

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

Ship's Name LEONARDO DA VINCI EMPIRE CLYDE	Official Number 159356	Nationality and Port of Registry British Mombasa	Gross Tonnage 7515	Date of Build 1925	Port of Survey
Moulded Dimensions: Length 429.25 Breadth 52.50 Depth 39.17					Date of Survey 12-4-43
Moulded displacement at moulded draught = 85 per cent. of moulded depth tons					Surveyor's Signature
Coefficient of fineness for use with Tables .71 (assumed)					Particulars of Classification 100M with fineness (contemplated)

Depth for Freeboard (D).	Depth correction.	Round of Beam correction.
Moulded depth ... 39.17	(a) Where D is greater than Table depth (D-Table depth) R = (39.21-28.62) 3 = + 31.77 ✓	Moulded Breadth (B) 52.5
Stringer plate04	(b) Where D is less than Table depth (if allowed) (Table depth-D) R =	Standard Round of Beam = $\frac{B \times 12}{50} = 12.60$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$	✓	Ship's Round of Beam = 12.00
Depth for Freeboard (D) = 39.21 ✓	If restricted by superstructures	Difference .60
		Restricted to
		Correction = $\frac{\text{Diff}^{\circ}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.60}{4} \times .8683 = +.13$ ✓

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...					
„ overhang ...					
R.Q.D. enclosed ...					
„ overhang ...					
Bridge enclosed ...					
„ overhang aft ...					
„ overhang forward ...					
F'cle enclosed open ...	113.08	56.54	7.75	-	56.54
„ overhang ...					
Trunk aft ...					
„ forward ...					
Tonnage opening aft ...					
„ „ forward ...					
Total ...	113.08	56.54			56.54

Standard Height of Superstructure **7.5**

„ „ R.Q.D. **-**

Deduction for complete superstructure **42**

Percentage covered $\frac{S}{L} = 26.34$

„ „ $\frac{S_1}{L} = 13.17$

Percentage from Table, Line A. **6.58**
(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 x .0658 = -2.76** ✓

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	52.92	1		52.92	48	48	1		48
$\frac{1}{2}$ L from A.P. ...	23.555	4		94.22	14	14	4		56
$\frac{2}{8}$ L „ ...	5.82	2		11.64	4	4	2		8
Amidships ...	-	4		-	-	-	4		-
$\frac{3}{8}$ L from F.P. ...	11.64	2		23.28	3	3	2		6
$\frac{1}{2}$ L „ ...	47.11	4		188.44	22	22	4		88
F.P. ...	105.85	1		105.85	63	63	1		63
Total ...				476.35					269

Mean actual sheer aft = **Deficient** ✓

Mean standard sheer aft

Mean actual sheer forward = **Deficient (less than 50%)** ✓

Mean standard sheer forward

Length of enclosed superstructure forward of amidships = **NA** ✓

„ „ aft of „ = **NA** ✓

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{207.35}{18} \left(.75 - .1317 \right) = +7.12$ ✓

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.	Deduction for Fresh Water.	TABULAR FREEBOARD corrected for Flush Deck (if required)	80.67
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient $\frac{.71 + .68}{1.36} = \frac{1.39}{1.366}$	82.44
Depth to Freeboard Deck = 39.21 ✓	Δ =	Depth Correction ... 31.77	
Summer freeboard = 10.71 ✓	Tons per inch immersion at summer load water line	Deduction for superstructures ... -2.76	
Moulded draught (d) = 28.50 ✓	T =	Sheer correction ... 7.12	
Deduction for Tropical Freeboard and addition for	Deduction = $\frac{\Delta}{40T}$ inches	Round of Beam correction13	
Winter freeboard = $\frac{d}{4}$ inches = 7.12 = 7 ✓	= 7 ✓	Correction for Thickness of Deck amidships ... -	
Addition for Winter North Atlantic Freeboard (if required) =		Other corrections, scantlings, etc. 9.80	
		with position of lower side scuttles	
		48.82	
		Summer Freeboard = 128.50 ✓	

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Steel, Deck:

Tropical Fresh Water Line above Centre of Disc ... 7	Tropical Fresh Water Freeboard ... 10'-8 1/2"
Fresh Water Line „ „ ... 7	Fresh Water „ „ ... 10'-1 1/2"
Tropical Line „ „ ... Nil	Tropical „ „ ... 10'-8 1/2" (limited)
Winter Line below „ „ ... 7	Winter „ „ ... 11'-3 1/2"
Winter North Atlantic Line „ „ ... 7	Winter North Atlantic „ „ ... 11'-3 1/2"