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Rpt. C.II.

11392

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Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

AUG 20 1937

Computation of Freeboard for ^{MOTOR} Steamer, Sailing Ship, Tanker

having a complete superstructure with tonnage opening aft

Port of Survey Gothenburg

Date of Survey 19th Aug. 1937

Name of Surveyor G. Jernqvist

Particulars of Classification 100 A1 with freeboard (contemplated)

Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build
"COLOMBIA"	Swedish Stockholm	-	5275	1937-8

Moulded Dimensions: Length 418.0' Breadth 55.75' Depth 28.0'

Moulded displacement at moulded draught = 85 per cent. of moulded depth 11130 tons

Coefficient of fineness for use with Tables .703

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth <u>28.0'</u>	(a) Where D is greater than Table depth (D - Table depth) R = <u>(28.04 - 27.87) 3 = +.51"</u>	Moulded Breadth (B) <u>55.75'</u>
Stringer plate <u>11 mm</u> <u>04</u>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R =	Standard Round of Beam = $\frac{B \times 12}{50} =$ <u>13.38</u>
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) = \checkmark$	If restricted by superstructures	Ship's Round of Beam = <u>14"</u>
Depth for Freeboard (D) = <u>28.04</u>		Difference <u>.62</u>
		Restricted to
		Correction = $\frac{\text{Diff}^\circ}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.62}{4} \times .0067 =$ <u>Nil</u>

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed	24.2'	24.20	9'-6"		24.20
„ overhang	2.6	1.30			1.30
R.Q.D. enclosed					
„ overhang					
Bridge enclosed	386.8	386.80	9'-6"		386.80
„ overhang aft					
„ overhang forward					
F'ele enclosed					
„ overhang					
Trunk aft					
„ forward					
Tonnage opening aft	4.4	2.85			
„ forward					
Total	418.0	415.15			415.15

Standard Height of Superstructure 7.6'

„ „ R.Q.D.

Deduction for complete superstructure 42.00

Percentage covered $\frac{S}{L} =$ 100.00

„ „ $\frac{S_1}{L} =$ 99.33

„ „ $\frac{E}{L} =$ 99.33

Percentage from Table, Line A.
(corrected for absence of forecastle (if required)) 99.18

Percentage from Table, Line B.
(corrected for absence of forecastle (if required))

Interpolation for bridge less than 2L (if required)

Deduction = 42 x .9918 = -41.65"

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	51.80	1		51.80	55.6"	79.60	1		79.60
$\frac{1}{2}$ L from A.P.	23.05	4		92.20	17.0	35.42	4		141.68
$\frac{2}{3}$ L „	5.70	2		11.40	1.1	8.76	2		17.52
Amidships		4			0.0		4		
$\frac{2}{3}$ L from F.P.	11.50	2		22.80	12.4	14.89	2		29.78
$\frac{1}{2}$ L „	46.10	4		184.40	48.0	60.25	4		241.00
F.P.	103.60	1		103.60	111.4	135.40	1		135.40
Total				466.20	+24"				644.98

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{178.78}{18} \times (.75 - .50) =$ -2.48"

If limited on account of midship superstructure.

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

Mean actual sheer aft = Excess

Mean standard sheer aft = Excess

Mean actual sheer forward = Excess

Mean standard sheer forward = Excess

Length of enclosed superstructure forward of amidships = 6.6.5.

„ „ aft of „ = 6.6.5.

The lowest point of sheer is 0.9" below the moulded depth at 31.4' aft of midships.

Deduction for Tropical Freeboard. Addition for Winter and Winter North Atlantic Freeboard. Depth to Freeboard Deck = <u>28.04</u> Ft. Summer freeboard = <u>2.90</u> Moulded draught (d) = <u>25.14</u> Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <u>6.28</u> = <u>160 mm</u> Addition for Winter North Atlantic Freeboard (if required) =	Deduction for Fresh Water. Displacement in salt water at summer load water line $\Delta =$ <u>11895</u> Tons per inch immersion at summer load water line $T =$ <u>44.26</u> Deduction = $\frac{\Delta}{40T}$ inches = <u>6.72</u> $= 171 \text{ mm}$ <i>See back of report</i>	TABULAR FREEBOARD corrected for Flush Deck (if required) Correction for coefficient $\frac{703 + .68}{1.36} = \frac{1.383}{1.36}$ <table><tr><th></th><th>+</th><th>-</th></tr><tr><td>Depth Correction</td><td>.51</td><td>-</td></tr><tr><td>Deduction for superstructures</td><td>-</td><td>41.65</td></tr><tr><td>Sheer correction</td><td>-</td><td>2.48</td></tr><tr><td>Round of Beam correction</td><td>-</td><td>-</td></tr><tr><td>Correction for Thickness of Deck amidships</td><td>-</td><td>-</td></tr><tr><td>Other corrections, scantlings, etc.</td><td>-</td><td>-</td></tr><tr><td></td><td>.51</td><td>44.13</td></tr></table> Summer Freeboard = <u>34.85</u>		+	-	Depth Correction51	-	Deduction for superstructures	-	41.65	Sheer correction	-	2.48	Round of Beam correction	-	-	Correction for Thickness of Deck amidships	-	-	Other corrections, scantlings, etc.	-	-		.51	44.13
	+	-																								
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SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck:—

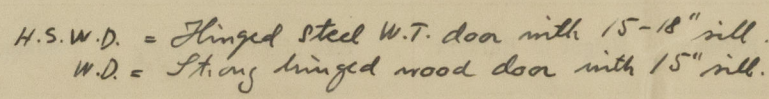
Tropical Fresh Water Line above Centre of Disc	331 mm	Tropical Fresh Water Freeboard	554
Fresh Water Line „ „	171	Fresh Water „ „	714
Tropical Line „ „	160	Tropical „ „	725
Winter Line below „ „	160	Winter „ „	1045
Winter North Atlantic Line „ „	-	Winter North Atlantic „ „	-

27 AUG 1937

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885 mm low
554
714
725
1045
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MAKING FORM
FOUR 4 SEP 1937
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Steel w.t. hatch 3.7' x 2.8' x 2.0'
hinged steel cover 2 clips



Tonnage opening in Shelter Deck 4.4' long x 18.0' wide; coaming 230x90x11 7/8 B.A.;
 wood cores 75 7/8" thick, secured with temporary battening arrangements.
~~One scupper 5" x 3 1/2" fitted each side in tonnage well with non-return valves.~~
~~Freeing port each side in tonnage well 3' x 1.9' fitted with steel braced shutters.~~
 One scupper each side in tonnage well provided with non-return valve controlled from above
 shelter deck. Scuppers 5" diameter and led overboard.
 Displacements and Tons per inch :-

at 75% of moulded depth	9720 tons displ.	and 42.91 tons per inch.
" 85% " " "	11180 " " "	43.80 " " "
" 95% " " "	12670 " " "	44.77 " " "

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