(N1133) (W133)

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
KOSHIN MARU	Kobe	30415		6057.	5120.17	2nd.April	1924	24.

Owners .	Builders	Yard No.	
Hiroumi Shoji Kab.Kaisha	O.I.W.Innoshima	918	Port of Survey .... Kobe
			Date of Survey **While Building.**

Type of vessel	Particulars of Classification	Position of Freeboard Deck	
Poop Bridge & F'castle	✠ 100 A 1	Upper deck	Name of Surveyor L.H.F.Young & H.J.Cox.

PRINCIPAL DIMENSIONS.

Length between perpendiculars 407.25 ft.
Length on Load Line 406.75 ft.
Length for Freeboard = L 406.75 ft.

Breadth Moulded = B_0 50.83 ft.
Thickness of Side plating in ins. x 3/12". 68x3 + .17 ft.
*(2/12 if plating is joggled) 12
Breadth for Freeboard = B 51.00 ft.

Depth Moulded to Fbd. deck = D_0 32.58 ft.
Round of Beam 12⅝ 1.06 ft.
Depth from base line to top of inner bottom plating or ordinary floors 33.64 -3.62 ft.
Depth for Tonnage Coef. (Art. 39) = D 30.02 ft.

CORRECTION TO TONNAGE (Art. 39) See below

Tonnage between top of ceiling on double bottom or ordinary floors as fitted and standard level of top of ceiling (v) = - 19.1 tons.

DEPTH OF DOUBLE BOTTOM (Art. 39) 3½" drop to margin

Depth of Actual Double Bottom (including plating) or Ordinary Floors 43.48 ins.
Depth of Standard Double Bottom (including plating) or Ordinary Floors 43.50 ins.
Difference -. 02 ins.
x 1/12 = 0 = d.

SHEER (Arts. 39 and 60-63)

Ordinate	Height of Sheer in inches.	S.M.	Products
1	114.3	1	114.3
2	50.5	4	202.0
3	14.4	2	28.8
4	0.0	4	0.
5	4.9	2	9.8
6	21.4	4	85.6
7	56.3	1	56.3
		Sum of Products =	496.8

Mean Height of Sheer = S = $\frac{\text{Sum of Products}}{18}$ 27.60 ins.
Standard Mean Height = S_0 = ⅛(L/10 + 10) = 16.89 ins.
Difference 10.71 x 1/12 = .89 ft. = d_1
Correction (Arts. 60-63) = ¾ (1 - e) $(S_0 - S)$ = ¾ x .640 x 10.71 = -5.14 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
AP to 8	14.0	6.0	–	6.0	84.0
8 to 73	145.0	9.5	2	11.5	1667.5
73 to 98	56.25	9.5	0	9.5	534.4
98 to175	170.75	9.5	2	11.5	1963.6
175 to FP	20.75	6.0	–	6.0	124.5
	406.75.			Sum of Products =	4374.0

$\frac{\text{Sum of Products}}{\text{Length of Ship}}$ = Actual Mean Depth of framing 10.75 ins.
Standard „ „ „ 8.00 ins.
Difference 2.75 x 2/12 = .46 = 2b

COEFFICIENT OF FINENESS (Art. 37 or 43)

$$\frac{100 (V + v)}{L (B - 2b) (D + d + d_1)} + n \qquad \text{or} \qquad \frac{35 \times \Delta}{L \times B_0 \times d_0} + 0.04$$

$$\frac{100(5120.17 - 19.1)}{406.75(51 - .46)(30.02 + 0 + .89)} + 0 = .80 \qquad = \qquad + 0.04 =$$
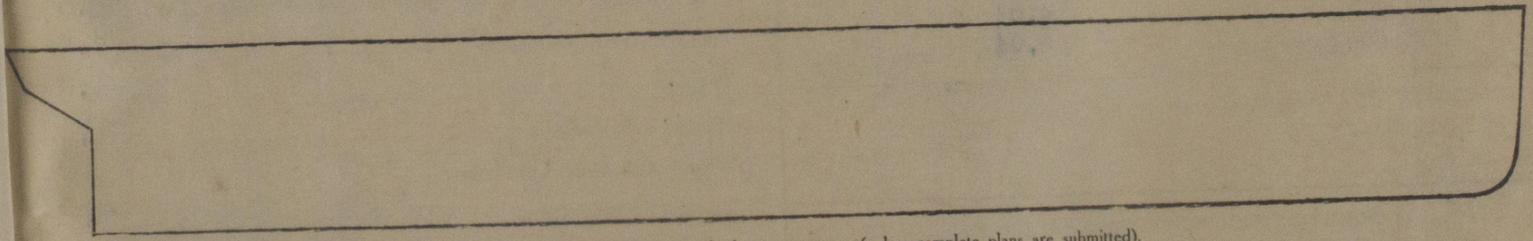
Sketch showing arrangement and height of double bottom or ordinary floors and of superstructures (unless complete plans are submitted).
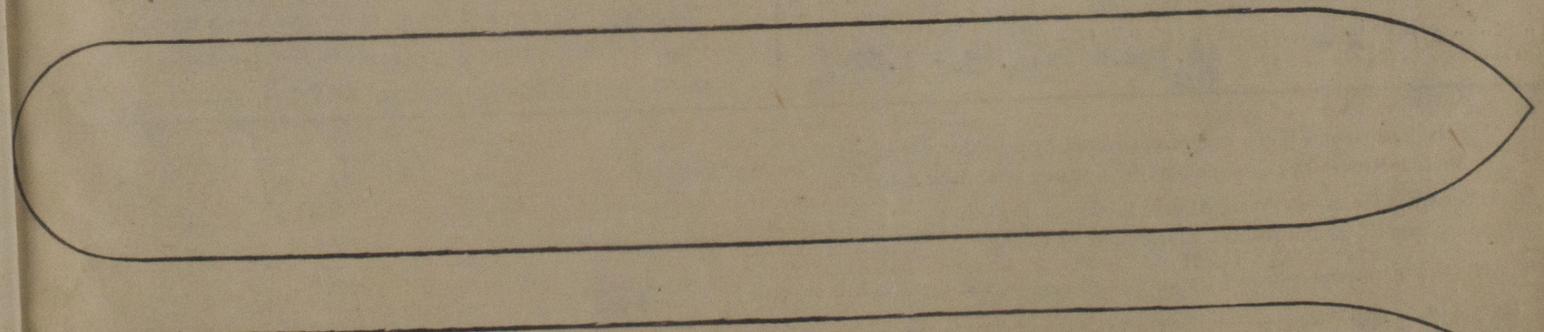
Standard Depth = 46.00
Actual mean " = 44.73
−1.27
Breadth of T.T.= 39.83

4" Ceiling in all holds ex. D.T.

v = $\frac{360 \times 39.83 \times .79 \times .10}{}$ = - 11.3 tons.
No Ceiling in E & B space & D.T. = $\frac{78 \times 39.83 \times .25}{100}$ = - 7.8 tons.

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.

Noted WP
15.12.24

008691-008699-005

WOOD DECK (Arts. 5 and 6)

	Mean Length in ft.	Thickness in ins.	Products
Forecastle	45.0	35 = .48	670.44
Bridge	137.25	3.02	
Poop or R.Q.D.	39.75		
Open Deck, ford.			
aft.			

Total length = l = **222.00**   Sum of Products = **670.44**

$\dfrac{\text{Sum of Products}}{l} = t =$ ins.; $\dfrac{\text{Sum of Products}}{L} = t_1 =$ **1.65**

CORRECTION FOR DEPTH & CORRECTION FOR FREEBOARD

If no sheathing fitted amidships $= t_1 = \pm''$ **1.65** 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 **32** ft. **7** ins.
Thickness of Stringer Plate **.48**
Thickness of Wood Deck Amidships **32 .7 .48**
Correction for partial wood deck $\pm$ **1.65**
Depth to use in Freeboard Tables **32** ft. **9.13** ins. $= D_1 = $ **32.76** ft.

SUPERSTRUCTURES.

HEIGHT (Arts. 46—48)

Standard Height $= (0.018 L + 1.2)$ ft. = **7.6** ft.

	Complete Superstructure	Forecastle	Bridge	Poop or R.Q.D.
Actual	=	7.9 = 1	7.9 = 1	7.9 = 1
Standard		7.6	7.6	7.6

CLOSING APPLIANCES (Arts. 50 and 54)

	Forecastle	Bridge Forward End.	Bridge After End.	Poop or Raised Quarter Deck
Means of Closing openings in bulkhead	Steel doors	W.T. Steel doors	Steel Doors	W.T. Steel doors
Corresponding Class	II	I	II	I

EFFECTIVE LENGTH (Arts. 55 and 56)

	Mean Length	Coef. Art. 56	Height Coef.	Products
Forecastle closed part	45	1	1	45.0
" open part				
Bridge closed part	137.25	1	1	137.25
" open part ford.				
" aft.				
Poop closed part	39.75	1	1	39.75
" open part				

Total Effective Length = **222.0**

$\dfrac{\text{Total Effective Length}}{\text{Length of Vessel}} = r =$ **.55**

Corresponding Coef. in Table (Art. 49) $= c =$ **.360**
Reduction for Complete Superstructure **39**
Product **14.04** ins.
Correction for Superstructures **14.04** ins.

EFFECTIVE LENGTH (Shelter Deck Vessels Arts. 87—92)

$l + \frac{2}{3}(1-p)(L-l) =$ ft.
(*See Art. 90)

CORRECTION FOR PROPORTIONS L/D (Art. 58)

When D_1 is less than 35 ft. $= \dfrac{D_1 + 16}{300}(1 - e/2)(L - 12 D_1)$
" " greater than 35 ft. $= 0.15 (1 - e/2)(L - 12 D_1)$
[Note $e = 1.0$ if more than 6/10 covered]
$\dfrac{48.76 \times .820 \times 13.63}{300} = +$ **1.82** 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   **about 41'0"**

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   **S.S. "USURI MARU"**

Fee. Yen.   ;   Depth of Keel   ins.;   Draught (btm. keel)   ft.   ins.

CORRECTION FOR ROUND OF BEAM (Art. 59)   9 13/16" tumble home

Standard Round of Beam $= \dfrac{\text{Length of Beam in ins.}}{50} = \dfrac{590.4}{50} = 11.81$ ins.

Correction $= \frac{1}{4}$ (Standard Round of Beam—Actual Round of Beam)
$= \frac{1}{4} (11.81 - 12.75)$ **-.24** 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?
Height and breadth of gangway
Correction $= .012 (80 - l) D_1$ or $1.2 (r - 0.5) D_1$ $= +$ ins.

SUMMARY.

Freeboard by Tables .... **99.05** ins.

		ins.
Correction for Sheer		5.14
" " Partial Wood Deck		1.65
" " Superstructures		14.04
" " Proportions L/D	1.82	
" " Round of Beam		.24
" " Freeing Ports		
" " Access to Crew's Quarters	1.82	21.07

Totals   **1.82   21.07**
Net Correction   **- 19.25**
Geometric Freeboard   **79.80** ins.
Corresponding Geometric Draught (mld.)   **25.97** ft.
Moulded Draught limited by {form transverse strength, longitudinal strength, position of side scuttles} to   **25.97** ft.
Corresponding Freeboard (Summer)   **79.80** ins.

Winter Freeboard (Art. 22) $= \frac{1}{4}(D_1 - 10) + \dfrac{r}{15} \times (59 - D_1)$
$= \frac{1}{4}(22.76) - \dfrac{.546}{43} \times 26 \pm 24$ **= + 6.01** ins.

Tropical Freeboard (Art. 24)   do.   do.   **= - 6.01** 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 =   **= - 6.49** 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)   **79.8** ins.
Fresh Water Load Line above centre of disc.   **6.5** ins.
Tropical Load Line above " " "   **6.0** ins.
Winter Load Line below " " "   **6.0** ins.
Winter N.A. Load Line below " " "   ins.

Vertical distance from the point of intersection of the extended line of the upper surface of **Stl. Str.** 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   **0.00** ins.

	No. 1	No. 2	Br No. 3 Dk	Br No. 4 Dk	No. 5	No. 6
Length and Breadth	27' x 20'	31'6"x20'	18'0"x18'0"	11'3"x18'0"	27' x 20"	27'x20"
Height above deck and thickness of side and end coaming	36" Side.50 end.44	36" Side.50 end.44	24" Side.50 end.44	24" .44	same as No. 1	
Shifting Beams { Number and Material	5 steel	5 steel	3 steel	1 steel		
{ Plate	16½ x.34	do	4x3 x.44	4x3 x.44		do
{ Angles	4x 3 x.44		12"x .34	13"x .34		
*Fore and Afters { Number and Material	none	none	none	none	do-	
{ Scantlings						
Thickness of hatches	3"	3"	3"	3"	do	
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											
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						" 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					2	Correction = (Total Area x x^2 x 2) = —					

FULL SCANTLING VESSEL OLD RULES

Moment of Inertia about assumed axis

Moment of Inertia about Neutral Axis
Distance from Neutral Axis to top of Strength deck beam at side / Keel   ft.
MODULUS OF SECTION =

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

TRANSVERSE MODULUS.

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

Moulded Geometric Draught (d) = ; H = ; f_1 =

$t =$ *FULL K=SCANTLING VESSEL*
$d - t =$ *OLD RULES.*

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

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