

Computation of Freeboard for Steamer, Sailing Ship, Tanker				
having	<i>a complete shelter deck with a tonnage opening</i>			
(Type of Superstructures.)				
Ship's Name <i>"Norwegian"</i>	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build
Moulded Dimensions: Length <i>399.4</i> Breadth <i>52.16</i> Depth <i>29.5</i> Moulded displacement at moulded draught = 85 per cent. of moulded depth <i>11385</i> tons Coefficient of fineness for use with Tables <i>.763</i>				

Port of Survey _____

Date of Survey *11 Aug 1934*

Name of Surveyor _____

Particulars of Classification _____

100A1 shelter deck with free board

Depth for Freeboard (D)		Depth correction	Round of Beam correction	
Moulded depth 29.50	(a) Where D is greater than Table depth (D - Table depth) R =	Moulded Breadth (B)	52.16
Stringer plate04	$(29.54 - 26.63) \times 3 = + 8.73$	Standard Round of Beam = $\frac{B \times 12}{50}$	= 12.52
Sheathing on exposed deck	-	(b) Where D is less than Table depth (if allowed) (Table depth - D) R =	Ship's Round of Beam	= 13.00
T $\left(\frac{L-S}{L} \right) =$	-		Difference	.48
Depth for Freeboard (D) =	29.54	If restricted by superstructures	Restricted to	-
			Correction = $\frac{\text{Diff}^a}{4} \times \left(1 - \frac{S_1}{L} \right)$	= $\frac{.48}{4} \times .0054 = Nil$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...					
„ overhang ...					
R.Q.D. enclosed ...					
„ overhang ...					
Bridge enclosed ...	395.07	395.07	8.08	✓	395.07
„ overhang aft ...					
„ overhang forward ...					
F'cle enclosed ...					
„ overhang ...					
Trunk aft ...					
„ forward ...					
Tonnage opening aft ...	4.33	2.16 = 58%			2.16
„ „ forward ...					
Total ...	399.40	397.23			397.23

Standard Height of Superstructure 7.494 ✓
 " " R.Q.D. ✓
 Deduction for complete superstructure 41.96 ✓
 Percentage covered $\frac{S}{L} = 100\%$
 " " $\frac{S_1}{L} = 99.46\%$
 " " $\frac{E}{L} = 99.46\%$
 Percentage from Table, Line A. 99.33% ✓
 (corrected for absence of forecaste (if required))
 Percentage from Table, Line B. ✓
 (corrected for absence of forecaste (if required))
 Interpolation for bridge less than 2L (if required)
 Deduction = $41.96 \times .9933 = -41.67$ ✓

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P. ...	49.94	1	49.94	46.5 ^{+7.03}	53.53	1	53.53
$\frac{1}{8}$ L from A.P. ...	22.225	4	88.90	16.19	23.82	4	95.28
$\frac{3}{8}$ L " ...	5.49	2	10.98	4.05	5.89	2	11.78
Amidships ...	-	4	-	-	-	4	-
$\frac{5}{8}$ L from F.P. ...	10.98	2	21.96	9.18	11.28	2	22.56
$\frac{1}{8}$ L " ...	44.45	4	177.80	36.73	45.63	4	182.52
F.P. ...	99.88	1	99.88	95.5 ^{+7.03}	102.53	1	102.53
Total ...			449.46				468.20

SECTION.

	Actual height of superstructure	=	8.080'
	Standard " "	=	7.494'
			<u>.586'</u>
Mean actual sheer aft	=	Excess	= 7.03' ✓

$$\frac{\text{Mean actual shear forward}}{\text{Mean standard shear forward}} = \text{Exam}$$
$$\frac{\text{Length of enclosed superstructure}}{L} \begin{matrix} \text{forward of amidships} \\ \text{" aft of " } \end{matrix} = \left\{ \begin{matrix} C.S.S. \\ \\ \end{matrix} \right.$$
$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{18.74}{18} \times .25 = -.26$$

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)		71.31	
Addition for Winter and Winter North Atlantic Freeboard.				$\frac{.763 + .08}{1.36} = \frac{1.443}{1.36} =$		75.65	
Depth to Freeboard Deck	= 29.57	Displacement in salt water at summer load water line		Correction for coefficient			
Summer freeboard	= 3.56	$\Delta =$		Depth Correction ...	8.73	-	
Moulded draught (d) = 26.01		Tons per inch immersion at summer load water line		Deduction for superstructures ...	-	41.67	
		T =		Sheer correction ...	-	0.26	
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches =		Deduction = $\frac{\Delta}{40 T}$ inches		Round of Beam correction ...	-	-	
		=		Correction for Thickness of Deck amidships ...	0.40	-	
Addition for Winter North Atlantic Freeboard (if required) =				Other corrections, scantlings, etc. ...	-	-	
					9.13	41.93	- 32.80
					Summer Freeboard = 42.85		

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	"	...

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS											
Description of Hatchway											
Dimensions of Hatchway											
COAMINGS	{	Height above Deck ...									
		Thickness { Sides ...									
		{ Ends ...									
		Stiffeners									
		Brackets, Stays									
HATCH BEAMS	{	Number									
		Spacing									
		Scantling and Sketch ...									
		Bearing Surface									
FORE AND AFTERS	{	Number									
		Spacing									
		Unsupported Lengths ...									
		Scantling* and Sketch ...									
		Bearing Surface									
HATCH COVERS	{	Material									
		Thickness									
		How fitted									
		Bearing Surface									
Spacing of Cleats											
Number of Tarpaulins											
<p>*Are wood fore and afters steel shod at all bearing surfaces ?</p> <p>Are battens and wedges efficient and in good condition ?</p> <p>Are tarpaulins in good condition and in accordance with rule requirements ?</p> <p>Are lashings provided in accordance with rule requirements ?</p>											

Particulars of fiddley, funnel and ventilator coamings :—

Particulars of Flush Bunker Scuttles :—

Particulars of Companionways :—

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

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

Particulars of Gangway Cargo and Coaling Ports :—

