

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker  
having a fore-castle and long poop

(Type of Superstructures.)

Ship's Name Bosna Nationality and Port of Registry Yugoslav Split Official Number ✓ Gross Tonnage 540 Date of Build 1899

Moulded Dimensions: Length 164.0, Breadth 26.0, Depth 12.46  
Moulded displacement at moulded draught = 85 per cent. of moulded depth 903 tons  
Coefficient of fineness for use with Tables 70

Port of Survey \_\_\_\_\_  
Date of Survey 15/8/35  
Name of Surveyor \_\_\_\_\_  
Particulars of Classification A1  
for service in the Adriatic

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth ... .. <u>12.46</u>	(a) Where D is greater than Table depth (D - Table depth) R = <u>(12.53 - 10.93) × 1.261 = +2.02</u>	Moulded Breadth (B) <u>26.0</u>
Stringer plate ... .. <u>.03</u>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = <u>✓</u>	Standard Round of Beam = $\frac{B \times 12}{50} = 6.24$
Sheathing on exposed deck $T \left( \frac{L-S}{L} \right) = 21 \times .1696 = .041$	If restricted by superstructures <u>✓</u>	Ship's Round of Beam = <u>6.50</u>
Depth for Freeboard (D) = <u>12.53</u>		Difference <u>.26</u>
		Restricted to <u>✓</u>
		Correction = $\frac{\text{Diff}^e}{4} \times \left( 1 - \frac{S_1}{L} \right) = \frac{.26}{4} \times .3002 = -.02$

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ... ..	<u>49.72</u>	<u>49.72</u>	<u>7.75</u>	<u>✓</u>	<u>49.72</u>
„ overhang ... ..	<u>3.98</u>	<u>1.99</u>	<u>.71</u>	<u>✓</u>	<u>1.99</u>
R.Q.D. enclosed ... ..					
„ overhang ... ..					
Bridge enclosed... <u>open</u> ...					
„ overhang aft ... ..	<u>19.29</u>	<u>9.64</u>	<u>7.75</u>	<u>✓</u>	<u>9.64</u>
„ overhang forward ... ..	<u>19.54</u>	<u>9.77</u>	<u>.71</u>	<u>✓</u>	<u>9.77</u>
F'cle enclosed ... ..	<u>43.66</u>	<u>43.66</u>	<u>7.83</u>	<u>✓</u>	<u>43.66</u>
„ overhang ... ..					
Trunk aft ... ..					
„ forward ... ..					
Tonnage opening aft ... ..					
„ „ forward ... ..					
Total ... ..	<u>136.19</u>	<u>114.78</u>			<u>114.78</u>

Standard Height of Superstructure <u>6.00</u>
„ „ R.Q.D. <u>✓</u>
Deduction for complete superstructure <u>22.40</u>
Percentage covered $\frac{S}{L} = 83.04$
„ „ $\frac{S_1}{L} = 69.98$
„ „ $\frac{E}{L} = 69.98$
Percentage from Table, Line A. <u>62.98</u>
(corrected for absence of fore-castle (if required))
Percentage from Table, Line B. <u>✓</u>
(corrected for absence of fore-castle (if required))
Interpolation for bridge less than 2L (if required) <u>✓</u>
Deduction = <u>22.40 × .6298 = -14.11</u>

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ... ..	<u>26.40</u>	1		<u>26.40</u>	<u>11.00</u>	<u>11.00</u>	1		<u>11.00</u>
$\frac{1}{2}$ L from A.P. ... ..	<u>11.75</u>	4		<u>47.00</u>	<u>5.53</u>	<u>5.53</u>	4		<u>22.12</u>
$\frac{2}{3}$ L „ ... ..	<u>2.90</u>	2		<u>5.80</u>	<u>1.38</u>	<u>1.38</u>	2		<u>2.76</u>
Amidships ... ..	<u>-</u>	4		<u>-</u>	<u>-</u>	<u>-</u>	4		<u>-</u>
$\frac{2}{3}$ L from F.P. ... ..	<u>5.81</u>	2		<u>11.62</u>	<u>5.92</u>	<u>5.92</u>	2		<u>11.84</u>
$\frac{1}{2}$ L „ ... ..	<u>23.50</u>	4		<u>94.00</u>	<u>23.70</u>	<u>23.70</u>	4		<u>94.80</u>
F.P. ... ..	<u>52.80</u>	1		<u>52.80</u>	<u>46.00</u>	<u>46.00</u>	1		<u>46.00</u>
Total ... ..				<u>237.62</u>					<u>188.52</u>

Mean actual sheer aft = Deficient  
Mean standard sheer aftMean actual sheer forward = Deficient  
Mean standard sheer forwardLength of enclosed superstructure forward of amidships = ✓  
„ „ aft of „ = ✓  
Sheers DeficientCorrection =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{49.10}{18} (.75 - .4152) = +.91$ If limited on account of midship superstructure. ✓If limited to maximum allowance of  $1\frac{1}{2}$  ins. per 100 ft. ✓Deduction for Tropical Freeboard.  
Addition for Winter and Winter North Atlantic Freeboard.Depth to Freeboard Deck = 12.70 ✓  
Summer freeboard = 1.00 ✓  
Moulded draught (d) = 11.70 ✓Deduction for Tropical freeboard and addition for Winter freeboard =  $\frac{d}{4}$  inches = 2.92-3 ✓  
Addition for Winter North Atlantic Freeboard (if required) = ✓

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 =  $\frac{\Delta}{40T}$  inchesΔ/40 = 3

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

 $\frac{70+68}{1.36} = \frac{1.38}{1.36}$ 

Depth Correction ... ..

Deduction for superstructures ... ..

Sheer correction ... ..

Round of Beam correction ... ..

Correction for Thickness of Deck amidships ... ..

Other corrections, scantlings, etc. and class ... ..17.4617.72

+	-
<u>2.02</u>	<u>-</u>
<u>-</u>	<u>14.11</u>
<u>0.91</u>	<u>-</u>
<u>-</u>	<u>.02</u>
<u>2.04</u>	<u>-</u>
<u>3.44</u>	<u>-</u>
<u>8.41</u>	<u>14.13</u>

Summer Freeboard = 12.00 ✓SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, 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 „ „ ... ..

15.0 = 305 ✓  
0.9 = 229 ✓1.3 = 381 ✓

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