

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name **S.S. SAROENA** Official Number **6671-26** Nationality and Port of Registry **Dutch. S'Gravenhage** Gross Tonnage **6671.26** Date of Build **1939**

Port of Survey **Rotterdam**

Date of Survey **Building**

Surveyor's Signature **J. H. H. H. H.**

Particulars of Classification **+100 A1**
Carrying petroleum in bulk Contemplated.

Moulded Dimensions: Length **131.411 M** Breadth **19.050 M** Depth **7.467 M**

Moulded displacement at moulded draught = 85 per cent. of moulded depth **12660 M³** tons

Coefficient of fineness for use with Tables **.797**

Depth for Freeboard (D).	Depth correction.	Round of Beam correction.
Moulded depth ... 7.467 M	(a) Where D is greater than Table depth (D-Table depth) R =	Moulded Breadth (B) 19.050
Stringer plate ... 15	(b) Where D is less than Table depth (if allowed) (Table depth-D) R =	Standard Round of Beam = $\frac{B \times R}{50} = \frac{19.050 \times 15}{50} = 5.715$
Sheathing on exposed deck	8.33(8.761-7.482)30 = -320 m/m	Ship's Round of Beam = 380
$T \left(\frac{L-S}{L} \right) =$	If restricted by superstructures 320 x $\frac{2134}{2290} = -298 m/m$	Difference deficient = 1 m/m
Depth for Freeboard (D) = 7.482		Restricted to
		Correction = $\frac{\text{Diff}^2}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{1^2}{4} \times \left(1 - \frac{19.050}{131.411} \right) = \frac{1}{4} \times 2334 = 583.5$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...	31.993	31.993	2134	2134/2290	29.815
„ overhang ...					
R.Q.D. enclosed ...					
„ overhang ...					
Bridge enclosed ...					
„ overhang aft ...					
„ overhang forward ...					
F'cle enclosed ...	18.429	18.429	3201	3201/2290	18.429
„ overhang ...					
Trunk aft ...	20.978	20.978	2134	2134/2290	46.900
„ forward ...					
Tonnage opening aft ...					
„ forward ...					
Total ...	50.432	100.760			95.154

Standard Height of Superstructure **2290 m/m**

„ „ R.Q.D. **1067 m/m**

Deduction for complete superstructure **1067 m/m**

Percentage covered $\frac{S}{L} = \frac{50.432}{131.411} = 38.38$

„ „ $\frac{S_1}{L} = \frac{100.760}{131.411} = 76.66$

„ „ $\frac{E}{L} = \frac{95.154}{131.411} = 72.41$

Percentage from Table, Line A. Tanker **65.96**
(corrected for absence of forecastle (if required))

Percentage from Table, Line B. **72.41**
(corrected for absence of forecastle (if required))

Interpolation for bridge less than 2L (if required)

Deduction = **1067 x .6596 = -704 m/m**

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	1349	1	1349	693	693	1	693	693	693
$\frac{1}{4}L$ from A.P. ...	599	4	2396	310	310	4	1240	1240	1240
$\frac{2}{4}L$ „ ...	150	2	300	77	77	2	154	154	154
Amidships ...	-	4	-	-	-	4	-	-	-
$\frac{3}{4}L$ from F.P. ...	300	2	600	140	140	2	280	280	280
$\frac{1}{4}L$ „ ...	1198	4	4792	574	574	4	2296	2296	2296
F.P. ...	2697	1	2697	1295	1295	1	1295	1295	1295
Total ...			12134				5958		5958

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{6176}{18} \left(.75 - \frac{1919}{2290} \right) = +172 m/m$

If limited on account of midship superstructure. **5581**

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**

Deduction for Tropical Freeboard.	Deduction for Fresh Water.	TABULAR FREEBOARD corrected for Flush Deck (if required)
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient $\frac{.797 + .68}{1.36} = \frac{1.477}{1.36}$
Depth to Freeboard Deck = 7.482	$\Delta = 12772 m^3$	Depth Correction ... 298
Summer freeboard = 1.130	Tons per inch immersion at summer load water line	Deduction for superstructures ... 704
Moulded draught (d) = 6.352	$T = 21.91 m^3$	Sheer correction ... 192
Deduction for Tropical freeboard and addition for	Deduction = $\frac{\Delta}{40 T} \text{ inches} = \frac{12772}{40 \times 21.91} = 146 m/m$	Round of Beam correction ... -
Winter freeboard = $\frac{d}{48} \text{ inches} = 132 m/m = 130 mm$	= 15 cms.	Correction for Thickness of Deck amidships ... -
Addition for Winter North Atlantic Freeboard (if required) = 132 + 108 = 240 m/m = 24 cms.		Other corrections, scantlings, etc. ... -
		Summer Freeboard = 1125 m/m

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

Tropical Fresh Water Line above Centre of Disc ...	28 cms.	Tropical Fresh Water Freeboard ...	85
Fresh Water Line „ „ ...	15	Fresh Water „ „ ...	98
Tropical Line „ „ ...	13	Tropical „ „ ...	100
Winter Line below „ „ ...	13	Winter „ „ ...	126
Winter North Atlantic Line „ „ ...	24	Winter North Atlantic „ „ ...	137

27 OCT 1939

S.S. "Saroena."

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.

Equivalent Length of Beam

$$6.644 \times \frac{18.415}{19.050} = 5.376$$

$$64.426 \times \frac{11.680}{19.050} = 39.500$$

$$9.909 \times \frac{10.482}{19.050} = \frac{5.452}{50.328}$$

Trade of ship Atlantic Trade

Names of sister ships S.S. "SAIDJA" yard N° 213 Rotterdamse Droogdok Mij. Rijk Mij. N° 28571

Builder's name and yard number Wilton Fijenoord Schiedam yard N° 660

Owners N.V. Nederlandsche Indische Tankstoomboot Maatschappij

Fee 216.00



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