

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name "EMPIRE BERMUDA"	Official Number 180078	Nationality and Port of Registry BRITISH WEST HARTLEPOOL	Gross Tonnage 3538.56	Date of Build 1944	Port of Survey West Hartlepool
Moulded Dimensions: Length 312'-0" Breadth 46'-4" Depth 24'-9" To C.B. of Rudder Stock 312'-7"					Date of Survey November 1944
Moulded displacement at moulded draught = 85 per cent. of moulded depth 6625 tons					Surveyor's Signature H. J. Craig
Coefficient of fineness for use with Tables .761					Particulars of Classification +100A.1. with freeboard

Depth for Freeboard (D).	Depth correction.	Round of Beam correction.
Moulded depth 24'-9"	(a) Where D is greater than Table depth (D - Table depth) R = $(24.80 - 20.84) \times 2.405 = +9.52$ 3.96	Moulded Breadth (B) 46'-4"
Stringer plate .05	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = ✓	Standard Round of Beam = $\frac{B \times 12}{50} =$ 11.12
Sheathing on exposed deck ✓	✓	Ship's Round of Beam = 11
$T \left(\frac{L-S}{L} \right) =$	✓	Difference .12
Depth for Freeboard (D) = 24.80	If restricted by superstructures ✓	Restricted to
		Correction = $\frac{\text{Diff}^*}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.12}{4} \times 2807 = +.01$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height <i>at 6' 6" steel</i>	Height Correction	Effective Length (E)
Poop enclosed To C.B. of Rudder Stock	80.58	80.58	7'-6"	-	80.58
.. overhang ...					
R.Q.D. enclosed	117'-0"	117.00	4'-10"	-	117.00
.. overhang ...					
Bridge enclosed...					
.. overhang aft ...					
.. overhang forward					
F'cle enclosed ...	27.25	27.25	7'-0"	-	27.25
.. overhang ...					
Trunk aft ...					
.. forward ...					
Tonnage opening aft ...					
.. forward					
Total ...	224.83	224.83			224.83

Standard Height of Superstructure **6.626**
 " " R.Q.D. **4.835**
 Deduction for complete superstructure **36.17**
 Percentage covered $\frac{S}{L} =$
 $\frac{S_1}{L} =$ **71.93**
 $\frac{E}{L} =$
 Percentage from Table, Line A. **65.38**
 (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 = **36.17 × 65.38 = -23.65**

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate <i>inches</i>	Effective Ordinate	S	M	Product
A.P. ...	41.26	1		41.26	9.0	9.00	1		9.00
1/4 L from A.P. ...	18.36	4		73.44	.75	.75	4		3.00
1/2 L ..	4.54	2		9.08	✓	✓	2		-
Amidships ...	-	4		-	✓	✓	4		-
3/4 L from F.P. ...	9.08	2		18.16	6.25	6.25	2		12.50
3/4 L ..	36.72	4		146.88	40.00	40.00	4		146.88
F.P. ...	82.52	1		82.52	82.50	82.50	1		82.52
Total ...				371.34					259.56

Mean actual sheer aft = **< .5**
 Mean standard sheer aft
 Mean actual sheer forward = **Grave**
 Mean standard sheer forward
 Length of enclosed superstructure forward of amidships = **✓**
 " " aft of " = **✓**

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - S}{2L} \right) = \frac{111.78}{18} \left(\frac{.75 - 3596}{3904} \right) = +2.42$
 If limited on account of midship superstructure. **✓**
 If limited to maximum allowance of 1 1/2 ins. per 100 ft. **✓**

Deduction for Tropical Freeboard.	Deduction for Fresh Water.	TABULAR FREEBOARD corrected for Fresh Deck (if required)	46.54
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line 20'-10"	Correction for coefficient $\frac{.761 + .68}{1.36} = \frac{1.441}{1.36}$	49.32
Depth to Freeboard Deck = 29.62	$\Delta =$ 6547	Depth Correction ...	9.52
Summer freeboard = 8.92	Tons per inch immersion at summer load water line 20'-10"	Deduction for superstructures ...	- 23.65
Moulded draught (d) = 20.70	$T =$ 29.04	Sheer correction ...	2.42
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 5.18 = 5 1/4	Deduction = $\frac{\Delta}{40 T}$ inches = 5.64 = 5 3/4	Round of Beam correction Super R.Q.01
Addition for Winter North Atlantic Freeboard (if required) = 7 1/4	MID Δ at 20'-8 1/2" = 6509 " T.P.1 " = 28.95	Correction for Thickness of Deck amidships ...	57.84
		Other corrections, scantlings, etc. To a summer moulded draught of 20'-8 1/2"	11.54
			81.33
		Summer Freeboard = 107.00	+57.68

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

Tropical Fresh Water Line above Centre of Disc ...	11"	Tropical Fresh Water Freeboard ...	8'-11"
Fresh Water Line " " ...	5 3/4"	Fresh Water " " ...	8'-0"
Tropical Line " " ...	5 1/4"	Tropical " " ...	8'-5 1/4"
Winter Line below " " ...	5 1/4"	Winter " " ...	8'-5 3/4"
Winter North Atlantic Line " " ...	7 1/4"	Winter North Atlantic " " ...	9'-4 1/4"
			9'-6 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.

"EMPIRE" BERMUDA

Plans of Midship Section, Profile & decks & stem frame & rudder enclosed for reference which please return with the assignment.

omit

omit

Trade of ship *Ocean-going*

Names of sister ships *"Empire Labrador" & previous vessels.*

Builder's name and yard number *William Gray & Co Ltd. 1173.*

Owners *Ministry of War Transport*

Fee *£ 14-0-0.*



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