

# LLOYD'S REGISTER OF SHIPPING

## SURVEYS FOR FREEBOARD

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER)

Received .....

Index No. ....

Govt. Copy .....

Owners C11 .....

Ship's Name <b>GEMMA</b>	Official Number	Nationality and Port of Registry <b>LIBERIAN</b> <b>British</b> <b>MONROVIA</b>	Gross Tonnage	Date of Build <b>1949</b>	Port of Survey
Moulded Dimensions: Length <b>384'</b> Breadth <b>62'-6"</b> Depth <b>26'-3"</b>					Date of Survey <b>12/8/60</b>
Freeboard Length <b>384' to c.r.s.</b>					Surveyor's Signature
Moulded displacement at moulded draught = 85 per cent. of moulded depth <b>12545</b> tons					Particulars of Classification <b>+100A1</b>
Coefficient of fineness for use with Tables <b>.820</b>					<b>For Restricted Service.</b>

DEPTH FOR FREEBOARD (D).	DEPTH CORRECTION.	ROUND OF BEAM CORRECTION.
Moulded depth ... <b>26.25</b>	(a) Where D is greater than Table depth (D-Table depth) R = <b>(26.30 - 25.60) 2.954 = +2.07</b>	Moulded Breadth (B) <b>62.5'</b>
Stringer plate ... <b>.05</b>	(b) Where D is less than Table depth (if allowed) (Table depth-D) R = <b>.70</b>	Standard Round of Beam = $\frac{B \times 12}{50} = \frac{15}{50} = \frac{15}{50}$
Wood Sheathing on exposed deck $T \left( \frac{L-S}{L} \right) =$	If restricted by superstructures	Ship's Round of Beam = $\frac{16}{1}$
Depth for Freeboard (D) = <b>26.30</b>		Difference
		Restricted to
		Correction = $\frac{\text{Diff}^e}{4} \times \left( 1 - \frac{S_1}{L} \right) = \frac{1}{4} \times .7551 = -.19$

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)	
Poop enclosed ...						Standard Height of Superstructure <b>7.34</b>
„ overhang ...						„ „ R.Q.D. ....
R.Q.D. enclosed ...						Deduction for complete superstructure <b>40.93</b>
„ overhang ...						Percentage covered $\frac{S}{L} = \frac{24.52}{24.52}$
At Bridge enclosed <b>equivalent</b> <b>63.87</b>	<b>63.87</b>				<b>63.87</b>	„ „ $\frac{S_1}{L} = \frac{24.49}{24.49}$
„ overhang aft ...	<b>.55</b>	<b>.41</b>			<b>.41</b>	„ „ $\frac{E}{L} = \frac{17.14}{17.14}$
„ overhang forward ...						Percentage from Table, Line A. Tanker <b>17.14</b>
Fore enclosed ...	<b>29.75</b>	<b>29.75</b>			<b>29.75</b>	(corrected for absence of forecastle (if required))
„ overhang ...						Percentage from Table, Line B.
Trunk aft ...						(corrected for absence of forecastle (if required))
„ forward ...						Interpolation for bridge less than .2L (if required)
Tonnage opening aft ...						Deduction = <b>40.93 x .1714 = - 7.02</b>
„ „ forward ...						
Total ...	<b>94.17</b>	<b>94.03</b>			<b>94.03</b>	

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P. ...	<b>48.40</b>	1		<b>48.40</b>	<b>27.50</b>	<b>27.50</b>	1		<b>27.50</b>	Mean actual sheer aft
1/8 L from A.P. ...	<b>21.54</b>	4		<b>86.16</b>	<b>2.99</b>	<b>2.99</b>	4		<b>11.96</b>	Mean standard sheer aft =
2/8 L „ ...	<b>5.32</b>	2		<b>10.64</b>	<b>0</b>	<b>0</b>	2		<b>0</b>	Mean actual sheer forward
Amidships ...	<b>0</b>	4		<b>0</b>	<b>0</b>	<b>0</b>	4		<b>0</b>	Mean standard sheer forward =
2/8 L from F.P. ...	<b>10.65</b>	2		<b>21.30</b>	<b>0</b>	<b>0</b>	2		<b>0</b>	Length of enclosed superstructure forward of amidships =
1/8 L „ ...	<b>43.08</b>	4		<b>172.32</b>	<b>1.50</b>	<b>1.50</b>	4		<b>6.00</b>	„ „ aft of „ =
F.P. ...	<b>96.80</b>	1		<b>96.80</b>	<b>53.00</b>	<b>53.00</b>	1		<b>53.00</b>	
Total ...				<b>435.62</b>					<b>98.46</b>	

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( \frac{.75 - \frac{S}{2L}}{.75 - \frac{S}{2L}} \right) = \frac{337.16}{18} \left( \frac{.75 - .1226}{.75 - .1226} \right) = +11.75$

If limited on account of midship superstructure. **.6274** If limited to maximum allowance of 1 1/2 ins. per 100ft.

## Deduction for Tropical Freeboard.

## Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = **26.30**

Summer freeboard = **5.96**

Moulded draught (d) = **20.34**

Keel allowance =

Extreme draught =

Deduction for Tropical freeboard and addition for =

Winter freeboard =  $\frac{d}{4}$  inches = **5.07 = 5'**

Addition for Winter North Atlantic Freeboard (if required) = **5.07 + 3.84 = 8.91 = 9'**

## Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta = 11375$

Tons per inch immersion at summer load water line

T = **50**

Deduction =  $\frac{\Delta}{40 T}$  inches

= **5.58**

= **5 1/2**

## TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient  $\frac{.68 + .82}{1.36} = \frac{1.50}{1.36} = 1.10$

	+	-
Depth Correction	<b>2.07</b>	
Deduction for superstructures		<b>7.02</b>
Sheer correction	<b>11.75</b>	
Round of Beam correction		<b>.19</b>
Correction for Thickness of Deck amidships		
Other corrections, scantlings, etc.		
	<b>13.82</b>	<b>7.21</b>

Summer Freeboard = **71.49 = 1816 mm**

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

Tropical Fresh Water Line above Centre of Disc	<b>10 3/4</b>	<b>27 cm</b>	Tropical Fresh Water Freeboard	<b>5' - 11 1/2"</b>	<b>182 cm</b>
Fresh Water Line	<b>5 1/2</b>	<b>14 cm</b>	Fresh Water	<b>5' - 0 3/4"</b>	<b>155 cm</b>
Tropical Line	<b>5 1/4</b>	<b>13 cm</b>	Tropical	<b>5' - 6"</b>	<b>168 cm</b>
Winter Line below	<b>—</b>		Winter	<b>5' - 6 1/4"</b>	<b>169 cm</b>
Winter North Atlantic Line	<b>—</b>		Winter North Atlantic	<b>not assigned</b>	<b>not assigned</b>

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