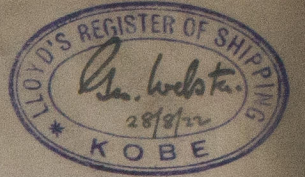


Amended Report.



LOYD'S REGISTER OF SHIPPING
(CLASSIFICATION SOCIETY RECOGNISED BY THE JAPANESE GOVERNMENT)
FREEBOARD CLASSIFICATION SHEETS JAPANESE VESSELS

SHIP NUMBER	VESSEL'S NAME	PORT OF SURVEY
8548	"BELFAST MARU" (Yard No. 480)	Kobe
REGISTER IN	TONNAGE, GROSS 6586.4 UNDER DE 6157.33	NO OF REPORT 7 DATE Augst. 28th 1922
	PORT OF REGISTRY Kobe	NAME OF SURVEYOR A. Watt.
TYPE OF VESSEL	OWNERS	
Awning Deck	Kawasaki Dockyard Co. Ltd.	
	TRADE	
	Cargo	
CLASS	FLYING LIMITS	
Lloyd's * 100 A.1. Deck "with freeboard". Minsho Rule 1st Class.	Ocean going	
TYPE OF FREEBOARD DECK	BUILDERS	
Awning Deck	Kawasaki Dockyard Co. Ltd.	
	DATE WHEN BUILT	LAUNCHED
	1922	14th March 1922

PRINCIPAL DIMENSIONS

LENGTH REGISTERED	405 FT	BREADTH MOULDED	53.0 FT	DEPTH MOULDED	37 FT 0 IN
LENGTH ON LOAD LINE	404.64 FT	THICKNESS SIDE PLATING IN INS $\times \frac{1}{2} = .64 \times \frac{1}{2} = .16$ FT		THICKNESS STRINGER PL	.54 IN
		OR IF Joggled $\times \frac{1}{2} = \times \frac{1}{2} =$ FT		THICKNESS WOOD DECK	-
				CORRECTION FOR RIVAL	
				When Deck or Super	.48 IN
				STRUCTURES (ARTS 5+6)	
				CORRECTED DEPTH	37 FT 1.02 IN
LENGTH FOR FREEBOARD	404.64 FT	BREADTH FOR FREEBOARD	53.16 FT	DEPTH FOR FREEBOARD	37.09 FT

CORRECOEFFICIENT OF FINENESS (ART. 39)

$$\frac{100(V \pm v)}{(B-2b)(D+d+d_1) + n} = \frac{100(6157.33 - 5)}{404.64 \times 53.16 - .46(34.52 - .09 + .68) + 0} = .82$$

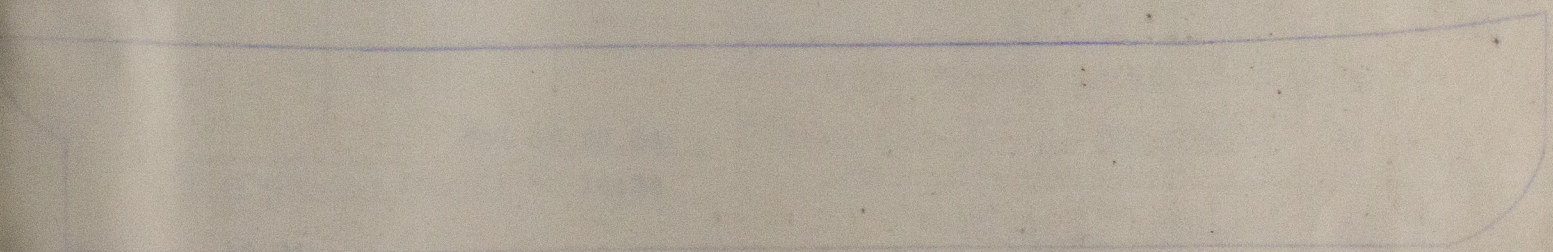
Tonnage UNDER FREEBOARD DE = 6157.33

Tonnage BETWEEN TOP OF DOUBLE BOTTOM OR ORDINARY FLOORS (INCLUDING BULKHEADS) AND TOP OF CEILING = 5.0

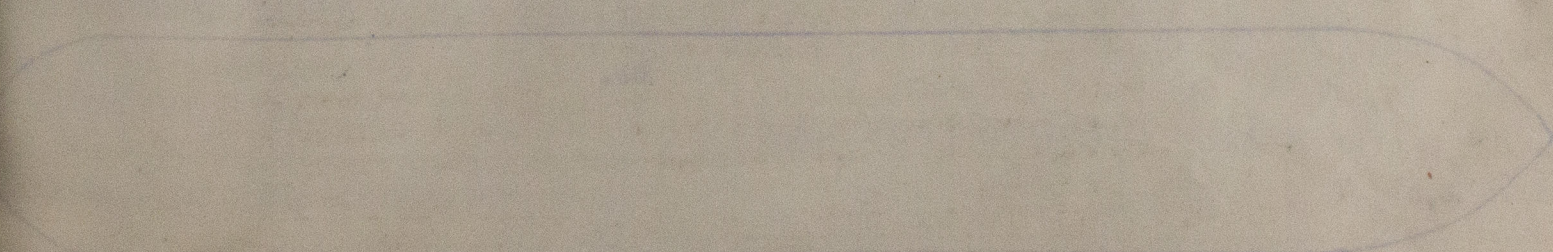
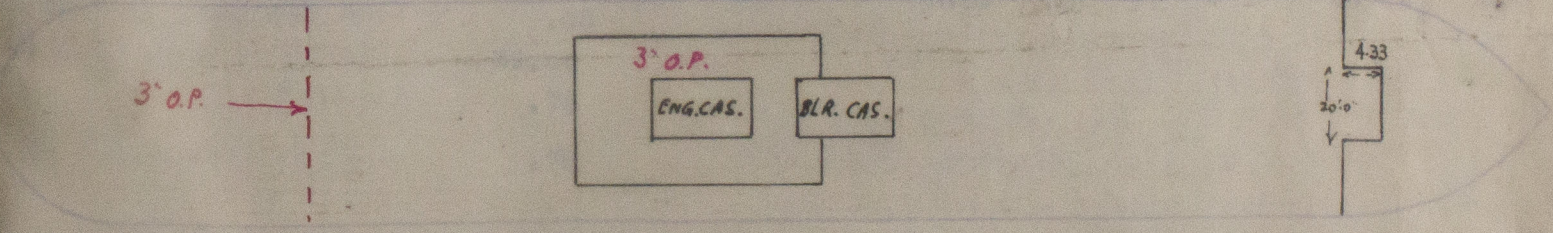
LENGTH OF VESSEL = 404.64 FT B = BREADTH OF VESSEL OUTSIDE PLATING AT BROADEST PART = 53.16 FT

DEPTH FROM TOP OF FREEBOARD DECK BEAM OR CHOLE LINE TO TOP OF UPPER BOTTOM PLATING OR ORDINARY FLOORS = 34.52 FT

HEAD ROOMING	(ACTUAL = 11.27 INS STANDARD = 8.50 INS DIFFERENCE = 2.77 $\times \frac{1}{2} = .46$ FT)	DEPTH DOUBLE BOTTOM OR ORDINARY FLOORS	(ACTUAL 46.50 INS STANDARD 47.02 INS DIFFERENCE .52 $\times \frac{1}{2} = .04$ FT)
CEILING	(ACTUAL 24.98 INS STANDARD 11.83 INS DIFFERENCE 8.15 $\times \frac{1}{2} = .68$ FT)	n = ZERO FOR VESSELS WITH DOUBLE BOTTOMS AND 0.02 FOR VESSELS WITH ORDINARY FLOORS	



SECTIONAL VIEW OF FLOORS, ARRANGEMENT & HEIGHT OF DOUBLE BOTTOM & OF SUPERSTRUCTURES WITH BULKHEADS & RAKE OF STEMS ALSO SCANTLING OF STEMS IF NOT THE SAME THROUGHOUT (unless COMPLETE PLANS ARE SUBMITTED)



SECTIONAL VIEW OF DECK STRUCTURES & POSITION OF BULKHEADS & DECK PLATES IN RELATION TO THE CENTERLINE OF THE VESSEL. EXTERIOR OF WOOD DECK SHEATHING TO BE INDICATED IN RED

Tank Top :- 2 1/2" Ceiling on 2" Cross Battens throughout

PARTIAL WOOD DECK (Art. 37-40)

Length	Thickness of Deck	Area
30.88	3.5-46=3.04" (assume)	93.88
33.96	3.0	101.88

Sum of products	195.76
Length of deck (1)	195.76
Area of deck	405.64
Correction	.48

<u>CORRECTION OF DEPTH.</u> (Art. 5 + 6)		
Depth	m	ft
of Stringer Plate	—	"
wood deck on stringer plate	—	"
If no wood deck amidships	+ 1	"
If wood dk. laid amidships	— (1 - 1)	"
<hr/>		
FOR USE IN FREEBOARD TABLE	=	ft
" " " " "	=	37.09

CORRECTION FOR HEIGHT OF SUPERSTRUCTURES (Art. 43-44)			
Height = (0.0184 + a) ft = (0.0184 + .005) = .0234			
Correction for Superstructure	Forecastle	Bridge	Roop
-	5.77		
	7.50	.77	

7. FOR LENGTH OF SUPERSTRUCTURES (ART. 45-46)				
	Mean length	Cost Art. 46	Height Art. 45	Products
Clear part	28.60	1.00	.77	22.02
Deck part	2.28	.75	.77	1.32
End part				
End for end				
End of				
End part				
End of				
			70% of	23.34
Total effective length =				16.34

Length	16.34
Area	404.64
Correction	.04
Complete superstructures	39.00
Product	.78
For superstructures	.78

CORRECTION FOR PARTIAL WOOD DECK. (Art. 47)			
Length			
Area			
Correction	.48		
Effective length of superstructures			
Area			
Correction			

Correction for superstructures 1/2 (Art. 47)

(1) When depth is less than 25 ft

$$\frac{1}{200} (1 - \frac{1}{2}) (D + 16) (L - 10 D)$$

$$= \frac{1}{200} (1 - \frac{1}{2}) (37.09 + 16) (30.88 - 10 \times 37.09)$$

(2) When depth is 25 ft or greater

$$0.17 (1 - \frac{1}{2}) (L - 10 D) = 0.17 (1 - \frac{1}{2}) (30.88 - 10 \times 37.09)$$

$$= -6.81$$

Correction for Round of Beam (Art. 49)

Standard round of beam = 12.48"

Correction = 1/2 (Standard Rd. of 8m - Actual Rd. of Beam)

$$= \frac{1}{2} (12.48 - 13.25) = -.19 \text{ ins}$$

CORRECTION FOR SIDES (ARTS. 50 TO 53)					
No.	Height of sheet measured from plant level to soil	Height of sheet	Multi-plier	Products	
1	$S_1 =$	$S_1 - S_2 =$	64.38	1	64.38
2	$S_2 =$	$S_2 - S_3 =$	26.50	4	106.00
3	$S_3 =$	$S_3 - S_4 =$	5.75	2	11.50
4	$S_4 =$		0.00	4	0.00
5	$S_5 =$	$S_5 - S_6 =$	9.56	2	19.12
6	$S_6 =$	$S_6 - S_7 =$	38.37	4	153.48
7	$S_7 =$	$S_7 - S_8 =$	95.13	1	95.13
Sum of products					449.61

Mean height of sheet, S = $\frac{\text{Sum of products}}{13} = 24.98$

Standard mean sheet, S₀ = $\frac{1}{3} (\frac{L}{10} + 10) = 16.83$

Correction = $\frac{1}{2} (1 - \frac{1}{2}) (S_0 - S)$

$$= \frac{1}{2} (1 - \frac{1}{2}) (16.83 - 24.98) = -5.99$$

Correction for Raising Ports and Access Cocks (Art. 54-55)

Length between in ft. each side

Area raising ports each side =

Area raising ports reqd. by Table Art. 54

Formulae if applicable

$$1 - \frac{1}{2} (1 - \frac{1}{2}) \times D = 1 - \frac{1}{2} (1 - \frac{1}{2}) \times 37.09$$

$$= 0.012 (37.09 - 1) \times D = 0.012 (37.09 - 1) \times 37.09$$

Winter Freeboard (Art. 56)

Add to Summer Fbd. $\frac{1}{4} (D - 10) + \frac{1}{4} (39 - D)$

$$(37.09 - 10) + \frac{1}{4} (39 - 37.09) = 6.8$$

Winter North Atlantic (Art. 57)

Add 2 ins to Winter Fbd. except for well deck and Shelter DR. vessels (Art. 58, 59 & 60)

Ratio effective length superstructures to hull length =

Additional Freeboard (Art. 59)

Tropical Freeboard (Art. 60)

Deduct from Summer Freeboard $\frac{1}{4} (D - 10) + \frac{1}{4} (39 - D)$

$$\frac{1}{4} (37.09 - 10) + \frac{1}{4} (39 - 37.09) = 6.8$$

Fresh Water Freeboard (Art. 61)

Deduct from Summer Fbd. $\frac{1}{4} (D - 10) + \frac{1}{4} (39 - D)$

1/4 x Draught in ft. of Summer

TABLE OF COMPUTATION

Freeboard by the Tables	120.21	ins.
for Partial Wood Deck	-	.48
Superstructures	-	.78
Proportions L/D	-	6.81
Round of Beam	-	.19
Sheer	-	5.99
Freeing ports & access	-	-
"Awning Dk. Str. Plt. doublg	.52	-
totals	.52	- 14.25
Net correction	-	- 13.67

Distance from upper edge of line indicating the position of the deck	106.54	ins.
	-	106.5
Distance from centre of Fresh Water line	7.1	ins. measured upward
Distance from centre of Tropical Load line	6.8	ins. measured upward
Distance from centre of Winter Load line	6.8	ins. measured downward
Distance from centre of the N.A. Load line	-	ins. measured downward
Distance from the point of intersection of the extended line of surface of steel stringer plate doubling awning deck at the mid-ship to the upper horizontal line indicating freeboard deck	0.00	ins. measured upward

Adding Geometric Draught = 28.21

Side Framing

9 1/2 x 3 1/2 x .55	-	-	312.0 x 9.5 =	2965
B.A.				
10 x 3 1/2 x 3 1/2 ; 3 1/2 x 3 1/2 x .50	Upper deck	52.0 x 10.0 =	520.	
x .50 C				
7 x 3 1/2 x .44	-	-	22.21 x 7.0	155
B.A.				
6 x 3 1/2 x .38	Upper deck	18.79 x 6.0	113	
angle				

405) 3753

9.27 mean

Sparring 2.00

11.27

Freeboard to be assigned = 106.5"

STRENGTH & VALUE

Standard longitudinal Modulus (Arts. 75 & 76)

$$\frac{I}{Y} = f \cdot d \cdot B = 11.46 \times 28.21 \times 53.0 = 17140$$

Actual Modulus = 17280

Standard thickness side plating (Art. 77)

$$\frac{0.105 L + 17}{100} = \frac{0.105 \times 28.21 + 17}{100} = .295$$

Actual thickness =

Standard frame spacing (Art. 78)

$$0.0025 L + 17 = 0.0025 \times 28.21 + 17 = 17.007$$

or dist. of L. be not greater than 160 ft =

Actual frame spacing =

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

$$\sqrt{\frac{S}{S_0}} \times t = \sqrt{\frac{160}{160}} \times .295 = .295$$

S = Actual frame spacing

S₀ = Standard frame spacing

t = " thickness side plating

Standard Transverse Modulus (Arts. 79 & 80)

$$S \cdot (d - 1/2)(f_1 + f_2) = \frac{1}{1000} \times (1000 \times 28.21 \times 53.0) = 15110$$

Actual Transverse Modulus =

Draught due to longitudinal strength (Art. 81)

$$\text{Draught} = \frac{M}{f \cdot B} = \frac{17280}{11.46 \times 53.0} = 28.4$$

Draught due to transverse strength (Art. 82)

$$\text{Draught} = \frac{1000 M}{S(f_1 + f_2)} + t = \frac{1000 \times 15110}{15110 \times 2} + .295 = 3.295$$



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Foundation

BRIDGE APPLIANCES FOR SUPERSTRUCTURES.

	FORECASTLE	BRIDGE		POOP OR RAISED QUARTER DECK
		FORWARD END	AFTER END	
MEANS OF CLOSING OPENINGS IN BULKHEAD	Steel doors	-	-	-
CORRESPONDING CLASS (ART 81-34)	1	-	-	-

ACCESS TO CREW'S 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 BERTHED IN BRIDGE HOUSE OR FORECASTLE?

HIGHT AND BREADTH OF GANGWAY.

CORRECTION (ART 15 214) = $0.02(80 - L) D$ IN. = $0.02(80 -)$ IN. =
OR $1.2(4 - 0.5) D$ IN. = $1.2(- 0.5)$ IN. =

DETAILS OF CONSTRUCTION OF THE WEATHER DECK HATCHWAYS.

	Nº 1	Nº 2	Nº 3	Nº 4	Nº 5	Nº 6	Nº 7	Nº 8
LENGTH AND BREADTH	26.0 x 18.0	30'4" x 18.0	21.8" x 18.0					
HIGHT GATE DECK AND THICKNESS OF COAMING	30 x.44	30 x.44	30 x.44	Same	Same	Same		
SCANTLING BEAMS	5 steel 15 x.36 pl	5 steel 16 1/2 x 36 pl	4 steel 15 x.36 pl					
	4x3x.44 angles	4x3x.44 angles	4x3x.44 angles	as	as	as		
PLATING AND SCANTLING	-	-	-	No.3	No.2	No.1.		
THICKNESS OF HATCHES	3"	3"	3"					

WHEN THE FORE AND AFTERS ARE OF IRON 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?

Partly

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

.30 .40 Coaming, Stiffeners 3 1/2 x 3 x.40 @ 2'0"

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.

38' 2 1/2" (frame 15.16)

STATE IF THERE ARE ANY CARGO PORTS OR DECKHATCHES THROUGH SIDES OF VESSEL BELOW UPPER DECK.

No.

STATE ANY SPECIAL FEATURES IN THE CONSTRUCTION OF THE VESSEL.

Sister Vessel to S/S. Wales Marie

Keel = 2 3/4"

See :- See Report of alterations



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W542-0848/4