

With T.D. in shelter deck.

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name IONIA 4 BALTROVEH	Official Number	Nationality and Port of Registry	Gross Tonnage	Date of Build	Port of Survey
Moulded Dimensions: Length 349.4 Breadth 49.75' Depth 25.5'					Date of Survey 28.6.47.
Moulded displacement at moulded draught = 85 per cent. of moulded depth 7460 tons					Surveyor's Signature
Coefficient of fineness for use with Tables 693					Particulars of Classification

DEPTH FOR FREEBOARD (D). Moulded depth ... 25.50 Stringer plate ... 4.4 ... 0.4 Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ Depth for Freeboard (D) = 25.54	DEPTH CORRECTION. (a) Where D is greater than Table depth $(D - \text{Table depth}) R = (25.54 - 23.29) 3 = 6.75'$ (b) Where D is less than Table depth (if allowed) (Table depth - D) R = If restricted by superstructures	ROUND OF BEAM CORRECTION. Moulded Breadth (B) 49.75' Standard Round of Beam = $\frac{B \times 12}{50} = 11.94$ Ship's Round of Beam = 12.50 Difference .56 Restricted to Correction = $\frac{\text{Diff}'}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.56}{4} \times .0061 \text{ Nil.}$
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DEDUCTION FOR SUPERSTRUCTURES.					
Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	Standard Height of Superstructure 6.99'
Poop enclosed ...	39.58	39.58	8.68		R.Q.D. 38.63
" overhang ...					Deduction for complete superstructure
R.Q.D. enclosed ...					Percentage covered $\frac{S}{L} = 100.00$
" overhang ...					" $\frac{S_1}{L} = 99.39$
Bridge enclosed ...	305.57	305.57	4		" $\frac{E}{L} = 29.39$
" overhang aft ...					Percentage from Table, Line A.
" overhang forward ...					(corrected for absence of forecastle (if required))
Fore enclosed ...					Percentage from Table, Line B.
" overhang ...					(corrected for absence of forecastle (if required))
Trunk aft ...					Interpolation for bridge less than .2L (if required)
" forward ...	4.25	2.12	"		Deduction = 38.63 x 99.25 = 38.34
Tonnage opening aft ...					
" forward ...					
Total ...	349.40	347.27		347.27	

SHEER CORRECTION.								
Station	Standard Ordinate	S	Product	Actual Ordinate	Effective Ordinate	S	Product	Mean actual shear aft
A.P. ...	44.94	1	44.94	45.00	64.08	1	64.08	Mean standard shear aft = > 1
1/2 L from A.P. ...	20.00	4	80.00	19.75	28.515	4	114.06	Mean actual shear forward
1/2 L " ...	4.94	2	9.88	4.44	7.05	2	14.10	Mean standard shear forward = > 1
Amidships ...		4				4		Length of enclosed superstructure forward of amidships =
1/2 L from F.P. ...	9.89	2	19.78	9.97	12.0	2	24.00	" aft of " =
1/2 L " ...	39.94	4	159.96	39.90	48.55	4	194.20	
F.P. ...	89.88	1	89.88	90.00	109.08	1	109.08	
Total ...			404.44	19.08			519.52	

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{442}{18} \times .25 = -1.60$
 If limited on account of midship superstructure.

Actual T.D. Height **8.58'**
 Standard **6.99'**
1.59'
19.08'

Deduction for Tropical Freeboard. Addition for Winter and Winter North Atlantic Freeboard. Depth to Freeboard Deck = 25.54 Summer freeboard = 1.006 Moulded draught (d) = 23.538 Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 23.58 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 = $\frac{\Delta}{40 T}$ inches =	TABULAR FREEBOARD corrected for Fresh Deck (if required) Correction for coefficient 693 + .68 = 1373/136 <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th></th> <th>+</th> <th>-</th> </tr> <tr> <td>Depth Correction</td> <td>6.75</td> <td></td> </tr> <tr> <td>Deduction for superstructures</td> <td>38.34</td> <td></td> </tr> <tr> <td>Sheer correction</td> <td>1.60</td> <td></td> </tr> <tr> <td>Round of Beam correction</td> <td></td> <td></td> </tr> <tr> <td>Correction for Thickness of Deck amidships</td> <td></td> <td></td> </tr> <tr> <td>Other corrections, scantlings, etc.</td> <td></td> <td></td> </tr> <tr> <td></td> <td>6.75</td> <td>39.94</td> </tr> <tr> <td></td> <td></td> <td>-32.19</td> </tr> <tr> <td></td> <td></td> <td>Summer Freeboard = 23.68</td> </tr> </table>		+	-	Depth Correction	6.75		Deduction for superstructures	38.34		Sheer correction	1.60		Round of Beam correction			Correction for Thickness of Deck amidships			Other corrections, scantlings, etc.				6.75	39.94			-32.19			Summer Freeboard = 23.68
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SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Woody 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 " " ...

Estimated $\frac{25.5}{3408} \times 85$

$$.85 \times 26.5 = 21.67$$

$$21 \overline{) 51} \quad 2\frac{1}{4} \quad 21 - 10^3 8.$$

$\Delta = 7500$ from Δ scale

Fee £

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