

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

SAN LORENZO
No 42730

No 34256

Ship's Name COMODORO RIVADAVIA.	Official Number	Nationality and Port of Registry Argentine Buenos Aires	Gross Tonnage 11633	Date of Build 1950/51	Port of Survey Rotterdam
Moulded Dimensions: Length 160.322 m Breadth 20.726 m Depth 11.277 m					Date of Survey During building
Moulded displacement at moulded draught = 85 per cent. of moulded depth 24693 ¹⁰⁰⁰ 3					Surveyor's Signature <i>[Signature]</i>
Coefficient of fineness for use with Tables .775					Particulars of Classification +100RI carrying petroleum in bulk (contemplated)

DEPTH FOR FREEBOARD (D).	DEPTH CORRECTION.	ROUND OF BEAM CORRECTION.
Moulded depth 11.277 m	(a) Where D is greater than Table depth (D-Table depth) R = 8.33(11.299 - 10.689)30 = +152 m/m	Moulded Breadth (B) 20.726 m
Stringer plate 0.022 m	(b) Where D is less than Table depth (if allowed) (Table depth-D) R = ✓	Standard Round of Beam = $\frac{B \times 12}{50} = \frac{20.726 \times 12}{50} = 415 \text{ m/m}$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$	If restricted by superstructures ✓	Ship's Round of Beam = 4415 m
Depth for Freeboard (D) = 11.299 m		Difference NIL.
		Restricted to
		Correction = $\frac{\text{Diff}^e}{4} \times \left(1 - \frac{S_1}{L} \right) = \text{NIL.}$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S) m	Equivalent Enclosed Length (S ₁)	Height m	Height Correction	Effective Length (E)
Poop enclosed <i>equival</i>	47.512	47.512	2.430		47.512
" overhang133	.067			.067
R.Q.D. enclosed					
" overhang					
Bridge <i>enclosed</i> <i>open</i> <i>equival</i>	10.117	13.588	2.430		13.588
" overhang aft					
" overhang forward133	.067			.067
F'cle enclosed <i>equival</i>	14.563	14.563	2.286		14.563
" overhang314	.157	TAKEN AS		.157
Trunk aft			STANDARD		
" forward					
Tonnage opening aft ...					
" " forward					
Total	80.772	75.954			75.954

Standard Height of Superstructure **2290 m/m.**
" " R.Q.D. **✓**
Deduction for complete superstructure **1067 m/m.**
Percentage covered $\frac{S}{L} = \frac{75.954}{147.37} = 50.38$
" " $\frac{S_1}{L} = \frac{75.954}{147.37} = 50.38$
" " $\frac{E}{L} = \frac{75.954}{147.37} = 50.38$
Percentage from Table, Line A. TANKER **38.37**
(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 x .3837 = 409 m/m.**

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate m	Effective Ordinate	S M	Product
A.P.	1590	1	1590	0.000	808	1	808
$\frac{1}{2}$ L from A.P.	706	4	2824	0.195	195	4	780
$\frac{2}{3}$ L "	176.5	2	353	0.000	✓	2	✓
Amidships	✓	4	✓	0.000	✓	4	✓
$\frac{2}{3}$ L from F.P.	353	2	706	0.000	✓	2	✓
$\frac{1}{2}$ L "	1412	4	5648	0.240	248	4	992
F.P.	3180	1	3180	2.100	2100	1	2100
Total			14301				4680

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 = **✓**
" " aft of " = **✓**
SHEERS DEFICIENT.

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - S}{2L} \right) = \frac{962}{18} \left(\frac{.75 - .2519}{.4981} \right) = +266 \text{ m/m.}$
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 = **11.299**
Summer freeboard = **2.550**
Moulded draught (d) = **8.749**
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{48} \text{ m/m} = \frac{8.749}{48} \text{ m/m} = 182 \text{ m/m} = 18 \text{ cm}$
Addition for Winter North Atlantic Freeboard (if required) = **182 + 131 = 313 m/m = 31 cm**

Deduction for Fresh Water.

Displacement in salt water at summer load water line $\Delta = \mathbf{22140 \text{ m}^3}$
Tons per inch immersion at summer load water line $T = \mathbf{20.50}$
Deduction = $\frac{\Delta}{40 T} \text{ inches} = \frac{22140}{40 \times 20.50} = 194 \text{ m/m} = 19 \text{ cm.}$

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{.775 + .68}{1.36} = \frac{1.455}{1.36}$
Depth Correction **152** **✓**
Deduction for superstructures **✓** **409**
Sheer correction **266** **✓**
Round of Beam correction **✓** **✓**
Correction for Thickness of Deck amidships **✓** **✓**
Other corrections, scantlings, etc. **✓** **✓**
418 **409** **+ 9**
Summer Freeboard = **2549**

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

Tropical Fresh Water Line above Centre of Disc **11.37 cm.**
Fresh Water Line " " **19** **✓**
Tropical Line " " **18** **✓**
Winter Line below " " **18** **✓**
Winter North Atlantic Line " " **31** **✓**

Tropical Fresh Water Freeboard **255** **✓**
Fresh Water " **236** **✓**
Tropical " **237** **✓**
Winter " **273** **✓**
Winter North Atlantic " **286** **✓**

"Commodore Rivadavia."

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.

$$\begin{array}{rcl} \text{Poop} & \text{enclosed at side} & = 46.445 \\ & + \frac{2}{3} \times 1600 & = \underline{1.067} \\ & & = \underline{\underline{47.512}} \end{array}$$

$$\begin{array}{rcl} \text{overhang forward} & = & 1.200 \\ & \text{less} & \underline{1.067} \\ & = & \underline{\underline{.133}} \end{array}$$

BRIDGE (open at aft end)

$$\begin{array}{rcl} & \text{enclosed at side} & = 12.800 \\ & + & \underline{4.250} \\ & & = 17.050 \\ & + \frac{2}{3} \times 1600 & = \underline{1.067} \\ & & = \underline{\underline{18.117}} \end{array}$$

$$\begin{array}{rcl} \text{overhang forward} & = & 1.200 \\ & \text{less} & \underline{1.067} \\ & = & \underline{\underline{.133}} \end{array}$$

FORECASTLE

$$\begin{array}{rcl} & \text{enclosed at side} & = 14.877 \\ & \text{less } \frac{6.500 \times .685}{14.200} & = \underline{.314} \\ & & = \underline{\underline{14.563}} \end{array}$$

$$\text{overhang} = .314$$

Trade of ship

Ocean Trade

Names of sister ships

DIRECTOR MADARIAGA, LA PLATA, SAN LORENZO.

Builder's name and yard number

Machinefabriek en Scheepswerf v. P. Smits & N.V. Jan No 599

Owners

Yacimientos Petroliferos Fiscales.

Fee

500.-



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