

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

Ship's Name M.V. BRITISH EMPRESS. FURNESS S.B.C. YARD No 391.	Official Number 181583.	Nationality and Port of Registry BRITISH LONDON.	Gross Tonnage 8737-64 8745	Date of Build 1946	Port of Survey MIDDLESBROUGH.
CR. LINE OF RUDDER STOCK ABAFT AFT PERP. $10\frac{3}{4}$ Moulded Dimensions: Length 465-0 465.90 Breadth 61'-9" Depth 33'-11" MOULDED DISPLACEMENT AT 27-4/8 MOULDED DRAFT. 17031 - TPI - 59.58 Moulded displacement at moulded draught = 85 per cent. of moulded depth 28.829 - 18069 tons DEPTH OF KEEL BELOW BASE LINE 1.64 Coefficient of fineness for use with Tables .764 .762					Date of Survey WHILE BUILDING.
					Surveyor's Signature <i>E. J. Glyn</i>
					Particulars of Classification * 100.A.I. CARRYING PETROLEUM IN BULK. LONGITUDINAL FRAMING AT BOTTOM AND AT DECK. (CLASS CONTEMPLATED)

DEPTH FOR FREEBOARD (D). Moulded depth ... 33.917 ... 33.92 Stringer plate8207 Sheathing on exposed deck NIL. $T \left(\frac{L-S}{L} \right) =$ Depth for Freeboard (D) = 33.99	DEPTH CORRECTION. (a) Where D is greater than Table depth (D-Table depth) R = (33.99 - 31.06) x 3.0 = + 8.79 ✓ (b) Where D is less than Table depth (if allowed) (Table depth-D) R = 2.93 If restricted by superstructures	SEE ALSO SKETCH OF CAMBER ON REPORT C.II. ROUND OF BEAM CORRECTION. Moulded Breadth (B) 61'-9" Standard Round of Beam = $\frac{B \times 12}{50} = \frac{14.82}{50} = 14.82$ Ship's Round of Beam = 14.98 Difference = .16 Restricted to Correction = $\frac{\text{Diff}^\circ}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.16}{4} \times \left(1 - \frac{.58}{170.31} \right) = .02$ NOTE :- NO CAMBER ABAFT No 8 FRAME - IE. 16'-0" FROM A.P.
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DEDUCTION FOR SUPERSTRUCTURES.					Standard Height of Superstructure 7.50'
Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	" " R.Q.D.
Poop enclosed <i>Equivalent</i> ... 97.98	97.98	8'-0"	✓	97.98	Deduction for complete superstructure 42.00
" overhang ... 1.67	.83			.83	Percentage covered $\frac{S}{L} = \frac{42.08}{100} = 42.08$
R.Q.D. enclosed ...					" " $\frac{S_1}{L} = \frac{41.58}{100} = 41.58$
" overhang ...					" " $\frac{E}{L} = \frac{32.58}{100} = 32.58$
Bridge enclosed <i>Equivalent</i> ... 42.83	42.83	8'-0"	✓	42.83	Percentage from Table, Line A. Tanker 32.58 (corrected for absence of forecastle (if required))
" overhang aft ... 3.50	2.62			2.62	Percentage from Table, Line B. (corrected for absence of forecastle (if required))
" overhang forward ... 1.17	.58			.58	Interpolation for bridge less than .2L (if required)
F'cle enclosed <i>Equivalent</i> ... 48.91	48.91	8'-0"	✓	48.91	Deduction = 42.00 x .3258 = 13.68
" overhang ...					
Trunk 'aft ...					
" forward ...					
Tonnage opening aft ...					
" " forward ...					
Total ... 196.06	193.75			193.75	

SHEER CORRECTION. NOTE:- NO SHEER ABAFT No 8. FRAME. IE. 16'-0" FROM A.P.							
Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P. ...	56.59.	1	56.59.	55.625	55.62	1	55.62
$\frac{1}{8}$ L from A.P. ...	25.18	4	100.72	25.75	25.75	4	103.00
$\frac{2}{8}$ L " ...	6.225	2	12.45	6.25	6.25	2	12.50
Amidships ...		4				4	
$\frac{3}{8}$ L from F.P. ...	12.45	2	24.90	12.25	12.25	2	24.50
$\frac{4}{8}$ L " ...	50.365	4	201.46	50.50	50.50	4	202.00
F.P. ...	113.18	1	113.18	113.50	113.50	1	113.50
Total ...			509.30				511.12
Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{1.82}{18} (.75 - .2104) = -.06$ If limited on account of midship superstructure. .5396							
Mean actual sheer aft = <i>Excess.</i> Mean standard sheer aft = <i>Excess.</i> Mean actual sheer forward = <i>Excess.</i> Mean standard sheer forward = <i>Excess.</i> Length of enclosed superstructure forward of amidships = aft of Sheer "forward. Std. Actual. Std. Actual. $\frac{12.45}{50.365} = \frac{12.25}{50.50} = \frac{37.35}{151.09} = \frac{36.75}{151.50}$ $\frac{113.18}{113.50} = \frac{113.50}{113.50} = \frac{301.62}{301.75}$ If limited to maximum allowance of $1\frac{1}{2}$ ins. per 100 ft.							

Deduction for Tropical Freeboard. Addition for Winter and Winter North Atlantic Freeboard. Depth to Freeboard Deck = 33.99 Summer freeboard = 6.58 Moulded draught (d) = 27.41 Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 6.85 = 6.4" Addition for Winter North Atlantic Freeboard (if required) = 6.85 + 14.66 = 11.51 = 11.2"	Deduction for Fresh Water. Displacement in salt water at summer load water line $\Delta = 17153$ Tons per inch immersion at summer load water line T = 59.58 Deduction = $\frac{\Delta}{40 T}$ inches = 7.20" = 7.4"	TABULAR FREEBOARD corrected for Flush Deck (if required) Correction for coefficient $\frac{.762 + .68}{1.36} = \frac{1.442}{1.36}$ Depth Correction ... 8.79 Deduction for superstructures ... 13.68 Sheer correction06 Round of Beam correction02 Correction for Thickness of Deck amidships ... Other corrections, scantlings, etc. ... 8.79 13.76 - 4.97 Summer Freeboard = 78.98
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SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck :-			
Tropical Fresh Water Line above Centre of Disc ... 14"	Tropical Fresh Water Freeboard ... 5.5"		
Fresh Water Line " " ... 7.4"	Fresh Water " " ... 5.1 3/4"		
Tropical Line " " ... 6.3 1/4"	Tropical " " ... 6.0 1/4"		
Winter Line below " " ... 6.3 1/4"	Winter " " ... 7.1 3/4"		
Winter North Atlantic Line " " ... 11.2"	Winter North Atlantic " " ... 7.6 1/2"		

British Empress.

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.

$$\begin{aligned} \text{Equivalent Camber} &= 15.00 \times 1.125 = 16.875 \\ &15.875 \times 1.125 = 17.805 \\ \text{Less } 50 \times \frac{92}{2} &= 23 \text{ sq. ins.} \\ \text{Plus } 50 \times 27.3 &= 9 \text{ sq. ins.} \\ \text{14 sq. ins.} &= \frac{.097 \text{ ft}}{25.708 \text{ ft}} \end{aligned}$$

$$\begin{aligned} \text{Mean camber} &= \frac{25.708}{30.875} \cdot 12 = 9.99" \\ \text{Equivalent camber} &= 9.99 \times \frac{3}{2} = 14.98" \end{aligned}$$

$$\begin{aligned} \text{Poop. } 94.25 + .90 &= 95.15' \\ \frac{2}{3} 4.85 &= \frac{2.83}{97.98}' \\ \text{Overhang. } 4.50 - 2.83 &= 1.67' \end{aligned}$$

$$\begin{aligned} \text{Bridge} &= 40.50' \\ \frac{2}{3} 3.5 &= \frac{2.33}{42.83}' \\ \text{Overhang forward} &= 3.50 - 2.33' \\ &= 1.17' \end{aligned}$$

$$\begin{aligned} \text{Forecastle} &= 54.50' \\ \text{Less } \frac{15.75 \times 20.0}{56.40} &= \frac{5.59}{48.91}' \end{aligned}$$

omit

Trade of ship TANKER

Names of sister ships M.V. BRITISH ADMIRAL - FURNESS S.B. CO YARD No 390.

Builder's name and yard number FURNESS S.B. CO LTD - YARD No 391.

Owners BRITISH TANKER CO LTD

Fee £ WILL BE CHARGED ON FIRST ENTRY REPORT.

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Foundation