

DISCLAIMER

Lloyd's Register of Shipping

SURVEYS FOR FREEBOARD.

Index No. 28281

(For London Office only.)

Cardiff No. 50,316

21 OCT 1933

Computation of Freeboard for Steamer, Sailing Ship, Tanker
having roop bridge and fore castle

KUSUYAME MARU (Type of Superstructures.)

Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build	
S.S. "MICHALAKIS"	GREEK Japan	385	5234	1919-12	
EX "BARRACOO"	SYRA Kobe	262 (5/1/39)			
Moulded Dimensions: Length	399.8'	Breadth	52.6'	Depth	31.0'
Moulded displacement at moulded draught = 85 per cent. of moulded depth				12050	tons
Coefficient of fineness for use with Tables				.77	

Port of Survey

Date of Survey

Name of Surveyor

Particulars of Classification

Depth for Freeboard (D)			
Moulded depth	...	...	31.0
Stringer plate	...	...	.04
Sheathing on exposed deck	T $\frac{L-S}{L}$ =		
Depth for Freeboard (D) =	31.04		

Depth correction	
(a) Where D is greater than Table depth	(D-Table depth) R = (31.04-26.66) 3.00
	= + 13.14"
(b) Where D is less than Table depth (if allowed)	(Table depth-D) R =
If restricted by superstructures	✓

Round of Beam correction	
Moulded Breadth (B)	52.0
Standard Round of Beam = $\frac{B \times 12}{50}$	12.48"
Ship's Round of Beam	138"
Difference	.52"
Restricted to	
Correction = $\frac{\text{Diff}}{4} \times (1 - \frac{S_1}{L})$	$\frac{.52}{4} \times .4923 = -.06$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Roop enclosed ...	49.25	49.25	4'-11 1/2"		49.25
" overhang ...	.66	.33			.33
R.Q.D. enclosed	✓				
" overhang	✓ 111.32	111.32	4'-11 1/2"		111.32
Bridge enclosed...	112.66	1.25			1.25
" overhang aft	1.67	.16			.16
" overhang forward	33	2.12			2.12
F'cle enclosed ...	38.55	38.55	4'-11 1/2"		38.55
" overhang ...	2.81				
Trunk aft					
" forward					
Tonnage opening aft					
" forward					
Total	204.59	202.98			202.98

Standard Height of Superstructure	7.498
" " R.Q.D.	✓
Deduction for complete superstructure	41.79
Percentage covered $\frac{S}{L} =$	51.17%
" $\frac{S_1}{L} =$	50.77%
" $\frac{E}{L} =$	50.77%
Percentage from Table, Line A.	
(corrected for absence of forecastle (if required))	
Percentage from Table, Line B.	36.77%
(corrected for absence of forecastle (if required))	
Interpolation for bridge less than .2L (if required)	
Deduction = 41.79 x .3677	= -15.44"

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	49.98	1		49.98	60	60.00	1		60.00
1/4 L from A.P. ...	22.24	4		88.96	26	26.00	4		104.00
3/4 L " ...	5.50	2		11.00	6.5	6.50	2		13.00
Amidships	✓	4		✓	✓	✓	4		✓
3/4 L from F.P. ...	10.99	2		21.98	13	13.00	2		26.00
1/4 L " ...	44.48	4		177.92	52	52.00	4		208.00
F.P. ...	99.96	1		99.96	120	120.00	1		120.00
Total	49.82			449.80					531.00

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} = \frac{81.20}{18} = 4.51 \text{ (excess)}$$

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.

Depth to Freeboard Deck	=	31.04
Summer freeboard	=	5.96
Moulded draught (d)	=	25.08

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = 6.27 = 6 1/4"

Addition for Winter North Atlantic Freeboard (if required) =

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$$\Delta = 11500$$

Tons per inch immersion at summer load water line

$$T = 41.7$$

Deduction = $\frac{\Delta}{40T}$ inches

$$= \frac{11500}{40 \times 41.7} = 6.89$$

$$= 7"$$

TABULAR FREEBOARD corrected for Fresh Deck (if required)

Correction for coefficient

Depth Correction	...	13.14
Deduction for superstructures	...	15.44
Sheer correction	...	2.23
Round of Beam correction	...	.06
Correction for Thickness of Deck amidships	...	-
Other corrections, scantlings, etc.	...	-

Summer Freeboard = 71.58

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

Tropical Fresh Water Line above Centre of Disc	13 1/2" = 33.7	Tropical Fresh Water Freeboard	5'-11 1/2" = 1816"
Fresh Water Line	7" = 178	Fresh Water	4'-10 1/2" = 1479
Tropical Line	6 1/4" = 159	Tropical	5'-4 1/2" = 1638
Winter Line below	6 1/4" = 159	Winter	5'-5 1/4" = 1657
Winter North Atlantic Line	✓	Winter North Atlantic	6'-5 3/4" = 1945

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway	ho 1	ho 2	ho 3	ho 4	On Br Dk. Cross Deck	Br. SPACE Cross BUNKER			
Dimensions of Hatchway	32'-6" x 20'	34'-8" x 20'	34'-8" x 20'	28'-2" x 20'	10'-8" x 18'	10'-8" x 18'			
COAMINGS	Height above Deck	30"	30"	30"	30"	30"			
	Thickness	44"				9" bulk			
	Stiffeners	10' x 3" x 1/2"	Same	Same	Same	4" bulk			
	Brackets, Stays	2-10' x 3" x 1/2"				none			
HATCH BEAMS	Number	6	6	6	5	5			
	Spacing	4'-8"	5'-0"	5'-0"	4'-8"	5'-4"			
	Scantling and Sketch	7" x 4" x 3" x 1/2"	Same	Same	Same	7" x 4" x 3" x 1/2"			
	Bearing Surface	3 1/2"	3 1/2"			3"			
FORE AND AFTERS	Number								
	Spacing								
	Unsupported Lengths								
	Scantling and Sketch	none				none			
HATCH COVERS	Material	wood				Same			
	Thickness	4 1/2"	Same	Same	Same	Same			
	How fitted	3"							
	Bearing Surface	3"							
Spacing of Cleats		2'-0"							
Number of Tarpaulins		2	Same	Same	Same	Same			

*Are wood fore and afters steel shod at all bearing surfaces? *Yes.*
 Are battens and wedges efficient and in good condition? *Yes.*
 Are tarpaulins in good condition and in accordance with rule requirements? *Yes.*
 Are lashings provided in accordance with rule requirements? *Yes.*

Particulars of fiddle, funnel and ventilator coamings:—
Fiddle and Ventilator Coamings in good condition.
Engine room skylight steel, strongly constructed.
Stonehold gratings covered by hinged steel covers.
no funnel coaming.

Particulars of Flush Bunker Scuttles:—

none.

Particulars of Companionways:—
Companion way on poop 5'-0" high x 4'-0" pre aft x 24" throat. Steps
fitted with strong hinged door (wood) on aft side with 16" sill - 42" x 14" door.

Particulars of Ventilators in exposed positions on freeboard and superstructure decks:—
4 ventilators to each hold - coamings 3'-0" high
x 4'-13" dia in body of fore and aft wells; those adjacent to fore & after bridge
bulb 6'-0" high 18" dia x 4 coamings; those on fore & after head coamings 3'-0" high x 18"
Two vents to No 4 hold on poop 20'-0" high 18" dia x 5 coaming stayed thwart ships.
All ventilators strongly constructed & fitted with wooden plugs & canvas covers.

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks:—
Air pipes to S.B. tanks in wells at bulwarks 3'-0" goose necks.
Air pipe to fore peak at stem 12" high goose neck.
Efficient closing appliances provided.

Particulars of Gangway Cargo and Coaling Ports:—

None.

Particulars of Scuppers and Sanitary Discharge Pipes — *Soil pipes to D.C.'s fore & aft and amidships discharging*
overboard below 3' board deck with storm valves fitted.
Scuppers through bulwarks.

Particulars of Side Scuttles:

none.

Particulars of Guard Rails:—
Guard rails on 2' ch head, bridge and poop 4'-0" high.
2 rails with stanchions spaced 5'-0" apart.

Particulars of Gangways, Lifelines, etc.:—

none fitted.

Suitable provision is made for rigging lifelines
available for use in any part of the vessel
used by the crew in the regular working thereof

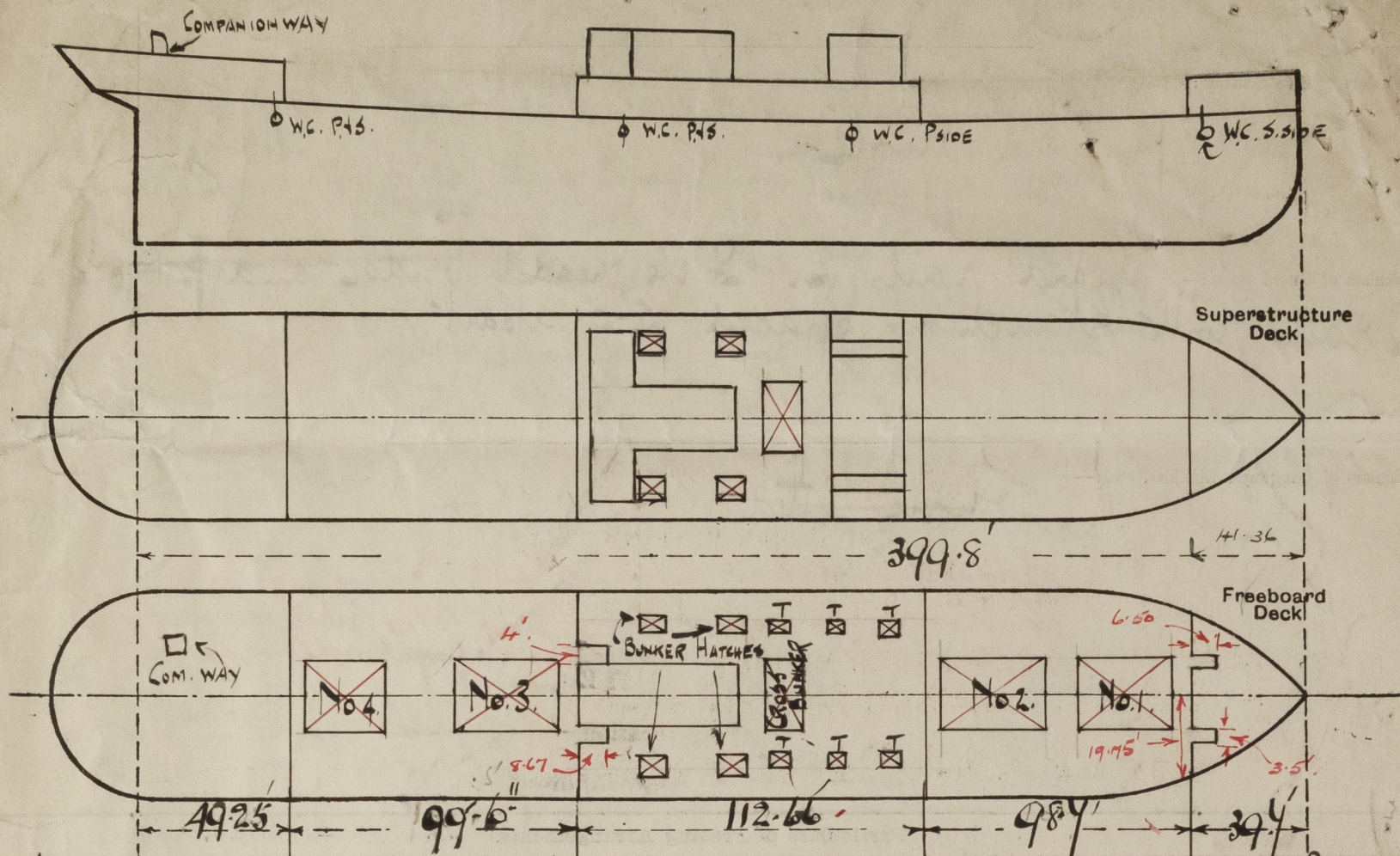
Particulars of Freeing Arrangements.						
	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
After Well	99'-6"	3'-9"	30' 4'-6" x 21" 10' 3'-6" x 18"	4	28.9 #	19.90 #
Forward Well	98'-4"	3'-9"	30' 4'-0" x 14" 10' 3'-0" x 15"	4	20.5 #	19.74 #
State position of each freeing port (F. and A. position and height above deck edge) After Well: from fore bulk 22'-0" - 46'-0" - 69'-0" and 90'-0" Forward Well: " " " 10'-6" - 34'-0" - 58'-0" and 81'-0"						
State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— <i>bars.</i>						
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	2'-6"	3"	6" x 3 1/2"	30"	none	4'-0" x 21"	10"	4'-11"
Raised Quarter Deck Bulkhead								
Bridge, After Bulkhead	none	3"	6" x 3 1/2"	3'-0"	none	3'-9" x 4'-0"	16"	4'-11"
Bridge, Forward Bulkhead	24"	3"	9" x 3 1/2" bulk	2'-3"	bracing struts	3'-0" x 4'-6"	24"	4'-11"
Forecastle Bulkhead	none	3"	6" x 3 1/2"	3'-6"	none	3'-0" x 4'-6"	18"	4'-11"
Trunk, Aft								
Trunk, Forward								
Exposed Machinery Casings on Freeboard or Raised Quarter Decks								
Exposed Machinery Casings on Superstructure Decks	21"	3"	3" x 3" x 3"	30"	none	22" x 4'-0"	21"	4'-9"
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	21"	3"	3" x 3" x 3"	30"	none	22" x 4'-0"	21"	4'-11"
Deckhouses on Flush Deck Ships						3'-0" x 4'-6" bolted plate at saddle back		

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

Poop Bulkhead	Steel hinged doors, manipulated door both sides.
Raised Quarter Deck Bulkhead	
Bridge, After Bulkhead	wood battens in channels. Storm board full height in raised ch.
Bridge, Forward Bulkhead	Steel hinged doors secured by dogs 12" apart - manipulated outside.
Forecastle Bulkhead	wood battens in channels.
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	
Exposed Machinery Casings on Superstructure Decks	Steel hinged doors manipulated both sides.
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	Steel hinged doors manipulated both sides and steel plate in way of saddle back 3'-0" x 4'-6" high, bolted spaced 6" apart.
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:—



Drumming hatches in bridge space (T) 2'-6" x 22" with 9" built coaming and linged wood covers. Coal bunker hatches 8'-0" x 3'-9" coaming 18" high x 4'-2" bearers for wooden hatches cleats and battening arrangements fitted. Door hatches

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

Bunker hatches on bridge deck 8'-0" x 3'-4" coamings 30" x 4" fitted with wooden hatches 2 1/2" thick cleats and battening arrangements and ~~the~~ tarpaulin bearers 2"

Draught Scale information:—

at 25'-4"	Deadweight	8140 tons		
25'-0"	"	8000 "	tons per inch	41.68.
23'-0"	"	7000 "	"	41.34.
21'-0"	"	6000 "	"	40.94.
19'-0"	"	5000 "	"	40.58.

This vessel is now undergoing Special Survey No 3. and will be completed before being Commissioned.

Assignment to be sent to owner aboard vessel at Instow, N. Devon.

Builder's name and yard number

R. Thompson & Sons Ltd. Sunderland.

Names of sister ships

Owners

Nicholas Eustathiou & Co

Fee £ 13.12.0

Received by me

Bridge 112.66
Recess 8.67 x 4.00 - 1.34
26 111.32 equs.

Fore castle 39.70
Recess 6.5 x 3.5 - 1.15
17.75 38.55 equs.

1.34
33
1.67 O.H.



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