

Lloyd's Register of Shipping.
SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, <u>Sailing Ship, Tanker</u>				Port of Survey <u>Stockholm</u>	
having <u>fore castle, bridge and R O D</u> <u>"KATSA CHRISTENSEN"</u>				Date of Survey <u>30 x 21 32</u>	
MENTA (Type of Superstructures.)				Name of Surveyor <u>K. J. Andersson</u>	
Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build	
<u>URANIA</u>	<u>Swedish Stockholm</u>	<u>3524</u>	<u>628</u>	<u>1899/7</u>	
Moulded Dimensions: Length	Breadth	Depth			
<u>173.3'</u>	<u>29.0'</u>	<u>13.33'</u>			
Moulded displacement at moulded draught = 85 per cent. of moulded depth				tons	
<u>1137</u>					
Coefficient of fineness for use with Tables				<u>.698</u>	
Depth for Freeboard (D)		Depth correction		Round of Beam correction	
Moulded depth	<u>13.33'</u>	(a) Where D is greater than Table depth (D—Table depth) R =		Moulded Breadth (B)	<u>29'</u>
Stringer plate	<u>0.03'</u>	<u>(13.36 - 11.55) 1.333 = + 2.41"</u>		Standard Round of Beam = $\frac{B \times 12}{50}$	<u>6.96"</u>
Sheathing on exposed deck		(b) Where D is less than Table depth (if allowed) (Table depth—D) R =		Ship's Round of Beam	<u>10.45"</u>
T $\left(\frac{L-S}{L}\right) =$				Difference	<u>3.79"</u>
Depth for Freeboard (D) =	<u>13.36'</u>	If restricted by superstructures		Restricted to	<u>✓</u>
				Correction = $\frac{\text{Diff}^n}{4} \times \left(1 - \frac{S_1}{L_1}\right)$	<u>$\frac{3.79}{4} \times .2637 = -0.25$</u>

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 ...	86.5'	86.50	4.0'	✓	86.50
" overhang ...					
Bridge enclosed ...	18.5'	18.50	7.2'	✓	18.50
" overhang aft ...					
" overhang forward ...					
F'cle enclosed ...	22.1'	22.10	7.2'	✓	22.10
" overhang ...	1.0'	.50	7.2'		.50
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" forward ...					
Total ...	128.10'	127.60			127.60

Standard Height of Superstructure 6.00

" " R.Q.D. 3.489 ✓

Deduction for complete superstructure 23.33 ✓

Percentage covered $\frac{S}{L} = 73.92\%$ ✓

" " $\frac{S_1}{L} = 73.63\%$ ✓

" " $\frac{E}{L} = 73.63\%$ ✓

Percentage from Table, Line A.
(corrected for absence of forecastle (if required)) 67.47% ✓

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

Interpolation for bridge less than .2L (if required)

Deduction = 23.33 × .6747 = - 15.74" ✓

6.00

3.489 ✓

23.33 ✓

$\frac{S}{L} = 73.92\%$ ✓

$\frac{S_1}{L} = 73.63\%$ ✓

$\frac{E}{L} = 73.63\%$ ✓

67.47% ✓

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product	Mean actual sheer aft =	Mean standard sheer aft =
A.P. ...	27.33	1	27.33	21.5"	21.50	1	27.33	Excess	
$\frac{1}{6}$ L from A.P. ...	12.16	4	48.64	5.0"	6.32	4	48.64	Mean actual sheer forward =	Deficient
$\frac{2}{6}$ L " ...	3.01	2	6.02	-1.0"	1.58	2	6.02	Mean standard sheer forward	
Amidships ...	✓	4	✓	0	1	4		Length of enclosed superstructure forward of amidships =	106
$\frac{3}{6}$ L from F.P. ...	6.01	2	12.02	8.0"	5.92	2	11.84	" " aft of "	= 500
$\frac{1}{6}$ L " ...	24.32	4	97.28	24.0"	23.70	4	94.80		
F.P. ...	54.66	1	54.66	50.0"	50.00	1	50.00		
Total ...			245.95				238.63		

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left(75 - \frac{8}{21} \right) = \frac{7.32}{18} (.75 - .3696) = + .15''$$

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)		18.80	
Addition for Winter and Winter North Atlantic Freeboard.		Displacement in salt water at summer load water line		Correction for coefficient		19.05	
Depth to Freeboard Deck =	Ft. 13.36	Δ =					
Summer freeboard =	.47	Tons per inch immersion at summer load water line					
Moulded draught (d) =	12.89	T = 10.0					
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 3.22" = 82 $\frac{m}{mm}$		Deduction = $\frac{\Delta}{40 T}$ inches = 82 $\frac{m}{mm}$		Depth Correction		+	-
Addition for Winter North Atlantic Freeboard (if required = 51 $\frac{m}{mm}$				Deduction for superstructures		-	15.74
				Sheer correction15	-
				Round of Beam correction... ..		-	.25
				Correction for Thickness of Deck amidships		-	-
				Other corrections, scantlings, etc.		-	-
						2.56	15.99
						- 13.43	
						Summer Freeboard = 5.62" = 143 $\frac{m}{mm}$	

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, ~~Wood~~, Steel, Deck :-

Tropical Fresh Water Line above Centre of Disc	...	6 1/2"	164 mm.	Tropical Fresh Water Freeboard	...	21 mm.	0' - 1 1/4"
Fresh Water Line	"	3 1/4"	82 mm.	Fresh Water	"	61 mm.	0' - 2 1/4"
Tropical Line	"	3 1/4"	82 mm.	Tropical	"	61 mm.	0' - 2 1/4"
Winter Line	below	3 1/4"	82 mm.	Winter	"	225 mm.	0' - 8 3/4"
Winter North Atlantic Line	"	5 1/4"	133 mm.	Winter North Atlantic	"	276 mm.	0' - 10 3/4"

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway	1	2	3	Bunker hatch on R & D	Hatch to coal scot on coal dk				
Dimensions of Hatchway	10'-0" x 9'-2"	18'-4" x 12'-6"	20'-3" x 12'-6"	4' x 2'	10'-0" x 4'-6"				
COAMINGS	Height above Deck	36"	36"	18"	8"				
	Thickness { Sides	7/20	Same as no 1.	3/16"	1/4"				
	Ends								
	Stiffeners	none		none	none				
	Brackets, Stays	none		none	none				
HATCH BEAMS	Number		2						
	Spacing		6'-8"						
	Scantling and Sketch	None	2 1/2" x 3/4" x 36"	Same as no 2	None				
	Bearing Surface		36" x 5/16"						
FORE AND AFTERS	Number	1	1						
	Spacing	centre							
	Unsupported Lengths								
	Scantling* and Sketch	3" x 3" x 5/16"	Same as no 1.	None					
	Bearing Surface	75 m/p							
HATCH COVERS	Material	Wood	Wood	Wood	Wood				
	Thickness	2"	2 1/2"	2 1/2"	2"				
	How fitted	Flt.	Flt.	Flt.	Flt.				
	Bearing Surface	3/4" x 50%	3/4" x 50%	3/4" x 50%	1/4" x 50%				
Spacing of Cleats	32"	30"	30"	39"	30"				
Number of Tarpaulins	2	2	2	2	2				

*Are wood fore and afters steel shod at all bearing surfaces? -
 Are battens and wedges efficient and in good condition? yes
 Are tarpaulins in good condition and in accordance with rule requirements? yes
 Are lashings provided in accordance with rule requirements? yes

Particulars of fiddle, funnel and ventilator coamings :- Fiddle covered by strong steel hinged covers. All on top of 7'-3" casing. Funnel and Ventilators in good condition. Standing on top of R & D.

Particulars of Flush Bunker Scuttles :- None

Particulars of Companionways :- None

Particulars of Ventilators in exposed positions on freeboard and superstructure decks :-
 On side dk. 1-15 1/2" diam. x 36" x 28" to hold.
 On bridge dk. 1-15 1/2" " x 9'-9" x 28" " (coaming passing through flying bridge dk.)
 Wood covers and tarpaulins for closing fitted.

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks :-
 Two 3" air pipes on freeboard deck forward and one ditto on R & D aft 43 and 36" high resp. goose necks.
 Wood plugs will be fitted for closing.

Particulars of Gangway Cargo and Coaling Ports :- None