

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name <u>S/S. "OTHEM"</u>	Official Number <u>5597</u>	Nationality and Port of Registry <u>Swedish.</u> <u>Stock.</u>	Gross Tonnage <u>7 mts.</u>	Date of Build <u>1914.</u>	Port of Survey.....
Moulded Dimensions: Length <u>184.0'</u> Breadth <u>50.0'</u> Depth <u>14.92'</u>					Date of Survey <u>14-4-47.</u>
Moulded displacement at moulded draught = 85 per cent. of moulded depth..... tons					Surveyor's Signature.....
Coefficient of fineness for use with Tables <u>.749</u>					Particulars of Classification <u>+ 100 A.I.</u>

DEPTH FOR FREEBOARD (D).	DEPTH CORRECTION.	ROUND OF BEAM CORRECTION.
Moulded depth <u>14.92</u>	(a) Where D is greater than Table depth (D-Table depth) R = <u>(14.95-12.27) 1.415 = +3.79</u>	Moulded Breadth (B) <u>30.00</u>
Stringer plate <u>.03</u>	(b) Where D is less than Table depth (if allowed) (Table depth-D) R = <u>2.68</u>	Standard Round of Beam = $\frac{B \times 12}{50} = \frac{30 \times 12}{50} = 7.2$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ <u>✓</u>	If restricted by superstructures <u>✓</u>	Ship's Round of Beam = <u>7.50</u>
Depth for Freeboard (D) = <u>14.95</u>		Difference <u>.30</u>
		Restricted to <u>✓</u>
		Correction = $\frac{\text{Diff}^\circ}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.30}{4} \times .4306 = -.03$

DEDUCTION FOR SUPERSTRUCTURES.					
	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed	<u>21.78</u>	<u>21.78</u>	<u>7.33</u>	<u>✓</u>	<u>21.78</u>
„ overhang					
R.Q.D. enclosed					
„ overhang					
Bridge enclosed	<u>53.17</u>	<u>53.17</u>	<u>7.00</u>	<u>✓</u>	<u>53.17</u>
„ overhang aft	<u>1.25</u>	<u>.94</u>			<u>.94</u>
„ overhang forward	<u>1.75</u>	<u>.87</u>			<u>.87</u>
F'cle enclosed	<u>28.00</u>	<u>28.00</u>	<u>7.00</u>	<u>✓</u>	<u>28.00</u>
„ overhang					
Trunk aft					
„ forward					
Tonnage opening aft					
„ „ forward					
Total	<u>105.95</u>	<u>104.76</u>			<u>104.76</u>

Standard Height of Superstructure 6.0'

„ „ R.Q.D. 3.56'

Deduction for complete superstructure 24.4

Percentage covered $\frac{S}{L} = \frac{104.76}{180} = 57.58$

„ „ $\frac{S_1}{L} = \frac{104.76}{180} = 56.94$

Percentage from Table, Line A. ✓
(corrected for absence of forecastle (if required))

Percentage from Table, Line B. 42.94 ✓
(corrected for absence of forecastle (if required))

Interpolation for bridge less than .2L (if required)

Deduction = 24.4 × .4294 = 10.48

SHEER CORRECTION.							
Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S
A.P.	<u>28.40</u>	1		<u>28.40</u>	<u>20.50</u>	<u>20.50</u>	1
$\frac{1}{4}$ L from A.P.	<u>12.64</u>	4		<u>50.56</u>	<u>8</u>	<u>7.90</u>	4
$\frac{2}{4}$ L „	<u>3.12</u>	2		<u>6.24</u>	<u>2</u>	<u>1.98</u>	2
Amidships		4					4
$\frac{2}{4}$ L from F.P.	<u>6.25</u>	2		<u>12.50</u>	<u>6</u>	<u>6.17</u>	2
$\frac{1}{4}$ L „	<u>25.28</u>	4		<u>101.12</u>	<u>24.5</u>	<u>24.77</u>	4
F.P.	<u>56.80</u>	1		<u>56.80</u>	<u>62.00</u>	<u>60.08</u>	1
Total				<u>255.62</u>			<u>227.56</u>

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{28.06}{18} \left(.75 - \frac{28.79}{180} \right) = +.72$

If limited on account of midship superstructure. ✓

Mean actual sheer aft = Sufficient 66.25%

Mean standard sheer aft = ✓

Mean actual sheer forward = Excess

Mean standard sheer forward = ✓

Length of enclosed superstructure forward of amidships = ✓

„ „ aft of „ = ✓

Deduction for Tropical Freeboard.	Deduction for Fresh Water.	TABULAR FREEBOARD
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Corrected for Flush Deck (if required)
Depth to Freeboard Deck = <u>14.95</u>	$\Delta =$	Correction for coefficient $\frac{.749 + .68}{1.36} = \frac{1.429}{1.36}$
Summer freeboard = <u>1.29</u>	Tons per inch immersion at summer load water line	Depth Correction <u>3.79</u>
Moulded draught (d) = <u>13.66</u>	T =	Deduction for superstructures <u>10.48</u>
Deduction for Tropical freeboard and addition for	Deduction = $\frac{\Delta}{40 T}$ inches	Sheer correction <u>.72</u>
Winter freeboard = $\frac{d}{4}$ inches = <u>3.41</u>	$\frac{d}{4} = \frac{13.66}{4} = 3.41$	Round of Beam correction <u>.03</u>
Addition for Winter North Atlantic Freeboard (if required) = <u>5.41</u>		Correction for Thickness of Deck amidships <u>-</u>
		Other corrections, scantlings, etc. <u>-</u>
		Summer Freeboard = <u>15.48</u>

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck			
Tropical Fresh Water Line above Centre of Disc	<u>172 m/m</u>	Tropical Fresh Water Freeboard	<u>15 1/2</u>
Fresh Water Line	<u>86 m/m</u>	Fresh Water	<u>8 3/4</u>
Tropical Line	<u>86 m/m</u>	Tropical	<u>12</u>
Winter Line below	<u>86 m/m</u>	Winter	<u>12</u>
Winter North Atlantic Line	<u>137 m/m</u>	Winter North Atlantic	<u>20 3/4</u>