

38202

Form L.L. 4C.

(Revised)

ISSUED BY THE
BOARD OF TRADE.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name. EMPIRE DEBEN GENERAL SAN MARTIN	Official Number 180852	Nationality and Port of Registry. London	Gross Tonnage 4250 11635	Date of Build 1923	Port of Survey Hamburg
Moulded Dimensions: Length 472'-8 1/4" Breadth 60'-6" Depth 45'-0"					Date of Survey 11th Sept 1945
Moulded displacement at moulded draught = 85 per cent. of moulded depth. 19650 tons					Surveyor's Signature Wm. Inman M.L. Caldwell
Coefficient of fineness for use with Tables. 783 (estimated)					Particulars of Classification Examined L.R.

Depth for Freeboard (D)	Depth Correction.	Round of Beam correction.
Moulded depth ... 45'-0"	(a) Where D is greater than Table depth (D—Table depth) R = (45.04 - 31.52) x 3 = + 40.56	Moulded Breadth (B) 60'-6"
Stringer plate ... 36'-04"	(b) Where D is less than Table depth (if allowed) (Table depth—D) R =	Standard Round of Beam = $\frac{B \times 12}{50} = 14.52$
Sheathing on exposed deck ...	If restricted by superstructures	Ship's Round of Beam = 13 3/4"
$T \left(\frac{L-S}{L} \right) =$		Difference .77
Depth for Freeboard (D) = 45'-04"		Restricted to
		Correction = $\frac{\text{Diff}^{\circ}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.77 \times 53.32}{4} = + .10$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed ...						Standard Height of superstructure 7'-5"
" overhang ...						" " " R.Q.D. ✓
R.Q.D. enclosed ...						Deduction for complete superstructure 42'-"
" overhang ...						Percentage covered $\frac{S}{L} = 49.38$
Bridge enclosed ...	472'-8 1/4"	207.87	8'-0"	-	207.87	" " $\frac{S_1}{L} = 46.68$
" overhang aft ...	207.87					" " $\frac{E}{L} =$
" overhang forward ...						Percentage from Table, Line A. ✓
Fore-castle enclosed ...	25.53	12.76			12.76	(corrected for absence of forecastle (if required))
" overhang ...						Percentage from Table, Line B. 33.17
Trunk aft ...						(corrected for absence of forecastle (if required))
" forward ...						Interpolation for bridge less than .2L (if required)
Tonnage opening aft ...						Deduction = 42 x .3317 = - 13.93
" " forward ...	233.40					
Total ...	472'-8 1/4"	220.63			220.63	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P. ...	57.27	1		57.27	3'-8"	44.00	1		44.00	Mean actual sheer aft = .79
1/2 L from A.P. ...	25.485	4		101.94	1'-8 1/2"	20.50	4		82.00	Mean actual sheer forward = Mean
1/2 L " " ...	6.30	2		12.60	5'	5.00	2		10.00	Length of enclosed superstructure forward of amidships = > .1
Amidships ...	-	4		-	-	-	4		-	" " aft of " = > .1
1/2 L from F.P. ...	12.60	2		25.20	1'-1 1/2"	13.50	2		27.00	
1/2 L " " ...	50.97	4		203.88	4'-10 1/4"	58.25	4		233.00	Sheer aft.
F.P. ...	114.54	1		114.54	10'-7 1/4"	127.25	1		127.25	$\begin{matrix} 57.27 & 1 & 57.27 & \left\{ & 44.0 & 1 & 44.0 \\ 25.485 & 3 & 76.45 & \left\{ & 20.5 & 3 & 61.5 \\ 6.30 & 3 & 18.90 & \left\{ & 5.0 & 3 & 15.0 \\ & & & & 152.62 & & 120.5 \end{matrix}$
Total ...				515.43					523.25	

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - S}{2L} \right) = \frac{7.82 \times (.75 - .5031)}{18} = -.22$

If limited on account of midship superstructure. **No**

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)	94.11
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line 28'-0"	Correction for coefficient $\frac{.783 + .68}{1.36} = \frac{1.463}{1.36} =$	101.23
Depth to Freeboard Deck = 45'-04"	$\Delta = 17.800$		
Summer freeboard = 17'-12"	Tons per inch immersion at summer load water line		
Moulded draught (d) = 27'-3 1/2"	T = 55		
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches =	Deduction = $\frac{\Delta}{40 T}$ inches		
Addition for Winter North Atlantic Freeboard (if required) =	7" as assigned by S.B.2.		
		Depth Correction ... 40.56	
		Deduction for superstructures ... - 13.93	
		Sheer correction ... - .22	
		Round of Beam correction10	
		Correction for Thickness of Deck amidships ... -	
		Other corrections, scantlings, etc. to be applied to an all-season moulded draught of 27'-11"	
		77.76	
		118.42	
		14.15	
		+ 104.27	
		Summer Freeboard = 205.50	

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

Tropical Fresh Water Line above Centre of Disc ...	7"	Tropical Fresh Water Freeboard ...	16'-6 1/2"
Fresh Water Line " " " " ...	7"	Fresh Water " " " " ...	16'-6 1/2"
Tropical Line " " " " ...	Nil	Tropical " " " " ...	17'-1 1/2"
Winter Line below " " " " ...	Nil	Winter " " " " ...	17'-1 1/2"
Winter North Atlantic Line " " " " ...	✓	Winter North Atlantic " " " " ...	17'-1 1/2"

Trade of Ship.....Number of years recommended for Load Line Certificate.....

Names of Sister Ships.....

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.



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