

DISCLOSED

SECTION

London Office
Copy

J. 14

321

LLOYD'S REGISTER OF SHIPPING.

(CLASSIFICATION SOCIETY RECOGNISED BY THE JAPANESE GOVERNMENT)

SURVEY FOR FREEBOARD.

Ship's Name S.S. "Hakusan Maru".	Port of Registry Tokyo Japanese.	Official No.	No. in R.B.	Gross Tonnage 10380.44	Tonnage under Fbd. Deck = V 8390.07	Date of Launch 19 May '23.	Date when Built 1923.	Report Number J.G.No.2
Owners Yokohama Yusen Kabushiki Kaisha.		Builders Nagasaki Works, Mitsubishi Zosen Kaisha.			Yard No. 383.	Port of Survey NAGASAKI		
Type of vessel Scantling Vessel with Poop Bridge and Forecastle	Particulars of Classification 100 A.1. Lloyd's and Teishinsho Rule 1st. class.			Position of Freeboard Deck Upper Deck		Date of Survey While building		
						Name of Surveyor R. Crawford.		

PRINCIPAL DIMENSIONS.

Length between perpendiculars 495 ft.	Breadth Moulded = B _o 62.00 ft.	Depth Moulded to Fbd. deck = D _o 37.00 ft.
Length on Load Line 494.33 ft.	Thickness of Side plating in ins. x 3/12 * (.82 x 3/12) + 0.21 ft. *(2/12 if plating is joggled)	Round of Beam +1.29 ft.
Length for Freeboard = L 494.33 ft.	Breadth for Freeboard = B 62.21 ft.	Depth from base line to top of inner bottom plating or ordinary floors -4.13 ft.
		Depth for Tonnage Coef. (Art. 39) = D 34.16 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) = - 4.64 tons.

DEPTH OF DOUBLE BOTTOM (Art. 39)

Depth of Actual Double Bottom (including plating) or Ordinary Floors	49.58	ins.
Depth of Standard Double Bottom (including plating) or Ordinary Floors	49.50	ins.
Difference	.08	
x 1/12 =	Nil.	= d.

SHEER (Arts. 39 and 60-63)

Ordinate	Height of Sheer in inches.	S.M.	Products
1	120	1	120
2	54	4	216
3	15	2	30
4	0	4	0
5	7.20	2	14.40
6	26.40	4	105.60
7	60.72	1	60.72
Sum of Products =			546.72

Mean Height of Sheer = $S = \frac{\text{Sum of Products}}{18} = 30.37$ ins.
Standard Mean Height = $S_o = \frac{1}{3}(L/10 + 10) = 19.81$ ins.
Difference $10.56 \times 1/12 = 0.88$ ft. = d₁
Correction (Arts. 60-63) = $\frac{3}{4}(1-e)(S_o - S) = \frac{3}{4}(1-.47)(19.81-30.37) = -4.20$ 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
1 - 46.	119.58	12	2	14	1814.0
46-65.	57.00	12	1 1/2 mean.	13.5	769.5
(MS & B65-104)	117.00	12	0	12	1404.0
104-137	97.50	12	0 (vert. sparring)	12	1170.0
137- PP.	93.25	10	2	12	1120.2

Sum of Products = 6275.7

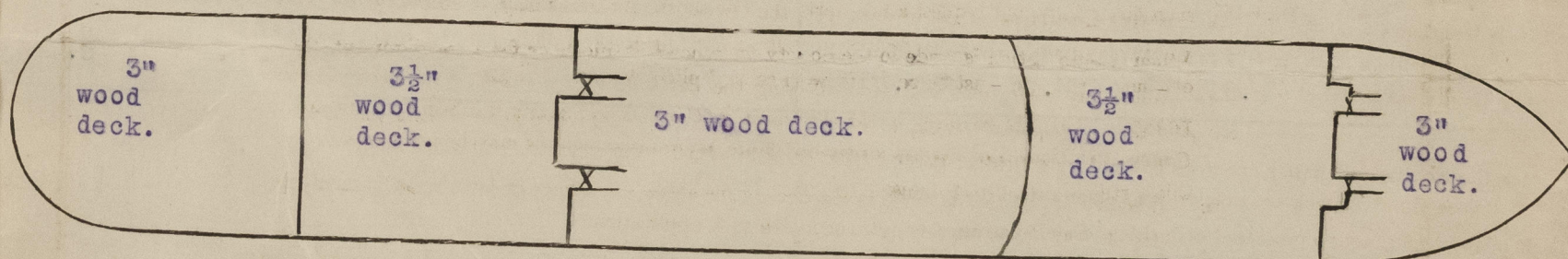
Sum of Products = Actual Mean Depth of framing 12.70 ins.
Length of Ship
Standard " " " " 9.50 ins.
Difference 3.20 x 2/12 = .53 = 2b

COEFFICIENT OF FINENESS (Art. 37 or 43)

$$\frac{100(V + v)}{L(B - 2b)(D + d + d_1) + n} = \frac{100(8390.07 - 4.64)}{494.33 \times (62.21 - .53)(34.16 + 0.88)} + 0 = .79$$

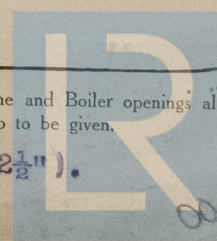
$$\text{or } \frac{35 \times \Delta}{L \times B_o \times d_o} + 0.04 = \dots + 0.04 = \dots$$

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 completely ceiled: - 2 1/2" Ceiling laid on battens (1 1/2" + 2 1/2").



© 2021

Lloyd's Register
Foundation

WOOD DECK (Arts. 5 and 6)			
	Mean Length in ft.	Thickness in ins.	Products
Forecastle	52.6 mean	3.0	157.9
Bridge	190.0 mean	3.0	570.0
Poop or R.Q.D.	93.8	3.0	281.4
Open Deck, ford.	90.9	3.5	318.1
" " aft.	67.0	3.5	234.5
Total length $\Sigma l =$		Sum of Products = 1561.8	
Sum of Products $\Sigma t =$		Sum of Products $\Sigma t_1 =$	
7		3	
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 $= (t - t_1) = \pm$ 0.16 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. 0.0 ins.			
Thickness of Stringer Plate 0.52 ..			
Thickness of Wood Deck Amidships 3.00 ..			
Correction for partial wood deck \pm - 0.16 ..			
Depth to use in Freeboard Tables 37 ft. 3.68 ins. = $D_1 = 37.31$ ft.			
SUPERSTRUCTURES.			
HEIGHT (Arts. 46-48)			
Standard Height $= (0.018 L + 1.2)$ ft. = 7.5 ..			
	Complete Superstructure	Forecastle	Bridge
Actual	7.75	9.0	8.0
Standard	7.5	7.5	7.5
CLOSING APPLIANCES (Arts. 50 and 54)			
	Forecastle	Bridge	
	Forward End.	After End.	
Means of Closing openings in bulkhead	Storm boards half height.	W.T. Bulk-head no opening.	
Corresponding Class	1V	1	
EFFECTIVE LENGTH (Arts. 55 and 56)			
	Mean Length	Coef. Art. 56	Products.
Forecastle closed part	51.29	1.00	51.29
" " open part	3.36	.75	2.52
Bridge closed part	186.00	1.00	186.00
" " open part ford.			
" " " aft.			
Poop closed part	93.80	1.00	93.80
" " open part			
Total Effective Length = 333.61			
Total Effective Length $\Sigma r =$ 333.61 = .67			
Length of Vessel 494.33			
Corresponding Coef. in Table (Art. 49) $= e =$.47			
Reduction for Complete Superstructure 39.00 ins.			
Product 18.33 ins.			
Correction for Superstructures - 18.33 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 D_1 is less than 35 ft. $= \frac{D_1 + 16}{300} (1 - e/2) (L - 12 D_1)$			
" " greater than 35 ft. $= 0.17 (1 - e/2) (L - 12 D_1)$ = 3.96 ins.			
[Note $e = 1.0$ if more than 6/10 covered] = 0.17(1 - 1/2)(494.33 - 12x37.31) = 3.96 ins.			
CORRECTION FOR ROUND OF BEAM (Art. 59)			
Standard Round of Beam $= \frac{\text{Length of Beam in ins.}}{50} = 14.88$ ins.			
Correction $= \frac{1}{4} (\text{Standard Round of Beam} - \text{Actual Round of Beam})$			
$= \frac{1}{4} (14.88 - 15.50) = - 0.16$ 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? 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 119.83 ins.			
Correction for Sheer .. 4.20			
" " Partial Wood Deck .. 0.16			
" " Superstructures .. 18.33			
" " Proportions L/D 3.96			
" " Round of Beam .. 0.16			
" " Freeing Ports ..			
" " Access to Crew's Quarters ..			
Totals 3.96 22.85			
Net Correction 18.89			
Geometric Freeboard 100.34 ins.			
Corresponding Geometric Draught (mld.) 28.93 ft.			
Moulded Draught limited by $\left\{ \begin{array}{l} \text{form} \\ \text{transverse strength} \\ \text{longitudinal strength} \\ \text{position of side scuttles} \end{array} \right\}$ to 28.93 ft.			
Corresponding Freeboard (Summer) 100.34 ins.			
Winter Freeboard (Art. 22) $= \frac{1}{4} (D_1 - 10) + \frac{r}{45} \times (59 - D_1)$			
$= \frac{1}{4} (37.31 - 10) + \frac{.67}{45} \times (59 - 37.31) = + 7.15$ ins.			
Tropical Freeboard (Art. 24) do. do. = - 7.15 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 $= \frac{1}{4} \times 28.93 = - 7.2$ 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) 100.3 ins.			
Fresh Water Load Line above centre of disc. 7.2 ins.			
Tropical Load Line above " " " 7.2 ins.			
Winter Load Line below " " " 7.2 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 of the upper 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 0.0 ins.			

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

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 .. See plan.

State if there are any cargo ports or scuppers through sides of vessel below upper deck Yes

State any special features in the construction of the vessel ..

Sister vessels "Hakozaki Maru", "Haruna Maru" and "Hakone Maru"

Fee. Yen. 225.00; Depth of Keel 2.52 ins.; Draught (btm. keel) 29 ft. 13 ins.

DETAILS OF CONSTRUCTION OF WEATHER DECK HATCHWAYS.

	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6
Length and Breadth	20'3" x 18'0"	30'0" x 20'0"	Bridge deck 12'0" x 16'0"	15'0" x 20'0"	24'0" x 20'0"	Poop deck 18'0" x 20'0"
Height above deck and thickness of side and end coaming	30"x.44"	30"x.50"	30"x.44"	30"x.44"	30"x.44"	30"x.44"
Shifting Beams	3 Mild steel P. 16 x.36 A. 4x3x.44	5 Mild steel P. 18 x.36 A. 4x3x.44	2 Mild steel P. 11 x.34 A. 3x3x.50	2 Mild steel P. 18 x.36 A. 4x3x.44	4 Mild steel P. 17 1/2 x.36 A. 4x3x.44	3 Mild steel P. 12 1/2 x.36 A. 4x3x.44
*Fore and Afters						
Thickness of hatches	3" 0 Pine	do.	do.	do.	do.	do.
Remarks	Good					
* 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						" " Str. Ang.					
T.T. Cr. Strake						2nd Deck Str.					
T.T. plating						" " Plating					
" "						" " "					
" "						" " Str. Ang.					
Margin Plate						3rd Deck Str.					
" "						" " Plating					
" Angle						" " "					
Shell Strake A						" " Str. Ang.					
" " B						Sheerstrake					
" " C						Strake below					
" " D						Shell Strake					
" " E						" "					
" " F						" "					
" " G						" "					
Totals below assumed axis						Totals above assumed axis					
" above assumed axis						Neutral Axis above below assumed axis (x) =					
Sum or Difference						Correction = (Total Area x x ² x 2) = -					
Moment of Inertia about assumed axis .. 2						Moment of Inertia about Neutral Axis ..					
Distance from Neutral Axis to top of Strength deck beam at side = .. ft.						MODULUS OF SECTION =					

DRAUGHT PERMITTED BY LONGITUDINAL STRENGTH (Arts. 81-86) = $\frac{\text{Actual Modulus}}{f. B_0}$

TRANSVERSE MODULUS.

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

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 = FULL SCANTLING VESSEL (OLD RULES)

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 $= \frac{I/y \times 1000}{s(f_1 + f_2)} + t =$..