

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Index. No. 35299.
(For London Office only.)

JUN 11 1937

Computation of Freeboard for Twin Screw Motor Steamer, Sailing Ship, Tanker
having Forecastle, Poop and Bridge
(Type of Superstructures.)

Port of Survey Copenhagen
Date of Survey 2nd June 1937
Name of Surveyor Wk. Juel

Ship's Name "Regina" Nationality and Port of Registry Norway Kristiansand Official Number L.J.M.C Gross Tonnage 9545 Date of Build 1937

Moulded Dimensions: Length 470' Breadth 65'2" Depth 35'4 1/2" (as measured)
Moulded displacement at moulded draught = 85 per cent. of moulded depth 21280 tons
Coefficient of fineness for use with Tables .81 .809

Particulars of Classification *100 A1
carrying Petroleum in Bulk
Long. framing. (contemplated)

Depth for Freeboard (D) Moulded depth as measured 35'4 1/2" = 35.37'
Stringer plate 78
Sheathing on exposed deck .04
 $T \left(\frac{L-S}{L} \right) =$
Depth for Freeboard (D) = 35.44'

Depth correction (a) Where D is greater than Table depth (D - Table depth) R = (35.44 - 31.33) 3 = + 12.33'
(b) Where D is less than Table depth (if allowed) (Table depth - D) R = 4.11
If restricted by superstructures ☒

Round of Beam correction Moulded Breadth (B) 65'2"
Standard Round of Beam = $\frac{B \times 12}{50} =$ 15.64"
Ship's Round of Beam 16" = 16.00
Difference excess = .36
Restricted to
Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) =$.36 \times .6143 = -.06

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...	101.33'	101.33'	7.50	✓	101.33'
" overhang ...	3.00'	1.50'	7.50	✓	1.50'
R.Q.D. enclosed ...					
" overhang ...	30.67'	30.67'			
Bridge enclosed <u>square</u> ...	31.42'	<u>see sketch</u>	7.50	✓	30.67'
" overhang aft ...	5.00'	3.75'		✓	3.75'
" overhang forward25'	.12'		✓	.12'
F'cle <u>enclosed</u> <u>open</u> ...	43.92'	43.92'	7.50	✓	43.92'
" overhang ...					
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" forward ...					
Total ...	184.17'	181.29'			181.29'

Standard Height of Superstructure 7.50'
" " R.Q.D. -
Deduction for complete superstructure 42.00'
Percentage covered $\frac{S}{L} =$ 39.19'
" $\frac{S_1}{L} =$ 38.54'
" $\frac{E}{L} =$ 38.54'
Percentage from Table, Line A. TANKER 29.54'
(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 \times .2954 = 12.42'

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	57.00	1		57.00	59 1/4"	59.25	1		59.25
1/4 L from A.P. ...	25.37	4		101.48	24 5/8"	24.62	4		98.48
1/2 L " ...	6.27	2		12.54	6 1/2"	6.50	2		13.00
Amidships ...	-	4		-	0	-	4		-
3/4 L from F.P. ...	12.54	2		25.08	14"	14.00	2		28.00
3/4 L " ...	50.73	4		202.92	56 7/8"	56.87	4		227.48
F.P. ...	114.00	1		114.00	134"	134.00	1		134.00
Total ...				513.02					560.21

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 = Tanker
" " aft of " = Tanker

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{47.19}{18} \left(.75 - \frac{196}{470} \right) = -1.45'$

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 = 35.44'
Summer freeboard = 7.19
Moulded draught (d) = 28.25
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 7.06 = 7" = 178 mm.
Addition for Winter North Atlantic Freeboard (if required) = 7.06 + 4.70 = 11.76 = 11 3/4" = 298 mm.

Deduction for Fresh Water. Displacement in salt water at summer load water line 28030 28'3"
 $\Delta =$ 19900 Tons
Tons per inch immersion at summer load water line 65.4
Deduction = $\frac{\Delta}{40 T}$ inches = 7.68 = 7 3/4" = 197 mm.

TABULAR FREEBOARD corrected for Flush Deck (if required)
Correction for coefficient $\frac{.809 + .68}{1.36} = \frac{1.489}{1.36}$
Depth Correction ... 12.33'
Deduction for superstructures ... 12.42'
Sheer correction ... 1.45'
Round of Beam correction06'
Correction for Thickness of Deck amidships ... -
Other corrections, scantlings, etc. ... -
Summer Freeboard = 86.21'

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

Tropical Fresh Water Line above Centre of Disc	14 3/4" = 375 mm.	Tropical Fresh Water Freeboard	5' 11 1/2" = 1816 mm.
Fresh Water Line	7 3/4" = 197	Fresh Water	6' 6 1/2" = 1994
Tropical Line	7" = 178	Tropical	6' 7 1/4" = 2013
Winter Line below	7" = 178	Winter	7' 9 1/4" = 2369
Winter North Atlantic Line	11 3/4" = 298	Winter North Atlantic	8' 2" = 2489

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS.									
Description of Hatchway	17 off	2 off	6 off	10 off	10 off	10 off	10 off	10 off	10 off
Dimensions of Hatchway	5'8" x 3'8"	5'3" x 3'8"	1'10" x 4'	15'0" x 9'0"	3'4" x 3'	3'2" x 2'	2'3" x 2'3"	4'6" x 4'6"	
COAMINGS									
Height above Deck	33 1/2"	33 1/2"	23 1/2"	36"	18"	18"	18"	18"	
Thickness	.40"	.40"	.38"	.44"	.26"	.26"	.26"	.38"	
Sides									
Stiffeners	100.75.75	100.75.75		3.3.32	75.75.9	75.75.9	75.75.85	65.32	
Brackets, Stays				180.75.105					
HATCH BEAMS									
Number				one					
Spacing				10.3 1/2.3 1/2					
Scantling and Sketch				38 x 50					
Bearing Surface									
FORE AND AFTERS									
Number									
Spacing									
Unsupported Lengths									
Scantling and Sketch									
Bearing Surface									
HATCH COVERS									
Material	Steel	Steel	Steel	Steel	Wood	Wood	Wood	Steel	
Thickness	.50"	.50"	.38"	.38"	2 1/2"	2 1/2"	2 1/2"	.34"	
How fitted	hinged	hinged	hinged	hinged				hinged	
Bearing Surface									
Spacing of Cleats					18"	18"	15"		
Number of Tarpaulins									
Are wood fore and afters steel shod at all bearing surfaces?									
Are battens and wedges efficient and in good condition?									
Are tarpaulins in good condition and in accordance with rule requirements?									
Are lashings provided in accordance with rule requirements?									

Particulars of fiddle, funnel and ventilator coamings:— All openings in fiddle top provided with permanently attached steel covers. Funnel and steel skylight of substantial construction. Ventilators on fiddle top: 6 off 36" diam. 1880 x 3/16" coaming 4 off 21" " 1880 x 3/16" "

Particulars of Flush Bunker Scuttles:—

none

Particulars of Companionways:— Access to forward pumproom through Companionway: .30 plating, 75 x 75.8 stiffeners, 15" fill, steel hinged w.t. door. Access to midship pumproom in after bulkhead of pumproom house: plating .30" with stiffeners 2 3/4 x 2 1/2 x .30 in 28" distance. Steel hinged w.t. door with 18" fill, turnbuckle manipulated from both sides. Access to crew quarters through steel hinged door from poop deck. Access to living engine room from poop deck aft through Companionway. .30 plating and 75 x 75.8 stiffeners, fill 13 1/2" above wood, door w.t. with turnbuckle.

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

Upper deck 2 off 18" diam. 3'0" x .40 Forehold Poop deck 2 off 12" diam. 2'6" x .38 steering engine. 1" 18" 3'0" x .40 Pumproom 2" 12" 2'6" x .38 accommodation. Forecastle deck 1" 24" 3'0" x .40 Forehold 1" 12" 2'6" x .34 ston. Bridge deck 3" 6" 3'0" x .26 Lamproom 29" 6" 2'6" x .26 accommodation. 1" 9" 2'6" x .34 ston.

Efficient means of closing provided.

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

opening of air pipes on poop and forecastle deck 18" above deck on freeboard deck 36" above deck. Wood plug and canvas covers supplied.

Particulars of Gangway Cargo and Coaling Ports:—

none

Particulars of Scuppers and Sanitary Discharge Pipes:—

Sanitary discharge pipe led overboard above freeboard deck of cast iron. All sanitary discharge pipes fitted with non return valves. Side lights in poop space of brass and fitted with efficient inside deadlights.

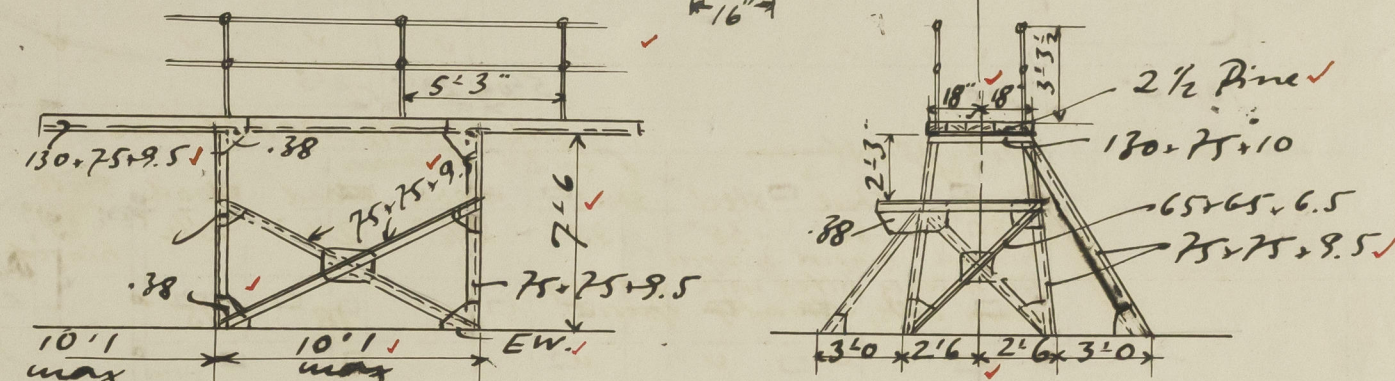
Particulars of Side Scuttles:—

Side scuttles from upper deck 2 off, 87' forward amidships made of 2 1/2" steel pipe. (one each side)

Particulars of Guard Rails:—

Open rails 3'6" height, 3 rods equally spaced; stanchions about 5'5" apart. (Open rails on poop deck, upper deck and forecastle deck.) Bulwark as per sketch 3'6" height with 5'150 x 75 x 9.5 rails and stanchions 6'150 x 75 x 9.5 in 4'2" to 5'4" distance.

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			Open rails 3'6"			
Forward Well			3'6"			
State position of each freeing port (F. and A. position and height above deck edge)			After Well:— Forward Well:—			
State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:—			openings in bulwark as per sketch 30" x 3 1/2" and 8" above deck.			
Additional area where sheer is less than standard.						

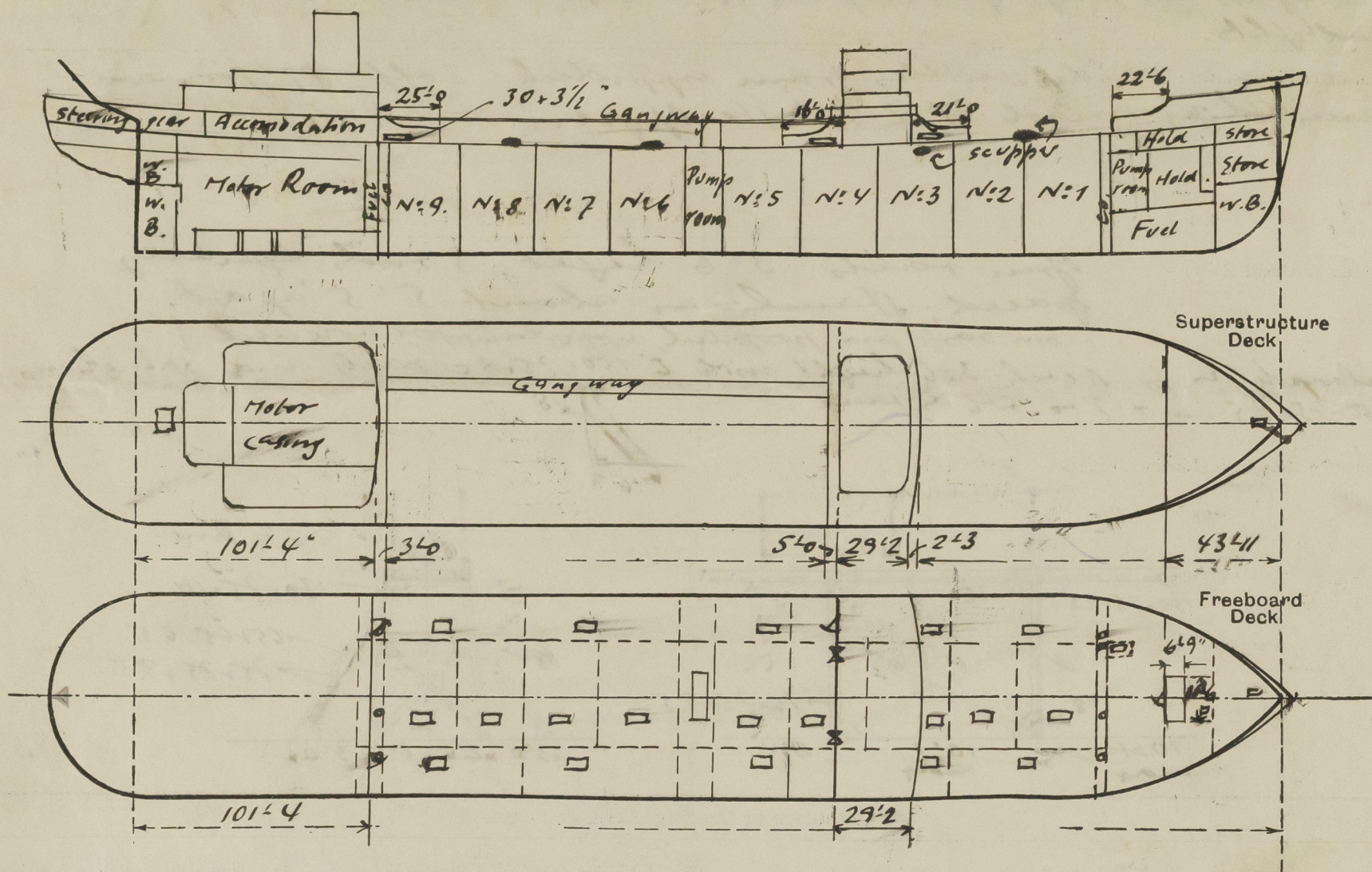
Particulars of Superstructures, Trunks, Casings, Deckhouses.

	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead	.45	.45	250.90.125	30"	Drake	5'0" x 2'4"	18"	7'6"
Raised Quarter Deck Bulkhead						5'0" x 2'0"	15" (to Lamproom)	
Bridge, After Bulkhead	.32	.32	4 1/2 x 3.80	32"	connected to coaming and kept on bottom	4'2" x 3'2"	21"	7'6"
Bridge, Forward Bulkhead	.40	.40	250.90.135	32"	connected to coaming and kept on heel			7'6"
Forecastle Bulkhead								
Trunk, Aft								
Trunk, Forward								
Exposed Machinery Casings on Freeboard or Raised Quarter Decks								
Exposed Machinery Casings on Superstructure Decks	.26	.26	120 x 75.8	30"	Brackets. No openings			4'9"
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	.30	.26	120 x 75.8	30"		4'11" x 2'5"	17"	7'6"
Deckhouses on Flush Deck Ships								

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

Poop Bulkhead	steel hinged w.t. doors with turnbuckle manipulated only from outside.
Raised Quarter Deck Bulkhead	
Bridge, After Bulkhead	10" steel plate with 10 7/8" lashing bolts + on p.s. and 1" thick door to Lamproom not w.t.
Bridge, Forward Bulkhead	No openings
Forecastle Bulkhead	Open.
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	
Exposed Machinery Casings on Superstructure Decks	
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	an steel hinged door each side manipulated 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 shown on the following sketches:—



Bridge Equiv. Bhd.
 $29.17 + 2.25 \times \frac{2}{3} = 30.67'$

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

Fibrewood bracketless system, 2 longitudinal bulkheads
 Displacement 19900 Tons on approximate L.W.L. 28'3" draught.

Builder's name and yard number *A/S. Burmeister & Wain's Maskin- & Skibsbyggeri, Copenhagen yard N: 625*

Names of sister ships

Owners *Hansen-Tangen, Kristiansand*

Fee £ *00/- paid on completion.*

Received by me

H. J. J. J.



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