

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name HAI HU (EX OTTAWA PALMER)	Official Number	Nationality and Port of Registry CHINESE SHANSHAI	Gross Tonnage 1300 APPROX	Date of Build 1946	Port of Survey
Moulded Dimensions: Length 210.33' Breadth 36.5' Depth 21.67'					Date of Survey 5.3.47
Moulded displacement at moulded draught = 85 per cent. of moulded depth 2970 tons					Surveyor's Signature
Coefficient of fineness for use with Tables .735					Particulars of Classification 100A1 WITH FREEBOARD

Depth for Freeboard (D).	Depth correction.	Round of Beam correction.
Moulded depth 21.67	(a) Where D is greater than Table depth (D - Table depth) R = (21.88 - 14.02) x 1.618 = +12.72"	Moulded Breadth (B) = 36.5'
Stringer plate03	7.86	Standard Round of Beam = $\frac{B \times 12}{50} = \mathbf{8.76"}$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) = \frac{2.5}{12} \times 8693 = \mathbf{-18}$	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = ✓	Ship's Round of Beam = 12.00"
Depth for Freeboard (D) = 21.88	If restricted by superstructures ✓	Difference = 3.24"
		Restricted to ✓
		Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{3.24}{4} \times 0.8788 = \mathbf{-0.71"$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed						Standard Height of Superstructure 6.00'
.. overhang R.Q.D. ✓
R.Q.D. enclosed						Deduction for complete superstructure 27.03"
.. overhang						Percentage covered $\frac{S}{L} = \mathbf{13.07}$
Bridge enclosed $\frac{S_1}{L} = \mathbf{12.12}$
.. overhang aft $\frac{E}{L} = \mathbf{6.06}$
.. overhang forward						Percentage from Table, Line A. 6.06
F'cle enclosed	23.50	23.50	7.0'	✓	23.50	(corrected for absence of forecastle (if required))
.. overhang	4.00	2.00			2.00	Percentage from Table, Line B. ✓
Trunk aft						(corrected for absence of forecastle (if required)) ✓
.. forward						Interpolation for bridge less than 2L (if required) ✓
Tonnage opening aft						Deduction = 27.03 x .0606 = -1.64"
.. .. forward						
Total	27.50	25.50			25.50	

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product	
A.P.	31.03	1	31.03	27.00	27.0	1	27.0	Mean actual sheer aft =
$\frac{1}{4}$ L from A.P.	13.81	4	55.24	8.50	8.5	4	34.0	Mean standard sheer aft =
$\frac{2}{8}$ L	3.415	2	6.83	-	-	2	-	} DEFICIENT
Amidships	-	4	-	-	-	4	-	
$\frac{2}{8}$ L from F.P.	6.83	2	13.66	-	-	2	-	Mean actual sheer forward =
$\frac{1}{4}$ L	27.62	4	110.48	17.50	17.5	4	70.0	Mean standard sheer forward =
F.P.	62.07	1	62.07	45.00	45.0	1	45.0	Length of enclosed superstructure forward of amidships =
Total			279.31				176.0 aft of =
Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - S}{2L} \right) = \frac{103.31}{18} \left(\frac{.75 - .0653}{.6847} \right) = \mathbf{+3.93"}$								If limited to maximum allowance of $1\frac{1}{2}$ ins. per 100 ft. ✓
If limited on account of midship superstructure. ✓								

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	Correction for coefficient $\frac{.735 + .68}{1.36} = \frac{1.415}{1.36}$
Depth to Freeboard Deck = 21.91	$\Delta = \mathbf{2609}$	Depth Correction 12.72
Summer freeboard = 5.46	Tons per inch immersion at summer load water line	Deduction for superstructures 1.64
Moulded draught (d) = 16.45	T = 15.5	Sheer correction 3.93
Deduction for Tropical freeboard and addition for	Deduction = $\frac{\Delta}{40T}$ inches	Round of Beam correction71
Winter freeboard = $\frac{d}{4}$ inches = 4.11 = 4"	= 4.21"	Correction for Thickness of Deck amidships36
Addition for Winter North Atlantic Freeboard (if required) = 6"	= 4.14"	Other corrections, scantlings, etc. to correspond to a summer moulded draught of 16'-5 1/4" (16'-5 3/8" actual)
		24.97
		41.98
		2.35
		+39.63
		Summer Freeboard = 65.50

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

Tropical Fresh Water Line above Centre of Disc 8 1/4"	Tropical Fresh Water Freeboard 4'-9 1/4"
Fresh Water Line 4 1/4"	Fresh Water 5'-1 1/4"
Tropical Line 4"	Tropical 5'-1 1/2"
Winter Line below 4"	Winter 5'-9 1/2"
Winter North Atlantic Line 6"	Winter North Atlantic 5'-11 1/2"