

DISCLOSED

110 NOV. 9 1922

SECTION
NO 322

COPY

Res. Wabata
12/9/22
KOBÉ

28453

"HAKONE MARU"

Nagasaki

8

9th Sept. 1922

17679

10422.82

8392.2

R. Crawford.

Tokyo

Full Scantling vessel with
poop Bridge & Forecastle

Nippon Yusen Kaisha

passenger & Cargo

* 100 A.L. Lloyd's
Teishinsho Rule 1st Class.

Ocean Going

Mitsubishi Zosen Kaisha Ltd.

Upper Deck

1921 - 11 mth

July 1921

PRINCIPAL DIMENSIONS

LENGTH REGISTERED	495	FT	BREADTH, MOLDED	=	62.00	FT	DEPTH, MOLDED	37	0.0
LENGTH ON LOAD LINE	494.33	FT	THICKNESS SIDE PLATING				THICKNESS STRINGER PL.		0.52
			IN. INS $\times \frac{1}{2}$ = (.82 $\times \frac{1}{2}$)		0.21	FT	THICKNESS WOOD DECK		3.00
			OR IF				CORRECTION FOR ACTUAL		0.16
			Joggled $\times \frac{1}{2}$ = $\frac{1}{2}$ = +			FT	WOOD DECK & SUPER-STRUCTURES (ART. 34)		-
							CORRECTED DEPTH	37	3.68
LENGTH FOR FREEBOARD	494.33	FT	BREADTH FOR FREEBOARD		62.21	FT	DEPTH FOR FREEBOARD		37.31

COEFFICIENT OF FINENESS (ART. 39)

$$C.F. = \frac{100(V \pm v)}{(B - 2b)(D + d + d_1) + \pi} = \frac{100(8392.2 - 4.64)}{494.33(62.21 - .56)(34.16 + 0 + .88) + 0} = .79$$

V = TONNAGE UNDER FREEBOARD DECK = 8392.2

4.64

v = TONNAGE BETWEEN TOP OF DOUBLE BOTTOM OR ORDINARY FLOORS (INCLUDING ORNLG) AS ENTERED IN SHIP'S BOOK OF TOP OF CEILING = 135

L = LENGTH OF VESSEL = 494.33 FT B = BREADTH OF VESSEL OUTSIDE PLATING AT BRODEST PART = 62.21 FT

D = DEPTH FROM TOP OF FREEBOARD DECK BEAM AT GUNWALE LINE TO TOP OF INNER BOTTOM PLATING OR ORDINARY FLOORS = 34.16 FT

DEPTH FRAME MOULING (ACTUAL = 12.88 INS

DEPTH DOUBLE BOTTOM (ACTUAL = 52.58 INS

(STANDARD = 9.50 INS

OR ORDINARY FLOORS (STANDARD = 52.08 INS

DIFFERENCE = 3.38 $\times \frac{1}{2}$ = .56 FT

MOULING DIFFERENCE = .50 $\times \frac{1}{2}$ = .25 FT

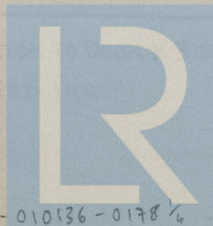
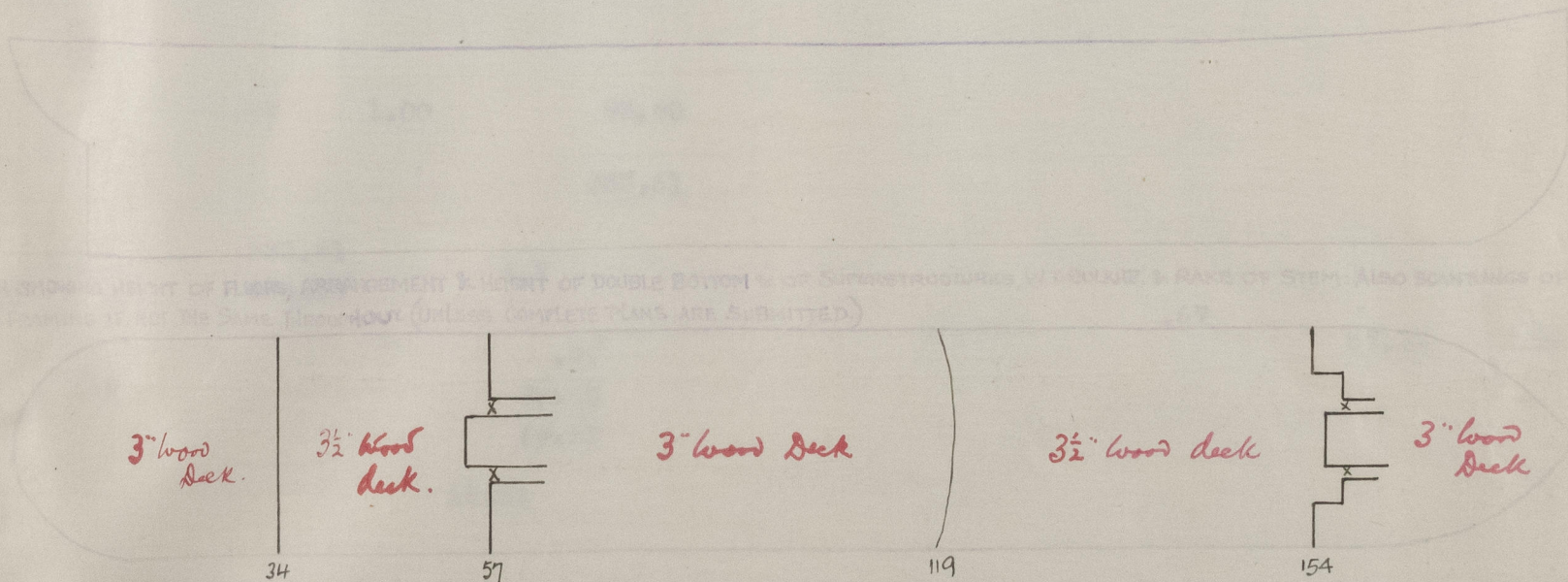
MEAN SHEER (ACTUAL = 30.37 INS

T = ZERO FOR VESSELS WITH DOUBLE BOTTOMS

(STANDARD = 19.81 INS

AND 0.02 FOR VESSELS WITH ORDINARY FLOORS

DIFFERENCE = 10.56 $\times \frac{1}{2}$ = 0.88 FT



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52.6	3.0	157.8
190.0 mean	3.0	570.0
93.8	3.0	281.4
157.9	3.5	552.6

Sum of products = 1561.8
Sum of products = actual 3.00
Sum of products = 1561.8
Length of vessel = 494.33 = 3.16
L - L = 3.00 3.16 - 0.16

CORRECTION OF DEPTH (Art. 5-6)
MOULDED DEPTH = 37 0.0
Thickness of Stringer Plate = 0.52
Thickness wood deck on stringer plate = 3.00
Correction (if no wood deck amidships = +t = +.16
for partial (if wood dk. laid amidships = -(E-t) = -.16
DEPTH FOR USE IN FREEBOARD TABLE = 37 3.68
(X 37.31) = 37.31

CORRECTION FOR HEIGHT OF SUPERSTRUCTURES (Arts. 44 to 48)

	Complete Superstructure	Forecastle	Bridge	Prop.
Standard height = (0.015 + 1.2) ft = (0.015 + 1.2) 7.5				
Actual height		7.75	9.0	8.0
Standard height		7.50	7.5	7.5

CORRECTION FOR LENGTH OF SUPERSTRUCTURES (Arts. 49-50)

	Mean length	Coef. Art. 49	Height Coef.	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, forward	-			-
" " aft	-			-
Prop., closed part	93.80	1.00		93.80
" open part	-			-
Total effective lengths	333.61			333.61

Total effective lengths = 333.61
Length of vessel = 494.33 = 6.7 = T (Art. 49)
Correction for Complete Superstructures = 39.00
Product = 18.33
Correction for Superstructures = 18.33

CORRECTION OF FREEBOARD FOR PARTIAL WOOD DECK (Art. 51)
Wood deck fitted amidships, -t = -
Wood deck fitted amidships, +(E-t) = -0.16

Effective length of superstructures (Art. 57)
L - L = 3.00 3.16 - 0.16

When depth is 35 ft or greater
 $0.17(1 - \frac{35}{D})(L - L) = 0.17(1 - \frac{35}{494.33})(494.33 - 12 \times 37.31)$
= 3.96

Correction for Round of Beam (Art. 52)
Standard round of beam = 15.50
Correction = $\frac{1}{2}(\text{Standard Rd. of Beam} - \text{Actual Rd. of Beam})$
= $\frac{1}{2}(14.88 - 15.50) = -0.16$

CORRECTION FOR SHEER (Arts. 60 to 62)

No.	Height of sheer measured from plane level to keel	Height of sheer	Multi-plier	Product
1	S ₁	S ₁ - S ₂ = 10.00	1	10.00
2	S ₂	S ₂ - S ₃ = 4.50	4	18.00
3	S ₃	S ₃ - S ₄ = 1.25	3	2.50
4	S ₄	S ₄ - S ₅ = 0.60	4	0.60
5	S ₅	S ₅ - S ₆ = 0.60	2	1.20
6	S ₆	S ₆ - S ₇ = 2.20	4	8.80
7	S ₇	S ₇ - S ₈ = 5.06	1	5.06
Sum of products				45.56

Mean height of sheer, S = $\frac{\text{Sum of products}}{18} = 30.37$
Standard mean sheer, S₀ = $\frac{1}{3}(\frac{L}{10} + 10) = 19.81$
Correction = $\frac{1}{2}(1 - 0.47)(S_0 - S)$
= $\frac{1}{2}(0.53)(19.81 - 30.37) = -4.20$

CORRECTION FOR MISSING PORTS AND AFTERS CREWS (Arts. 63 to 65)
Length between in ft. each side:
Area missing ports each side =
Area missing ports reqd. by Table Art. 64
Formulas if applicable:
 $1.2(V - 3.5) \times D = 1.2(100 - 3.5) \times 37.31$
or $0.012(80 - 1) \times D = 0.012(80 - 1) \times 37.31$

WINTER FREEBOARD (Art. 24)
Add to Summer Fbd. $\frac{1}{2}(D - 10) + \frac{Z}{45}(39 - D)$
 $\frac{1}{2}(37.31 - 10) + \frac{.67}{45}(39 - 37.31) = 7.15 = 7.2"$

WINTER NORTH ATLANTIC (Art. 25)
Add to Summer Fbd. same as Winter Fbd. except for wind dir. and shelter dk. vessels (Arts. 33, 49 & 50)
Ratio effective length superstructures to vessel length =
Additional Freeboard (Art. 25) =
Theoretical Freeboard (Art. 24)
Deduct from Summer Freeboard $\frac{1}{2}(D - 10) + \frac{Z}{45}(39 - D)$
 $\frac{1}{2}(37.31 - 10) + \frac{.67}{45}(39 - 37.31) = 7.2$

FRESH WATER (Art. 26)
Deduct from Summer Freeboard $\frac{1}{2}(D - 10) + \frac{Z}{45}(39 - D)$
 $\frac{1}{2}(37.31 - 10) + \frac{.67}{45}(39 - 37.31) = 7.2$
Fresh Water Draft in ft. of Summer Freeboard = 7.2

SUMMARY OF COMPUTATION

Freeboard by the Tables

119.23

Correction for Partial Wood Deck	-	0.16
Superstructures	-	18.33
Proportions L/D	3.96	-
Round of Beam	-	0.16
Sheer	-	4.20
Fitting posts & latches	-	-
Totals	3.96	22.85
Net correction		18.89

Vertical distance from upper edge of horizontal line indicating the freeboard to the centre of the disc	100.34 ins.
	= 100.3
Vertical distance from centre of disc to the Fresh Water line	7.2 ins. measured upward
Vertical distance from centre of disc to the Tropical Load line	7.2 ins. measured upward
Vertical distance from centre of disc to the Winter Load line	7.2 ins. measured downward
Vertical distance from centre of disc to Winter N.A. Load line	- ins. measured downward
Vertical distance from the point of intersection of the extended line of surfaces of wood deck at the midline of the vessel with the upper horizontal line indicating the upper freeboard deck	0.00 ins. measured upward
Corresponding to Geometric Freeboard	= 28.93 ft.

Position in Vessel	Size of Frame	Quantity	Height to Main Deck
Fore Peak	9x3 1/2 x.44 B.A.	-	-
Aft Peak	- do -	2	-
17" Frame Spacing	11x3 1/2 x.58 BA	-	-
36" F.S. (Frames 88)	12x3 1/2 x.56	5x3 1/2 x.56	2nd Deck
-96	CH.	-	-
16" " Tnl. Recs. & in way of 3rd pk.	- do -	-	-
36" " Elsewhere	- do -	3 1/2 x3 1/2 x.56	2nd Deck.
			59"
			54"
			in way of 3rd Deck

STRENGTH OF VESSEL

Standard longitudinal Modulus (Arts 75-76)

Full scantling vessel

Standard thickness side plating (Art 77)

Actual thickness

Standard frame spacing (Art 78)

Actual frame spacing

Where the frame spacing exceeds the standard the standard thickness of side plating is to be taken as

S = Actual frame spacing
S₀ = Standard frame spacing
t = thickness side plating

Standard transverse Modulus (Arts 79-80)

Actual least transverse Modulus

DRAUGHT DUE TO LONGITUDINAL STRENGTH (Art 81)

Draught = $\frac{1000M}{S(\frac{1}{2} + \frac{1}{2})}$

Draught = $\frac{1000M}{S(\frac{1}{2} + \frac{1}{2})} + L$



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CLOSING APPLIANCES FOR SUPERSTRUCTURES

MEANS OF CLOSING OPENING IN SIDEWALL CORRESPONDING CLASS (ART 51-54)	FORECASTLE	BRIDGE		POOP
		FORWARD END	AFTER END	
	Storm boards half height	W.T. Bulkhead No opening	storm boards half height	W.T. Hinged Doors.
	lv	1	lv	1

ACCESS TO CREWS QUARTERS IN VESSELS HAVING A FORECASTLE AND LONG POOP AND IN VESSELS OF LESS THAN 15 FT. MOULDED DEPTH HAVING A FORECASTLE, BRIDGE AND POOP.

ARE CREW BERTHS IN BRIDGE WINGS OR FORECASTLE?

HEIGHT AND BREADTH OF GANGWAY.

CORRECTION (ART 15 & 16) = $0.12(50-L) D$ INS. = $0.12(50-)$ INS.
OR $1.2(1-0.5) D$ INS. = $1.2(-0.5)$ INS.

DETAILS OF CONSTRUCTION OF THE WEATHER DECK HATCHWAYS

LENGTH AND BREADTH HEIGHT ABOVE DECK AND THICKNESS OF COAMING	No 1	No 2	No 3 Bridge Dk	No 4	No 5	No 6 Poop Dk.	No 7	No 8
	20.25 x 18.0	30.0 x 20.0	12.0 x 16.0	15.0 x 20.0	24.0 x 20.0	18.0 x 20.0		
BRIMING AND MATERIAL	30" x.44	30" x.50	30 x.44	30" x.44	30 x.44	30 x.44		
SHIFTING BEAMS	3	5	2	2	4	3		
SCANTLING	mild stl 16 x.36	mild stl 18 x.36	mild stl 11 x.34	mild stl 18 x.36	mild stl 17 1/2 x.36	mild stl 12 1/2 x.36		
FORE AND AFTERS	4x3x.44	4x3x.44	3 1/2 x3x.50	4x3x.44	4x3x.44	4x3x.44		
NUMBER AND MATERIAL SCANTLING	-	-	-	-	-	-		
THICKNESS OF HATCHES	3" O.P.	do	do	do	do	do		
REMARKS	* WHEN THE FORE AND AFTERS ARE OF WOOD THE DEPTH SHOULD BE STATED FROM THE UNDERSIDE OF THE HATCHES.							

ARE THE ENGINE AND BOILER OPENINGS COVERED BY A BRIDGE, POOP, RAISED QUARTER DECK, OR ENCLOSED BY A STRONG STEEL DECKHOUSE?

Bridge

IF OPENINGS ARE NOT SO PROTECTED GIVE THICKNESS OF PLATING AND SCANTLING AND SPACING OF STIFFENERS OF CASINGS.

ARE SUITABLE MEANS PROVIDED FOR CLOSING ALL OPENINGS IN THEM IN BAD WEATHER? Yes

STATE 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 SCUFFERS THROUGH SIDES OF VESSEL BELOW UPPER DECK. Yes

STATE ANY SPECIAL FEATURES IN THE CONSTRUCTION OF THE VESSEL.

Sister vessel to T.S.S. "HAKOZAKI MARU" and "HARUNA MARU"

Keel = 2.52"

Fee - Yen 225



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