

## TIMBER FREEBOARD.

C.11 (Comp.).

## Lloyd's Register of Shipping.

Index No. **25261.**  
(For London Office only).

## SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name <b>ELIZABETE</b>	Official Number	Nationality and Port of Registry <b>British Cardiff</b>	Gross Tonnage	Date of Build <b>1917-7mo.</b>	Port of Survey <b>Cardiff.</b>
Moulded Dimensions: Length <b>251.0'</b> Breadth <b>43.5'</b> Depth <b>20'-2½"</b>					Date of Survey <b>30<sup>th</sup> and 31<sup>st</sup> Dec 1940</b>
Moulded displacement at moulded draught = 85 per cent. of moulded depth tons					Surveyor's Signature <b>A.C. Hunter</b>
Coefficient of fineness for use with Tables <b>.815 estimated</b>					Particulars of Classification <b>+ 100A1.</b>

Depth for Freeboard (D).	Depth correction.	Round of Beam correction.
Moulded depth ... <b>20.21</b>	(a) Where D is greater than Table depth (D - Table depth) R = <b>(20.25 - 16.73) x 1.931 = +6.80"</b>	Moulded Breadth (B) <b>43.5'</b>
Strainer plate ... <b>.04</b>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = <b>3.52</b>	Standard Round of Beam = $\frac{B \times 12}{50}$ = <b>10.44"</b>
Heating on exposed deck $T \left( \frac{L-S}{L} \right) =$	If restricted by superstructures <b>✓</b>	Ship's Round of Beam = <b>12.00"</b>
Depth for Freeboard (D) = <b>20.25</b>		Difference <b>Excess</b> <b>1.56"</b>
		Restricted to
		Correction = $\frac{\text{Diff}^*}{4} \times \left( 1 - \frac{S_1}{L} \right)$ = <b><math>\frac{1.56}{4} \times .5396 = .21</math></b>

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ...	<b>25.0</b>	<b>25.0</b>	<b>7.0</b>	<b>✓</b>	<b>25.0</b>
" overhang ...	<b>2.0</b>	<b>1.0</b>			<b>1.0</b>
R.Q.D. enclosed ...					
" overhang ...					
Bridge enclosed ...	<b>64.0</b>	<b>64.0</b>	<b>7.0</b>	<b>✓</b>	<b>64.0</b>
" overhang aft ...					
" overhang forward					
Forecastle enclosed ...	<b>20.0</b>	<b>25.1</b>	<b>7.0</b>	<b>✓</b>	<b>25.1</b>
" overhang ...	<b>6.0</b>	<b>4.5</b>			<b>4.5</b>
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" forward					
Total ...	<b>117.0</b>	<b>115.55</b>			<b>115.55</b>

Standard Height of Superstructure **6.01'**

" " R.Q.D. **✓**

Deduction for complete superstructure **31.10"**

Percentage covered  $\frac{S}{L} =$  **46.61**

" "  $\frac{S_1}{L} =$  **46.04**

" "  $\frac{E}{L} =$  **46.04**

Percentage from Table, Line A. Timber **66.77**

(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 = **31.10 x .6677 = -20.76**

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
P. ...	<b>35.10</b>	<b>1</b>	<b>35.10</b>	<b>41.25</b>	<b>41.25</b>	<b>1</b>	<b>41.25</b>		<b>41.25</b>
from A.P. ...	<b>15.62</b>	<b>4</b>	<b>62.48</b>	<b>12.00</b>	<b>12.00</b>	<b>4</b>	<b>48.00</b>		<b>48.00</b>
" ...	<b>3.86</b>	<b>2</b>	<b>7.72</b>	<b>-1.00</b>	<b>-1.00</b>	<b>2</b>	<b>-2.00</b>		<b>-2.00</b>
amidships ...	<b>-</b>	<b>4</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>4</b>	<b>-</b>		<b>-</b>
from F.P. ...	<b>7.72</b>	<b>2</b>	<b>15.44</b>	<b>13.50</b>	<b>13.50</b>	<b>2</b>	<b>27.00</b>		<b>27.00</b>
" ...	<b>31.24</b>	<b>4</b>	<b>124.96</b>	<b>37.00</b>	<b>37.00</b>	<b>4</b>	<b>148.00</b>		<b>148.00</b>
" ...	<b>70.10</b>	<b>1</b>	<b>70.10</b>	<b>72.50</b>	<b>72.50</b>	<b>1</b>	<b>72.50</b>		<b>72.50</b>
Total ...			<b>315.901</b>				<b>334.75</b>		

Mean actual sheer aft = **89%**

Mean standard sheer aft

Mean actual sheer forward = **Excess**

Mean standard sheer forward

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

" aft of " = **> .1L**

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( \frac{.75 - S}{2L} \right) =$   **$\frac{18.85}{18} \left( \frac{.75 - .2330}{2} \right) = -.54$**

If limited on account of midship superstructure. **✓**

If limited to maximum allowance of 1½ ins. per 100 ft. **✓**

Deduction for Tropical Freeboard.	Deduction for Fresh Water.	TABULAR FREEBOARD corrected for Flush Deck (if required)
Condition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient
Depth to Freeboard Deck = <b>20.25</b>	$\Delta =$	<b><math>\frac{.815 + .68}{1.36} = 1.495</math></b>
Summer freeboard = <b>1.75</b>	Tons per inch immersion at summer load water line	<b>1.36</b>
Moulded draught (d) = <b>18.50</b>	T =	
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <b>4.63 = 4¾"</b>	Deduction = $\frac{\Delta}{40T}$ inches	
Deduction for Winter North Atlantic Freeboard (if required) = $\frac{d}{3} = 6.17 = 6¼"$	$\frac{d}{4} = 4¾"$	

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

Timber	Tropical Fresh Water Line above Centre of Disc	<b>19¾"</b>	Timber	Tropical Fresh Water Freeboard	<b>0-11½"</b>
"	Fresh Water Line	<b>15"</b>	"	"	<b>1-4¾"</b>
"	Tropical Line	<b>15"</b>	"	"	<b>1-4¾"</b>
"	Winter Line	<b>4"</b>	"	Winter	<b>21-3¼"</b>
"	Winter North Atlantic Line	<b>5"</b>	"	Winter North Atlantic	<b>31-0¼"</b>

T. Timber Summer Line above " **10¼"**

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not included 23/1/41