

Basis computation for CSS vessel with Tonnage opening aft.

Index. No. 36469.  
(For London Office only).

## Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name <b>EMPIRE MIST.</b>	Official Number	Nationality and Port of Registry	Gross Tonnage	Date of Build	Port of Survey <b>Sunderland</b>
Moulded Dimensions: Length <b>421'-1 1/2"</b> Breadth <b>56'-2 1/2"</b> Depth <b>29.0'</b>	Date of Survey <b>Whistle building</b> <b>" " computation 7.2.41.</b>				Surveyor's Signature <b>C. A. Miller.</b>
Moulded displacement at moulded draught = 85 per cent. of moulded depth <b>12184.</b> tons	Particulars of Classification <b>+100 A1</b> <b>with freeboard</b> <b>(contemplated)</b>				
Coefficient of fineness for use with Tables <b>.731</b>	Depth for Freeboard (D). Moulded depth ... <b>29.00</b> Stringer plate ... <b>.41"</b> Sheathing on exposed deck $T \left( \frac{L-S}{L} \right) =$ Depth for Freeboard (D) = <b>29.03</b>				
Depth correction. (a) Where D is greater than Table depth $(D - \text{Table depth}) R =$ $(29.03 - 28.08) \times 3 = +1.85"$ (b) Where D is less than Table depth (if allowed) (Table depth - D) R = If restricted by superstructures			Round of Beam correction. Moulded Breadth (B) <b>56.21'</b> Standard Round of Beam = $\frac{B \times 12}{50} =$ <b>13.49</b> Ship's Round of Beam = <b>14.00"</b> Difference <b>.51</b> Restricted to Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L}\right) = \frac{.51}{4} \times .0067 =$ <b>.Nil</b>		

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ...	32.83	32.83	9.07'	✓	32.83
" overhang ...	.50	.25			.25
R.Q.D. enclosed ...					
" overhang ...					
Bridge enclosed...	380.42	380.42	9.07'	✓	380.42
" overhang aft ...	2.62	1.96			1.96
" overhang forward					
F'cle enclosed ...					
" overhang ...					
Trunk aft ...					
" forward ...					
Tonnage opening aft ...	4.75	$0.46 \times \frac{1}{2} = 2.83$		✓	2.83
" " forward					
Total ...	421.12	418.29			418.29

  

Standard Height of Superstructure	<b>7.5'</b>
" " R.Q.D.	<b>42.00"</b>
Deduction for complete superstructure	
Percentage covered $\frac{S}{L} =$	<b>100.00</b>
" " $\frac{S_1}{L} =$	<b>99.33</b>
" " $\frac{E}{L} =$	<b>99.33</b>
Percentage from Table, Line A.	<b>99.18</b>
(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 = $42.0 \times .9918 =$	<b>-41.66"</b>

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	Mean actual sheer aft =	Mean standard sheer aft =
A.P. ...	52.11	1	52.11	59.87	78.71	1	78.71			Excess	
1/4 L from A.P. ...	23.19	4	92.76	26.37	35.03	4	140.12			Excess	
2/4 L " ...	5.73	2	11.46	6.56	8.66	2	17.32				
Amidships ...	-	4	-	-	-	4	-				
2/4 L from F.P. ...	11.46	2	22.92	13.40	15.27	2	30.54				
1/4 L " ...	46.38	4	185.52	53.82	61.78	4	247.12				
F.P. ...	104.22	1	104.22	120.00	138.84	1	138.84				
Total ...			468.99	+18.84			652.65				

  

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( \frac{.75 - S}{2L} \right) = \frac{183.66}{18} \times .25 = -2.55"$

If limited on account of midship superstructure. ✓

If limited to maximum allowance of 1 1/2 ins. per 100 ft. ✓

## Deduction for Tropical Freeboard.

## Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = **29.03**

Summer freeboard = **3.31**

Moulded draught (d) = **25.72**

Deduction for Tropical freeboard and addition for Winter freeboard =  $\frac{d}{4}$  inches =

Addition for Winter North Atlantic Freeboard (if required) =

## Deduction for Fresh Water.

Displacement in salt water at summer load water line

Δ =

Tons per inch immersion at summer load water line

T =

Deduction =  $\frac{\Delta}{40 T}$  inches

## TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient  $\frac{731 + .68}{1.36} = \frac{1.411}{1.36}$

	+	-
Depth Correction ...	2.85	
Deduction for superstructures ...		41.66
Sheer correction ...		2.55
Round of Beam correction ...		
Correction for Thickness of Deck amidships ...		
Other corrections, scantlings, etc. ...		
	2.85	44.21

Summer Freeboard = **39.72**

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

Tropical Fresh Water Line above Centre of Disc ...	
Fresh Water Line " " ...	
Tropical Line " " ...	
Winter Line below " " ...	
Winter North Atlantic Line " " ...	

Tropical Fresh Water Freeboard ...	
Fresh Water " " ...	
Tropical " " ...	
Winter " " ...	
Winter North Atlantic " " ...	