

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name <i>Star Lion</i>	Official Number <i>114941</i>	Nationality and Port of Registry <i>British Samarang</i>	Gross Tonnage <i>2508</i>	Date of Build <i>1907-6</i>	Port of Survey
Moulded Dimensions: Length <i>310.67'</i> Breadth <i>40.50'</i> Depth <i>21.75'</i>					Date of Survey <i>26th-27th Aug. & 10th Sept.</i>
Moulded displacement at moulded draught = 85 per cent. of moulded depth					Surveyor's Signature <i>Jack Borben assisted by acting surveyor Mr. Hor</i>
Coefficient of fineness for use with Tables <i>.71 (assumed)</i>					Particulars of Classification <i>+100A</i>

Depth for Freeboard (D).	Depth correction.	Round of Beam correction.
Moulded depth ... <i>21.75</i>	(a) Where D is greater than Table depth (D - Table depth) R = <i>(21.84 - 20.71) 2.389 = + 2.70"</i>	Moulded Breadth (B) <i>40.50'</i>
Strainer plate ... <i>.05</i>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R =	Standard Round of Beam = $\frac{B \times 12}{50} = 9.72'$
Sheathing on exposed deck <i>2 1/2"</i>		Ship's Round of Beam = <i>10.00'</i>
$T \left(\frac{L-S}{L} \right) = 21 \times 2082$ <i>.04</i>	If restricted by superstructures	Difference <i>.28 excess</i>
Depth for Freeboard (D) = <i>21.84</i>		Restricted to
		Correction = $\frac{\text{Diff}^*}{4} \times \left(1 - \frac{S}{L} \right) = \frac{.28}{4} \times 2082 = - .01"$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Roop enclosed ...	<i>213.00</i>	<i>213.00</i>	<i>8.0'</i>		<i>213.00</i>
... overhang ...					
R.Q.D. enclosed ...					
... overhang ...					
Bridge enclosed ...					
... overhang aft ...					
... overhang forward ...					
Fore enclosed ...	<i>33.00</i>	<i>33.00</i>	<i>8.0'</i>		<i>33.00</i>
... overhang ...					
Trunk aft ...					
... forward ...					
Tonnage opening aft ...					
... forward ...					
Total ...	<i>246.00</i>	<i>246.00</i>			<i>246.00</i>

Standard Height of Superstructure <i>6.61'</i>	
" " R.Q.D.	
Deduction for complete superstructure <i>36.05"</i>	
Percentage covered $\frac{S}{L} = 79.18$	
" " $\frac{S_1}{L} = 79.18$	
" " $\frac{E}{L} = 79.18$	
Percentage from Table, Line A. <i>74.29</i>	
(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 = <i>36.05 x 74.29 = - 26.78"</i>	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate <i>Plotted + 16.20</i>	Effective Ordinate	S	M	Product
A.P. ...	<i>41.07</i>	<i>1</i>		<i>41.07</i>	<i>27.00</i>	<i>43.20</i>	<i>1</i>		<i>41.07</i>
1/2 L from A.P. ...	<i>18.275</i>	<i>4</i>		<i>73.10</i>	<i>7.60</i>	<i>19.22</i>	<i>4</i>		<i>73.10</i>
1/4 L " ...	<i>4.52</i>	<i>2</i>		<i>9.04</i>	<i>.60</i>	<i>4.75</i>	<i>2</i>		<i>9.04</i>
Amidships ...	-	<i>4</i>		-	-	-	<i>4</i>		-
1/2 L from F.P. ...	<i>9.03</i>	<i>2</i>		<i>18.06</i>	<i>5.00</i>	<i>5.00</i>	<i>2</i>		<i>10.00</i>
1/4 L " ...	<i>36.55</i>	<i>4</i>		<i>146.20</i>	<i>20.25</i>	<i>20.25</i>	<i>4</i>		<i>81.00</i>
F.P. ...	<i>82.13</i>	<i>1</i>		<i>82.13</i>	<i>61.00</i>	<i>61.00</i>	<i>1</i>		<i>61.00</i>
Total ...				<i>369.60</i>					<i>275.21</i>

Correction = Difference between sums of products $\frac{369.60 - 275.21}{18} = \frac{94.39}{18} = 5.24$ *+1.86*

If limited on account of midship superstructure.

Mean actual sheer aft = *Excess*

Mean standard sheer aft = *Excess*

Mean actual sheer forward = *Deficient*

Mean standard sheer forward = *Deficient*

Length of enclosed superstructure forward of amidships = *Deficient*

" " aft of " = *Sheer*

Deduction for Tropical Freeboard. Addition for Winter and Winter North Atlantic Freeboard. Depth to Freeboard Deck = <i>21.80</i> Summer freeboard = <i>2.02</i> Moulded draught (d) = <i>19.78</i> Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <i>4.95 = 5"</i> Addition for Winter North Atlantic Freeboard (if required) = <i>5" + 2" = 7"</i>	Deduction for Fresh Water. Displacement in salt water at summer load water line $\Delta =$ Tons per inch immersion at summer load water line $T =$ Deduction = $\frac{\Delta}{40T}$ inches $\frac{d}{h} = 5"$	TABULAR FREEBOARD corrected for Fresh Deck (if required) Correction for coefficient $\frac{71+68}{1.36} = 1.33$ <table style="width: 100%;"> <tr> <th></th> <th>+</th> <th>-</th> </tr> <tr> <td>Depth Correction ...</td> <td><i>2.70</i></td> <td></td> </tr> <tr> <td>Deduction for superstructures ...</td> <td></td> <td><i>26.78</i></td> </tr> <tr> <td>Sheer correction ...</td> <td><i>1.86</i></td> <td></td> </tr> <tr> <td>Round of Beam correction ...</td> <td></td> <td><i>.01</i></td> </tr> <tr> <td>Correction for Thickness of Deck amidships ...</td> <td></td> <td><i>.48</i></td> </tr> <tr> <td>Other corrections, scantlings, etc. ...</td> <td></td> <td></td> </tr> <tr> <td></td> <td><i>4.56</i></td> <td><i>27.27</i></td> </tr> <tr> <td>Summer Freeboard =</td> <td><i>24.37</i></td> <td></td> </tr> </table>		+	-	Depth Correction ...	<i>2.70</i>		Deduction for superstructures ...		<i>26.78</i>	Sheer correction ...	<i>1.86</i>		Round of Beam correction ...		<i>.01</i>	Correction for Thickness of Deck amidships ...		<i>.48</i>	Other corrections, scantlings, etc. ...				<i>4.56</i>	<i>27.27</i>	Summer Freeboard =	<i>24.37</i>	
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SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck:—

Tropical Fresh Water Line above Centre of Disc ...	10"	Tropical Fresh Water Freeboard ...	1'-2 1/4"
Fresh Water Line " " ...	5"	Fresh Water " " ...	1'-3 1/4"
Tropical Line " " ...	5"	Tropical " " ...	1'-4 1/4"
Winter Line below " " ...	5"	Winter " " ...	2'-5 1/4"
Winter North Atlantic Line " " ...	7"	Winter North Atlantic " " ...	2'-7 1/4"