

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker
having Prop, Bridge and Forecastle.

Port of Survey London

Date of Survey 15.20 July 1932

Name of Surveyor R. Blake.

Particulars of Classification + 100.A.1.
S. S. Ham. No. 3-7.27

Ship's Name PARANA (Type of Superstructures.)
GABOON.

Nationality and Port of Registry British Argentine (2/10/40)
Liverpool

Official Number 137434

Gross Tonnage 3297

Date of Build 1915.
3

Moulded Dimensions: Length 336.5 Breadth 48.30 Depth 25.0
Moulded displacement at moulded draught = 85 per cent. of moulded depth 7826 tons
Coefficient of fineness for use with Tables .793

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth 25.00	(a) Where D is greater than Table depth (D - Table depth) R = <u>25.16 - 22.43 = 2.73</u>	Moulded Breadth (B) <u>48.30</u>
Stringer plate .6204	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = <u>2.07</u>	Standard Round of Beam = $\frac{B \times 12}{50} = \frac{48.30 \times 12}{50} = 11.59$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) = \frac{25 \times (78.08 + 77.22)}{336.5} = .12$	If restricted by superstructures <input checked="" type="checkbox"/>	Ship's Round of Beam = <u>12.00</u>
Depth for Freeboard (D) = <u>25.16</u>		Difference <u>.41</u>
		Restricted to <u>.4673</u>
		Correction = $\frac{\text{Diff}^e}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.41}{4} \times \left(1 - \frac{.5327}{1} \right) = .05$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed	33.04	33.04	8.3 1/2"		33.04
" overhang	2.83	1.41			1.41
R.Q.D. enclosed					
" overhang					
Bridge enclosed	103.77	103.77	9.0 1/2"		103.77
" overhang aft	4.43	3.32			3.32
" overhang forward					
F'cle enclosed	37.70	37.70	8.1 1/2"		37.70
" overhang					
Trunk aft					
" forward					
Tonnage opening aft					
" forward					
Total	181.77	179.24			179.24

Standard Height of Superstructure <u>6.86</u>
" " R.Q.D. <input checked="" type="checkbox"/>
Deduction for complete superstructure <u>37.76</u>
Percentage covered $\frac{S}{L} = \frac{181.77}{336.5} = 54.02\%$
" $\frac{S_1}{L} = \frac{179.24}{336.5} = 53.27\%$
" $\frac{E}{L} = \frac{179.24}{336.5} = 53.27\%$
Percentage from Table, Line A. <input checked="" type="checkbox"/>
(corrected for absence of forecastle (if required))
Percentage from Table, Line B. <u>39.27%</u>
(corrected for absence of forecastle (if required))
Interpolation for bridge less than 2L (if required)
Deduction = <u>37.76</u> x <u>39.27</u> = <u>14.83</u>

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	43.65	1		43.65	39	39.00	1		39.00
1/2 L from A.P.	19.42	4		77.68	16 5/8	16.69	4		66.76
2/3 L "	4.80	2		9.60	4 1/8	4.17	2		8.34
Amidships		4					4		
2/3 L from F.P.	9.60	2		19.20	8 1/2	8.29	2		16.58
1/2 L "	38.85	4		155.40	33 1/8	33.18	4		132.72
F.P.	87.30	1		87.30	75	75.00	1		75.00
Total				392.83					338.40

Mean actual sheer aft = Deficient
Mean standard sheer aft

Mean actual sheer forward = Deficient
Mean standard sheer forward

Length of enclosed superstructure forward of amidships = .143
" " aft of " = .17

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{54.43}{18} \left(.75 - \frac{27.01}{1} \right) = + 1.45$$

If limited on account of midship superstructure.

If limited to maximum allowance of 1 1/2 ins. per 100 ft.

Deduction for Tropical Freeboard.
Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = 25.04
Summer freeboard = 4.10
Moulded draught (d) = 20.94

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = $\frac{20.94}{4} = 5.23 = 5 \frac{1}{4}$
Addition for Winter North Atlantic Freeboard (if required) =

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 = $\frac{\Delta}{40 T}$ inches
= $5 \frac{1}{4}$

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{.793 + .68}{1.36} = \frac{1.473}{1.36}$

	+	-
Depth Correction	7.07	
Deduction for superstructures		14.83
Sheer correction	1.45	
Round of Beam correction05
Correction for Thickness of Deck amidships		1.44
Other corrections, scantlings, etc.		
	8.52	16.32

Summer Freeboard = 49.33SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, ~~Wood~~, Steel, Deck:— 4-1 1/4

Tropical Fresh Water Line above Centre of Disc	10 1/2
Fresh Water Line " "	5 1/4
Tropical Line " "	5 1/4
Winter Line below " "	5 1/4
Winter North Atlantic Line " "	

Tropical Fresh Water Freeboard	
Fresh Water " "	
Tropical " "	
Winter " "	4-6 1/2
Winter North Atlantic " "	

[illegible]

Ex. Pr. Med.
 $108.2' - (20.33 \times 5) + (4.08 \times 5.33) + (16.33 \times 5.3)$

$$108.2 - \frac{101.65 + 21.8 + 86.6}{47.41}$$

$$108.2 - \frac{210.05}{47.41}$$

$$108.2 - 4.43 = 103.7$$

equiv. for bld -

$$\begin{aligned} & 42.54 - (18 \times 4) + (2.5 \times 6 \times 4) + (9.5 \times 6) + (5.5 \times 4) + (2.5 \times 6) \\ & (13 \times 4) + (3 \times 26 \times 6) + (2.5 \times 6) + (5.5 \times 4) + (2.75 \times 6) + (2.67 \times 4) \\ & - \frac{(52 + 79.38 + 15 + 22 + 16.5 + 10.69)}{40.42} \\ & - \frac{195.56}{40.42} \\ & - 4.84 \end{aligned}$$

Freeboard Deck.

Bridge Deck.

1 " " " Casing Top 8'-0" x 14'-6" " 1'-4" " " " " " " " " "

Popuck.

1 Hatch 5'-9" x 3'-6" coaming 1'-6" high, wood covers, cleats, battens, & tarpaulins.

This vessel was surveyed afloat & in dry dock for freeboard, & S.S. 2nd No. 1. is now in progress.

Builder's name and yard number *Tyne Iron Shipbuilding Co Ltd. Newcastle. No 193.*

Names of sister ships

OWNERS British & African S. N. Co Ltd (Gilder Tempest & Co. Ltd. Inqrs)

Fee £ 11 : 18 : 0 Received by me

Received
a/c 25/7/32