

DISCLOSED SECTION

LLOYD'S REGISTER OF SHIPPING.

(CLASSIFICATION SOCIETY RECOGNISED BY THE JAPANESE GOVERNMENT)

SURVEY FOR FREEBOARD.

No 322

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
"HAGURO MARU"	FUCHU	--	--	About 3500	3070.57	12th sept. 1928.	--	52
Owners		Builders		Yard No.		Port of Survey		
Iya Shosen K.K.		Yokohama Dock Coy.		171		Yokohama.		
Type of vessel	Particulars of Classification		Position of Freeboard Deck		Date of Survey			
Single deck with	* 100 A. 1.		Upper deck.		During Building.			
op. Bridge & Foc'l	Full Scantling				J. Crichton and H.J. Cox.			
Name of Surveyor								

PRINCIPAL DIMENSIONS.			
Length between perpendiculars	340.0 ft.	Breadth Moulded = B _o	49.0 ft.
Length on Load Line	340.0 ft.	Thickness of Side plating in ins. x 3/12"	.58 + .15 ft.
Length for Freeboard = L	340.0 ft.	* (2/12 if plating is joggled)	
		Breadth for Freeboard = B	49.15 ft.
		Depth Moulded to Fbd. deck = D _o	25.75 ft.
		Round of Beam	+ .83 ft.
		Depth from base line to top of inner bottom plating or ordinary floors	3.29 ft.
		Depth for Tonnage Coef. (Art. 39) = D	23.29 ft.

CORRECTION TO TONNAGE (Art. 39)		DEPTH OF DOUBLE BOTTOM (Art. 39)	
Distance between top of ceiling on double bottom or ordinary floors as fitted and standard level of top of ceiling (v) =	-39.17 tons.	Depth of Actual Double Bottom (including plating) or Ordinary Floors	39.46 ins.
		Depth of Standard Double Bottom (including plating) or Ordinary Floors	40.46 ins.
		Difference	1.00
		x 1/12 =	-.08 = d.

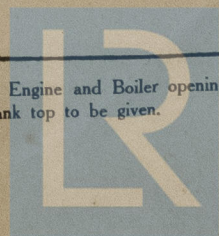
SHEER (Arts. 39 and 60-63)				FRAMING (Art. 39)						
Ordinate	Height of Sheer in inches.	S.M.	Products	Between Frames	Length in ft.	Depth of Frame in ins.	Thickness of Sparring in inches	Total depth in inches	Products ft. x inches	
1 aft	48.00	1	48.00	AP to 8	16.70	5.0	-	5.0	83.50	
2	20.81	4	83.24	8 " 10	5.00	8.0	-	8.0	40.00	
3	4.88	2	9.76	10 " 14	10.00	8.0	2.0	10.0	100.00	
4	0.00	4	0.00	14 " 52	95.00	11.0	2.0	13.0	1235.00	
5	9.25	2	18.50	52 " 71	47.50	9.0	-	9.0	427.50	
6	37.06	4	148.24	71 " 132	147.00	11.0	2.0	13.0	1911.00	
7	84.00	1	84.00	132 " F.P.	18.80	7.0	-	7.0	131.60	
Sum of Products =			391.74	340.00			Sum of Products =			3928.60
Mean Height of Sheer = S = $\frac{\text{Sum of Products}}{18}$ = 21.76 ins.				Sum of Products = Actual Mean Depth of framing. 11.55 ins.						
Standard Mean Height = S _o = $\frac{1}{3}(L/10 + 10)$ = 14.67 ins.				Length of Ship						
Difference 7.09 x 1/12 = .59 ft. = d ₁				Standard " " " " 7.50 ins.						
Correction (Arts. 60-63) = $\frac{3}{4}(1-e)(S_o-S)$ = -3.62 ins.				Difference 4.05 x 2/12 = .68 = 2b						

COEFFICIENT OF FINENESS (Art. 39 or 43)		or	
$\frac{100(V+v)}{L(B-2b)(D+d+d_1)+n}$		$\frac{35 \times \Delta}{L \times B_o \times d_o} + 0.04$	
$\frac{303140}{340(49.15-.68)(23.29-.08+.59)} = .77$		$\frac{35 \times 7000}{340 \times 49.15 \times 23.29} + 0.04 = .78$	

Sketch showing arrangement and height of double bottom or ordinary floors and of superstructures (unless complete plans are submitted).

Tank top Drops 3" at margin.	Ceiling in way of Hatches only.
Standard depth of c.d.b. = 40.46 + 2.50 = 42.96	
Actual " " = 39.46 + 1.5 = 37.96	
diff. 5.00 = .42	
Corr. ⁿ = $\frac{289 \times 43 \times .75 \times .42}{100} = -39.17$	

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.



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WOOD DECK (Arts. 5 and 6)			
	Mean Length in ft.	Thickness in ins.	Products
Forecastle	34.55	3.5	561.43
Bridge	112.50	3.14	
Poop or R.Q.D.	31.75		
Open Deck, ford.			
" " aft.			
Total length = l =		Sum of Products = 561.43	
Sum of Products = t =		ins. : Sum of Products = t ₁ = 1.65 ins.	

CORRECTION FOR DEPTH & CORRECTION FOR FREEBOARD.

If no sheathing fitted amidships = t₁ = ± 1.65 ins. (Arts. 6 and 57 p. 1)

If sheathing is fitted amidships = (t - t₁) = ± 0 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.	9
Thickness of Stringer Plate			.36
Thickness of Wood Deck Amidships	25		9.36
Correction for partial wood deck	±		1.65
Depth to use in Freeboard Tables	25	ft.	11.01
		ins. = D ₁ = 25.92	

SUPERSTRUCTURES.

HEIGHT (Arts. 46-48)

Standard Height = (0.018 L + 1.2) ft. = 7.32

	Complete Superstructure	Forecastle	Bridge	Poop or R.Q.D.
Actual		6.61	7.12	6.61
Standard		7.32	7.32	7.32

CLOSING APPLIANCES (Arts. 50 and 54)

	Forecastle	Bridge	Poop or Raised Quarter Deck
Means of Closing openings in bulkhead	Half height storm doors	Steel half height storm doors	Steel door
Corresponding Class	IV	I	I

EFFECTIVE LENGTH (Arts. 55 and 56)

	Mean Length	Coef. Art. 56	Height Coef.	Products
Forecastle closed part	34.55	1	.90	31.10
" open part				
Bridge closed part	112.50	1	.97	109.13
" open part ford.				
" " aft.				
Poop closed part	31.75	1	.90	28.58
" open part				
Total Effective Length =		168.81		
Length of Vessel = r =		.50		
Corresponding Coef. in Table (Art. 49) = e =		.320		
Reduction for Complete Superstructure		37.54		
Product		12.01		
Correction for Superstructures		12.01		

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 D₁ is less than 35 ft. = $\frac{D_1 + 16}{300} (1 - e/2) (L - 12 D_1)$

" " greater than 35 ft. = $0.17 (1 - e/2) (L - 12 D_1)$

[Note e = 1.0 if more than 5/10 covered] = 14 x .64 x 25.96 = 43.41

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

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? **--**

State the vertical distance from base line at top of keel to lower edge of lowest side scuttle **All above freeboard deck.**

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 **--**

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

DETAILS OF CONSTRUCTION OF WEATHER DECK HATCHWAYS.

	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6
Length and Breadth	27.0 x 18.0	27.6 x 18.0	12.6 x 18.0	27.6 x 18.0	25.0 x 18.0	
Height above deck and thickness of side and end coaming	24 x .46	24 x .46	18 x .44	24 x .46	24 x .46	
Shifting Beams	5	5	2	5	4	
Number and Material	Steel	Steel	Steel	Steel	Steel	
Scantlings	15 x .36	15 x .36	14 x .36	15 x .36	16 x .36	
"Fore and Afters	4 x 3 x .44	4 x 3 x .44	4 x 3 x .44	4 x 3 x .44	4 x 3 x .44	
Thickness of hatches	All 2 1/2" thick.					
Remarks	None.					

* 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 =

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

TRANSVERSE MODULUS.

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

Actual Side Plating =; Actual Frame Spacing =

If actual frame spacing exceeds the standard $\sqrt{\frac{\text{Actual frame spacing}}{\text{Standard frame spacing}}} t =$

Moulded Geometric Draught (d) =; H =; f₁ =; f₂ =

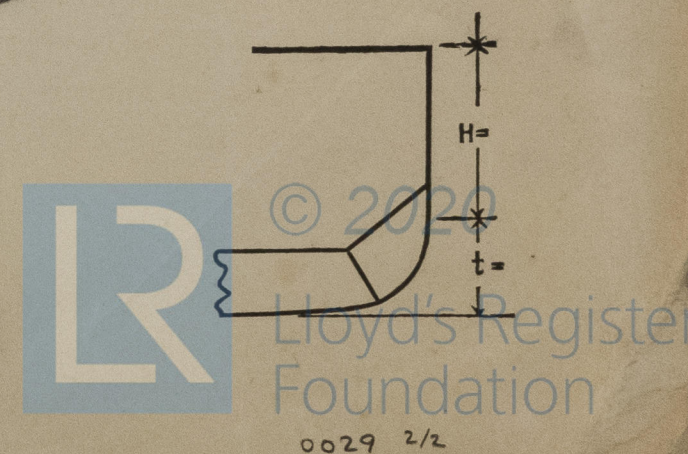
t =; K =; f₁ + f₂ =

d - t =; f₁ + f₂ =

Standard $\frac{1}{y} = \frac{s(d-t)(f_1 + f_2)}{1000} =$

Frame in ship = at spacing, $\frac{1}{y} =$

DRAUGHT PERMITTED BY TRANSVERSE STRENGTH = $\frac{1/y \times 1000}{s(f_1 + f_2)} + t =$



Walter D.D.
H. 12. 28



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