

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

19198

4 FEB 1942

Ship's Name EMPIRE DICKENS.	Official Number 164853	Nationality and Port of Registry British Middlesbrough	Gross Tonnage 9819	Date of Build While Building	Port of Survey Middlesbrough
Moulded Dimensions: Length 476'-4 1/2" Breadth 68'-0" Depth 36'-0" To centre of rudder stock 476'-9 1/2"				Date of Survey While building	
Moulded displacement at moulded draught = 85 per cent. of moulded depth 21480 T.P. 1.66.5 Corp 759. 114 28'-0" 19415. 6540.				Surveyor's Signature Cyril B. Leaver	
Coefficient of fineness for use with Tables .757.				Particulars of Classification Class contemplated + 100 A.I. Carrying Petroleum in bulk Longitudinal Framing.	

Depth for Freeboard (D). Moulded depth ... 36'-0" Stringer plate ... 8'-2" .068 Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$.07 Depth for Freeboard (D) = 36'-068	Depth correction. (a) Where D is greater than Table depth $(D - \text{Table depth}) R =$ $(36.07 - 31.80) \times 3 = +12.81"$ 4.27 (b) Where D is less than Table depth (if allowed) $(\text{Table depth} - D) R =$ ✓ If restricted by superstructures ✓	Round of Beam correction. Moulded Breadth (B) 68'-0" Standard Round of Beam = $\frac{B \times 12}{50} = 16.32$ Ship's Round of Beam 17' = 17.00 Difference Excess .68" Restricted to ✓ Correction = $\frac{\text{Diff}^*}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.68}{4} \times .6899 = -.12"$
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DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed equi ...	5108-64	113-21	7'-6"	✓	113-21
" overhang ...	113-21				
R.Q.D. enclosed ...					
" overhang ...					
Bridge enclosed ...					
" overhang aft ...					
" overhang forward ...					
F'cle enclosed ...	34-6 1/2	34-54	7'-6"	✓	34-54
" overhang ...	32	15			15
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" forward ...					
Total ...	148-04	147-90			147-90

Standard Height of Superstructure	7'-5"
" " R.Q.D.	✓
Deduction for complete superstructure	42-00
Percentage covered $\frac{S}{L} =$	31.04
" $\frac{S_1}{L} =$	31.01
" $\frac{E}{L} =$	31.01
Percentage from Table, Line A, Tanker	22.01
(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 = $42.00 \times .2201 =$	-9.24"

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P. ...	57-70	1	57-70	45-75	45-75	1	45-75
1/4 L from A.P. ...	125-675	4	102-70	20-75	20-75	4	83-00
2/4 L " ...	6-35	2	12-70	5-625	5-625	2	11-25
Amidships ...	-	4	-	-	-	4	-
3/4 L from F.P. ...	12-645	2	25-34	6-89	6-89	2	13-78
1/4 L " ...	51-35	4	205-40	26-75	26-75	4	107-00
F.P. ...	115-34	1	115-34	61-625	61-625	1	61-63
Total ...			519-28				322-41

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{196.87}{18} \left(.75 - \frac{.1552}{.5948} \right) = +6.51"$$

If limited on account of midship superstructure.

Mean actual sheer aft = **deficient**
Mean standard sheer aftMean actual sheer forward = **deficient**
Mean standard sheer forwardLength of enclosed superstructure forward of amidships = **tanher**

Fora sheers. " aft of "

12-645	338-085	6-89	3	20-67
51-35	3154-05	46-75	3	80-25
115-34	1115-34	61-625	1	61-625
	307-525			162-545

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 = **36'-07"**
Summer freeboard = **8'-04"**
Moulded draught (d) = **28'-03"**

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = **7"**

Addition for Winter North Atlantic Freeboard (if required) = $7.01 + 4.77 = 11.78" = 11 \frac{3}{4}"$

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta =$ **19538**

Tons per inch immersion at summer load water line

$T =$ **65.4**

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

= **7.47**

= **7 1/2"**

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $.757 + .68 = 1.437/1.36$
1.36

	+	-
Depth Correction ...	12-81	-
Deduction for superstructures ...	-	9-24
Sheer correction ...	6-51	-
Round of Beam correction ...	-	.12
Correction for Thickness of Deck amidships ...	-	-
Other corrections, scantlings, etc. ...	-	-
	19-32	9-36

Summer Freeboard = **96.54**

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

Tropical Fresh Water Line above Centre of Disc	14 1/2"
Fresh Water Line	7 1/2"
Tropical Line	7"
Winter Line below	7"
Winter North Atlantic Line	11 3/4"

Tropical Fresh Water Freeboard	8'-0 1/2"
Fresh Water	6'-10"
Tropical	7'-5"
Winter	7'-5 1/2"
Winter North Atlantic	3'-7 1/2"
	9'-0 1/4"

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.

Poop at Side $108' - 6\frac{1}{2}"$
 $\frac{1}{3} \times 6' - 1\frac{1}{2}"$ $4' - 1"$
 $112 - 7\frac{1}{2}"$
 AP. to centre of rudder stock 7
 Enclosed equiv. $113 - 2\frac{1}{2}" = 113.21$
 Freeboard $114' - 6\frac{1}{2}"$

[Handwritten signature]

Trade of ship _____

Names of sister ships _____

Builder's name and yard number _____

Owners _____

Fee £ _____



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Foundation