

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, ~~Sailing Ship, Tug~~
 having Roof, Bridge and Forecastle

Port of Survey New YorkDate of Survey Oct. 28th 1914FREE TOWN

(Type of Superstructures.)

Ship's Name

Nationality and Port of Registry

Official Number

Gross Tonnage

Date of Build

Name of Surveyor

Particulars of Classification

+ 100 A.

Moulded Dimensions: Length 425.0 Breadth 56.0 Depth 31.75 ✓
 Moulded displacement at moulded draught = 85 per cent. of moulded depth
 Coefficient of fineness for use with Tables 704 ✓

Depth for Freeboard (D)
 Moulded depth ... 31.75
 Stringer plate ... 0.3
 Sheathing on exposed deck (Steel) ✓
 $T \left(\frac{L-S}{L} \right) =$
 Depth for Freeboard (D) = 31.71 ✓

Depth correction
 (a) Where D is greater than Table depth
 $(D - \text{Table depth}) R =$
 $(31.75 - 28.35) 3 = 10.35$ ✓
 (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
 Standard Round of Beam = $\frac{B \times 12}{50} = 13.44$
 Ship's Round of Beam = 13.44
 Difference 0.06
 Restricted to
 Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{0.06}{4} \times 1755 = 2.63$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...	27.66	27.66	8.5	-	27.66
" overhang ...					
R.O.D. enclosed ...					
" overhang ...					
enclosed ...	275.25	275.25	8.5	-	275.25
overhang aft ...					
overhang forward ...					
Fore enclosed ...	39.00	39.00	8.5	-	39.00
" overhang ...					
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" forward ...					
Total ...	341.91	341.91			341.91

Standard Height of Superstructure 7.50R.Q.D. 42.00

Deduction for complete superstructure

Percentage covered $\frac{S}{L} = 80.45\%$ $\frac{S_1}{L} = 80.45\%$ $\frac{E}{L} = 80.45\%$ Percentage from Table, Line A.
(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 × 75.86 = 3186.12

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	52.50	1		52.50	54.0	54.00	1		54.00
$\frac{1}{2}L$ from A.P. ...	23.36	4		93.44	24.0	24.00	4		96.00
$\frac{3}{4}L$ " ...	5.78	2		11.56	6.0	6.00	2		12.00
Amidships ...		4					4		
$\frac{3}{4}L$ from F.P. ...	11.55	2		23.10	12.0	11.92	2		23.84
$\frac{1}{2}L$ " ...	46.73	4		186.92	47.5	47.50	4		190.00
F.P. ...	105.00	1		105.00	108.00	108.00	1		108.00
Total ...				472.52					472.52

Correction = $\frac{\text{Difference between sums of products}}{18} = \frac{75 - 4022}{18} = -23.7$

If limited on account of midship superstructure.

If limited to maximum allowance of $1\frac{1}{2}$ ins. per 1

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = 31.78 ✓
 Summer freeboard = 5.06 ✓
 Moulded draught (d) = 26.72 ✓

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = 6.68 - 6.74 ✓

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

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta = 13439$
 Tons per inch immersion at summer load water line

 $T = 46.76$ Deduction = $\frac{\Delta}{40 \times T}$ $= 729.74$ ✓

TABULAR FREEBOARD corrected for Fresh Water

Correction for coefficient

Depth Correction ...
 Deduction for superstructures ...
 Sheer correction ...
 Round of Beam correction ...
 Correction for Thickness of Deck amidships ...
 Other corrections, scantlings, etc. ...

SUMMER FREEBOARD amidships from Centre of Disc to top of D

Fresh Water Line above Centre of Disc ...

Summer Line

Winter Line

Winter North Atlantic Line

NOV 1932



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PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
On Upper Deck					On Bridge Deck				
Hatchway	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9
Length of Hatchway	27' x 18' 0"	30' 6" x 18' 3"	23' 11" x 18' 2"	18' 11" x 18' 1"	29' 3" x 18' 1"	30' 6" x 18' 2"	23' 11" x 18' 2"	32' 0" x 18' 1"	32' 0" x 18' 1"
Height above Deck	36"	9" B.A.	9" B.A.	9" B.A.	36"	30"	30"	30"	30"
Thickness	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
Stiffeners	7 x 3/4 x 44"	7 x 3/4 x 44"	7 x 3/4 x 44"	7 x 3/4 x 44"	7 x 3/4 x 44"	7 x 3/4 x 44"	7 x 3/4 x 44"	7 x 3/4 x 44"	7 x 3/4 x 44"
Brackets, Stays	2" dia.	9" dia.	9" dia.	9" dia.	2" dia.	2" dia.	2" dia.	2" dia.	2" dia.
Number	5	7	5	7	7	7	7	7	7
Spacing	4' 5"	3' 8"	4' 0"	4' 0"	3' 7"	3' 8"	4' 0"	4' 0"	4' 0"
Scantling and Sketch	2 off 4 x 3 x 44"	4 x 3 x 44"	4 x 3 x 44"	4 x 3 x 44"	4 x 3 x 44"	4 x 3 x 44"	4 x 3 x 44"	4 x 3 x 44"	4 x 3 x 44"
Centre	2 off 4 x 3 x 44"	4 x 3 x 44"	4 x 3 x 44"	4 x 3 x 44"	4 x 3 x 44"	4 x 3 x 44"	4 x 3 x 44"	4 x 3 x 44"	4 x 3 x 44"
Bearing Surface	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"
Material	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood
Thickness	3"	2 1/2"	2 1/2"	2 1/2"	3"	3"	3"	3"	3"
How fitted	7 x 0"	7 x 0"	7 x 0"	7 x 0"	7 x 0"	7 x 0"	7 x 0"	7 x 0"	7 x 0"
Bearing Surface	4"	3 1/2"	3 1/2"	3 1/2"	4"	4"	4"	4"	4"
Spacing of Cleats	18"	24"	24"	24"	18"	18"	18"	18"	18"
Number of Tarpaulins	4	2	2	2	4	4	4	4	4

*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. Strong + waterproofed.*
 Are lashings provided in accordance with rule requirements? *Yes. One to each section of weather deck hatch.*

Particulars of fiddle, funnel and ventilator coamings:—

No fiddle. No door in funnel, funnel riveted to deck. Type L.P. seats on top of bridge deck. Coaming 8 ft. high by 4" thick. Wood + canvas covers provided. S.K. skylight of steel, 10" coaming at sides, 44" @ centre. 31 thick, closed by steel hinged flap.

Particulars of Scuttles:—

None.

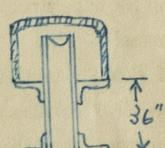
ys:—

Proposed positions on freeboard and superstructure decks:—

wood and canvas covered.

*Forecastle 2' 24" dia. x 36" coaming x 40"
 1' 12" dia. x 36" " x 38"
 1' 8" dia. x 36" " x 38"
 On Bridge 8' 24" dia. x 36" " x 40"
 4' 18" dia. x 36" " x 40"
 7 Small dia. x 30" " x 44"
 In aft well 4' 24" x 60" " x 44"*

ons on freeboard, raised quarter, or superstructure decks:—



Two on ft. deck, 26 on bridge deck as per sketch. 3" x 4" dia. of strong steel pipe. Openings can be closed by lashing canvas around cap. Recommend same be accepted.

None.

Gray's Lake Castle

Particulars of Scuppers and Sanitary Discharge Pipes

7" deck scupper overboard through open pipe. Inside ft. and bridge deck. 3 1/2" scupper pipe extending below freeboard deck, with brass storm valve at deck. The main scupper through 4" scupper pipe. 7-1/2" pipe deck scupper into the after well. There are no toilets etc. below the level of the superstructure deck, except in poop space where two 9" dia. and crew's wash place, connected up into 3 1/2" dia. pipes (I.P. 1 S). There have brass storm valve at outlets, as have also discharge from toilets and sanitary pipes coming from above bridge deck.

Particulars of Side Scuttles:

Deadlights are fitted in fore and poop spaces. There have all C.S. deadlights fitted.

Particulars of Guard Rails:—

Partial solid bulwarks, fitted on ft. and bridge decks. (see sketch) Solid bulwarks are fitted in wells. 48" high 6 1/2" B.A. rail stays about 64" apart. Open rails elsewhere are 45" high, 4 high.

Particulars of Gangways, Lifelines, etc.:—

No gangways. Handrails fitted on sides of all bridge deck houses. Lifelines arranged by master when required.

Particulars of Freeing Arrangements.

	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Ratio area each side
After Well	41' 54"	48"	1 Forward 18" x 12" 2 Ports 3' 6" x 1' 6"	2	10 1/2 sq ft	10 1/2
Forward Well	41' 55"	48"	18"	1	10 1/2 sq ft	10 1/2
State position of each freeing port	After Well:— 18" x 12" <i>Swing open.</i> 1/2" (F. and A. position and height above deck edge) Forward Well:— 18" <i>Swing open.</i> 1/2"					
State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:—	<i>Hinged shutters.</i>					
Additional area where sheer is less than standard.	<i>✓</i>					

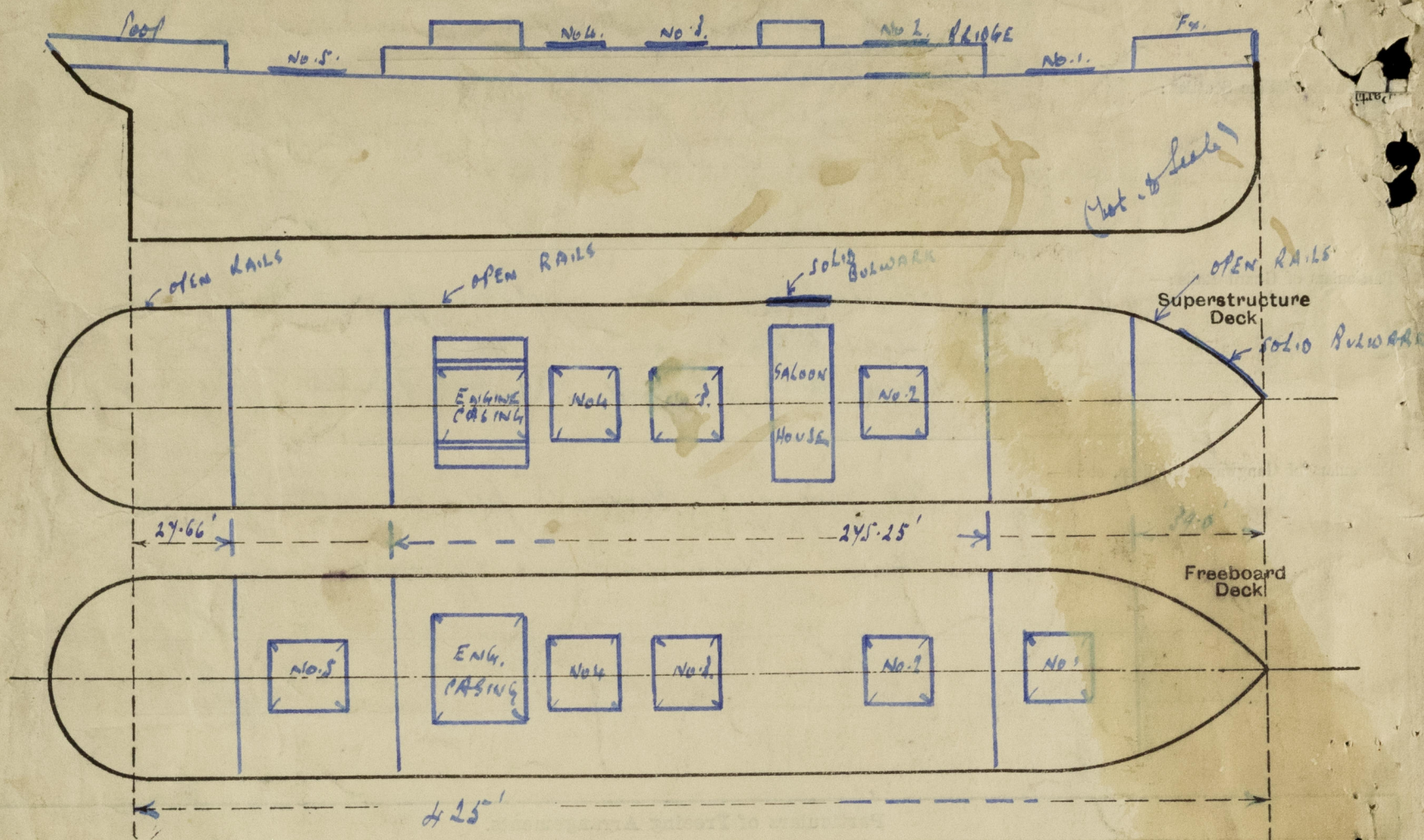
Particulars of Superstructures, Trunks, Casings, Deckhouses.

	Coaming	Plating	Stiffeners	Spacing	End Attachments of Bulwark	Size of Openings	Height of Bulwark	Height of Coaming
Poop Bulkhead	44"	44"	7 x 3 x 44 B.A.	45"	Swing top, long bottom	None	✓	✓
Raised Quarter Deck Bulkhead	✓	✓	✓	45"	"	4' 6" x 3' 0"	24"	15"
Bridge, After Bulkhead	50"	50"	6 x 3 x 50 B.A.	45"	"	4' 6" x 3' 0"	24"	15"
Bridge, Forward Bulkhead	50"	50"	6 x 3 x 50 B.A.	45"	"	4' 6" x 3' 0"	24"	15"
Forecastle Bulkhead	44"	44"	4 x 3 x 44 B.A.	30"	"	4' 6" x 3' 0"	24"	15"
Trunk, Aft	✓	✓	✓	✓	✓	✓	✓	✓
Trunk, Forward	✓	✓	✓	✓	✓	✓	✓	✓
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	<i>Not exposed. Covered by long bridge. An offshoot of poop along coaming.</i>							
Exposed Machinery Casings on Superstructure Decks	<i>Not exposed. Covered by strong steel deck house.</i>							
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	<i>✓</i>							
Deckhouses on Flush Deck Ships	<i>✓</i>							

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

Poop Bulkhead	<i>Closed. No openings</i>
Raised Quarter Deck Bulkhead	<i>Closed. No openings</i>
Bridge, After Bulkhead	<i>Swing opening, portable plates with hook bolts</i>
Bridge, Forward Bulkhead	<i>Swing opening, portable plates with hook bolts</i>
Forecastle Bulkhead	<i>Swing opening, portable plates with hook bolts</i>
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	<i>Not exposed</i>
Exposed Machinery Casings on Superstructure Decks	<i>Not exposed</i>
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	<i>✓</i>
Deckhouses on Flush Deck Ships	<i>✓</i>

Superstructure bulkheads, trunks, deckhouses, casings, cargo and coaling hatchways, exits and thickness of sheathing on the freeboard deck, gangway, 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:—



Are there any special features in the construction of the ship:—

This vessel was surveyed, while lying in the water at Pier 30 - Brooklyn, New York.

No particulars of displacement.

Conditions of assignment in my opinion are satisfactory, except that four port coamings in aft well should be braced to bulkhead.

OMIT

W.B.

Builder's name and yard number *Cammell Laird & Co Ltd No 928*

Names of sister ships *M/S. "Manchester Castle"*

Owners *Lancashire Shipping Co. Ltd. (J. Chambers & Co. Mgrs)*

Fee *\$ 80.00* Received by me

changed a few York.

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