

-9 MAY 1932

LLOYD'S REGISTER OF SHIPPING.

(CLASSIFICATION SOCIETY RECOGNISED BY THE JAPANESE GOVERNMENT)

SURVEY FOR FREEBOARD.

Ship's Name "USSURI MARU"	Port of Registry Osaka	Official No. --	No. in R.B. <i>Supp. 42659</i>	Gross Tonnage 6353 Approx.	Tonnage under Fbd. Deck = V 5081 Approx.	Date of Launch --	Date when Built 1931	Report Number 86
Owners Osaka Shosen Kaisha.		Builders Mitsubishi Zosen Kaisha.		Yard No. 500		Port of Survey Nagasaki		
Type of vessel Complete Superstructure		Particulars of Classification * 100A A. 1. with freeboard.		Position of Freeboard Deck 2nd Deck.		Date of Survey While Building.		
						Name of Surveyor G. Anderson & H. J. Cox.		

PRINCIPAL DIMENSIONS.

Length between perpendiculars 404.5 ft.	Breadth Moulded = B ₀ 55 ft.	Depth Moulded to Fbd. deck = D ₀ 25.5 ft.
Length on Load Line ft.	Thickness of Side plating in ins. x ³ / ₁₂ + ft. *(2/12 if plating is joggled)	Round of Beam + ft.
Length for Freeboard = L 404.5 ft.	Breadth for Freeboard = B ft.	Depth from base line to top of inner bottom plating or ordinary floors ft.
		Depth for Tonnage Coef. (Art. 39) = D 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) = tons.

DEPTH OF DOUBLE BOTTOM (Art. 39)

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)

Ordinate	Height of Sheer in inches.	S.M.	Products
1		1	
2		4	
3		2	
4		4	
5		2	
6		4	
7		1	

Sum of Products =
Mean Height of Sheer = S = $\frac{\text{Sum of Products}}{18}$ = ins.
Standard Mean Height = S₀ = $\frac{1}{3}(L/10 + 10)$ = ins.
Difference x ¹/₁₂ = ft. = d₁
Correction (Arts. 60-63) = $\frac{3}{4}(1 - e)(S_0 - S)$ = 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

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

COEFFICIENT OF FINENESS (Art. 39 or 43)

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

d. = 21.68'

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

= $\frac{35 \times 9300}{404.5 \times 55 \times 21.68} + 0.04 = .71$

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.

MARKING FORM
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W1331-0027 1/2

WOOD DECK (Arts. 5 and 6)

	Mean Length in ft.	Thickness in ins.	Products
Forecastle			
Bridge			
Poop or R.Q.D.	3.1	.40	3.1
Onen Deck, ford.			
Onen Deck, aft.			

Total length = $l =$ Sum of Products = 3.10 ins.
Sum of Products = $t =$ ins. : Sum of Products = $t_1 = 3.10$ ins.

CORRECTION FOR DEPTH & CORRECTION FOR FREEBOARD.
If no sheathing fitted amidships = $t_1 = \pm 3.1$ 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.
Depth moulded = 25 ft. 6 ins.
Thickness of Stringer Plate = $.40$ ins.
Thickness of Wood Deck Amidships = 0 ins.
Correction for partial wood deck = ± 3.1 ins.
Depth to use in Freeboard Tables = 25 ft. 9.5 ins. = $D_1 = 25.79$ ft.

SUPERSTRUCTURES. (Arts. 46-48)
Standard Height = $(0.018 L + 1.2)$ ft. = 7.5 ft.

	Complete Superstructure	Forecastle	Bridge	Poop or R.Q.D.
Actual	$71-6.12 = 1$			
Standard	$71-6.0 =$			

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 ford.				
" " aft.				
Poop closed part				
" open part				

Total Effective Length = 1.00
Corresponding Coef. in Table (Art. 49) = $e =$
Reduction for Complete Superstructure = -37.43 ins.
Correction for Superstructures = -37.43 ins.

EFFECTIVE LENGTH (Shelter Deck Vessels Arts. 87-92)
 $l + \frac{1}{3}(1-p)(L-l) =$ 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. = $\frac{0.17}{100} (1 - e/2) (L - 12 D_1)$
[Note $e = 1.0$ if more than $6/10$ covered] = $\frac{41.79}{300} \times 95.02 = 6.62(+)$ ins.

Are the Engine and Boiler openings covered by a Bridge, Poop, Raised Quarter Deck or enclosed by a strong steel deck house? **Complete Superstructure and deck house above.**
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 **26.5**
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 **All W.P. bulkheads (except collision bulkhead.) extend to 2nd. deck only.**
Sister vessels
Fee. Yen : Depth of Keel : Draught (btm. keel) : ft. : ins.

CORRECTION FOR ROUND OF BEAM (Art. 59) $4''$
Standard Round of Beam = Length of Beam in ins. = 13.2 ins.
Correction = $\frac{1}{4}$ (Standard Round of Beam - Actual Round of Beam) = $\frac{1}{4}(13.2 - 4.0) + 2.3$ ins.

CORRECTION FOR FREEING PORTS (in vessels less than 15 ft. Depth Art. 64)
Length of bulwark in feet each side : : : : :
Area of Freeing ports each side : : : : :
Area of Freeing ports required by Table : : : : :
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 = $.012 (80 - l) D_1$ or $1.2 (r - 0.5) D_1$: : : : : ins.

SUMMARY.
Freeboard by Tables = 62.68 ins.
Correction for Sheer = $+$: : : : :
" " Partial Wood Deck = 3.1 : : : : :
" " Superstructures = 37.43 : : : : :
" " Proportions L/D = 6.62 : : : : :
" " Round of Beam = 2.30 : : : : :
" " Freeing Ports : : : : :
" " Access to Crew's Quarters : : : : :
Totals = 8.92 : : : : :
Net Correction = -31.61 : : : : :
Geometric Freeboard = 31.07 ins.
Corresponding Geometric Draught (mld.) = 22.94 ft.
Moulded Draught limited by $\frac{1}{4}(D_1 - 10) + \frac{1}{45}(59 - D_1)$ to 22.94 ft.
Corresponding Freeboard (Summer) = 31.1 ins.
Winter Freeboard (Art. 22) = $\frac{1}{4}(D_1 - 10) + \frac{1}{45}(59 - D_1)$ = 4.69 ins.
Tropical Freeboard (Art. 24) do. do. = -4.69 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) $\frac{9940}{40 \times 42.2} = -5.86$ ins.
 $\frac{1}{4}$ " per foot of Summer Draught = 40×42.2 : : : : :
FREEBOARD TO BE ASSIGNED.
Vertical distance from upper edge of horizontal line indicating the freeboard deck to the centre of the disc. (Summer Line) = 31.1 ins.
Fresh Water Load Line above centre of disc. = 5.9 ins.
Tropical Load Line above " " " = 4.7 ins.
Winter Load Line below " " " = 4.7 ins.
Winter N.A. Load Line below " " " = : : : : : ins.
Vertical distance from the point of intersection of the extended line of the upper surface of **Str. plate** of the 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.

DETAILS OF CONSTRUCTION OF WEATHER DECK HATCHWAYS.

	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6
Length and Breadth	18' x 14'	30' x 18'	27' 6" x 18'	17' 6" x 16'		
Height above deck and thickness of side and end coaming	33" .44	33" .44	33" .44	33" .44		
Shifting Beams	Three 11 1/2 x .31 75x75x10.5	Five 16 x .36 100x75x11.5	Five 15 x .36 100x75x11.5	Three 13 x .34 90x75x10.5		
*Fore and Afters	Number and Material Scantlings	Number and Material Scantlings	Number and Material Scantlings	Number and Material Scantlings		
Thickness of hatches	← 2 1/2" →					
Remarks						

* When the fore and afters are of wood the depth should be stated from the underside of hatches.

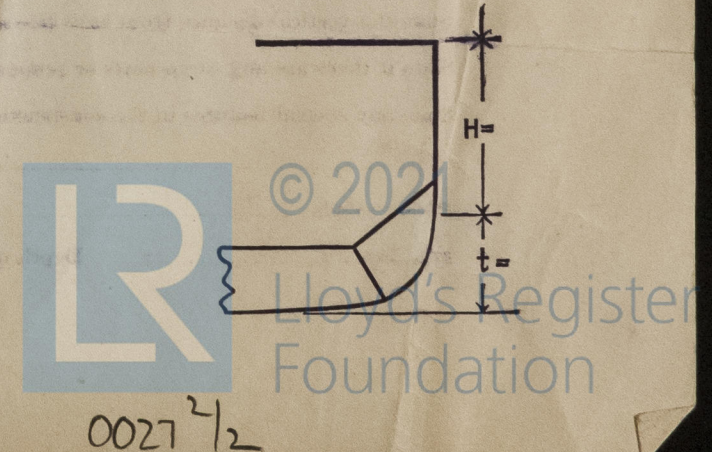
LONGITUDINAL MODULUS.
Height of Assumed Axis above base = : : : : :
Section at : : : : :

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											
Sum or Difference											

Moment of Inertia about assumed axis = 2
Neutral Axis above assumed axis (x) = : : : : :
Correction = (Total Area x x² x 2) = : : : : :
Moment of Inertia about Neutral Axis : : : : :
Distance from Neutral Axis to top of Strength deck beam at side = : : : : : ft.
Modulus of Section = : : : : :
Actual Modulus = : : : : :
f. B.

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

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 $\sqrt{\frac{Actual frame spacing}{Standard frame spacing}} t =$: : : : :
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 $\frac{I/y \times 1000}{s(f_1 + f_2)} + t =$: : : : :
f. B.



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