

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

DEC 28 1937.

G.R. No. 20482.

Ship's Name <b>"MACHARDA"</b>	Official Number <b>166228</b>	Nationality and Port of Registry <b>British Liverpool</b>	Gross Tonnage <b>7998</b>	Date of Build <b>While Building</b>	Port of Survey <b>Port Glasgow</b>
Moulded Dimensions: Length <b>170'</b> Breadth <b>62.5'</b> Depth <b>34.83'</b>					Date of Survey <b>While Building</b>
Moulded displacement at moulded draught = 85 per cent. of moulded depth <b>17740.1</b> tons					Surveyor's Signature <b>M. L. Swinton</b>
Coefficient of fineness for use with Tables <b>.714</b>					Particulars of Classification <b>100 A1 (Contemplated)</b>

<b>Depth for Freeboard (D).</b> Moulded depth ... <b>34.83'</b> Stringer plate ... <b>.65"</b> Sheathing on exposed deck <input checked="" type="checkbox"/> $T \left( \frac{L-S}{L} \right) =$ <b>.05</b> Depth for Freeboard (D) = <b>34.88</b>	<b>Depth correction.</b> (a) Where D is greater than Table depth (D-Table depth) R = <b>(34.88-31.33) 3 = +10.65"</b> (b) Where D is less than Table depth (if allowed) (Table depth-D) R = <b>3.55</b> If restricted by superstructures <input checked="" type="checkbox"/>	<b>Round of Beam correction.</b> Moulded Breadth (B) <b>62.5'</b> Standard Round of Beam = $\frac{B \times 12}{50} =$ <b>15.00"</b> Ship's Round of Beam <b>15.4"</b> = <b>15.25"</b> Difference <b>excess = .25"</b> Restricted to Correction = $\frac{\text{Diff}}{4} \times \left( 1 - \frac{S_1}{L} \right) =$ <b>.25/4 x .4427 = .03"</b>
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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 <b>EQUIV.</b> ...	<b>49.54</b>	<b>49.54</b>	<b>8.0'</b>		<b>49.54</b>	Standard Height of Superstructure <b>7.50'</b>
" overhang ...	<b>7.42</b>	<b>.94</b>			<b>.94</b>	" " R.Q.D. <input checked="" type="checkbox"/>
R.Q.D. enclosed ...	<b>1.88</b>					Deduction for complete superstructure <b>42.00"</b>
" overhang <b>EQUIV.</b> ...	<b>162.91</b>	<b>162.91</b>	<b>9.0</b>		<b>162.91</b>	Percentage covered $\frac{S}{L} =$ <b>56.26</b>
Bridge enclosed <b>EQUIV.</b> ...	<b>162.66</b>	<b>162.91</b>				" " $\frac{S_1}{L} =$ <b>55.73</b>
" overhang aft <b>EQUIV.</b> ...	<b>161.42</b>					" " $\frac{E}{L} =$ <b>55.73</b>
" overhang forward ...						Percentage from Table, Line A. (corrected for absence of forecastle (if required))
Forecastle enclosed <b>EQUIV.</b> ...	<b>50.04</b>	<b>48.52</b>	<b>8.0</b>		<b>48.52</b>	Percentage from Table, Line B. <b>41.73</b> (corrected for absence of forecastle (if required))
" overhang ...						Interpolation for bridge less than 2L (if required)
Trunk aft ...						Deduction = <b>42.00 x .4173 = -17.52"</b>
" forward ...						
Tonnage opening aft ...						
" forward ...						
Total ...	<b>264.34</b>	<b>261.91</b>			<b>261.91</b>	

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	<b>57.00</b>	<b>1</b>	<b>57.00</b>	<b>57.00</b>	<b>60.0</b>	<b>60.00</b>	<b>1</b>	<b>60.00</b>	<b>60.00</b>
1/2 L from A.P. ...	<b>25.36</b>	<b>4</b>	<b>101.44</b>	<b>26.5</b>	<b>26.50</b>	<b>26.50</b>	<b>4</b>	<b>106.00</b>	<b>106.00</b>
2/2 L " ...	<b>6.27</b>	<b>2</b>	<b>12.54</b>	<b>6.0</b>	<b>6.00</b>	<b>6.00</b>	<b>2</b>	<b>12.00</b>	<b>12.00</b>
Amidships ...	<b>-</b>	<b>4</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>4</b>	<b>-</b>	<b>-</b>
3/2 L from F.P. ...	<b>12.54</b>	<b>2</b>	<b>25.08</b>	<b>15.0</b>	<b>15.00</b>	<b>15.00</b>	<b>2</b>	<b>30.00</b>	<b>30.00</b>
1/2 L " ...	<b>50.72</b>	<b>4</b>	<b>202.88</b>	<b>57.0</b>	<b>57.00</b>	<b>57.00</b>	<b>4</b>	<b>228.00</b>	<b>228.00</b>
F.P. ...	<b>114.00</b>	<b>1</b>	<b>114.00</b>	<b>129.0</b>	<b>129.00</b>	<b>129.00</b>	<b>1</b>	<b>129.00</b>	<b>129.00</b>
Total ...			<b>512.94</b>					<b>565.00</b>	

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{52.06}{18} (.75 - .2813) = -1.36"$$

If limited on account of midship superstructure. ☒If limited to maximum allowance of 1 1/2 ins. per 100 ft. ☒

<b>Deduction for Tropical Freeboard.</b> <b>Addition for Winter and Winter North Atlantic Freeboard.</b> Depth to Freeboard Deck = <b>34.88</b> Summer freeboard = <b>7.27</b> Moulded draught (d) = <b>27.61</b> Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <b>6.90 = 7"</b> Addition for Winter North Atlantic Freeboard (if required) =	<b>Deduction for Fresh Water.</b> Displacement in salt water at summer load water line $\Delta = 16630 \text{ c } 28.0$ Tons per inch immersion at summer load water line $T = 57.41 \text{ c } 28.0$ Deduction = $\frac{\Delta}{40T}$ inches = <b>54.34</b> $= 7.19 = 7 1/4"$	<b>TABULAR FREEBOARD</b> corrected for Flush Deck (if required) Correction for coefficient $\frac{.714 + .68}{1.36} = \frac{1.394}{1.36}$ <table border="1"> <tr> <th></th> <th>+</th> <th>-</th> </tr> <tr> <td>Depth Correction ...</td> <td><b>10.65</b></td> <td><b>-</b></td> </tr> <tr> <td>Deduction for superstructures ...</td> <td><b>-</b></td> <td><b>17.52</b></td> </tr> <tr> <td>Sheer correction ...</td> <td><b>-</b></td> <td><b>1.36</b></td> </tr> <tr> <td>Round of Beam correction ...</td> <td><b>-</b></td> <td><b>.03</b></td> </tr> <tr> <td>Correction for Thickness of Deck amidships ...</td> <td><b>-</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>10.65</b></td> <td><b>18.91</b></td> </tr> </table> Summer Freeboard = <b>87.36</b>		+	-	Depth Correction ...	<b>10.65</b>	<b>-</b>	Deduction for superstructures ...	<b>-</b>	<b>17.52</b>	Sheer correction ...	<b>-</b>	<b>1.36</b>	Round of Beam correction ...	<b>-</b>	<b>.03</b>	Correction for Thickness of Deck amidships ...	<b>-</b>	<b>-</b>	Other corrections, scantlings, etc. ...	<b>-</b>	<b>-</b>		<b>10.65</b>	<b>18.91</b>	<b>93.30</b> <b>95.62</b> <b>57.8</b> <b>29.12.37</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 ...	<b>1 1/4"</b>	Tropical Fresh Water Freeboard ...	<b>6' 1"</b>
Fresh Water Line " " ...	<b>7/8"</b>	Fresh Water " " ...	<b>6' 8"</b>
Tropical Line " " ...	<b>7"</b>	Tropical " " ...	<b>6' 8 1/4"</b>
Winter Line below " " ...	<b>7"</b>	Winter " " ...	<b>7' 10 1/4"</b>
Winter North Atlantic Line " " ...	<b>✓</b>	Winter North Atlantic " " ...	<b>✓</b>

31 DEC 1937



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A new form should be prepared if any alterations that affect the freeboard have been made. If no such alterations have been made, the Surveyor should endorse the form on this side with his signature and the date.

Prop 51.42'

$$\begin{array}{rcl} \text{Recesses. } 7.63 \times 4.00 & = & 30.52 \\ 7.63 \times 9.66 & = & 73.40 \\ & & \underline{104.22} \end{array}$$

$$\begin{array}{rcl} \frac{104.22}{55.5} = & \frac{51.42}{1.88} & \text{overhang} \\ & \underline{49.54} & \text{equiv.} \end{array}$$

Bridge

161.42

$$\frac{7}{8} \times 2.24 = \frac{1.49}{162.91 \text{ equiv.}}$$

Trade of ship International.

Names of sister ships S.S. MALANCHA. Gen. Freight. Reg. No. 20366.

Builder's name and yard number W. Hamilton & Co. Ltd., Port Glasgow. No. 430.

Owners Thos. & John Brocklebank, Ltd.

Fee £ 19 : 0 : 0.  
(ESTIMATED.)



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Foundation