

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

15 JUL 1932

Computation of Freeboard for Steamer, ~~Sailing Ship, Tug~~
having Shelter Deck with tonnage opening.

(Type of Superstructures.)

Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build
" IRADENTES " VOGTLAND	<i>Norwegian</i> Tonsberg		4960	1922 9

Moulded Dimensions: Length 399.2 Breadth 53.97 Depth 30.378
Moulded displacement at moulded draught = 85 per cent. of moulded depth 12334 tons
Coefficient of fineness for use with Tables .778

Port of Survey Oslo
Date of Survey 5/7/32
Name of Surveyor Rhude
Particulars of Classification 100 A1
with freeboard.
S.S. NYK. No. 2-30.

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth <u>30.30</u>	(a) Where D is greater than Table depth (D-Table depth) R = <u>(30.35 - 26.61) 3 = + 11.22</u>	Moulded Breadth (B) <u>53.97</u> Standard Round of Beam = $\frac{B \times 12}{50} =$ <u>12.95</u> Ship's Round of Beam = <u>13.00</u> Difference <u>.05</u>
Stringer plate <u>.05</u>	(b) Where D is less than Table depth (if allowed) (Table depth-D) R = <u>3.74</u>	Restricted to Correction = $\frac{\text{Diff}}{4} \times (1 - \frac{S_1}{L}) =$ <u>$\frac{.05}{4} \times .0054 = \text{NIL}$</u>
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$	If restricted by superstructures <input checked="" type="checkbox"/>	
Depth for Freeboard (D) = <u>30.35</u>		

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Roop enclosed	<u>31.83</u>	<u>31.83</u>	8'-0"		31.83
" overhang	<u>.58</u>	<u>.29</u>			.29
R.Q.D. enclosed <u>7-0</u> ...	<u>4-0</u>				
" overhang					
Bridge enclosed					
" overhang aft	<u>362.79</u>	<u>362.79</u>	8-0		362.79
" overhang forward	<u>362.92</u>	<u>8</u>			
F'cle enclosed					
" overhang					
Trunk aft					
" forward					
Tonnage opening aft	<u>4.00</u>	<u>diff. 2.14</u>			2.14
" " forward					
Total	<u>399.20</u>	<u>397.05</u>			<u>397.05</u>

Standard Height of Superstructure	<u>7.492</u>
" " R.Q.D.	
Deduction for complete superstructure	<u>41.94</u>
Percentage covered $\frac{S}{L} =$	<u>100 %</u>
" " $\frac{S_1}{L} =$	<u>99.46</u>
" " $\frac{E}{L} =$	<u>99.46</u>
Percentage from Table, Line A. (corrected for absence of forecastle (if required))	<u>99.33</u>
Percentage from Table, Line B. (corrected for absence of forecastle (if required))	
Interpolation for bridge less than 2L (if required)	
Deduction =	<u>.9933 x 41.94 = - 41.66</u>

measured aft. SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	<u>49.92</u>	1		<u>49.92</u>	<u>8"</u>	<u>8.00</u>	1		<u>14.00</u>
$\frac{1}{4}L$ from A.P.	<u>22.21</u>	4		<u>88.84</u>	<u>1/2"</u>	<u>.25</u>	4		<u>17.20</u>
$\frac{2}{4}L$ "	<u>5.49</u>	2		<u>10.98</u>		<u>0</u>	2		<u>1.40</u>
Amidships		4				<u>0</u>	4		
$\frac{3}{4}L$ from F.P.	<u>10.98</u>	2		<u>21.96</u>	<u>3/4"</u>	<u>0</u>	2		<u>4.18</u>
$\frac{1}{4}L$ "	<u>44.43</u>	4		<u>177.72</u>	<u>3"</u>	<u>2.5</u>	4		<u>33.80</u>
F.P.	<u>99.84</u>	1		<u>99.84</u>	<u>13"</u>	<u>13.0</u>	1		<u>19.00</u>
Total				<u>449.26</u>		<u>26</u>			<u>89.58</u>

Mean actual sheer aft = Deficient
Mean standard sheer aft = Deficient
Mean actual sheer forward = Deficient
Mean standard sheer forward = Deficient
Length of enclosed superstructure forward of amidships = 3 C.S.S.
" " aft of " = 6"

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) =$ $\frac{359.68}{18} (.75 - .50) = + 5.00$
If limited on account of midship superstructure.

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 $\Delta =$ <u>125.85</u>	Correction for coefficient $\frac{.778 + .68}{1.36} =$ <u>1.458</u>
Depth to Freeboard Deck = <u>30.35</u>	Tons per inch immersion at summer load water line $T =$ <u>45.0</u>	Depth Correction <u>11.22</u>
Summer freeboard = <u>4.24</u>	Deduction = $\frac{\Delta}{40T}$ inches $=$ <u>7.00</u>	Deduction for superstructures <u>41.66</u>
Moulded draught (d) = <u>26.11</u>	$=$ <u>178</u>	Sheer correction <u>5.00</u>
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <u>6.52</u> = <u>166</u>		Round of Beam correction
Addition for Winter North Atlantic Freeboard (if required) =		Correction for Thickness of Deck amidships
		Other corrections, scantlings, etc.
		<u>16.22</u> <u>41.66</u> <u>- 25.44</u>
		Summer Freeboard = <u>50.94</u>

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

Tropical Fresh Water Line above Centre of Disc	<u>13.52 = 344</u>	Tropical Fresh Water Freeboard	<u>37.42 = 950</u>
Fresh Water Line " "	<u>7.00 = 178</u>	" Fresh Water " "	<u>43.94 = 1116</u>
Tropical Line " "	<u>6.52 = 166</u>	" Tropical " "	<u>44.42 = 1128</u>
Winter Line below " "	<u>6.52 = 166</u>	" Winter " "	<u>57.46 = 1460</u>
Winter North Atlantic Line " "		" Winter North Atlantic " "	

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
		on Shelter Deck		on Upper Deck		on Shelter Deck		on Foreck	
Description of Hatchway		Nº 1, 2, 4-5	Nº 3	Nº 1, 2, 4-5	Nº 3	Hatch to prior store after pk	Hatch to prior store after pk	Foreck	
Dimensions of Hatchway		32'-1" x 18'-6"	18'-4" x 18'-6"	32'-1" x 18'-6"	14'-1" x 11'-4"	34' x 31'	3'-1/2" x 3'-3"	3'-7" x 2'-6"	
COAMINGS	Height above Deck	36"	36"	12'-1/2"	12'-1/2"	31" x 26"	6"	18"	
	Thickness	50"	50"	78"	78"	26"	46"	36"	
	Sides	7 x 3 1/2"	7 x 3 1/2"	78"	78"		46"	36"	
	Stiffeners	6	4						
	Brackets, Stays								
HATCH BEAMS	Number	5	3	5	2				
	Spacing	Equal sp.	Equal sp.	Equal sp.	Equal sp.				
	Scantling and Sketch	17 1/2" x 18"	18" x 14 1/2"	18" x 14 1/2"	18" x 15 1/2"				
		angles 4 x 3 x 40	4 x 3 x 44	4 x 3 x 40	3 1/2 x 3 1/2 x 50				
	Bearing Surface	2 3/4"	2 3/4"	2 1/2"					
FORE AND AFTERS	Number								
	Spacing								
	Unsupported Lengths								
	Scantling* and Sketch								
	Bearing Surface								
HATCH COVERS	Material	wood	wood	wood	wood	steel	steel	steel	
	Thickness	2 1/2"	2 1/2"	2 1/2"	2 1/2"	30"	30"	32"	
	How fitted	f. a.	f. a.	f. a.	f. a.	hinged	hinged	bolted	
	Bearing Surface	2 1/2"	2 1/2"	2 1/2"	2 1/2"				
Spacing of Cleats		22" x 24"	22" x 24"	22" x 24"	22" x 24"				
Number of Tarpaulins		3	3	2	2				

*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: *Funnel & ventilator coamings on boat deck, 8' above shelter deck, in good condition. No fiddle openings (M/V.)*

Particulars of Flush Bunker Scuttles: *None*

Particulars of Companionways: *None*

Tunnel escape at after dk. house: 2'-4" x 2'-4" x 7'-9" of steel. Opening 3'-10" x 1'-8" door, steel hinged. sill 12"

Particulars of Ventilators in exposed positions on freeboard and superstructure decks: *On Foreck: one 12" x 3'-1" x 30"; one 12" x 34" above wood chatty x 30"*
one 12" x 3'-2" x 24". Two 19" x 3'-1" x 34" (to not hold).
On Fore deck: Two 19" x 30" x 36"; Two derrick post vents 24". Two 24" x 30" x 36"
amidships: Two 18" x 30" x 26"; Two derrick post vents 24". Two 18" x 11'-0" x 30" supported at lower end by iron bars
After deck: Two 24" x 10'-6" x 42" supported at boat deck; Four 21" x 29'-30" x 38". Two derrick post vents 24". Two 7'-6" derrick post vents.
Top of deck house aft: Two 14" x 37" x 24"; Two 13" x 28" x 26". Two 8" x 25" x 20". Two 11" x 29'-2" x 26"; Two 12" x 33" x 26"
all have means of closing

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks: *On Foreck: one P+S. 4" x 18", one port 3 1/2" x 8 1/2"*
On Foreck: Four P+S. 4" x 18" x 20"
amidships: Two P+S. 4" x 18" x 20"; one three P+S. 2 1/2" x 19" x 21"
Two P+S. 4" x 19" x 20"; one 8'S. 3 1/2" x 17". one P+S. 1 1/2" x 32". P+S.
After deck: Three 3 1/2" x 18" x 19" R+S; one 2 1/2" x 21" S+S
Aft: Three 2 1/2" x 21" S+S, two - do - port. all have means of closing

Particulars of Gangway Cargo and Coaling Ports: *None*

Particulars of Scuppers and Sanitary Discharge Pipes: *Five scuppers; P+S, led overboard below freeboard deck*
also one scupper, P+S, no tonnage opening
None are fitted with storm valves. Wood plugs only.
4 sanitary discharges port side and 5 Starboard led overboard above freeboard deck.
2. - (1 P+S) led overboard below freeboard dk; all have storm valves.

Particulars of Side Scuttles: *In crew space aft below shelter deck, fitted with ^{hinged} leadlights*

Particulars of Guard Rails: *Forecastle: Stanchions 3'-8" sp. 3'-8" to 3'-11", 3 rails.*

Particulars of Gangways, Lifelines, etc.: *None*

Particulars of Freeing Arrangements.					
	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Rule area each side
<i>Foreck opening</i>	4'-7"	8'	2'-0" x 2'-7"	1, 8 above dk edge	
After Well		3'-6 1/2"	3 1/2" x 20"	8 total	32 1/4
Forward Well		3'-6 1/2"	3 1/2" x 20"	number	
State position of each freeing port ... After Well: 69'-3" 101'-8" 129'-8" 157'-5" from dk. (F. and A. position and height above deck edge) Forward Well: 14'-2" 44'-7" 83'-8" 124'-8" " 11" above dk. edge 3 rails.					
State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such: <i>fitted with hinged shutter</i>					
Additional area where sheer is less than standard.					

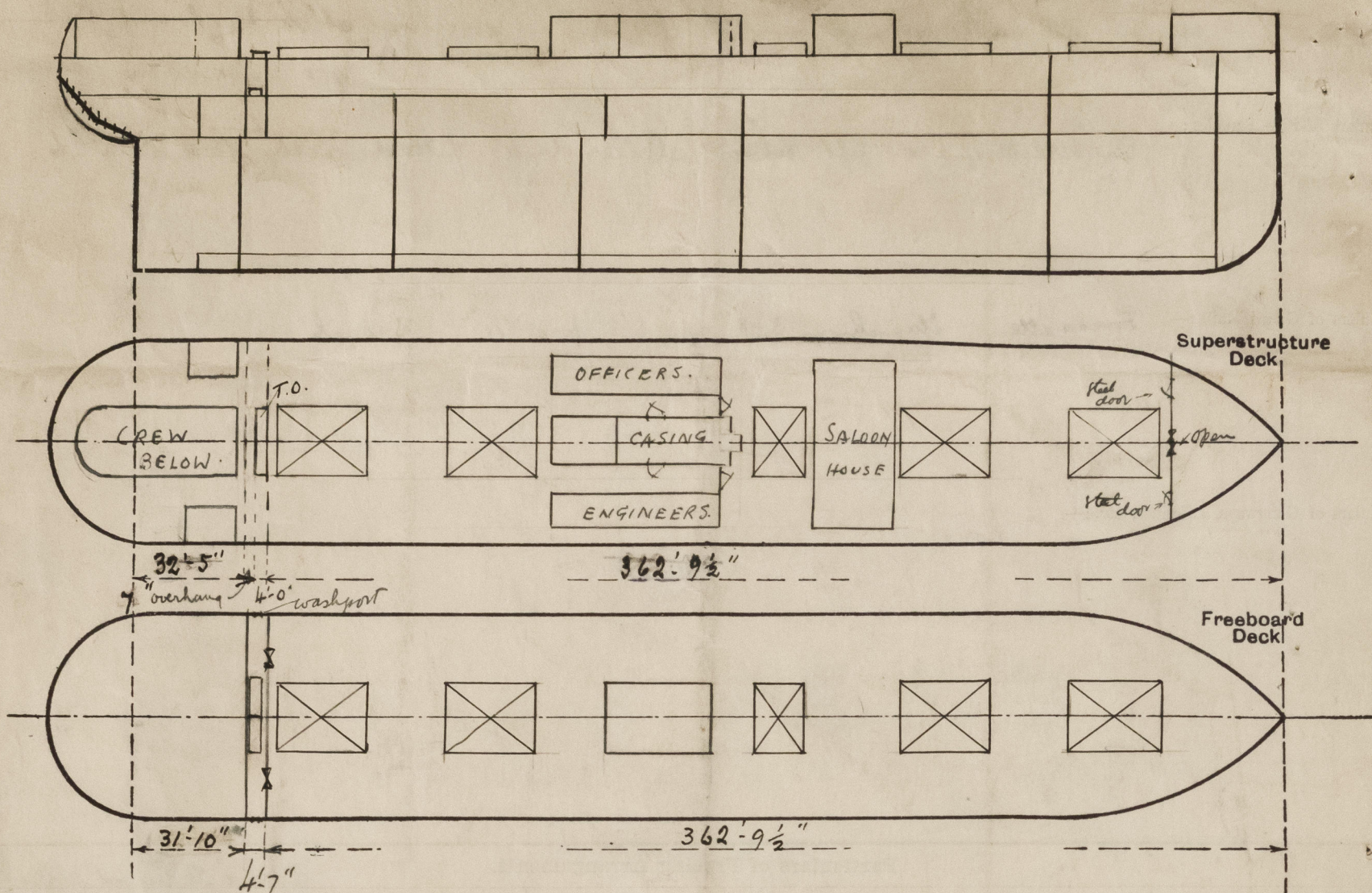
Particulars of Superstructures, Trunks, Casings, Deckhouses.								
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
T.O. aft Bulkhead	none	24"	4 1/2 x 2 1/4 x 34 o.a.	30"	none	none	✓	8'
Raised Quarter Deck Bulkhead								
T.O. fore Bulkhead	none	24"	4 1/2 x 2 1/4 x 34 o.a.	28"-33"	none	4' x 3'	24"	8'
Bridge, Forward Bulkhead								
Forecastle Bulkhead	7' x 32"	30"	4 x 3 x 40 o.a.	20"	none	4'-6" x 2'-0"	20"	8'-1"
Trunk, Aft								
Trunk, Forward								
Exposed Machinery Casings on Freeboard or Raised Quarter Decks								
Exposed Machinery Casings on Superstructure Decks protected by dk.	15" x 39"	24"	3 x 2 1/2" x 26 o.a.	27 1/2"	braked top over at bottom	4'-5" x 2'-4"	18"	8'
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	16 1/2" x 37"	30"	4 x 3 x 30 o.a.	24"	braked at top none at bottom	none	✓	
Deckhouses on Flush Deck Ships								

Particulars of Closing Appliances (state if capable of being manipulated from both sides).	
T.O. after Bulkhead	✓
Raised Quarter Deck Bulkhead	1 steel door, P+S., with 2 strongbacks on each, -38; opening from T.O. only.
Bridge, After Bulkhead	
Bridge, Forward Bulkhead	
Forecastle Bulkhead	Open. Shifting boards in 3 1/2" ch. Steel doors to paint & lamp lockers. 5'-21" x 4'-24" x 1'-24" x 1'-24"
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	
Exposed Machinery Casings on Superstructure Decks	1 steel door P+S., 24". Manipulated from both sides.
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	✓
Deckhouses on Flush Deck Ships	

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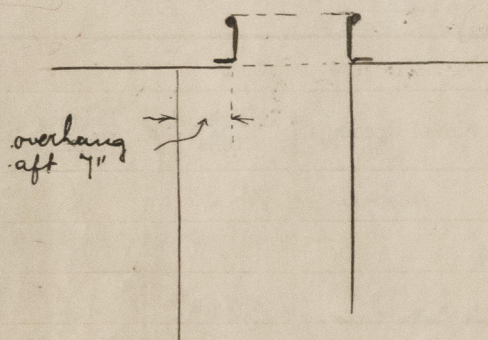
Superstructure bulkheads, trunks, deckhouses, casings, cargo and coaling hatchways, extent and thickness of sheathing on the freeboard deck, gangway, cargo and coaling ports, and any other openings, etc., which would affect the seaworthiness of the ship are to be shown on the following sketches:—



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

Tonnage opening hatch: 4'-0" x 18'-7"
 12" BA coaming
 2 1/2" covers f. & a., 2 1/2" bearing surface.

Hatchway on upper dk. in Tonnage opening
 3'-6" x 7'-7" 20 1/2" coaming .38"
 2 1/2" covers, athwartships, bearing surf. 2 1/2"
 18" sp. of cleats, 2 tarpaulins



85% DM = 25'-9"
 Deck 2 1/4"
 25'-11 1/4"

Superstructure at 26'-2" = 12 1/2"
 2 1/4" = 1 1/2"
 25'-11 1/4" = 12 1/2"
 12 1/2"

N.V. freeboards, assigned 16/9/22:
 F.W. 3'-5 1/2"
 I.S. 3'-6"
 S. 4'-0"
 W. 4'-6"
 B.V. summer 4'-0"
 from dk. line at top
 of steel upper dk. at
 side.

Please return the enclosed plan.

The survey was held afloat and was confined to obtain the above particulars.

Builder's name and yard number

Deutsche Werft, Hamburg, No 10

Names of sister ships

Owners

W. Wilhelmsen

Fee

Gr. 234.00
 *expense.

Received by me



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