

EMPIRE AIRMAN 36724

## Lloyd's Register of Shipping.

Index. No. 37088  
(For London Office only).

## SURVEYS FOR FREEBOARD.

N<sup>o</sup> 33549(COMPUTATION FOR ~~STEAMER, SAILING SHIP, TANKER.~~)

*MUSHTARI*

Ship's Name <b>EMPIRE COLLINS</b>	Official Number <b>169106</b> <i>PAKISTAN</i>	Nationality and Port of Registry <b>BRITISH SUNDERLAND</b>	Gross Tonnage <b>9517</b> <del>9195.56</del>	Date of Build <b>1942</b>	Port of Survey <b>Sunderland</b>
Moulded Dimensions: Length <b>476.96</b> Breadth <b>68.00</b> Depth <b>36.00</b>					Date of Survey <b>During Construction</b>
Moulded displacement at moulded draught = 85 per cent. of moulded depth <b>21467</b> tons					Surveyor's Signature <i>J. S. Hulls</i>
Coefficient of fineness for use with Tables <b>.76 .757</b>					Particulars of Classification <b>+ 100 A.1.</b> <b>CARRYING PETROLEUM IN BULK</b>

<b>Depth for Freeboard (D).</b> Moulded depth ... <b>36.00</b> Stringer plate ... <b>.82</b> <b>.07</b> Sheathing on exposed deck $T \left( \frac{L-S}{L} \right) =$ <b>.76</b> Depth for Freeboard (D) = <b>36.07</b>	<b>Depth correction.</b> (a) Where D is greater than Table depth $(D - \text{Table depth}) R =$ $(36.07 - 31.80) 3 = + 12.81''$ $4.27$ (b) Where D is less than Table depth (if allowed) $(\text{Table depth} - D) R =$ <b>.757</b> If restricted by superstructures <input checked="" type="checkbox"/>	<b>Round of Beam correction.</b> Moulded Breadth (B) <b>68.00</b> Standard Round of Beam = $\frac{B \times 12}{50} =$ <b>16.32</b> Ship's Round of Beam = <b>17</b> Difference <b>Excess .68</b> Restricted to <input checked="" type="checkbox"/> Correction = $\frac{\text{Diff}}{4} \times \left( 1 - \frac{S_1}{L} \right) =$ $\frac{.68}{4} \times .6901 = - .12''$
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## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)	
Poop enclosed ...	<b>113.31</b>	<b>113.31</b>	<b>7.5</b>	<input checked="" type="checkbox"/>	<b>113.31</b>	Standard Height of Superstructure <b>7.5'</b>
„ overhang ...						„ „ R.Q.D. <input checked="" type="checkbox"/>
R.Q.D. enclosed ...						Deduction for complete superstructure <b>42.00''</b>
„ overhang ...						Percentage covered $\frac{S}{L} =$
Bridge enclosed ...						„ $\frac{S_1}{L} =$ <b>30.99</b>
„ overhang aft ...						„ $\frac{E}{L} =$
„ overhang forward ...						Percentage from Table, Line A. <b>TANKER 21.99</b>
Fore enclosed ...	<b>34.50</b>	<b>34.50</b>	<b>7.5</b>	<input checked="" type="checkbox"/>	<b>34.50</b>	(corrected for absence of forecastle (if required))
„ overhang ...						Percentage from Table, Line B.
Trunk aft ...						(corrected for absence of forecastle (if required)) <input checked="" type="checkbox"/>
„ forward ...						Interpolation for bridge less than .2L (if required) <input checked="" type="checkbox"/>
Tonnage opening aft ...						Deduction = <b>42.00 x .2199 = - 9.24''</b>
„ „ forward ...						
Total ...	<b>147.81</b>	<b>147.81</b>			<b>147.81</b>	

## SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product	
A.P. ...	<b>57.70</b>	1	<b>57.70</b>	<b>45.3/4</b>	<b>45.75</b>	1	<b>45.75</b>	Mean actual sheer aft =
1/2 L from A.P. ...	<b>25.67</b>	4	<b>102.68</b>	<b>20.2</b>	<b>20.50</b>	4	<b>82.00</b>	Mean standard sheer aft =
3/4 L „ ...	<b>6.345</b>	2	<b>12.69</b>	<b>5.3/8</b>	<b>5.375</b>	2	<b>10.75</b>	DEFICIENT
Amidships ...	-	4	-	0	-	4	-	Mean actual sheer forward =
3/4 L from F.P. ...	<b>12.69</b>	2	<b>25.38</b>	<b>6.3/4</b>	<b>6.75</b>	2	<b>13.50</b>	Mean standard sheer forward =
1/2 L „ ...	<b>51.35</b>	4	<b>205.40</b>	<b>26.3/4</b>	<b>26.75</b>	4	<b>107.00</b>	Length of enclosed superstructure forward of amidships =
F.P. ...	<b>115.39</b>	1	<b>115.39</b>	<b>62.</b>	<b>62.00</b>	1	<b>62.00</b>	„ „ aft of „ =
Total ...			<b>519.24</b>				<b>321.00</b>	NIL

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{198.24}{18} \left( .75 - \frac{.1550}{.5950} \right) = + 6.55''$

If limited on account of midship superstructure. ☒ If limited to maximum allowance of 1 1/2 ins. per 100 ft. ☒

<b>Deduction for Tropical Freeboard.</b> <b>Addition for Winter and Winter North Atlantic Freeboard.</b> Depth to Freeboard Deck = <b>36.07</b> Summer freeboard = <b>8.04</b> Moulded draught (d) = <b>28.03</b> Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <b>7.01 = 7''</b> Addition for Winter North Atlantic Freeboard (if required) = <b>7.01 + 4.77 = 11.78 = 11 3/4''</b>	<b>Deduction for Fresh Water.</b> Displacement in salt water at summer load water line $\Delta =$ <b>19546</b> Tons per inch immersion at summer load water line $T =$ <b>65.2</b> Deduction = $\frac{\Delta}{40 T}$ inches = <b>7.49</b> <b>= 7 1/2''</b>	<b>TABULAR FREEBOARD corrected for Flush Deck (if required)</b> Correction for coefficient $\frac{.757 + .68}{1.36} = \frac{1.437}{1.36}$ <table border="1"> <tr> <th></th> <th>+</th> <th>-</th> </tr> <tr> <td>Depth Correction ...</td> <td><b>12.81</b></td> <td>-</td> </tr> <tr> <td>Deduction for superstructures ...</td> <td>-</td> <td><b>9.24</b></td> </tr> <tr> <td>Sheer correction ...</td> <td><b>6.55</b></td> <td>-</td> </tr> <tr> <td>Round of Beam correction ...</td> <td>-</td> <td><b>.12</b></td> </tr> <tr> <td>Correction for Thickness of Deck amidships ...</td> <td>-</td> <td>-</td> </tr> <tr> <td>Other corrections, scantlings, etc. ...</td> <td>-</td> <td>-</td> </tr> <tr> <td></td> <td><b>19.36</b></td> <td><b>9.36</b></td> </tr> </table> <b>Summer Freeboard = 96.58</b>		+	-	Depth Correction ...	<b>12.81</b>	-	Deduction for superstructures ...	-	<b>9.24</b>	Sheer correction ...	<b>6.55</b>	-	Round of Beam correction ...	-	<b>.12</b>	Correction for Thickness of Deck amidships ...	-	-	Other corrections, scantlings, etc. ...	-	-		<b>19.36</b>	<b>9.36</b>
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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 ...	<b>14 1/2''</b>
Fresh Water Line „ „ ...	<b>7 1/2''</b>
Tropical Line „ „ ...	<b>7''</b>
Winter Line below „ „ ...	<b>7''</b>
Winter North Atlantic Line „ „ ...	<b>11 3/4''</b>

Tropical Fresh Water Freeboard ...	<b>8 1/2''</b>
Fresh Water „ „ ...	<b>7 1/2''</b>
Tropical „ „ ...	<b>7 1/2''</b>
Winter „ „ ...	<b>8 1/2''</b>
Winter North Atlantic „ „ ...	<b>9 1/4''</b>

8 DEC 1942



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.

Actual displacement at 28'3" draft = 19547 tons.  
Tons per Inch = 65.2.

Proof Equivalent Bld

20.79 x 6.12	=	127.23	sq. ft.
24.08 x 6.12	=	147.37	" "
		274.60	" "
÷ 65.67	=	4.182	
		109.125	
		113.31	

*Smith*

Trade of ship

Names of sister ships *SS. Empire Coleridge etc. SLO RPT. N° 33375*

Builder's name and yard number *Messrs. Sir James Laing & Son Ltd YARD N° 745.*

Owners *Ministry of War Transport.*

Fee £ *20* : :  
*Will be charged on completion*

*25*



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