

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name <i>Lindholmens Vav.</i> <i>Yard No. 973</i>	Official Number	Nationality and Port of Registry <i>Swedish</i>	Gross Tonnage	Date of Build	Port of Survey <i>Gothenburg</i>
Moulded Dimensions: Length <i>76.66 M.</i> Breadth <i>12.5 M.</i> Depth <i>6.375 M.</i>					Date of Survey <i>11th. Feb. 1941</i>
Moulded displacement at moulded draught = 85 per cent. of moulded depth <i>4085 tons = 4048.5 M.<sup>3</sup> tons</i>					Surveyor's Signature
Coefficient of fineness for use with Tables <i>.780</i>					Particulars of Classification <i>✱ 100 A1</i> <i>(contemplated)</i>

Depth for Freeboard (D).	Depth correction.	Round of Beam correction.
Moulded depth ... <i>6.375</i>	(a) Where D is greater than Table depth (D - Table depth) R = <i>8.33 (6.39 - 5.111) × 19.36 = +206</i>	Moulded Breadth (B) <i>12.5 M.</i>
Stringer plate ... <i>Sayd</i> ... <i>.015</i>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = <i>1.279</i>	Standard Round of Beam = $\frac{B \times 12}{50} = \frac{12.5 \times 12}{50} = 250 \text{ M.}$
Sheathing on exposed deck $T \left( \frac{L-S}{L} \right) =$	If restricted by superstructures <input checked="" type="checkbox"/>	Ship's Round of Beam = <i>260 m.m.</i>
Depth for Freeboard (D) = <i>6.390</i>		Difference <i>10</i>
		Restricted to <input checked="" type="checkbox"/>
		Correction = $\frac{\text{Diff.}}{4} \times \left( 1 - \frac{S_1}{L} \right) = \frac{10}{4} \times .3116 = -1 \text{ M.M.}$

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Equi. Poop enclosed ...	<i>16.97</i>	<i>16.97</i>	<i>2180</i>	<input checked="" type="checkbox"/>	<i>16.97</i>
„ overhang ...	<i>3.50</i>	<i>1.75</i>			<i>1.75</i>
R.Q.D. enclosed ...	<i>26.23</i>	<i>26.23</i>	<i>1215</i>	<i>1215/1226</i>	<i>25.99</i>
„ overhang ...					
Bridge enclosed ...					
„ overhang aft ...					
„ overhang forward ...					
F'cle enclosed ...	<i>5.55</i>	<i>5.55</i>	<i>2831</i>	<input checked="" type="checkbox"/>	<i>5.55</i>
„ overhang ...	<i>1.22</i>	<i>.61</i>			<i>.61</i>
Trunk aft ...					
„ forward ...					
Tonnage opening aft ...	<i>1.23</i>	<i>1.20</i>	<i>diff. = 384</i>		<i>1.20</i>
„ forward ...	<i>.61</i>	<i>.46</i>			<i>.46</i>
Total ...	<i>55.31</i>	<i>52.77</i>			<i>52.53</i>

Standard Height of Superstructure <i>1.835 M.</i>	
„ „ R.Q.D. <i>1.226 M.</i>	
Deduction for complete superstructure <i>792 m.m.</i>	
Percentage covered $\frac{S}{L} = \frac{55.31}{76.66} = 72.15$	
„ „ $\frac{S_1}{L} = \frac{52.77}{76.66} = 68.84$	
„ „ $\frac{E}{L} = \frac{52.53}{76.66} = 68.52$	
Percentage from Table, Line A. <i>60.48</i>	
(corrected for absence of forecastle (if required)) <input checked="" type="checkbox"/>	
Percentage from Table, Line B. <input checked="" type="checkbox"/>	
(corrected for absence of forecastle (if required)) <input checked="" type="checkbox"/>	
Interpolation for bridge less than 2L (if required) <input checked="" type="checkbox"/>	
Deduction = <i>792 × 60.48 = -479 M.M.</i>	

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	<i>893</i>	<i>1</i>		<i>893</i>	<i>488</i>	<i>488</i>	<i>1</i>		<i>488</i>
$\frac{1}{4}$ L from A.P. ...	<i>397</i>	<i>4</i>		<i>1588</i>	<i>114</i>	<i>114</i>	<i>4</i>		<i>456</i>
$\frac{2}{4}$ L „ ...	<i>99</i>	<i>2</i>		<i>198</i>	-	-	<i>2</i>		-
Amidships ...	-	<i>4</i>		-	-	-	<i>4</i>		-
$\frac{3}{4}$ L from F.P. ...	<i>198</i>	<i>2</i>		<i>396</i>	-	-	<i>2</i>		-
$\frac{1}{4}$ L „ ...	<i>793</i>	<i>4</i>		<i>3172</i>	<i>8</i>	<i>8</i>	<i>4</i>		<i>32</i>
F.P. ...	<i>1785</i>	<i>1</i>		<i>1785</i>	<i>260</i>	<i>260</i>	<i>1</i>		<i>260</i>
Total ...				<i>8032</i>					<i>1236</i>

Mean actual sheer aft = <i>Deficient.</i>	
Mean standard sheer aft =	
Mean actual sheer forward = <i>Deficient &lt; 50%</i>	
Mean standard sheer forward =	
Length of enclosed superstructure forward of amidships =	
„ „ aft of „ = <i>Deficient shears.</i>	

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( \frac{.75 - S}{2L} \right) = \frac{6796 - 3607}{18} = +147 \text{ M.M.}$   
 If limited on account of midship superstructure. ☒ If limited to maximum allowance of  $1\frac{1}{2}$  ins. per 100 ft. ☒

<b>Deduction for Tropical Freeboard.</b> <b>Addition for Winter and Winter North Atlantic Freeboard.</b> Depth to Freeboard Deck = <i>7.605</i> Summer freeboard = <i>1.977</i> Moulded draught (d) = <i>5.628</i> Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = Addition for Winter North Atlantic Freeboard (if required) =	<b>Deduction for Fresh Water.</b> Displacement in salt water at summer load water line $\Delta =$ Tons per inch immersion at summer load water line $T =$ Deduction = $\frac{\Delta}{40 T}$ inches =	<b>TABULAR FREEBOARD</b> corrected for Flush Deck (if required) Correction for coefficient $\frac{.780 + .68}{1.36} = 1.46/1.36$ <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>+</th> <th>-</th> </tr> </thead> <tbody> <tr> <td>Depth Correction ...</td> <td><i>206</i></td> <td>-</td> </tr> <tr> <td>Deduction for superstructures ...</td> <td>-</td> <td><i>479</i></td> </tr> <tr> <td>Sheer correction ...</td> <td><i>147</i></td> <td>-</td> </tr> <tr> <td>Round of Beam correction ...</td> <td>-</td> <td><i>1</i></td> </tr> <tr> <td>Correction for Thickness of Deck amidships</td> <td>-</td> <td>-</td> </tr> <tr> <td>Other corrections, soundings, etc. ...</td> <td><i>1215</i></td> <td>-</td> </tr> <tr> <td><b>Summer Freeboard</b></td> <td><b>1568</b></td> <td><b>480 + 1088</b></td> </tr> </tbody> </table>		+	-	Depth Correction ...	<i>206</i>	-	Deduction for superstructures ...	-	<i>479</i>	Sheer correction ...	<i>147</i>	-	Round of Beam correction ...	-	<i>1</i>	Correction for Thickness of Deck amidships	-	-	Other corrections, soundings, etc. ...	<i>1215</i>	-	<b>Summer Freeboard</b>	<b>1568</b>	<b>480 + 1088</b>
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## SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck:

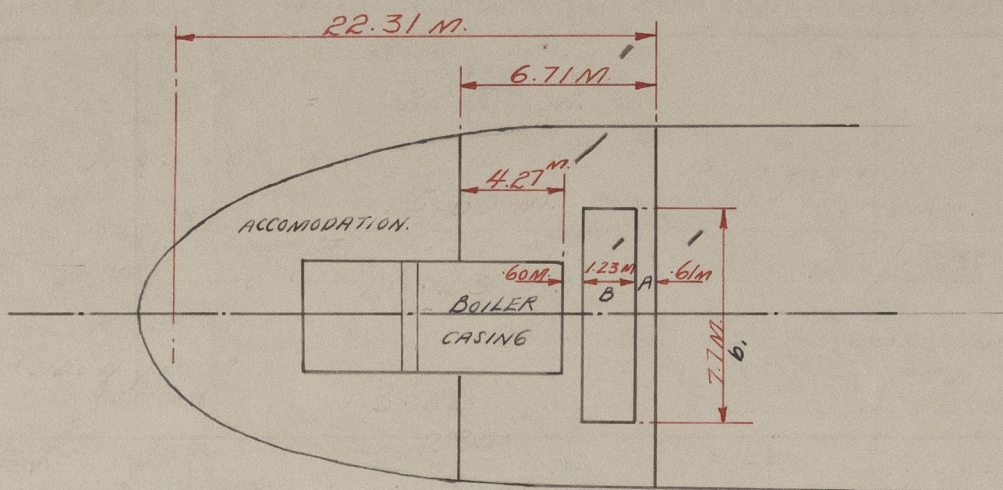
Tropical Fresh Water Line above Centre of Disc ...	...
Fresh Water Line „ „ ...	...
Tropical Line „ „ ...	...
Winter Line below „ „ ...	...
Winter North Atlantic Line „ „ ...	...

Tropical Fresh Water Freeboard ...	...
Fresh Water „ „ ...	...
Tropical „ „ ...	...
Winter „ „ ...	...
Winter North Atlantic „ „ ...	...



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:



$$\begin{aligned}
 \text{Total length of poop} &= 22.31 \text{ M.} \\
 \text{Poop front to accommodation Bnd.} &= 6.71 \text{ M.} \\
 \text{Equi. length of boiler casing } \left( \frac{4.27 \times 4.0}{12.5} \right) &= 1.37 \text{ M.} \\
 \text{Equi. poop enclosed} &= 16.97 \text{ M.} \\
 \text{Length from poop front to equi. bnd.} &= 5.34 \text{ M.} \\
 \text{Length from poop front to opening (A)} &= 0.61 \text{ M.} \\
 \text{" of Tonnage opening (B)} &= 1.23 \text{ M.} \\
 \text{Equi. Poop overhang (C)} &= 3.50 \text{ M.}
 \end{aligned}$$

$$\begin{aligned}
 75\% (A) \quad .75 \times .61 &= .46 \text{ M.} \\
 50\% (C) \quad .50 \times 3.5 &= 1.75 \text{ M.} \\
 &= 2.21 \text{ M.}
 \end{aligned}$$

$$\begin{aligned}
 \frac{B-b}{B} [(A+B+C) - (.75A + .50C)] &= \frac{12.50 - 7.70}{12.5} [5.34 - 2.21] \\
 &= 1.20 \text{ M.}
 \end{aligned}$$

Trade of ship.....

Names of sister ships.....

Builder's name and yard number.....

Owners.....

Fee £.....



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Foundation