

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

 Index No. **3282**
 (For London Office only.)

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having

(Type of Superstructures.)

Port of Survey

 Date of Survey **16. 3. 33**

Name of Surveyor

 Particulars of Classification **+100 A1.**

 Ship's Name **POLARIS.** Nationality and Port of Registry **Swedish Stockholm** Official Number **7457** Gross Tonnage **2163** Date of Build **1896**
 Moulded Dimensions: Length **290** Breadth **39.84** Depth **22.50**
 Moulded displacement at moulded draught = 85 per cent. of moulded depth **4923** tons
 Coefficient of fineness for use with Tables **.780**

 Depth for Freeboard (D)
 Moulded depth **22.50**
 Stringer plate **.04**
 Sheathing on exposed deck
 $T \left(\frac{L-S}{L} \right) =$ **✓**
 Depth for Freeboard (D) = **22.54**

 Depth correction
 (a) Where D is greater than Table depth
 $(D - \text{Table depth}) R = (22.54 - 19.33) 2.231$
 $= + 7.16''$
 (b) Where D is less than Table depth (if allowed)
 $(\text{Table depth} - D) R =$ **✓**
 If restricted by superstructures **✓**

 Round of Beam correction
 Moulded Breadth (B) **39.84**
 Standard Round of Beam = $\frac{B \times 12}{50} = 9.56$
 Ship's Round of Beam = **6.50**
 Difference **3.06" deflection**
 Restricted to
 Correction = $\frac{\text{Diff}^{\circ}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{3.06}{4} \times 0.965 = +.07''$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed	28.60	28.60	7'-0"		28.60
" overhang				$\frac{4.00}{4.533}$	72.36
R.Q.D. enclosed	82.00	82.00	4'-0"		
" overhang					118.00
Bridge enclosed	118.00	118.00	7'-0"		
" overhang aft					
" overhang forward					33.40
Fore enclosed	33.40	33.40	7'-0"		
" overhang					
Trunk aft					
" forward					
Tonnage opening aft					
" forward					
Total	262.00	262.00			252.36

 Standard Height of Superstructure **6.40'**
 " " R.Q.D. **4.533'**
 Deduction for complete superstructure **34.67'**
 Percentage covered $\frac{S}{L} = 90.35\%$
 " " $\frac{S_1}{L} = 90.35\%$
 " " $\frac{E}{L} = 87.02\%$
 Percentage from Table, Line A.
 (corrected for absence of forecastle (if required))
 Percentage from Table, Line B. **84%**
 (corrected for absence of forecastle (if required))
 Interpolation for bridge less than 2L (if required)
 Deduction = $34.67 \times .84 = - 29.12''$

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	39.00	1		39.00	39.50	39.50	1		39.50
$\frac{1}{2}$ L from A.P.	17.36	4		69.44	14.22	14.22	4		56.88
$\frac{3}{4}$ L "	4.29	2		8.58	3.57	3.57	2		7.08
Amidships	✓	4		✓	✓	✓	4		✓
$\frac{3}{4}$ L from F.P.	8.58	2		17.16	9.36	9.36	2		18.72
$\frac{1}{2}$ L "	34.71	4		138.84	37.52	37.52	4		150.08
F.P.	78.00	1		78.00	90.00	90.00	1		90.00
Total				351.02					362.26

 Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{11.24}{18} (.75 - .4517) = -.19''$

 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.
 Addition for Winter and Winter North Atlantic Freeboard.

 Ft.
 Depth to Freeboard Deck = **22.54**
 Summer freeboard = **1.83**
 Moulded draught (d) = **20.71**

Deduction for Tropical freeboard and addition for

 Winter freeboard = $\frac{d}{4}$ inches = **5.18" = 132%**

 Addition for Winter North Atlantic Freeboard (if required) = **2 = 51%**

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

 = **132%**

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

 $\frac{.78 + .68}{1.36} = \frac{1.46}{1.36}$

 Depth Correction **7.16**

 Deduction for superstructures **- 29.12**

 Sheer correction **- .19**

 Round of Beam correction **.07**

 Correction for Thickness of Deck amidships **-**

 Other corrections, scantlings, etc. **-**

 Summer Freeboard = **21.94**

 SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck:— **21.94" = 557.7%**

Tropical Fresh Water Line above Centre of Disc	
Fresh Water Line " "	
Tropical Line " "	
Winter Line below " "	132
Winter North Atlantic Line " "	

Tropical Fresh Water Freeboard	
Fresh Water " "	
Tropical " "	
Winter " "	
Winter North Atlantic " "	