

31 OCT 1952

Rpt. C.11 (Comp.).

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(For London Office only.)

# LLOYD'S REGISTER OF SHIPPING

UNITED WITH THE BRITISH CORPORATION REGISTER

## SURVEYS FOR FREEBOARD.

(COMPUTATION FOR ~~STEAMER~~, ~~SAILING SHIP~~, TANKER.)

Ship's Name <b>"OTOWASAN MARU"</b>	Official Number	Nationality and Port of Registry Japan Tokyo	Gross Tonnage Approx. 12,000 Tons	Date of Build 1952 - 11	Port of Survey Tamano
Moulded Dimensions: Length 162.090 Breadth 21.400 Depth 12.268				Date of Survey Whilst Building	
Moulded displacement at moulded draught = 85 per cent. of moulded depth 28.580 K.tons (excluding bossing)				Surveyor's Signature <i>B. Young</i>	
Coefficient of fineness for use with Tables 0.778				Particulars of Classification + 100A1 Class Contemplated "Carrying Petroleum in Bulk".	

DEPTH FOR FREEBOARD (D).	DEPTH CORRECTION.	ROUND OF BEAM CORRECTION.
Moulded depth ... 12.268	(a) Where D is greater than Table depth (D-Table depth) R = 8.33(12.292 - 10.806)30 = +371mm	Moulded Breadth (B) 21.400
Stringer plate ... .024	(b) Where D is less than Table depth (if allowed) (Table depth-D) R = 1.486	Standard Round of Beam = $B \times \frac{12}{50} = .428$
Sheathing on exposed deck $T \left( \frac{L-S}{L} \right) =$	If restricted by superstructures	Ship's Round of Beam = 0.430
Depth for Freeboard (D) = 12.292		Difference 2
		Restricted to
		Correction = $\frac{\text{Diff}^e}{4} \times \left(1 - \frac{S_1}{L}\right) = \text{Nil}$

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed <i>EQUIV.</i>	38.240	38.240	2.440		38.240
" overhang ...	----				
R.Q.D. enclosed ...	----				
" overhang ...	----				
Bridge enclosed <i>EQUIV.</i>	13.429	13.429	2.285	2.285	13.400
" overhang aft ...	----				
" overhang forward ...	----				
F'cle enclosed ...	22.490	22.490	2.310		22.490
" overhang ...	----				
Trunk aft ...	----				
" forward ...	----				
Tonnage opening aft ...	----				
" " forward ...	----				
Total ...	74.159	74.159			74.130

Standard Height of Superstructure 2.29 M.

" " R.Q.D. —

Deduction for complete superstructure 1067mm

Percentage covered  $\frac{S}{L} =$  45.75

" "  $\frac{S_1}{L} =$  45.74

" "  $\frac{E}{L} =$  45.74

Percentage from Table, Line A. TANKER 36.74.  
(corrected for absence of forecastle (if required))

Percentage from Table, Line B.  
(corrected for absence of forecastle (if required))

Interpolation for bridge less than 2L (if required)

Deduction = 1067 x 36.74 = -392mm.

## SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P. ...	1604	1	1604	1.377	1.377	1	1.377
1/4 L from A.P. ...	713	4	2852	0.482	.482	4	1.928
1/2 L " ...	178	2	356	0	0	2	0
Amidships ...	0	4	0	0	0	4	0
3/4 L from F.P. ...	356	2	712	0.102	.102	2	.204
1/4 L " ...	1426	4	5704	1.229	1.229	4	4.916
F.P. ...	3208	1	3208	3.061	3.061	1	3.061
Total ...			14436				11486

Mean actual sheer aft =  
Mean standard sheer aft =

DEFICIENT.

Mean actual sheer forward =  
Mean standard sheer forward =

Length of enclosed superstructure forward of amidships = DEFICIENT.

" " aft of " = SHEERS.

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{2950(.75 - .2288)}{18} = 85\text{mm.}$

If limited on account of midship superstructure.

If limited to maximum allowance of 1 1/2 ins. per 100 ft.

## Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

31.69

Depth to Freeboard Deck = 12.292

Summer freeboard = 2.632

Moulded draught (d) = 9.660

Keel allowance =

Extreme draught =

Deduction for Tropical freeboard and addition for Winter freeboard =  $\frac{d}{48} = 201\text{mm.}$

Addition for Winter North Atlantic Freeboard (if required) = 201 + 133 = 334mm

Deduction for Fresh Water.

26/33

Displacement in salt water at summer load water line.  $\Delta = 26.220$  KT. (at 9.640)

Tons per inch immersion at summer load water line  $T = 31.01$  KT/Cm

Deduction =  $\frac{\Delta}{40 T} = 210\text{mm.}$

## TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient  $\frac{.771 + .68}{1.36} = 1.451/1.36$

	+	-
Depth Correction	371	
Deduction for superstructures		392
Sheer correction	85	
Round of Beam correction		
Correction for Thickness of Deck amidships		
Other corrections, scantlings, etc.		
	456	392

Summer Freeboard = 2632mm

2407

2568

19.11.52

+64

## SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck:—

Tropical Fresh Water Line above Centre of Disc	411mm	Tropical Fresh Water Freeboard	2221
Fresh Water Line	210	Fresh Water	2422
Tropical Line	201	Tropical	2431
Winter Line below	201	Winter	2833
Winter North Atlantic Line	334	Winter North Atlantic	2966



# Gtowan Maru.

A new form should be prepared if any alterations that affect the freeboard have been made. If no such alterations have been made, the Surveyor should endorse the form on this side with his signature and the date.

POOP.

$$\begin{aligned}\text{EQUIV LENGTH} &= 36.740 + \frac{2}{3} \times 2.250. \\ &= 36.740 + 1.50 \\ &= \underline{38.24.}\end{aligned}$$

BRIDGE

$$\begin{aligned}\text{EQUIV LENGTH} &= \left\{ 12.750 + \frac{2}{3} \times 1.5 \right\} \frac{20.9}{21.4} \\ &= 13.75 \times \frac{20.9}{21.4} \\ &= \underline{13.429.}\end{aligned}$$

16.422  
28  
10.455

49.1  
21.1

71.4  
4  
255.8

Trade of ship International

Names of sister ships -----

Builder's name and yard number Mitsui S.B. Co., No. 569.

Owners Mitsui Sempaku K.K.

Fee £                     

*E. Gornush*  
*11/11/18*



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