

J94.
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LLOYD'S REGISTER OF SHIPPING.

(CLASSIFICATION SOCIETY RECOGNISED BY THE JAPANESE GOVERNMENT)

SURVEY FOR FREEBOARD.

Ship's Name "NAGOYA MARU"	Port of Registry Fuchu	Official No.	No. in R.B.	Gross Tonnage 6069 about.	Tonnage under Fbd. Deck=V 5271.78	Date of Launch 5th May 1932	Date when Built	Report Number 87
Owners Ishihara Gomei Kaisha.		Builders Mitsubishi Zosen Kaisha, Nagasaki			Yard No. 503	Port of Survey Nagasaki.		
Type of vessel Full Scantling	Particulars of Classification * 100 A.1.			Position of Freeboard Deck Upper Deck.		Date of Survey While building G. Anderson and Name of Surveyor H.J.Cox.		

PRINCIPAL DIMENSIONS.

Length between perpendiculars 405 ft.	Breadth Moulded = B _o 55.5 ft.	Depth Moulded to Fbd. deck = D _o 32.5 ft.
Length on Load Line 405 ft.	Thickness of Side plating in ins. x ³ / ₁₂ .66x3/12 + .17 ft.	Round of Beam 14" = + 1.17 ft.
	* (2/12 if plating is joggled)	Depth from keel line to top of inner bottom plating or ordinary floors - 3.83 ft.
Length for Freeboard = L 405 ft.	Breadth for Freeboard = B 55.67 ft.	Depth for Tonnage Coef. (Art. 39) = D 29.84 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) = **+1.64** tons.

DEPTH OF DOUBLE BOTTOM (Art. 39)

Depth of Actual Double Bottom (including plating) or Ordinary Floors **45.50 + .50 = 46.00** ins.
 Depth of Standard Double Bottom (including plating) or Ordinary Floors **44" + .52 = 44.52** ins.
 Difference **1.48**
 x ¹/₁₂ = **.12** = d.

SHEER (Arts. 39 and 60-63)

Ordinate	Height of Sheer in inches.	S.M.	Products
1	105.0	1	105.0
2	47.13	4	188.52
3	12.41	2	24.82
4	0	4	0
5	6.09	2	12.18
6	23.31	4	93.24
7	51.00	1	51.00
Sum of Products =			474.76
Mean Height of Sheer = S = $\frac{\text{Sum of Products}}{18}$ =			26.38 ins.
Standard Mean Height = S _o = $\frac{1}{3}(L/10 + 10)$ =			16.83 ins.
Difference $\frac{9.55}{12} \times \frac{1}{12}$ =			.80 ft. = d ₁
Correction (Arts. 60-63) = $\frac{3}{4}(1-e)(S_o - S)$ =			$\frac{3}{4}(1-.672) \times 9.55 = 4.81$ 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 & 9	18.79	8"	0	8	150.32
9 & 16	17.63	9"	2	11	193.93
16 & 57	112.75	9.06"	2	11.06	1247.02
57 & 87	82.50	11.82"	0	11.82	975.15
87 & 129	110.50	9.06	2	11.06	1222.13
129 & 148	42.50	11.82	2	13.82	587.35
148 & FP	20.33	8.00	0	8	162.64
Sum of Products =					4538.54
Sum of Products = Actual Mean Depth of framing					11.21 ins.
Length of Ship					Standard $\frac{61+2}{12}$ = 8.50 ins.
Difference					2.71 x ² / ₁₂ = .45 = 2b

COEFFICIENT OF FINENESS (Art. 39 or 43)

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

$$\frac{527242}{405(55.67-.45)(29.84+.12+.80)} = .77$$

$$\text{or } \frac{35 \times \Delta}{L \times B_o \times d_o} + 0.04$$

$$= \frac{35 \times 3960}{405 \times 55.67 \times 29.84} + 0.04 =$$

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

Tank top falls 2" from $\frac{1}{4}$ to margin

Standard Depth of Double bottom **44.52 + 2.5 = 47.02**

Actual Depth of Double Bottom **46.0 + 3.0 - 2/2 = 48.00**

difference = **.98"**

Correction = $\frac{365.88 \times 48 \times .75 \times .08}{100} = 10.54$

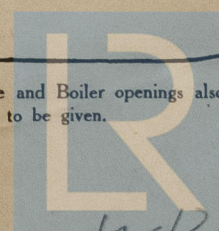
Nett Correction **10.54 - 9.90 = + .64 tons.**

No Ceiling in Machinery Space.

48' x 82.5 = 3960 sq.ft.

$\frac{3960 \times .25}{100} = -9.90$ 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.



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WOOD DECK (Arts. 5 and 6)

	Mean Length in ft.	Thickness in ins.	Products
Forecastle	38.08	1	38.08
Bridge	137.50	1.40	192.50
Poop or R.Q.D.	30.92	1.33	41.12
Open Deck, ford.			
.. .. aft.			
Total length = l =	206.5		Sum of Products = 640.15
Sum of Products = t =		ins. ;	Sum of Products = t ₁ = 1.58

CORRECTION FOR DEPTH & CORRECTION FOR FREEBOARD.

If no sheathing fitted amidships = t₁ = ± 1.58 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 = 32 ft. 6 ins.
 Thickness of Stringer Plate = .40 ins.
 Thickness of Wood Deck Amidships = 32 - 6.40 = 25.60 ins.
 Correction for partial wood deck = + 1.58 ins.
 Depth to use in Freeboard Tables = 32 ft. 7.98 ins. = D₁ = 32.67 ft.

SUPERSTRUCTURES.

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

	Complete Superstructure	Forecastle	Bridge	Poop or R.Q.D.
Actual	7.61	7.47	7.83	7.5
Standard	7.5	7.5	7.5	7.5

CLOSING APPLIANCES (Arts. 50 and 54)

	Forecastle	Bridge	Poop or Raised Quarter Deck
Means of Closing openings in bulkhead	Steel Door & wood door.	Steel Door	Steel Door
Corresponding Class	II	I	I

EFFECTIVE LENGTH (Arts. 55 and 56)

	Mean Length	Coef. Art. 56	Height Coef.	Products.
Forecastle closed part	38.08	1	1	38.08
.. open part	136.17	1	1	136.17
Bridge closed part				
.. open part ford.	1.33	.75	1	1.00
.. .. aft.	30.92	1	1	30.92
Poop closed part				
.. open part				
Total Effective Length =	206.17			

Total Effective Length = 206.17
 Length of Vessel = r = .51
 Corresponding Coef. in Table (Art. 49) = e = .328
 Reduction for Complete Superstructure = 39" = 12.79 ins.
 Product = -12.79 ins.
 Correction for Superstructures = 12.79 ins.

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 9/10 covered] = 1.622 x 8.36 x 12.96 = 1.76 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 **All above freeboard deck.**

State if there are any cargo ports or scuppers through sides of vessel below upper deck **None.**

State any special features in the construction of the vessel ..

Sister vessels ..

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

Bridge

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Yes

All above freeboard deck.

None.

DETAILS OF CONSTRUCTION OF WEATHER DECK HATCHWAYS.

	No. 1	No. 2	No. 3	No. 4	No. 5	Sinker Hatch on No. 6
Length and Breadth	27 x 18	33 x 20	16'6" x 20	33 x 20	30'3" x 20'	2'9" x 20'
Height above deck and thickness of side and end coaming	23 1/2" x .50 S .44 E	23" x .50 S .44 E	18" x .46 S .44 E	23 1/2" x .50 S .44 E	23 1/2" x .50 S .44 E	18" x .44
Shifting Beams { Number and Material Scantlings			Macanking Steel Hatches	fitted.		--
* Fore and Afters { 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.

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											
Sum or Difference											

Neutral Axis above assumed axis (x) = ..
 below 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) = $\frac{\text{Actual Modulus}}{f. B_0} =$..

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 = ..
 t = .. K = ..
 d - t = ..
 Standard $I/y = \frac{s(d-t)(f_1 + f_2)}{1000} =$..
 Frame in ship = .. at .. spacing, I/y = ..
 DRAUGHT PERMITTED BY TRANSVERSE STRENGTH = $\frac{I/y \times 1000}{s(f_1 + f_2)} + t =$..