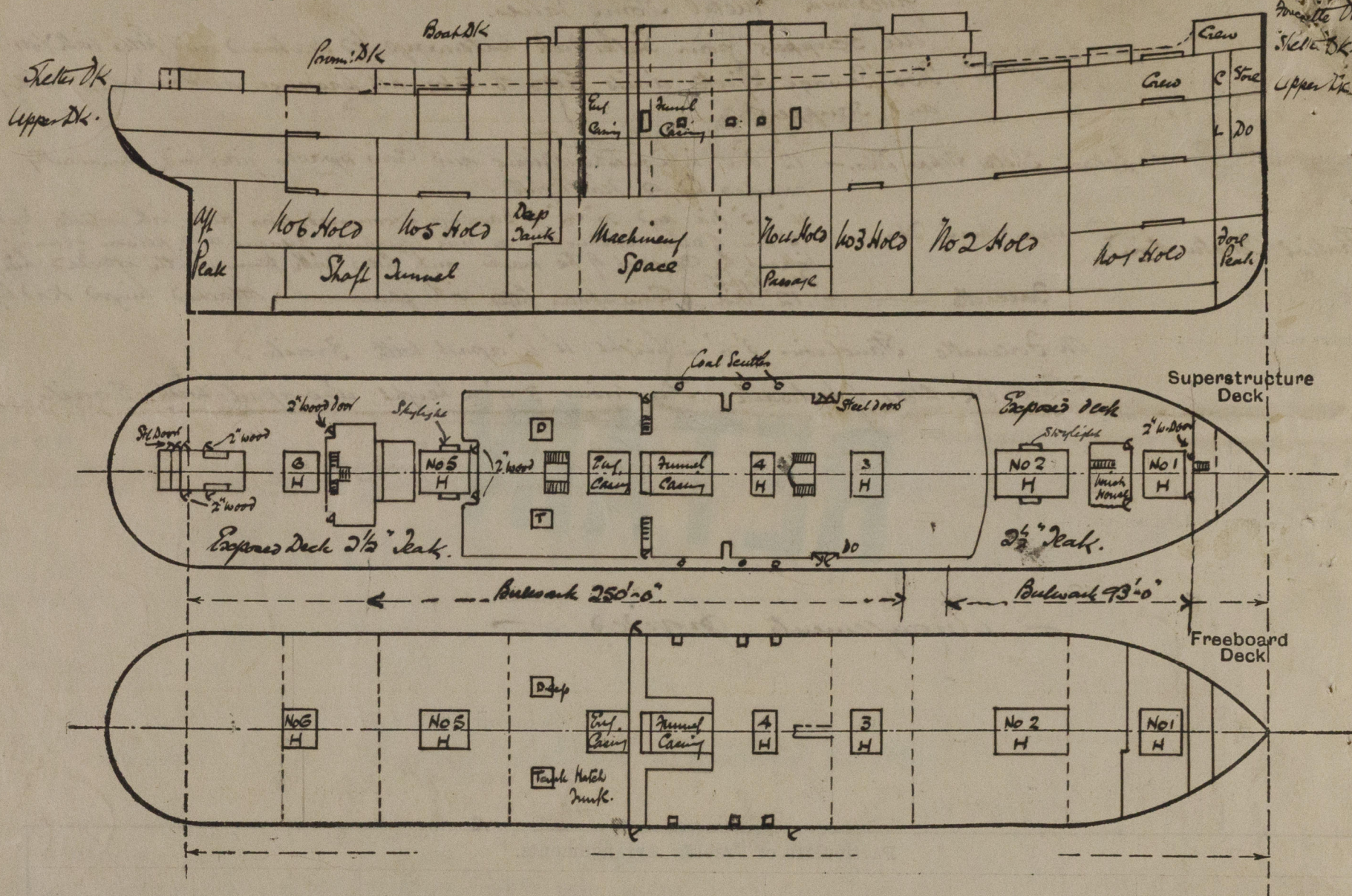
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead								
Raised Quarter Deck Bulkhead ...								
Bridge, After Bulkhead								
Bridge, Forward Bulkhead								
Forecastle Bulkhead	30 ✓	30 ✓	5 x 3 x 30 ✓	33" ✓	Riveted to transverse angle ✓	2 @ 4' 10" x 26" ✓	20 3/4" ✓	7'-6" ✓
Trunk, Aft								
Trunk, Forward								
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...								
Exposed Machinery Casings on Super-structure Decks (Roof Dks) ...	30 ✓	30 ✓	3 1/2 x 3 x 30 ✓	30" ✓	None ✓	5'-6" x 2'-0" ✓	12" ✓	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	
Raised Quarter Deck Bulkhead ...	
Bridge, After Bulkhead	
Bridge, Forward Bulkhead	
Forecastle Bulkhead	2 @ 2" Oak wood doors Capable of manipulation from both sides ✓
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	
Exposed Machinery Casings on Super-structure Decks	1 Steel door Capable of manipulation from both sides ✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	
Deckhouses on Flush Deck Ships ...	

City of Barcelona

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



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

Displacement at 28'-0" Draft held = 16644 Tons. Tons per inch = 58.60
 Do " 29'-0" " = 17351 " " 59.29.

Builder's name and yard number

Barclay Curle & Co. Ltd. No 656.

Names of sister ships

None.

Owners

Ellerman Lines Ltd.

Fee £ 20

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Received by me

[Signature]



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