

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name <i>M. S. ISLAND COMMANDER</i> ex. <i>S. S. ANDREW KELLY</i>	Official Number <i>134745</i>	Nationality and Port of Registry <i>Canadian Vancouver B.C.</i>	Gross Tonnage <i>270.98</i>	Date of Build <i>1912</i> <i>Altered 1941</i>	Port of Survey <i>Vancouver B.C.</i>
Dimensions: Length <i>117.6</i> Breadth <i>21.87</i> Depth <i>13.08</i> (virtual freeboard deck)				Date of Survey <i>Nov. 1941</i>	
Displacement at moulded draught = 85 per cent. of moulded depth				Surveyor's Signature <i>F.B. Gill and D. Turner</i>	
of fineness for use with Tables <i>68</i> (Actual less than 68)				Particulars of Classification <i>100A - for towing services (contemplated)</i>	

Depth for Freeboard (D). ... <i>Virtual</i> ... <i>13.08</i>	Depth correction. (a) Where D is greater than Table depth (D-Table depth) R = <i>(13.11 - 7.84) x .905 = + 4.77</i> <i>5.27</i> (b) Where D is less than Table depth (if allowed) (Table depth-D) R = <i>✓</i>	Round of Beam correction. Moulded Breadth (B) <i>21.87</i> Standard Round of Beam = $\frac{B \times 12}{50} = 5.25$ Ship's Round of Beam = <i>7.00</i> Difference <i>1.75</i> Restricted to Correction = $\frac{\text{Diff}^*}{4} \times (1 - \frac{S_1}{L}) = \frac{1.75}{4} \times 0.446 = -.02$
Depth for Freeboard (D) = <i>13.11</i>	If restricted by superstructures <i>✓</i>	

DEDUCTION FOR SUPERSTRUCTURES.

Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
<i>98.60</i>	<i>98.60</i>	<i>.67</i>	<i>.92/3.117</i>	<i>29.10</i>
		<i>+ .25 (sheathing)</i>		
<i>19.00</i>	<i>13.76</i>	<i>4'-9 1/2</i>	<i>4.79/6.0</i>	<i>10.98</i>
		<i>Min.</i>		
<i>117.60</i>	<i>112.36</i>			<i>40.08</i>

Standard Height of Superstructure *6.00*
" " R.Q.D. *3.117*
Deduction for complete superstructure *17.76*
Percentage covered $\frac{S}{L} = 100.00$
" " $\frac{S_1}{L} = 95.54$
" " $\frac{E}{L} = 34.08$
Percentage from Table, Line A. *18.46*
(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 = $17.76 \times 18.46 = -3.28$

SHEER CORRECTION.

Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
<i>21.76</i>	<i>1</i>		<i>21.76</i>	<i>47.00</i>	<i>21.76</i>	<i>1</i>		<i>21.76</i>
<i>9.685</i>	<i>4</i>		<i>38.74</i>	<i>27.00</i>	<i>9.685</i>	<i>4</i>		<i>38.74</i>
<i>2.39</i>	<i>2</i>		<i>4.78</i>	<i>9.20</i>	<i>2.39</i>	<i>2</i>		<i>4.78</i>
<i>-</i>	<i>4</i>		<i>-</i>	<i>-</i>	<i>-</i>	<i>4</i>		<i>-</i>
<i>4.785</i>	<i>2</i>		<i>9.57</i>	<i>4.00</i>	<i>4.00</i>	<i>2</i>		<i>8.00</i>
<i>19.375</i>	<i>4</i>		<i>77.50</i>	<i>17.00</i>	<i>17.00</i>	<i>4</i>		<i>68.00</i>
<i>43.52</i>	<i>1</i>		<i>43.52</i>	<i>37.00</i>	<i>37.00</i>	<i>1</i>		<i>37.00</i>
			<i>195.87</i>					<i>178.28</i>

Mean actual sheer aft = *Excess*
Mean standard sheer aft

Mean actual sheer forward = *Deficient (.862)*
Mean standard sheer forward

Length of enclosed superstructure forward of amidships = *Deficient*
" " aft of " = *sheer*

Forward sheer	Standard	Actual
<i>4.785</i>	<i>3</i>	<i>14.35</i>
<i>19.375</i>	<i>3</i>	<i>58.125</i>
<i>43.52</i>	<i>1</i>	<i>43.52</i>
		<i>116.00</i>

If limited to maximum allowance of $1\frac{1}{2}$ ins. per 100 ft. *✓*

n = Difference between sums of products $(\frac{75-S}{2L}) = \frac{17.59}{18} \times .25 = +.24$
on account of midship superstructure. *✓*

for Tropical Freeboard.
or Winter and Winter North Freeboard.

R.Q. Ft.
h to Freeboard Deck = *14.03*
mer freeboard = *2.04*
Moulded draught (d) = *11.99*

or Tropical freeboard and addition for freeboard = $\frac{d}{4}$ inches = *2.99 = 3"*

Winter North Atlantic Freeboard (if = *5"*

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

$\frac{d}{4} = 3"$

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient *✓*

Depth Correction ... *4.77*
Deduction for superstructures ... *3.28*
Sheer correction ... *.24*
Round of Beam correction ... *.02*
Correction for Thickness of Deck amidships ... *11.00*
Other corrections, scantlings, etc. ... *-1 -1*

Summer Freeboard = *24.47*

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck: *2'-0 1/2"*

Tropical Fresh Water Line above Centre of Disc ...	<i>6"</i>
Fresh Water Line " " ...	<i>3"</i>
Tropical Line " " ...	<i>3"</i>
Winter Line below " " ...	<i>3"</i>
Winter North Atlantic Line " " ...	<i>5"</i>

Tropical Fresh Water Freeboard ...	<i>1'-6 1/2"</i>
Fresh Water " " ...	<i>1'-9 1/2"</i>
Tropical " " ...	<i>1'-9 1/2"</i>
Winter " " ...	<i>2'-3 1/2"</i>
Winter North Atlantic " " ...	<i>2'-5 1/2"</i>