

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

MOB. 659.

Ship's Name EMPIRE FORT ANNAN EX MASUREN	Official Number 180633	Nationality and Port of Registry LONDON	Gross Tonnage 2383 2185.38	Date of Build 1935	Port of Survey MIDDLESBROUGH
Moulded Dimensions: Length 275'-7 1/8" Breadth 44'-3 1/2" Depth 20'-8"					Date of Survey 9th July 1945 & SUBSEQUENTLY
Moulded displacement at moulded draught = 85 per cent. of moulded depth _____ tons					Surveyor's Signature Thomas Nell
Coefficient of fineness for use with Tables .765 (assumed)					Particulars of Classification _____

DEPTH FOR FREEBOARD (D).	DEPTH CORRECTION.	ROUND OF BEAM CORRECTION.
Moulded depth ... 20.67	(a) Where D is greater than Table depth (D - Table depth) R = (20.71 - 18.37) x 2.120 = + 4.96	Moulded Breadth (B) 44'-3 1/2"
Stringer plate04	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = 2.34	Standard Round of Beam = $\frac{B \times 12}{50} =$ 10.63"
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$	If restricted by superstructures ✓	Ship's Round of Beam = 10 1/2"
Depth for Freeboard (D) = 20.71		Difference .13
		Restricted to
		Correction = $\frac{\text{Diff}^e}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.13}{4} \times 16.92 = +.01$

DEDUCTION FOR SUPERSTRUCTURES.				
Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ... 23'-7 1/2"	23.62	7'-6"	✓ -	23.62
" overhang ... 84'-7 1/4"	84.64	4'-2 1/2"	✓ x 4.19	81.70
R.Q.D. enclosed ... 112'-2 1/2"	101.00	7'-6"	-	101.00
Bridge enclosed ... 19'-8 1/4"	19.69	7'-15"	-	19.69
" overhang aft ... 11'-1 1/2"				
" overhang forward ...				
F'cle enclosed ...				
" overhang ...				
Trunk aft ...				
" forward ...				
Tonnage opening aft ...				
" forward ...				
Total ... 240.17	228.95			226.01

Standard Height of Superstructure **6.256**

" " R.Q.D. **4.341**

Deduction for complete superstructure **33.56**

Percentage covered $\frac{S}{L} =$ **87.14**

" " $\frac{S_1}{L} =$ **83.08**

" " $\frac{E}{L} =$ **82.01**

Percentage from Table, Line A. **77.79**

(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 = **33.56 x .7779 = - 26.10**

ABOVE VIRTUAL U.D.K. LINE.
ACTUAL HT OF POOP 8'-1"

SHEER CORRECTION.							
Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S
A.P. ... 37.56	✓	1	37.56	49"	✓	49	1
1/2 L from A.P. ... 16.715	✓	4	66.86	23	✓	23	4
3/4 L " ... 4.13	✓	2	8.26	5	✓	5	2
Amidships ... -	✓	4	-	-	✓	-	4
3/8 L from F.P. ... 8.26	✓	2	16.52	12"	✓	12	2
1/8 L " ... 33.43	✓	4	133.72	44"	✓	44	4
F.P. ... 75.12	✓	1	75.12	100"	✓	100	1
Total ... 338.04	✓		338.04		✓		

Mean actual sheer aft = **49**

Mean standard sheer aft = **49**

Mean actual sheer forward = **23**

Mean standard sheer forward = **23**

Length of enclosed superstructure forward of amidships = **> 1**

" " aft of " = **> 1**

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - \frac{S}{2L}}{.75 - \frac{.4357}{2L}} \right) = \frac{112.96}{18} \left(\frac{.75 - .4357}{.75 - .4357} \right) = -1.97$

If limited on account of midship superstructure. **No**

ABOVE VIRTUAL U.D.K. LINE.

Deduction for Tropical Freeboard.		Deduction for Fresh Water.		TABULAR FREEBOARD corrected for Flush Deck (if required)	
Addition for Winter and Winter North Atlantic Freeboard.		Displacement in salt water at summer load water line		Correction for coefficient	
Depth to Freeboard Deck = 20.71	✓	$\Delta =$ 5250 tons		Depth Correction ... 4.96	
Summer freeboard = 1.42	✓	Tons per inch immersion at summer load water line		Deduction for superstructures ... 26.10	
Moulded draught (d) = 19.29	✓	T = 10.02		Sheer correction ... 1.97	
Deduction for Tropical freeboard and addition for		Deduction = $\frac{\Delta}{40 T}$ inches		Round of Beam correction01	
Winter freeboard = $\frac{d}{4}$ inches = 4.82 = 4 3/4	✓	= 131 mm		Correction for Thickness of Deck amidships ... -	
Addition for Winter North Atlantic Freeboard (if required) =		= 5 1/4		Other corrections, scantlings, etc. ... -	
				4.97 28.07 - 23.10	
				Summer Freeboard = 17.00	

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

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

Empire Annan.

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.

Poep	23.62
Q. Deck	87.64
Bridge	112.21
	<hr/>
	223.47

$\frac{223.47}{275.59} = .811$
 \therefore allow 90% of bridge

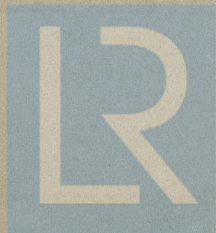
Trade of ship

Names of sister ships

Builder's name and yard number *F. SCHICHAN G.m.b.H. DANZIG*

Owners *MINISTRY OF WAR TRANSPORT MANAGERS* *CROSBY, SON & CO., LTD. EAGLESHIPPE, STOCKTON-ON-TRES.*

Fee £ *PLEASE SEE LETTER*



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