

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

Ship's Name "HINSANG"	Official Number	Nationality and Port of Registry British Hongkong.	Gross Tonnage Approx 3700	Date of Build 1941	Port of Survey Hongkong
Moulded Dimensions: Length 350.0' Breadth 53.0' Depth 26.0'					Date of Survey While Building
Moulded displacement at moulded draught = 85 per cent. of moulded depth 8500 tons					Surveyor's Signature J. J. Morrison
Coefficient of fineness for use with Tables .726					Particulars of Classification +100 A1

Depth for Freeboard (D).	Depth correction.	Round of Beam correction.
Moulded depth ... 26.0'	(a) Where D is greater than Table depth $(D - \text{Table depth}) R =$ $(26.03 - 23.93) 2.692 = +7.27"$	Moulded Breadth (B) 53.0'
Stringer plate03	(b) Where D is less than Table depth (if allowed) (Table depth - D) R =	Standard Round of Beam = $\frac{B \times 12}{50} =$ 12.72"
Sheathing on exposed deck None in way of marking.		Ship's Round of Beam = 13.25"
$T \left(\frac{L-S}{L} \right) =$		Difference 0.53"
2 1/2' Teak on Poop & Bridge		Restricted to
Depth for Freeboard (D) = 16.03'	If restricted by superstructures	Correction = $\frac{\text{Diff}^{\circ}}{4} \times (1 - \frac{S_1}{L}) =$.53' x .1785 = .094'

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 ...	219.83'	219.83	7' 6"	✓	219.83
" overhang aft ...	✓				
" overhang forward ...	✓				
File enclosed ...	32.67'	32.67	7' 6"	✓	32.67
" overhang ...	✓				
Trunk aft ...	✓				
" forward ...	✓				
Tonnage opening aft ...	✓				
" " forward	✓				
Total ...	252.50	252.50			252.50

Standard Height of Superstructure **7.00'**

" " R.Q.D. ✓

Deduction for complete superstructure **38.67"**

Percentage covered $\frac{S}{L} =$ **72.15. ✓**

" " $\frac{S_1}{L} =$ **72.15. ✓**

" " $\frac{E}{L} =$ **72.15. ✓**

Percentage from Table, Line A. and B **65.65 ✓**
(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 = **38.67 x .6565 = 25.39"**

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	45.00	1		45.00	45.00	51.00	45.00	-1	45.00
1/4 L from A.P. ...	10.025	4		80.10	19.50	22.69	10.025	4	80.10
3/4 L " ...	4.95	2		9.90	4.50	5.61	4.95	-2	9.90
Amidships ...	-	4		-	0	-	-	4	-
3/4 L from F.P. ...	9.90	2		19.80	9.50	9.50	-	2	19.00
1/4 L " ...	40.05	4		160.20	39.00	39.00	-	4	156.00
F.P. ...	90.00	1		90.00	90.00	90.00	-	1	90.00
Total ...				405.00					400.00

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) =$ **5.40 (7.75 - .3607) = +1.1"**

If limited on account of midship superstructure.

Actual Superstructure Height **7.5'**

Standard " **7.0'**

Excess **.5'**

Mean actual sheer aft = **Excess.**

Mean standard sheer aft

Mean actual sheer forward = **Deficient.**

Mean standard sheer forward

Length of enclosed superstructure forward of amidships = } **Deficient Sheer.**

" " aft of " = }

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) =$ **5.40 (7.75 - .3607) = +1.1"**

If limited on account of midship superstructure.

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 Finish Deck (if required)
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient .726 + .68 = 1.406 / 1.36
Depth to Freeboard Deck = 16.03'	$\Delta =$ 8806 tons.	Depth Correction ... 7.27
Summer freeboard = 3.35'	Tons per inch immersion at summer load water line	Deduction for superstructures ... 25.39
Moulded draught (d) = 22.68'	$T =$ 36.48	Sheer correction11
Deduction for Tropical freeboard and addition for	Deduction = $\frac{\Delta}{40 T}$ inches	Round of Beam correction04
Winter freeboard = $\frac{d}{4}$ inches = 5.67 = 5 3/4'	= 5.95	Correction for Thickness of Deck amidships ...
Addition for Winter North Atlantic Freeboard (if required) = ✓	= 6"	Other corrections, scantlings, etc. ...
		7.38 25.43 -18.05
		Summer Freeboard = 40.36

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

Tropical Fresh Water Line above Centre of Disc ... 11 3/4"	Tropical Fresh Water Freeboard ... 2' 4 1/4"
Fresh Water Line " " ... 6 1/4"	Fresh Water " " ... 2' 10 1/4"
Tropical Line " " ... 5 3/4"	Tropical " " ... 2' 10 1/2"
Winter Line below " " ... 5 3/4"	Winter " " ... 3' 10"
Winter North Atlantic Line " " ... ✓	Winter North Atlantic " " ...

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.