

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

(COMPUTATION FOR ~~STEAMER, SAILING SHIP~~, TANKER.)

Ship's Name <b>EMPIRE JEWEL</b>	Official Number <b>180365</b>	Nationality and Port of Registry <b>BRITISH GRANGEMOUTH.</b>	Gross Tonnage <b>2370</b>	Date of Build <b>1945.</b>	Port of Survey <b>GRANGEMOUTH</b>
Moulded Dimensions: Length <b>287.54</b> Breadth <b>44.0</b> Depth <b>19.5</b> [CR. OF RUDDER STOCK TO FORE PERP.]				Date of Survey <b>WHILST BUILDING.</b>	
Moulded displacement at moulded draught = 85 per cent. of moulded depth <b>4350</b> tons				Surveyor's Signature <b>James M. Winders</b>	
Coefficient of fineness for use with Tables <b>.726.</b>				Particulars of Classification <b>+ 100A.1. CARRYING PETROLEUM IN BULK. [CONTEMPLATED].</b>	

Depth for Freeboard (D).		Depth correction.		Round of Beam correction.	
Moulded depth ...	<b>19.5</b>	(a) Where D is greater than Table depth (D - Table depth) R = $(19.54 - 19.17) \times 2.2/2 = .82$		Moulded Breadth (B)	<b>44.0</b>
Stringer plate <b>0.46"</b> ...	<b>.04</b>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = <b>✓</b>		Standard Round of Beam = $\frac{B \times 12}{50} =$	<b>10.56</b>
Sheathing on exposed deck <b>NONE.</b>	<b>✓</b>			Ship's Round of Beam <b>6"</b> =	<b>6.00</b>
T $\left(\frac{L-S}{L}\right) =$				Difference	<b>4.56</b>
Depth for Freeboard (D) =	<b>19.54</b>	If restricted by superstructures	<b>✓</b>	Restricted to	<b>✓</b>
				Correction = $\frac{\text{Diff}^e}{4} \times \left(1 - \frac{S_1}{L}\right) =$	$\frac{4.56}{4} \times .2942 = +.33$

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed <b>EQUIN.</b> <b>AT SIDE</b> <b>75.21</b>	<b>75.21</b>	<b>75.21</b>	<b>7.5</b>	<b>✓</b>	<b>75.21</b>
" overhang <b>AT CENTRE</b> <b>75.38</b>	<b>75.38</b>				
R.Q.D. enclosed					
" overhang					
Bridge enclosed					
" overhang aft					
" overhang forward					
F'cle enclosed	<b>37.0</b>	<b>37.00</b>	<b>6.5</b>	<b>✓</b>	<b>37.00</b>
" overhang					
Trunk aft <b>EQUIN.</b> <b>AT SIDE</b> <b>178.0</b>	<b>178.0</b>		<b>6.5</b>		
" forward <b>AT CENTRE</b> <b>175.17</b>	<b>175.17</b>	<b>90.74</b>	<b>(SEE SKETCH)</b>	<b>✓</b>	<b>90.74</b>
Tonnage opening aft					
" forward					
Total	<b>112.21</b>	<b>202.95</b>			<b>202.95</b>

Standard Height of Superstructure	<b>6.375</b>
" " R.Q.D.	<b>✓</b>
Deduction for complete superstructure	<b>34.50</b>
Percentage covered $\frac{S}{L} =$	<b>39.02</b>
" " $\frac{S_1}{L} =$	<b>70.58</b>
Percentage from Table, Line <b>TANKER</b> <b>63.71</b> (corrected for absence of forecastle (if required))	
Percentage from Table, Line <b>B.</b> <b>✓</b> (corrected for absence of forecastle (if required))	
Interpolation for bridge less than 2L (if required) <b>✓</b>	
Deduction = $34.50 \times .6371 =$	<b>- 21.98</b>

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	<b>38.75</b>	<b>1</b>		<b>38.75</b>	<b>39"</b>	<b>39.00</b>	<b>1</b>		<b>39.00</b>
$\frac{1}{2}$ L from A.P. ...	<b>17.245</b>	<b>4</b>		<b>68.98</b>	<b>14"</b>	<b>14.00</b>	<b>4</b>		<b>56.00</b>
$\frac{2}{3}$ L " ...	<b>4.265</b>	<b>2</b>		<b>8.53</b>	<b>0</b>	<b>-</b>	<b>2</b>		<b>-</b>
Amidships ...	<b>-</b>	<b>4</b>		<b>-</b>	<b>0</b>	<b>-</b>	<b>4</b>		<b>-</b>
$\frac{2}{3}$ L from F.P. ...	<b>8.53</b>	<b>2</b>		<b>17.06</b>	<b>4<math>\frac{3}{8}</math>"</b>	<b>4.19</b>	<b>2</b>		<b>8.38</b>
$\frac{1}{2}$ L " ...	<b>34.49</b>	<b>4</b>		<b>137.96</b>	<b>40<math>\frac{3}{8}</math>"</b>	<b>40.87</b>	<b>4</b>		<b>163.48</b>
F.P. ...	<b>77.50</b>	<b>1</b>		<b>77.50</b>	<b>81<math>\frac{5}{8}</math>"</b>	<b>81.31</b>	<b>1</b>		<b>81.31</b>
Total				<b>348.78</b>					<b>348.17</b>

Mean actual sheer aft =	<b>.784</b>
Mean standard sheer aft	
Mean actual sheer forward =	<b>Excess.</b>
Mean standard sheer forward	
Length of enclosed superstructure forward of amidships =	
" " aft of " =	<b>Tanker.</b>
<b>SHEER AFT.</b>	
<b>38.75</b> 1 <b>38.75</b> 39.00 1 <b>39.00</b>	
<b>17.245</b> 3 <b>51.73</b> 14.00 3 <b>42.00</b>	
<b>4.265</b> 3 <b>12.79</b> - 3 <b>-</b>	
<b>103.27</b>	<b>81.00</b>
Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{75-S}{21}\right) =$	$\frac{.61}{18} (.75 - .1951) = +.02$
If limited on account of midship superstructure.	<b>✓</b>
	If limited to maximum allowance of 1 $\frac{1}{2}$ ins. per 100 ft. <b>✓</b>

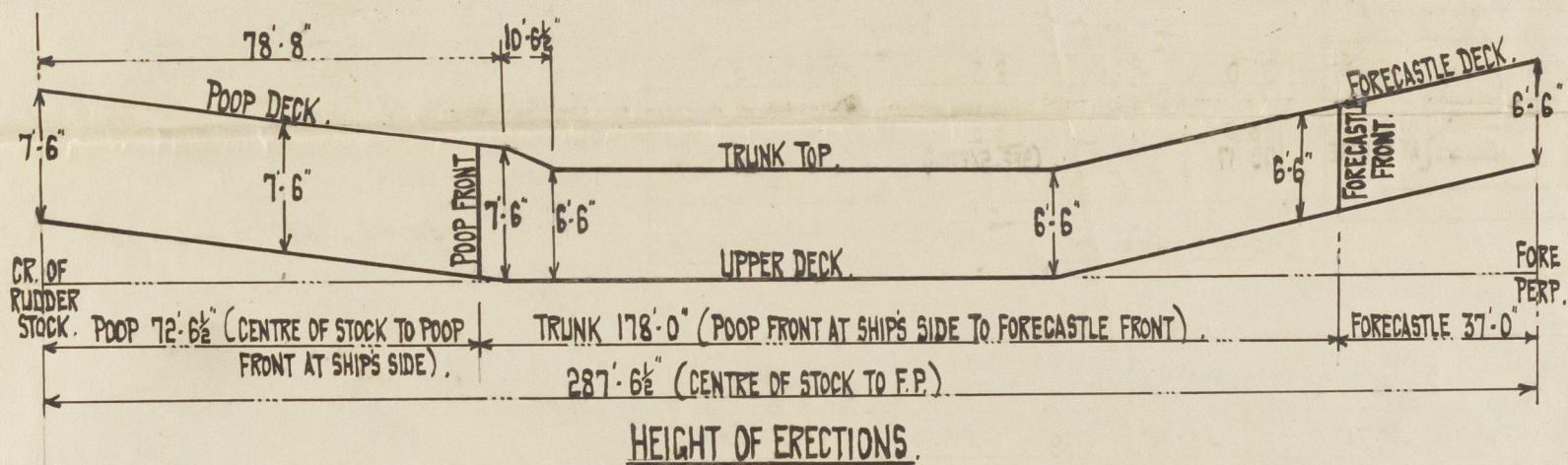
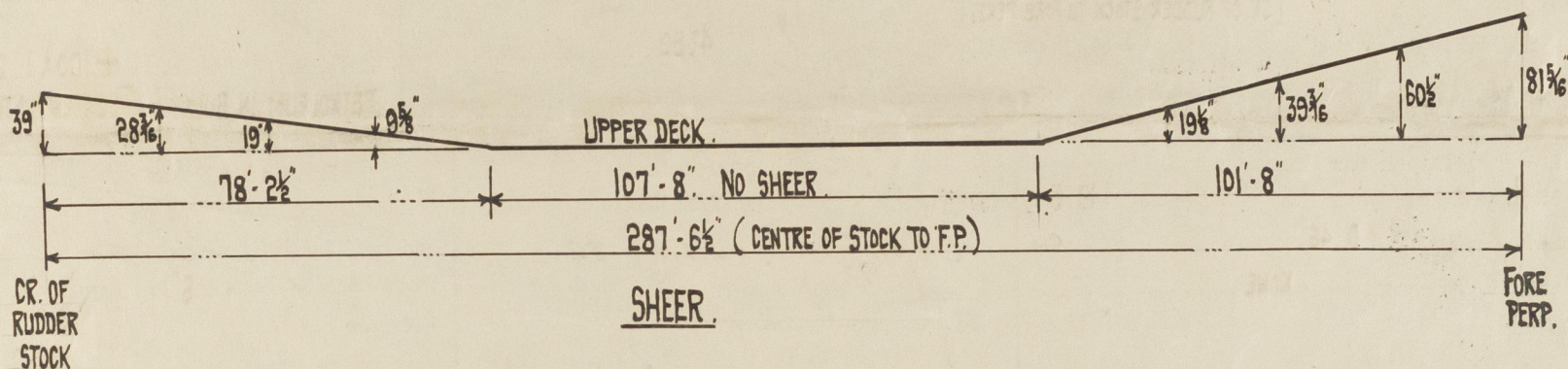
Deduction for Tropical Freeboard.	Deduction for Fresh Water.	TABULAR FREEBOARD corrected for Flush Deck (if required)	<b>38.60</b>
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient $\frac{.726 + .68}{1.36} = \frac{1.406}{1.76}$	<b>39.91</b>
Depth to Freeboard Deck = <b>19.54</b>	$\Delta =$ <b>48.10</b>	Depth Correction ...	<b>.82</b>
Summer freeboard = <b>1.58</b>	Tons per inch immersion at summer load water line	Deduction for superstructures ...	<b>- 21.98</b>
Moulded draught (d) = <b>17.96</b>	T = <b>25.08</b>	Sheer correction ...	<b>.02</b>
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = $4.49 = 4\frac{1}{2}"$	Deduction = $\frac{\Delta}{40}$ inches = $4.79 = 4\frac{3}{4}"$	Round of Beam correction ...	<b>.83</b>
Addition for Winter North Atlantic Freeboard (if required) = $4.49 + 2.88 = 7.37 = 7\frac{1}{4}"$	DRAFT. <b>14'-0"</b> EXT. DISP. (TONS SW.) <b>3623</b> T.P.I. <b>24.05</b>	Correction for Thickness of Deck amidships ...	<b>-</b>
	<b>16'-0"</b> <b>4207</b> <b>24.47</b>	Other corrections, scantlings, etc. ...	<b>-</b>
	<b>18'-0"</b> <b>4804</b> <b>25.08</b>		<b>1.17 21.98 - 20.81</b>
		Summer Freeboard =	<b>19.10</b>

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

Tropical Fresh Water Line above Centre of Disc ...	<b>9<math>\frac{1}{4}"</math></b>
Fresh Water Line " " ...	<b>4<math>\frac{3}{4}"</math></b>
Tropical Line " " ...	<b>4<math>\frac{1}{2}"</math></b>
Winter Line below " " ...	<b>4<math>\frac{1}{2}"</math></b>
Winter North Atlantic Line " " ...	<b>7<math>\frac{1}{4}"</math></b>

Tropical Fresh Water Freeboard ...	<b>0' 9<math>\frac{3}{4}"</math></b>
Fresh Water " " ...	<b>1' 2<math>\frac{1}{4}"</math></b>
Tropical " " ...	<b>1' 2<math>\frac{1}{2}"</math></b>
Winter " " ...	<b>1' 1<math>\frac{1}{4}"</math></b>
Winter North Atlantic " " ...	<b>2' 2<math>\frac{1}{4}"</math></b>

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.



Poop  $4 \times \frac{2}{3} = 2.67$   
72.54  
75.21

Trunk 4.00  
- 2.83  

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1.17  
175.17  

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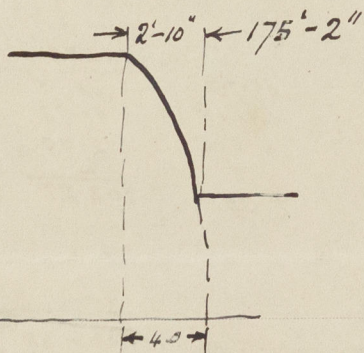
174.00

$$\frac{1}{2} \times 1.17 = \frac{.39}{174.39}$$

Taper  $\frac{32.67}{141.72}$

$$32.67 \times \frac{23.33 + 18.67}{2 \times 44} = 15.59$$

$$141.72 \times \frac{23.33}{44} = \frac{75.15}{90.74}$$



Trade of ship.....**INTERNATIONAL.**

Names of sister ships "EMPIRE PYM" AND "EMPIRE JUMNA". (See Glasgow Reports N° 67977 and 69122)

Builder's name and yard number MESSRS. THE GRANGEMOUTH DOCKYARD CO. LD. N° 462

Owners: THE MINISTRY OF WAR TRANSPORT

EST. Fee £ 12.0.0.

Freeboard Request Form 9 attached.

Plans of Midship Section and Profile and Decks enclosed for reference.

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Lloyd's Register  
Foundation