

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

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(For London Office only.)

-6 MAY 1932

312

Computation of Freeboard for Steamer, Sailing Ship, Tanker
having R.Q.D. - Bridge & Tackle

(Type of Superstructures.)

Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build
"TOSCA"	British	99738	449	1908

Moulded Dimensions: Length 154.8 Breadth 25.5 Depth 12.25 834 tons

Moulded displacement at moulded draught = 85 per cent. of moulded depth

Coefficient of fineness for use with Tables .410

Port of Survey Southampton

Date of Survey 29/4/32 & 2/5/32

Name of Surveyor McMillan

Particulars of Classification +100A1

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth <u>12.25</u>	(a) Where D is greater than Table depth (D - Table depth) R = <u>(12.25 - 10.32) 1.19 = + 2.33</u>	Moulded Breadth (B) <u>25.5</u>
Stringer plate <u>.03</u>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R =	Standard Round of Beam = $\frac{B \times 12}{50} = \frac{6.12}{50} = \frac{6.50}{38}$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$	If restricted by superstructures	Ship's Round of Beam = <u>.38</u>
Depth for Freeboard (D) = <u>12.28</u>		Difference
		Restricted to
		Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.38}{4} \left(1 - \frac{.302}{.410} \right) = -.03$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed						Standard Height of Superstructure <u>6.0</u>
" overhang						" " R.Q.D. <u>3.37</u>
R.Q.D. enclosed	<u>86.30</u>	<u>86.3</u>	<u>4.0</u> (CL)		<u>86.3</u>	Deduction for complete superstructure <u>21.48</u>
" overhang	<u>9.92</u>	<u>9.92</u>	<u>6.25</u> (CL)		<u>9.92</u>	Percentage covered $\frac{S}{L} = \frac{74.42}{154.8} = .479$
Bridge enclosed	<u>15.48</u>	<u>13.04</u>	<u>7.02</u>		<u>13.04</u>	" " $\frac{S_1}{L} = \frac{74.42}{154.8} = .479$
" overhang aft	<u>3.76</u>	<u>1.98</u>			<u>3.76</u>	" " $\frac{E}{L} = \frac{74.42}{154.8} = .479$
" overhang forward	<u>4.52</u>	<u>3.76</u>			<u>4.52</u>	Percentage from Table, Line A. <u>66.71</u>
F'cle enclosed	<u>119.22</u>	<u>113.05</u>			<u>113.05</u>	(corrected for absence of forecastle (if required))
" overhang	<u>11.78</u>	<u>11.78</u>			<u>11.78</u>	Percentage from Table, Line B. <u>66.71</u>
Trunk aft						(corrected for absence of forecastle (if required))
" forward						Interpolation for bridge less than .2L (if required)
Tonnage opening aft						Deduction = <u>21.48</u> x <u>.6671</u> = <u>14.33</u>
" " forward						<u>14.33</u>
Total	<u>119.22</u>	<u>113.05</u>			<u>113.05</u>	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	Mean actual sheer aft	Mean standard sheer aft
A.P.	<u>26.48</u>	1		<u>26.48</u>	<u>25.00</u>	<u>26.48</u>	1		<u>26.48</u>		
$\frac{1}{2}$ L from A.P.	<u>11.78</u>	4		<u>47.12</u>	<u>11.45</u>	<u>11.78</u>	4		<u>47.12</u>		
$\frac{2}{3}$ L "	<u>2.91</u>	2		<u>5.82</u>	<u>2.96</u>	<u>2.91</u>	2		<u>5.82</u>		
Amidships		4					4				
$\frac{2}{3}$ L from F.P.	<u>5.82</u>	2		<u>11.64</u>	<u>4.93</u>	<u>4.93</u>	2		<u>9.86</u>		
$\frac{1}{2}$ L "	<u>23.56</u>	4		<u>94.34</u>	<u>19.75</u>	<u>19.75</u>	4		<u>79.00</u>		
F.P.	<u>52.96</u>	1		<u>52.96</u>	<u>45.00</u>	<u>45.00</u>	1		<u>45.00</u>		
Total				<u>238.36</u>					<u>213.28</u>		

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{25.08}{18} \left(.75 - \frac{.385}{.410} \right) = +.52$

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.	Deduction for Fresh Water.	TABULAR FREEBOARD corrected for Flush Deck (if required)
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient $\frac{.41 + .68}{1.36} = \frac{1.39}{1.36} \times \frac{16.17}{1.36} = 16.53$
Depth to Freeboard Deck = <u>12.28</u>	$\Delta = 974$	Depth Correction <u>2.33</u>
Summer freeboard = <u>4.44</u>	Tons per inch immersion at summer load water line	Deduction for superstructures <u>14.33</u>
Moulded draught (d) = <u>11.86</u>	T = <u>7.8</u>	Sheer correction <u>.03</u>
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <u>2.96 : 3"</u>	Deduction = $\frac{\Delta}{40 T}$ inches = <u>3.12</u>	Round of Beam correction <u>.03</u>
Addition for Winter North Atlantic Freeboard (if required) = <u>5"</u>	<u>3"</u>	Correction for Thickness of Deck amidships <u>48.00</u>
		Other corrections, scantlings, etc. <u>50.84</u>
		Summer Freeboard = <u>53.53</u>

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

Tropical Fresh Water Line above Centre of Disc <u>6"</u>	Tropical Fresh Water Freeboard <u>4'-5"</u>
Fresh Water Line " " <u>3"</u>	Fresh Water " " <u>4'-8"</u>
Tropical Line " " <u>3"</u>	Tropical " " <u>4'-8"</u>
Winter Line below " " <u>3"</u>	Winter " " <u>4'-8"</u>
Winter North Atlantic Line " " <u>5"</u>	Winter North Atlantic " " <u>4'-10"</u>

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway				NO 1	BUNKER. VESSEL	NO 2			
Dimensions of Hatchway				24' x 15' 6"	14' 6" x 4' 6"	21' 9" x 10' 6"			
COAMINGS	Height above Deck	...	...	36"	7' 9"	36"			
	Thickness	...	...	9/20	1/4"	9/20			
	Stiffeners (no. & dist.)	...	...	5 x 3 x 1/4"	3 x 3 x 3/16 x 30"	5 x 3 x 1/4"			
	Brackets, Stays	...	...				
HATCH BEAMS	Number	...	...	2		2			
	Spacing	...	...	8' (mean)		7' 8" mean			
	Scantling and Sketch	...	...	7" x 3 3/4" x 24"	✓	as for NO 1			
	Bearing Surface	...	...	6"		6"			
FORE AND AFTERS	Number	...	...	3		3			
	Spacing	...	...	3' 10"		3' 10"			
	Unsupported Lengths	...	...	8' 7"		8' 7"			
	Scantling* and Sketch	...	...	7 x 6" Sides	✓	7 x 6" Sides			
Bearing Surface				2 1/2"		2 1/2"			
HATCH COVERS	Material	...	...	wood	wood	wood			
	Thickness	...	...	2 1/2"	2 1/2"	2 1/2"			
	How fitted	...	...	Not angled	Not angled	Not angled			
	Bearing Surface	...	...	2 1/2"	2 1/2"	2 1/2"			
Spacing of Cleats				24"	24"	24"			
Number of Tarpaulins				2	2	2			

Bunker hatch on R.O.D. forms the fore end of E & B casing.

*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? Rings.

Particulars of fiddley, funnel and ventilator coamings:—

Particulars of fiddle, funnel and ventilator coamings:—

Stitchhold gratings covered by efficient steel covers / ~~not hinged~~ ^{permanently attached} operated from 1 side only.

Fiddle & funnel ventilator in efficient condition.

Engine skylight of wood.

Particulars of Flush Bunker Scuttles:—

Particulars of Companionways :—

1 Steel companion in plating. 3'6" x 2'6" x 7'0" with 12" size situated under forehatch leading to crew's quarters, & having ~~wood~~^{hinged steel} door with handles operated from both sides.

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

on Isosle. 1 at 6' chain with 4' coaming. 5 census quarters.

In *Amurella* 1 " 9" " " 36" " " hold spines. ✓
1 " 18" " " 18" " " " (hold scale)

[illegible]

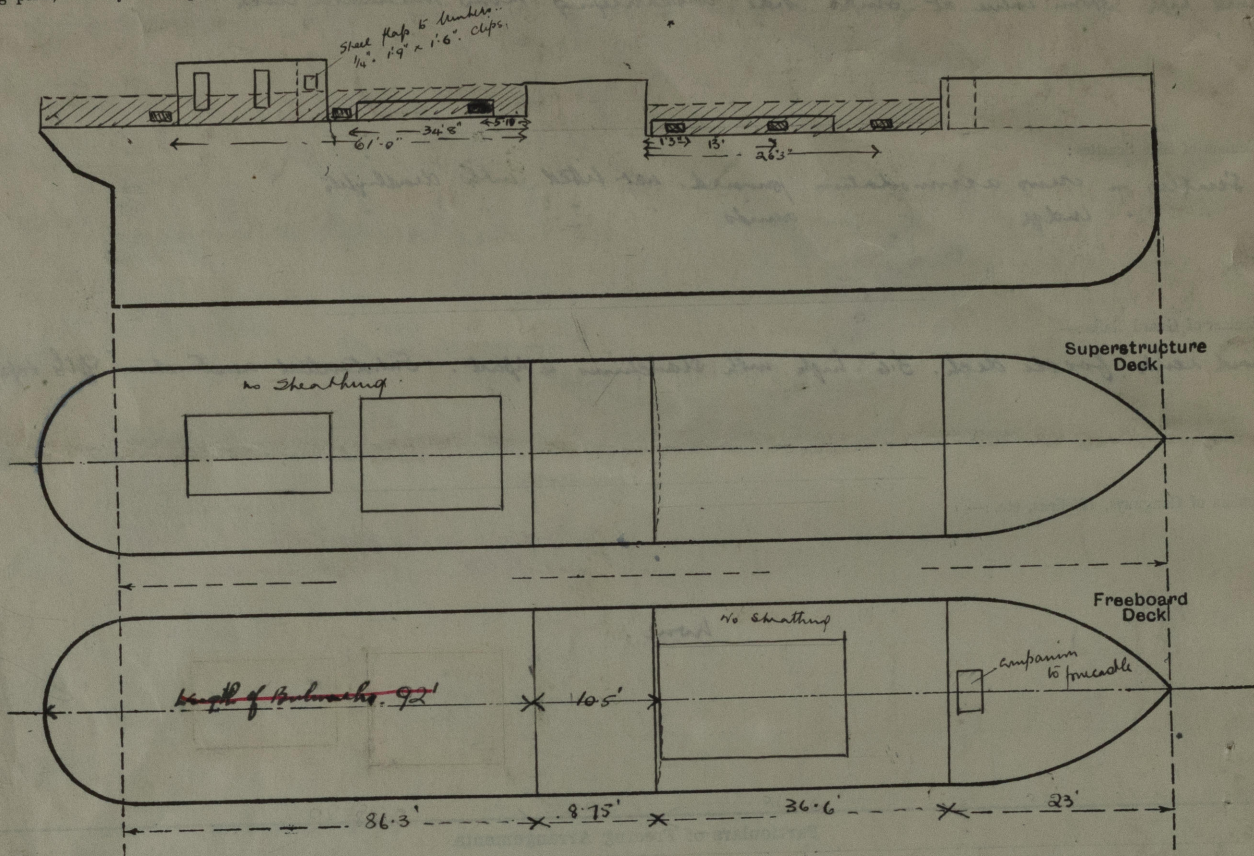
Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks :—

1. c_2 in pipe on RPD 2" x 20" high. 15 aft. peak. *each on lifting hole*

Good thing for closing arrangement. ✓

Particulars of Gangway Cargo and Coaling Ports:—

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 shown on the following sketches:—



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

From Blue form
12 831
4 3849
962 = 710 tons

85 x 12 x 2 = 10.44
58.44
10.99
962
1.37 x 12 x 78 =
128
710
838
838

11.86
58
12.44
962
12.82 x 12 x 78 = 264
710
974

7/16 = 23-0
6 = 15-48
10 = 7-52
3-76

8/16 = 11-5
8-75
1-75
3-50
1-19
8-75
9-92

Sheets taken with vessel afloat.

Vessel examined on shipway for docking survey & repairs.

Builder's name and yard number

Names of sister ships

Owners

L. A. Wilson.

Fee £ 5 : 2 : 0

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