

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Index. No. 350 80.
(For London Office only).

JUL 16 1937

Nº 32141

Ship's Name CITINA "NORTHLEIGH" (Parker's no 237)	Official Number 165573	Nationality and Port of Registry British London	Gross Tonnage 5450	Date of Build 1937	Port of Survey Sunderland
Moulded Dimensions: Length 424'-11 1/2" Breadth 56'-0" Depth 29'-4"					Date of Survey Whilst building
Moulded displacement at moulded draught = 85 per cent. of moulded depth 13030 tons					Surveyor's Signature John Rennie
Coefficient of fineness for use with Tables .769					Particulars of Classification 100 A1 with freeboard (contemplated)

Depth for Freeboard (D).		Depth correction.	Round of Beam correction.
Moulded depth ...	29.33	(a) Where D is greater than Table depth (D - Table depth) R = (29.36 - 28.33) 3' = + 3.09"	Moulded Breadth (B) 56.0
Stringer plate41	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = 1.03	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 = 13
Depth for Freeboard (D) =	29.36		Difference .44 deficient
			Restricted to
			Correction = $\frac{\text{Diff}}{4} \times (1 - \frac{S_1}{L}) = \frac{.44}{4} \times .0059 = \text{Nil}$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed ...	31.96	31.96	8.5		31.96	Standard Height of Superstructure 7.5
" overhang ...						" " R.Q.D. ✓
R.Q.D. enclosed ...						Deduction for complete superstructure 42
" overhang ...						Percentage covered $\frac{S}{L} = 100$
Bridge enclosed ...	386.25	386.25	8.5		386.25	" $\frac{S_1}{L} = 99.41$
" overhang aft ...	2.25	1.69			1.69	" $\frac{E}{L} = 99.41$
" overhang forward ...						Percentage from Table, Line A. 99.27
Fore enclosed ...						(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 ...	4.50	2.53			2.53	Deduction = 42 x .9927 = - 41.69
" forward ...						
Total ...	424.96	422.43			422.43	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P. ...	52.50	1	52.50	49.56	61.56	1	61.56			Mean actual shear aft = Excess
1/4 L from A.P. ...	23.36	4	93.44	22.25	27.39	4	109.56			Mean standard shear aft = 12" diff
1/2 L " ...	5.775	2	11.55	5.00	6.77	2	13.54			Mean actual shear forward = Excess
Amidships ...		4				4				Mean standard shear forward = Excess
3/4 L from F.P. ...	11.55	2	23.10	11.25	11.91	2	23.82			Length of enclosed superstructure forward of amidships = 6.5.5
1/4 L " ...	46.72	4	186.88	44.00	48.18	4	192.72			" " aft of " = 6.5.5
F.P. ...	104.99	1	104.99	96.25	108.25	1	108.25			
Total ...			472.46				509.45			

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - S}{2L} \right) = \frac{36.99}{18} \left(\frac{.25}{2L} \right) = -.51"$

If limited on account of midship superstructure.

If limited to maximum allowance of 1 1/2 ins. per 100 ft.

Deduction for Tropical Freeboard.
Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = **29.36**
Summer freeboard = **3.79**
Moulded draught (d) = **25.57**

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = **6.39 = 6 1/2**
Addition for Winter North Atlantic Freeboard (if required) = **✓**

Deduction for Fresh Water.

Displacement in salt water at summer load water line
 $\Delta = 13439$
Tons per inch immersion at summer load water line
 $T = 48.38$
Deduction = $\frac{\Delta}{40T}$ inches = **6.95**
7"

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{.769 + .18}{1.36} = \frac{.949}{1.36}$

	+	-
Depth Correction ...	3.09	
Deduction for superstructures ...		41.69
Sheer correction51
Round of Beam correction ...		
Correction for Thickness of Deck amidships ...		
Other corrections, scantlings, etc. ...		
	3.09	42.20
Summer Freeboard =	45.41	

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

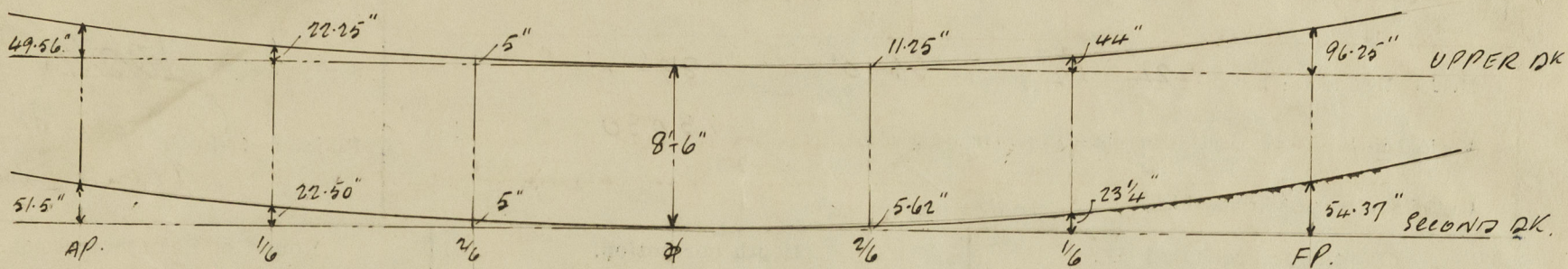
Tropical Fresh Water Line above Centre of Disc ...	13 1/2"	Tropical Fresh Water Freeboard ...	2' 8"
Fresh Water Line " " ...	7"	Fresh Water " " ...	3' 2 1/2"
Tropical Line " " ...	6 1/2"	Tropical " " ...	3' 3"
Winter Line below " " ...	6 1/2"	Winter " " ...	4' 4"
Winter North Atlantic Line " " ...	✓	Winter North Atlantic " " ...	✓

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Northleigh
CHINA FIR.

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.

Sheets



External displacement 13439 tons at extreme draft of 25'-9"
Tons per inch 48.38 tons.

Trade of ship

Names of sister ships

Builder's name and yard number

Wm. P. & Sons Ltd. Yard No 237.

Owners

J. & L. (for one of his companies)

Fee £

16 0 0

Will be charged on completion



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Foundation