

14 MAY 1942

Rpt. C.11 (Comp.).

Norsol ex Empire
Diamond 36640Index No. 36825
(For London Office only.)

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

F. 33.

Ship's Name <i>Empire Chapman</i>	Official Number <i>168512</i>	Nationality and Port of Registry <i>British Belfast</i>	Gross Tonnage <i>8194</i>	Date of Build <i>1942</i>	Port of Survey <i>Belfast</i>
Moulded Dimensions: Length <i>460</i> ✓ Breadth <i>59</i> ✓ Depth <i>34</i> ✓					Date of Survey <i>during construction</i>
Moulded displacement at moulded draught = 85 per cent. of moulded depth <i>17733</i> ✓ tons					Surveyor's Signature <i>Wm. Balfour</i>
Coefficient of fineness for use with Tables <i>791</i>					Particulars of Classification <i>400A1 Carrying Petroleum in bulk</i>

DEPTH FOR FREEBOARD (D). Moulded depth ... <i>34.0</i> Stringer plate ... <i>80"</i> ✓ ... <i>07</i> Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ <i>none</i> ✓ Depth for Freeboard (D) = <i>34.07</i>	DEPTH CORRECTION. (a) Where D is greater than Table depth $(D - \text{Table depth}) R =$ $(34.07 - 30.67) \times 3 = +10.20"$ (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) <i>59</i> Standard Round of Beam = $\frac{B \times 12}{50} = 14.16"$ Ship's Round of Beam = <i>14.74"</i> ✓ Difference = <i>59"</i> ✓ Restricted to Correction = $\frac{\text{Diff}^{\circ}}{4} \times (1 - \frac{S_1}{L}) = \frac{59}{4} \times .5830 = -0.9"$
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DEDUCTION FOR SUPERSTRUCTURES.					
	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed <i>Equi</i> ...	<i>95.00</i>	<i>95.00</i>	<i>7.5'</i>	<i>7'-6"</i>	<i>95.00</i>
" overhang ...					
R.Q.D. enclosed ...					
" overhang ...					
Bridge enclosed ...	<i>46.86</i>	<i>46.86</i>	<i>7.5'</i>	<i>7'-6"</i>	<i>46.86</i>
" overhang aft ...	<i>2.50</i>	<i>1.88</i>			<i>1.88</i>
" overhang forward ...					
Fore enclosed ...	<i>48.04</i>	<i>48.04</i>	<i>7.5'</i>	<i>7'-6"</i>	<i>48.04</i>
" overhang ...					
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" " forward ...					
Total ...	<i>192.40</i>	<i>191.78</i>			<i>191.78</i>

Standard Height of Superstructure	<i>7.5'</i>
" " R.Q.D.	✓
Deduction for complete superstructure	<i>42.00"</i>
Percentage covered $\frac{S}{L} =$	<i>41.83</i>
" " $\frac{S_1}{L} =$	<i>41.70</i>
" " $\frac{E}{L} =$	<i>41.70</i>
Percentage from Table, Line A <i>Tanker</i>	<i>32.70</i>
(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 = <i>42.00</i> × <i>32.70</i> =	<i>-13.73"</i>

SHEER CORRECTION.							
Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S
A.P. ...	<i>56.00</i>	1		<i>56.00</i>	<i>56.4</i> ✓	<i>56.40</i>	1
$\frac{1}{2}$ L from A.P. ...	<i>24.92</i>	4		<i>99.68</i>	<i>25.0</i> ✓	<i>25.00</i>	4
$\frac{1}{2}$ L " ...	<i>6.16</i>	2		<i>12.32</i>	<i>6.2</i> ✓	<i>6.20</i>	2
Amidships ...	-	4		-	-	-	4
$\frac{1}{2}$ L from F.P. ...	<i>12.32</i>	2		<i>24.64</i>	<i>12.4</i> ✓	<i>12.40</i>	2
$\frac{1}{2}$ L " ...	<i>49.84</i>	4		<i>199.36</i>	<i>50.0</i> ✓	<i>50.00</i>	4
F.P. ...	<i>112.00</i>	1		<i>112.00</i>	<i>112.1</i> ✓	<i>112.10</i>	1
Total ...				<i>504.00</i>		<i>505.70</i>	

Mean actual sheer aft =
Mean standard sheer aft =

Mean actual sheer forward =
Mean standard sheer forward =

Length of enclosed superstructure forward of amidships =
" " aft of " =

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{1.7}{18} (.75 - \frac{2092}{5408}) = -0.05"$
 If limited on account of midship superstructure.

If limited to maximum allowance of $1\frac{1}{2}$ ins. per 100 ft. ✓

Deduction for Tropical Freeboard. Addition for Winter and Winter North Atlantic Freeboard. Depth to Freeboard Deck = <i>34.07</i> Ft. Summer freeboard = <i>6.71</i> Moulded draught (d) = <i>27.36</i> Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <i>6.84</i> = <i>6\frac{3}{4}"</i> Addition for Winter North Atlantic Freeboard (if required) = <i>6.84</i> + <i>4.60</i> = <i>11.44</i> = <i>11\frac{1}{2}"</i>	Deduction for Fresh Water. Displacement in salt water at summer load water line $\Delta = 16791$ Tons per inch immersion at summer load water line $T = 56.41$ Deduction = $\frac{\Delta}{40T}$ inches = $\frac{16791}{40 \times 56.41} = 7\frac{1}{2}"$ <i>84 8210 T.P. 1</i> <i>98 17115 58.6</i> <i>97 16439 58.2</i>	TABULAR FREEBOARD corrected for Flush Deck (if required) Correction for coefficient $\frac{791 + .68}{1.36} = 1.491/1.36$ <table border="1"> <tr> <th></th> <th>+</th> <th>-</th> </tr> <tr> <td>Depth Correction</td> <td><i>10.20</i></td> <td>-</td> </tr> <tr> <td>Deduction for superstructures</td> <td>-</td> <td><i>13.73</i></td> </tr> <tr> <td>Sheer correction</td> <td>-</td> <td><i>.05</i></td> </tr> <tr> <td>Round of Beam correction</td> <td>-</td> <td><i>.09</i></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><i>10.20</i></td> <td><i>13.87</i></td> </tr> </table> Summer Freeboard = <i>80.38</i>		+	-	Depth Correction	<i>10.20</i>	-	Deduction for superstructures	-	<i>13.73</i>	Sheer correction	-	<i>.05</i>	Round of Beam correction	-	<i>.09</i>	Correction for Thickness of Deck amidships	-	-	Other corrections, scantlings, etc.	-	-		<i>10.20</i>	<i>13.87</i>
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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	... <i>14\frac{1}{4}"</i>
Fresh Water Line	... <i>7\frac{1}{2}"</i>
Tropical Line	... <i>6\frac{3}{4}"</i>
Winter Line below	... <i>6\frac{3}{4}"</i>
Winter North Atlantic Line	... <i>11\frac{1}{2}"</i>

Tropical Fresh Water Freeboard	<i>5\frac{1}{2}"</i>
Fresh Water	<i>6\frac{1}{2}"</i>
Tropical	<i>6\frac{1}{2}"</i>
Winter	<i>7\frac{1}{2}"</i>
Winter North Atlantic	<i>7\frac{1}{2}"</i>

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.

Peak equivalent length

$$\begin{array}{r} 92'-7 \\ 2'-5 \\ \hline 95'-0 \end{array} + \frac{2}{3} \times 3-7\frac{1}{2}$$

Bridge equivalent length

$$\begin{array}{r} 43.83 \\ 3.03 \\ \hline 46.86 \end{array} + \frac{2}{3} \times 4'-6\frac{1}{2}"$$

[Handwritten signature]

Trade of ship Ocean going Tanker

Names of sister ships Empire Diamond. Derwentdale

Builder's name and yard number Harland & Wolff No 1082

Owners Administration - Ministry of War Transport. (Sir R. Repner & Co Ltd Managers)

Fee £ 4



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Foundation