

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

52 FEB 1933

Computation of Freeboard for Steamer, Sailing Ship, Tanker  
having Poop, R.Q.D., Bridge & Forecastle.

Port of Survey Stockholm

Date of Survey 23 & 24 Jan. 1933.

Name of Surveyor E.H. Knowles.

Ship's Name "POLARIS" Nationality and Port of Registry Swedish Stockholm Official Number 7457 Gross Tonnage 2163 Date of Build 1890/7.

Moulded Dimensions: Length 290. Breadth  $\frac{1}{2}$  = 19.92 Depth 22-6

Moulded displacement at moulded draught = 85 per cent. of moulded depth 4923 tons

Coefficient of fineness for use with Tables .780

Particulars of Classification +100 A1.  
SS. Skm: 3<sup>rd</sup> N<sup>o</sup> 3. 2-28.  
SS. Hbg: N<sup>o</sup> 1. 32.

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth ... .. <u>22-6</u>	(a) Where D is greater than Table depth (D - Table depth) R = $(22-6 - 19.33) 2.231 = + 7.16$	Moulded Breadth (B) $\frac{1}{2} = 19.92$ <u>39.84</u>
Stringer plate ... .. <u>.04</u>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = $3.21$	Standard Round of Beam = $\frac{B \times 12}{50} = \frac{478.08}{50} = 9.56$
Sheathing on exposed deck $T \left( \frac{L-S}{L} \right) =$	If restricted by superstructures	Ship's Round of Beam = $\frac{6.2}{1} = 6.2$
Depth for Freeboard (D) = <u>22-54</u>		Difference = $3.06$
		Restricted to
		Correction = $\frac{\text{Diff}^e}{4} \times \left( 1 - \frac{S_1}{L} \right) = \frac{3.06}{4} \left( 1 - \frac{86.28}{100} \right) = +.10$

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ... ..	<u>28.6</u>	<u>28.60</u>	<u>7'-0"</u>		<u>28.60</u>
" overhang ... ..					
R.Q.D. enclosed ... ..	<u>82.0</u>	<u>82.00</u>	<u>4'-0"</u>	$\frac{4.40}{4.533}$	<u>72.36</u>
" overhang ... ..					
Bridge enclosed ... ..	<u>118.0</u>	<u>106.20</u>	<u>7'-0"</u>		<u>106.20</u>
" overhang aft ... ..					
" overhang forward ... ..					
F'cle enclosed ... ..	<u>33.4</u>	<u>33.40</u>	<u>7'-0"</u>		<u>33.40</u>
" overhang ... ..					
Trunk aft ... ..					
" forward ... ..					
Tonnage opening aft ... ..					
" forward ... ..					
Total ... ..	<u>262.00</u>	<u>250.20</u>			<u>240.56</u>

Standard Height of Superstructure	<u>6.40</u>
" " R.Q.D.	<u>4.533</u>
Deduction for complete superstructure	<u>34.67</u>
Percentage covered $\frac{S}{L} =$	<u>90.35%</u>
" " $\frac{S_1}{L} =$	<u>86.28%</u>
" " $\frac{E}{L} =$	<u>82.96%</u>
Percentage from Table, Line A. (corrected for absence of forecastle (if required))	<u>78.94%</u>
Percentage from Table, Line B. (corrected for absence of forecastle (if required))	
Interpolation for bridge less than .2L (if required)	
Deduction = $34.67 \times .7894 =$	<u>27.38</u>

## SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P. ... ..	<u>39.00</u>	1	<u>39.00</u>	<u>39.5</u>	<u>39.50</u>	1	<u>39.50</u>
$\frac{1}{2}$ L from A.P. ... ..	<u>17.36</u>	4	<u>69.44</u>	<u>13.5</u>	<u>14.22</u>	4	<u>56.88</u>
$\frac{3}{4}$ L " ... ..	<u>4.29</u>	2	<u>8.58</u>	<u>0</u>	<u>3.54</u>	2	<u>7.08</u>
Amidships ... ..		4		<u>0</u>		4	
$\frac{3}{4}$ L from F.P. ... ..	<u>8.58</u>	2	<u>17.16</u>	<u>9.5</u>	<u>9.36</u>	2	<u>18.72</u>
$\frac{1}{2}$ L " ... ..	<u>34.71</u>	4	<u>138.84</u>	<u>36</u>	<u>37.52</u>	4	<u>150.08</u>
F.P. ... ..	<u>48.00</u>	1	<u>48.00</u>	<u>90</u>	<u>90.00</u>	1	<u>90.00</u>
Total ... ..			<u>351.02</u>				<u>362.26</u>

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{351.02 - 362.26}{18} \left( .75 - \frac{250.2}{2 \times 290} \right) = \frac{-11.24}{18} \left( .75 - .4317 \right) = -1.19$$

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.	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	Correction for coefficient $\frac{.780 + .68}{1.36} = \frac{1.46}{1.36}$
Depth to Freeboard Deck = <u>22-54</u>	$\Delta =$	Depth Correction ... .. <u>7.16</u>
Summer freeboard = <u>1.98</u>	Tons per inch immersion at summer load water line	Deduction for superstructures ... .. <u>27.38</u>
Moulded draught (d) = <u>20-56</u>	T =	Sheer correction ... .. <u>.19</u>
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <u>5.14</u> = <u>13 1/4"</u>	Deduction = $\frac{\Delta}{40 T}$ inches =	Round of Beam correction ... .. <u>.10</u>
Addition for Winter North Atlantic Freeboard (if required) = <u>2</u> = <u>5 1/4"</u>		Correction for Thickness of Deck amidships ... ..
		Other corrections, scantlings, etc. ... ..
		<u>7.26</u> <u>27.57</u> $(-20.31)$
		Summer Freeboard = <u>23.71</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>262 7/8</u>	Tropical Fresh Water Freeboard ... ..	<u>340 7/8</u>
Fresh Water Line " " ... ..	<u>131 7/8</u>	Fresh Water " " ... ..	<u>471 7/8</u>
Tropical Line " " ... ..	<u>131 7/8</u>	Tropical " " ... ..	<u>471 7/8</u>
Winter Line below " " ... ..	<u>131 7/8</u>	Winter " " ... ..	<u>733 7/8</u>
Winter North Atlantic Line " " ... ..	<u>182 7/8</u>	Winter North Atlantic " " ... ..	<u>784 7/8</u>



# PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway	1	2	3	4	Av. BK. 7'2" x 7'6"	Av. BK. 11' x 3'6"	Av. BK. 6'7" x 3'6"	Poop 30' x 26"	
Dimensions of Hatchway	14' x 14'	22' x 14'	20' x 14'	20' x 14'	11' x 7'6"	11' x 3'6"	6'7" x 3'6"	30' x 26"	
COAMINGS	Height above Deck	46"	34"	34"	34"	35"	23"	23"	
	Thickness Sides	32"	As	As	As	As	As	As	
	Stiffeners Ends	-	-	-	-	-	-	-	
	Brackets, Stays	-	-	-	-	-	-	-	
STEEL HATCH BEAMS	Number	1	2	1	1				
	Spacing	center	7'	center	center				
	Scantling and Sketch	3"x3" angles	2 1/2"x2 1/2" angles	3"x3" angles	3"x3" angles				
	Bearing Surface	3"	3"	2"	2"	3"			
WOOD FORE AND AFTERS	Number	3	3	3	As				
	Spacing	42"	42"	42"	As				
	Unsupp'd Lengths	8'6"	8'6"	8'6"	As				
	Scantling and Sketch	5"x6"	5"x6"	5"x6"	N°3				
HATCH COVERS	Material	Wood	As	As	Wood	Wood	Wood		
	Thickness	2 1/2"	As	As	2 1/2"	2 1/2"	2 1/2"		
	How fitted	Thw.	As	As	Thw.	Thw.	Thw.		
	Bearing Surface	2"	As	As	2"	2"	2"		
Spacing of Cleats	24"	As	As	As	24"	24"	24"		
Number of Tarpaulins	3	As	As	As	2	2	2		

Particulars of fiddle, funnel and ventilator coamings:—  
 Fiddle openings protected by strong steel hinged covers. All on top of a casing 52" high.  
 Funnel + ventilators in good condition.  
 Particulars of Flush Bunker Scuttles:—  
 None.

Particulars of Companionways:—  
 Fiddle to crew space. Steel, with steel hinged doors at aft side, 24" x 49". Sill, 14". Operable from both sides.  
 Poop to Saloon. Steel, with 2 steel hinged doors at aft side, 43" x 48". Sill, 9 1/2". Handle operable from both sides.  
 Particulars of Ventilators in exposed positions on freeboard and superstructure decks:—  
 Fiddle 8 @ 5 1/2" x 20", 2 @ 9" x 32", 1 @ 9" x 42". All vents having wood plugs + tarpaulins.  
 R.O.D. 23 @ 12" x 30", 1 @ 15" x 32", 1 @ 6" x 32" for closing.  
 B.R. 2 @ 9" x 58", 3 @ 11" x 30".

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks:—  
 4 @ 2" x 22" h 43" for cowls + wood plugs provided for closing.  
 1 @ 2" x 15" screw cap.

Particulars of Gangway Cargo and Coaling Ports:—  
 None.

## Particulars of Scuppers and Sanitary Discharge Pipes:—

Sanitary discharge pipes led overboard above freeboard deck. Storm valves fitted.

Particulars of Side Scuttles:—

All above freeboard deck. Different deadlights fitted.

Particulars of Guard Rails:—

Fore 40" high. Stanchions spaced 56" apart + 2 rods + 2 wires passing thro' same.  
 Midships + Poop 38" high. Stanchions spaced 42" apart, with 3 rods thro' same.

Particulars of Gangways, Lifelines, etc.:—

Lifelines, with stanchions, fitted all fore + aft as convenient.  
 Crew space for? Saloon on poop.

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 R.O.D.	82' 3"	38"	24" x 15"	4	10 sq. ft.	
Forward Well	27' 6"	53"	28" x 24"	2	9.33 sq. ft.	

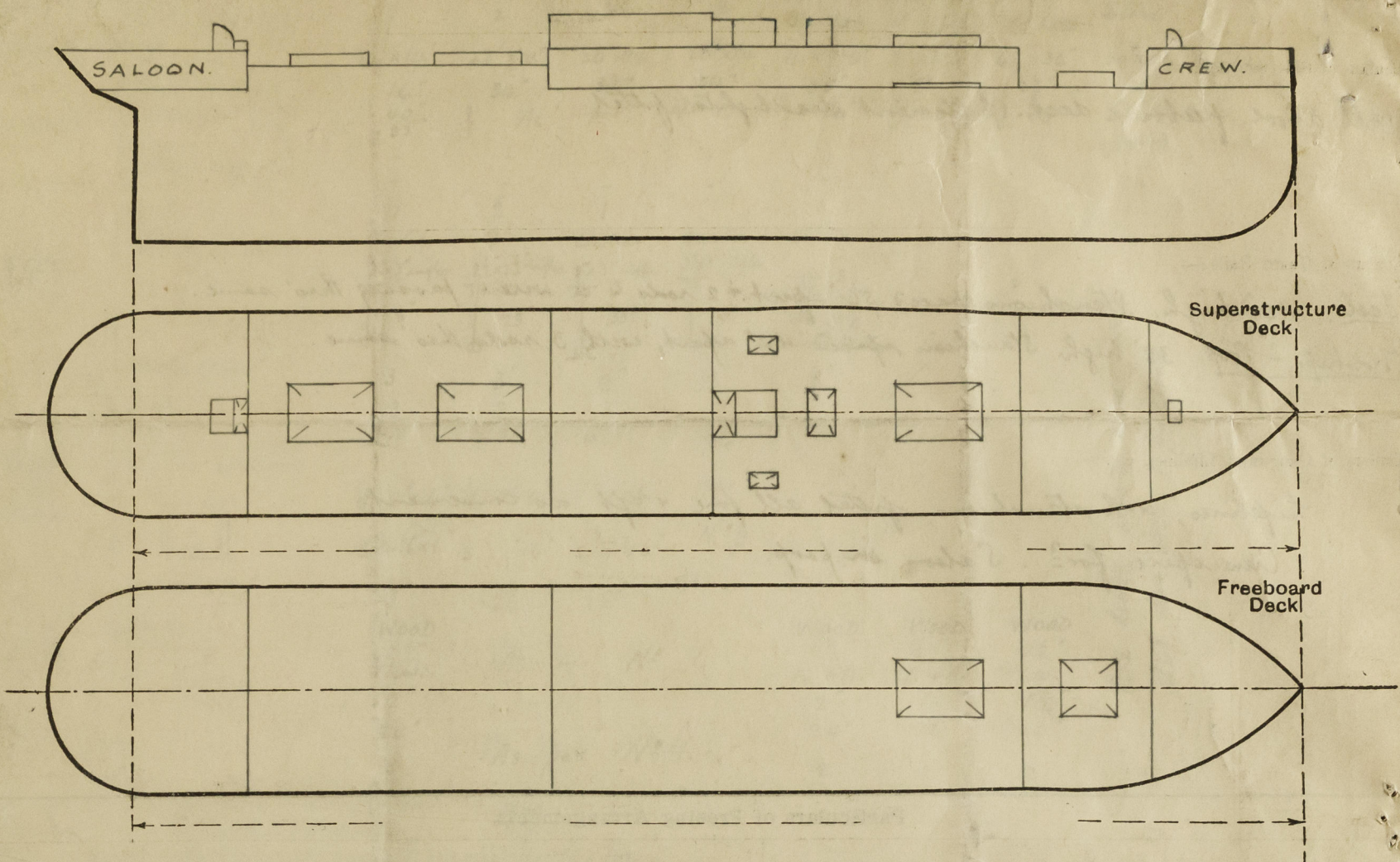
State position of each freeing port:—  
 (F. and A. position and height above deck edge) Forward Well:— 3", 11'-0" from Aft. Front Bulkhead: 13" over deck edge.  
 State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:—  
 Additional area where sheer is 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	Vert. pl.	32"	3" x 3" angles	29"	-	-	-	7'-0"
Raised Quarter Deck Bulkhead	Vert. pl.	32"	3" x 3" angles	29"	-	-	-	4'-0"
Bridge, After Bulkhead	Vert. pl.	36"	7" x 3" B.A.	52"	3" x 3" angles	38" x 50"	22 1/2"	7'-0"
Bridge, Forward Bulkhead	Vert. pl.	36"	7" x 3" B.A.	52"	3" x 3" angles	38" x 50"	22 1/2"	7'-0"
Forecastle Bulkhead	Vert. pl.	32"	Wood lining inside	-	-	24" x 52"	20"	7'-0"
Trunk, Aft								
Trunk, Forward								
Exposed Machinery Casings on Freeboard or Raised Quarter Decks								
Exposed Machinery Casings on Superstructure Decks	18"	40"				38" x 30"	22 1/2"	6'-0"
Machinery Casings within Superstructures not fitted with Class I Closing Appliances								
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	No openings.
Bridge, After Bulkhead	
Bridge, Forward Bulkhead	2 loose steel doors, with hook bolts NOT passing thro' bulkhead, spaced 5 1/2" apart. Operates from outside only.
Forecastle Bulkhead	1 steel hinged door to crew space, + 2 doors to wash places, all workable from both sides.
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	
Exposed Machinery Casings on Superstructure Decks	1 steel hinged door (P + S) into B.R. vents + for working ashes, 2 catches each, workable outside only.
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	
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:—

*Timber Freeboards not required.*

Builder's name and yard number *John Readhead & Sons. S. Shields. N<sup>o</sup> 191.*

Names of sister ships

Owners *Rederi A/B. Iris. (C. Abrahamsen. Mgr.) Stockholm.*

Fee *£K. 230.—* :

Received by me



© 2020

Lloyd's Register  
Foundation