

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name <b>HAVBRAUT</b>	Official Number	Nationality and Port of Registry <b>NORWEGIAN BERGEN</b>	Gross Tonnage <b>294</b>	Date of Build <b>1944 11</b>	Port of Survey
Moulded Dimensions: Length <b>128.0</b> Breadth <b>26.04</b> Depth <b>15.0</b>					Date of Survey <b>19-8-47</b>
Moulded displacement at moulded draught = 85 per cent. of moulded depth					Surveyor's Signature <b>E. J.</b>
Coefficient of fineness for use with Tables <b>.68 assumed</b>					Particulars of Classification

<b>DEPTH FOR FREEBOARD (D).</b> Moulded depth ... .. <b>15.00</b> Stringer plate ... .. 3" Sheathing on exposed deck $T \left( \frac{L-S}{L} \right) = .25 \left( \frac{104.96}{128} \right)$ Depth for Freeboard (D) = <b>15.20</b>	<b>DEPTH CORRECTION.</b> (a) Where D is greater than Table depth $(D - \text{Table depth}) R = (15.20 - 8.53) \cdot 985 = + 6.57$ (b) Where D is less than Table depth (if allowed) (Table depth - D) R = If restricted by superstructures	<b>ROUND OF BEAM CORRECTION.</b> Moulded Breadth (B) <b>26.04'</b> Standard Round of Beam = $\frac{B \times 12}{50} = 6.25"$ Ship's Round of Beam = <b>6.50</b> Difference <b>+ .25</b> Restricted to Correction = $\frac{\text{Diff}^e}{4} \times \left( 1 - \frac{S_1}{L} \right) = \frac{.25 \times .82}{4} = .05"$
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## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ... ..					
" overhang ... ..					
R.Q.D. enclosed ... ..					
" overhang ... ..					
Bridge enclosed ... ..					
" overhang aft ... ..					
" overhang forward ... ..					
F'cle enclosed ... ..	<b>23.04</b>	<b>23.04</b>	<b>7.83</b>	<b>✓</b>	<b>23.04</b>
" overhang ... ..					
Trunk aft ... ..					
" forward ... ..					
Tonnage opening aft ... ..					
" " forward ... ..					
Total ... ..	<b>23.04</b>	<b>23.04</b>			<b>23.04</b>

Standard Height of Superstructure **6.0'**  
 " " R.Q.D. **✓**  
 Deduction for complete superstructure **18.8"**  
 Percentage covered  $\frac{S}{L} =$   
 $\frac{S_1}{L} =$   
 $\frac{E}{L} =$   
 Percentage from Table, Line A. **9.0**  
 (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 = **18.8 × .09 = - 1.69"**

## SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P. ... ..	<b>22.80</b>	1	<b>22.80</b>	<b>33.00</b>	<b>22.80</b>	1	<b>22.80</b>
$\frac{1}{2}$ L from A.P. ... ..	<b>10.15</b>	4	<b>40.60</b>	<b>14.83</b>	<b>10.15</b>	4	<b>40.60</b>
$\frac{2}{3}$ L " ... ..	<b>2.51</b>	2	<b>5.02</b>	<b>4.67</b>	<b>2.51</b>	2	<b>5.02</b>
Amidships ... ..	<b>-</b>	4	<b>-</b>	<b>-</b>	<b>-</b>	4	<b>-</b>
$\frac{2}{3}$ L from F.P. ... ..	<b>5.02</b>	2	<b>10.04</b>	<b>1.33</b>	<b>1.33</b>	2	<b>2.66</b>
$\frac{1}{2}$ L " ... ..	<b>20.29</b>	4	<b>81.16</b>	<b>4.67</b>	<b>4.67</b>	4	<b>18.68</b>
F.P. ... ..	<b>45.60</b>	1	<b>45.60</b>	<b>15.50</b>	<b>15.50</b>	1	<b>15.50</b>
Total ... ..			<b>205.22</b>				<b>105.26</b>

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{99.96}{18} (.75 - .09) = + 3.67"$   
 If limited on account of midship superstructure. **✓**

Mean actual sheer aft = **Even**  
 Mean standard sheer aft =

Mean actual sheer forward = **deficient**  
 Mean standard sheer forward =

Length of enclosed superstructure forward of amidships = **deficient**  
 " " aft of " = **sheer**

<b>Deduction for Tropical Freeboard.</b> <b>Addition for Winter and Winter North Atlantic Freeboard.</b> Depth to Freeboard Deck = <b>15.25</b> Summer freeboard = <b>1.83</b> Moulded draught (d) = <b>13.42</b> Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <b>3.35 = 3 1/4"</b> Addition for Winter North Atlantic Freeboard (if required) = <b>✓</b>	<b>Deduction for Fresh Water.</b> Displacement in salt water at summer load water line $\Delta =$ Tons per inch immersion at summer load water line $T =$ Deduction = $\frac{\Delta}{40 T}$ inches = <b>3"</b>	<b>TABULAR FREEBOARD corrected for Flush Deck (if required)</b> Correction for coefficient <b>NIL</b> <table border="1"> <tr> <th></th> <th>+</th> <th>-</th> </tr> <tr> <td>Depth Correction</td> <td><b>6.57</b></td> <td><b>-</b></td> </tr> <tr> <td>Deduction for superstructures</td> <td><b>-</b></td> <td><b>1.69</b></td> </tr> <tr> <td>Sheer correction</td> <td><b>3.67</b></td> <td><b>-</b></td> </tr> <tr> <td>Round of Beam correction</td> <td><b>-</b></td> <td><b>.05</b></td> </tr> <tr> <td>Correction for Thickness of Deck amidships</td> <td><b>-60</b></td> <td><b>-</b></td> </tr> <tr> <td>Other corrections, scantlings, etc.</td> <td><b>-</b></td> <td><b>-</b></td> </tr> <tr> <td></td> <td><b>10.84</b></td> <td><b>1.74</b></td> </tr> </table> Summer Freeboard = <b>21.90</b>		+	-	Depth Correction	<b>6.57</b>	<b>-</b>	Deduction for superstructures	<b>-</b>	<b>1.69</b>	Sheer correction	<b>3.67</b>	<b>-</b>	Round of Beam correction	<b>-</b>	<b>.05</b>	Correction for Thickness of Deck amidships	<b>-60</b>	<b>-</b>	Other corrections, scantlings, etc.	<b>-</b>	<b>-</b>		<b>10.84</b>	<b>1.74</b>
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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  
 Fresh Water Line " "  
 Tropical Line " "  
 Winter Line below " "  
 Winter North Atlantic Line " "

3" = 76 mm  
 3 1/4" = 83 mm  
 ... ..

Tropical Fresh Water Freeboard  
 Fresh Water " "  
 Tropical " "  
 Winter " "  
 Winter North Atlantic " "

1'-10" = 5'59 m.m.  
 1'-7" = 483 m.m.  
 2'-1 1/4" = 642 m.m.  
 Lloyd's Register Foundation