

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name EMPIRE MIRANDA.	Official Number 169501	Nationality and Port of Registry BRITISH GREENOCK	Gross Tonnage 7052 APPROX 7054.46 7000 TONS M.T. 24/48	Date of Build 1943	Port of Survey GREENOCK
Moulded Dimensions: Length 425'-6 1/2" Breadth 56' Depth 36'-10" To UPPER Dk To centre of rudder stock To 2nd Dk - 16400 To 2nd Dk - 14985 tons				Date of Survey WHILE BUILDING.	Surveyor's Signature Kenneth Inglis
Moulded displacement at moulded draught = 85 per cent. of moulded depth				Particulars of Classification +100.A.1. WITH FREEBOARD (CONTEMPLATED)	
Coefficient of fineness for use with Tables .769					

Depth for Freeboard (D)	Depth correction.	Round of Beam correction.
Moulded depth ... 36.83 To 2nd Dk - 27.75	(a) Where D is greater than Table depth (D - Table depth) R = 1 (36.89 - 28.39) 3 = +25.50 8.50	Moulded Breadth (B) 56
Stringer plate ... UPPER Dk - .72 2nd Dk - .60	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = ✓	Standard Round of Beam = $\frac{B \times 12}{50} = 13.44$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$	If restricted by superstructures ✓	Ship's Round of Beam = 14.
Depth for Freeboard (D) = 36.89		Difference .56
		Restricted to ✓
		Correction = $\frac{\text{Diff}^2}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.56^2}{4} \times .9181 = -.13"$

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 ...	34'-6 1/2"	34.88	7'-6"	✓	34.88
" overhang ...					
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" forward ...					
Total ...	34.88	34.88			34.88

Standard Height of Superstructure	7.5'
" R.Q.D.	✓
Deduction for complete superstructure	42.00
Percentage covered $\frac{S}{L} =$	8.19
" $\frac{S_1}{L} =$	
" $\frac{E}{L} =$	
Percentage from Table, Line A.	4.10
(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 = $42.00 \times .0410 = -1.72"$	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	52.59	1	52.59	54	54	1	54.00		
1/4 L from A.P. ...	23.40	4	93.60	24	24	4	96.00		
3/4 L " ...	5.785	2	11.57	6	6	2	12.00		
Amidships ...	-	4	-	0	-	4	-		
3/4 L from F.P. ...	11.57	2	23.14	12	12	2	24.00		
1/4 L " ...	46.805	4	187.22	48	48	4	192.00		
F.P. ...	105.18	1	105.18	108	108	1	108.00		
Total ...			473.30				486.00		

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - S}{2L} \right) = \frac{12.70}{18} (.75 - .0410) = -.50"$
If limited on account of midship superstructure. **Yes, NIL.** **709** If limited to maximum allowance of 1 1/2 ins. per 100 ft. **✓**

Deduction for Tropical Freeboard.	Deduction for Fresh Water.	TABULAR FREEBOARD corrected for Flush Deck (if required)
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line 27-13973, 3534	Correction for coefficient $\frac{.769 + .68}{1.36} = 1.449/1.36$
Depth to Freeboard Deck = 36.89	$\Delta = 26-13395$	Depth Correction ... 25.50'
Summer freeboard = 10.79	Tons per inch immersion at summer load water line 27-4833, 48.08	Deduction for superstructures ... - 1.72'
Moulded draught (d) = 26.10	$T = 26-4800$	Sheer correction ... -
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 6.52' = 6 1/2"	Deduction = $\frac{\Delta}{40T}$ inches = 7.04	Round of Beam correction ... - 13'
Addition for Winter North Atlantic Freeboard (if required) = ✓	= 7"	Correction for Thickness of Deck amidships ... -
		Other corrections, scantlings, etc. To correspond
		with a Summer Moulded Draught of 26'-1 1/4"
		Summer Freeboard = 129.50

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

28 APR 1943

Tropical Fresh Water Line above Centre of Disc ...	13 1/2"
Fresh Water Line " " ...	7"
Tropical Line " " ...	6 1/2"
Winter Line below " " ...	6 1/2"
Winter North Atlantic Line " " ...	✓

Tropical Fresh Water Freeboard ...	10'-9 1/2"
Fresh Water " " ...	9'-8"
Tropical " " ...	10'-2 1/2"
Winter " " ...	10'-3"
Winter North Atlantic " " ...	11'-4"

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MARINE
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A new form should be prepared if any alterations that affect the freeboard have been made. If no such alterations have been made, the Surveyor should endorse the form on this side with his signature and the date.

Trade of ship. INTERNATIONAL.

Names of sister ships. EMPIRE BEATRICE

Builder's name and yard number. LITHGOWS YARD N° 983.

Owners. THE MINISTRY OF WAR TRANSPORT

✓ APPROX
Fee £ 18 0 0



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