

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name <i>Messrs Rotterdam Drydock Co's</i> <i>No. 213</i>	Official Number	Nationality and Port of Registry <i>Dutch</i>	Gross Tonnage	Date of Build	Port of Survey <i>Rotterdam</i>
Moulded Dimensions: Length <i>131.061 M.</i> Breadth <i>19.05 M.</i> Depth <i>7.467 M.</i>					Date of Survey <i>31/3/39</i>
Moulded displacement at moulded draught = 85 per cent. of moulded depth <i>12660 m³</i>					Surveyor's Signature <i>A.T.S.S.</i>
Coefficient of fineness for use with Tables <i>.799</i>					Particulars of Classification <i>100 A.I.</i> <i>Carrying petroleum in bulk</i> <i>(Contemplated)</i>

Depth for Freeboard (D). Moulded depth ... <i>7.467</i> Stringer plate ... <i>.015</i> Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ Depth for Freeboard (D) = <i>7.482</i>	Depth correction. (a) Where D is greater than Table depth $(D - \text{Table depth}) R =$ (b) Where D is less than Table depth (if allowed) $(\text{Table depth} - D) R =$ $8.33(8.737 - 7.482)30 = -314 \text{ mm}$ If restricted by superstructures $\frac{314}{1} \times \frac{2134}{2290} = -293 \text{ mm}$	Round of Beam correction. Moulded Breadth (B) <i>19.05</i> Standard Round of Beam = $\frac{B \times 100}{50} = 381 \text{ mm}$ Ship's Round of Beam = <i>380</i> Difference = <i>1 mm Deficient</i> Restricted to Correction = $\frac{\text{Diff}}{4} \times (1 - \frac{S_1}{L}) = \frac{1}{4} \times 234 = \text{nil.}$
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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>31.643</i>	<i>31.643</i>	<i>2.134</i>	$\frac{2134}{2290}$	<i>29.487</i>
„ overhang ...					
R.Q.D. enclosed ...					
„ overhang ...					
Bridge enclosed ...					
„ overhang aft ...					
„ overhang forward ...					
Fore enclosed ...	<i>18.439</i>	<i>18.439</i>	<i>3.201</i>		<i>18.439</i>
„ overhang ...					
Trunk aft ...		<i>50.311</i>	<i>2.134</i>	$\frac{2134}{2290}$	<i>46.882</i>
„ forward ...					
Tonnage opening aft ...					
„ „ forward ...					
Total ...	<i>50.082</i>	<i>100.393</i>			<i>94.808</i>

Standard Height of Superstructure *2290 mm*
 „ „ R.Q.D. ✓
 Deduction for complete superstructure *1067 mm*
 Percentage covered $\frac{S}{L} = 38.21$
 „ „ $\frac{S_1}{L} = 76.60$
 „ „ $\frac{E}{L} = 72.34$
 Percentage from Table, Line A. **TANKER 65.88**
 (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 = $1067 \times 65.88 = -703 \text{ mm}$

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	<i>1346</i>	1		<i>1346</i>	<i>686</i>	<i>686</i>	1		<i>686</i>
$\frac{1}{2}L$ from A.P. ...	<i>598</i>	4		<i>2392</i>	<i>305</i>	<i>305</i>	4		<i>1220</i>
$\frac{2}{3}L$ „ ...	<i>149</i>	2		<i>298</i>	<i>75</i>	<i>75</i>	2		<i>150</i>
Amidships ...		4					4		
$\frac{2}{3}L$ from F.P. ...	<i>299</i>	2		<i>598</i>	<i>142</i>	<i>142</i>	2		<i>284</i>
$\frac{1}{2}L$ „ ...	<i>1196</i>	4		<i>4784</i>	<i>576</i>	<i>576</i>	4		<i>2304</i>
F.P. ...	<i>2692</i>	1		<i>2692</i>	<i>1295</i>	<i>1295</i>	1		<i>1295</i>
Total ...				<i>12110</i>					<i>5939</i>

Mean actual sheer aft = *Deficient*
 Mean standard sheer aft = *Deficient*
 Mean actual sheer forward = *Deficient*
 Mean standard sheer forward = *Deficient*
 Length of enclosed superstructure forward of amidships = *Deficient*
 „ „ aft of „ = *Sheer*
 Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{S}{2L} \right) = \frac{6171}{18} \left(\frac{.75 - .1910}{.5590} \right) = +192 \text{ mm}$
 If limited on account of midship superstructure. ✓
 If limited to maximum allowance of 1½ ins. per 100 ft. ✓

Deduction for Tropical Freeboard. Addition for Winter and Winter North Atlantic Freeboard. Depth to Freeboard Deck = <i>7.482</i> Summer freeboard = <i>1.130</i> Moulded draught (d) = <i>6.352</i> Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{48} = 132 \text{ mm} = 13 \text{ cms}$ Addition for Winter North Atlantic Freeboard (if required) = $132 + 107 = 239 \text{ mm} = 24 \text{ cms.}$	Deduction for Fresh Water. Displacement in salt water at summer load water line $\Delta =$ Tons per inch immersion at summer load water line $T =$ Deduction = $\frac{\Delta}{40T} \text{ inches}$ $= \frac{d}{48} = 13 \text{ cms.}$	TABULAR FREEBOARD corrected for Plank Deck (if required) Correction for coefficient $\frac{.799 + .68}{1.36} = \frac{1.479}{1.36}$ <table border="1"> <tr> <th></th> <th>+</th> <th>-</th> </tr> <tr> <td>Depth Correction ...</td> <td></td> <td><i>293</i></td> </tr> <tr> <td>Deduction for superstructures ...</td> <td></td> <td><i>703</i></td> </tr> <tr> <td>Sheer correction ...</td> <td><i>192</i></td> <td></td> </tr> <tr> <td>Round of Beam correction ...</td> <td></td> <td></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>192</i></td> <td><i>996</i></td> </tr> <tr> <td>Summer Freeboard =</td> <td colspan="2"><i>1126 mm</i></td> </tr> </table>		+	-	Depth Correction ...		<i>293</i>	Deduction for superstructures ...		<i>703</i>	Sheer correction ...	<i>192</i>		Round of Beam correction ...			Correction for Thickness of Deck amidships ...			Other corrections, scantlings, etc. ...				<i>192</i>	<i>996</i>	Summer Freeboard =	<i>1126 mm</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>26 cms</i>	Tropical Fresh Water Freeboard ...	<i>87</i>
Fresh Water Line „ „ ...	<i>13</i>	Fresh Water „ „ ...	<i>100</i>
Tropical Line „ „ ...	<i>13</i>	Tropical „ „ ...	<i>100</i>
Winter Line below „ „ ...	<i>13</i>	Winter „ „ ...	<i>126</i>
Winter North Atlantic Line „ „ ...	<i>24</i>	Winter North Atlantic „ „ ...	<i>137</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.

<u>Trunk</u>		<u>Equivalent length</u>	
6,644	$\times \frac{15.865}{19.050}$	=	5.359
64,426	$\times \frac{11.680}{19.050}$	=	39.500
9,909	$\times \frac{10.482}{19.050}$	=	5.452
			<u>50.311</u>

Trade of ship.....

Names of sister ships.....

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

Owners.....

Fee £.....



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Foundation