

DISCLOSED SECTION

360 970

LLOYD'S REGISTER OF SHIPPING.
(CLASSIFICATION SOCIETY RECOGNISED BY THE JAPANESE GOVERNMENT)
SURVEY FOR FREEBOARD.

Ship's Name BUENOS AIRES MARU RIO DE JANEIRO MARU	Port of Registry Osaka	Official No. --	No. in R.B. --	Gross Tonnage About 9500	Tonnage under Fbd. Deck = V --	Date of Launch	Date when Built Building	Report Number 60
Owners Osaka Shosen Kaisha.		Builders Nippon Yusen Kaisha Nagasaki.			Yard No. 456 - 7	Port of Survey Nagasaki.		
Type of vessel Complete superstructure with ro'cle.	Particulars of Classification + 100 A. 1. "with freeboard"		Position of Freeboard Deck Assumed 7'6" below Superstructure Deck.		Date of Survey While Building G. Anderson & Name of Surveyor H. J. Cox.			

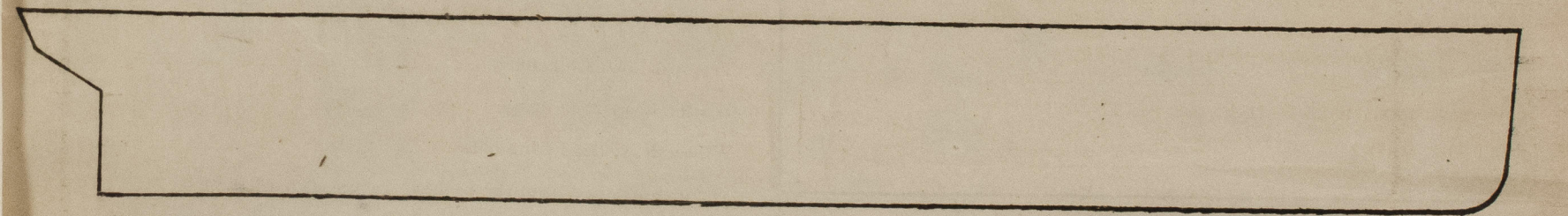
PRINCIPAL DIMENSIONS.								
Length between perpendiculars	460	ft.	Breadth Moulded = B ₀	62	ft.	Depth Moulded to Fbd. deck = D ₀	assumed 32.0	ft.
Length on Load Line	460	ft.	Thickness of Side plating in ins. x 3/12"	+	ft.	Round of Beam	+	ft.
			*2/12 if plating is joggled)			Depth from base line to top of inner bottom plating or ordinary floors	-	ft.
Length for Freeboard = L	460	ft.	Breadth for Freeboard = B		ft.	Depth for Tonnage Coef. (Art. 39) = D		ft.

CORRECTION TO TONNAGE (Art. 39)	DEPTH OF DOUBLE BOTTOM (Art. 39)
Tonnage between top of ceiling on double bottom or ordinary floors as fitted and standard level of top of ceiling (v) =	Depth of Actual Double Bottom (including plating) or Ordinary Floors
	ins.
	Depth of Standard Double Bottom (including plating) or Ordinary Floors
	ins.
	Difference
	x 1/12 =
	= d.

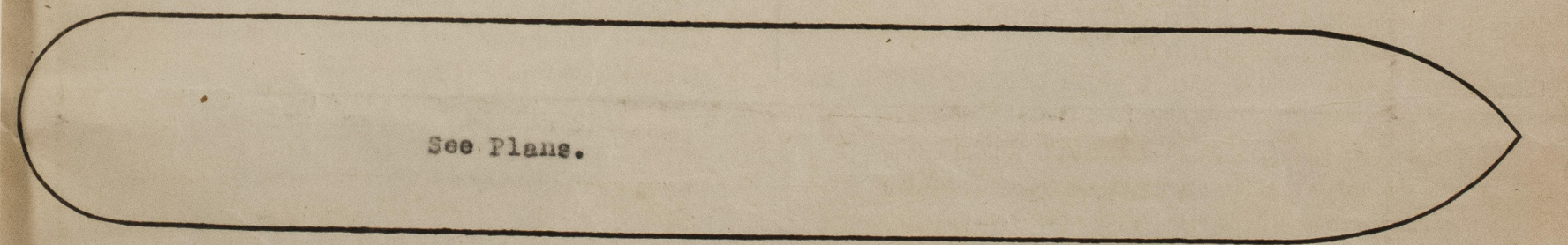
SHEER (Arts. 39 and 60-63)				FRAMING (Art. 39)					
Ordinate	Height of Sheer in inches.	S.M.	Products	Between Frames	Length in ft.	Depth of Frame in ins.	Thickness of Sparring in inches	Total depth in inches	Products ft. x inches
1	96.0	1							
2	43.0	4							
3	12.0	2							
4	0	4							
5	4.0	2							
6	16.0	4							
7	36.0	1							

Sum of Products =	Sum of Products =
Mean Height of Sheer = S = $\frac{\text{Sum of Products}}{18}$ =	Sum of Products = Actual Mean Depth of framing
ins.	ins.
Standard Mean Height = S ₀ = $\frac{1}{3}(L/10 + 10)$ =	Standard " " " " =
ins.	ins.
Difference x 1/12 =	Difference x 2/12 =
ft. = d ₁	= 2b
Correction (Arts. 60-63) = $\frac{3}{4}(1 - e)(S_0 - S)$ =	
ins.	

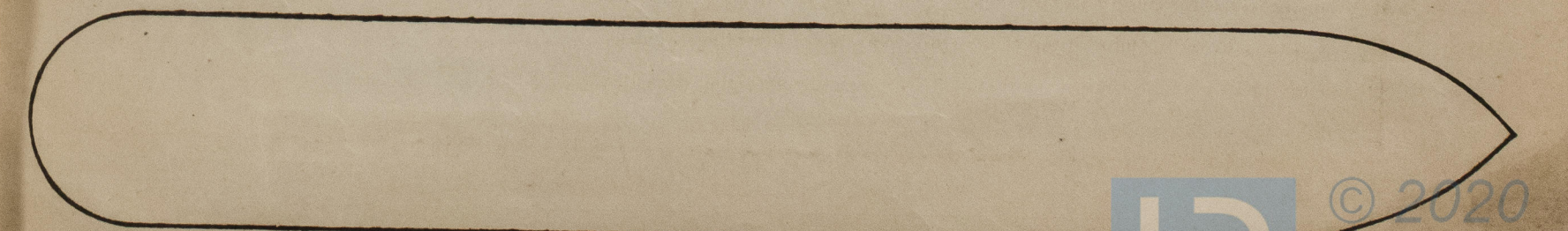
COEFFICIENT OF FINENESS (Art. 39 or 43)	
$\frac{100(V + v)}{L(B - 2b)(D + d + d_1) + n}$	$d = 85\% \text{ of } 32' \text{ (assumed depth moulded)} = 27.2'$
	or $\frac{35 \times \Delta}{L \times B_0 \times d_0} + 0.04$
	$= \frac{35 \times 15767}{460 \times 62 \times 27.2} + 0.04 = .75$



Sketch showing arrangement and height of double bottom or ordinary floors and of superstructures (unless complete plans are submitted).



See Plans.



Sketch of deck erections showing openings in end bulkheads and position and arrangement of closing appliances. Hatchways, and Engine and Boiler openings also to be shown. Extent and thickness of wood deck or composition to be shown in red ink, and extent and thickness of ceiling (and battens) on tank top to be given.

007846 - 007856 - 0129 1/2

WOOD DECK (Arts. 5 and 6)			
	Mean Length in ft.	Thickness in ins.	Products
Forecastle			
Bridge			
Poop or R.Q.D.			
Open Deck, fwd.			
" " aft.			
Total length = $l =$		Sum of Products =	
Sum of Products = $t =$		ins. ; $\frac{\text{Sum of Products}}{L} = t_1 =$	
		ins.	

CORRECTION FOR DEPTH & CORRECTION FOR FREEBOARD.

If no sheathing fitted amidships = $t_1 = \pm$ ins. (Arts. 6 and 57 p. 1)
 If sheathing is fitted amidships = $(t - t_1) = \mp$ ins. (Arts. 6 and 57 p. 2)
 * Note: Use the upper sign in correction for depth and the lower sign in correction for freeboard.

DEPTH TO USE IN FREEBOARD TABLE. Corrected

Depth moulded to C.S. Dk. 39 ft. 6 ins. depth to 3.3. Deck
 Thickness of Stringer Plate .75 " less 7'6"
 Thickness of Wood Deck Amidships 3.00 " 39 9.75-7'6"
 Correction for partial wood deck \pm " -
 Depth to use in Freeboard Tables 32 ft. 3.75 ins. = $D_1 = 32.31$ ft.

SUPERSTRUCTURES.

HEIGHT (Arts. 46-48)

Standard Height = $(0.018 L + 1.2)$ ft. = _____ ft.

	Complete Superstructure	Forecastle	Bridge	Poop or R.Q.D.
Actual				
Standard				

CLOSING APPLIANCES (Arts. 50 and 54)

	Forecastle	Bridge		Poop or Raised Quarter Deck
		Forward End.	After End.	
Means of Closing openings in bulkhead				
Corresponding Class				

EFFECTIVE LENGTH (Arts. 55 and 56)

	Mean Length	Coef. Art. 56	Height Coef.	Products
Forecastle closed part				
" open part				
Bridge closed part				
" open part fwd.				
" " aft.				
Poop closed part				
" open part				

Total Effective Length =

Total Effective Length
Length of Vessel = $r =$

Corresponding Coef. in Table (Art. 49) = $e = 1.0$

Reduction for Complete Superstructure 39.0 ins.

Product _____ ins.

Correction for Superstructures 39" ins.

EFFECTIVE LENGTH (Shelter Deck Vessels Arts. 87-92)

$l + \frac{1}{2}(1-p)(L-r) =$ _____ ft.

(* See Art. 90)

CORRECTION FOR PROPORTIONS L/D (Art. 58)

When D_1 is less than 35 ft. = $\frac{D_1 + 16}{300} (1 - e/2) (L - 12 D_1)$

" " greater than 35 ft. = $0.17 (1 - e/2) (L - 12 D_1)$

[Note $e = 1.0$ if more than 6/10 covered] = $\frac{48.31}{300} \times (460 - 307.72) = 5.80$

Are the Engine and Boiler openings covered by a Bridge, Poop, Raised Quarter Deck or enclosed by a strong steel deck house? **Yes**

If openings are not so protected give thickness of plating and scantlings and spacing of stiffeners of Casings

Are suitable means provided for closing all openings in them in bad weather? **Yes**

State the vertical distance from base line at top of keel to lower edge of lowest side scuttle 36'9" = 77.47 ins.

State if there are any cargo ports or scuppers through sides of vessel below upper deck **No** Draught from top of keel = 25.87 ft.

State any special features in the construction of the vessel **All W.T. Bulkheads extend to upper deck.**

Sister vessels

Fee, Yen _____; Depth of Keel _____ ins.; Draught (btm. keel) _____ ft. _____ ins.

CORRECTION FOR ROUND OF BEAM (Art. 59) superstructure deck

Standard Round of Beam = $\frac{\text{Length of Beam in ins.}}{50} = \frac{74.4}{50} = 1.488$ ins.
 Correction = $\frac{1}{4}$ (Standard Round of Beam - Actual Round of Beam)
 = $\frac{1}{4} (1.488 - 9) = 1.47$ ins.

CORRECTION FOR FREEING PORTS

(in vessels less than 15 ft. Depth Art. 64)

Length of bulwark in feet each side _____ ft.
 Area of Freeing ports each side _____ sq. ft.
 Area of Freeing ports required by Table _____ sq. ft.
 Correction $1.2 (r - 0.5) D_1 = +$ _____ ins.

CORRECTION FOR ACCESS TO CREW'S QUARTERS (Arts. 65-67)

Are Crew berthed in Bridge House or Forecastle?
 Height and breadth of gangway _____
 Correction = $-0.12 (80 - l) D_1$ or $1.2 (r - 0.5) D_1 = +$ _____ ins.

SUMMARY.

Freeboard by Tables 94.03 ins.
 Correction for Sheer $+$ _____
 " " Partial Wood Deck _____
 " " Superstructures _____ 39"
 " " Proportions L/D _____
 " " Round of Beam 1.47 _____
 " " Freeing Ports _____
 " " Access to Crew's Quarters _____
 Totals 6.75 39.00
 Net Correction -32.25
 Geometric Freeboard 61.78 ins.
 Corresponding Geometric Draught (mld.) 27.16 ft.
 Moulded Draught limited by $\left(\frac{\text{form}}{\text{moulded draught}} \right)$ to 27.16 ft.
 Corresponding Freeboard (Summer) 61.83 ins.

Winter Freeboard (Art. 22) = $\frac{1}{4} (D_1 - 10) + \frac{1}{4} 15 (59 - D_1)$
 = $\frac{1}{4} (22.31 - 10) + \frac{1}{4} 15 (59 - 22.31) = 6.17$ ins.

Tropical Freeboard (Art. 24) do. do. = 6.17 ins.

Winter North Atlantic Fbd. (Art. 23) Vessels 330 ft. and below.

Ratio of effective length of superstructures to length of vessel

Additional Freeboard _____ ins.

Fresh Water Freeboard (Art. 27) $\frac{15662}{40 \times 57.1} = 6.86 = 6.9$ Max.
 $\frac{1}{4}$ " per foot of Summer Draught = $\frac{40 \times 56.6}{40 \times 56.6} = 6.57$ ins.

FREEBOARD TO BE ASSIGNED. by Owners request

Vertical distance from upper edge of horizontal line indicating the freeboard deck to the centre of the disc. (Summer Line) 77.5 ins.

Fresh Water Load Line above centre of disc. 6.6 ins.

Tropical Load Line above " " 6.2 ins.

Winter Load Line below " " 6.2 ins.

Winter N.A. Load Line below " " _____ ins.

Vertical distance from the point of intersection of the extended line of the upper surface of wood moet deck at mid length of the vessel with the outside of shell plating to the upper edge of the horizontal line indicating the freeboard deck 90.1 ins.

Depth from top of keel to Assumed Freeboard Dk = 32'-3.75"
 Twice thickness of keel = 1.72

Owners extreme draft 32.547

6.547

77.47 ins.

25.87 ft.

"BUENOS AIRES MARU". "RIO DE JANEIRO MARU"

TRANSVERSE STRENGTH

		WING FUEL OIL TANK:		FRESH WATER TANK:		ENGINE ROOM		FORWARD CARGO HOLD:	
		ABAFT F. No. 62		12"x3 1/2"x.44" B.A.		11"x3 1/2"x.54" B.A.		11"x3 1/2"x.54" B.A.	
FRAMES		9"x3 1/2"x.46" B.A.		12"x3 1/2"x.44" B.A.		11"x3 1/2"x.54" B.A.		11"x3 1/2"x.54" B.A.	
I/Y OF FRAMES (REVISED B.S.)		14.40		27.65		25.30		25.30	
" H " IN FT.		7.63		17.33		16.83		17.33	
" K " IN FT.		32.17		21.50		20.92		21.50	
(f 1)		10.91		27.66		26.28		27.66	
(f 2)		7.59		3.45		3.28		3.45	
CORRECTED (f 2)		7.97 (**)		--		--		3.80 (*)	
(f 1 + f 2)		18.88		31.11		29.56		31.46	
(f 1 + f 2) x S (S = 33")		623.5		1,026.63		975.48		1,038.18	
1,000 x M		14,400.00		27,650.00		25,300.00		25,300.00	
1000 x M									
(f 1 + f 2) x S		23.11		26.92		25.93		24.38	
(t) IN FT.		4.63		5.58		6.67		5.58	
PERMITTED BY DRAUGHT TRANSVERSE STRENGTH.		27.74		32.50		32.60		29.96	

NOTE:- slide rule accuracy.

(*) = 22 ft. to pillar.

(**) = 21 ft. to pillar.

		28 1/2 x .42		12.0		16.4		197		3230	
Margin Plate 5 x .48		2.4		10.1		24		240			
" " 55 x .56		30.8		12.3		379		4660			
" Angle 5x5x.56x2		10.6		12.3		130		1600			
Shell Strake A 71.63 x .68		48.7		15.7		765		12000			
" B 77.75 x .68		52.9		15.6		825		12870			
" C 78 x .68		53.0		15.5		822		12730			
" D 76 1/2 x .68		52.0		15.3		795		12170			
" E 77 1/2 x .68		52.7		13.1		690		9040			
" F 82 x .66		54.1		7.8		422		3290			
" G 58.63 x .66		38.7		2.5		97		240			
Totals below assumed axis		612.8		7423		97920					
" above assumed axis		517.4		8693		172100					
Sum or Difference		1130.2		1270		270020					

Moment of Inertia about assumed axis

540040

Neutral Axis above assumed axis (x) = 1.12

Correction = (Total Area x x^2 x 2) = -1270 x 1.12 x 2 = 2760

Moment of Inertia about Neutral Axis = 537280

Distance from Neutral Axis to top of Strength deck beam at side = 22.58 ft.

Keel

MODULUS OF SECTION = 23790

Actual Modulus = 23790

f. B. = 14.13 x .62

DRAUGHT PERMITTED BY LONGITUDINAL STRENGTH (Arts. 81-86)

Minimum Side Plating (Art. 77) $\frac{0.105 \times 460 + 17}{100} = .653$; Standard Frame Spacing (Art. 78) = $.025 \times 460 + 17 = 28.5$

Actual Side Plating = .66; Actual Frame Spacing = 33"

If actual frame spacing exceeds the standard $\sqrt{\frac{\text{Actual frame spacing}}{\text{Standard frame spacing}}} = \sqrt{\frac{33}{28.5}} \times .653 = .70$

Moulded Geometric Draught (d) = _____ H = _____ f. = _____

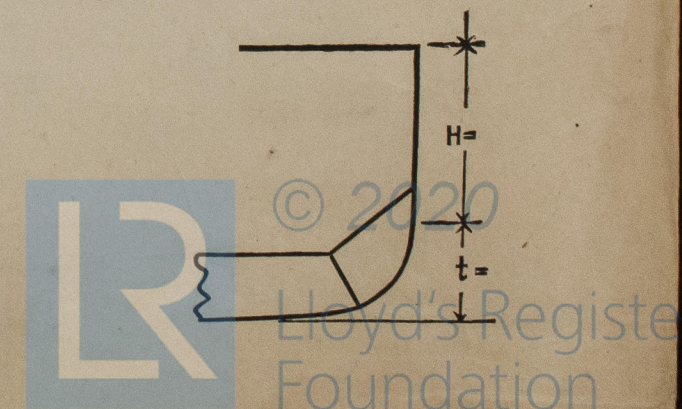
t = _____ K = _____ f. = _____

d - t = _____ f. + f. = _____

Standard I/y = $\frac{s(d-t)(f_1 + f_2)}{1000} =$ _____

Frame in ship = _____ at _____ spacing, I/y = _____

DRAUGHT PERMITTED BY TRANSVERSE STRENGTH = $\frac{I/y \times 1000}{s(f_1 + f_2)} + t =$ _____



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