

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name LANCASHIRE	Official Number 140529	Nationality and Port of Registry British Liverpool	Gross Tonnage	Date of Build 1917 -7	Port of Survey
Moulded Dimensions: Length 481.5 Breadth 57.00 Depth 35.37					Date of Survey 11.12.43
Moulded displacement at moulded draught = 85 per cent. of moulded depth 17746 tons					Surveyor's Signature
Percentage of fineness for use with Tables .753					Particulars of Classification

Depth for Freeboard (D). depth 35.37 plate06 on exposed deck $\frac{L-S}{L} = .29 \times .2293 = .07$ Depth for Freeboard (D) = 35.50	Depth correction. (a) Where D is greater than Table depth $(D - \text{Table depth}) R = (35.50 - 32.10) \times 3 = +10.20$ 3.40 (b) Where D is less than Table depth (if allowed) (Table depth - D) R = If restricted by superstructures	Round of Beam correction. Moulded Breadth (B) 57' Standard Round of Beam = $\frac{B \times 12}{50} = 13.68$ Ship's Round of Beam = 9.00 Difference 4.68 Restricted to Correction = $\frac{\text{Diff}^2}{4} \times \left(1 - \frac{S_1}{L}\right) = \frac{4.68^2}{4} \times .3144 = +3.7$
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DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
enclosed <i>Equival.</i>	48.00	48.00	8.25	-	48.00
overhang ...	3.08	1.54	"	-	1.54
enclosed ...					
overhang ...					
enclosed ...	193.00	193.00	8.25	-	193.00
overhang aft ...					
overhang forward ...	42.00	21.00	"	-	21.00
enclosed <i>Ship</i>	85.00	66.57	8.0	-	66.57
overhang ...					
aft ...					
forward ...					
opening aft ...					
" forward					
Total ...	371.08	330.11			330.11

Standard Height of Superstructure **7.5'**

" " R.Q.D. **✓**

Deduction for complete superstructure **42"**

Percentage covered $\frac{S}{L} = 77.07$

" " $\frac{S_1}{L} = 68.56$

" " $\frac{E}{L} =$

Percentage from Table, Line A. **✓**
(corrected for absence of forecastle (if required))

Percentage from Table, Line B. **60.55**
(corrected for absence of forecastle (if required))

Interpolation for bridge less than .2L (if required) **-**

Deduction = $42 \times .6055 = -25.43$

SHEER CORRECTION.

on	Standard Ordinate	S	Product	Actual Ordinate	Effective Ordinate	S	Product
...	58.15	1	58.15	42.00	42.00	1	42.00
A.P. ...	25.88	4	103.52	9.00	9.00	4	36.00
...	6.39	2	12.78	-3.00	-3.00	2	-6.00
...	-	4	-	-	-	4	-
A.P. ...	12.79	2	25.58	16.50	12.79	2	25.58
...	51.76	4	207.04	51.00	51.76	4	207.04
...	116.30	1	116.30	114.00	116.30	1	116.30
al ...			523.37				420.92

Mean actual sheer aft = **38.7%**
 Mean standard sheer aft =

Mean actual sheer forward = **Sum**
 Mean standard sheer forward =

Length of enclosed superstructure forward of amidships = **Sum of product**
 L

Sheer Mt. $\frac{58.15}{25.88} \times \frac{58.15}{77.64} = \frac{42.00}{9.00} \times \frac{42.00}{27.00} = \frac{16.50}{51.76} \times \frac{16.50}{155.28} = \frac{114.00}{116.30} \times \frac{114.00}{116.30} = \frac{49.50}{153.00} = \frac{114.00}{316.50}$

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{102.45}{18} (.75 - .3853) = +2.07$

limited on account of midship superstructure.

If limited to maximum allowance of $1\frac{1}{2}$ ins. per 100 ft.

Correction for Tropical Freeboard.
 Correction for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = **35.73**
 Summer freeboard = **10.33**
 Moulded draught (d) = **25.40**

Correction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = **6.35 = 6 1/4"**

Correction for Winter North Atlantic Freeboard (if required) =

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta =$

Tons per inch immersion at summer load water line

T =

Deduction = $\frac{\Delta}{40 T}$ inches

= **6 1/2"**

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

$\frac{.753 + .68}{1.36} = \frac{1.433}{1.36}$

Depth Correction

Deduction for superstructures

Sheer correction

Round of Beam correction

Correction for Thickness of Deck amidships

Other corrections, scantlings, etc. *Drakeford*

Sum all seasons moulded draught of 25.43 1/4"

96.75
101.95

	+	-
Depth Correction	10.20	-
Deduction for superstructures	-	25.43
Sheer correction	2.07	-
Round of Beam correction	.37	-
Correction for Thickness of Deck amidships	2.66	-
Other corrections, scantlings, etc.	32.18	-
<i>Sum all seasons moulded draught of 25.43 1/4"</i>	47.48	25.43

82.8
13.12.43

+ 22.05

Summer Freeboard = **124.00**

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

Tropical Fresh Water Line above Centre of Disc **6 1/2"**
 Fresh Water Line " " " " " " " " **6 1/2"**
 Tropical Line " " " " " " " " **11 1/2"**
 Winter Line below " " " " " " " " **11 1/2"**
 Winter North Atlantic Line " " " " " " " " **11 1/2"**

Tropical Fresh Water Freeboard **10' 4"**
 Fresh Water " " " " " " " " **9' 9 1/2"**
 Tropical " " " " " " " " **9' 9 1/2"**
 Winter " " " " " " " " **10' 4"**
 Winter North Atlantic " " " " " " " " **10' 4"**