

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name <b>TOMISHIMA MARU</b>	Official Number <b>68746</b>	Nationality and Port of Registry <b>JAPAN. Tokyo</b>	Gross Tonnage <b>7550</b>	Date of Build <b>5. 1952</b>	Port of Survey <b>Nagasaki</b>
Moulded Dimensions: Length <b>140.250</b> Breadth <b>19.00</b> Depth <b>10.500</b>					Date of Survey <b>During Construction</b>
Moulded displacement at moulded draught=85 per cent. of moulded depth <b>16.610</b> K.tons					Surveyor's Signature <b>G. Young</b>
Coefficient of fineness for use with Tables <b>.681</b>					Particulars of Classification <b>+ 100 A1</b>

Depth for Freeboard (D).	Depth correction.	Round of Beam correction.
Moulded depth ... .. <b>10.500</b>	(a) Where D is greater than Table depth (D—Table depth) R = <b>8.33(10511-9350)30 = +290 1/4 in.</b>	Moulded Breadth (B) <b>19.00</b>
Stringer plate ... .. <b>.011</b>	(b) Where D is less than Table depth (if allowed) (Table depth—D) R = <b>1.161</b>	Standard Round of Beam = $\frac{B \times 12}{50} =$ <b>380</b>
Sheathing on exposed deck $T \left( \frac{L-S}{L} \right) =$	If restricted by superstructures	Ship's Round of Beam = <b>380</b>
Depth for Freeboard (D) = <b>10.511</b>		Difference
		Restricted to
		Correction = $\frac{\text{Diff}^2}{4} \times \left( 1 - \frac{S_1}{L} \right) =$ <b>NIL</b>

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)	
Poop enclosed ... EQUIV...	<b>7.290</b>	<b>7.290</b>	<b>2.300</b>		<b>7.290</b>	Standard Height of Superstructure <b>2.290 m.</b>
" overhang ... ..						" " R.Q.D. ....
R.Q.D. enclosed ... ..						Deduction for complete superstructure <b>1067 1/4 in.</b>
" overhang ... ..						Percentage covered $\frac{S}{L} =$ <b>55.15</b>
Bridge enclosed ... EQUIV...	<b>60.172</b>	<b>60.172</b>	<b>2.450</b>		<b>60.172</b>	" " $\frac{S_1}{L} =$ <b>55.61</b>
" overhang aft ... ..	<b>.161</b>	<b>.121</b>			<b>.121</b>	" " $\frac{E}{L} =$ <b>55.61</b>
" overhang forward ... ..	<b>10.404</b>	<b>10.404</b>			<b>10.404</b>	Percentage from Table, Line A. (corrected for absence of forecastle (if required))
Fore enclosed ... EQUIV...	<b>8.480</b>	<b>8.480</b>	<b>2.300</b>		<b>8.480</b>	Percentage from Table, Line B. <b>40.68</b>
" overhang ... ..	<b>1.240</b>	<b>.620</b>			<b>.620</b>	(corrected for absence of forecastle (if required))
Trunk aft ... ..						Interpolation for bridge less than 2L (if required)
" forward ... ..						Deduction = <b>1067 x .4068 = -434 1/4 in.</b>
Tonnage opening aft ... ..						
" " forward ... ..	<b>78.027</b>	<b>78.027</b>			<b>78.027</b>	
Total ... ..	<b>77.343</b>	<b>76.683</b>			<b>76.683</b>	

## SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product	
A.P. ... ..	<b>1422</b>	<b>1</b>	<b>1422</b>	<b>1.450</b>	<b>1450</b>	<b>1</b>	<b>1450</b>	Mean actual sheer aft =
1/2 L from A.P. ... ..	<b>632</b>	<b>4</b>	<b>2528</b>	<b>.644</b>	<b>644</b>	<b>4</b>	<b>2576</b>	Mean standard sheer aft =
2/2 L " ... ..	<b>158</b>	<b>2</b>	<b>316</b>	<b>.161</b>	<b>161</b>	<b>2</b>	<b>322</b>	Mean actual sheer forward =
Amidships ... ..	<b>-</b>	<b>4</b>	<b>-</b>	<b>0</b>	<b>-</b>	<b>4</b>	<b>-</b>	Mean standard sheer forward =
2/2 L from F.P. ... ..	<b>316</b>	<b>2</b>	<b>632</b>	<b>.322</b>	<b>322</b>	<b>2</b>	<b>644</b>	Length of enclosed superstructure forward of amidships =
1/2 L " ... ..	<b>1264</b>	<b>4</b>	<b>5056</b>	<b>1.289</b>	<b>1289</b>	<b>4</b>	<b>5156</b>	" " aft of " =
F.P. ... ..	<b>2844</b>	<b>1</b>	<b>2844</b>	<b>2.900</b>	<b>2900</b>	<b>1</b>	<b>2900</b>	
Total ... ..			<b>12798</b>				<b>13048</b>	

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( \frac{.75-S}{2L} \right) = \frac{280(75-.2757)}{18} = -7 1/4 in.$

If limited on account of midship superstructure. —

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

Deduction for Tropical Freeboard.	Deduction for Fresh Water.	TABULAR FREEBOARD
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient
Depth to Freeboard Deck = <b>10.511</b>	$\Delta = 15.470 \text{ K.T. } 1526$	$\frac{681+68}{1.36} = \frac{1.361}{1.36}$
Summer freeboard = <b>2.142</b>	Tons per inch immersion at summer load water line	
Moulded draught (d) = <b>8.369</b>	T = <b>55.88 K.T.</b>	Depth Correction ... .. <b>290</b>
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{48} = 17 1/4 in.$	Deduction = $\frac{\Delta}{40T}$ inches = <b>6.92 in.</b>	Deduction for superstructures ... .. <b>434</b>
Addition for Winter North Atlantic Freeboard (if required) =	= <b>176 1/4 in.</b>	Sheer correction ... .. <b>7</b>
		Round of Beam correction ... ..
		Correction for Thickness of Deck amidships ... ..
		Other corrections, scantlings, etc. ... ..
		Summer Freeboard = <b>2142</b>

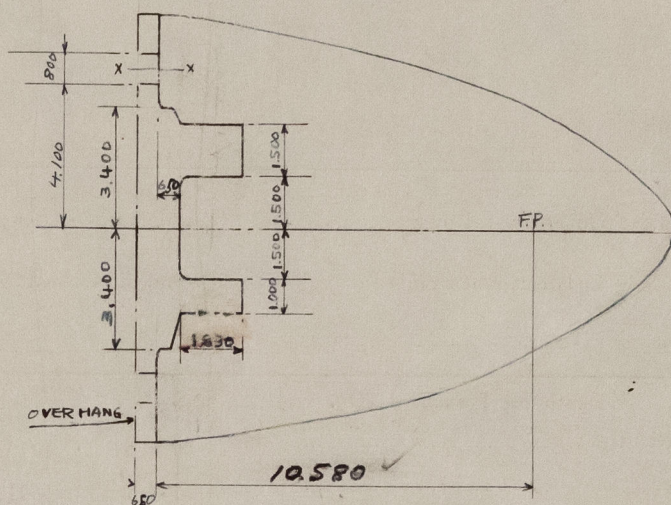
## SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck:—

Tropical Fresh Water Line above Centre of Disc ... <b>350 1/4 in.</b>	Tropical Fresh Water Freeboard <b>1.781</b>
Fresh Water Line " " ... <b>176 1/4 in.</b>	Fresh Water " <b>1.926</b>
Tropical Line " " ... <b>174 1/4 in.</b>	Tropical " <b>1.908</b>
Winter Line below " " ... <b>174 1/4 in.</b>	Winter " <b>2.307</b>
Winter North Atlantic Line " " ...	Winter North Atlantic " <b>2.307</b>



Expt. C. 11. 1933.

FILE DECK.



X-X SECTION

Overhang. 2.050  
less. .810  

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1.240

Diagram showing a cross-section of a canal with a trapezoidal shape. The top width is 810, the bottom width is 610, and the height is 1312. The left side is a vertical line, and the right side is a sloped line. The top edge is labeled 'F.C.L.E.' and the bottom edge is labeled 'U.P.P. D.K.'.

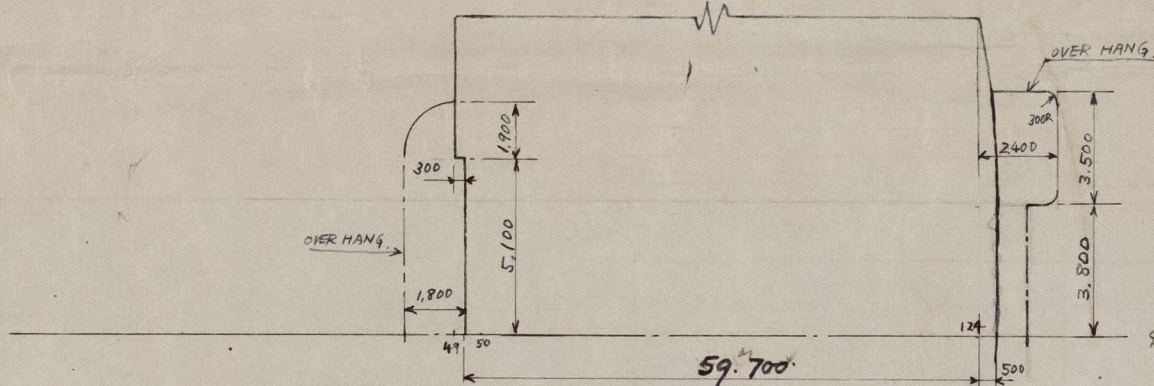
$$2300 \frac{(1830 \times 2500 + 6800 \times 650) + 810 \times 1312 \times 800}{10.5}$$

$$= 2300 \frac{(4575 + 4420) + 850}{10.5}$$

$$= 20,685 + 850 = \frac{21535}{10.5}$$

$$= 205$$

BRIDGE DECK



$500 \times 1.212 \times 80 \times \frac{1}{2}$   
 $10 \sqrt{x} \times 2.500$   
 $10.580$   
 $10.404$   
 $\therefore$  ann is less than  $L/10$ .

Bridge  
Length at side. = 60.000 ✓  
+  $\frac{2}{3} \times 500$  ✓ = + .333 ✓  
-  $\frac{300 \times 5,100}{9.500}$  ✓ = - .161 ✓  
Equiv. Length 60.172 + Overhang. .161

Fee £ : :