

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker
having Shelterdeck and Tonnage opening aft.

Port of Survey Copenhagen.Date of Survey 18th Aug & 8th Sept.Name of Surveyor N. Jeth Lydersen.Particulars of Classification 100 A. 1.
Shelterdeck w. freeboard.

Ship's Name

DELAWARE

Nationality and Port of Registry

Danish.
Copenhagen.

Official Number

✓

Gross Tonnage

2280.

Date of Build

1919-12.

Moulded Dimensions: Length 310'-0" Breadth 44'-6" Depth 22'-0"
Moulded displacement at moulded draught = 85 per cent. of moulded depth
Coefficient of fineness for use with Tables 1.016 x 310' x 44.5' x 22.0' x .85 = .739

Depth for Freeboard (D)

Moulded depth 22'-0"Stringer plate (40')03'

Sheathing on exposed deck

 $T \left(\frac{L-S}{L} \right) =$ Depth for Freeboard (D) = 22'-03"

Depth correction

(a) Where D is greater than Table depth

(D - Table depth) R = (22'-03" - 20'-6") 2.384' + 3.24'

(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) 44'-5"Standard Round of Beam = $\frac{B \times 12}{50} = 10.68$ Ship's Round of Beam = 11'6"Difference .48

Restricted to

Correction = $\frac{\text{Diff}^e}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.48}{4} \times 10084 = 12.10$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...	<u>26'-0"</u>	<u>26'-0"</u>	<u>8'-0"</u>	-	<u>26'-0"</u>
" overhang ...	<u>2'-0"</u>	<u>1'-0"</u>	-	-	<u>1'-0"</u>
R.Q.D. enclosed ...	✓				
" overhang ...	✓				
Bridge enclosed ...					
" overhang aft ...	<u>278'-0"</u>	<u>278'-0"</u>	<u>8'-0"</u>	-	<u>278'-0"</u>
" overhang forward ...					
Forecastle enclosed ...					
" overhang ...					
Trunk aft ...					
" forward ...					
Tonnage opening aft ...	<u>4'-0"</u>	<u>2'-5"</u>			<u>2'-5"</u>
" " forward ...					
Total ...	<u>310'-0"</u>	<u>304'-5"</u>			<u>307'-5"</u>

Standard Height of Superstructure 6'-60"" " R.Q.D. 8'-0"Deduction for complete superstructure 36'-0"Percentage covered $\frac{S}{L} = 100\%$ " $\frac{S_1}{L} = 99.20\%$ " $\frac{E}{L} = 99.20\%$

Percentage from Table, Line A. -

(corrected for absence of forecastle (if required))

Percentage from Table, Line B. 99.01

(corrected for absence of forecastle (if required))

Interpolation for bridge less than 2L (if required)

Deduction = 36'-0" x .9901 = - 35'-64"SHEER CORRECTION. Sheer measured at shelterdeck.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	<u>41'-0"</u>	1		<u>41'-0"</u>	<u>32'-2"</u>	<u>16'-8"</u>	1		<u>49'-3"</u>
from A.P. ...	<u>18'-24"</u>	4		<u>72'-96"</u>	<u>13'-4"</u>	<u>21'-93"</u>	4		<u>87'-72"</u>
" " ...	<u>4'-51"</u>	2		<u>9'-02"</u>	<u>4"</u>	<u>5'-42"</u>	2		<u>10'-84"</u>
Amidships ...	-	4		-	<u>0"</u>	-	4		-
$\frac{3}{4}$ L from F.P. ...	<u>9'-02"</u>	2		<u>18'-04"</u>	<u>20'-9"</u>	<u>12'-30"</u>	2		<u>24'-60"</u>
$\frac{1}{4}$ L " ...	<u>36'-49"</u>	4		<u>145'-96"</u>	<u>63'-42"</u>	<u>49'-75"</u>	4		<u>199'-00"</u>
F.P. ...	<u>82'-0"</u>	1		<u>82'-00"</u>	<u>95'-16"</u>	<u>111'-8"</u>	1		<u>111'-80"</u>
Total ...				<u>368'-98"</u>					<u>483'-26"</u>

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{114'-28"}{18} \left(.75 - \frac{.50}{.25} \right) = - 1'-59"$

If limited on account of midship superstructure.

If limited to maximum allowance of $1\frac{1}{2}$ ins. per 100 ft.

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = 22'-03"Summer freeboard = 1'-16"Moulded draught (d) = 20'-87"

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = 5'-22"

Addition for Winter North Atlantic Freeboard (if required) =

Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta =$

Tons per inch immersion at summer load water line

T =

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

=

TABULAR FREEBOARD (corrected for Fresh Deck (if required))

Correction for coefficient

739 + 68 1419
136 136Depth Correction 3'-24"Deduction for superstructures - 35'-64"Sheer correction - 1'-59"Round of Beam correction -Correction for Thickness of Deck amidships -Other corrections, scantlings, etc. -3'-24" 37'-23" - 33'-99"Summer Freeboard = 13'-90"SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck: 13'-90"Tropical Fresh Water Line above Centre of Disc ... 10'-44" 265" Tropical Fresh Water Freeboard ... 3'-46" .088"Fresh Water Line " " ... 5'-22" 133" Fresh Water " " ... 8'-68" .220"Tropical Line " " ... 5'-22" 133" Tropical " " ... 8'-68" .220"Winter Line below " " ... 5'-22" 133" Winter " " ... 19'-12" .486"Winter North Atlantic Line " " ... 4'-22" 183" Winter North Atlantic " " ... 27'-12" .536"

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS										
Shelterdeck.										
Description of Hatchway	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	2 nd Deck.				
Dimensions of Hatchway	22'-0" x 18'-0"	22'-0" x 18'-0"	12'-0" x 18'-0"	26'-0" x 18'-0"	22'-0" x 18'-0"	22'-0" x 20'-0"	22'-0" x 20'-0"	12'-0" x 20'-0"	26'-0" x 20'-0"	22'-0" x 20'-0"
COAMINGS	Height above Deck			8'00" M				2'30" M		
	Thickness			11" M				11" M		
	Sides									
	Stiffeners			Horizontal stiffeners 150 x 90 x 12 1/4				None fitted.		
HATCH BEAMS	Brackets, Stays			Two off	Two off	Two off		None fitted.		
	Number	5	5	3	7	5		5	3	5
	Spacing	3'-8"	3'-8"	3'-0"	3'-3"	3'-8"		3'-8"	3'-0"	3'-3"
	Scantling and Sketch			100 x 75 x 11 1/4	380 x 8 1/2 M			100 x 75 x 11 1/4	380 x 8 1/2 M	
FORE AND AFTERS	Bearing Surface			90" M				90" M		
	Number									
	Spacing									
	Unsupported Lengths									
HATCH COVERS	Scantling and Sketch									
	Bearing Surface									
	Material			Wood				Wood		
	Thickness			3"				3"		
HATCH COVERS	How fitted			Fitted longitud.				Fitted longitud.		
	Bearing Surface									
	Spacing of Cleats	24"	24"	24"	24"	24"		24"	24"	24"
	Number of Tarpaulins	2	2	2	2	2		2	2	2
<p>*Are wood fore and afters steel shod at all bearing surfaces? None fitted.</p> <p>Are battens and wedges efficient and in good condition? Yes.</p> <p>Are tarpaulins in good condition and in accordance with rule requirements? Yes.</p> <p>Are lashings provided in accordance with rule requirements? Yes.</p>										

Particulars of fiddle, funnel and ventilator coamings:-

Fiddle casing protected by strong steel deckhouse. All fiddle openings are provided with permanently attached strong steel covers.										
Vents. aft of 1/4 L. from stem.										
Position	No. of	D	Coaming	Remarks						
Forward Saloon	1	18"	8'-7"	56" off stayed	All ventilators are fitted with efficient cowls, steel covers and canvas covers are supplied for all ventilators.					
Deck	1	18"	25'	40"						
Aft	1	18"	10'-8"	40"						
Below 5-bulb	1	18"	12'-0"	50"						
Below 6-bulb	1	18"	36"	40"						

Particulars of Flush Bunker Scuttles:-

None fitted.

Particulars of Companionways:-

None fitted.

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

Vents. forward of 1/4 L. from stem on shelterdeck.										
Position	No. of	D	Coaming	Remarks						
Forward Saloon	1	18"	8'-7"	56" off stayed	Ventilators are fitted with efficient cowls, steel covers and canvas covers supplied for all vents.					
Deck	1	18"	25'	40"						
Aft	1	18"	10'-8"	40"						
Below 5-bulb	1	18"	12'-0"	50"						

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

Height of swan-neck bend above steeldeck. 24". Wood plugs and canvas covers, not permanently attached, are supplied for all the air pipes.

Particulars of Gangway Cargo and Coaling Ports:-

None fitted.

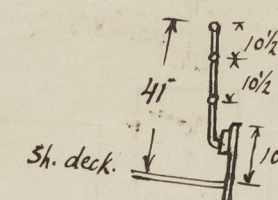
Particulars of Scuppers and Sanitary Discharge Pipes - One scupper (p.s.) fitted from 2nd deck in well. 3 1/4" dia. No stop valve fitted. Scuppers from 2nd deck are led to the bilges and fitted with closing appliances to close watertight. No sanitary discharge pipes are fitted below 2nd deck.

See Cpn. Surveyors' letter dated 22/9/31

Particulars of Side Scuttles:-

All side scuttles below Shelterdeck are fitted with permanently attached, efficiently constructed, inside dead rights.

Particulars of Guard Rails:-



Stanchions spaced 4'-0" apart.

Particulars of Gangways, Lifelines, etc.:-

None fitted.

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	6'-0"	8'-0"	2.33' x 1.60'	One	3.728 sq. ft.	
Forward Well	✓	✓	✓	✓	✓	✓
<p>State position of each freeing port (P. and A. position and height above deck edge) After Well:- Freeing port fitted midway between bulkheads.</p> <p>State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:- Forward Well:-</p> <p>Additional area where sheer is less than standard.</p>						

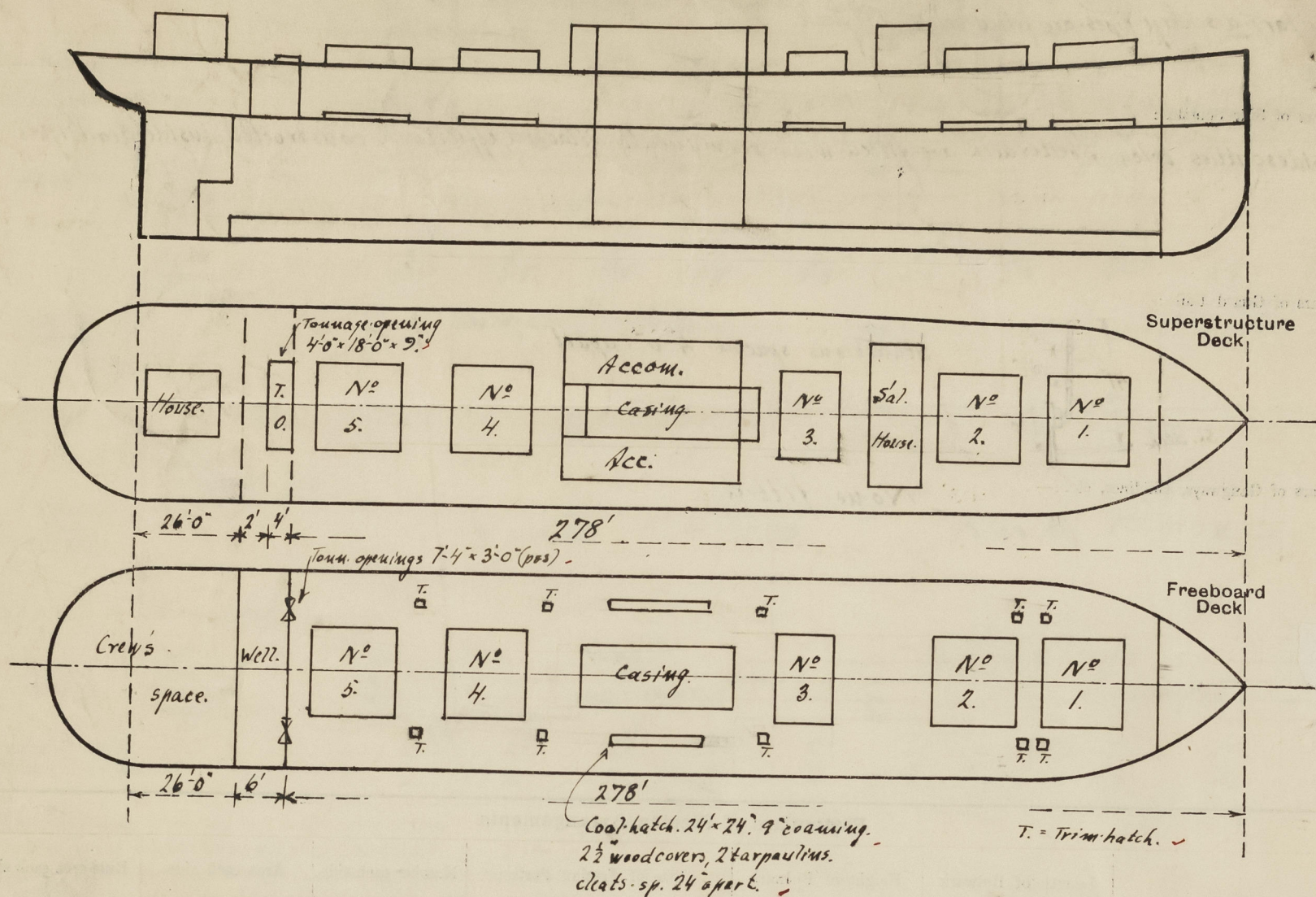
Particulars of Superstructures, Trunks, Casings, Deckhouses.

	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead	30"	30"	4 x 3 x 35"	30"	Rivet takes foot & top angle	No openings	✓	✓
Raised Quarter Deck Bulkhead	✓							
Bridge, After Bulkhead	30"	30"	4 x 3 x 35"	30"	Rivet takes foot & top angle	7'-4" x 3'-0"	None	8'-0"
Bridge, Forward Bulkhead	Collision bulkhead carried to shelterdeck.							
Forecastle Bulkhead	✓							
Trunk, Aft	✓							
Trunk, Forward	✓							
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	✓							
Exposed Machinery Casings on Superstructure Decks	34"	30"	3 1/2 x 2 1/2 x 32"	30"	Brk. at top. Carried below deck	No openings	✓	7'-6"
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	34"	25"	3 1/2 x 2 1/2 x 32"	30"	Carried above and below decks	"	✓	8'-0"
Deckhouses on Flush Deck Ships	✓							

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

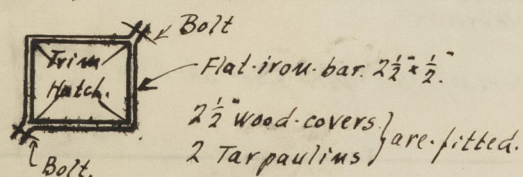
Poop Bulkhead	No openings.
Raised Quarter Deck Bulkhead	✓
Bridge, After Bulkhead	Storerooms for full height in riveted channels.
Bridge, Forward Bulkhead	Collision bulkhead carried to shelterdeck.
Forecastle Bulkhead	✓
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	✓
Exposed Machinery Casings on Superstructure Decks	Covered by steel deck house (p.s.) Doorway to Eng. Room 5'-2" x 2'-3" with hinged steel door manipulated from both sides.
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	No openings.
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:—

Battening down arr. for trim hatches on 2nd deck.



Trim hatches 21' x 26'. Coaming 9" high.

Efficient temporary 3" wood covers with 2 tarpaulins are fitted to the tonnage opening aft.

Builder's name and yard number A-B. ÖRESUNDSVARVET, Landskrona, Sweden.

Names of sister ships 5/s - Georgia.

Owners A/s. P/s - Viking (A. O. Andersen, Mgr.) Copenhagen.

Fee £ 13 : 0 : 0

Received by me

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