

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

Ship's Name "BRITISH EARL"	Official Number 181502	Nationality and Port of Registry BRITISH LONDON.	Gross Tonnage 8573	Date of Build 1946	Port of Survey NEWCASTLE-ON-TYNE
Moulded Dimensions: Length 463.46 Breadth 61.79 Depth 34.08 <i>To CR OF RUDDER STOCK</i>					Date of Survey WHILST BUILDING.
Moulded displacement at moulded draught = 85 per cent. of moulded depth 18224 tons <i>INCLUDING CRUISER STERN.</i>					Surveyor's Signature H. J. Pyle
Coefficient of fineness for use with Tables .769					Particulars of Classification 100 A1 <i>(CLASS CONTEMPLATED)</i> "CARRYING PETROLEUM IN BULK"

DEPTH FOR FREEBOARD (D). Moulded depth ... 34.08 Stringer plate .72 <i>(.88" IN WAY OF MIDSHIP FRAME)</i> Sheathing on exposed deck NONE $T \frac{(L-S)}{L} =$ Depth for Freeboard (D) = 34.14	DEPTH CORRECTION. (a) Where D is greater than Table depth (D-Table depth) R = $(34.14 - 30.89) 3 = + 9.75$ (b) Where D is less than Table depth (if allowed) (Table depth-D) R = If restricted by superstructures <input checked="" type="checkbox"/>	ROUND OF BEAM CORRECTION. Moulded Breadth (B) 61.75 Standard Round of Beam = $\frac{B \times 12}{50} = 14.82$ Ship's Round of Beam = 15.5 Difference + .68 Restricted to Correction = $\frac{\text{Diff}^o}{4} \times (1 - \frac{S_1}{L}) = \frac{.68}{4} \times .5828 = -.10$
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DEDUCTION FOR SUPERSTRUCTURES.					
	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed <i>equiv</i> ...	96.79	96.79	8.0	<input checked="" type="checkbox"/>	96.79
" overhang66	.66		<input checked="" type="checkbox"/>	.66
R.Q.D. enclosed ...	1.33				
" overhang ...					
Bridge enclosed <i>equiv</i> ...	42.67	42.67	8.0	<input checked="" type="checkbox"/>	42.67
" overhang aft ...	2.63	2.63			2.63
" overhang forward <i>equiv</i>42	.42			.42
F'cle enclosed ...	50.17	50.17	8.0		50.17
" overhang ...					
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" " forward ...					
Total ...	193.34	193.34			193.34

Standard Height of Superstructure 7.5'
" " R.Q.D. <input checked="" type="checkbox"/>
Deduction for complete superstructure 42"
Percentage covered $\frac{S}{L} = 42.14$
" " $\frac{S_1}{L} = 41.72$
" " $\frac{E}{L} =$
Percentage from Table, Line A. TANKER 32.72 (corrected for absence of fore-castle (if required))
Percentage from Table, Line B. (corrected for absence of fore-castle (if required))
Interpolation for bridge less than .2L (if required)
Deduction = $42.00 \times .3272 = 13.74'$

SKETCH OF SHEER OVERLEAF.				SHEER CORRECTION.			
Station	Standard Ordinate	S	Product	Actual Ordinate	Effective Ordinate	S	Product
A.P. ...	56.35	1	56.35	56.35	56.35	1	56.35
$\frac{1}{8}$ L from A.P. ...	25.075	4	100.30	25.075	25.075	4	100.30
$\frac{2}{8}$ L " ...	6.198	2	12.39	6.25	6.198	2	12.39
Amidships ...		4				4	
$\frac{2}{8}$ L from F.P. ...	12.39	2	24.78	12.25	12.25	2	24.50
$\frac{1}{8}$ L " ...	50.15	4	200.60	50.25	50.25	4	201.00
F.P. ...	112.69	1	112.69	111.25	111.25	1	111.25
Total ...			507.11				505.79

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{1.32}{18} \times (.75 - .2107) = + .04$
If limited on account of midship superstructure. 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 = 34.15 Summer freeboard = 6.65 Moulded draught (d) = 27.50 Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 6.875 = 6$\frac{3}{4}$ Addition for Winter North Atlantic Freeboard (if required) = 6.87 + 4.63 = 11.50 = 11$\frac{1}{2}$	Deduction for Fresh Water. Displacement in salt water at summer load water line $\Delta = 17297$ Tons per inch immersion at summer load water line $T = 58.145$ Deduction = $\frac{\Delta}{40T}$ inches = 7.44 = 7$\frac{1}{2}$	TABULAR FREEBOARD corrected for Flush Deck (if required) Correction for coefficient $\frac{.763 + .68}{1.36} = \frac{1.449}{1.36}$ Depth Correction ... 9.75 Deduction for superstructures ... 13.74 Sheer correction04 Round of Beam correction10 Correction for Thickness of Deck amidships16 Other corrections, scantlings, etc. ... 9.95 13.84 - 3.89 Summer Freeboard = 79.82	78.57 83.71 82.8 18.10.46
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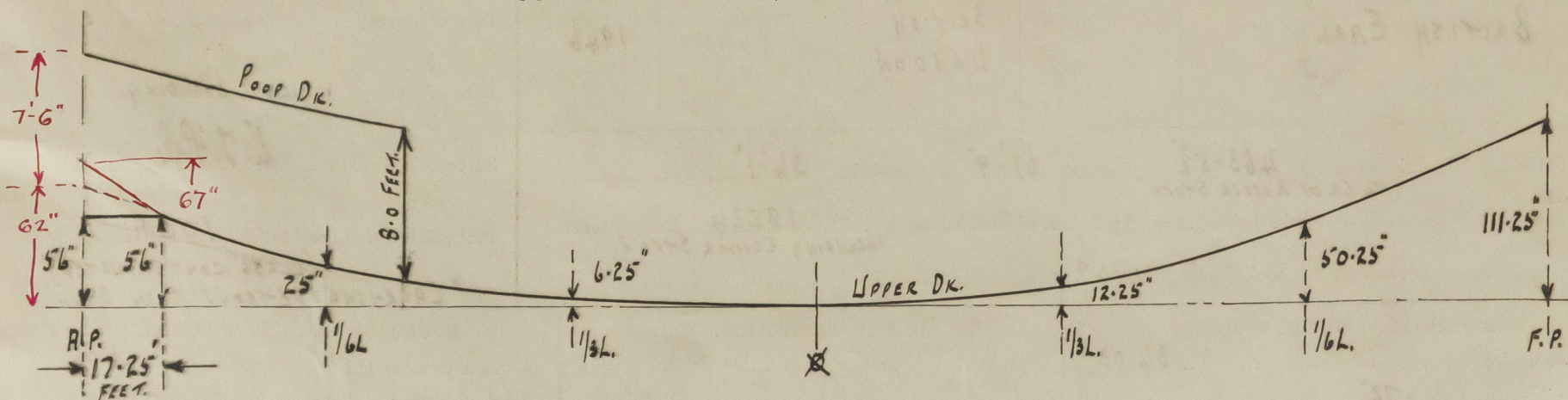
SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck :-			
Tropical Fresh Water Line above Centre of Disc ...	14$\frac{1}{4}$"	Tropical Fresh Water Freeboard	5$\frac{1}{4}$"
Fresh Water Line " "	7$\frac{1}{2}$"	Fresh Water " "	6$\frac{1}{2}$"
Tropical Line " "	6$\frac{3}{4}$"	Tropical " "	6$\frac{1}{4}$"
Winter Line below " "	6$\frac{3}{4}$"	Winter " "	7$\frac{1}{2}$"
Winter North Atlantic Line " "	11$\frac{1}{2}$"	Winter North Atlantic " "	7$\frac{1}{4}$"

5m T 11/41. M.C.C. 002554-001567-0064

British Carl

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.

Virtual sheer at A.P. = 62"



SKETCH OF SHEER.

Poop :-

$$\begin{aligned} \text{length at side} &= 93.625 \\ \frac{2}{3} \times 4.75 &= 3.17 \\ \text{equiv end.} &= 96.79' \\ \text{equiv hang} &= 4.5 - 3.17 = 1.33' \end{aligned}$$

Bridge :-

$$\begin{aligned} \text{length at side} &= 40.00 \\ \frac{2}{3} \times 4 &= 2.67 \\ \text{equiv end.} &= 42.67' \\ \text{Ford o'hang} &= 3.5 - 2.67 = .83' \end{aligned}$$

Forecastle :-

$$\begin{aligned} \text{length forward of passage} &= 24.21' \checkmark \\ \text{length at side of passage} &= 22.96 + 17.14 = 20.05 \\ &\quad - 3.00 \\ &\quad 18.00 \times 17.05' = 15.31 \checkmark \\ &\quad 20.05 \\ \text{Passage } (18.0 - 15.31) \times .995 &= 2.68 \checkmark \\ \text{sidehouses } \frac{25.87 + 22.96}{2} &= 24.42 \\ &\quad - 10.00 \\ &\quad 13.5 \times 14.42 = 7.97 \checkmark \\ &\quad 24.42 \\ \text{Equivalent enclosed length} &= 50.17' \checkmark \end{aligned}$$

EXTERNAL DISPLACEMENT (INCL CRUISER STERN) @ 28'-0" DRAFT 17589 TONS, TONS PER INCH 58.32.
" " " " @ 27'-0" " 16890 " " " 57.90.

FREEBOARD REQUEST FORM ENCLOSED HERewith.

Forecastle Equivalent covered

$$\begin{aligned} &24.21 \\ &18.00 \\ &7.97 \end{aligned}$$

$$\text{Equivalent covered length} = 50.18' \checkmark$$

Sheer forward

std	actual	std	actual
12.33	12.25	3	37.17
50.15	50.25	3	150.45
112.69	111.25	1	112.69
			300.31
			298.75
			$\frac{298.75}{300.31} = .995$

Trade of ship INTERNATIONAL

Names of sister ships BRITISH MARQUIS

Builder's name and yard number SWAN HUNTER & WIGHAM RICHARDSON'S No 1772

Owners BRITISH TANKERS LTD

Fee £

ML-10



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