

Moulded computation for removal of wood sheathing in bridge space

Lloyd's Register of Shipping.

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(For London Office only).

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name LIMA	Official Number	Nationality and Port of Registry	Gross Tonnage	Date of Build	Port of Survey
Moulded Dimensions: Length 351.06 Breadth 45.0 Depth 28.83'					Date of Survey
Moulded displacement at moulded draught = 85 per cent. of moulded depth					Surveyor's Signature
Coefficient of fineness for use with Tables .753 assumed					Particulars of Classification 100A1

Depth for Freeboard (D). Moulded depth ... 28.83 Stringer plate05 Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) = 25 \times \frac{3620}{351.06} = .09$ Depth for Freeboard (D) = 28.97	Depth correction. (a) Where D is greater than Table depth $(D - \text{Table depth}) R = (28.97 - 23.40) 2.700 = +15.04$ $\frac{5.57}{2.700}$ (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) 45.00' Standard Round of Beam = $\frac{B \times 12}{50} = 10.80''$ Ship's Round of Beam = 11.00'' Difference .20'' Restricted to Correction = $\frac{\text{Diff}^*}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.20 \times 4102}{4} = -.02''$
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DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...	40.00	40.00	7.83		40.00
„ overhang ...			+ sheathing		
R.Q.D. enclosed					
„ overhang					
Bridge enclosed ...	115.00	115.00	8.00		115.00
„ overhang aft ...			+ sheathing		
„ overhang forward					
F'cle enclosed ...	69.00	52.05	8.0		52.05
„ overhang ...			+ sheathing		
Trunk aft ...					
„ forward ...					
Tonnage opening aft ...					
„ „ forward					
Total ...	224.00	207.05			207.05

Standard Height of Superstructure **7.01**
 „ „ R.Q.D. **✓**
 Deduction for complete superstructure **38.73**
 Percentage covered $\frac{S}{L} = 63.80$
 „ „ $\frac{S_1}{L} = 58.98$
 „ „ $\frac{E}{L} = 58.98$
 Percentage from Table, Line A.
 (corrected for absence of forecastle (if required))
 Percentage from Table, Line B. **44.98**
 (corrected for absence of forecastle (if required))
 Interpolation for bridge less than 2L (if required)
 Deduction = $38.73 \times .4498 = -17.42''$

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	45.11	1		45.11	42.00	42.00	1		42.00
$\frac{1}{8}L$ from A.P. ...	10.07	4		80.28	19.75	19.75	4		79.00
$\frac{3}{8}L$ „ ...	4.96	2		9.92	4.94	4.94	2		9.88
Amidships ...	—	4		—	—	—	4		—
$\frac{5}{8}L$ from F.P. ...	9.92	2		19.84	10.07	10.07	2		20.14
$\frac{7}{8}L$ „ ...	40.15	4		160.60	40.28	40.28	4		161.12
F.P. ...	90.21	1		90.21	90.00	90.00	1		90.00
Total ...				405.96					402.14

Mean actual sheer aft = **Deficient 7.75**
 Mean standard sheer aft
 Mean actual sheer forward = **Excess**
 Mean standard sheer forward
 Length of enclosed superstructure forward of amidships =
 „ „ aft of „ = **Deficient sheer**

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{3.82(75 - .319)}{18} = +.09$
 If limited on account of midship superstructure.

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

Deduction for Tropical Freeboard. Addition for Winter and Winter North Atlantic Freeboard. Depth to Freeboard Deck = 28.88 Summer freeboard = 4.71 Moulded draught (d) = 24.17 Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = $\frac{6.04}{4} = 1.53$ mm 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 = $\frac{\Delta}{40T}$ inches $\frac{d}{A} = 153$ mm	TABULAR FREEBOARD corrected for Fresh Deck (if required) Correction for coefficient $\frac{685.753}{1.36} = 1.433/1.36$ <table border="1"> <thead> <tr> <th></th> <th>+</th> <th>-</th> </tr> </thead> <tbody> <tr> <td>Depth Correction ...</td> <td>15.04</td> <td>—</td> </tr> <tr> <td>Deduction for superstructures ...</td> <td>—</td> <td>17.42</td> </tr> <tr> <td>Sheer correction ...</td> <td>.09</td> <td>—</td> </tr> <tr> <td>Round of Beam correction ...</td> <td>—</td> <td>.02</td> </tr> <tr> <td>Correction for Thickness of Deck amidships ...</td> <td>—</td> <td>1.08</td> </tr> <tr> <td>Other corrections, scantlings, etc. ...</td> <td>—</td> <td>—</td> </tr> <tr> <td>Summer Freeboard</td> <td>15.13</td> <td>18.52</td> </tr> </tbody> </table>		+	-	Depth Correction ...	15.04	—	Deduction for superstructures ...	—	17.42	Sheer correction09	—	Round of Beam correction ...	—	.02	Correction for Thickness of Deck amidships ...	—	1.08	Other corrections, scantlings, etc. ...	—	—	Summer Freeboard	15.13	18.52
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SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Steel, Deck:

Tropical Fresh Water Line above Centre of Disc	306 mm
Fresh Water Line	153 „
Tropical Line	153 „
Winter Line below	153 „
Winter North Atlantic Line	—

Tropical Fresh Water Freeboard	11.28 - 4
Fresh Water	12.81 „
Tropical	12.81 „
Winter	15.87 „
Winter North Atlantic	—

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