

Estimate of Tanker Freeboard

Index No. 37114
 (For London/Office only)

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name <i>Sir J. Laing & Sons'</i> <i>Yard No. 753</i>	Official Number	Nationality and Port of Registry	Gross Tonnage	Date of Build	Port of Survey
Moulded Dimensions: Length <i>466.75</i> Breadth <i>64</i> Depth <i>35'-6"</i>					Date of Survey <i>18.11.42</i>
Moulded displacement at moulded draught = 85 per cent. of moulded depth _____ tons					Surveyor's Signature _____
Coefficient of fineness for use with Tables <i>.78 assumed</i>					Particulars of Classification <i>+100A1</i> <i>Carrying Petroleum in Bulk</i>

Depth for Freeboard (D). Moulded depth <i>35.50</i> Stringer plate ... <i>8.4"</i> <i>.07</i> Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ Depth for Freeboard (D) = <u><i>35.57</i></u>	Depth correction. (a) Where D is greater than Table depth (D - Table depth) R = $(35.57 - 31.07) \times 3 = +13.50$ $\frac{4.50}{4} = 1.125$ (b) Where D is less than Table depth (if allowed) (Table depth - D) R = If restricted by superstructures <input checked="" type="checkbox"/>	Round of Beam correction. Moulded Breadth (B) <i>64</i> Standard Round of Beam = $\frac{B \times 12}{50} = 15.36$ Ship's Round of Beam = <i>16.12</i> Difference = <i>76"</i> Restricted to <i>5.22</i> Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{76}{4} \times \left(1 - \frac{15.36}{64} \right) = 16.29$
--	---	---

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed <i>Equi.</i> ...	<i>124.70</i>	<i>124.70</i>	<i>7.5</i>	<input checked="" type="checkbox"/>	<i>124.70</i>
.. overhang ...					
R.Q.D. enclosed ...					
.. overhang ...					
Bridge enclosed <i>Equi.</i> ...	<i>45.69</i>	<i>45.69</i>	<i>7.5</i>	<input checked="" type="checkbox"/>	<i>45.69</i>
.. overhang aft ...					
.. overhang forward ...					
F'cle enclosed <i>Equi.</i> ...	<i>52.47</i>	<i>52.47</i>	<i>7.5</i>	<input checked="" type="checkbox"/>	<i>52.47</i>
.. overhang ...					
Trunk aft ...					
.. forward ...					
Tonnage opening aft ...					
.. " forward ...					
Total ...	<u><i>222.86</i></u>	<u><i>222.86</i></u>			<u><i>222.86</i></u>

Standard Height of Superstructure *7.5*

.. " R.Q.D. _____

Deduction for complete superstructure *42*

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

.. " $\frac{S_1}{L} =$ *47.8*

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

Percentage from Table, Line A. *Tanker 38.8* ✓

(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 = $42 \times 38.8 = 16.29$ ✓

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	<i>56.62</i>	<i>1</i>		<i>56.62</i>	<i>21.75</i>	<i>21.75</i>	<i>1</i>		<i>21.75</i>
$\frac{1}{8}L$ from A.P. ...	<i>25.185</i>	<i>4</i>		<i>100.74</i>	<i>1.50</i>	<i>1.50</i>	<i>4</i>		<i>6.00</i>
$\frac{2}{8}L$ " ...	<i>6.23</i>	<i>2</i>		<i>12.46</i>	<i>0</i>	<i>-</i>	<i>2</i>		<i>-</i>
Amidships ...	<i>-</i>	<i>4</i>		<i>-</i>	<i>0</i>	<i>-</i>	<i>4</i>		<i>-</i>
$\frac{2}{8}L$ from F.P. ...	<i>12.45</i>	<i>2</i>		<i>24.90</i>	<i>5.04</i>	<i>5.04</i>	<i>2</i>		<i>10.08</i>
$\frac{1}{8}L$ " ...	<i>50.37</i>	<i>4</i>		<i>201.48</i>	<i>27.30</i>	<i>27.30</i>	<i>4</i>		<i>109.20</i>
F.P. ...	<i>113.2</i>	<i>1</i>		<i>113.20</i>	<i>87.00</i>	<i>87.00</i>	<i>1</i>		<i>87.00</i>
Total ...				<u><i>509.63</i></u>					<u><i>234.03</i></u>

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 .. = *NIL.*

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{275.60}{18} \left(.75 - \frac{239}{234} \right) = +7.82$ ✓
 If limited on account of midship superstructure. If limited to maximum allowance of 1 1/2 ins. per 100 ft.

Deduction for Tropical Freeboard. Addition for Winter and Winter North Atlantic Freeboard. Depth to Freeboard Deck = <i>35.57</i> Summer freeboard = <i>7.50</i> Moulded draught (d) = <i>28.07</i> Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = _____ 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 = $\frac{\Delta}{40T}$ inches = _____	TABULAR FREEBOARD corrected for Flush Deck (if required) Correction for coefficient $\frac{.78 + .68}{1.36} = 1.46/1.36$ <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th></th> <th>+</th> <th>-</th> </tr> <tr> <td>Depth Correction ...</td> <td><i>13.50</i></td> <td><i>-</i></td> </tr> <tr> <td>Deduction for superstructures ...</td> <td><i>-</i></td> <td><i>16.29</i></td> </tr> <tr> <td>Sheer correction ...</td> <td><i>7.82</i></td> <td><i>-</i></td> </tr> <tr> <td>Round of Beam correction ...</td> <td><i>-</i></td> <td><i>10</i></td> </tr> <tr> <td>Correction for Thickness of Deck amidships ...</td> <td><i>-</i></td> <td><i>-</i></td> </tr> <tr> <td>Other corrections, scantlings, etc. ...</td> <td><i>-</i></td> <td><i>-</i></td> </tr> <tr> <td></td> <td><u><i>21.32</i></u></td> <td><u><i>16.39</i></u></td> </tr> </table> Summer Freeboard = <i>90.03</i>		+	-	Depth Correction ...	<i>13.50</i>	<i>-</i>	Deduction for superstructures ...	<i>-</i>	<i>16.29</i>	Sheer correction ...	<i>7.82</i>	<i>-</i>	Round of Beam correction ...	<i>-</i>	<i>10</i>	Correction for Thickness of Deck amidships ...	<i>-</i>	<i>-</i>	Other corrections, scantlings, etc. ...	<i>-</i>	<i>-</i>		<u><i>21.32</i></u>	<u><i>16.39</i></u>
	+	-																								
Depth Correction ...	<i>13.50</i>	<i>-</i>																								
Deduction for superstructures ...	<i>-</i>	<i>16.29</i>																								
Sheer correction ...	<i>7.82</i>	<i>-</i>																								
Round of Beam correction ...	<i>-</i>	<i>10</i>																								
Correction for Thickness of Deck amidships ...	<i>-</i>	<i>-</i>																								
Other corrections, scantlings, etc. ...	<i>-</i>	<i>-</i>																								
	<u><i>21.32</i></u>	<u><i>16.39</i></u>																								

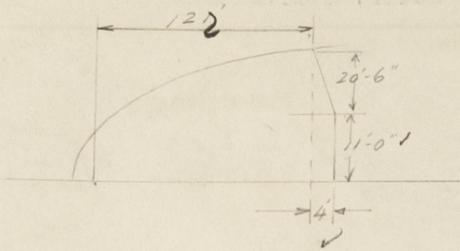
SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck:—

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

© 2020
 Lloyd's Register
 Foundation

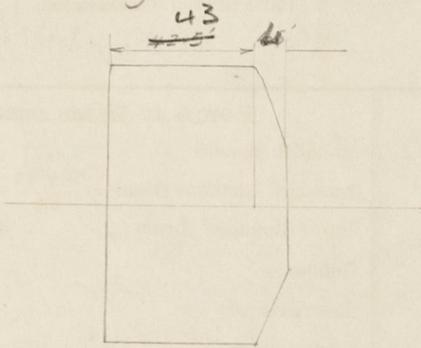
A new form should be prepared if any alterations that affect the freeboard have been made. If no such alterations have been made, the Surveyor should endorse the form on this side with his signature and the date.

Poop:



$$\text{Equivalent poop} = 122 + 4 \times \frac{20.5 + 22}{63} = 122 + 2.70 = \frac{124.7}{124.7}$$

Bridge:



$$\text{Equi. Budge.} = 43 + 4 \times \frac{21 + 22}{64} = 43 + \frac{2.69}{.69} = 45.72$$

F'de.

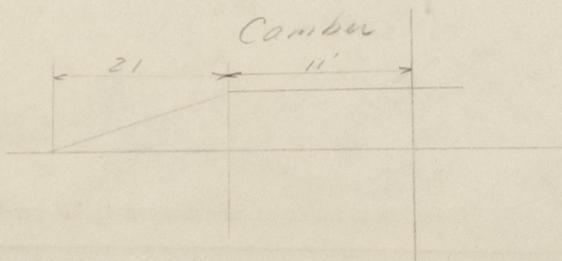


$$62.25 - \frac{9.78}{23} = 52.47$$

$$\text{Equi. F'de.} = 44.5 + 18 \times \frac{10.5}{25} = 44.5 + 7.56 = 52.06$$

sheer:

	Ht. at centre	width 1/2 of DC.	Camber	Camber	Deck at side	Sheer	
Round Camber → A.P.	37.67	14.5'	3.28"	.27'	37.40	1.90	22.00 21.75
1/6 L. from A.P.	36.75	29.5	13.60"	1.13'	35.62	.12	1.44 1.5
2/6 " " "	36.83	32	16"	1.33	35.50	0	0
3/6 " " "	36.83	32'	16"	1.33	35.50	0	0
4/6 L. " F.P.	37.25	32'	16"	1.33	35.92	.42	5.04"
5/6 L. " "	38.75	26.5	11.80"	.98	37.77	2.27	27.30
F.P.	42.75'	✓	✓	✓	42.75	7.25	87.00



$$\text{Area} = 2 \left(11 + \frac{1}{2} \times 21 \right) \frac{16}{12} = 2 \times 21.5 \times \frac{4}{3} = 57.33$$

$$57.33 = 64 \times \frac{2}{3} \times C$$

$$C = 16.12$$

Trade of ship _____

Names of sister ships _____

Builder's name and yard number _____

Owners _____

Fee £ _____



© 2020

Lloyd's Register
Foundation