

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name HOPESTAR	Official Number 161592	Nationality and Port of Registry British, Newcastle	Gross Tonnage	Date of Build 1936	Port of Survey
Moulded Dimensions: Length 410 Breadth 57.25 Depth 38.04					Date of Survey 12.4.41
Moulded displacement at moulded draught = 85 per cent. of moulded depth _____ tons					Surveyor's Signature
Coefficient of fineness for use with Tables .767 (estimated)					Particulars of Classification + 100A1 with freeboard.

Depth for Freeboard (D).		Depth correction.		Round of Beam correction.	
Moulded depth ...	38.04	(a) Where D is greater than Table depth		Moulded Breadth (B)	57.25'
Stringer plate59"	$(D - \text{Table depth}) R =$	$(38.04 - 27.33) \times 3 = +32.28"$	Standard Round of Beam = $\frac{B \times 12}{50} =$	13.74"
Sheathing on exposed deck		(b) Where D is less than Table depth (if allowed)		Ship's Round of Beam =	14.50"
$T \left(\frac{L-S}{L} \right) =$	✓	(Table depth - D) R =	✓	Difference	.76"
Depth for Freeboard (D) =	38.04	If restricted by superstructures	✓	Restricted to	
				Correction = $\frac{\text{Diff}^*}{4} \times \left(1 - \frac{S_1}{L} \right) =$	$\frac{.76}{4} \times 92.66 = -18"$

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 42.00"
„ overhang ...						Percentage covered $\frac{S}{L} =$ 7.32
Bridge enclosed ...						„ „ $\frac{S_1}{L} =$ 7.32
„ overhang aft ...						„ „ $\frac{E}{L} =$ 6.58
„ overhang forward ...						Percentage from Table, Line A. 3.29
F'cle enclosed ...	30.00'	30.00	6.75'	6.75/7.5	27.00	(corrected for absence of forecastle (if required)) ✓
„ overhang ...						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 = 42.00" x .0329 = -1.38"
„ „ forward						
Total ...	30.00	30.00			27.00	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P. ...	51.00	1		51.00	39.75	39.75	1		39.75	Mean actual sheer aft = Mean standard sheer aft = } Deficient.
$\frac{1}{4}$ L from A.P. ...	22.695	4		90.78	18.00	18.00	4		72.00	
$\frac{2}{4}$ L „ ...	5.61	2		11.22	4.375	4.375	2		8.75	Mean actual sheer forward = Mean standard sheer forward = } Deficient.
Amidships ...	—	4		—	—	—	4		—	
$\frac{3}{4}$ L from F.P. ...	11.22	2		22.44	10.50	10.50	2		21.00	Length of enclosed superstructure forward of amidships = „ „ aft of „ = } Nil.
$\frac{1}{4}$ L „ ...	45.39	4		181.56	37.75	37.75	4		151.00	
F.P. ...	102.00	1		102.00	84.00	84.00	1		84.00	
Total ...				459.00					376.50	

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{75-S}{2L} \right) = \frac{822.50 - 376.50}{18} \left(\frac{75-1}{2 \times 410} \right) = \frac{446}{18} \times \frac{74}{820} = +2.87327$
 If limited on account of midship superstructure. 7134 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)
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient $\frac{.767 + .68}{1.36} = 1.447/1.36$
Depth to Freeboard Deck = 38.04	$\Delta =$	Depth Correction ... 32.18
Summer freeboard = 11.19	Tons per inch immersion at summer load water line	Deduction for superstructures ... 1.38
Moulded draught (d) = 26.90	T =	Sheer correction ... 4.87
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 6.73 = 6$\frac{3}{4}$"	Deduction = $\frac{\Delta}{40T}$ inches = 7"	Round of Beam correction ... 1.18
Addition for Winter North Atlantic Freeboard (if required) =		Correction for Thickness of Deck amidships ... 1.86
		Other corrections, scantlings, etc. to correspond to a summer moulded draught of 26'-10$\frac{3}{4}$" (26'-10$\frac{7}{8}$" actual)
		Summer Freeboard = 134.25

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

Tropical Fresh Water Line above Centre of Disc	13$\frac{3}{4}$"
Fresh Water Line	7"
Tropical Line	6$\frac{3}{4}$"
Winter Line below	6$\frac{3}{4}$"
Winter North Atlantic Line	✓

Tropical Fresh Water Freeboard	11'-2$\frac{1}{4}$"
Fresh Water	10'-0$\frac{1}{2}$"
Tropical	10'-7$\frac{1}{4}$"
Winter	10'-7$\frac{1}{2}$"
Winter North Atlantic	11'-9"

16 APR 1941

CH (COMP)

Hope Star.

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.

Partial flush deck penalty.

$$\begin{array}{r}
 4.10 \\
 \underline{2.05} \\
 6.15
 \end{array}
 \times \frac{3}{2} \left(.1 - \frac{.0658}{.1} \right)$$

$$\begin{array}{r}
 .268 \\
 \underline{.342} \\
 .074
 \end{array}
 = +1.65''$$

Trade of ship.....

Names of sister ships.....

Builder's name and yard number.....

Owners.....

Fee £.....



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Foundation