

Lloyd's Register of Shipping.
SURVEYS FOR FREEBOARD.
(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name	Official Number	Nationality and Port of Registry	Gross Tonnage	Date of Build	Port of Survey
SOMMELSDYK		Dutch Rotterdam		1939.	
Moulded Dimensions: Length 142.049 [✓] Breadth 18.898 [✓] Depth 12.344 [✓]					Date of Survey 14/9/39.
Moulded displacement at moulded draught = 85 per cent. of moulded depth _____ tons					Surveyor's Signature _____
Coefficient of fineness for use with Tables .433 [✓] given by surveyors.					Particulars of Classification _____

Depth for Freeboard (D).		Depth correction.	Round of Beam correction.
Moulded depth 12.344	(a) Where D is greater than Table depth (D-Table depth) R = 2.950	Moulded Breadth (B) 18.898
Stringer plate020	8.33 (12.420 - 9.440) 30 = + 134.	Standard Round of Beam = $\frac{B \times 12}{50} = 348 \text{ mm.}$
Sheathing on exposed deck		(b) Where D is less than Table depth (if allowed) (Table depth-D) R =	Ship's Round of Beam = $\frac{305}{43} =$
T $\left(\frac{L-S}{L} \right) = .046 \times .4316 = .056$			Difference <u>43.</u>
Depth for Freeboard (D) = 12.420		If restricted by superstructures	Restricted to
			Correction = $\frac{\text{Diff}^e}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{43}{4} \times .4316 = +13 \text{ mm.}$

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... ..	25.480	25.480	2.591	✓	25.480
„ overhang aft					
„ overhang forward					
F ^h le enclosed	12.650	12.650	2.286	× 2.286. 2.290	12.628
„ overhang					
Trunk aft					
„ forward					
Tonnage opening aft ...					
„ forward					
Total	38.130	38.130			38.108

Standard Height of Superstructure 2.290

" " R.Q.D. 1

Deduction for complete superstructure 1064

Percentage covered $\frac{S}{L} = 26.84$

" " $\frac{S_1}{L} = 26.84$

" " $\frac{E}{L} = 26.83$

Percentage from Table, Line A. 13.41

(corrected for absence of forecaste (if required))

Percentage from Table, Line B. 14.00

(corrected for absence of forecaste (if required))

Interpolation for bridge less than $2L$ (if required) $13.41 + \left(\frac{25.48}{28.41} \times 3.59 \right)$

Deduction = $1064 \times .1663 = -177 \text{ mm.}$ ✓ $\frac{13.41}{16.63} = 3.22$

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P. ...	143Y	1	143Y	1250	1250	1	1250
$\frac{1}{8}$ L from A.P. ...	638	4	2552	620	620	4	2480
$\frac{3}{8}$ L " ...	159	2	318	205	205	2	410
Amidships ...	-	4	-	-	-	4	-
$\frac{3}{8}$ L from F.P. ...	319	2	638	330	330	2	660
$\frac{1}{8}$ L " ...	124Y	4	5108	1145	1145	4	4400
F.P. ...	284Y	1	284Y	2630	2630	1	2630
Total ...			12924X				12130

$$\frac{\text{Mean actual shear aft}}{\text{Mean standard shear aft}} = \text{Deficient}$$
$$\frac{\text{Mean actual sheer forward}}{\text{Mean standard sheer forward}} = \text{Deficient}$$

$$\frac{\text{Length of enclosed superstructure}}{L} \text{ forward of amidships} =$$

$$\text{" " aft of " " = } \left. \vphantom{\frac{\text{Length of enclosed superstructure}}{L}} \right\} \text{Does not apply.}$$

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - .5}{.21} \right) = \frac{494}{18} \times (.45 - .1342) = +24 \text{ mm.}$$

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

<p>Deduction for Tropical Freeboard.</p> <p>Addition for Winter and Winter North Atlantic Freeboard.</p> <p style="text-align: right; margin-right: 20px;">Ft.</p> <p>Depth to Freeboard Deck = 12.364</p> <p>Summer freeboard = 2.973</p> <p>Moulded draught (d) = 9.391</p> <p>Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{48} \times \frac{1000}{\text{inches}} = 196 \text{ mms} = 20 \text{ cms.}$</p> <p>Addition for Winter North Atlantic Freeboard (if required) =</p>	<p>Deduction for Fresh Water.</p> <p>Displacement in salt water at summer load water line</p> <p>$\Delta = 18145$</p> <p>Tons per inch immersion at summer load water line</p> <p>$T = 22.28 \frac{\text{m}^3}{\text{cm}}$</p> <p>Deduction = $\frac{\Delta}{40 T} \text{ inches} = 20.4 \text{ cms.}$</p>	<p>TABULAR FREEBOARD corrected for Flush Deck (if required)</p> <p>Correction for coefficient $\frac{1.033 + 68}{1.36} = \frac{141.3}{1.36}$</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <th></th> <th>+</th> <th>-</th> </tr> <tr> <td>Depth Correction</td> <td>434</td> <td>.</td> </tr> <tr> <td>Deduction for superstructures</td> <td>-</td> <td>144</td> </tr> <tr> <td>Sheer correction</td> <td>24</td> <td>-</td> </tr> <tr> <td>Round of Beam correction</td> <td>13</td> <td>-</td> </tr> <tr> <td>Correction for Thickness of Deck amidships</td> <td>-</td> <td>56</td> </tr> <tr> <td>Other corrections, scantlings, etc.</td> <td>-</td> <td>-</td> </tr> <tr> <td></td> <td>474</td> <td>233</td> </tr> </table> <p>Summer Freeboard = 2973 mms.</p>		+	-	Depth Correction	434	.	Deduction for superstructures	-	144	Sheer correction	24	-	Round of Beam correction	13	-	Correction for Thickness of Deck amidships	-	56	Other corrections, scantlings, etc.	-	-		474	233
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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	40' cms	Tropical Fresh Water Freeboard	254	"
Fresh Water Line	"	"	20' cms	Fresh Water	"	...	244	"
Tropical Line	"	"	20' cms	Tropical	"	...	244	"
Winter Line	below	"	20' cms	Winter	"	...	314	"
Winter North Atlantic Line	"	"	...	Winter North Atlantic	"	...	✓	