

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name <i>Alexandra</i>	Official Number	Nationality and Port of Registry	Gross Tonnage	Date of Build	Port of Survey
Moulded Dimensions: Length <i>266.22</i> Breadth <i>39.00</i> Depth <i>19.50</i>					Date of Survey <i>16.5.38</i>
Moulded displacement at moulded draught = 85 per cent. of moulded depth					Surveyor's Signature
Coefficient of fineness for use with Tables <i>under .68</i>					Particulars of Classification <i>+ 100 A1 with flr.</i>

Depth for Freeboard (D).	Depth correction.	Round of Beam correction.
Moulded depth <i>19.50</i>	(a) Where D is greater than Table depth (D - Table depth) R = $(19.53 - 17.75) \times 2.048 = + 3.65$	Moulded Breadth (B) <i>39.0'</i>
Stringer plate <i>.03</i>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = 1.78	Standard Round of Beam = $\frac{B \times 12}{50} = 9.36''$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ <i>✓</i>	If restricted by superstructures <i>✓</i>	Ship's Round of Beam = <i>9.75''</i>
Depth for Freeboard (D) = <i>19.53</i>		Difference = <i>.39''</i>
		Restricted to
		Correction = $\frac{\text{Diff.}}{4} \times (1 - \frac{S_1}{L}) = \frac{.39}{4} \times .1817 = -.02$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed	<i>176.58</i>	<i>164.18</i>	<i>7.5'</i>	-	<i>164.18</i>
„ overhang			<i>+23'</i>		
R.Q.D. enclosed			<i>sheathing</i>		
„ overhang					
Bridge enclosed					
„ overhang aft					
„ overhang forward					
F'cle enclosed	<i>53.64</i>	<i>53.64</i>	<i>7.5'</i>	-	<i>53.64</i>
„ overhang			<i>+23'</i>		
Trunk aft			<i>sheathing</i>		
„ forward					
Tonnage opening aft					
„ „ forward					
Total	<i>230.22</i>	<i>217.82</i>			<i>217.82</i>

Standard Height of Superstructure *6.162*„ „ R.Q.D. *✓*Deduction for complete superstructure *32.62*Percentage covered $\frac{S}{L} = 86.48$ „ „ $\frac{S_1}{L} = 81.83$ „ „ $\frac{E}{L} = 81.83$ Percentage from Table, Line A. *77.57*

(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 = $32.62 \times .7757 = - 25.30$

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	<i>36.62</i>	1		<i>36.62</i>	<i>27.72</i>	<i>27.72</i>	1		<i>27.72</i>
$\frac{1}{4}$ L from A.P.	<i>16.295</i>	4		<i>65.18</i>	<i>11.75</i>	<i>11.75</i>	4		<i>47.00</i>
$\frac{2}{8}$ L „	<i>4.03</i>	2		<i>8.06</i>	<i>2.20</i>	<i>2.20</i>	2		<i>4.40</i>
Amidships	-	4		-	-	-	4		-
$\frac{3}{8}$ L from F.P.	<i>8.06</i>	2		<i>16.12</i>	<i>6.90</i>	<i>8.40</i>	2		<i>16.80</i>
$\frac{1}{4}$ L „	<i>32.59</i>	4		<i>130.36</i>	<i>34.60</i>	<i>33.95</i>	4		<i>135.80</i>
F.P.	<i>73.24</i>	1		<i>73.24</i>	<i>80.28</i>	<i>76.30</i>	1		<i>76.30</i>
Total				<i>329.58</i>		<i>See over</i>			<i>308.02</i>

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - \frac{S}{2L}}{.75 - \frac{S}{2L}} \right) = \frac{21.56}{18} \left(\frac{.75 - .4324}{.75 - .4324} \right) = +.38$ If limited on account of midship superstructure. *✓*Mean actual sheer aft = *Deficient (71.292 standard. see over)*Mean actual sheer forward = *Excess*Length of enclosed superstructure forward of amidships = *Deficient sheer*„ „ aft of „ = *Deficient sheer*Deduction for Tropical Freeboard.
Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = *19.74* ✓
 Summer freeboard = *2.24* ✓
 Moulded draught (d) = *17.50* ✓

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = *4.37 = 111* ✓Addition for Winter North Atlantic Freeboard = *6.37 = 162* ✓

Deduction for Fresh Water.

Displacement in salt water at summer load water line

Δ =

Tons per inch immersion at summer load water line

T =

Deduction = $\frac{\Delta}{40T}$ inches*1/4 = 111* ✓

TABULAR FREEBOARD corrected for Flush Deck (if required)

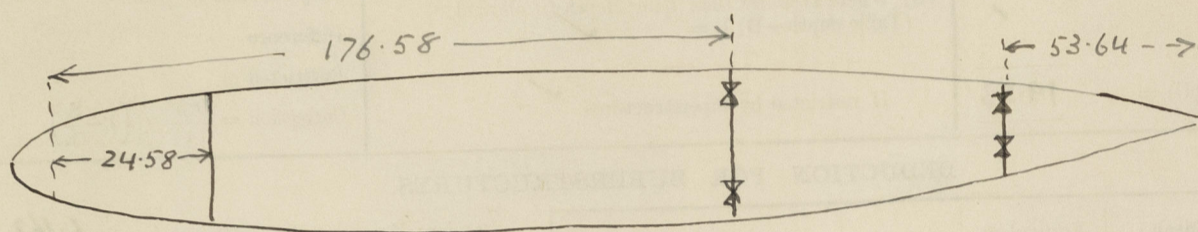
Correction for coefficient *Nil.*

	+	-
Depth Correction	<i>3.65</i>	-
Deduction for superstructures	-	<i>25.30</i>
Sheer correction	<i>.38</i>	-
Round of Beam correction	-	<i>.02</i>
Correction for Thickness of Deck amidships	<i>2.50</i>	-
Other corrections, scantlings, etc. <i>to summer moulded draught 17.6</i>	<i>9.93</i>	-
	<i>16.46</i>	<i>25.32</i>
Summer Freeboard =	<i>26.85 = 682</i> ✓	

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Deck: *682* ✓

Tropical Fresh Water Line above Centre of Disc	<i>222</i> ✓	Tropical Fresh Water Freeboard	<i>460</i> ✓
Fresh Water Line „ „	<i>111</i> ✓	Fresh Water „ „	<i>571</i> ✓
Tropical Line „ „	<i>111</i> ✓	Tropical „ „	<i>571</i> ✓
Winter Line below „ „	<i>111</i> ✓	Winter „ „	<i>793</i> ✓
Winter North Atlantic Line „ „	<i>1162</i> ✓	Winter North Atlantic „ „	<i>844</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.



$$\frac{176.58}{266.22} = .6633$$

$$\frac{176.58}{152.00} \times 100\% = 24.58$$

$$\frac{24.58}{152.00} \times 91.84 = 139.60$$

$$\frac{139.60}{164.18}$$

allows length
of poop.

$$\begin{array}{r} .5 = 100\% \\ .7 = 90\% \\ .2 = 10\% \end{array}$$

$$\frac{.6633}{.2} \times 10 = 8.162$$

$$100.00 - 8.16 = 91.84\%$$

Sheer Aft.
Standard

36.62	1	36.62
16.295	3	48.88
4.03	3	12.09
-	1	-
		97.59

Actual

27.72	1	27.72
11.75	3	35.25
2.20	3	6.60
-	1	-
		69.57

Sheer aft
= 71.29% of standard

Sheer forward This is of irregular character.

Standard

8.06	3	24.18
32.59	3	97.77
73.24	1	73.24
		195.19

Actual

6.90	3	20.70
34.60	3	103.80
80.28	1	80.28
		204.78

$$195.19 + \left[(204.78 - 195.19) \times \frac{21.29}{25} \right]$$

$$= 203.36$$

∴ for effective sheer ordinates
forward multiply standard
sheer ordinates by $\frac{203.36}{195.19}$.

Trade of ship

Names of sister ships

Builder's name and yard number

Owners

Fee £



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Foundation