

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker  
having *Lancaster Bridge and Raised Quarter Deck.*

Port of Survey

Date of Survey *4. 3. 32.*

Name of Surveyor

Particulars of Classification *+ 100 A1.*

(Type of Superstructures.)

Ship's Name

Nationality and Port of Registry

Official Number

Gross Tonnage

Date of Build

*Urania*

*Swedish Stockholm*

*3529*

*628*

*1899.*

Moulded Dimensions: Length *173.3'* Breadth *29.0'* Depth *13.33'*

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

Coefficient of fineness for use with Tables *.715.*

Depth for Freeboard (D)

Depth correction

Round of Beam correction

Moulded depth ... .. *13.33'*

Stringer plate ... .. *.04'*

Sheathing on exposed deck

$$T \left( \frac{L-S}{L} \right) =$$

Depth for Freeboard (D) = *13.37*

(a) Where D is greater than Table depth  
(D-Table depth) R =

$$(13.37 - 11.55) / 1.333 = + 2.43$$

(b) Where D is less than Table depth (if allowed)  
(Table depth-D) R =

If restricted by superstructures

Moulded Breadth (B)

*29.00*

$$\text{Standard Round of Beam} = \frac{B \times 12}{50} =$$

*6.96*

Ship's Round of Beam

*10.75*

Difference

*3.79*

Restricted to

$$\text{Correction} = \frac{\text{Diff}}{4} \times \left( 1 - \frac{S_1}{L} \right) = \frac{3.79}{4} (1 - .7334) = .25$$

### DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ... ..					
" overhang ... ..					
R.Q.D. enclosed ... ..	<i>86.50</i>	<i>86.50</i>	<i>4.00</i>	-	<i>86.50</i>
" overhang ... ..					
Bridge enclosed ... ..	<i>18.50</i>	<i>18.50</i>	<i>7.17</i>	-	<i>18.50</i>
" overhang aft ... ..					
" overhang forward ... ..					
F'cle enclosed ... ..	<i>22.10</i>	<i>22.10</i>	<i>7.17</i>	-	<i>22.10</i>
" overhang ... ..					
Trunk aft ... ..					
" forward ... ..					
Tonnage opening aft ... ..					
" forward ... ..					
Total ... ..	<i>127.10</i>	<i>127.10</i>			<i>127.10</i>

Standard Height of Superstructure

*6.00*

" " R.Q.D.

*3.489*

Deduction for complete superstructure

*23.33*

Percentage covered  $\frac{S}{L} =$

*73.34%*

" "  $\frac{S_1}{L} =$

*73.34%*

" "  $\frac{E}{L} =$

*73.34%*

Percentage from Table, Line A.

(corrected for absence of forecastle (if required))

*67.11*

Percentage from Table, Line B.

(corrected for absence of forecastle (if required))

Interpolation for bridge less than 2L (if required)

$$\text{Deduction} = 23.33 \times .6711 = 15.66$$

### SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P. ... ..	<i>27.33</i>	1	<i>27.33</i>	<i>21.50</i>	<i>27.33</i>	1	<i>27.33</i>
$\frac{1}{2}$ L from A.P. ... ..	<i>12.16</i>	4	<i>48.64</i>	<i>6.32</i>	<i>12.16</i>	4	<i>48.64</i>
$\frac{2}{3}$ L " ... ..	<i>3.01</i>	2	<i>6.02</i>	<i>1.58</i>	<i>3.01</i>	2	<i>6.02</i>
Amidships ... ..		4				4	
$\frac{2}{3}$ L from F.P. ... ..	<i>6.01</i>	2	<i>12.02</i>	<i>5.91</i>	<i>5.91</i>	2	<i>11.82</i>
$\frac{1}{2}$ L " ... ..	<i>24.32</i>	4	<i>97.28</i>	<i>23.70</i>	<i>23.70</i>	4	<i>94.80</i>
F.P. ... ..	<i>54.66</i>	1	<i>54.66</i>	<i>50.00</i>	<i>50.00</i>	1	<i>50.00</i>
Total ... ..			<i>245.95</i>				<i>238.61</i>

Mean actual sheer aft = *excess*  
Mean standard sheer aft

Mean actual sheer forward = *defective*  
Mean standard sheer forward

Length of enclosed superstructure forward of amidships =

" " aft of " =

*Virtual sheer aft due to excess height of R.Q.D. is in excess of standard sheer aft, but cannot be used as sheer forward is deficient*

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{7.34}{18} (.75 - .3667) = +.16$$

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 = *13.37*

Summer freeboard = *.50*

Moulded draught (d) = *12.87*

Deduction for Tropical freeboard and addition for

Winter freeboard =  $\frac{d}{4}$  inches = *3.22 = 3\frac{1}{4}*

Addition for Winter North Atlantic Freeboard (if required =

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

=

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

*.68 + .715*

*1.36*

*+*

*-*

Depth Correction ... .. *2.43*

Deduction for superstructures ... .. *15.66*

Sheer correction ... .. *.16*

Round of Beam correction ... .. *.25*

Correction for Thickness of Deck amidships

Other corrections, scantlings, etc. ... ..

*2.59 - 15.91 - 13.32 =*

Summer Freeboard = *5.97*

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

Tropical Fresh Water Line above Centre of Disc ... ..	
Fresh Water Line " " ... ..	
Tropical Line " " ... ..	
Winter Line below " " ... ..	
Winter North Atlantic Line " " ... ..	

Tropical Fresh Water Freeboard ... ..	
Fresh Water " " ... ..	
Tropical " " ... ..	
Winter " " ... ..	
Winter North Atlantic " " ... ..	

*Difference from 1906 { Summer - 1\frac{1}{4}" Winter + \frac{1}{2}"*

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