

DISCLOSED

SECTION 19

NOV 30 1922
Kobe

346

LLOYD'S REGISTER OF SHIPPING.

(CLASSIFICATION SOCIETY RECOGNISED BY THE JAPANESE GOVERNMENT)

SURVEY FOR FREEBOARD.

Ship's Name	Port of Registry	Official No.	No. in R.B.	Gross Tonnage	Tonnage under Fbd. Deck=V	Date of Launch	Date when Built	Report Number
MONTREAL MARU	Kobe	28910		6576.52	6157.33	1922 6th Sept.	1922	10
Owners		Builders			Yard No.	Port of Survey.....Kobe.....		
Kawasaki Dockyard Co. Ltd.		Kawasaki Dockyard Co.Ltd.			482	Date of Survey 20th August 1922.....		
Type of vessel	Particulars of Classification			Position of Freeboard Deck		Name of Surveyor		
Awning Deck	100 A.l.Awning Deck with freeboard, and Teishinsho Rule 1st Class.			Awning Deck		A. Watt.		

PRINCIPAL DIMENSIONS.

Length between perpendiculars	405	ft.	Breadth Moulded = B ₀	53.00	ft.	Depth Moulded to Fbd. deck = D ₀	37.00	ft.
Length on Load Line	404.64	ft.	Thickness of Side plating in ins. $\times \frac{3}{12}$	16	ft.	Round of Beam	+ 1.10	ft.
			*(2/12 if plating is jogged)			Depth from base line to top of inner bottom plating or ordinary floors	- 3.62	ft.
Length for Freeboard = L	404.64	ft.	Breadth for Freeboard = B	53.16	ft.	Depth for Tonnage Coef. (Art. 39) = D	34.48	ft.

CORRECTION TO TONNAGE (Art. 39)

Tonnage between top of ceiling on double bottom or ordinary floors as fitted and standard level of top of ceiling (v) = $\frac{405 \times .04 \times 30}{100} = 5$ tons.

DEPTH OF DOUBLE BOTTOM (Art. 39)

Depth of Actual Double Bottom (including plating) or Ordinary Floors	43.5	ins.
Depth of Standard Double Bottom (including plating) or Ordinary Floors	44.52	ins.
Difference	-1.02	
$\times \frac{1}{12}$	-.09	= d.

SHEER (Arts. 39 and 60-63)

Ordinate	Height of Sheer in inches.	S.M.	Products
1	64.38	1	64.38
2	26.50	4	106.00
3	5.75	2	11.50
4	0	4	0
5	9.56	2	19.12
6	38.37	4	153.48
7	95.13	1	95.13

Sum of Products = 449.61

Mean Height of Sheer = $S = \frac{\text{Sum of Products}}{18} = 24.98$ ins.
Standard Mean Height = $S_0 = \frac{1}{3}(L/10 + 10) = 16.83$ ins.
Difference $8.15 \times \frac{1}{12} = .68$ ft. = d,
Correction (Arts. 60-63) = $\frac{3}{4}(1 - e)(S_0 - S) = \frac{3}{4} \times .98 \times 8.15 = 5.99$ ins.

FRAMING (Art. 39)

Between Frames	Length in ft.	Depth of Frame in ins.	Thickness of Sparring in inches	Total depth in inches	Products ft. x inches
Holds	312.0	9.5	2.0	11.5	3590
Heavy spc	52.0	10.0	2.0	12.0	624
Fore pk	22.21	7.0	2.0	9.0	200
Aft peak	18.79	6.0	2.0	8.0	150

Sum of Products = 4564

Sum of Products = Actual Mean Depth of framing. 11.27 ins.
Length of Ship

Standard „ „ „ „ 8.50 ins.

Difference $2.77 \times \frac{2}{12} = .46$ = 2b

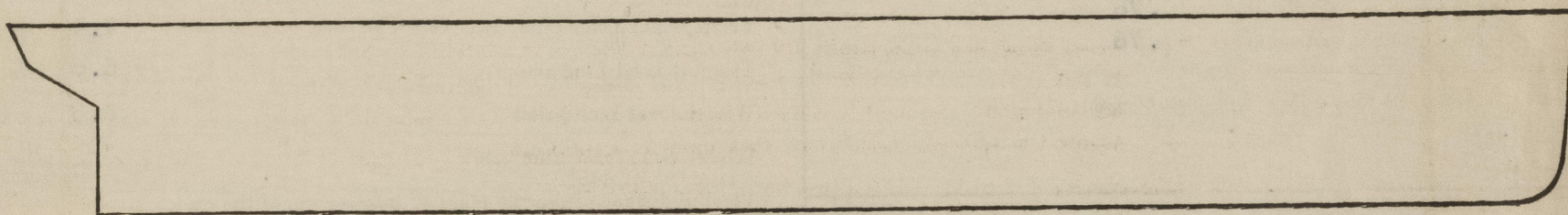
COEFFICIENT OF FINENESS (Art. 39 or 43)

$$\frac{100(V + v)}{L(B - 2b)(D + d + d_1)} + n$$

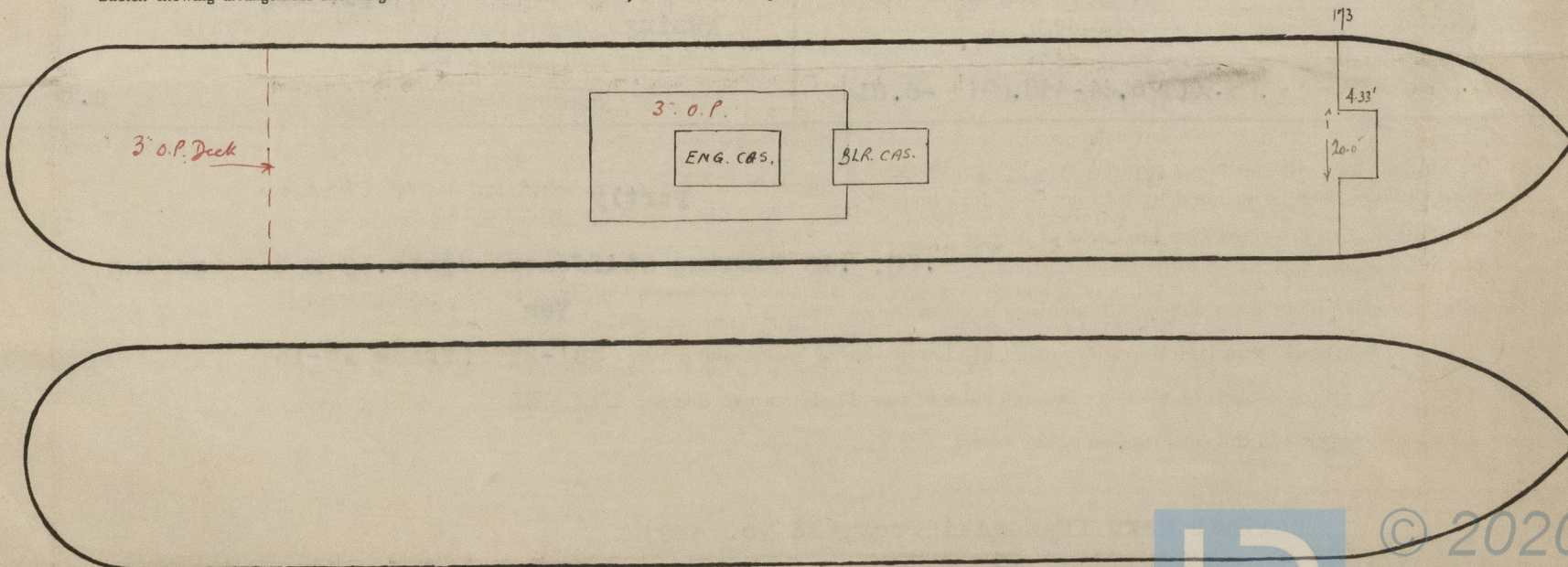
$$= \frac{100(6157.33 - 5)}{404.64(53.16 - .46)(34.48 - .09 + .68)} + 0 = .82$$

$$\text{or } \frac{35 \times \Delta}{L \times B_0 \times d_0} + 0.04$$

$$= \frac{35 \times 6157.33}{404.64 \times 53.16 \times 34.48} + 0.04 =$$

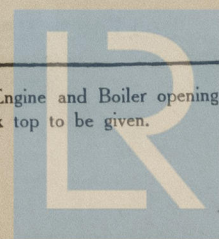


Sketch showing arrangement and height of double bottom or ordinary floors and of superstructures (unless complete plans are submitted).



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.

Tank top:- $2\frac{1}{2}$ " ceiling on 2" Cross Battens throughout.



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Lloyd's Register
Foundation

007088-007099-0032 1/2

WOOD DECK (Arts. 5 and 6)			
	Mean Length in ft.	Thickness in ins.	Products
Forecastle	30.88	3.04	93.88
Bridge Awning	33.96	3.00	101.88
Poop or R.Q.D.			
Open Deck, fwd.			
" " aft.			
Total length = l =	64.84	Sum of Products =	195.76
Sum of Products	= t = ins.; Sum of Products = t ₁ = .48 ins.		

CORRECTION FOR DEPTH & CORRECTION FOR FREEBOARD.
 If no sheathing fitted amidships = t₁ = ± .48 ins. (Arts. 6 and 57 p. 1)
 If sheathing is fitted amidships = (t - t₁) = ± 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.	
Depth moulded	37 ft. 0.00 ins.
Thickness of Stringer Plate	.54 ..
Thickness of Wood Deck Amidships	..
Correction for partial wood deck	+ .48 ..
Depth to use in Freeboard Tables	37 ft. 1.02 ins. = D ₁ = 37.09 ft.

SUPERSTRUCTURES.				
HEIGHT (Arts. 46-48)				
Standard Height = (0.018 L + 1.2) ft. = 7.50 ft.				
	Complete Superstructure	Forecastle	Bridge	Poop or R.Q.D.
Actual		5.77 = .77		
Standard		7.50		

CLOSING APPLIANCES (Arts. 50 and 54)				
	Forecastle	Bridge Forward End.	After End.	Poop or Raised Quarter Deck
Means of Closing openings in bulkhead	Steel doors	-	-	-
Corresponding Class	1	-	-	-

EFFECTIVE LENGTH (Arts. 55 and 56)				
	Mean Length	Coef. Art. 56	Height Coef.	Products.
Forecastle closed part	28.60	1.00	.77	22.02
" " open part	2.28	.75	.77	1.32
Bridge closed part				
" " open part fwd.				
" " " aft.				
Poop closed part				
" " open part				

Total Effective Length = 23.34
 Total Effective Length = r = .04 70% = 16.34
 Length of Vessel
 Corresponding Coef. in Table (Art. 49) = e = .02
 Reduction for Complete Superstructure 39.00 ins.
 Product .78 ins.
 Correction for Superstructures - .78 ins.

EFFECTIVE LENGTH (Shelter Deck Vessels Arts. 87-92)
 $l + \frac{1}{2}(1-p)(L-l) =$.. ft.
 (* See Art. 90)

CORRECTION FOR PROPORTIONS L/D (Art. 58)
 When D₁ 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] = .17 x .99 (406.64 - 445.08) = -6.81 ins.

Are the Engine and Boiler openings covered by a Bridge, Poop, Raised Quarter Deck or enclosed by a strong steel deck house? **Partly**
 If openings are not so protected give thickness of plating and scantlings and spacing of stiffeners of Casings **.30, .40 Coaming Stiffeners 3 1/2 x 3 x .40 @ 24" spacing**
 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 **38'-2 1/2" (frame 15-16)**
 State if there are any cargo ports or scuppers through sides of vessel below upper deck **No**
 State any special features in the construction of the vessel
 Sister vessels **Belfast Maru (Kawasaki Dockyard No. 480)**
 Fee, Yen. **180.00**; Depth of Keel **22** ins.; Draught (btm. keel) **28** ft. **5** ins.

CORRECTION FOR ROUND OF BEAM (Art. 59)
 Standard Round of Beam = Length of Beam in ins. = 12.48 ins.
 Correction = $\frac{1}{4}(\text{Standard Round of Beam} - \text{Actual Round of Beam})$
 = $\frac{1}{4}(12.48 - 13.25) = -.19$ 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) D₁ = + .. 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 = .012 (80 - l) D₁ or 1.2 (r - 0.5) D₁ .. = + .. ins.

SUMMARY.
 Freeboard by Tables 120.21 ins.
 Awning Deck Str. plate doubling .52
 Correction for Sheer 5.99
 " " Partial Wood Deck .48
 " " Superstructures .78
 " " Proportions L/D 6.81
 " " Round of Beam .19
 " " Freeing Ports
 " " Access to Crew's Quarters
 Totals .52 14.25
 Net Correction 13.73
 Geometric Freeboard 106.5 ins.
 Corresponding Geometric Draught (mld.) 28.21 ft.
 Moulded Draught limited by $\left(\frac{\text{form transverse strength}}{\text{longitudinal strength}} \right)$ to 28.21 ft.
 Corresponding Freeboard (Summer) 106.5 ins.

Winter Freeboard (Art. 22) = $\frac{1}{4}(D_1 - 10) + r/45 \times (59 - D_1)$
 = $\frac{1}{4}(37.09 - 10) + .04/45(59 - 37.09) = + 6.8$ ins.
 Tropical Freeboard (Art. 24) do. do. = - 6.8 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)
 $\frac{1}{4}$ per foot of Summer Draught = $\frac{1}{4} \times 28.21 = - 7.1$ ins.

FREEBOARD TO BE ASSIGNED.
 Vertical distance from upper edge of horizontal line indicating the freeboard deck to the centre of the disc. (Summer Line) 106.5 ins.
 Fresh Water Load Line above centre of disc. 7.1 ins.
 Tropical Load Line above " " " 6.8 ins.
 Winter Load Line below " " " 6.8 ins.
 Winter N.A. Load Line below " " " - ins.
 Vertical distance from the point of intersection of the extended line of the upper surface of pl. dblg of the Awning 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 0.00 ins.

DETAILS OF CONSTRUCTION OF WEATHER DECK HATCHWAYS.

	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6
Length and Breadth	26'-0"x18'-0"	30'-4"x18'-0"	21'-8"x18'-0"			
Height above deck and thickness of side and end coaming	30 x.44	30 x.44	30 x.44	Same as	Same as	Same as
Shifting Beams { Number and Material Scantlings	5 Steel Pl. 15 x.36 A. 4 x 3 x.44	5 Steel Pl. 16 1/2 x.36 A. 4 x 3 x.44	4 Steel Pl. 15 x.36 A. 4 x 3 x.44	No. 3 Hatch	No. 2 Hatch	No. 1 Hatch
*Fore and Afters { Number and Material Scantlings	-	-	-			
Thickness of hatches	3"	3"	3"			
Remarks	* When the fore and afters are of wood the depth should be stated from the underside of hatches.					

LONGITUDINAL MODULUS.

BELOW ASSUMED AXIS.						ABOVE ASSUMED AXIS.					
Item	Scantlings	Area	Lever	Moment	Mt. of Inertia	Item	Scantlings	Area	Lever	Moment	Mt. of Inertia
Flat Keel						Top Deck Str.					
" "						" " "					
Centre Girder						" " Plating					
C.G. btm. ang.						" " "					
C.G. top angles						" " "					
T.T. Cr. Strake						" " Str. Ang.					
T.T. plating						2nd Deck Str.					
" "						" " Plating					
" "						" " "					
" "						" " Str. Ang.					
Margin Plate						3rd Deck Str.					
" "						" " Plating					
" Angle						" " "					
Shell Strake A						" " "					
" " B						" " Str. Ang.					
" " C						Sheerstrake					
" " D						Strake below					
" " E						Shell Strake					
" " F						" "					
" " G						" "					
Totals below assumed axis						Totals above assumed axis					
" above assumed axis						Neutral Axis above assumed axis (x) =					
Sum or Difference					2	Correction = (Total Area x x ² x 2) =					

Moment of Inertia about assumed axis

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

TRANSVERSE MODULUS.
 Minimum Side Plating (Art. 77) $\frac{0.105 \times}{100} + 17 =$..; Standard Frame Spacing (Art. 78) = .025 X + 17 = ..
 Actual Side Plating = ..; Actual Frame Spacing = ..
 If actual frame spacing exceeds the standard $\sqrt{\frac{\text{Actual frame spacing}}{\text{Standard frame spacing}}} t =$..

Moulded Geometric Draught (d) = .. H = .. f₁ = ..
 t = .. K = .. f₂ = ..
 d - t = .. f₁ + f₂ = ..

Standard I/y = $\frac{s(d-t)(f_1 + f_2)}{1000} =$..
 Frame in ship = .. at .. spacing, I/y = ..

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

