

Rpt. C.11 (Comp.)

No 8048

For LONDON OFFICE ONLY

LLOYD'S REGISTER OF SHIPPING

UNITED WITH THE BRITISH CORPORATION REGISTER

SURVEYS FOR FREEBOARD

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER)

Received

Index No.

Govt. Copy

Owners C11

Ship's Name " P A R A N A G U A "	Official Number -	Nationality and Port of Registry BRAZILIAN RIO DE JANEIRO.	Gross Tonnage About- 5.800 Tms	Date of Build April 1961	Port of Survey HELSINGFORS
Moulded Dimensions: Length 117.778 m. Breadth 16.612 m. Depth 10.617 to Sh. Dk. Freeboard Length 117.778 to Centre of Rudder Stock Moulded displacement at moulded draught = 85 per cent. of moulded depth 12.815 m ³ tons (excluding bossing) Coefficient of fineness for use with Tables 7257 726					Date of Survey DURING CONSTRUCTION
Surveyor's Signature W. G. McCulloch					Particulars of Classification * 100 A 1. (Contemplated)

DEPTH FOR FREEBOARD (D).	DEPTH CORRECTION.	ROUND OF BEAM CORRECTION.
Moulded depth ... 10.617	(a) Where D is greater than Table depth (D-Table depth) R = $8.33(10.635-7.852) = 117.778 \times 2.783 = 689 \text{ mm}$	Moulded Breadth (B) 16.612
Stringer plate018	(b) Where D is less than Table depth (if allowed) (Table depth-D) R = $3.96(10.635-10.617) = 7.52 \text{ mm}$	Standard Round of Beam = $\frac{B \times 12}{50} = 332$
Wood Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ -	If restricted by superstructures	Ship's Round of Beam = .330
Depth for Freeboard (D) = 10.635		Difference = .002
		Restricted to Correction = $\frac{\text{Diff}^2}{4} \times \left(1 - \frac{S}{L} \right) = \frac{.002^2}{4} \times \left(1 - \frac{.2818}{1} \right) = .0001 \text{ mm}$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Bridge enclosed (Sketch)	22.642	22.642	2427		22.642
" overhang	-	-			
R.Q.D. enclosed	-	-			
" overhang	-	-			
Bridge enclosed	-	-			
" overhang aft	-	-			
" overhang forward	-	-			
F'ole enclosed	9313	9.313	2276		9.313
" overhang	2740	.620	2276		.620
Trunk aft	1.240				
" forward	-	-			
Tonnage opening aft	-	-			
" " forward	-	-			
Total	33.195	32.575			32.575

Standard Height of Superstructure 2.248 m

" " R.Q.D.

Deduction for complete superstructure 1044 mm

Percentage covered $\frac{S}{L} = .2818$

" " $\frac{S_1}{L} =$ } 2766

" " $\frac{E}{L} =$

Percentage from Table, Line A. 13.83%
(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 = 1383 x 1044 = 144 mm

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	1235	1		1235	760	760	1		760
$\frac{1}{2}L$ from A.P.	529	4		2196	74	74	4		296
$\frac{3}{4}L$ "	137	2		274	0	0	2		0
Amidships	0	4		0	0	0	4		0
$\frac{3}{4}L$ from F.P.	274	2		548	13	13	2		26
$\frac{1}{2}L$ "	1098	4		4392	465	465	4		1860
F.P.	2470	1		2470	1554	1554	1		1554
Total				11115					4496

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{6619}{18} \left(.75 - \frac{1409}{11115} \right) = 224 \text{ mm}$

If limited on account of midship superstructure. No.

Mean actual sheer aft = Deficient

Mean standard sheer aft =

Mean actual sheer forward = .454 (p.t.o.)

Mean standard sheer forward =

Length of enclosed superstructure forward of amidships = } Nil.

" " aft of " =

Deduction for Tropical Freeboard. Addition for Winter and Winter North Atlantic Freeboard. Depth to Freeboard Deck = 10.635 Summer freeboard = 2.785 Moulded draught (d) = 7.850 Keel allowance = Extreme draught = Deduction for Tropical freeboard and addition for = Winter freeboard = $\frac{d}{48}$ inches = 164 mm Addition for Winter North Atlantic Freeboard (if required) =	Deduction for Fresh Water. Displacement in salt water at summer load water line $\Delta = 11217 \text{ m.tons}$ Tons per inch immersion at summer load water line $T = 16.63 \text{ m.tons.}$ Deduction = $\frac{\Delta}{40 T}$ inches = 169 mm HYDROSTATIC CURVES FORWARDED.	TABULAR FREEBOARD corrected for Flush Deck (if required) Correction for coefficient $\frac{726 + .68}{1.36} = 1709$ <table border="1"> <thead> <tr> <th></th> <th>+</th> <th>-</th> </tr> </thead> <tbody> <tr> <td>Depth Correction</td> <td>689</td> <td>-</td> </tr> <tr> <td>Deduction for superstructures</td> <td>-</td> <td>144</td> </tr> <tr> <td>Sheer correction</td> <td>224</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>249</td> <td>-</td> </tr> <tr> <td></td> <td>1162</td> <td>144</td> </tr> </tbody> </table> Summer Freeboard = 2785 mm		+	-	Depth Correction	689	-	Deduction for superstructures	-	144	Sheer correction	224	-	Round of Beam correction	-	-	Correction for Thickness of Deck amidships	-	-	Other corrections, scantlings, etc.	249	-		1162	144
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SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck :- 2785 mm

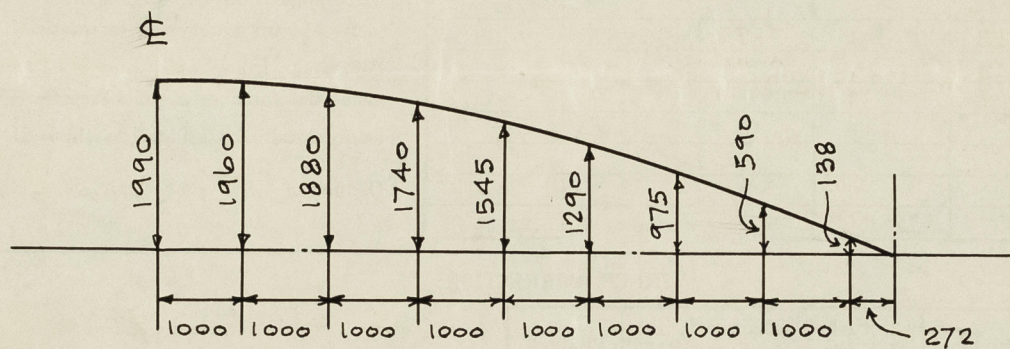
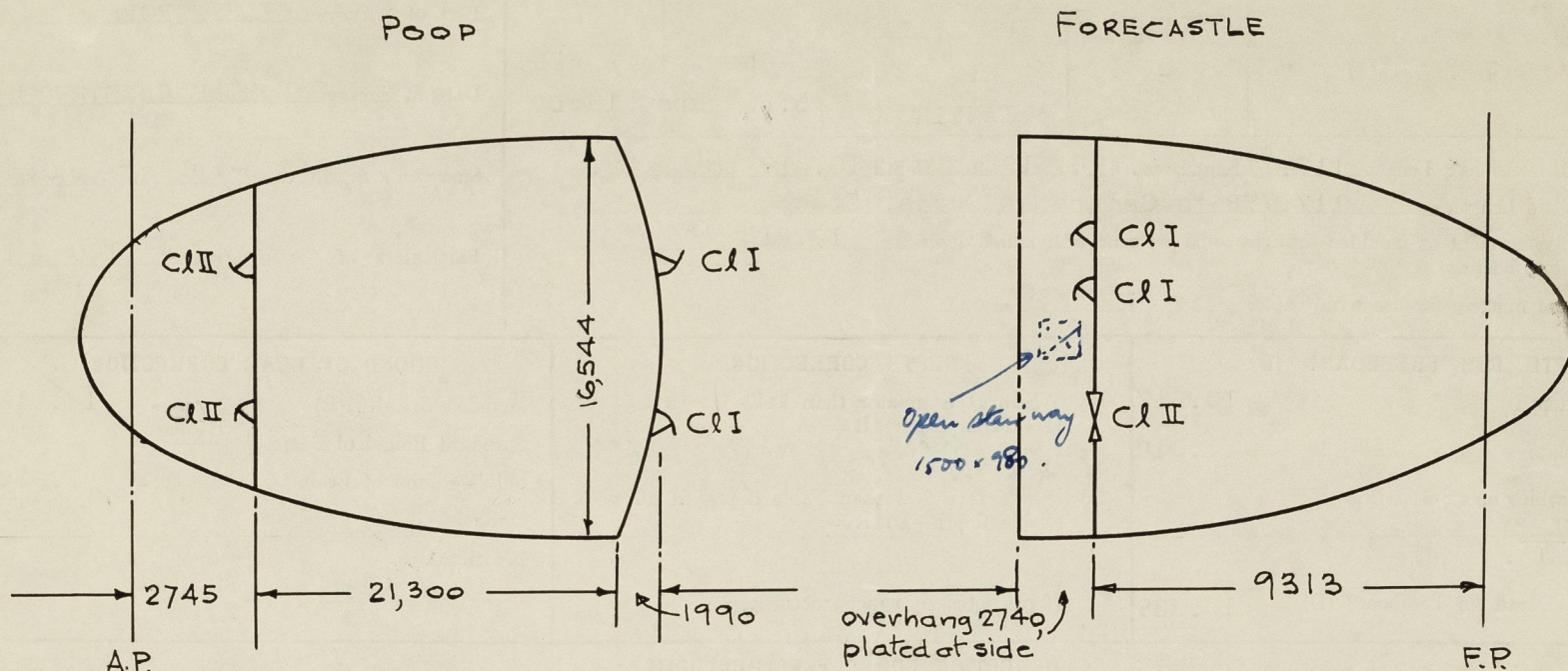
Tropical Fresh Water Line above Centre of Disc	.333 mm
Fresh Water Line	.169 mm
Tropical Line	.164 mm
Winter Line below	.164 mm
Winter North Atlantic Line	...

Tropical Fresh Water Freeboard	2.452 mm
Fresh Water	2.616 mm
Tropical	2.621 mm
Winter	2.942 mm
Winter North Atlantic	...

21 MAR 1961

Paranaguá.

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.



OFFSETS OF POOP FRONT.

Area of half poop front.

1990	1	1990
1960	4	7840
1880	2	3760
1740	4	6960
1545	2	3090
1290	4	5160
975	2	1950
590	4	2360
138	1	138
		33248.

$$\text{Area } \frac{1}{2} \times 1000 + 33248 = 11082.666 \text{ m}^2$$

$$\frac{1}{2} \times 138 \times 272 = 18768$$

$$\text{INTERNATIONAL } 1101434 \text{ m}^2$$

Sheer forward.

Actual	Standard.
0	0
13	274
465	1098
1574	2470
2988	6586
2988	6586
2988	6586

$$\frac{1}{2} B \cdot 8272 \text{ mm}$$

$$M. \text{ length} = \frac{11101434}{8272} = 1342 \text{ mm}$$

$$\text{Equin length } 22642 \text{ mm}$$

Trade of ship _____ INTERNATIONAL _____

Names of sister ships "GUANABARA", "TODOS OS SANTOS", "TURIACU"

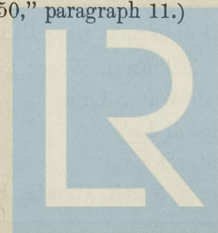
Builder's name and yard number Valmet Oy. Nº 203

Owners COMISSAO DE MARINHA MERCANTE

Fee £ _____

List of plans forwarded for reference. (See "Instructions to Surveyors, Part 4, 1950," paragraph 11.)

- MIDSHIP SECTION } As approved
- PROFILE AND DECKS } and modified
- HYDROSTATIC CURVES.



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