

Lloyd's Register of Shipping.
SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer <i>Pop. Bridge & Forecastle</i> Tanker					Port of Survey <i>Falmouth</i>
having <i>Pop. Bridge & Forecastle</i>					Date of Survey <i>13/4/32. 14/4/32. 15/4/32.</i>
(Type of Superstructure.)					Name of Surveyor <i>R. H. Jeffs</i>
Ship's Name <i>"BRITISH DUCHESS"</i> 404.25	Nationality and Port of Registry <i>British London</i>	Official Number <i>147647</i>	Gross Tonnage <i>5973</i>	Date of Build <i>1924.5</i>	Particulars of Classification <i>+100A1</i> <i>Carrying Petroleum in bulk</i>
Moulded Dimensions: Length <i>400.25</i> Breadth <i>52.5</i> Depth <i>33</i>					
Moulded displacement at moulded draught = 85 per cent. of moulded depth <i>13,490</i> tons					
Coefficient of fineness for use with Tables <i>.781</i>					
Depth for Freeboard (D)		Depth correction		Round of Beam correction	
Moulded depth <i>33.0</i>		(a) Where D is greater than Table depth (D-Table depth) R = $(33.06 - 26.95) 3.00$ <i>6.11 x 3 = 18.33</i>		Moulded Breadth (B) <i>54.5</i>	
Stringer plate <i>.062</i>		(b) Where D is less than Table depth (if allowed) (Table depth-D) R =		Standard Round of Beam = $\frac{B \times 12}{50} = 13.08$	
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$		If restricted by superstructures		Ship's Round of Beam = <i>13.2</i>	
Depth for Freeboard (D) = <i>33.06</i>				Difference	
				Restricted to	
				Correction = $\frac{\text{Diff}}{4} \times (1 - \frac{S}{L}) = \frac{.42}{4} (.5398) = .05$	

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed	<i>104.0</i>	<i>104.00</i>	<i>8'-0"</i>		<i>104.00</i>	Standard Height of Superstructure <i>7.5</i>
" overhang						" " R.Q.D.
R.Q.D. enclosed						Deduction for complete superstructure <i>42.00</i>
" overhang						Percentage covered $\frac{S}{L} = 47.59$
Bridge enclosed	<i>32.83</i>	<i>32.83</i>	<i>8'-0"</i>		<i>32.83</i>	" $\frac{S_1}{L} = 46.98$
" overhang aft	<i>4.92</i>	<i>.69</i>			<i>.69</i>	" $\frac{E}{L} = 46.98$
" overhang forward	<i>4.92</i>	<i>.46</i>			<i>.46</i>	Percentage from Table, Line A.
Fore enclosed	<i>50.83</i>	<i>50.83</i>	<i>8'-0"</i>		<i>50.83</i>	(corrected for absence of forecastle (if required))
" overhang	<i>3.64</i>	<i>1.82</i>			<i>1.82</i>	Percentage from Table, Line B. <i>37.98</i>
Trunk aft						(corrected for absence of forecastle (if required))
" forward						Interpolation for bridge less than .2L (if required)
Tonnage opening aft						Deduction = <i>15.98</i>
" forward						
Total	<i>192.39</i>	<i>189.90</i>			<i>189.90</i>	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P.	<i>50.42</i>	<i>1</i>		<i>50.42</i>	<i>49</i>	<i>51.0</i>	<i>1</i>		<i>51.00</i>	Mean actual sheer aft = <i>Deficient</i>
1/4 L from A.P.	<i>22.42</i>	<i>4</i>		<i>89.68</i>	<i>20.87</i>	<i>21.72</i>	<i>4</i>		<i>86.88</i>	Mean actual sheer forward = <i>Deficient</i>
1/2 L "	<i>5.55</i>	<i>2</i>		<i>11.10</i>	<i>5.45</i>	<i>5.43</i>	<i>2</i>		<i>10.86</i>	Mean standard sheer forward
Amidships	<i>✓</i>	<i>4</i>		<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>4</i>		<i>✓</i>	Length of enclosed superstructure forward of amidships =
3/4 L from F.P.	<i>11.10</i>	<i>2</i>		<i>22.20</i>	<i>10.125</i>	<i>11.06</i>	<i>2</i>		<i>22.12</i>	" " aft of " = <i>Tanker</i>
1/4 L "	<i>44.85</i>	<i>4</i>		<i>179.40</i>	<i>43.87</i>	<i>44.24</i>	<i>4</i>		<i>176.96</i>	
F.P.	<i>100.84</i>	<i>1</i>		<i>100.84</i>	<i>101</i>	<i>102.0</i>	<i>1</i>		<i>102.00</i>	
Total				<i>453.64</i>					<i>449.82</i>	
Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{453.64}{18} \left(.75 - \frac{.75}{2} \right) = .11$										If limited to maximum allowance of 1 1/2 ins. per 100 ft.
If limited on account of midship superstructure.										

Deduction for Tropical Freeboard.
Addition for Winter and Winter North Atlantic Freeboard.Depth to Freeboard Deck = *33.06*
Summer freeboard = *5.89*
Moulded draught (d) = *27.17*

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = *6.79* : *6.74*Addition for Winter North Atlantic Freeboard (if required) = *4.04* : *4"*

Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta = 13,430$

Tons per inch immersion at summer load water line

 $T = 44.15$ Deduction = $\frac{\Delta}{40T}$ inches*7.60**7 1/2*

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

Depth Correction	<i>18.33</i>	
Deduction for superstructures		<i>15.95</i>
Sheer correction	<i>11</i>	
Round of Beam correction		<i>.05</i>
Correction for Thickness of Deck amidships		
Other corrections, scantlings, etc.		
	<i>18.44</i>	<i>16.00</i>

Summer Freeboard = *70.68*

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

Tropical Fresh Water Line above Centre of Disc	<i>14 1/4</i>
Fresh Water Line " "	<i>7 1/2</i>
Tropical Line " "	<i>6 3/4</i>
Winter Line below " "	<i>6 3/4</i>
Winter North Atlantic Line " "	<i>10 3/4</i>

Tropical Fresh Water Freeboard	<i>4-8 1/2</i>
Fresh Water " "	<i>5-3 1/4</i>
Tropical " "	<i>5-2 1/4</i>
Winter " "	<i>6-5 1/2</i>
Winter North Atlantic " "	<i>MARKING FORM</i>