

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker *M.S.*
having *Complete Superstructure with Soudage Opening*
KASII MARU (Type of Superstructures.)

Ship's Name KASII MARU	Nationality and Port of Registry <i>Tokyo Japan</i>	Official Number 41651	Gross Tonnage 6825	Date of Build 1936
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Port of Survey *Osaka, Harima*
Date of Survey *while building*
Name of Surveyor *W. S. Barker*
Particulars of Classification *+100 A1 with freeboard*

Moulded Dimensions: Length **480** Breadth **61** Depth **31 (Fwd DK)**
Moulded displacement at moulded draught = 85 per cent. of moulded depth **14040** tons
Coefficient of fineness for use with Tables **.679** (*.68 lowest in table*)

Depth for Freeboard (D)		Depth correction		Round of Beam correction	
Moulded depth	31.00	(a) Where D is greater than Table depth (D - Table depth) R = (31.04 - 30.00) 3 = +3.12		Moulded Breadth (B)	61.00
Stringer plate	.45"	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = ✓		Standard Round of Beam = $\frac{B \times 12}{50}$	14.64
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$	.04			Ship's Round of Beam	15"
Depth for Freeboard (D) =	31.04	If restricted by superstructures ✓		Difference Excess	.36"
				Restricted to	
				Correction = $\frac{\text{Diff}^{\circ}}{4} \times \left(1 - \frac{S_1}{L} \right)$	$= \frac{.36}{4} \times .0045 = \text{NIL}$

DEDUCTION FOR SUPERSTRUCTURES.

Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed ...	26.40	26.40	9.0	✓	26.40
" overhang ...	.25	.12		✓	.12
R.Q.D. enclosed ...					
" overhang ...					
Bridge enclosed ...	419.10	419.10	9.0	✓	419.10
" overhang aft ...	419.1	.19	9.0	✓	.19
" overhang forward ...	.25				
F'cle enclosed ...					
" overhang ...					
Trunk aft ...					
" forward ...					
Tonnage opening aft ...	4.00	2.09 - 1/2 DIFF. 9.0	✓		2.09
" forward ...					
Total ...	450.00	447.90			447.90

Standard Height of Superstructure **7.50**
" " R.Q.D. **-**
Deduction for complete superstructure **42.00**
Percentage covered $\frac{S}{L} = 100.00$
" " $\frac{S_1}{L} = 99.52$
" " $\frac{E}{L} = 99.52$
Percentage from Table, Line A. **99.40**
(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 = $42 \times .9940 = -41.74$

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P. ...	55.00	1	55.00	60"	78.00	1	78.00			
1/4 L from A.P. ...	24.475	4	97.90	24"	34.71	4	138.84			
3/4 L " ...	6.05	2	12.10	5.63	8.58	2	17.16			
Amidships ...	-	4		0		4				
3/4 L from F.P. ...	12.10	2	24.20	10.5	13.20	2	26.40			
1/4 L " ...	48.95	4	195.80	41.5	53.40	4	213.60			
F.P. ...	110.00	1	110.00	102	120.00	1	120.00			
Total ...			495.00	+18"			594.00			

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 = } b.s.s.
" " aft of " = } b.s.s.

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - S}{2L} \right) = \frac{99.00}{18} \left(\frac{.75 - .50}{.75} \right) = -1.37$
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 corrected for Flush Deck (if required)	
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient	87.10
Ft.	Δ =		87.10
Depth to Freeboard Deck = 31.04	Tons per inch immersion at summer load water line	Depth Correction ...	3.12
Summer freeboard = 3.93	T =	Deduction for superstructures ...	- 41.74
Moulded draught (d) = 27.11	Deduction = $\frac{\Delta}{40T}$ inches	Sheer correction ...	- 1.37
Deduction for Tropical freeboard and addition for		Round of Beam correction ...	-
Winter freeboard = $\frac{d}{4}$ inches =		Correction for Thickness of Deck amidships ...	-
Addition for Winter North Atlantic Freeboard (if required =		Other corrections, scantlings, etc. ...	-
			3.12 43.11 - 39.99
			Summer Freeboard = 47.11 = 1197 m/m.

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

Freeboards as assigned by Japanese Authorities

Tropical Fresh Water Line above Centre of Disc ...	353 m/m.
Fresh Water Line " " ...	179
Tropical Line " " ...	174
Winter Line below " " ...	174
Winter North Atlantic Line " " ...	✓

Tropical Fresh Water Freeboard ...	786
Fresh Water " " ...	960
Tropical " " ...	965
Winter " " ...	1313
Winter North Atlantic " " ...	✓

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS											
Description of Hatchway											
Dimensions of Hatchway											
COAMINGS	{	Height above Deck ...	...							
		Thickness { Sides ...	...							
		{ Ends ...	...							
		Stiffeners ... ..	...							
		Brackets, Stays ...	...							
HATCH BEAMS	{	Number ... ..	...							
		Spacing ... ..	...							
		Scantling and Sketch ...	...							
		Bearing Surface ... ..	...							
FORE AND AFTERS	{	Number ... ..	...							
		Spacing ... ..	...							
		Unsupported Lengths ...	...							
		Scantling* and Sketch ...	...							
		Bearing Surface ... ..	...							
HATCH COVERS	{	Material ... ..	...							
		Thickness ... ..	...							
		How fitted ... ..	...							
		Bearing Surface ... ..	...							
Spacing of Cleats											
Number of Tarpaulins											
<div>*Are wood fore and afters steel shod at all bearing surfaces ?</div> <div>Are battens and wedges efficient and in good condition ?</div> <div>Are tarpaulins in good condition and in accordance with rule requirements ?</div> <div>Are lashings provided in accordance with rule requirements ?</div>											

Particulars of fiddley, funnel and ventilator coamings :—

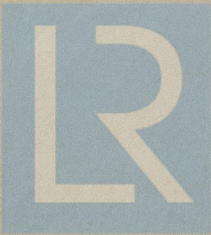
Particulars of Flush Bunker Scuttles :—

Particulars of Companionways :—

Particulars of Ventilators in exposed positions on freeboard and superstructure decks :—

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks :—

Particulars of Gangway Cargo and Coaling Ports :—



Particulars of Scuppers and Sanitary Discharge Pipes —

Particulars of Side Scuttles :

Particulars of Guard Rails :—

Particulars of Gangways, Lifelines, etc. :—

Particulars of Freeing Arrangements.

	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
After Well						
Forward Well						

State position of each freeing port } After Well :—
(F. and A. position and height above deck edge) } Forward Well :—
State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such :—
Additional area where sheer is less than standard.

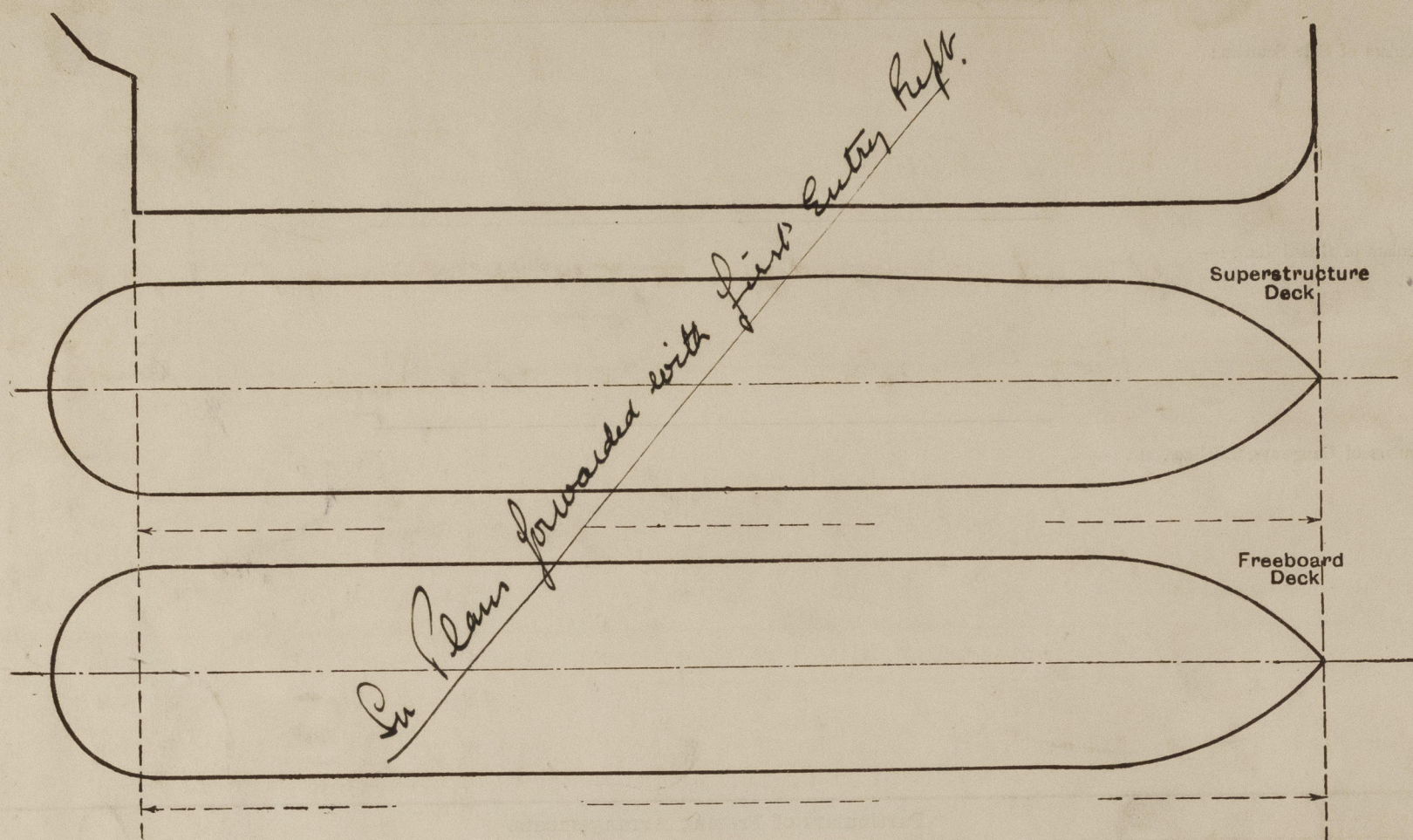
Particulars of Superstructures, Trunks, Casings, Deckhouses.

	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead								
Raised Quarter Deck Bulkhead ...								
Bridge, After Bulkhead								
Bridge, Forward Bulkhead								
Forecastle Bulkhead								
Trunk, Aft								
Trunk, Forward								
Exposed Machinery Casings on Free- board or Raised Quarter Decks ...								
Exposed Machinery Casings on Super- structure Decks								
Machinery Casings within Superstruc- tures not fitted with Class I Closing Appliances								
Deckhouses on Flush Deck Ships ...								

Particulars of Closing Appliances (state if capable of being manipulated from both sides).

Poop Bulkhead	Storm Boards in Rirted Channels							
Raised Quarter Deck Bulkhead ...								
Bridge, After Bulkhead	Storm Boards in Rirted Channels.							
Bridge, Forward Bulkhead								
Forecastle Bulkhead								
Exposed Machinery Casings on Free- board or Raised Quarter Decks ...								
Exposed Machinery Casings on Super- structure Decks								
Machinery Casings within Superstruc- tures not fitted with Class I Closing Appliances	Hinged steel doors operable from both sides.							
Deckhouses on Flush Deck Ships ...								

Superstructure bulkheads, trunks, deckhouses, casings, cargo and coaling hatchways, extent and thickness of sheathing on the freeboard deck, gangway, cargo and coaling ports, and any other openings, etc., which would affect the seaworthiness of the ship are to be shewn on the following sketches:—



State any special features in the construction of the ship:—

Hulboard has been assigned by the Japanese Government, for particulars see verification form herewith

Builder's name and yard number Harima Shipbuilding & Engineering Co. Ltd.

Names of sister ships

Owners Nokusei Kenin Kaisha

Fee £ : : Received by me



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Foundation