

Basis computation as C.S.S. with T.O. aft.

Index No. 36603
(For London Office only).

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, ~~SAILING SHIP, TANKER.~~)

Ship's Name EMPIRE TIDE.	Official Number	Nationality and Port of Registry British, Greenock	Gross Tonnage	Date of Build 1941	Port of Survey Greenock.
Moulded Dimensions: Length 425.54' Breadth 56.0' Depth 27'-9" to 2nd sh.					Date of Survey While building
Moulded displacement at moulded draught = 85 per cent. of moulded depth 11701 tons					Surveyor's Signature Kenneth Luggis
Coefficient of fineness for use with Tables .728					Particulars of Classification + 100 A1 with freeboard (conthelta)

Depth for Freeboard (D). Moulded depth ... 27.75 Stringer plate46 Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ ✓ Depth for Freeboard (D) = 27.79	Depth correction. (a) Where D is greater than Table depth $(D - \text{Table depth}) R =$ (b) Where D is less than Table depth (if allowed) $(\text{Table depth} - D) R =$ $(28.37 - 27.79) \times 3 = -1.74"$ If restricted by superstructures	Round of Beam correction. Moulded Breadth (B) 56.00' Standard Round of Beam = $\frac{B \times 12}{50} =$ 13.44" Ship's Round of Beam = 14.00" Difference .56 Restricted to Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.56}{4} \times .0061 = \text{Neg}$
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DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...	42.75	42.75	9.08	✓	42.75
.. overhang ...					
R.Q.D. enclosed ...					
.. overhang ...					
Bridge enclosed ...	377.63	377.63	9.08	✓	377.63
.. overhang aft ...					
.. overhang forward ...					
Fore enclosed ...					
.. overhang ...					
Trunk aft ...					
.. forward ...	5.16	$\text{Diff} \times \frac{1}{2}$ 2.58			2.58
Tonnage opening aft ...					
.. forward ...					
Total ...	425.54	422.96			422.96

Standard Height of Superstructure **7.5'**
 .. R.Q.D. **42.00'**
 Deduction for complete superstructure
 Percentage covered $\frac{S}{L} =$ **100.00**
 $\frac{S_1}{L} =$ **99.39**
 $\frac{E}{L} =$ **99.39**
 Percentage from Table, Line A. **99.25'**
 (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 = **42.00 x .9925 = -41.694.**

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	52.55	1		52.55	54	73.00	1		73.00
$\frac{1}{2}L$ from A.P. ...	13.385	4		43.54	24	32.48	4		129.92
$\frac{3}{4}L$..	5.78	2		11.56	6	8.03	2		16.06
Amidships ...	-	4		-	-	-	4		-
$\frac{3}{4}L$ from F.P. ...	11.56	2		13.12	12	13.97	2		27.94
$\frac{1}{2}L$..	46.775	4		187.10	48	56.51	4		226.04
F.P. ...	65.11	1		105.11	108	127.00	1		127.00
Total ...				472.18					529.96

Mean actual sheer aft = **Excess.**
 Mean standard sheer aft = **Excess.**
 Mean actual sheer forward = **Excess.**
 Mean standard sheer forward = **Excess.**
 Length of enclosed superstructure forward of amidships = **1.**
 .. aft of .. = **C.S.S.**

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - S}{2L} \right) = \frac{126.98}{18} \times .25 = -1.76"$
 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 = 27.79 Summer freeboard = 3.09 Moulded draught (d) = 24.70 Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 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 =	TABULAR FREEBOARD corrected for Flush Deck (if required) Correction for coefficient .728 + .68 = 1.408 / 1.36 <table border="1"> <thead> <tr> <th></th> <th>+</th> <th>-</th> </tr> </thead> <tbody> <tr> <td>Depth Correction ...</td> <td>-</td> <td>1.74</td> </tr> <tr> <td>Deduction for superstructures ...</td> <td>-</td> <td>41.69</td> </tr> <tr> <td>Sheer correction ...</td> <td>-</td> <td>1.76</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>Summer Freeboard =</td> <td>79.52</td> <td>81.32</td> </tr> </tbody> </table>		+	-	Depth Correction ...	-	1.74	Deduction for superstructures ...	-	41.69	Sheer correction ...	-	1.76	Round of Beam correction ...	-	-	Correction for Thickness of Deck amidships ...	-	-	Other corrections, scantlings, etc. ...	-	-	Summer Freeboard =	79.52	81.32
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SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, ~~Wood~~, Steel, Deck:—

C.S.S./T.O. draught 24.70	Tropical Fresh Water Line above Centre of Disc ...	Tropical Fresh Water Freeboard ...
+ 1.50	Fresh Water Line ..	Fresh Water ..
	Tropical Line ..	Tropical ..
Scantling draught 26.20	Winter Line below ..	Winter ..
	Winter North Atlantic Line ..	Winter North Atlantic ..

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