

Lloyd's Register of Shipping.  
SURVEYS FOR FREEBOARD.  
(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name <b>NORRISIA.</b>	Official Number <b>169753</b>	Nationality and Port of Registry <b>British London</b>	Gross Tonnage <b>8245.97</b>	Date of Build <b>1944</b>	Port of Survey <b>Belfast &amp; Glasgow</b>
Moulded Dimensions: Length <b>460</b> Breadth <b>59</b> Depth <b>34</b>					Date of Survey <b>during construction</b>
Moulded displacement at moulded draught = 85 per cent. of moulded depth <b>17733</b> tons					Surveyor's Signatures <b>Wm. Balfour W. J. P. J.</b>
Coefficient of fineness for use with Tables <b>.791</b>					Particulars of Classification <b>+100A. Carrying Petroleum in Bulk. Class contemplated</b>

Depth for Freeboard (D).	Depth correction.	Round of Beam correction.
Moulded depth ... .. <b>34.00</b>	(a) Where D is greater than Table depth (D - Table depth) R = <b>(34.07 - 30.67) x 3 = +10.20</b> <b>3.40</b>	Moulded Breadth (B) <b>59</b>
Stringer plate <b>.84</b> ... .. <b>.07</b>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R =	Standard Round of Beam = $\frac{B \times 12}{50} =$ <b>14.16</b>
Sheathing on exposed deck $T \left( \frac{L-S}{L} \right) =$ <b>nil</b>	If restricted by superstructures	Ship's Round of Beam = <b>14.94</b>
Depth for Freeboard (D) = <b>34.07</b>		Difference <b>.59</b>
		Restricted to
		Correction = $\frac{\text{Diff}^*}{4} \times \left( 1 - \frac{S_1}{L} \right) =$ <b><math>\frac{.59 \times 5832}{4} = -1.09</math></b>

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed <b>Equival</b>	94.99	94.99	← 7'-6"		94.99
.. overhang ... ..					
R.Q.D. enclosed ...					
.. overhang					
Bridge enclosed <b>Equival</b>	46.86	46.86	← 7'-6"		46.86
.. overhang aft ...	2.50	1.88			1.88
.. overhang forward					
Fore enclosed ... ..	48.04	48.04	← 7'-6"		48.04
.. overhang ... ..					
Trunk aft ... ..					
.. forward ... ..					
Tonnage opening aft ...					
.. forward					
Total ... ..	192.39	191.77			191.77

Standard Height of Superstructure	<b>7.5'</b>
.. .. R.Q.D.	
Deduction for complete superstructure	<b>42</b>
Percentage covered $\frac{S}{L} =$	<b>41.82</b>
.. .. $\frac{S_1}{L} =$	<b>41.68</b>
.. .. $\frac{E}{L} =$	
Percentage from Table, <b>Line A. tanker</b>	<b>32.68</b>
(corrected for absence of forecastle (if required))	
Percentage from Table, <b>Line B.</b>	
(corrected for absence of forecastle (if required))	
Interpolation for bridge less than .2L (if required)	
Deduction = <b>42 x 32.68 = -13.73</b>	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ... ..	56.00	1		56.00	56.4	56.4	1		56.4
1/4 L from A.P. ...	24.92	4		99.68	25.0	25.0	4		100.0
3/4 L .. ..	6.16	2		12.32	6.2	6.2	2		12.4
Amidships ... ..	-	4		-	-	-	4		-
3/4 L from F.P. ...	12.32	2		24.64	12.4	12.4	2		24.8
1/4 L .. ..	49.84	4		199.36	50.0	50.0	4		200.0
F.P. ... ..	112.00	1		112.00	112.1	112.1	1		112.1
Total ... ..				504.00					505.7

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) =$   **$\frac{1.7}{18} \left( .75 - \frac{.2091}{2} \right) = -.05$**

If limited on account of midship superstructure.

Mean actual sheer aft =  
Mean standard sheer aft =

Mean actual sheer forward =  
Mean standard sheer forward =

Length of enclosed superstructure forward of amidships =  
.. .. aft of .. =

Deduction for Tropical Freeboard.	Deduction for Fresh Water.	TABULAR FREEBOARD corrected for Flush Deck (if required)	<b>77.70</b>
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient $\frac{791 + .68}{1.36} = \frac{1.471}{1.36}$	<b>84.05</b>
Depth to Freeboard Deck = <b>34.07</b>	$\Delta =$ <b>16791</b>	Depth Correction ... .. <b>10.20</b>	
Summer freeboard = <b>6.71</b>	Tons per inch immersion at summer load water line	Deduction for superstructures ... .. <b>13.73</b>	
Moulded draught (d) = <b>27.36</b>	$T =$ <b>56.41</b>	Sheer correction ... .. <b>.05</b>	
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <b>6.84 = 6 3/4</b>	Deduction = $\frac{\Delta}{40T}$ inches <b>7.44 = 7 1/2</b>	Round of Beam correction ... .. <b>.09</b>	
Addition for Winter North Atlantic Freeboard (if required) = <b>6.84 + 4.00 = 11.44 = 11 1/2</b>	<b>44 8.2 17115 56.6</b>	Correction for Thickness of Deck amidships ... .. <b>-</b>	
	<b>28 17115 56.6</b>	Other corrections, scantlings, etc. ... .. <b>-</b>	
	<b>27 16439 56.2</b>	Summer Freeboard = <b>80.38</b>	

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

Tropical Fresh Water Line above Centre of Disc ...	<b>14 1/4"</b>	Tropical Fresh Water Freeboard ...	<b>6'-8 1/2"</b>
Fresh Water Line .. ..	<b>7 1/2"</b>	Fresh Water .. ..	<b>6'-1 1/4"</b>
Tropical Line .. ..	<b>6 3/4"</b>	Tropical .. ..	<b>6'-1 3/4"</b>
Winter Line below .. ..	<b>6 3/4"</b>	Winter .. ..	<b>7'-3 1/4"</b>
Winter North Atlantic Line .. ..	<b>11 1/2"</b>	Winter North Atlantic .. ..	<b>7'-8"</b>



Pool.

$\frac{2}{3} \times 3.62 =$

$$\begin{array}{r} 92.58 \\ 2.41 \\ \hline 94.99 \end{array}$$

Bridge.

$\frac{2}{3} \times 4.54$

$$\begin{array}{r} 43.83 \\ 3.03 \\ \hline 46.86 \end{array}$$

Fee £ 19-0-0