

Estimate of Tanker Freeboard

Index. No. 34444
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).	Depth correction.	Round of Beam correction.
Moulded depth <i>35.50</i>	(a) Where D is greater than Table depth (D - Table depth) R = <i>(35.57 - 31.07) 3 = +13.50</i>	Moulded Breadth (B) <i>64'</i>
Stringer plate ... <i>8.4"</i> <i>.07</i>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = <i>4.50</i>	Standard Round of Beam = $\frac{B \times 12}{50} =$ <i>15.36</i>
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$	If restricted by superstructures <i>✓</i>	Ship's Round of Beam = <i>16.12</i>
Depth for Freeboard (D) = <i>35.57</i>		Difference <i>.76"</i>
		Restricted to <i>.522</i>
		Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) =$ <i>-.10"</i>

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>124.70</i>	<i>7.5</i>	<i>✓</i>	<i>124.70</i>
.. overhang					
R.Q.D. enclosed					
.. overhang					
Bridge enclosed <i>Equi.</i> <i>45.69</i>	<i>45.69</i>	<i>45.69</i>	<i>7.5</i>	<i>✓</i>	<i>45.69</i>
.. overhang aft					
.. overhang forward					
F'cle enclosed <i>Equi.</i> <i>52.47</i>	<i>52.47</i>	<i>52.47</i>	<i>7.5</i>		<i>52.47</i>
.. overhang					
Trunk aft					
.. forward					
Tonnage opening aft					
.. forward					
Total	<i>222.86</i>	<i>222.86</i>			<i>222.86</i>

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 38.65* *✓*

(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 x 38.65 = 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>56.60</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				<i>509.63</i>					<i>234.03</i>

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) =$ *275.60 - 239 = +7.82* *✓*

If limited on account of midship superstructure. *51.18*

Mean actual sheer aft =

Mean standard sheer aft =

Mean actual sheer forward =

Mean standard sheer forward =

Length of enclosed superstructure forward of amidships = *NIL.*

.. .. aft of =

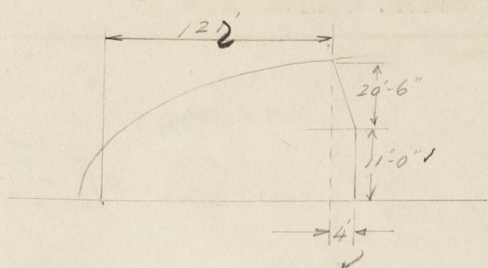
Deduction for Tropical Freeboard.	Deduction for Fresh Water.	TABULAR FREEBOARD corrected for Flush Deck (if required)
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient <i>.78 + .68 = 1.46 / 1.36</i>
Depth to Freeboard Deck = <i>35.57'</i>	$\Delta =$	Depth Correction <i>13.50</i>
Summer freeboard = <i>7.50</i>	Tons per inch immersion at summer load water line	Deduction for superstructures <i>16.29</i>
Moulded draught (d) = <i>28.07</i>	T =	Sheer correction <i>7.82</i>
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{\Delta}{4}$ inches =	Deduction = $\frac{\Delta}{40T}$ inches =	Round of Beam correction <i>.10</i>
Addition for Winter North Atlantic Freeboard (if required) =		Correction for Thickness of Deck amidships
		Other corrections, scantlings, etc.
		Summer Freeboard = <i>90.03</i>

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

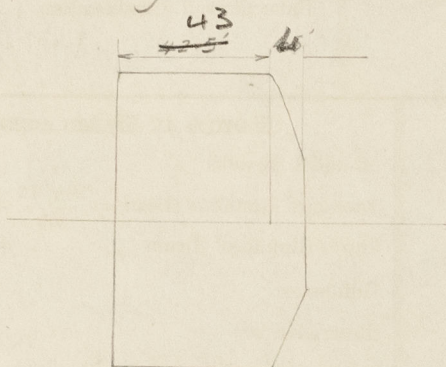
A new form should be prepared if any alterations that affect the freeboard have been made. If no such alterations have been made, the Surveyor should endorse the form on this side with his signature and the date.

Poop:



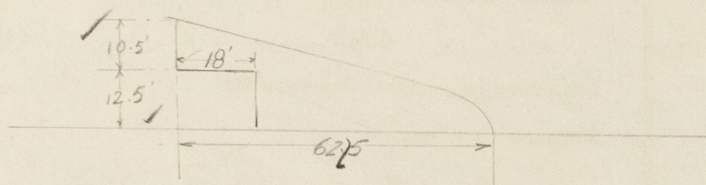
$$\text{Equivalent poop} = 122' + 4 \times \frac{20.5 + 22}{63} = 122 + 2.70 = 124.7$$

Bridge:



$$\text{Equi. Bridge} = 43' + 4 \times \frac{21 + 22}{64} = 43 + 3.02 = 46.02$$

F'le.

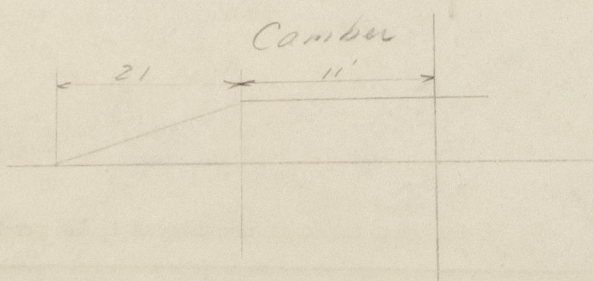


$$62.25 - \frac{18 \times 12.5}{23} = 52.47$$

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

Sheer:

	Ht at centre	1/2 width of DK	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 " " "	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 £



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Foundation