

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

Index. No. 25238  
(For London Office only.)

No 101726.

Computation of Freeboard for Steamer, ~~Sailing Ship~~ Tanker  
having COMPLETE SHELTER DECK WITH FORECASTLE.

Port of Survey LIVERPOOL

Date of Survey January 1933

Name of Surveyor J. Chelina

Particulars of Classification \*100A1  
Rhl. Deck with freeboard  
S.S. Nov. No 3-12-29

Ship's Name S.S. IONIC STAR Nationality and Port of Registry BRITISH LONDON Official Number 142297 Gross Tonnage 5602 Date of Build 1917-12

Moulded Dimensions: Length 389.4 Breadth 53.1 Depth 36'-0"  
Moulded displacement at moulded draught = 85 per cent. of moulded depth 13512 tons  
Coefficient of fineness for use with Tables .448

Depth for Freeboard (D) Moulded depth ... 36'-0"  
Stringer plate ... 69.06  
Sheathing on exposed deck  
 $T \left( \frac{L-S}{L} \right) = .25 \times .559 = .14$   
Depth for Freeboard (D) = 36.20

Depth correction  
(a) Where D is greater than Table depth  
(D - Table depth) R = (36.20 - 25.96) 2.495 = + 30.64  
(b) Where D is less than Table depth (if allowed)  
(Table depth - D) R =  
If restricted by superstructures

Round of Beam correction  
Moulded Breadth (B) 53.1  
Standard Round of Beam =  $\frac{B \times 12}{50} = \frac{12.72}{50} = 6.1$   
Ship's Round of Beam = 6.1  
Difference 6.72' deficient  
Restricted to  
Correction =  $\frac{\text{Diff}}{4} \times (1 - \frac{S}{L}) = \frac{6.72}{4} \times (1 - \frac{1.74}{48.26}) = 1.29$

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>i</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ...					
„ overhang ...					
R.Q.D. enclosed ...					
„ overhang ...					
Bridge enclosed ...	<u>45.00</u>	<u>22.50</u>	<u>7.75</u>		<u>22.50</u>
„ overhang aft ...	<u>36.33</u>	<u>18.16</u>	<u>7.75</u>		<u>18.16</u>
„ overhang forward ...	<u>48.26</u>	<u>48.26</u>	<u>7'-6.9\"</u>		<u>48.26</u>
Fore enclosed ...	<u>50.0</u>	<u>84</u>			<u>84</u>
„ overhang ...	<u>1.74</u>				
Trunk aft ...					
„ forward ...					
Tonnage opening aft ...					
„ „ forward					
Total ...	<u>131.33</u>	<u>89.79</u>			<u>89.79</u>

Standard Height of Superstructure	<u>4.394</u>
„ „ R.Q.D.	<u>41.29</u>
Deduction for complete superstructure	<u>41.29</u>
Percentage covered $\frac{S}{L} =$	<u>33.43</u>
„ „ $\frac{S_i}{L} =$	<u>23.06</u>
„ „ $\frac{E}{L} =$	<u>23.06</u>
Percentage from Table, Line A. (corrected for absence of forecastle (if required))	<u>11.53</u>
Percentage from Table, Line B. (corrected for absence of forecastle (if required))	<u>14.61</u>
Interpolation for bridge less than .2L (if required)	$(3.08 \times \frac{40.66}{44.88}) = 1.61$
Deduction = $.1314 \times 41.29 =$	<u>5.43</u>

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	<u>48.94</u>	1		<u>48.94</u>	<u>24.00</u>	<u>24.00</u>	1		<u>24.00</u>
$\frac{1}{4}$ L from A.P. ...	<u>21.78</u>	4		<u>87.12</u>	<u>10.36</u>	<u>10.36</u>	4		<u>41.44</u>
$\frac{3}{4}$ L „ ...	<u>5.38</u>	2		<u>10.76</u>	<u>2.58</u>	<u>2.58</u>	2		<u>5.16</u>
Amidships ...	-	4		-	-	-	4		-
$\frac{3}{4}$ L from F.P. ...	<u>10.46</u>	2		<u>21.52</u>	<u>3.56</u>	<u>3.56</u>	2		<u>7.12</u>
$\frac{1}{4}$ L „ ...	<u>43.55</u>	4		<u>174.20</u>	<u>14.34</u>	<u>14.34</u>	4		<u>57.36</u>
F.P. ...	<u>97.88</u>	1		<u>97.88</u>	<u>33.00</u>	<u>33.00</u>	1		<u>33.00</u>
Total ...				<u>440.42</u>					<u>168.08</u>

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{242.34}{18} \times (.75 - \frac{168.08}{168.08}) = + 8.80$$

If limited on account of midship superstructure.

If limited to maximum allowance of  $1\frac{1}{2}$  ins. per 100 ft.Deduction for Tropical Freeboard.  
Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = 36.06 Ft.  
Summer freeboard = 9.10  
Moulded draught (d) = 26.96

Deduction for Tropical freeboard and addition for

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

Addition for Winter North Atlantic Freeboard (if required) =

Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta =$  11840

Tons per inch immersion at summer load water line

 $T =$  40.55Deduction =  $\frac{\Delta}{40T}$  inches $=$  7.29 $=$  7.4

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

$$\frac{.748 + .66}{1.36} = \frac{1.428}{1.36}$$

Depth Correction ...

Deduction for superstructures ...

Sheer correction ...

Round of Beam correction ...

Correction for Thickness of Deck amidships ...

Other corrections, scantlings, etc. 1.68 $\frac{1}{2}$  winter moulded draught of 26.96Summer Freeboard = 109.14

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

Tropical Fresh Water Line above Centre of Disc ... 14.1  
Fresh Water Line „ „ ... 7.4  
Tropical Line „ „ ... 6.3  
Winter Line below „ „ ... 6.3  
Winter North Atlantic Line „ „ ... ...

Tropical Fresh Water Freeboard ... 9.14  
Fresh Water „ „ ... 8.6  
Tropical „ „ ... 8.6  
Winter „ „ ... 9.8  
Winter North Atlantic „ „ ... ...

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# PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS											
Description of Hatchway	N°1	N°2	N°3	N°4	N°5	N°1	N°2	N°3	N°4	N°5	
Dimensions of Hatchway	19'1 1/2" x 16'-0"	23'-4 1/2" x 16'-0"	10'-7 1/2" x 16'-0"	23'-4 1/2" x 16'-0"	23'-4 1/2" x 16'-0"	19'1 1/2" x 16'-0"	23'-4 1/2" x 16'-0"	10'-7 1/2" x 16'-0"	23'-4 1/2" x 16'-0"	23'-4 1/2" x 16'-0"	
COAMINGS	Height above Deck ... 30 1/2"	do.	33 1/2"	As.	do.	32 x 3 1/2 x 44 angle Cleaming.	do.	9" x 3 BA.	As.	As.	
	Thickness ... 44"	do.	44"	N°1.	do.	do.	do.	do.	N°1.	N°1.	
	Sides ... 7 1/2 x 3 1/2 x 44	do.	do.	do.	do.	do.	do.	do.	do.	do.	
	Stiffeners ... None	do.	do.	do.	do.	do.	do.	do.	do.	do.	
	Brackets, Stays ... None	do.	do.	do.	do.	do.	do.	do.	do.	do.	
HATCH BEAMS	Number ... 5	5	one	As.	do.	2.	2.	one.	As.	As.	
	Spacing ... 3'-2"	3'-10"	5'-3"	N°2.	do.	6'-4"	7'-9"	do.	N°1.	N°1.	
	Scantling and Sketch	do.	do.	do.	do.	do.	do.	do.	do.	do.	
	7 1/2 x 15" x 40"	5 1/2 x 40"	7 1/2 x 34"	As.	do.	18" x 40"	do.	7 1/2 x 38"	As.	As.	
	3 x 3 x 40"	do.	do.	do.	do.	do.	do.	do.	do.	do.	
	Bearing Surface ... 6 x 3 1/2 x 6"	do.	4 x 3 x 40"	3 1/2"	do.	do.	do.	do.	do.	do.	
FORE AND AFTERS	Number ... None	✓	None	None	✓	2.	do.	None	As	As	
	Spacing ... None	✓	None	None	✓	5'-4"	do.	do.	N°2.	N°2.	
	Unsupported Lengths ... None	✓	None	None	✓	6'-4"	do.	do.	do.	do.	
	Scantling and Sketch	do.	do.	do.	do.	7'-9"	do.	do.	do.	do.	
	Bearing Surface ... None	✓	do.	do.	✓	2 1/2" 8 1/2" Wood.	do.	do.	do.	do.	
HATCH COVERS	Material ... W.P.	do.	do.	do.	do.	Insulated	do.	W.P.	Insulated	do.	
	Thickness ... 3"	do.	do.	do.	do.	do.	do.	3"	do.	do.	
	How fitted ... F.A.	do.	do.	do.	do.	do.	do.	F.A.	do.	do.	
	Bearing Surface ... 3"	do.	do.	do.	do.	Plugs.	do.	3"	Plugs.	do.	
Spacing of Cleats	20"	23"	23"	24"	24"	do.	do.	None.	do.	do.	
Number of Tarpaulins	3.	3.	3.	3.	3.	do.	do.	None.	do.	do.	
<p>*Are wood fore and afters steel shod at all bearing surfaces? <i>Yes.</i></p> <p>Are battens and wedges efficient and in good condition? <i>Yes.</i></p> <p>Are tarpaulins in good condition and in accordance with rule requirements? <i>Yes.</i></p> <p>Are lashings provided in accordance with rule requirements? <i>Yes.</i></p>											

Particulars of fiddle, funnel and ventilator coamings:—

Fiddle gratings covered with hinged steel plates. ✓  
 Funnel, Vent coamings & E. R. sky lights in good condition. ✓

Particulars of Flush Bunker Scuttles:—

None. ✓

Particulars of Companionways:—

None. ✓

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

FORECASTLE. H=40.  
 1, 2 1/2" high 9" Dia 3/8" T. 1/2 Fore Peak Lower Space.  
 4, 3'-3" 10 1/2" 3" 1/2 Cross Forecastle.  
 6, 3'-3" 9" 3" 1/2 " " " "  
 2, 3'-6" 20" 3/8" 1/2 N°1 Hld.  
 4, 5" 3" G.N. 1/2 Forecastle Space.

FREEBOARD DECK.				
4,	4'-0" high.	20" Dia	3/8" T.	1/2 N°2 Hold Spaces.
2,	3'-6"	17"	3/8" T.	1/2 Cross Bunkers.
2,	3'-3"	10 1/2"	3/8" T.	1/2 " " "
2,	3'-6"	17"	3/8" T.	1/2 Side Bunkers.
6,	3'-5"	20"	3/8" T.	1/2 Hld Spaces.
1,	3'-3"	13"	3/8" T.	1/2 Tunnel.
1,	3'-3"	9"	3/8" T.	1/2 Laycock.
4,	6"	6"	G.N.	1/2 App. Stone.

Wood plugs & canvas covers aboard for all Vals. ✓

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

The E & B. Space Tanks & Settling Tanks are not now used for Oil Fuel & the Air pipes have no gauges fitted. The Bunkers are fitted for Coal or Oil.

*No efficient closing appliances provided.*

Particulars of Gangway Cargo and Coaling Ports:— None.

1,	13" high.	2" dia	1/2 F. P. Tank
2,	15"	2"	1/2 N°1 TK.
2,	45"	3"	1/2 Oil Fuel TK.
2,	48"	2"	1/2 " " "
2,	28"	4"	1/2 " " Settling Tank
2,	18"	2 1/2"	1/2 N°3 TK.
2,	24"	2 1/2"	1/2 N°3 TK.
2,	24"	2"	1/2 N°4 TK.
2,	18"	2"	1/2 N°4 TK.
1,	19"	3"	1/2 App. Peak Tank

Rpt. C. 11 (Contd.)

Newcastle-on-Tyne

C8302

IONIC STAR

FEB -2 1929  
 Index No.

## Lloyd's Register of Shipping.

Ship's Name

IONIC STAR

Official No. 142294.

Memorandum of alterations reported since ship was surveyed for assignment of Load Lines.

Forecastle hatch (H=12'6") fitted with 50 steel bars secured by 2" bolts spaced 6" apart.

An additional ventilator bearing No. 38 fitted on port side of foreboard deck to coal bunker. Closed by wood plug and canvas cover.

*P. Allison.*  
 31-1-29.

Memorandum on board indicated as above.

RETAIN

RETAIN

W440-0015 (2/14)

W440-0015.1



Particulars of Scuppers and Sanitary Discharge Pipes:—

3 cuppers of Upper and Lower Tween decks are carried through the insulation to the bilges. ✓  
Sanitary pipe discharge about 6'-0" below weather deck & are fitted with storm valves. ✓

Particulars of Side Scuttles:—

NONE. ✓

RETAIN

Particulars of Guard Rails:—

Forecastle Head:— 3'-6" high, 5'-0" between stanchions, 3 rods. -  
Aftcast. No 5 Hatch & Aft:— 3'-10" 4'-6" " 4 " -

Particulars of Gangways, Lifelines, etc.:—

NONE.

Portable provisions made for rigging lifelines which are available for use in any part of the ship which might have to be used by the crew in the regular working of the ship.

Particulars of Freeing Arrangements.

	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
Aft. Well ... ..	✓	✓	✓	✓	✓	✓
Forward Well ... ..	83'-3"	3'-8"	one 28" x 22" - one 25" x 20"	2.	7.7	16.65
BETWEEN Bdg & Eng. Accom.	40'-6"	3'-8"	one 27" x 21"	one	4.0	10.55
State position of each freeing port ... .. } After Well:— 5" above deck edge. (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:— Shutters. 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 ... ..	3/8" ✓	5/16" ✓	Room partition bulkheads	3'-0" ✓	✓	5'-2" x 2'-1" ✓	15" ✓	7'-6" ✓
Trunk, Aft ... ..								
Trunk, Forward ... ..								
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	-							
Exposed Machinery Casings on Super-structure Decks ... ..	1/2" ✓	3/8" ✓	3" x 3" x 3.	29" ✓	18" x 18" Bkt. at top.	5'-6" x 2'-2" ✓	17" ✓	7'-9" ✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ... ..	-							
Deckhouses on Flush Deck Ships ...	3/8" ✓	5/16" ✓	3 x 3 x 1/4	about 3'-0" ✓	Bkt. top & bottom at fwd end.	5'-0" x 2'-2" ✓	16" x 18" ✓	7'-9" ✓

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

Poop Bulkhead ... ..	
Raised Quarter Deck Bulkhead ...	
Bridge, After Bulkhead ... ..	Open
Bridge, Forward Bulkhead ... ..	Open
Forecastle Bulkhead ... ..	Wood doors to accommodation. Steel door to lamp room. Operated both sides. ✓
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	
Exposed Machinery Casings on Super-structure Decks ... ..	Steel door. Operated both sides. ✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ... ..	
Deckhouses on Flush Deck Ships ...	Wood doors. Operated both sides. ✓



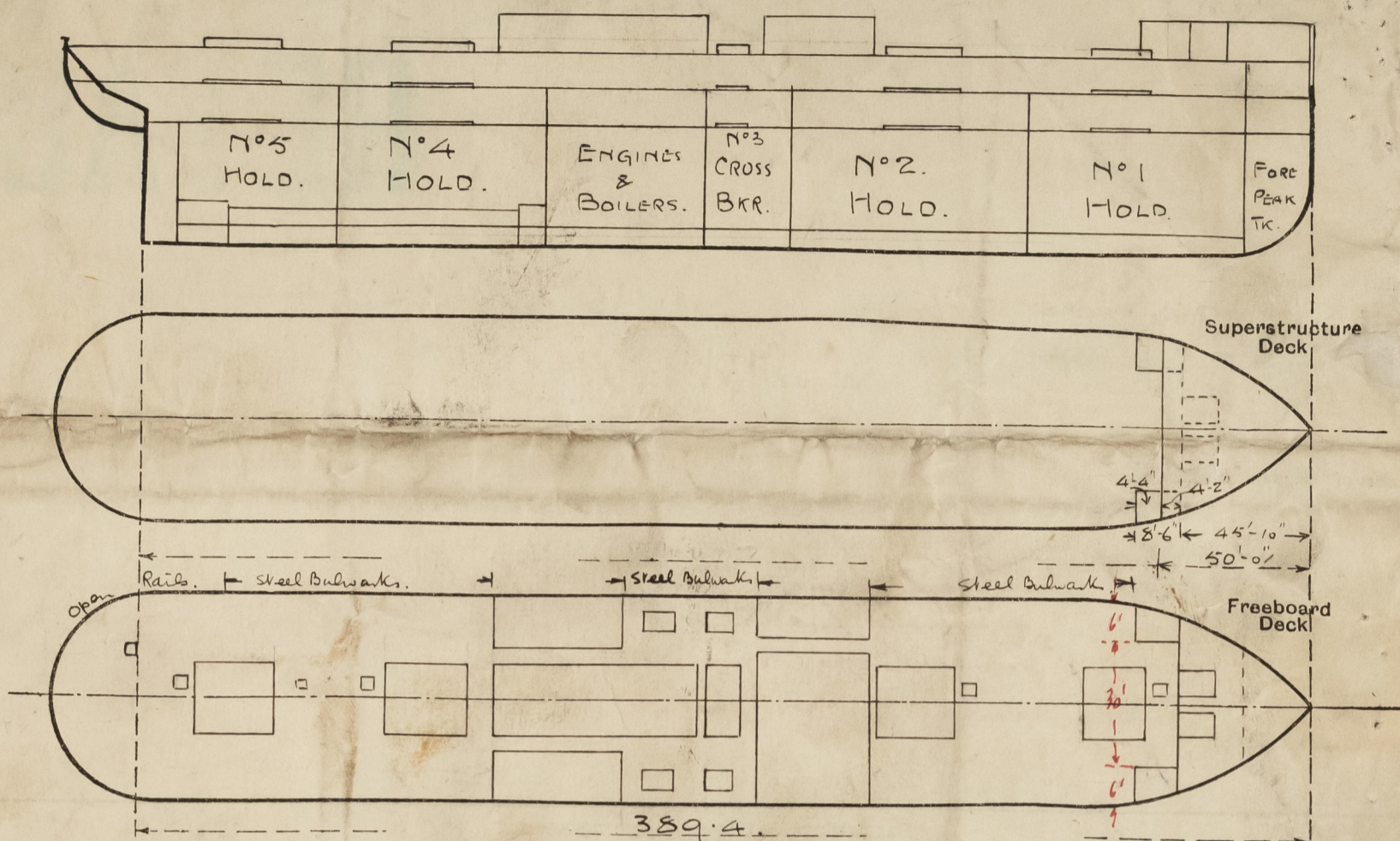
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W440-0015 (414)

*Blue Star*

Superstructure, bulkheads, trunks, deckhouses, casings, cargo and coaling hatchways, extent 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 shewn on the following sketches:—



*Handwritten calculations:*  
 54.35 /  
 - 30.85 = 23.50  
 47  
 48.26  
 1.74  
 50.00

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

Fore hatch on Fore Head. 4'-1" x 2'-5", 8" B.A. Coaming 31" x 9" spaced cleats, one 6" x 3" T. bar beam.  
 2 1/2" Wood core, 2 1/2" rest, 3 Kapanlin, one hinged locking bar.  
 Fore hatch on Shelter deck. 4'-1" x 3'-0", 2 1/2" x 2 1/2" L coamings 2 1/2" Wood core, 2 1/2" rest.  
 Bunker hatches. Fwd. P+S. 7'-2" x 3'-9" x 3; 33" high 3" W.P. hatches, 3" rest, 21" cleats, 3 Kapanlin.  
 Aft. P+S. 8'-6" x 3'-9" x 3. as above.  
 Bosby hatches to Cargo hatches. 3'-0" x 3'-0" x 4. 30" high 2 1/2" W.P. hatches, 2 1/2" rest, 21" cleats 3 Kapanlin.  
 One hatch aloft after mast house permanently sealed & caulked, insulation complete beneath. 2'-0" x 2'-8"; 2"  
 3" Wood deck throughout, fore aft, except in way of bunkers amidships.

Vessel measured cybrat for Freeboard only.

Builder's name and yard number. RUSSELL & Co. (PORT GLASGOW). N° 694.

Names of sister ships

Owners UNION COLD STORAGE CO. LD. (Blue Star Line Ltd)

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