

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name **EMPIRE GRENADA** Official Number **8231-47** Nationality and Port of Registry **British Glasgow** Gross Tonnage **1946** Date of Build **1946**

Port of Survey **Glasgow**

Date of Survey **March 1946**

Surveyor's Signature **A. Dickson**

Particulars of Classification **100-A-1**
Carrying Petroleum in Bulk Contemplated

Moulded Dimensions: Length **460'-11 1/2"** Breadth **59'-0"** Depth **34'-10"**

Moulded displacement at moulded draught = 85 per cent. of moulded depth **18207** tons

Coefficient of fineness for use with Tables **.791**

Depth for Freeboard (D).	Depth correction.	Round of Beam correction.
Moulded depth ... 34'-10" ... 34.83	(a) Where D is greater than Table depth (D-Table depth) R = $(34.90 - 30.73) 30 = +12.51$	Moulded Breadth (B) 59.0
Stringer plate ... 80"07	(b) Where D is less than Table depth (if allowed) (Table depth-D) R = \checkmark	Standard Round of Beam = $\frac{B \times 12}{50} = 14.16$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$	If restricted by superstructures \checkmark	Ship's Round of Beam = 14.75"
Depth for Freeboard (D) = 34.90		Difference .59
		Restricted to
		Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.59}{4} \times .576 = -.08$

DEDUCTION FOR SUPERSTRUCTURES.

Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed <i>equiv.</i> ... 96.70	96.70	7.5'	\checkmark	96.70
.. overhang ...				
R.Q.D. enclosed ...				
.. overhang ...				
Bridge enclosed <i>equiv.</i> ... 50.83	50.83	7.5'	\checkmark	50.83
.. overhang aft ... 2.92	2.19			2.19
.. overhang forward				
Fore enclosed ... 45.75	45.75	7.5'	\checkmark	45.75
.. overhang ...				
Trunk aft ...				
.. forward ...				
Tonnage opening aft ...				
.. forward				
Total ... 196.20	195.47			195.47

Standard Height of Superstructure **7.5'**

" " R.Q.D. **-**

Deduction for complete superstructure **42.0"**

Percentage covered $\frac{S}{L} = 42.56$

" " $\frac{S_1}{L} = 42.40$

Percentage from Table, Line **A. Tanker 33.40**
(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 = $42 \times .3340 = -14.03$

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	56.10	1		56.10	46.66	46.66	1		46.66
$\frac{1}{4}$ L from A.P. ...	24.96	4		99.84	7.67	7.67	4		30.68
$\frac{2}{8}$ L " ...	6.17	2		12.34	-	-	2		-
Amidships ...	-	4		-	-	-	4		-
$\frac{3}{8}$ L from F.P. ...	12.34	2		24.68	-	-	2		-
$\frac{1}{8}$ L " ...	49.92	4		199.68	30.62	30.62	4		122.48
F.P. ...	112.19	1		112.19	101.68	101.68	1		101.68
Total ...				504.83					301.50

Mean actual sheer aft =
Mean standard sheer aft = } Deficient

Mean actual sheer forward =
Mean standard sheer forward =

Length of enclosed superstructure forward of amidships =
L

" " aft of " = } Tanker

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - \frac{S}{2L}}{.5372} \right) = \frac{203.33}{18} \left(\frac{.75 - .2128}{.5372} \right) = +6.07$

If limited on account of midship superstructure.

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

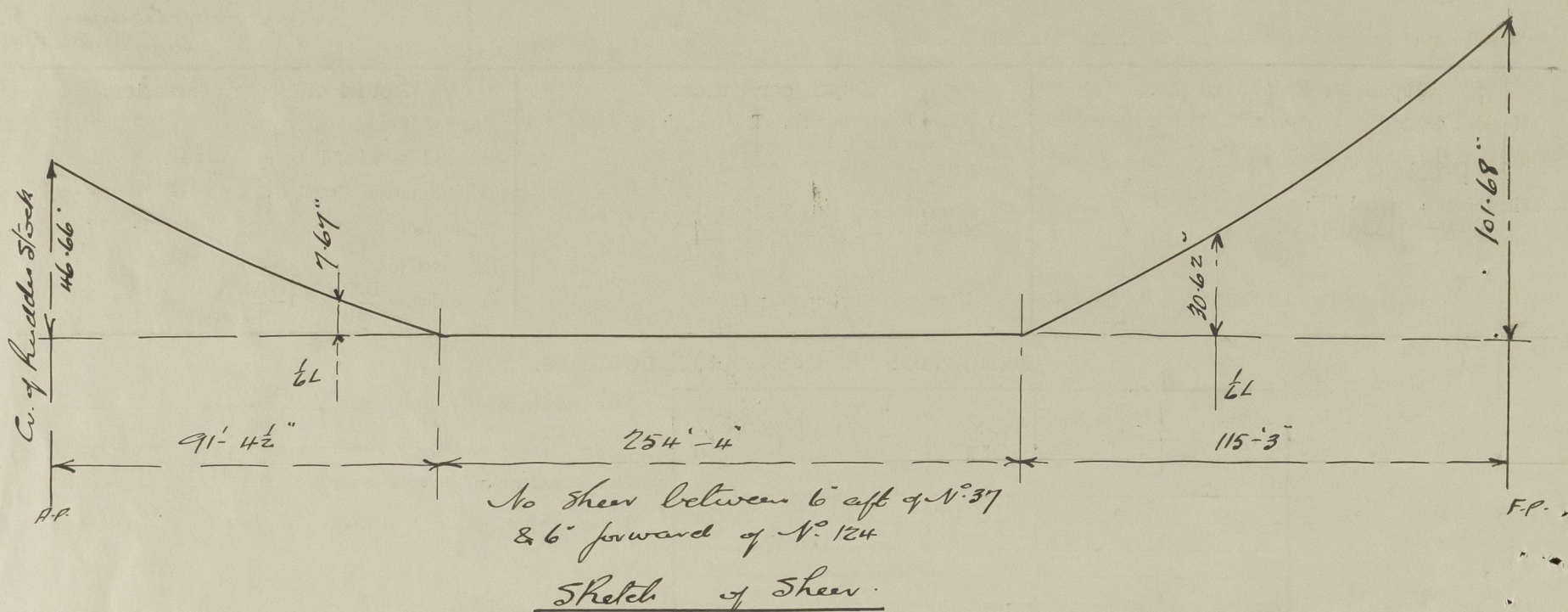
Deduction for Tropical Freeboard.	Deduction for Fresh Water.	TABULAR FREEBOARD
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Corrected for Fresh Deck (if required)
Depth to Freeboard Deck = 34.90	$\Delta = 16833$	Correction for coefficient $\frac{791+68}{1.36} = \frac{1.471}{1.36}$
Summer freeboard = 7.40	Tons per inch immersion at summer load water line	
Moulded draught (d) = 27.50	$T = 56.38$	
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 6.87	Deduction = $\frac{\Delta}{40T}$ inches = 7.46	
Addition for Winter North Atlantic Freeboard (if required) = 6.87 + 4.61 = 11.48	7 1/2"	

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

Tropical Fresh Water Line above Centre of Disc ... 14 1/4"	1/42 Tropical Fresh Water Freeboard ... 6 1/2"
Fresh Water Line " " ... 7 1/2"	7 1/2 Fresh Water " " ... 6 9 1/4"
Tropical Line " " ... 6 3/4"	7 Tropical " " ... 6 10"
Winter Line below " " ... 6 3/4"	7 Winter " " ... 7 11 1/2"
Winter North Atlantic Line " " ... 11 1/2"	11 1/2 Winter North Atlantic " " ... 8 4 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.

Roop:-	93.37	Bridge:-	47.50
$\frac{2}{3} \times 5$	<u>3.33</u>	$\frac{2}{3} \times 5$	<u>3.33</u>
	96.70		50.83



External Displacement at 28'0 Draft 17115 Tons. Tons per Inch 56.55
 " " " 27'0 " 16439 " " " " 56.15

Freeboard Request Form and Copy of Builders letter enclosed.

Plans of General Arrangement forwarded for reference also plans of Midship Section, Steel Decks, Framing Profile and Stemframe and Rudder. Please return plans

Trade of ship International
 Names of sister ships "BRITISH MIGHT" HARLAND & WOLFF N° 1196 G. (Red Rpt returned herewith)
 Builder's name and yard number Harland & Wolff Ltd. N° 1197 G.
 Owners British Tankers Ltd.
 Fee £ 19 : 0 : 0



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