

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

DEPTH FOR FREEBOARD (D).					DEPTH CORRECTION.		ROUND OF BEAM CORRECTION.	
Moulded depth	...	...	...	20.50	(a)	Where D is greater than Table depth (D-Table depth) R = $(20.54 - 16.91) \times 1.952$ $3.63 = +7.09$ ✓	Moulded Breadth (B)	37.5 ✓
Stringer plate	...	...	...	.04	(b)	Where D is less than Table depth (if allowed) (Table depth-D) R =	Standard Round of Beam = $\frac{B \times 12}{50}$	= 9.0 ✓
Sheathing on exposed deck				✓			Ship's Round of Beam	= 9.5 ✓
$T \left( \frac{L-S}{L} \right) =$							Difference	.5 ✓
Depth for Freeboard (D) = 20.54						If restricted by superstructures	Restricted to	
							Correction = $\frac{\text{Diff}^e}{4} \times \left( 1 - \frac{S_1}{L} \right)$	= $\frac{.5}{4} \times .5546$ = -.07 ✓

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>i</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ...	23.50	23.50	7.0	-	23.50
" overhang ...					
R.Q.D. enclosed ...					
" overhang ...					
Bridge enclosed ...	63.50	63.50	7.0	-	63.50
" overhang aft ...					
" overhang forward ...					
F'cle enclosed ...	26.00	26.00	7.0	-	26.00
" overhang ...					
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" " forward ...					
Total ...	113.00	113.00			113.00

Standard Height of Superstructure ..... 6.04

" " R.Q.D. ....

Deduction for complete superstructure ..... 31.375

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

" "  $\frac{S_i}{L} =$  } 44.54

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

Percentage from Table, Line A. *Tambor* 35.54

(corrected for absence of forecastle (if required))

Percentage from Table, Line B.

(corrected for absence of forecastle (if required))

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

Deduction = 31.375 x .3554 = - 11.15

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P. ...	35.37	1	35.37	46.00	46.00	1	46.00
$\frac{1}{8}$ L from A.P. ...	15.74	4	62.96	18.17	18.17	4	72.68
$\frac{2}{8}$ L „ ...	3.89	2	7.78	4.54	4.54	2	9.08
Amidships ...	—	4	—	—	—	4	—
$\frac{2}{8}$ L from F.P. ...	7.78	2	15.56	8.98	8.98	2	17.96
$\frac{1}{8}$ L „ ...	31.48	4	125.92	35.94	35.94	4	143.76
F.P. ...	70.75	1	70.75	82.50	82.50	1	82.50
Total ...			318.35				371.98

Mean actual sheer aft  
Mean standard sheer aft =

Mean actual sheer forward  
Mean standard sheer forward =

Length of enclosed superstructure forward of amidships =  
L

„ „ aft of „ =

}

}

}

53.63  
18

(.75 - .2227) = -1.57

If limited to maximum allowance of 1½ ins. per 100 ft.

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

If limited on account of midship superstructure.

Deduction for Tropical Freeboard.		Deduction for Fresh Water.	TABULAR FREEBOARD <small>corrected for Flush Deck (if required)</small>															
<b>Addition for Winter and Winter North Atlantic Freeboard.</b>		Displacement in salt water at summer load water line	Correction for coefficient															
Depth to Freeboard Deck =	Ft. <u>20.54</u>	$\Delta$ =	$\frac{.753 + .68}{1.36} = \frac{1.433}{1.36}$															
Summer freeboard =	<u>2.35</u>	Tons per inch immersion at summer load water line	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%; text-align: center;">+</th> <th style="width: 50%; text-align: center;">-</th> </tr> <tr> <td style="text-align: center;">7.09</td> <td style="text-align: center;">-</td> </tr> <tr> <td style="text-align: center;">-</td> <td style="text-align: center;">11.15</td> </tr> <tr> <td style="text-align: center;">-</td> <td style="text-align: center;">1.57</td> </tr> <tr> <td style="text-align: center;">-</td> <td style="text-align: center;">.07</td> </tr> <tr> <td style="text-align: center;">-</td> <td style="text-align: center;">-</td> </tr> <tr> <td style="text-align: center;">7.09</td> <td style="text-align: center;">12.79</td> </tr> </table>		+	-	7.09	-	-	11.15	-	1.57	-	.07	-	-	7.09	12.79
+	-																	
7.09	-																	
-	11.15																	
-	1.57																	
-	.07																	
-	-																	
7.09	12.79																	
Moulded draught (d) =	<u>18.19</u>	T =	<div style="text-align: right; padding-right: 20px;"> <del>32.17</del>  <del>33.89</del> </div>															
Deduction for Tropical freeboard and addition for		Deduction = $\frac{\Delta}{40 T}$ inches																
Winter freeboard = $\frac{d}{4}$ inches =	$\frac{4.55}{4} = 1.14$	=	<div style="text-align: right; padding-right: 20px;"> <del>5.70</del>  <del>28.19</del> </div>															
Addition for Winter North Atlantic Freeboard (if required) =			<div style="text-align: right; padding-right: 20px;"> <del>12.84</del> </div>															

SUMMER FREEBOARD		TROPICAL		WINTER	
Tropical Fresh Water Line above Centre of Disc	...	236	...	Tropical Fresh Water Freeboard	...
Fresh Water Line	"	120	...	Fresh Water	"
Tropical Line	"	116	...	Tropical	"
Winter Line	below	116	...	Winter	"
Winter North Atlantic Line	"	180	...	Winter North Atlantic	"