

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

Ship's Name <b>Q.S.M.V. DOMINION MONARCH."</b>	Official Number <b>166828</b>	Nationality and Port of Registry <b>British Southampton</b>	Gross Tonnage <b>27,155</b>	Date of Build <b>1939</b>	Port of Survey <b>Newcastle on Tyne</b>
Moulded Dimensions: Length <b>651.71'</b> Breadth <b>84.50'</b> Depth <b>48.50'</b> <small>FROM CR. OF RUDDER STOCK</small>					Date of Survey <b>5th January, 1939</b>
Moulded displacement at moulded draught = 85 per cent. of moulded depth <b>45,240</b> tons					Surveyor's Signature <b>A. G. Akister</b>
Coefficient of fineness for use with Tables <b>.697</b>					Particulars of Classification <b>+100A1 with freeboard corresponding to a summer moulded draught of 34'-0"</b>

<b>Depth for Freeboard (D).</b> Moulded depth ... <b>48.50</b> Stringer plate ... <b>50"</b> ... <b>.04</b> Sheathing on exposed deck <b>2 1/4"</b> $T \left( \frac{L-S}{L} \right) = .19 \times .211$ ... <b>.04</b> Depth for Freeboard (D) = <b>48.58</b>	<b>Depth correction.</b> (a) Where D is greater than Table depth (D - Table depth) R = $(48.58 - 43.45) 3 = +15.39"$ (b) Where D is less than Table depth (if allowed) (Table depth - D) R = If restricted by superstructures	<b>Round of Beam correction.</b> Moulded Breadth (B) <b>84.50'</b> Standard Round of Beam = $\frac{B \times 12}{50} = 20.28$ Ship's Round of Beam = <b>6.00</b> Difference DEFICIENT <b>14.28</b> Restricted to Correction = $\frac{\text{Diff}^a}{4} \times (1 - \frac{S_1}{L}) = \frac{14.28}{4} \times \frac{211}{651.71} = +.76"$
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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 ...					
.. overhang ...					
Bridge enclosed ...					
.. overhang aft ...					
.. overhang forward ...					
Fore enclosed ...	<b>512.75</b>	<b>512.75</b>	<b>8.00</b>		<b>512.75</b>
.. overhang ...	<b>1.50</b>	<b>1.12</b>			<b>1.12</b>
Trunk aft ...					
.. forward ...					
Tonnage opening aft ...					
.. forward ...					
Total ...	<b>514.25</b>	<b>513.87</b>			<b>513.87</b>

Standard Height of Superstructure <b>7.5'</b>
.. R.Q.D. <b>✓</b>
Deduction for complete superstructure <b>42"</b>
Percentage covered $\frac{S}{L} = 78.90$
.. $\frac{S_1}{L} = 78.84$
.. $\frac{E}{L} = 78.84$
Percentage from Table, Line A. <b>73.87</b>
(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 = <b>42 × .7387 = - 31.02"</b>

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	<b>75.17</b>	<b>1</b>		<b>75.17</b>	<b>66.25</b>	<b>66.25</b>	<b>1</b>		<b>66.25</b>
1/4 L from A.P. ...	<b>33.45</b>	<b>4</b>		<b>133.80</b>	<b>30.70</b>	<b>30.70</b>	<b>4</b>		<b>122.80</b>
3/4 L ..	<b>8.27</b>	<b>2</b>		<b>16.54</b>	<b>9.05</b>	<b>9.05</b>	<b>2</b>		<b>18.10</b>
Amidships ...		<b>4</b>					<b>4</b>		
3/4 L from F.P. ...	<b>16.54</b>	<b>2</b>		<b>33.08</b>	<b>16.875</b>	<b>16.875</b>	<b>2</b>		<b>33.75</b>
1/4 L ..	<b>66.90</b>	<b>4</b>		<b>267.60</b>	<b>58.95</b>	<b>58.95</b>	<b>4</b>		<b>235.80</b>
F.P. ...	<b>150.34</b>	<b>1</b>		<b>150.34</b>	<b>132.55</b>	<b>132.55</b>	<b>1</b>		<b>132.55</b>
Total ...				<b>676.53</b>					<b>609.25</b>

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( \frac{.75 - S}{2L} \right) = \frac{67.28}{18} \left( \frac{.75 - .3945}{.3555} \right) = + 1.33"$

If limited on account of midship superstructure.

If limited to maximum allowance of 1 1/2 ins. per 100 ft.

Mean actual sheer aft = Deficient  
Mean standard sheer aft = Deficient  
Mean actual sheer forward = Deficient  
Mean standard sheer forward = Deficient  
Length of enclosed superstructure forward of amidships = Deficient  
.. aft of .. = Sheer.

<b>Deduction for Tropical Freeboard.</b> <b>Addition for Winter and Winter North Atlantic Freeboard.</b> Depth to Freeboard Deck = <b>48.54</b> Summer freeboard = <b>14.54</b> Moulded draught (d) = <b>34.00</b> Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <b>8.5 = 8 1/2"</b> <b>Addition for Winter North Atlantic Freeboard (if required) =</b> ✓	<b>Deduction for Fresh Water.</b> Displacement in salt water at summer load water line $\Delta = 36220$ Tons per inch immersion at summer load water line $T = 107.47$ Deduction = $\frac{\Delta}{40T}$ inches = <b>8.42</b> <b>= 8 1/2"</b>	<b>TABULAR FREEBOARD</b> corrected for Flush Deck (if required) Correction for coefficient $\frac{.697 \times .68}{1.36} = \frac{1.377}{1.36}$ <table><tr><th></th><th>+</th><th>-</th></tr><tr><td>Depth Correction ...</td><td><b>15.39</b></td><td></td></tr><tr><td>Deduction for superstructures ...</td><td></td><td><b>31.02</b></td></tr><tr><td>Sheer correction ...</td><td><b>1.33</b></td><td></td></tr><tr><td>Round of Beam correction ...</td><td><b>.76</b></td><td></td></tr><tr><td>Correction for Thickness of Deck amidships ...</td><td></td><td><b>.48</b></td></tr><tr><td>Other corrections, scantlings, etc. DRAUGHT OF ...</td><td><b>44.96</b></td><td></td></tr><tr><td></td><td><b>62.44</b></td><td><b>31.50</b></td></tr><tr><td>Summer Freeboard =</td><td colspan="2"><b>174.50</b></td></tr></table>		+	-	Depth Correction ...	<b>15.39</b>		Deduction for superstructures ...		<b>31.02</b>	Sheer correction ...	<b>1.33</b>		Round of Beam correction ...	<b>.76</b>		Correction for Thickness of Deck amidships ...		<b>.48</b>	Other corrections, scantlings, etc. DRAUGHT OF ...	<b>44.96</b>			<b>62.44</b>	<b>31.50</b>	Summer Freeboard =	<b>174.50</b>	
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SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, ~~Wood~~ Steel Deck:

Tropical Fresh Water Line above Centre of Disc ...	<b>17"</b>	Tropical Fresh Water Freeboard ...	<b>13' 1 1/2"</b>
Fresh Water Line ..	<b>8 1/2"</b>	Fresh Water ..	<b>13' 10"</b>
Tropical Line ..	<b>8 1/2"</b>	Tropical ..	<b>13' 10"</b>
Winter Line below ..	<b>8 1/2"</b>	Winter ..	<b>15' 3"</b>
Winter North Atlantic Line ..	✓	Winter North Atlantic ..	✓