

17 MAR 1950

Index No. 42197
(For London Office only)

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name ARIMASAN MARU.	Official Number 42965	Nationality and Port of Registry JAPAN Kobe	Gross Tonnage 8596.50	Date of Build 5.7.37	Port of Survey Tamano, Japan.
Moulded Dimensions: Length 451.25 ✓ <i>To centre of Rudder Stock</i> Breadth 62.0 ✓ Depth 39.5 ✓					Date of Survey 15.1.50.
Moulded displacement at moulded draught = 85 per cent. of moulded depth 18973 Tons					Surveyor's Signature Glynn
Coefficient of fineness for use with Tables 709.707 ✓					Particulars of Classification 100 A-1 <i>Contemplated</i>

Depth for Freeboard (D).	Depth correction.	Round of Beam correction.
Moulded depth ... 39.50	(a) Where D is greater than Table depth (D - Table depth) R = (39.50 - 30.09) 3 = + 28.56 ✓	Moulded Breadth (B) 62.0 ✓
Stringer plate ... 0.07	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = 9.52 ✓	Standard Round of Beam = $\frac{B \times 12}{50} =$ 14.88 ✓
Sheathing on exposed deck (65 mm)	If restricted by superstructures ✓	Ship's Round of Beam = 18.0 ✓
$T \left(\frac{L-S}{L} \right) = \frac{2.50 \times 93.50}{12 \times 451.25} =$ 0.04 ✓		Difference + 3.12 ✓
Depth for Freeboard (D) = 39.61 ✓		Restricted to
		Correction = $\frac{\text{Diff}^2}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{3.12^2}{4} \times 9208 = - .72$ ✓

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poep enclosed ...					
„ overhang ...					
R.Q.D. enclosed ...					
„ overhang ...					
Bridge enclosed ...					
„ overhang aft ...					
„ overhang forward	32.75 ✓	32.75	7.5 ✓		32.75
F'cle enclosed ...	3.0 ✓	3.00	7.5 ✓		3.00
„ overhang ...					
Trunk aft ...	42.5		2.33		
„ forward ...	5.00		2.33		
Tonnage opening aft ...					
„ „ forward					
Total ...	35.75	35.75			35.75

Standard Height of Superstructure **7.50** ✓
„ „ R.Q.D. ✓
Deduction for complete superstructure **42.00** ✓
Percentage covered $\frac{S}{L} =$ **7.92** ✓
Percentage from Table, Line A. **3.96** ✓
(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 = **42.00 × 0.396 = 1.66** ✓

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	55.125	1		55.13	58 ✓	58.00	1		58.00
$\frac{1}{2}$ L from A.P. ...	24.53	4		98.12	24.62	24.62	4		98.48
$\frac{3}{8}$ L „ ...	6.06	2		12.12	6.31	6.31	2		12.62
Amidships ...	-	4		-	0	-	4		-
$\frac{3}{8}$ L from F.P. ...	12.13	2		24.26	12	12.00	2		24.00
$\frac{1}{2}$ L „ ...	49.06	4		196.24	48.87	48.87	4		195.48
F.P. ...	110.25	1		110.25	113.87	113.87	1		113.87
Total ...				496.12					502.45

Mean actual sheer aft = **Excess** ✓
Mean standard sheer aft = **Excess** ✓
Mean actual sheer forward = **Excess** ✓
Mean standard sheer forward = **Excess** ✓
Length of enclosed superstructure forward of amidships = **NIL** ✓
„ „ aft of „ = **NIL** ✓
Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{75-S}{2L} \right) = \frac{6.33(75-0.396)}{18} = - .25$ ✓
If limited on account of midship superstructure. **Yes NIL** ✓
If limited to maximum allowance of 1½ ins. per 100 ft. ✓

Deduction for Tropical Freeboard. Addition for Winter and Winter North Atlantic Freeboard. <i>Top of wood on</i> Depth to Freeboard Deck = 39.78 Ft. Summer freeboard = 9.92 Moulded draught (d) = 29.86 ✓ Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 7.47 = 7½ Addition for Winter North Atlantic Freeboard (if required) = ✓	Deduction for Fresh Water. Displacement in salt water at summer load water line $\Delta =$ 16380 Tons per inch immersion at summer load water line T = 54.30 Deduction = $\frac{\Delta}{40 T}$ inches = 7.54 = 7½	TABULAR FREEBOARD corrected for Flush Deck (if required) 88.90 ✓ Correction for coefficient $\frac{707+68}{1.36} = \frac{1387}{1.36}$ partial Depth Correction ... 28.56 ✓ Deduction for superstructures ... 1.66 ✓ Sheer correction ... 72 ✓ Round of Beam correction Wood ... 2.04 ✓ Correction for Thickness of Deck amidships ... 30.60 ✓ Other corrections, scantlings, etc. ... 2.38 ✓ Summer Freeboard = 118.88
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SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Deck:

Tropical Fresh Water Line above Centre of Disc	380 mm	Tropical Fresh Water Freeboard	2643
Fresh Water Line	190	Fresh Water	2833
Tropical Line	190	Tropical	2833
Winter Line below	190	Winter	3213
Winter North Atlantic Line		Winter North Atlantic	

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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.

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