

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

34873.

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having *SHUTTERDECK WITH TONNAGE OPENINGS AND OPEN FORECASTLE*Port of Survey *WEIERMÜNDE**RIO YAPE*

(Type of Superstructures.)

Date of Survey *MARCH 1936*

Ship's Name

Nationality and Port of Registry

Official Number

Gross Tonnage

Date of Build

*LEONIAN**BRITISH
LIVERPOOL**164286.**5419**1936*Name of Surveyor *A. Holtz*Moulded Dimensions: Length *400.76* Breadth *57.5* Depth *25.67*Moulded displacement at moulded draught = 85 per cent. of moulded depth *10420* tonsCoefficient of fineness for use with Tables *0.725*Particulars of Classification ** 100 A1
WITH FREEBOARD*

Depth for Freeboard (D)

Moulded depth *25.67*Stringer plate *.03*

Sheathing on exposed deck

$$T \left(\frac{L-S}{L} \right) =$$

Depth for Freeboard (D) = *25.70*

Depth correction

(a) Where D is greater than Table depth
(D-Table depth) R = *✓*(b) Where D is less than Table depth (if allowed)
(Table depth-D) R = *1.02*

$$(26.72 - 25.70) \times 3.00$$

If restricted by superstructures = *-3.06"*

Round of Beam correction

Moulded Breadth (B) *57.5*

$$\text{Standard Round of Beam} = \frac{B \times 12}{50} = *13.8"*$$

$$\text{Ship's Round of Beam} = *13.8"*$$

$$\text{Difference} = *0*$$

Restricted to

$$\text{Correction} = \frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = *✓ Nil.*$$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S) FEET	Equivalent Enclosed Length (S ₁) FEET	Height FEET	Height Correction	Effective Length (E) FEET
Poop enclosed ...	<i>28.42</i>	<i>28.42</i>	<i>12.0</i>	<i>✓</i>	<i>28.42</i>
" overhang ...	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>
R.Q.D. enclosed ...	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>
" overhang ...	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>
Bridge enclosed ...	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>
" overhang aft ...	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>
" overhang forward ...	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>
Forecastle enclosed ...	<i>367.34</i>	<i>367.34</i>	<i>12.0</i>	<i>✓</i>	<i>367.34</i>
" overhang ...	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>
Trunk aft ...	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>
" forward ...	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>
Tonnage opening aft ...	<i>5.00</i>	<i>2.50</i>	<i>12.0</i>	<i>✓</i>	<i>2.50</i>
" forward ...	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>
Total ...	<i>400.76</i>	<i>398.26</i>	<i>✓</i>	<i>✓</i>	<i>398.26</i>

Standard Height of Superstructure *7' 6"*" " R.Q.D. *✓*Deduction for complete superstructure *42.00"*

$$\text{Percentage covered } \frac{S}{L} = *100\%*$$

$$\frac{S_1}{L} = *99.38\%*$$

$$\frac{E}{L} = *99.38\%*$$

Percentage from Table, Line A.

(corrected for absence of forecastle (if required)) *99.24%*

Percentage from Table, Line B.

(corrected for absence of forecastle (if required)) *✓*Interpolation for bridge less than 2L (if required) *✓*

$$\text{Deduction} = 42.00 \times .9924 = *-41.68"*$$

SHEER CORRECTION.

AT SHUTTERDECK

Station	Standard Ordinate	S M	Product	Actual Ordinate INCHES	Effective Ordinate	S M	Product
A.P. ...	<i>50.07</i>	<i>1</i>	<i>50.07</i>	<i>63.78</i>	<i>117.78</i>	<i>1</i>	<i>117.78</i>
$\frac{1}{2}$ L from A.P. ...	<i>22.285</i>	<i>4</i>	<i>89.14</i>	<i>27.88</i>	<i>52.40</i>	<i>4</i>	<i>209.60</i>
$\frac{3}{8}$ L " ...	<i>5.508</i>	<i>2</i>	<i>11.02</i>	<i>6.57</i>	<i>12.96</i>	<i>2</i>	<i>25.92</i>
Amidships ...	<i>✓</i>	<i>4</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>4</i>	<i>✓</i>
$\frac{3}{8}$ L from F.P. ...	<i>11.016</i>	<i>2</i>	<i>22.03</i>	<i>13.19</i>	<i>19.94</i>	<i>2</i>	<i>39.88</i>
$\frac{1}{2}$ L " ...	<i>44.57</i>	<i>4</i>	<i>178.28</i>	<i>58.03</i>	<i>80.65</i>	<i>4</i>	<i>322.60</i>
F.P. ...	<i>100.14</i>	<i>1</i>	<i>100.14</i>	<i>127.24</i>	<i>181.24</i>	<i>1</i>	<i>181.24</i>
Total ...	<i>✓</i>	<i>✓</i>	<i>450.68</i>	<i>✓</i>	<i>897.02</i>	<i>✓</i>	<i>✓</i>

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{446.34}{18} (.75 - .50) = *-6.20"*$$

If limited on account of midship superstructure. *✓*If limited to maximum allowance of $1\frac{1}{2}$ ins. per 100 ft. *YES 6.01"*

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = *25.70*Summer freeboard = *1.94*Moulded draught (d) = *23.76*

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = *5.94 = 6"*

Addition for Winter North Atlantic Freeboard (if

required = *✓*

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$$\Delta = *1190*$$

Tons per inch immersion at summer load water line

$$T = *47.5*$$

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

$$= *6.27*$$

$$= *6\frac{1}{4}"*$$

TABULAR FREEBOARD corrected for Flush Deck (if required)

$$\text{Correction for coefficient} = \frac{.725 + .68}{1.36} = \frac{1.405}{1.360}$$

$$= *1.036*$$

$$71.74 \times 1.036 = *74.11*$$

$$74.11 - 6.01 = *68.10*$$

$$68.10 - 6.27 = *61.83*$$

$$61.83 - 6.01 = *55.82*$$

$$55.82 - 6.27 = *49.55*$$

$$49.55 - 6.01 = *43.54*$$

$$43.54 - 6.27 = *37.27*$$

$$37.27 - 6.01 = *31.26*$$

$$31.26 - 6.27 = *24.99*$$

$$24.99 - 6.01 = *18.98*$$

$$18.98 - 6.27 = *12.71*$$

$$12.71 - 6.01 = *6.70*$$

$$6.70 - 6.27 = *.43*$$

$$.43 - 6.01 = *-5.58*$$

$$-5.58 - 6.27 = *-11.85*$$

$$-11.85 - 6.01 = *-17.86*$$

$$-17.86 - 6.27 = *-24.13*$$

$$-24.13 - 6.01 = *-30.14*$$

$$-30.14 - 6.27 = *-36.41*$$

$$-36.41 - 6.01 = *-42.42*$$

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

Tropical Fresh Water Line above Centre of Disc ...

Fresh Water Line " " ...

Tropical Line " " ...

Winter Line below " " ...

Winter North Atlantic Line " " ...

Tropical Fresh Water Freeboard ...

Fresh Water " " ...

Tropical " " ...

Winter " " ...

Winter North Atlantic " " ...

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PARTICULARS OF PROTECTION TO OPENINGS, ETC.

Description of Hatchway	HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS										Two Outright Hatchways for Vegetable or Tank
	HATCHWAY No. I	HATCHWAY No. II	HATCHWAY No. III	HATCHWAY No. IV	HATCHWAY No. V	HATCHWAY No. VI	HATCHWAY No. VII	HATCHWAY No. VIII	HATCHWAY No. IX	HATCHWAY No. X	
Dimensions of Hatchway	132-145	132-145	110-122	110-122	86-92	86-92	38-54	38-48	119-28	119-28	119-28
Height above Deck	30"	30"	30"	30"	33"	33"	30"	30"	30"	30"	18"
Thickness	.43	.43	.43	.43	.43	.43	.43	.43	.43	.43	.43
Stiffeners	5/8 x 3/4	5/8 x 3/4	5/8 x 3/4	5/8 x 3/4	5/8 x 3/4	5/8 x 3/4	5/8 x 3/4	5/8 x 3/4	5/8 x 3/4	5/8 x 3/4	5/8 x 3/4
Brackets, Stays	3 STAYS	3 STAYS	3 STAYS	3 STAYS	3 STAYS	3 STAYS	3 STAYS	3 STAYS	3 STAYS	3 STAYS	3 STAYS
Number	5	5	5	5	5	5	5	5	5	5	5
Spacing	58.47	58.47	60.61	60.61	60.61	60.61	60.61	60.61	60.61	60.61	60.61
Scantling and Sketch	23.83	23.83	20.28	20.28	20.28	20.28	20.28	20.28	20.28	20.28	20.28
HATCH BEAMS	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31
INCHES	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
Bearing Surface	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
FORE AND AFTERS	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
Material	PINE	PINE	PINE	PINE	PINE	PINE	PINE	PINE	PINE	PINE	PINE
Thickness	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
How fitted	BATTENED	BATTENED	BATTENED	BATTENED	BATTENED	BATTENED	BATTENED	BATTENED	BATTENED	BATTENED	BATTENED
Bearing Surface	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75
Spacing of Cleats	2	2	2	2	2	2	2	2	2	2	2
Number of Tarpaulins	3	3	3	3	3	3	3	3	3	3	3

Particulars of fiddle, funnel and ventilator coamings:— ENGINE AND BOILER COAMINGS 8.30' ABOVE SHELTERDECK, STRONGLY CONSTRUCTED. SIDES PROTECTED BY STEEL DECK HOUSE. FUNNEL AND VENTILATOR COAMINGS ARE RIVETED TO THE PLATING. FIDDLE OPENINGS ARE PROVIDED WITH STRONG HINGED STEEL COVERS. ENGINE SKYLIGHT OF STEEL STRONGLY CONSTRUCTED.

Particulars of Flush Bunker Scuttles:— NONE.

Particulars of Companionways:— ALL COMPANIONWAYS SITUATED INSIDE SUPERSTRUCTURE. (SEE SKETCH ON THE OTHER SIDE.) ENTRANCES TO ENGINE AND BOILER SPACES OF SUBSTANTIAL CONSTRUCTION. ALL DOORS MADE OF STEEL, SILLS 18" CAPABLE OF BEING OPERATED FROM BOTH SIDES. (SEE SKETCH ON THE OTHER SIDE.)

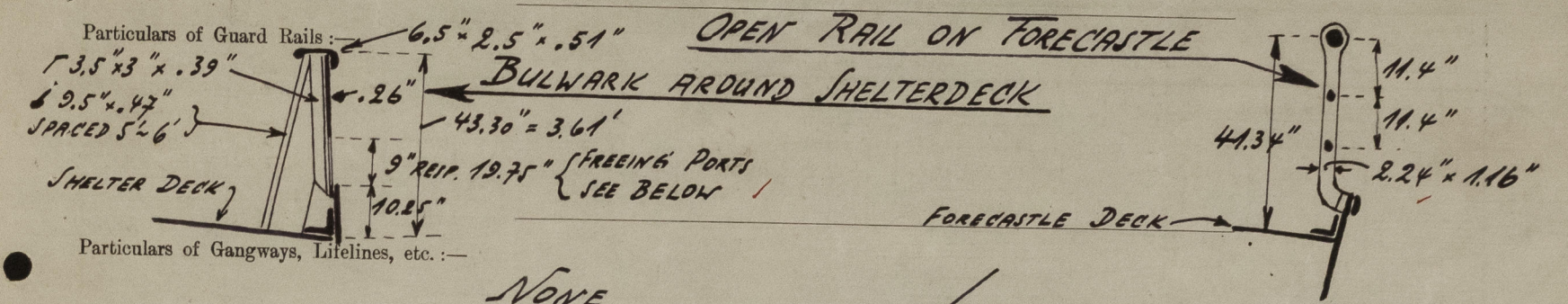
Particulars of Ventilators in exposed positions on freeboard and superstructure decks:— NO VENTILATORS IN EXPOSED POSITION ON FREEBOARD DECK. ALL VENTILATORS IN EXPOSED POSITION ON FORECASTLE AND SHELTER DECK TO SPACES BELOW SHELTERDECK HAVE COAMINGS 36" ABOVE DECK. ALL OTHER VENTILATORS HAVE COAMINGS 30" ABOVE DECK. ALL VENTILATOR COAMINGS ARE SUBSTANTIALLY CONSTRUCTED AND EFFICIENTLY CONNECTED TO THE DECK PLATING AS PER RULES. ALL VENTILATOR COAMINGS FITTED WITH WOODEN COVERS AND PROTECTING CANVAS.

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks:— ALL AIR PIPES ARE OF SUBSTANTIAL CONSTRUCTION AND ARE PROVIDED WITH EFFICIENT MEANS OF CLOSING (BY STEEL COVERS). HEIGHT OF THE AIR PIPE OPENINGS = 18"-27" ABOVE SHELTERDECK.

Particulars of Gangway Cargo and Coaling Ports:— NONE.

Particulars of Scuppers and Sanitary Discharge Pipes:— NO SCUPPERS FITTED TO OUTBOARDS BELOW SHELTERDECK IN WAY OF CARGO SPACE. ONE 5" SCUPPER EACH SIDE FITTED IN WAY OF TONNAGE WELL WITH NON RETURN SCREW DOWN VALVE OPERATED FROM SHELTERDECK. ARRANGEMENT OF SCUPPERS SEE SKETCH ON THE OTHER SIDE. ONE 5" SCUPPER PIPE EACH SIDE LED TO ENGINE BILGE IN WAY OF SHELTER TWIN DECK SIDE BUNKERS. ALL SANITARY AND DISCHARGE PIPES FITTED WITH STORM VALVES AS PER RULES. (SEE SKETCH ON THE OTHER SIDE.)

Particulars of Side Scuttles:— NO SIDE SCUTTLES BELOW SHELTER DECK. ALL SIDE SCUTTLES ABOVE SHELTER DECK HAVE DEAD LIGHTS.



Particulars of Gangways, Lifelines, etc.:— NONE

Particulars of Freeing Arrangements.						
	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
AROUND SHELTER DECK	43.30' = 3.61'	43.30' = 3.61'	9 PORTS EACH SIDE 2106' x 204'	9	62.33	RULE FOR 7 L (C.I.S.) = 28.54
TONNAGE Well			2 PORTS EACH SIDE 2132' x 1640'	2	69.32	
State position of each freeing port (P. and A. position and height above deck edge)	TONNAGE Well: WITHOUT OPENING IN VENTEL'S SIDE. Forward Well: —					
State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:	THE TWO PORTS 2132' x 1640' EACH SIDE ARE FITTED WITH SHUTTERS. ALL OTHERS WITHOUT SHUTTERS AND BARS.					
Additional area where sheer is less than standard.						

Particulars of Superstructures, Trunks, Casings, Deckhouses.								
	Coaming INCHES	Plating INCHES	Stiffeners INCHES	Spacing INCHES	End Attachments of Stiffeners	Size of Openings FEET	Height of Sills	Height of Casings FEET
Poop Bulkhead at Tonnage Opening	NONE	.23	6 4.5 x 2.5 x .31	28.4 ~ 30.0	NONE	4.10 x 3.02	2'	12
Raised Quarter Deck Bulkhead								
Bridge, After Bulkhead at Tonnage	NONE	.23	6 4.5 x 2.5 x .31	27.6 ~ 30.0	NONE	4.10 x 3.02	2'	12
Bridge, Forward Bulkhead								
Forecastle Bulkhead								
Trunk, Aft								
Trunk, Forward								
Exposed Machinery Casings on Freeboard or Raised Quarter Decks								
Exposed Machinery Casings on Superstructure Decks	17.75 x .33	.31	6 3.0 x 2.5 x .31	30.35	ALTERNATE BRACKET AT TOP ONLY	5.09 x 2.3	18"	8.3
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	17.75 x .43	.43	6 4.5 x 2.5 x .31	60.70	ENGINE CASING: NONE	7.5 x 3.8 x 4.59	7.05'	12
Deckhouses on Tonnage Ships	10.00 x .39	.29 ~ .25	6 4.5 x 2.5 x .31	30.35	ALTERNATE BRACKET AT TOP ONLY	5.94 x 2.3	10"	8

Particulars of Closing Appliances (state if capable of being manipulated from both sides).	
Poop Bulkhead	CHANNELS WELDED ON BULKHEAD WITH SHIFTING BOARDS OF 3" THICKNESS FOR FULL HEIGHT.
Raised Quarter Deck Bulkhead	
Bridge, After Bulkhead	CHANNELS WELDED ON BULKHEAD WITH SHIFTING BOARDS OF 3" THICKNESS FOR FULL HEIGHT.
Bridge, Forward Bulkhead	
Forecastle Bulkhead	
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	HINGED STEEL DOORS 27.6" WIDE, SILLS 18" HEIGHT, MANIPULATED FROM BOTH SIDES. NO OPENINGS, WITH EXCEPTION OF ONE COAL TRIMMING OPENING IN CASING EACH SIDE. DIMENSIONS OF OPENINGS: R.I. 3.84' x 4.59' AND L.I. 3.18' x 4.59', CLOSED BY STRONG HINGED STEEL COVERS, LOWER EDGES ARE 7.05' ABOVE DECK, BOTH SIDES.
Deckhouses on Tonnage Ships	NO ENTRANCE TO SPACES BELOW SHELTERDECK AS ONLY SITUATED INSIDE DECKHOUSE, SEE SKETCH ON THE OTHER SIDE.

